APO Productivity Databook 2025

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Country Abbreviations

APO21	21 APO member economies:
BAN	Bangladesh
CAM	Cambodia
ROC	Republic of China (ROC)
FIJ	Fiji
HKG	Hong Kong
IND	India
IDN	Indonesia
IRN	Islamic Republic of Iran (Iran)
JPN	Japan
KOR	Republic of Korea (Korea)
LAO	Lao PDR
MAL	Malaysia
MGL	Mongolia
NEP	Nepal
PAK	Pakistan
PHL	the Philippines
SIN	Singapore
SRI	Sri Lanka
THA	Thailand
TUR	Turkiye
VIE	Vietnam

Asia27	APO21 plus the following six countries:
AFG	the Islamic Emirate of Afghanistan (Afghanistan)
BTN	the Kingdom of Bhutan (Bhutan)
BRN	Brunei Darussalam (Brunei)
CHN	the People's Republic of China (China)
MDV	the Republic of Maldives (the Maldives)
MYA	Myanmar

Asia33	Asia27 plus the following six countries:
BHR	the Kingdom of Bahrain (Bahrain)
KWT	State of Kuwait (Kuwait)
OMT	Sultanate of Oman (Oman)
QAT	State of Qatar (Qatar)
SAU	Kingdom of Saudi Arabia (Saudi Arabia)
UAE	United Arab Emirates (UAE)

Asia	Asia33 plus the following 15 countries:
ARM	Armenia
AZE	Azerbaijan
GEO	Georgia
IRQ	Iraq
JOR	Jordan
KAZ	Kazakhstan
KGZ	Kyrgyz Republic
LBN	Lebanon
MAC	Macao SAR
SAR	Syria
TLS	Timor-Leste
TKM	Turkmenistan
UZB	Uzbekistan
WBG	West Bank and Gaza
YEM	Yemen

Reference	the following seven countries:
USA	United States of America (US)
AUS	Australia
NZL	New Zealand
GBR	United Kingdom (UK)
FRA	France
DEU	Germany
ITA	Italy

*Names in brackets are used in the text.

Region Abbreviations

ASEAN	Association of Southeast Asian Nations: 10 countries of Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. The ASEAN is separated into two groups in the Databook, i.e., the ASEAN6 and CLMV.
ASEAN6	Six countries of Brunei, Indonesia, Malaysia, the Philippines, Singapore, and Thailand.
CLMV	Four countries of Cambodia, Lao PDR, Myanmar, and Vietnam.
East Asia	Six countries of China, the ROC, Hong Kong, Japan, Korea, and Mongolia.
EU15	15 countries of the European Union prior to enlargement: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the UK.
EU27	27 countries of the European Union: the EU15 (excluding the UK) plus Bulgaria, the Republic of Croatia, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovak Republic, and Slovenia.
GCC	Gulf Cooperation Council: Six countries of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE.
IPEF	Indo-Pacific Economic Framework: 14 countries of the US, Japan, Australia, New Zealand, the Republic of Korea, India, Fiji, and seven ASEAN countries (Brunei, Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam).
RCEP	Regional Comprehensive Economic Partnership: 15 countries of 10 ASEAN countries, Australia, China, Japan, Korea, and New Zealand.
SAARC	South Asian Association for Regional Cooperation: Eight countries of Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka.

*Abbreviations like IPEF and RCEP, though not regions, are included for consistency.

Abbreviations

ADB	Asian Development Bank
ANRD	Asia Natural Resources Database
APO	Asian Productivity Organization
APO-PDB	APO Productivity Database
AQALI	Asia QALI Database
B&C	Building and Construction
BOP	Balance of Payment
CPI	Consumer Price Index
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
COE	Compensation of Employees
EITE	Energy-intensive and trade-exposed
FDI	Foreign Direct Investment
FISIM	Financial intermediation services indirectly measured
FTAs	Free Trade Agreements
GDP	Gross Domestic Product
GFCF	Gross fixed capital formation
GNI	Gross National Income
GVC	Global value chains
ICP	International Comparisons Program
ICT	Information and Communication Technology
IDE	Institute of Developing Economies
ILO	International Labour Organization
IMF	International Monetary Fund
IOT	Input-Output Table
IPNs	International production networks
IPP	Intellectual property products
ISIC	International Standard Industry Classification of All Economic Activities
KEO	Keio Economic Observatory, Keio University
LDCs	Least Developed Countries
M&E	Machinery and Equipment
MER	Mineral and Energy Resources
NPISHs	Non-Profit Institutions Serving Households
OECD	Organisation for Economic Co-operation and Development
PPP	Purchasing Power Parity
QALI	Quality-adjusted labor inputs
QNA	Quarterly National Accounts
R&D	Research and Development
SNA	System of National Accounts
SUT	Supply and Use Tables
TFP	Total Factor Productivity
UN	United Nations
UNDESA	United Nations Department of Economic and Social Affairs
UNSD	United Nations Statistics Division
WHO	World Health Organization
WTO	World Trade Organization

Foreword

The global economy continues to evolve under the influence of rapid technological change, evolving trade dynamics, and geopolitical shifts. In this dynamic environment, enhancing national productivity remains essential to sustain economic growth and resilience. The *APO Productivity Databook 2025* reflects the dedicated efforts of researchers, economists, and analysts who rigorously compile and analyze productivity data across the Asia-Pacific region.

The Asia-Pacific, with its diverse structures and development paths, faces both enduring challenges and new opportunities. This Databook serves as an essential tool for policymakers, academics, and business leaders as they navigate this complexity. The 2025 edition provides a comprehensive analysis of economic growth and productivity across the region from 1970 to 2023, with projections extending to 2035. The analyses draw on the APO Productivity Database (APO-PDB) 2025, which develops harmonized productivity accounts for the 21 APO member economies (APO21) and six non-member economies in Asia, with the USA as a reference economy. Regional productivity accounts are presented for Asia27 (APO21 plus Afghanistan, Bhutan, Brunei, the People's Republic of China, the Maldives, and Myanmar), ASEAN6 (Brunei, Indonesia, Malaysia, Philippines, Singapore, and Thailand), CLMV (Cambodia, Lao PDR, Myanmar, and Vietnam), East Asia, and SAARC (South Asian Association for Regional Cooperation), enabling consistent cross-country and group comparisons.

This edition continues the series' emphasis on transparent, harmonized measurement. It incorporates the latest official national accounts and population updates, quality-adjusted labor inputs from the Asia QALI Database (AQALI) 2025, and capital measurement improvements that include land and natural resource assets from the Asia Natural Resources Database (ANRD). Cross-country level comparisons are aligned with recent international price benchmarks to improve comparability. Together, these advances strengthen the evidence base for understanding the roles of capital, labor quality, and total factor productivity (TFP) in Asia's growth.

Building on these analyses, the *APO Productivity Databook 2025* complements the APO's wider mission to help its members design effective, evidence-based productivity strategies. By aligning high-quality statistics with practical initiatives and research, the APO supports its members in building resilience and sustaining productivity-led growth.

The APO expresses its deep appreciation to the Keio Economic Observatory at Keio University, Tokyo, for its continued collaboration in developing the APO-PDB and to national experts and statistical offices across its member economies for their vital contributions to data quality and coverage.

We hope that the *APO Productivity Databook 2025* will serve as a reliable and practical resource for understanding productivity trends and supporting informed decision-making across the Asia-Pacific and beyond.

Dr. Indra Pradana Singawinata
Secretary-General
Asian Productivity Organization
Tokyo, September 2025

1 Framework and Scope

1.1 Coverage of the 2025 Edition

The 18th edition of the APO Productivity Databook provides standardized productivity and growth comparisons across 33 Asian economies and several global reference countries. Spanning more than five decades (1970–2023), it evaluates Asia's structural transformation, post-COVID-19 recovery, and projections through 2035. Productivity enhancement is emphasized as the foundation of sustainable long-term growth, either by increasing output with given inputs or by maintaining output while reducing resource use. Enhancing national productivity metrics remains a fundamental policy imperative. To support this goal, the Databook systematically evaluates historical performance and prospects based on harmonized data and robust methodologies.

It establishes baseline indicators of economic growth and productivity across 33 Asian economies, including the 21 APO members and 12 non-member Asian countries. The APO21 consists of Bangladesh, Cambodia, the Republic of China (ROC), Fiji, Hong Kong, India, Indonesia, the Islamic Republic of Iran (Iran), Japan, the Republic of Korea (Korea), the Lao People's Democratic Republic (Lao PDR), Malaysia, Mongolia, Nepal, Pakistan, the Philippines, Singapore, Sri Lanka, Thailand, Turkiye, and Vietnam. The twelve non-member economies in Asia are Afghanistan, the Kingdom of Bhutan (Bhutan), Brunei Darussalam (Brunei), the People's Republic of China (China), the Maldives, Myanmar, and the Gulf Cooperation Council (GCC), consisting of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE). Afghanistan and the Maldives are being incorporated for the first time in the 2025 edition.[1] In addition, Australia, the European Union (EU), France, Italy, Germany, New Zealand, the United Kingdom (UK), and the United States (US) are included as reference economies.

The analytical framework deployed throughout the Databook series draws from the APO Productivity Database (APO-PDB), a meticulously constructed set of productivity accounts for Asian nations. This database represents the culmination of a sustained research partnership between the APO and Keio University's Keio Economic Observatory (KEO) that commenced in 2007, progressively refining its methodological precision and expanding its measurement capabilities. In its 2025 iteration, the APO-PDB encompasses the Asia27 economies—defined as the APO21 member economies plus Afghanistan, Bhutan, Brunei, China, the Maldives, and Myanmar—with the US incorporated as a reference economy. These Asia27 economies collectively generate 93% of Asia's total economic output (measured in purchasing power parity terms) as of 2023.

The Databook elucidates the sources of economic growth across individual economies by quantifying the respective contributions of capital inputs, labor inputs, and total factor productivity (TFP) to GDP growth. APO-PDB 2025 extends beyond individual economy productivity accounts to develop regional growth accounts for eight distinct economy groupings: the ASEAN6, APO21, Asia27, CLMV, East Asia, IPEF, RCEP, and SAARC.[2] These regional productivity accounts adjust for inter-economy price differentials in outputs, capital, and labor inputs (Section 8.5). Starting with this year's edition, cross-country

1: Afghanistan is included in the Databook for regional consistency. However, the accuracy of its economic data is highly uncertain due to prolonged conflict, weak institutional capacity, and the dominance of informal and subsistence-based economic activities. Users are therefore advised to interpret the estimates with particular caution. In the case of the Maldives, while official national accounts are relatively well-developed and aligned with international standards, caution is still warranted due to the small size of the economy, its heavy reliance on fishing and tourism, and its vulnerability to external shocks. See Section 8.4 for further discussion and main data sources.

output level comparisons are based on the 2021 benchmark PPP estimates, published in 2024 by the International Comparison Program (World Bank 2024a). The implications of this revision are discussed further in Box 3.

The APO-PDB is based on official national accounts. In Asia27, the System of National Accounts 2008 (2008 SNA) by the United Nations (2009) has been introduced in 25 economies, excluding Myanmar and Lao PDR, either partially or fully (Section 8.1.1).[3] Several countries have made significant revisions to their official national accounts since June 2024. New benchmark-year national accounts were subsequently released in Cambodia (2014 benchmark year, revised from 2000; published in July 2024), Korea (2020 benchmark year, revised from 2015; published in June 2024),[4] the Maldives (2019 benchmark year, revised from 2014; published in September 2024), and the ROC (2021 benchmark year, revised from 2016; published in January 2025). The APO-PDB 2025 follows the latest estimates and constructs retrospective harmonized estimates back to 1970, using as much auxiliary information as possible.[5]

This edition effectively reflects the revisions to the official national accounts and other statistical data published through the beginning of May 2025, as well as the updated population projections published by the United Nations (2024), replacing the UN's 2022 estimates used in the previous edition of Databook.

The aggregate measure of capital services is developed to analyze overall productivity performance (TFP) and the productivity of capital and labor. To consider the quality changes in capital input, 23 types of assets are defined: 11 produced assets (including ICT hardware and software, and R&D capital), seven types of land, inventory, and four types of mineral and energy resources (MER). Since 2020, the KEO has developed land and MER data as part of the Asia Natural Resources Database (ANRD). Summaries of ANRD 2025, incorporated into the APO-PDB 2025, are provided in Section 8.2.6. The APO-PDB covers low-income Asian countries. In this context, a notable feature of its produced asset stock measurement is the explicit consideration of damage to productive capital stocks caused by natural disasters (Section 8.2.4).

KEO began developing a comprehensive labor database in 2013, which includes the number of workers, average hours worked per worker, and wages per hour worked. These are cross-classified by gender, educational attainment, age, and employment status. This is the Asia QALI Database (AQALI), which gives the quality-adjusted labor inputs (QALI) for all economies of Asia27 and continues to be refined and updated as countries release their population censuses and labor statistics.[6] Quality-adjusted, also known as composition-adjusted, refers to the effect of changes in the composition of the workforce where

2: While not all are geographic regions in the strict sense, abbreviations such as IPEF and RCEP are also listed for consistency. From this edition onward, the Databook replaces the former "South Asia" regional grouping with SAARC, thereby including Afghanistan and the Maldives in the regional classification. Refer to the region abbreviations (p. 7) for the complete country list.

3: Since the varying SNA adoptions can result in discrepancies between data definitions and coverage, data harmonization is necessary for comparative productivity analyses. The APO-PDB reconciles these national account variations based on their specific concepts and definitions. This reconciliation is based on the 2008 SNA and provides harmonized estimates for improved international comparison.

4: The Bank of Korea (2024b) published retrospective estimates extending back to 1953, based on the new 2020 benchmark Korean System of National Accounts, in December 2024. Box 15 presents an overview of this comprehensive 70-year revision, examining its statistical and institutional implications.

5: In addition to the adjustments following the release of these benchmark revisions, the APO-PDB 2025 includes various corrections and revisions.

6: The detailed data sources and methodological framework for QALI are documented in Nomura and Akashi (2017) for six South Asian countries, Nomura (2023) for Vietnam, and Nomura (2025, Chapter 4) for Bhutan. For Afghanistan and the Maldives—newly incorporated in this edition—data construction began in 2022, and they are included for the first time in AQALI 2025. In AQALI 2025, the latest estimates have also been revised and improved by incorporating labor force survey (LFS) microdata: specifically, custom LFS data for 2017–2022 obtained from the National Statistical Office of Thailand, and LFS microdata for 2018–2023 downloaded from the website of the Philippine Statistics Authority (PSA). Although the comprehensive documentation of the AQALI framework is still a work in progress due to the complexity of the source data and the need for numerous assumptions to address missing information, a brief explanation is provided in Section 8.3 and Box 16.

different gender, education, and age categories are paid different wages (Section 8.3). Based on the AQA-LI 2025, the labor input in the APO-PDB 2025 is decomposed into hours worked and labor quality (as a default) or college and non-college labor inputs (Box 9).

The APO Productivity Databook/Database project is managed by Koji Nomura, under the consultancy of Professor W. Erwin Diewert (University of British Columbia) and Dr. Mun S. Ho (Harvard University), and with coordination by Mr. Towfiqul Islam at APO. This edition's text, tables, and figures were authored by Koji Nomura and Mun S. Ho, with research assistance from KEO: Sho Inaba, Shiori Nakayama, Mansaku Yoshida, and Tomoko Nagashima. We gratefully acknowledge the lasting influence of the late Professor Dale W. Jorgenson, whose early support and insight helped shape the direction of this project. We would also like to thank Ms. Eunice Ya Ming Lau (Former Head of the Productivity Economics Branch, Office for National Statistics, UK) for laying the foundation of the Databook series as an author of the editions from 2008 to 2013, and Professor Fukunari Kimura (Professor Emeritus at Keio University and current President of the Institute of Developing Economies, Japan External Trade Organization) for his contribution as an author from 2013 to 2023. The Databook is grateful to Trina Ott for her review of the draft.

1.2 Structure of the Databook

The structure of the Databook is as follows. Chapter 2 presents an overview of recent macroeconomic developments and inflation dynamics in Asia, highlighting post-COVID-19 recovery patterns, energy and food price shocks, and their implications for growth and policy responses. To understand the dynamics of long-term economic growth in Asia, Chapter 3 details the diverse development efforts and achievements through cross-country level comparisons of GDP. Decompositions of GDP, which are defined by three approaches in SNA—production by industry, expenditure on final demand, and income to factor inputs—are valuable in understanding the structure and, in turn, the behavior of an economy. Chapter 4 presents the demand side decomposition, analyzing the sources of countries' expenditure growth.

Chapter 5 analyzes the supply-side decompositions of economic growth, providing the growth of labor productivity (output per worker and output per hour worked), capital productivity, energy productivity, and TFP in each country and region. This edition of the Databook includes estimates for 2023, which is the final year. Some tables in Chapter 9 present estimates for the sub-periods, reflecting the damage caused by the COVID-19 pandemic (2019–2020) and the subsequent recovery (2020–2023).

The different composition of economic activity among countries is one of the main sources of the vast gaps in cross-country labor productivity at the aggregate level. The comparison of industry structure is presented in Chapter 6.[7] Chapter 7 analyzes the income side of GDP by measuring real income growth and evaluating the improvement or deterioration in the terms of trade. Chapter 8 presents methodological notes on the framework and assumptions used in this Databook. Some supplementary tables are provided in Chapter 9. Finally, the Appendix presents the profiles from 1970 to 2023, as well as our projections through 2035, for APO21 economies and the entire region.[8]

7: In the construction of the APO-PDB, considerable efforts have been made to address the challenges of linking time-series industry-level data across Asian countries. Nevertheless, significant issues remain regarding the quality and consistency of industry-level data. These challenges underscore the importance of addressing data consistency at the national level through systematic and country-specific efforts. One such example is Bhutan, where Nomura (2025, Chapter 3) discusses in detail the procedures undertaken to ensure the internal consistency of time-series industry-level production data. At present, however, an industry-level productivity account at basic prices that is fully aligned with the aggregate productivity account has yet to be established within the APO-PDB framework.

8: Profiles for APO non-member countries and for regional aggregates beyond APO21 are not included in the Appendix but can be provided upon request by contacting KEO (office@sanken.keio.ac.jp).

The official national accounts and metadata information used to construct the APO-PDB 2025 have been collected by national experts in APO member economies and researchers at KEO. The contributors are listed in Section 1.3. At KEO, submitted data are examined and the long-time productivity accounts are constructed using detailed information on labor, production, prices, trades, and taxes collected separately. Readers should consider that international comparisons of economic performance are never a precise science. Instead, they are fraught with measurement and data comparability issues. Given the limits on data availability and quality, some of the adjustments in the Databook are necessarily conjectural, while others are based on widely accepted assumptions. Despite the best efforts in harmonizing data, some data uncertainty remains.

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2 Recovery from Economic Shocks and Uncertain Outlooks

Despite the pandemic and geopolitical crises (wars in Ukraine and the Middle East, and violent conflicts in Africa) in 2024, the year ended on a somewhat positive note for much of the world as recovery continued. Of the 22 countries in Asia27 for which 2024 GDP data is available, 16 have 2024 GDP growth that is higher than 2023, while six had lower growth. The high inflation rates of 2022 fell in 2023 and continued to fall in 2024, allowing monetary authorities to ease high interest rates. However, even with this seemingly positive economic environment, in the 2024 "year of elections", there were numerous changes of government, as well as leadership changes without elections. These changes occurred in both developed regions—including France, Germany, Japan, the ROC, the UK, and the US—as well as in developing regions, such as Bangladesh, India, Pakistan, and Sri Lanka. The biggest event dominating headlines in 2025 is the new US administration, which has rapidly introduced policies that have significantly impacted global economic activity. These changes in US policy, combined with the international responses, is expected to widely alter long-established trade and investment patterns, and introduce substantial uncertainty to short- and medium-term global growth outlooks.

This chapter reviews the performance of Asian countries over the last few years, identifying which countries have continued their post-pandemic recovery and which have faltered. It examines how the recovery of exports and tourism, along with high public investment, contributed to higher GDP growth in 2024 in many countries in the region. Growth in China in 2024 was similar to that in 2023 as they continued to face challenges in managing the property sector. This chapter also highlights the challenges posed by high external debt for certain countries in Asia, and many other low-income countries worldwide. Recent productivity and economic growth performance is compared with historical trends since 1970.

The focus on trade policy, driven by US government actions, coincides with a shift in economic policy, moving toward industrial policy, particularly in areas such as supply chain resilience and emerging technologies—including computing, new energy, and artificial intelligence. These are not only major concerns for developed countries, but also for China and India. This issue of the APO addresses advanced and new technology sectors, including the emerging trade patterns for electric vehicles, batteries, and solar cells.

Additional issues dominated policy discussions in many countries in 2024: low productivity growth, low population growth, and rapid aging. These issues are concerns of both rich and middle-income countries, in Asia and elsewhere. Chapter 3 discusses the correlation between these issues and the economic outlook out to 2035.

Section 2.1 describes the recent continued recovery from the pandemic and geopolitical crisis, analyzing whether growth in the US, China, and the EU contributed to the pandemic slump and the subsequent recovery of Asia, via exports. Section 2.2 covers energy prices and the general inflationary effects of global shocks, including the foreign exchange crisis in some countries. Section 2.3 presents productivity growth trends for the entire Asia27 region from 1970 to 2023, as well as for the various sub-regions of Asia. Finally, Section 2.4 summarizes the recent significant increase in trade flows of clean-technology products between Asia and the US and Europe.

2.1 Continuing Recovery from the Aftermath of COVID-19

2.1.1 Global Growth Divergence and Policy Responses

World economic activity collapsed in 2020 due to COVID-19 lockdowns. Amazingly, much of the world bounced back in 2021 with an aggregate Asia27 GDP growth of 7%, and 6% in the US and EU27 (Table 2.1).[9] This recovery continued well in 2022–2024 in parts of the world. However, the war in Ukraine, which began in February 2022, as well as other localized wars and extreme weather events impacted recovery in some economies.

Table 2.1 Recent Economic Growth, 2015–2024

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
APO21	4.7	5.3	5.0	4.0	2.5	−3.1	6.1	5.2	4.7	n.a
Asia27	4.9	5.7	5.6	4.9	3.4	−1.4	7.3	4.3	4.5	n.a
East Asia	4.1	4.9	5.4	4.9	3.6	0.0	7.6	2.7	3.7	n.a
China	5.0	6.4	6.6	6.1	4.6	0.9	8.9	3.1	4.4	5.0
Hong Kong	2.4	2.1	3.7	2.7	−1.7	−6.5	6.1	−3.5	3.3	2.5
Japan	1.5	0.8	1.7	0.6	−0.4	−4.3	2.7	0.9	1.5	0.1
Korea	2.8	3.0	3.4	3.3	2.4	−0.9	4.5	3.1	1.9	2.0
Mongolia	2.5	1.5	5.4	7.3	5.3	−4.5	1.6	4.8	7.0	4.9
ROC	1.5	2.2	3.6	2.8	3.2	2.9	6.6	2.5	0.5	4.6
SAARC	7.5	7.8	6.3	6.2	3.9	−4.9	8.2	6.9	7.3	n.a
Afghanistan	−1.8	3.5	2.6	1.2	3.8	−2.1	−23.2	−6.4	2.7	n.a
Bangladesh	8.0	8.8	6.0	7.9	5.9	3.3	6.2	6.8	4.3	5.8
Bhutan	4.7	5.6	7.3	3.0	6.5	−8.6	4.7	6.4	0.5	5.8
India	8.1	8.2	6.6	6.2	4.0	−6.3	9.1	7.7	8.7	6.5
Maldives	3.9	6.4	7.8	12.2	7.0	−39.9	31.9	4.6	4.6	5.1
Nepal	3.5	0.0	8.2	7.1	6.2	−2.5	4.4	5.1	2.3	4.1
Pakistan	3.9	6.2	4.5	6.2	2.3	−0.9	5.8	4.7	0.1	3.2
Sri Lanka	4.7	4.1	6.1	2.4	0.9	−5.1	4.1	−7.4	−0.7	5.0
ASEAN	5.2	4.9	5.2	5.3	4.2	−3.5	3.7	6.1	3.5	n.a
Brunei	4.7	−0.8	−0.7	4.4	5.8	−2.6	−1.5	−2.1	3.0	4.2
Cambodia	6.9	6.9	7.1	8.0	7.3	−3.3	4.7	6.5	3.4	n.a
Indonesia	4.8	4.9	4.9	5.0	4.9	−2.1	3.6	5.2	4.9	5.0
Lao PDR	7.4	4.8	6.1	5.1	4.0	−0.4	2.8	5.4	1.7	n.a
Malaysia	5.4	4.5	4.9	4.3	3.2	−4.6	4.9	10.6	1.6	5.1
Myanmar	35.3	4.8	1.1	6.7	5.1	−10.1	−15.1	0.9	0.3	n.a
Philippines	5.6	7.3	6.9	6.4	5.2	−10.1	6.1	8.6	4.3	5.7
Singapore	4.0	4.8	5.2	3.7	0.8	−3.0	7.4	3.9	1.5	4.4
Thailand	3.1	3.4	4.1	4.1	2.1	−6.2	1.5	2.5	2.0	2.5
Vietnam	5.8	5.9	7.4	8.4	6.4	3.1	3.4	9.0	3.8	7.1
Other Asia	3.3	7.7	6.1	−0.5	−1.5	2.4	8.5	5.2	5.2	n.a
Fiji	4.4	2.4	5.2	3.7	−0.6	−18.7	−5.0	18.1	7.3	n.a
Iran	0.0	13.2	4.7	−4.8	−4.7	3.3	5.5	4.9	5.6	4.6
Turkiye	5.9	3.3	7.2	3.0	0.8	1.8	10.8	5.4	5.0	3.2
US	2.8	1.7	2.4	2.9	2.6	−2.3	5.8	2.4	2.9	2.8
France	1.1	0.9	2.1	1.6	2.0	−7.7	6.7	2.5	0.9	1.1
Germany	1.6	2.3	2.7	1.1	1.0	−4.2	3.6	1.4	−0.3	−0.2
Italy	0.9	1.2	1.6	0.8	0.4	−9.3	8.6	4.6	0.7	0.5
UK	2.5	1.8	2.7	1.3	1.6	−10.6	7.9	5.9	0.2	1.1
EU27	2.3	1.9	2.8	2.0	1.9	−5.7	6.1	3.4	0.4	0.9

Unit: Percentage (average annual growth rate).
Sources: Official annual and quarterly national accounts and APO Productivity Database 2025.

In 2022, continuing the recovery, US GDP growth was 2.5%, EU 3.5%, India 7.7%, and Japan 0.9%, all above their pre-pandemic trend. In China recovery was only 3.1% (compared to 6–7% pre-pandemic), as strict COVID-19 prevention policies continued. The COVID-19 disruptions of supply chains led to a spike in inflation rates in 2022 in most countries, with the major exception of China (Figure 2.1, left). US CPI inflation was 8% in 2022 and 9% in the EU. This led to high interest rates in the US, EU, and other major economies as they worked to contain high inflation. Countries experiencing foreign exchange crises and sharp depreciations of their currencies, such as Turkiye, Pakistan, Sri Lanka, and Lao PDR experienced higher inflation rates.

Throughout 2023 inflation rates declined with US interest rates easing towards the end of the year. This contributed to a 2.9% growth rate in 2023 for the US, which was higher than in 2022. In the EU, high interest rates continued with growth falling to 0.4% in 2023. Japan accelerated to 1.5% growth, while India reached 8.7%. China, which had relaxed COVID-19 restrictions at the beginning of 2023, recovered to a 4.4% growth rate for 2023.

9: The GDP estimates used here are based on the APO-PDB, aligned with the final demand accounts outlined in Chapter 4 and detailed in Section 8.1. These may differ from official GDP figures, which are typically derived from production-side accounts and still rely on fixed-weight Laspeyres indices for some Asian countries. In contrast, the APO-PDB applies translog indices that better reflect substitution effects and relative price changes, potentially resulting in different growth rates.

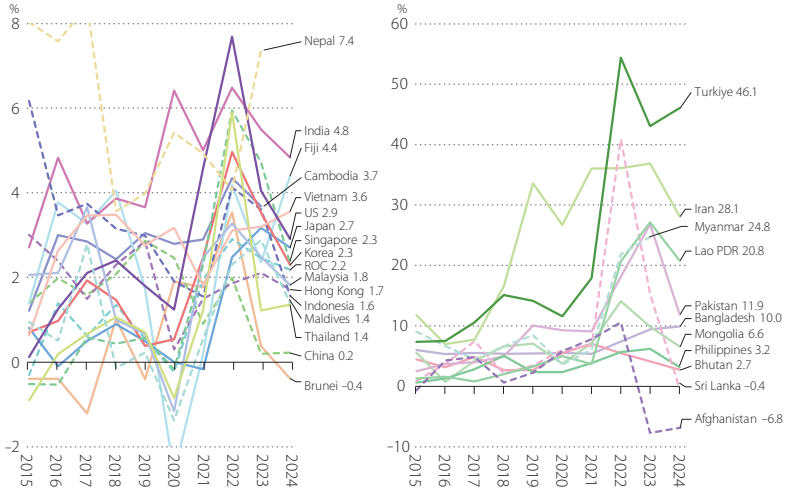

Figure 2.1 High Inflation due to COVID-19, 2015–2024

Unit: Annual growth rate of CPI. Source: Official estimates. Note: The observation periods for Cambodia, Nepal, and Myanmar end in 2023.

Across developed regions, inflation rates continued to fall in 2024, nearly reaching pre-pandemic levels of about 2% in the US. This continued easing of interest rates, especially in the EU, where GDP growth reached 0.9% compared to 0.4% in 2023. The US maintained a 2.8% growth rate, very close to the 2023 rate, following a meeting in November 2023 between the presidents of the US and China aimed at easing political and trade tensions.

In Asia, India continued to lead with 6.5% growth in 2024 while China reached 5.0%, slightly higher than its 2023 rate. The other major Asian economy, Japan, began 2024 with a contraction due to global supply chain issues and high inflation, but recovered later in the year, ending with a 0.1% growth for the year. This growth in most of the large economies contributed to higher exports from Asia and increased 2024 growth there: Vietnam 7.1%, the Philippines 5.7%, Indonesia 5.0%, Malaysia 5.1%, and the ROC 4.6%. These trade effects are discussed in greater detail in Section 2.1.3.

Interest rates were not the only factor driving the recovery. Energy prices were very high in 2022, with crude oil reaching USD 125 per barrel. Notably, gas prices were particularly high in the EU following the start of the war in Ukraine. The price of oil eased to about USD 70–80 per barrel for much of 2023. European gas prices also fell significantly. Oil was approximately USD 70 per barrel by the second half of 2024. These low energy prices were impactful for the EU but could not offset the high interest rates and the sharp slowdown in Germany in 2023. The fluctuating high, then low, prices initially benefited, then hurt, the Gulf Oil states, Malaysia, and Brunei (Saudi Arabia's GDP growth: 9% in 2022 and –1% in 2023), and had the reverse effects on India, Pakistan, and the remaining oil-importing Asia. Energy prices are described in greater detail in Box 2.

Public investment in infrastructure played a crucial role in recovery from the pandemic and trade shocks for several countries in Asia, including Thailand, Singapore, Malaysia, Indonesia, and Vietnam. The role of such investments in the last few years and how they might affect the longer-term outlook for productivity and growth is discussed in Section 2.1.4.

Section 2.1.1 concludes by outlining key policies and economic developments in major economies since the pandemic, highlighting their relevance to Asia's growth.

(i) US

Immediately prior to the pandemic, the Trump administration's (2017–2020) policies included significant tax cuts, deregulation, and trade restrictions, especially on imports from China. When COVID-19 hit, the

US suffered a high COVID mortality rate compared to other countries, but the huge response by the government to maintain incomes (deficit of 15% of GDP) led to a GDP fall in 2020 of only –2.3%, much smaller than the fall in EU27 (–5.7%) and smaller than much of Asia. Under the Biden administration, beginning in January 2021, the substantial stimulus continued (deficit of 12% of GDP), leading to a rapid recovery in 2021 (5.8% GDP growth). Supply chain disruptions and large stimulus led to an 8% inflation rate in 2022, causing the Federal Reserve to respond with high interest rates. Inflation eased significantly in 2023 and reached 3% in 2024 (Figure 2.1), allowing interest rates to decline and GDP growth to recover to nearly 3% for both 2023 and 2024. Unemployment reached 8.1% in 2020, leading to a significant increase in labor productivity that year. Surprisingly, this trend did not decline substantially after 2020, as shown in Figure 5.3 (Section 5.2). That is, the pandemic seems to have a long-run positive impact on US productivity.

(ii) EU

In the decade preceding the COVID-19 pandemic, the EU addressed the Greek financial crisis and instituted major economic reforms, including new fiscal rules. The UK's withdrawal from the EU, finalized in January 2020, also had a significant impact on EU administration and policy. When COVID-19 hit, the EU governments did not pursue a stimulus as large as the US (it had a deficit of 6.7% of GDP in 2020). The EU27 experienced a much bigger decline in GDP in 2020 (–5.7%) and a slower recovery compared to the US. When the war in Ukraine started in February 2022, Europe was much more exposed with a cutoff of gas imports from Russia, leading to an inflation rate in 2022 that was higher than in the US. These shocks, combined with the slower easing of high interest rates in EU27, led to anemic growth in 2023 (0.4%) and 2024 (0.9%). Germany's transition in power from Angela Merkel, who served as chancellor for sixteen years, to Olaf Scholz, who placed more emphasis on climate policy, may have further impacted energy prices. The labor market response to COVID-19 in the EU was noteworthy with employment falling slightly in 2020, but hours worked decreasing by 5.9%. As a result, labor productivity per worker declined, but productivity per hour worked increased by 1.3% in 2020. Post-2020 EU productivity per worker continued its slow rise while productivity per hour was essentially flat.

(iii) China

Before the COVID-19 outbreak, economic growth in China decelerated from an 11% rate during 2005–2010 to 5.9% during 2015–2019 (Table 9.3). China followed a very strict COVID-19 lockdown strategy, accompanied by large stimulus measures, managing to avoid a recession in 2020, achieving 0.9% GDP growth. While there was a marked decline from earlier growth, this decline was comparable to that experienced by the US and the EU27. The government budget deficit was 8% of GDP compared to about 3% in the mid-2010s. This stimulus, combined with high exports, contributed to a rapid recovery with 8.9% growth in 2021. The global demand for information technology to meet the work-at-home needs of the pandemic contributed to the export expansion. In 2022, however, the strict lockdown policies disrupted normal economic activity. The crisis in the property sector led to a construction slump, and the Ukraine war disrupted trade, all of which contributed to a sharp deceleration to 3.1% in 2022. The COVID-19 restrictions were removed at the end of 2022, leading to a recovery in the services sector, while construction and manufacturing remained weak (overall 2023 GDP growth was 4.4%). Continued geopolitical tensions and US restrictions on technology exports contributed to a decline in foreign direct investment. Unlike almost all countries shown in Figure 2.1, these weaknesses in many parts of the economy led to a deflation problem in China, rather than inflation. The economic challenges persisted in 2024 (weak property sector, poor consumer sentiment, and US trade restrictions), and the government response included a promotion of the high-tech industries (electric vehicles and high-tech manufacturing). These cross-pressures resulted in a 5.0% GDP growth in 2024. The labor productivity line in Figure 5.3 for China shows a pause in 2020, but the rapid improvement continued post-2020 along its pre-pandemic trend.

(iv) Japan

In 2019, before the COVID-19 outbreak, Japan experienced a GDP growth rate of –0.4% due to damage from typhoons, a rise in the consumption tax from 8% to 10%, and a decline in exports to the US and China. It then suffered a sharp 4.3% contraction in GDP when the COVID-19 lockdowns took effect. The recovery in 2021 was modest, with 2.7% GDP growth, slower than in the EU and the US, due in part to the slower vaccine rollout. The 2020 Tokyo Olympics were postponed to 2021. However in 2021, no spectators were allowed, eliminating the anticipated stimulus effects. A new Prime Minister, Fumio Kishida, was installed in October 2021. The recovery continued to weaken in 2022, despite the reopening of borders. The yen depreciated sharply (from JPY 110 per USD in September 2021 to 143 in September 2022) with the low-interest rate policy of the Bank of Japan, and the high energy prices led to sustained trade deficits and unfamiliar high 2.5% inflation compared to the below 1% rate of the mid-2010s. In 2023, there was an increase in tourism (see Box 1 for the rise in Japan tourism, which exceeded the recovery in many countries), and exporters benefited from the weak yen, resulting in GDP growth of 1.5%. The very loose monetary policy was tightened in 2023 and 2024, and the high inflation led to low consumption growth. The disruption of production in automotive plants in late 2023 contributed to a contraction in GDP at the start of 2024. The economy recovered later in 2024, with rises in wages and stabilization of the yen. However, exports of vehicles continued to decline, and GDP growth fell to almost zero for the entire year. Turning to the labor market, unemployment rose from 2.3% in 2019 to 2.8% in 2020, the year of the COVID-19 pandemic, and remained below 3% for the post-pandemic period, despite low growth. Hours worked decreased by 0.7% in 2020 (see Japan's country profile in Appendix), resulting in a 3.5% decline in labor productivity, as shown in Figure 5.3. Labor productivity recovered slightly post-pandemic. This pattern of poor productivity growth after 2015 is a Japan phenomenon that is not observed for most countries shown in Figure 5.3.

(v) India

India maintained a high growth rate in the years preceding 2019, averaging 7.0% from 2015 to 2018. It implemented a dramatic "demonetization" policy in November 2016, when large denomination notes were no longer legal tender, a move intended to curb illegal activities and promote a cashless economy. The demonetization, the rise in oil prices (from USD 50 per barrel in 2017 to about USD 70 in 2018), and the collapse of a major financial company in 2018 contributed to a deceleration of growth after 2016, which fell to 4.0% in 2019. India responded to the COVID-19 shock with a significant deficit (9% of GDP), but was unable to curb the sharp job losses, resulting in a 6.3% decline in GDP in 2020. India launched a rapid vaccination drive in 2021, contributing to a sharp recovery and 9.1% GDP growth. The war in Ukraine in 2022 had a different impact on India, which benefited from lower oil prices and increased oil imports from Russia. High investment (including foreign investment in digital services), and export growth, contributed to continued high GDP growth: 7.7% in 2022, 8.7% in 2023, and 6.5% in 2024. The ruling party was re-elected in 2024. Unlike many countries shown in Figure 5.3, the inflation rate in India rose to only 6% in 2020 due to the COVID-19 shock and to 6% in 2022, driven by high food prices resulting from the Ukraine war. The higher interest rates put in response to this inflation did not substantially affect demand. Turning to productivity effects, the sharp decline in GDP in 2020 led to a slight decrease in labor productivity; however, it continued the high, post-2010, growth trend after 2020. During the 2015–2023 period, India labor productivity growth averaged 4.7% per year (Figure 5.5).

2.1.2 Brief Update of Health Dynamics

The 2024 edition of the Databook (APO 2024, Section 2.2) provided the WHO's estimated "excess mortality" rates due to COVID-19 through 2021, contrasting them with confirmed COVID-19 deaths. In the previous analysis, particular attention was drawn to the imbalance observed in some Asian countries between the health impact, as measured by excess mortality, and the economic impact, such as the degree of GDP growth disruption. This section gives a brief update. The estimated excess deaths per thousand by

2021 are highest in Indonesia, with 3.9 deaths per thousand, followed by India (3.4), Iran (3.4), and Italy (3.1). Other countries, including China, Japan, and Vietnam, had zero or negative excess deaths.

The global number of COVID-19 cases reported to the WHO reached a weekly high of 23 million in January 2022 but subsequently fell to very low levels in 2023, with fewer than 200 thousand cases by 2024. Mathieu et al. (2024) provides an updated estimate of excess mortality, showing a dramatic reduction after March 2023 in almost all countries, with only a few outliers; in many cases, this results in a return to zero excess deaths. Figure 2.2 illustrates an example from the Mathieu et al. webpage for selected Asian countries and the US.

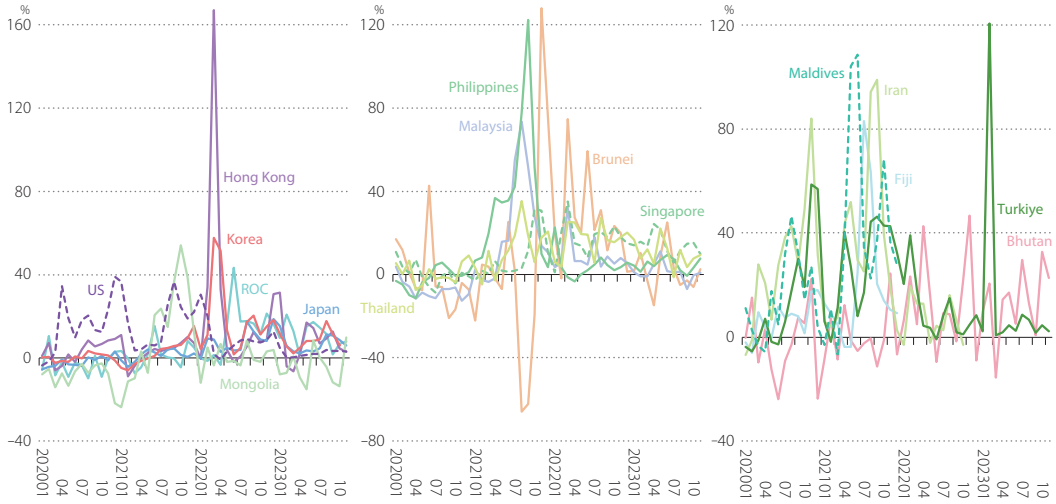

Figure 2.2 Excess Mortality: Deaths from All Causes Compared to Projection

Unit: Percentage point (difference between the reported number of weekly or monthly deaths in 2020–2024 and the projected number of deaths for the same period based on previous years). Source: Mathieu et al. (2024) in Our World in Data.

2.1.3 Role of Exports in the Post-Pandemic Recovery

Trade plays a significant role in the economies of almost every country in Asia, including the larger economies. This contrasts with the US's small 11% export share of GDP. Figure 4.12 (Section 4.2) provides the trade shares for 2023, indicating that only two countries on the list have an export share lower than the US's: Pakistan (10%) and Nepal (7%). The two Asian giants have high shares: India (22%) and China (19%). South Asia has lower shares than East Asia, but they are still significant, at 13% (Bangladesh), 20% (Sri Lanka), and 28% (Bhutan). East Asia (including Southeast Asia) and the oil exporters have very high exports, with many shares exceeding 46% of the highly integrated EU15, such as ROC (62%), Thailand (65%), and Vietnam (87%). A significant portion of these exports from Asia is directed to the three major economies—China, the US, and the EU.

Table 2.2 presents the dollar value of goods exports from each country in the Asia27 group to the US, China, the EU, and non-China Asia for 2015–2023, with the US included for reference. Table 2.3 presents these exports as a percentage of GDP. The Tables also give this information for group subtotals such as ASEAN and Asia27.

Table 2.2 Goods Exports to US, China, EU, and non-China Asia, 2015–2023

	to US									to China								
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2015	2016	2017	2018	2019	2020	2021	2022	2023
APO21	494	496	517	550	563	553	673	752	719	903	868	962	1,080	1,023	1,052	1,361	1,281	1,164
Asia27	959	929	987	1,070	1,009	1,022	1,256	1,343	1,221	908	873	968	1,086	1,030	1,060	1,368	1,288	1,169
East Asia	754	718	761	819	740	739	899	935	851	700	675	726	810	740	762	966	875	766
China	465	433	469	519	446	467	582	590	501	–	–	–	–	–	–	–	–	–
Hong Kong	43	41	42	43	36	36	35	34	30	314	308	314	339	318	326	432	376	352
Japan	135	138	140	143	140	115	129	133	137	132	133	148	167	154	161	190	168	146
Korea	74	71	73	75	74	73	92	106	111	165	147	161	189	158	153	192	183	146
Mongolia	0	0	0	0	0	0	0	0	0	4	4	5	7	7	6	8	11	13
ROC	36	35	38	39	45	48	61	71	71	85	84	97	109	103	115	144	138	109
SAARC	60	62	66	73	74	65	91	106	95	16	14	19	25	26	27	35	25	26
Afghanistan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bangladesh	7	7	7	8	8	6	8	10	10	1	1	1	1	1	1	2	2	2
Bhutan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
India	46	48	52	58	58	51	73	85	77	12	11	15	21	21	23	29	19	20
Maldives	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nepal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pakistan	4	4	4	4	4	4	6	6	5	2	2	2	2	3	2	4	3	3
Sri Lanka	3	3	3	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0
ASEAN	136	140	148	166	184	206	248	283	258	173	167	209	233	233	249	333	340	335
Brunei	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2
Cambodia	2	2	2	3	4	5	8	10	9	0	1	1	1	1	1	2	2	2
Indonesia	17	17	18	18	18	18	24	27	22	18	19	25	31	32	36	62	75	74
Lao PDR	0	0	0	0	0	0	0	0	0	1	2	1	2	2	2	3	2	4
Malaysia	20	20	21	22	22	25	32	36	33	31	27	32	39	38	43	53	55	49
Myanmar	0	0	0	0	1	1	1	1	1	5	5	6	6	6	6	5	4	4
Philippines	9	9	10	10	11	9	11	12	11	8	7	9	10	11	11	13	12	12
Singapore	26	25	26	34	35	39	39	46	44	61	52	62	61	61	59	82	78	78
Thailand	26	27	28	29	32	34	41	47	47	29	28	33	36	35	35	45	41	40
Vietnam	35	40	43	48	61	75	92	105	92	20	25	39	47	47	56	66	67	70
Other Asia	9	9	12	12	11	12	17	20	17	18	16	15	19	32	21	35	47	43
Fiji	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Iran	0	0	0	0	0	0	0	0	0	15	13	11	14	28	17	29	43	38
Turkiye	8	9	11	11	11	12	17	20	16	4	3	4	4	4	4	5	5	4
US	–	–	–	–	–	–	–	–	–	142	137	147	144	126	144	181	185	175

	to EU									to Non-China Asia								
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2015	2016	2017	2018	2019	2020	2021	2022	2023
APO21	440	461	508	538	521	493	600	664	641	1,397	1,409	1,665	1,782	1,649	1,495	1,894	2,127	1,954
Asia27	800	801	883	941	946	962	1,195	1,296	1,209	2,497	2,431	2,750	2,983	2,893	2,741	3,492	3,844	3,580
East Asia	528	519	569	599	614	654	808	847	788	1,700	1,641	1,804	1,949	1,946	1,905	2,421	2,592	2,436
China	360	339	373	400	423	466	593	628	566	1,088	1,010	1,073	1,186	1,228	1,232	1,582	1,699	1,611
Hong Kong	37	41	43	42	41	49	46	39	37	88	94	116	113	109	100	122	132	125
Japan	63	70	74	77	76	66	74	76	79	228	239	264	278	266	241	293	301	278
Korea	45	45	53	53	49	49	63	69	69	172	173	210	227	202	187	234	250	228
Mongolia	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
ROC	22	23	26	26	25	25	33	35	37	124	124	141	145	141	144	189	209	194
SAARC	73	76	84	91	89	76	106	131	131	134	135	151	160	158	126	180	202	186
Afghanistan	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
Bangladesh	17	19	19	21	21	18	24	29	30	4	5	5	5	5	4	6	8	8
Bhutan	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
India	46	47	53	58	56	47	69	87	87	119	120	136	142	141	111	161	181	165
Maldives	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nepal	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
Pakistan	7	7	8	8	8	8	10	11	10	6	6	6	7	6	5	6	7	7
Sri Lanka	3	3	3	3	3	3	4	4	4	3	3	3	3	3	3	3	3	3
ASEAN	122	124	141	150	143	140	160	182	164	620	602	700	778	742	676	843	992	896
Brunei	0	0	0	0	0	0	0	0	0	6	4	5	6	6	5	7	9	6
Cambodia	3	4	4	5	5	4	4	5	5	2	2	3	3	3	6	4	4	6
Indonesia	14	14	15	15	13	14	18	21	16	88	81	97	104	94	82	111	151	129
Lao PDR	0	0	0	0	0	0	0	0	0	2	2	3	4	4	4	4	5	3
Malaysia	19	18	21	22	21	21	25	29	25	112	108	125	145	140	130	167	206	180
Myanmar	0	1	1	2	3	3	2	4	3	6	6	6	8	8	7	7	8	7
Philippines	7	6	9	8	7	6	8	8	8	33	32	39	36	38	35	40	43	39
Singapore	29	29	31	35	33	34	36	41	36	204	198	227	251	231	206	268	308	276
Thailand	22	21	23	24	22	20	24	26	25	107	106	118	132	124	110	130	139	135
Vietnam	29	32	36	38	38	38	43	49	46	61	63	77	90	94	90	105	119	115
Other Asia	77	82	90	102	100	92	121	135	126	43	54	94	96	46	34	48	58	61
Fiji	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Iran	2	2	2	1	1	1	1	1	1	23	31	69	76	23	14	23	31	27
Turkiye	75	80	88	101	99	91	120	134	126	20	22	25	21	23	19	25	27	34
US	265	263	277	306	324	280	318	410	425	333	336	361	406	408	338	425	485	459

Unit: billion USD. Sources: WTO Stats (accessed April 17, 2025) and the United Nations Comtrade Database (accessed March 22, 2025), including adjustments by APO-PDB.

Table 2.3 Goods Exports Shares to US, China, EU, and non-China Asia, 2015–2023

	to US									to China								
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2015	2016	2017	2018	2019	2020	2021	2022	2023
APO21	3.7	3.4	3.4	3.5	3.6	3.6	4.0	4.5	4.2	6.8	6.0	6.3	6.9	6.5	6.8	8.1	7.7	6.8
Asia27	3.8	3.6	3.5	3.6	3.3	3.3	3.5	3.8	3.4	3.6	3.3	3.5	3.6	3.3	3.4	3.8	3.6	3.3
East Asia	4.1	3.7	3.7	3.7	3.2	3.2	3.3	3.6	3.3	3.8	3.5	3.6	3.6	3.2	3.3	3.6	3.4	3.0
China	4.0	3.7	3.7	3.6	3.0	3.0	3.1	3.1	2.7	–	–	–	–	–	–	–	–	–
Hong Kong	13.8	12.8	12.2	12.0	10.0	10.5	9.5	9.4	8.0	101.4	95.9	92.1	93.6	87.5	94.6	117.1	104.8	92.3
Japan	3.0	2.8	2.8	2.8	2.7	2.3	2.6	3.1	3.3	3.0	2.6	3.0	3.3	3.0	3.2	3.8	3.9	3.5
Korea	4.8	4.5	4.2	4.1	4.2	4.2	4.7	5.9	6.1	10.7	9.3	9.4	10.4	9.0	8.8	9.9	10.2	8.0
Mongolia	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.0	0.0	34.7	36.2	47.0	50.1	48.5	42.9	50.3	62.3	63.5
ROC	6.8	6.4	6.4	6.4	7.3	7.1	7.9	9.2	9.4	16.0	15.5	16.5	17.8	16.8	17.0	18.5	18.0	14.4
SAARC	2.2	2.1	2.0	2.1	2.0	1.9	2.2	2.5	2.1	0.6	0.5	0.5	0.7	0.7	0.8	0.9	0.6	0.6
Afghanistan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.1
Bangladesh	2.9	2.7	2.5	2.5	2.2	1.7	2.0	2.4	2.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4
Bhutan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
India	2.2	2.1	2.0	2.1	2.0	1.9	2.3	2.5	2.1	0.6	0.5	0.6	0.8	0.8	0.9	0.9	0.6	0.6
Maldives	0.6	0.5	0.5	0.5	0.6	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nepal	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Pakistan	1.4	1.2	1.2	1.3	1.5	1.5	1.8	2.0	1.7	0.8	0.6	0.5	0.7	0.9	0.8	1.1	1.0	1.1
Sri Lanka	3.6	3.4	3.2	3.5	3.7	3.0	3.5	4.5	3.2	0.4	0.3	0.5	0.5	0.3	0.3	0.4	0.4	0.4
ASEAN	5.4	5.3	5.2	5.4	5.7	6.7	7.3	7.7	6.8	6.8	6.3	7.3	7.6	7.2	8.1	9.8	9.3	8.9
Brunei	0.4	0.1	0.2	0.4	0.2	0.6	0.1	0.7	0.6	0.8	2.2	2.3	1.8	3.4	10.4	17.3	14.9	13.9
Cambodia	9.3	8.5	8.5	9.5	12.2	15.0	22.6	24.2	22.4	2.0	2.7	2.9	3.1	3.2	3.6	4.7	4.1	4.6
Indonesia	2.0	1.8	1.8	1.8	1.6	1.7	2.0	2.0	1.6	2.1	2.1	2.5	2.9	2.8	3.4	5.2	5.7	5.3
Lao PDR	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.6	0.8	9.8	10.5	7.5	8.5	9.6	10.1	13.9	15.2	24.1
Malaysia	6.6	6.7	6.6	6.2	6.2	7.4	8.6	8.9	8.3	10.3	9.1	10.1	10.9	10.4	12.7	14.3	13.6	12.1
Myanmar	0.1	0.3	0.6	1.0	1.7	2.0	1.2	2.3	1.8	8.6	12.0	12.5	13.1	13.1	14.8	11.0	13.8	13.2
Philippines	3.0	2.8	3.0	3.0	2.9	2.6	2.8	2.9	2.4	2.5	2.2	2.7	2.8	2.9	3.0	3.3	3.1	2.8
Singapore	8.5	7.8	7.5	8.9	9.4	11.1	8.9	9.0	8.6	19.8	16.2	18.1	16.1	16.2	16.8	18.8	15.4	15.5
Thailand	6.5	6.4	6.1	5.7	5.8	6.7	8.0	9.4	9.0	7.2	6.8	7.3	7.0	6.3	6.9	8.7	8.2	7.8
Vietnam	14.7	15.5	15.1	15.4	18.1	21.5	25.1	25.6	21.4	8.2	9.8	13.8	15.2	14.1	16.1	17.9	16.4	16.3
Other Asia	0.7	0.7	0.8	1.0	1.0	1.0	1.3	1.4	1.0	1.4	1.2	1.0	1.6	2.7	1.8	2.6	3.3	2.6
Fiji	3.9	4.4	3.9	4.6	5.2	4.6	4.7	6.1	5.0	1.3	1.4	1.1	1.6	1.0	1.3	1.6	1.0	0.9
Iran	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	2.6	1.9	3.7	6.8	3.9	5.8	7.8	7.0
Turkiye	1.0	1.0	1.3	1.4	1.4	1.6	2.1	2.2	1.5	0.4	0.4	0.5	0.6	0.5	0.5	0.6	0.5	0.4
US	–	–	–	–	–	–	–	–	–	0.8	0.7	0.8	0.7	0.6	0.7	0.8	0.7	0.6

	to EU									to Non-China Asia								
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2015	2016	2017	2018	2019	2020	2021	2022	2023
APO21	3.3	3.2	3.4	3.5	3.3	3.2	3.6	4.0	3.8	10.5	9.8	11.0	11.5	10.4	9.7	11.2	12.8	11.4
Asia27	3.2	3.1	3.1	3.1	3.1	3.1	3.3	3.6	3.4	10.0	9.3	9.8	9.9	9.4	8.8	9.8	10.8	10.0
East Asia	2.9	2.7	2.8	2.7	2.7	2.8	3.0	3.2	3.1	9.2	8.6	8.9	8.7	8.5	8.2	9.0	9.9	9.4
China	3.1	2.9	2.9	2.8	2.8	3.0	3.2	3.3	3.0	9.4	8.6	8.4	8.2	8.2	7.9	8.4	9.0	8.6
Hong Kong	12.1	12.9	12.6	11.5	11.3	14.1	12.4	11.0	9.6	28.4	29.4	33.9	31.3	29.9	29.0	33.1	36.9	32.8
Japan	1.4	1.4	1.5	1.5	1.5	1.3	1.5	1.8	1.9	5.1	4.8	5.4	5.5	5.2	4.8	5.8	7.1	6.6
Korea	2.9	2.8	3.1	2.9	2.8	2.8	3.2	3.8	3.8	11.2	11.0	12.3	12.4	11.6	10.7	12.0	13.9	12.4
Mongolia	2.8	6.5	5.4	1.5	2.1	0.8	0.4	0.7	0.7	1.2	0.7	0.9	1.0	1.7	1.5	3.2	3.5	3.5
ROC	4.2	4.2	4.3	4.3	4.1	3.6	4.2	4.6	4.9	23.3	22.9	23.8	23.7	23.0	21.3	24.3	27.3	25.6
SAARC	2.6	2.5	2.5	2.6	2.4	2.2	2.6	3.1	2.9	4.8	4.5	4.5	4.5	4.3	3.6	4.4	4.7	4.1
Afghanistan	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.7	3.1	3.6	4.4	4.2	3.5	5.0	5.2	4.8
Bangladesh	7.5	7.1	6.7	6.6	6.0	4.9	5.7	6.7	7.0	1.9	1.7	1.7	1.7	1.6	1.2	1.5	1.9	2.0
Bhutan	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	26.6	23.6	22.8	24.1	25.1	26.4	28.4	24.6	21.0
India	2.2	2.0	2.0	2.1	2.0	1.8	2.2	2.5	2.4	5.6	5.3	5.2	5.2	4.9	4.2	5.1	5.3	4.6
Maldives	2.1	1.9	1.9	2.1	2.1	2.4	1.4	1.7	1.7	2.8	3.1	4.0	3.3	3.4	4.5	3.6	4.3	4.4
Nepal	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	2.3	2.1	1.9	1.9	2.4	2.1	4.1	2.7	2.3
Pakistan	2.3	2.2	2.3	2.5	2.8	2.7	2.8	3.5	3.4	2.2	1.8	1.8	2.1	2.2	1.8	1.9	2.3	2.4
Sri Lanka	3.5	3.4	3.4	3.5	3.9	3.8	4.3	5.4	4.1	3.1	3.1	3.3	3.5	3.7	3.0	3.6	4.5	3.9
ASEAN	4.8	4.7	4.9	4.9	4.4	4.5	4.7	5.0	4.3	24.5	22.7	24.5	25.4	22.9	22.0	24.9	27.1	23.7
Brunei	0.1	0.3	0.1	0.1	0.1	0.0	0.1	0.2	0.2	43.4	36.8	41.1	42.0	43.4	41.2	52.4	51.4	41.5
Cambodia	12.9	14.3	14.5	13.7	12.7	11.1	11.4	12.9	11.0	7.5	8.7	9.1	8.8	9.4	18.2	10.0	10.2	13.5
Indonesia	1.6	1.4	1.5	1.5	1.2	1.3	1.5	1.6	1.2	10.2	8.7	9.5	9.9	8.4	7.7	9.3	11.4	9.3
Lao PDR	1.5	1.2	0.9	0.8	1.1	1.5	1.2	1.6	2.6	13.3	14.1	19.4	19.8	19.3	19.0	21.8	32.6	21.5
Malaysia	6.3	6.0	6.6	6.1	5.8	6.2	6.7	7.0	6.1	37.3	35.9	39.1	40.5	38.3	38.6	44.6	50.5	45.1
Myanmar	0.5	1.2	3.0	5.0	6.1	7.1	5.3	12.8	9.5	10.8	13.7	14.2	16.4	16.3	18.2	15.6	26.9	25.9
Philippines	2.1	1.9	2.6	2.3	2.0	1.8	2.0	2.0	1.8	10.6	9.9	11.8	10.5	10.1	9.7	10.1	10.7	9.0
Singapore	9.3	9.0	9.0	9.4	8.8	9.6	8.2	8.0	7.1	66.2	61.8	66.0	66.5	61.4	59.0	61.4	60.4	54.6
Thailand	5.3	5.1	5.1	4.6	4.1	4.0	4.7	5.1	4.8	26.4	25.5	25.6	25.7	22.6	21.7	25.4	27.7	25.9
Vietnam	12.1	12.3	12.9	12.4	11.4	11.0	11.7	11.9	10.8	25.5	24.3	27.4	28.9	28.1	26.0	28.7	29.1	26.7
Other Asia	6.0	6.0	6.4	8.7	8.6	7.9	9.1	9.2	7.6	3.3	3.9	6.7	8.3	3.9	2.9	3.6	4.0	3.7
Fiji	1.8	1.3	1.7	0.8	1.3	1.8	0.6	1.7	1.4	2.2	2.2	2.9	2.6	2.4	1.9	2.7	2.6	1.7
Iran	0.5	0.5	0.3	0.3	0.3	0.2	0.2	0.2	0.1	5.4	6.5	12.7	19.7	5.6	3.2	4.5	5.6	5.0
Turkiye	8.6	9.2	10.2	12.9	13.0	12.6	14.6	14.7	11.2	2.3	2.5	2.9	2.7	3.0	2.7	3.1	3.0	3.0
US	1.4	1.4	1.4	1.5	1.5	1.3	1.3	1.6	1.5	1.8	1.8	1.8	2.0	1.9	1.6	1.8	1.9	1.7

Unit: percentage (Export country's GDP at current market prices=1.0). Sources: Official national accounts in each country, WTO Stats (accessed April 17, 2025), and the United Nations Comtrade Database (accessed March 22, 2025), including adjustments by APO-PDB.

(i) Before the Pandemic

For Asia as a whole, the export share of GDP has been rising steadily from the low levels (less than 11%) in 1970 to a peak of 32% in 2008, just before the Global Financial Crisis. A major contributor to this rise is China's role following its entry into the World Trade Organization in 2001. This Asia export share declined somewhat after that peak, fluctuating to around 28%. This is significantly higher than the global average export share, which was 26% in 2008. For goods exports, not including services such as tourism, to just the US, EU, China, and non-China Asia, Table 2.3 shows that the goods export share of GDP for the Asia27 group was 20.6% in 2015, then declined to 19.1% in 2019 and recovered to 20.1% in 2023 after the pandemic. These tables indicate that the long rise of the goods export share of GDP for Asia has ended and stabilized.

Another point to note is that for Asia27 as a whole, the regional destination of exports did not change significantly between 2015 and 2023, despite the COVID-19 disruption and changes in US trade policy. The goods export share to the US was 3.8% in 2015 and 2022, and the share to non-China Asia was 10% in 2015 and 2023. However, there are notable changes for individual countries.

For China, the total export share declined slightly between 2015 and 2023, primarily due to a large decrease in exports to the US (4.0% to 2.7%), a modest reduction in exports to non-China Asia (9.4% to 8.6%), and minimal change in exports to the EU. For Korea, the export share of GDP to the US, EU, and non-China Asia rose noticeably, but dropped from 10.7% to 8.0% for China. The pattern for ROC exports is like Korea's. Mongolia's exports to China rose dramatically from 35% to 63%, with small changes to the other regions. The destinations of India's exports show small changes.

In ASEAN, Vietnam's export share to the US and China almost doubled, while there was little change in exports to the EU and non-China Asia. Indonesia's export share to China rose from 2.1% in 2015 to 5.3% in 2023, while declining for the other three regions. On the other hand, Thailand, Malaysia, and the Philippines exhibited only minor changes in their export destinations. SAARC had lower export shares and did not shown significant changes in export destinations. Similarly, the low export shares of the US showed little change, even in the face of China's growth.

The third point to note is that, for Asia27 as a whole, the shares of goods exports to the US, China, and EU27 were very similar; in 2019, just before the pandemic, the shares were 3.3%, 3.3%, and 3.1%, respectively. The share of non-China Asia was 9.4%.

(ii) During the Pandemic

The impact of the pandemic on exports is counterbalanced through a two-way link between exports and GDP growth. A decline in activity in a country due to lockdowns leads to lower incomes and, consequently, lower demand for imports, which in turn results in lower exports from the rest of the world. On the other hand, a country may be free from the direct effects of the pandemic and impose no lockdowns, but have export customers that are severely affected, resulting in a loss of aggregate demand and a decline in GDP. Exports may fall for non-demand-related reasons due to disruptions on the supply side. For example, the pandemic led to sick crews and disruptions in shipping, as well as factory lockdowns that disrupted the supply of components needed to produce export goods. The shortage of computer components was a key obstacle to higher production to meet the sudden demand. Table 2.1 presents the GDP growth of each country or region. Table 2.4 provides the growth in the goods export share of GDP.

Aggregate Asia27 GDP fell by only 1.2% in 2020 when COVID lockdowns hit; this, however, is made up of the 0.9% growth in China (and positive growth in Vietnam, the ROC, Turkiye, and Iran) offsetting the large falls in GDP in the rest of Asia27. The GDP growth rates in the other regions were: the US (–2.3%), the EU27 (–5.7%), India (–6.3%), and Japan (–4.3%).

Table 2.4 Growth in Goods Export Shares to US, China, EU, and non-China Asia, 2015–2023

	to US									to China								
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2015	2016	2017	2018	2019	2020	2021	2022	2023
APO21		−6.9	−1.0	3.6	0.5	0.6	11.0	12.9	−7.6		−11.4	5.1	9.0	−7.2	5.1	17.1	−4.3	−12.8
Asia27		−7.7	−0.9	1.0	−8.5	0.6	6.6	7.3	−10.3		−8.4	3.4	4.5	−7.9	2.3	11.5	−5.5	−10.4
East Asia		−8.9	−0.5	−1.6	−12.5	−2.4	5.3	7.0	−8.3		−7.6	1.0	1.9	−11.3	0.7	9.4	−6.7	−12.3
China		−8.4	−0.9	−2.0	−18.8	1.2	2.8	0.9	−15.0		–	–	–	–	–	–	–	–
Hong Kong		−7.5	−4.9	−1.8	−18.0	4.8	−10.1	−1.2	−16.3		−5.5	−4.0	1.6	−6.8	7.8	21.4	−11.1	−12.7
Japan		−9.9	2.8	0.0	−3.8	−18.4	11.8	20.5	3.9		−11.7	12.3	9.8	−9.1	5.5	16.9	4.0	−12.3
Korea		−6.8	−6.4	−3.6	3.1	−1.0	12.9	22.0	2.3		−14.3	1.3	9.5	−13.8	−2.5	11.5	2.9	−24.5
Mongolia		−50.9	−25.2	−29.3	114.6	−81.2	84.2	−124.4	2.6		4.3	26.1	6.3	−3.1	−12.3	15.8	21.4	1.9
ROC		−5.7	−0.6	1.0	13.4	−3.1	10.2	15.6	1.9		−2.7	5.9	8.0	−5.9	1.1	8.6	−2.9	−22.3
SAARC		−4.4	−5.7	5.6	−2.0	−8.5	18.6	9.3	−14.9		−19.0	12.8	25.5	−0.5	10.4	9.4	−39.5	−0.8
Afghanistan		−67.8	42.1	−21.1	48.5	−5.0	42.8	5.2	−4.5		−73.8	65.8	107.0	6.0	8.0	−38.1	−8.8	−3.2
Bangladesh		−7.3	−10.2	0.0	−10.9	−24.4	15.7	16.5	2.4		−5.6	−4.5	12.3	−10.6	−16.3	25.7	2.4	3.7
Bhutan		−0.4	−20.3	−4.2	6.5	22.5	−15.5	−24.3	−17.1		−5.8	−14.6	8.1	6.8	30.6	−5.5	−38.3	−15.8
India		−3.6	−5.3	5.3	−2.4	−6.2	18.7	7.8	−16.5		−17.5	16.9	26.6	−0.8	15.2	4.7	−47.2	−2.5
Maldives		−16.8	−14.9	14.6	4.7	−33.2	−94.5	−26.8	−43.5		113.9	128.2	−55.9	−407.7	557.7	−392.5	13.4	46.8
Nepal		0.0	−8.8	5.2	−5.2	−16.0	32.4	0.7	−17.4		0.6	36.1	−1.3	−30.1	−116.1	32.0	−54.8	−7.4
Pakistan		−12.7	−4.9	11.6	11.0	−1.2	20.9	10.6	−16.6		−28.4	−16.4	29.5	17.8	−10.3	35.0	−10.7	13.7
Sri Lanka		−5.2	−5.1	7.5	4.8	−19.9	15.9	25.3	−33.8		−42.8	57.8	1.5	−41.3	−2.6	17.7	7.0	−12.3
ASEAN		−1.7	−1.8	4.1	4.8	16.7	8.7	5.4	−12.2		−8.2	14.7	3.8	−5.5	12.3	18.9	−5.4	−4.7
Brunei		−156.3	98.2	56.3	−46.5	83.6	−236.3	257.4	−16.9		94.3	5.9	−21.4	60.1	113.3	50.4	−15.1	−6.5
Cambodia		−9.3	0.5	10.8	25.6	20.0	41.2	6.7	−7.6		28.3	7.8	6.3	6.1	10.7	26.6	−15.0	13.0
Indonesia		−8.7	−1.5	−1.6	−11.8	8.3	18.7	−1.8	−24.8		0.1	18.2	16.8	−4.2	19.0	42.8	8.4	−6.1
Lao PDR		−19.4	−24.2	1.3	12.8	22.3	61.9	52.3	38.7		7.5	−33.7	12.0	12.3	4.9	32.4	9.0	46.0
Malaysia		2.1	−1.5	−6.2	−1.2	17.9	15.8	2.9	−6.3		−12.0	10.4	7.2	−4.7	20.2	11.9	−5.2	−11.1
Myanmar		114.5	56.2	52.5	48.7	19.9	−53.0	68.2	−23.9		33.4	4.7	4.1	0.6	11.6	−29.4	22.7	−4.4
Philippines		−7.6	6.3	1.4	−2.7	−13.6	8.6	3.1	−17.1		−11.8	18.8	6.6	1.4	3.2	11.7	−8.2	−10.4
Singapore		−9.2	−3.4	17.6	4.6	17.3	−22.9	1.1	−3.7		−20.0	10.7	−11.2	0.6	3.4	11.1	−20.0	0.6
Thailand		−2.0	−4.4	−6.3	1.3	14.9	17.1	16.1	−4.4		−6.3	6.8	−3.7	−10.2	8.4	23.5	−5.5	−6.0
Vietnam		5.6	−3.0	1.9	16.1	17.4	15.4	2.0	−18.2		17.2	34.6	9.8	−8.0	13.5	10.5	−8.8	−0.4
Other Asia		0.3	21.8	18.1	−3.7	6.4	24.4	6.8	−33.7		−16.2	−14.0	43.4	52.0	−39.1	35.7	22.2	−24.2
Fiji		11.9	−11.4	15.8	12.5	−13.0	1.7	27.3	−21.0		7.1	−19.0	32.9	−50.4	31.2	18.8	−43.3	−9.5
Iran		193.9	−10.0	−50.1	−511.4	−36.6	18.4	−105.8	88.6		−26.4	−30.7	65.0	60.6	−55.6	39.9	29.1	−11.4
Turkiye		3.3	27.6	9.4	−0.8	12.3	24.7	5.9	−41.2		−6.6	18.3	18.6	−10.6	7.0	16.3	−20.0	−26.8
US		–	–	–	–	–	–	–	–		−6.3	2.9	−7.4	−17.4	14.2	12.5	−7.4	−11.6

	to EU									to Non-China Asia								
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2015	2016	2017	2018	2019	2020	2021	2022	2023
APO21		−2.7	4.5	3.3	−5.2	−3.2	11.0	11.9	−6.7		−6.5	11.4	4.3	−9.6	−7.5	15.1	13.4	−11.7
Asia27		−4.4	2.8	−0.6	−2.1	1.1	7.7	8.7	−7.6		−7.2	5.4	1.1	−5.7	−5.9	10.2	10.2	−7.9
East Asia		−5.9	2.9	−3.8	0.3	4.1	6.8	7.9	−6.2		−7.6	3.3	−1.3	−2.5	−4.4	9.6	10.0	−5.2
China		−7.1	0.5	−5.1	1.9	6.3	4.8	5.3	−9.0		−8.6	−3.0	−2.1	0.0	−3.2	5.7	6.6	−3.9
Hong Kong		6.4	−2.2	−8.8	−2.0	21.8	−12.9	−12.0	−12.9		3.6	14.2	−8.0	−4.5	−3.2	13.4	10.9	−11.8
Japan		−2.0	6.8	2.3	−2.5	−13.0	11.0	19.5	6.2		−7.0	11.5	2.8	−6.1	−8.4	19.9	19.3	−6.8
Korea		−3.0	7.9	−5.7	−3.7	−0.4	15.2	16.5	−1.5		−2.1	11.6	1.1	−7.4	−7.5	11.6	14.4	−11.4
Mongolia		83.6	−18.7	−127.4	31.9	−94.2	−73.9	58.9	2.7		−59.9	33.3	7.6	57.2	−15.6	75.3	11.1	0.2
ROC		0.1	2.7	0.0	−5.3	−12.1	14.7	9.0	5.5		−1.8	4.1	−0.4	−3.0	−7.8	13.3	11.7	−6.7
SAARC		−3.6	−2.2	3.8	−5.1	−10.4	17.2	15.9	−5.0		−6.8	−0.5	0.9	−3.7	−18.2	20.1	6.1	−12.7
Afghanistan		−24.2	−1.4	1.9	45.1	−0.9	31.0	3.8	−5.9		14.8	14.5	19.7	−5.2	−17.4	35.7	3.5	−8.8
Bangladesh		−5.7	−5.8	−0.4	−9.5	−21.0	15.0	16.9	4.3		−7.4	−3.2	1.6	−9.6	−26.6	23.6	22.2	4.7
Bhutan		0.5	−11.9	−5.7	7.6	26.5	−9.5	−21.8	−17.7		−11.9	−3.2	5.2	4.2	5.1	7.2	−14.2	−15.7
India		−5.1	−0.5	3.6	−7.6	−11.1	21.9	15.6	−5.8		−6.1	−1.3	−0.4	−4.5	−16.6	19.8	4.1	−15.4
Maldives		−9.3	−3.3	14.0	−2.3	12.1	−50.2	16.8	1.2		9.1	25.6	−18.7	1.9	27.9	−22.6	18.3	2.4
Nepal		0.4	−6.5	−5.5	−18.9	−19.7	19.2	2.6	−13.0		−10.3	−11.4	3.1	21.2	−11.1	64.4	−40.0	−15.4
Pakistan		−2.2	2.2	9.7	9.7	−1.5	1.8	22.6	−2.8		−19.9	0.3	14.4	5.8	−18.1	1.9	19.5	5.4
Sri Lanka		−2.4	0.4	3.6	9.1	−3.4	14.6	21.0	−25.9		−2.3	6.0	7.3	4.0	−19.9	18.5	21.8	−12.9
ASEAN		−2.6	5.0	−1.0	−10.3	3.1	3.7	5.4	−13.6		−7.4	7.5	3.5	−10.4	−3.9	12.1	8.6	−13.2
Brunei		68.1	−71.1	−0.1	2.3	−111.1	62.7	74.5	−7.0		−16.4	11.0	2.0	3.4	−5.2	23.9	−1.9	−21.4
Cambodia		10.1	1.6	−5.3	−8.1	−13.0	2.7	11.7	−16.0		14.2	5.1	−3.5	6.2	66.7	−60.6	2.1	28.1
Indonesia		−10.6	4.4	−3.0	−21.7	7.3	16.3	5.2	−28.7		−16.3	9.6	4.2	−17.0	−7.8	18.0	20.6	−20.0
Lao PDR		−20.6	−23.6	−12.1	26.2	30.9	−18.2	24.2	49.5		5.7	32.2	1.9	−2.3	−1.9	13.8	40.2	−41.5
Malaysia		−4.7	9.4	−7.0	−6.1	7.9	7.4	3.9	−13.0		−4.0	8.7	3.6	−5.6	0.7	14.5	12.4	−11.5
Myanmar		81.2	89.2	50.6	20.6	14.4	−29.2	88.5	−30.0		23.7	3.6	14.5	−0.6	10.8	−15.3	54.6	−3.7
Philippines		−9.7	29.6	−13.1	−15.1	−12.0	11.1	4.1	−10.8		−6.9	17.8	−12.0	−3.7	−4.1	3.6	6.1	−17.2
Singapore		−2.6	−0.6	4.2	−6.3	9.1	−16.0	−2.0	−11.7		−6.9	6.6	0.7	−7.9	−4.0	3.9	−1.6	−10.2
Thailand		−3.4	−1.9	−8.5	−13.6	−1.6	15.8	9.2	−7.3		−3.3	0.4	0.3	−13.0	−3.9	15.9	8.5	−6.9
Vietnam		1.7	4.2	−3.9	−8.1	−4.0	6.3	1.8	−9.8		−4.6	11.9	5.2	−2.7	−7.8	9.9	1.2	−8.5
Other Asia		1.5	5.1	31.5	−1.9	−8.2	14.8	1.1	−20.0		16.8	52.7	21.1	−74.7	−30.2	22.0	9.3	−7.8
Fiji		−31.1	27.8	−75.9	46.3	32.4	−111.1	103.2	−14.0		0.5	30.3	−11.7	−7.2	−22.2	31.5	−3.8	−41.7
Iran		1.3	−54.9	18.0	−27.0	−13.4	1.8	−19.7	−41.4		18.1	66.8	44.1	−126.5	−54.0	32.6	22.1	−12.1
Turkiye		5.8	11.2	23.1	1.0	−3.2	14.7	0.7	−27.0		8.7	13.8	−8.9	13.3	−12.6	13.3	−3.2	1.9
US		−3.7	1.2	4.5	1.6	−13.8	2.3	16.2	−3.0		−1.9	3.1	6.5	−3.8	−18.0	12.5	4.0	−12.0

Unit: percentage (growth rate of the shares in Table 2.3). Sources: Official national accounts in each country, WTO Stats (accessed April 17, 2025), and the United Nations Comtrade Database (accessed March 22, 2025), including adjustments by APO-PDB.

The minor decline in US GDP, and pandemic-induced supply disruptions, is associated with big falls in exports from some Asian countries to the US, as indicated by the change in export shares in Table 2.4—Japan (–18%), Bangladesh (–24%), Sri Lanka (–20%), the Philippines (–14%), India (–6%); and minor declines in ROC (–3%) and Korea (–1%). However, other countries provided key goods needed for pandemic protection and work-at-home technologies, Consequently, their exports to the US rose—China (1%), Cambodia (20%), Indonesia (8%), Malaysia (18%), Thailand (15%) and Vietnam (17%).[10]

The 6% decline in EU27 GDP in 2020 had disparate effects on Asian exports. The biggest losers were Japan (–13%), ROC (–12%), Bangladesh (–21%), India (–11%), Cambodia (–13%), the Philippines (–12%), and lesser declines for Vietnam, Sri Lanka, Thailand, and Pakistan. The countries with higher exports during the COVID-19 year were China (6%), Hong Kong (22%), Indonesia (7%), Malaysia (8%), and Singapore (9%).

China dodged a recession in the COVID-19 year, but the pandemic disruptions still reduced exports from some countries to China, including Korea (–3%), Mongolia (–12%), Bangladesh (–16%), Pakistan (–10%), and Sri Lanka (–3%). Many Asian countries had higher export shares to China in 2020—Japan (6%), India (15%), Cambodia (11%), Indonesia (19%), Malaysia (20%), Myanmar (12%), Thailand (8%), Vietnam (13%), and slight rises for the Philippines, Singapore, Lao PDR, and the ROC. For the final export destination in Table 2.4, non-China Asia, the change in export shares for most countries was negative. The exceptions are Cambodia, Malaysia, Bhutan, and the Maldives.

(iii) Recovery from the Pandemic

As noted above, various major economies have recovered from the COVID-19 shock. The US experienced a rapid recovery in 2021, followed by steady growth of 2.5–3.0% from 2022 to 2024. The EU27 experienced a significant recovery in 2021, but growth slowed to less than 1.0% during 2023–2024. China experienced a substantial 8.9% increase in 2021, followed by a slower 3.1% growth in 2022, which then accelerated to 4.4% in 2024—still below its pre-pandemic trend. Japan had a slow recovery, with GDP growth of only 0.9%, 1.5%, and 0.1% in 2022, 2023, and 2024, respectively. This mixed performance of the major economies had corresponding effects on Asian exports and their GDP growth.

The steady growth in the US helped Japan increase its goods export share to the US after the sharp decline in 2020, with 12% growth in 2021, 20% in 2022, and 4% in 2023. Korea, the ROC, and Bangladesh's exports to the US followed a similar pattern. India experienced significant growth in US-bound exports in 2021 (19%), but the export share declined by 17% in 2023. A similar pattern is observed in Pakistan, Sri Lanka, Malaysia, the Philippines, Thailand, Vietnam, and Türkiye, with substantial declines in 2023. It should be emphasized that these are shares of GDP. Given the rise in real GDP in many of these countries, the change in exports in absolute dollars may be smaller, as shown in Table 2.2. For example, in nominal dollars, Vietnam's exports to the US in 2023 are 50% higher than in 2019, before the pandemic.

The significant deceleration in EU27 growth in 2023 led to a substantial decline in Asian exports to the EU. The export share of GDP to the EU27 for the Asia27 aggregate increased by 7.7% in 2021, 8.7% in 2022, and decreased by 7.6% in 2023. This pattern roughly describes the change in exports to the EU for China, Korea, India, Sri Lanka, Indonesia, Malaysia, Philippines, Thailand, and Vietnam. The exceptions

10: This aspect of the positive demand shock for work-at-home products such as computer equipment and electric tools was discussed in the 2024 edition of the Databook (APO 2024), citing Kimura (2021). Malaysia and Indonesia are major producers of medical gloves and palm oil, a material used in the production of soaps and sanitizers. The main producers of computer components and equipment are China, ROC, Korea, Vietnam, Malaysia, Japan, and the US, and they benefited from the high demand during the COVID-19 lockdowns.

are Japan, the ROC, and Bangladesh, with steady growth in all three years following a significant decline in 2020.

The impact of China on this region is quite clear. The 9% jump in 2021 GDP, followed by growths of 3.1%, 4.4%, and 5.0% in the subsequent years, produced a corresponding change in Asia27's exports to China. The goods export share of GDP for Asia27 changed by +12%, –5%, and –10% in 2021, 2022, and 2023, respectively. In nominal dollars (trillion USD), Asia27 exports to China were 1.03 in 2019, 1.06 in 2020, 1.37 in 2021, 1.29 in 2022, and 1.17 in 2023. The temporary huge jump in 2021 could not be sustained, but the 2023 nominal value of exports was higher than the pre-pandemic value.

(iv) Service Exports and Pandemic Effects

The discussion above regarding the role of exports in pandemic recovery focuses solely on goods exports. Tourism is a major export for many countries in Asia. Box 1 addresses the expansion of tourism exports over the 2005–2024 period, including the significant impact of COVID-19.

Box 1 Asia's Tourism: Economic Driver and COVID-19 Vulnerability

While Asia is often regarded as a manufacturing export region, tourism plays a significant role in many countries of the area, providing a substantial source of employment and economic growth. within spite of the post-COVID-19 effects, 11 of the Asia27 countries are expected to have a tourism export share of GDP exceeding 3% in 2024, led by the Maldives (64%) and Fiji (20%). Seven other countries exceeded 1%, higher than the 0.7% share of the US. The tourism export share of GDP between 2005 and 2024 is shown in Figure 2.3. Three features stand out: the most obvious is the calamity of the suspension of travel during the COVID-19 pandemic in 2020 and 2021; the second is the high shares in Pacific and ASEAN countries; and the third is the rapid growth since 2005 in some countries.

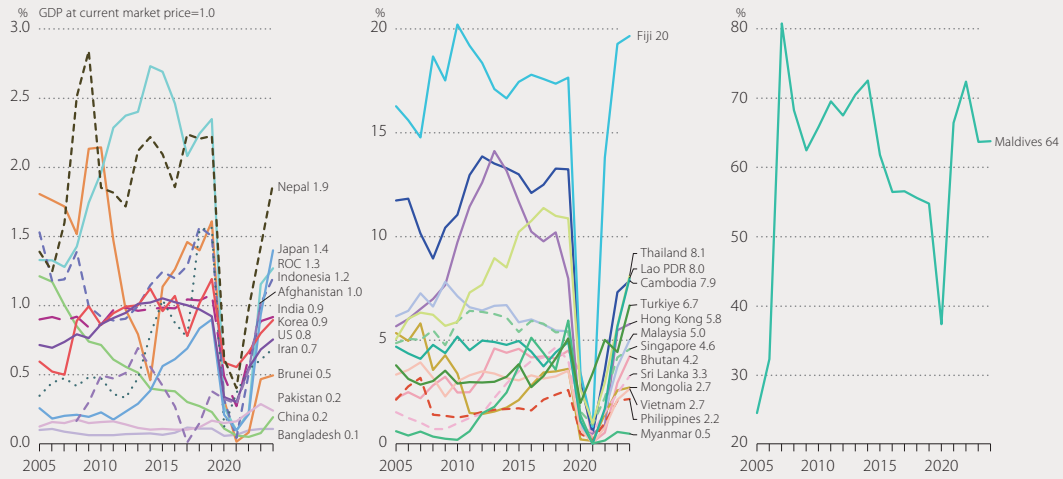

Figure 2.3 Tourism Export Share of GDP, 2005–2024

Unit: Percentage. Sources: Official national accounts in each country, including adjustments by APO-PDB and WTO Stats (accessed April 17, 2025). Notes: The tourism export share is defined as the ratio of the export of "travel" recorded in the Balance of Payment in WTO Stats to market-price GDP at current prices. Missing values in the Balance of Payments are interpolated and extrapolated using the number of tourists in official tourism statistics for each country, as well as the UN Tourism Data Dashboard (accessed June 16, 2025). The value of tourism exports for Afghanistan is available for 2008–2023.

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Tourism exports have risen significantly since 2005 in the Maldives (25% to 73% in 2014), Hong Kong (from 5.7% to 14% in 2013), Thailand (from 5.0% to 11.4% in 2017), Sri Lanka (from 1.5% to 4.6% in 2018), and Bhutan (from 2.2% to 4.6% in 2013). Others which started from lower levels but realized significant growth include Japan (from 0.3% to 1.4% in 2024), Iran (from 0.4% to 1.6% in 2019), Myanmar (from 0.6% to 5.1% in 2016), the ROC (from 1.3% to 2.7% in 2014), and Nepal (from 1.4% to 2.2% in 2014).

One source of this growth of tourism in Asia is China. The rapid growth of incomes in China has made it the world's largest outbound tourism source, with a USD 196 billion expenditure in 2023, compared to the next highest, USD 150 billion for the US, according to UN Tourism (2024). Southeast Asia, including Hong Kong, has been a prime beneficiary of this China-led growth—others include the ROC and Japan. China has seen an increase in its foreign tourist arrivals, but tourism still accounts for only 0.2% of its GDP in 2024.

The result of this growth is that in 2019, before the COVID-19 shock, the Maldives, Fiji, Cambodia, Thailand, and Hong Kong had tourism export shares exceeding 10%, while Malaysia, Singapore, Sri Lanka, Lao PDR, Turkiye, Bhutan, Myanmar, Mongolia, and Vietnam exceeded 2.5%. Tourism has always played a significant role for the Pacific islands—Fiji, the Maldives, and Papua New Guinea—but it has also been a long-standing major activity and source of growth and foreign exchange for Cambodia, Thailand, and Hong Kong.

These countries have benefited from this rapid growth, but their heavy dependence on tourism left them vulnerable to an enormous shock from the COVID-19 travel lockdown that lasted for much of 2020–2021. As shown in Figure 2.3, the export share dropped to practically zero during 2021, with Singapore and Thailand managing to hit 1%. That is, the export share dropped about 8–14 percentage points in 2021 for Thailand, Cambodia, and Fiji. Recovery began in 2022, but this luxury expense (i.e., consumption with a high-income elasticity) has still not returned to pre-COVID shares of GDP by 2024, for almost all countries shown in Figure 2.3. For example, Cambodia's share recovered to 7.9% in 2024, compared to 13% in 2019; Thailand's share recovered to 8.1%, compared to 11%; Hong Kong's share recovered to 5.8%, compared to 8.0%; and the ROC's share recovered to 1.3%, compared to 2.3%.

A few countries have done well in this regard. Turkiye's share recovered to 6.7% in 2024, the Philippines is back to its long standing 2% share, and Sri Lanka suffered a political crisis in 2022 with the ouster of the President just when the pandemic was easing, but the tourism share recovered to 3.3% in 2024—close to its share in the mid-2010s. A few countries reached a higher share than their pre-pandemic levels. Fiji reached 20% in 2024, compared to 18% in 2019. Lao PDR reached 8.0%, compared to 4.9%. Japan reached 1.4%, up from 0.9%.

More recent assessments, as reported by Basu-Das and Domingo (2025), indicate a continued recovery in 2025. They also point out the role of recent liberalization of visa requirements and air service agreements in the growth of tourism in Asia.

2.1.4 Role of Infrastructure Investments

The Databook focuses on measuring and analyzing productivity growth in Asia. This involves measuring output, capital, and labor inputs, and analyzing where and when countries achieve output growth higher than the growth of inputs, thereby experiencing positive total factor productivity growth. One type of capital input that has been a long-standing focus of development economists is public infrastructure, which encompasses roads, rail, ports, electricity networks, and telecommunications networks. There is substantial literature on the importance of infrastructure for economic development. Many observers have suggested that high investment in infrastructure by the four Asian tiger economies contributed to their early rapid growth (e.g., Mody 1997, Bom and Ligthart 2014, Foster et al. 2023). This section examines how other developing countries in Asia have invested in such infrastructure since the 1970s and how

many countries have accelerated these investments in response to the significant unemployment caused by the COVID-19 shock.

In the national accounts, fixed investment consists of three major categories: structures, machinery and equipment, and intellectual property. In our asset classification, as shown in Table 8.4 (Section 8.2.1), structures include dwellings, non-residential buildings, and "other structures." Not all countries publish detailed data on public infrastructure expenditures. Our best proxy for this is "other structures," which encompass all the public infrastructure items listed above, as well as other items such as pipelines and mining structures.

Figure 2.4 illustrates the GDP share of investment in "other structures" from 1970 to 2023. The left panel shows the path of the earliest Asian developers, including Japan and the Asian Tigers, as well as the US. The center panel is for ASEAN and China. The right panel is for SAARC and other Asian countries.

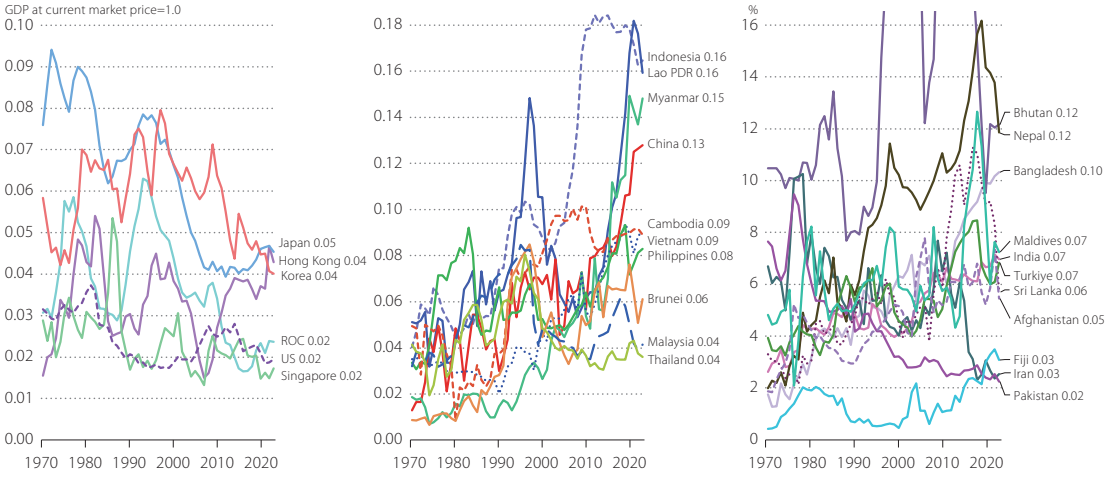


Figure 2.4 Share of Other Structure Investment in GDP, 1970–2023

Unit: Percentage (GDP at current market prices=1.0). Sources: Official national accounts in each country, including adjustments and crude estimates by APO-PDB.

The development story of the four Asian tigers has been widely covered. Here, it is merely noted that Japan has consistently maintained a high rate of public infrastructure investment, reaching almost 8% of GDP as late as the mid-1990s and currently exceeding 4%. The US share is around 2%. Korea has a similar high investment approach with a 7% share from 1980 to 2011 before declining to 4% currently. The ROC share has dropped from 6% in the mid-1990s to approximately 2%, with slightly higher investment following the COVID-19 shock. Hong Kong fell into a 2% trough during the Global Financial Crisis but has now risen to 4%, with a significant surge after 2021. In this set of countries, only Hong Kong has a clearly elevated investment in other structures during the COVID recovery years. Hong Kong followed China in implementing strict lockdown policies in 2022, which contributed to a 3.5% decline in GDP growth. In 2023, this policy was reversed, and a resumption of tourism led to 3.3% growth in 2023 and 2.5% in 2024. This structure investment likely made a minor contribution to the recovery.

The investment shares for ASEAN and China (Figure 2.4, center) indicate a higher rate of investment in other structures in Indonesia, Lao PDR, and China, surpassing the 8% peak of Japan. Mining structures may distort the figure for Indonesia, but it has raised investment. Indonesia launched its National Strategic Projects in 2016 to address what its government recognized as a low stock of infrastructure capital

compared to other developing countries. When the pandemic struck, Indonesia responded with substantial transfers and government deficits in the first two years (amounting to 6% of GDP in 2020) and subsequently consolidated the budget. This fiscal consolidation contributed to a slight decline in the high share of investment in other structures, but it remained a government priority. ADB (2024) suggests public infrastructure spending is contributing to the high growth expected for 2024 and 2025.

The rise of infrastructure spending in Lao PDR after 2012 was dramatic, from 6% of GDP to 18% in 2021; this is focused on transportation links (e.g., Laos-China Railway) and electric power networks (cross-border transmission lines). This contributed to the 6% growth over the five years preceding the pandemic. This infrastructure enabled Lao PDR to export electricity starting in 2022, and to benefit from the tourism rebound after travel restrictions were lifted, contributing to the country's COVID recovery (5.4% in 2022 and 1.7% in 2023).

The unusually high share of investment in China (47% in 2011), and the corresponding low consumption share, have been well analyzed. This section notes the rise in the share of other structures from 7% in 2009 to 13% in 2023, which includes investments in high-speed rail and other transportation networks. This significant investment aims to enhance the quality of life and improve transportation efficiency; it is also part of the effort to mitigate the decline in economic growth, from the double-digit rates of the 2000s to 6–7% in the mid-2010s (the years preceding the pandemic). Unlike the other countries, this investment share continued to rise after the pandemic, contributing to the recovery from COVID.

Infrastructure investment is also a priority in Vietnam, reaching 10% in the 2000s and maintaining a level of 9% during the post-pandemic years. ADB (2024) also notes the role of sustained public investment in contributing to Vietnam's favorable growth outlook (7.1% in 2024).

Productivity growth is discussed in Chapter 5, and the detailed labor productivity growth rates for each country are given in Table 9.11. Bom and Ligthart (2014) discuss the difficulties in empirically showing the link between infrastructure investments and output, but some interesting features about this link may be noted here. In the period before 2000, Korea and the ROC were near the top of the table (Korea's 6.5% in 1990–1995 and the ROC's 5.5% in 1995–2000). China is near the top in all subperiods, and Vietnam is also highly ranked (China's 7.9% in 2010–2015 and Vietnam's 4.9% in 2015–2023).

Both Malaysia and Thailand had an infrastructure share of GDP peaking at 8% in the 1990s, but have since fallen to approximately 4%, following the trends of high-income Asian countries. Infrastructure was not a major element in the COVID-19 recovery. For Thailand, the lifting of travel restrictions and tourism recovery played a significant role, while for Malaysia, exports of pandemic-related health and IT products were the key factor. In terms of labor productivity growth (Table 9.11), Malaysia and Thailand rank in the middle after 2005.

Finally, the right panel of Figure 2.4 shows the infrastructure investment share for SAARC countries. India pushed its share from 4% in 2000 to more than 6% throughout the 2010s, and to 7% after 2018. The National Infrastructure Pipeline was launched in 2019 and subsequently ramped up following the pandemic. The World Bank (2024c) highlights the crucial role of public investment in sustaining India's high GDP growth.

The significant increase in infrastructure investment in Bangladesh is a notable feature, rising from 6% in 2011 to 10% in 2023 (Figure 2.4, right). Much of this is for roads, railways, bridges, and ports, with the Padma Bridge significantly improving connectivity upon its opening in 2022. These are crucial elements in maintaining the smooth flow of trade and contributing to high GDP growth (7.3% in 2010–2015 and 6.2% in 2015–2023). This substantial investment was maintained post-pandemic.

Sri Lanka experienced robust growth until 2017, when political turmoil began in 2018 and ultimately led to the overthrow of the Rajapaksa government in 2022. This turmoil had already hampered tourism, and GDP growth fell to 0.9% in 2019. The COVID-19 shock, the loss of tourism, and the foreign exchange crisis led to a debt default in 2022, prompting the new government to arrange stabilization programs with the IMF. The crisis (–7.4% growth in 2022 and –0.7% in 2023) led to a sharp fall in infrastructure spending, from 17% in 2017 to 6% in 2023.

Pakistan experienced robust growth in the mid-2010s, averaging around 5%, until the balance of payments crisis in 2019, which led to a sharp devaluation. Consequently, GDP growth declined to 2.3%. The pandemic led to a –0.9% growth in 2020, but recovered strongly in 2021 (5.8% growth) with the help of high remittances. Growth remained high in 2022, but political instability led to the ousting of Prime Minister Imran Khan. Additionally, massive flooding in the summer, combined with further balance of payments problems, led to a sharp slowdown (0.1% in 2023 and 3.2% in 2024). Figure 2.4 (right) shows that the 5% share of infrastructure investment in GDP in the 1980s fell to less than 3% in the 2010s and declined further after the pandemic, with the foreign exchange crisis. In terms of labor productivity growth (Table 9.11), Pakistan is positioned towards the bottom of the list after 2000.

This section may be summarized by stating that high infrastructure investment is correlated with improved economic performance. There may be a two-way causality: the usual one, where public goods contribute to higher productivity growth, and the possibility that stable governments can marshal the resources to generate conditions for economic development and high investment.

2.2 Inflation, Debt, and Energy Costs under Global COVID-19 Shocks

2.2.1 Energy Prices and Output

The pandemic disrupted supply chains and shifted demand to information technology goods and health services, leading to sharp price spikes in some goods. However, the overall lockdown effect in 2020, was lower demand that caused a general recession, which led to lower prices. The stimulus to counter the recession and maintain incomes, combined with the continued supply disruptions, led to high inflation in 2021 and 2022 in most countries, as shown in Figure 2.1.

The war in Ukraine, which began in 2022, led to further disruptions in energy and food markets, adding to price pressures. These shocks to the energy and food markets contributed to severe balance of payments difficulties for some countries, leading to sharp depreciations and very high inflation rates. CPI inflation in the US was 8% in 2022, 9% in the EU, and 6% in India. For countries facing foreign exchange challenges, the 2022 inflation rates were 54% in Turkiye, 41% in Sri Lanka, and 18% in Pakistan. Iran's high inflation before the pandemic was largely due to the economic sanctions imposed after the US withdrew from the Joint Comprehensive Plan of Action in 2018.

The US and EU responded to high inflation with tight monetary policies. This led to lower GDP growth and eventually eased inflation rates back to almost pre-pandemic levels by 2024. The normalization of inflation in 2024 occurred in most of the countries shown in Figure 2.1, but not all—it remained elevated in India, Turkiye, and Pakistan. This section provides a detailed description of the price changes and their impacts during the COVID-19 pandemic and subsequent geopolitical shocks.

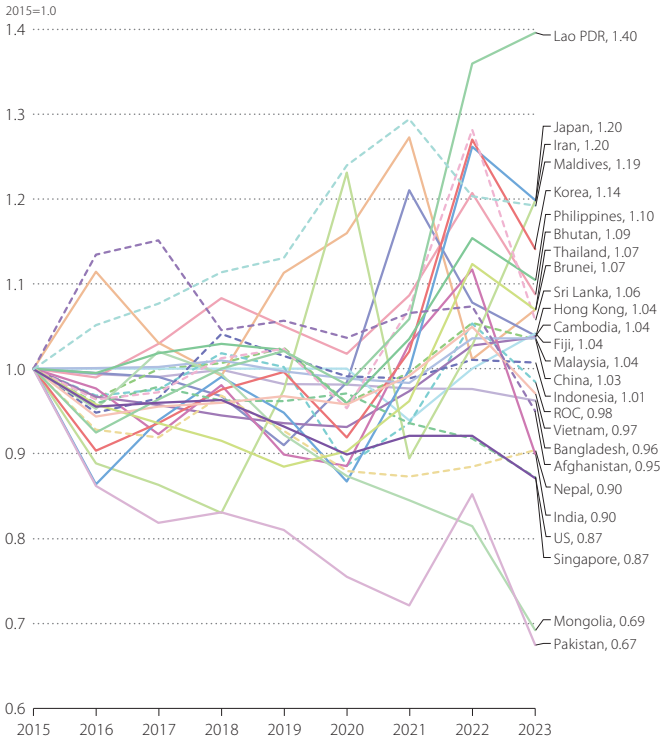


Figure 2.5 Real Import Prices, 2015–2023

——Import price relative to GDP deflator

Unit: index (2015=1.0). Source: Official national accounts in each country (including adjustments by APO-PDB).

We begin by examining the impact of these shocks on overall import prices. Figure 2.5 gives an index of the import price relative to the GDP deflator. The figure excludes countries that show little or negative change in the relative import price to enhance readability: Pakistan, Mongolia, Singapore, the US, Bangladesh, the ROC, and Indonesia. The immediate impact of COVID-19 in 2020 was modest, except in Iran, given the low inflation in the major exporting countries, as shown in Figure 2.1. In 2021, import prices rose by about 0–10% for most countries, 15% for Cambodia, Turkiye, and India. A significant jump occurred in 2022, driven by higher energy and food prices, with three countries experiencing a rise of more than 20%, as Japan (23%), Korea (22%), and Lao PDR (25%), and nine with increases of 10–20%. Some countries had lower import prices relative to 2019 levels: Brunei, Mongolia, and Singapore. Import prices tempered in 2023, but remained 26% higher than 2019 levels for Japan and 15% for Korea.

The Databook has a long tradition of providing analyses of energy costs and productivity growth. This draws from the Energy Cost Monitoring (ECM) Datasbase described in Nomura and Inaba (2024, 2025). Figure 2.6 presents the monthly prices of final energy consumption for eight industrialized countries from January 2020 to June 2025. This update reflects the information provided in the 2024 edition of the Databook (APO 2024), which noted that the disruption of gas imports from Russia to the EU in 2022 increased energy costs to nearly twice the 2015 levels in the UK and Germany. The rise in US energy prices peaked at 1.7 times. Energy prices have fallen by 2025 but remain higher than in 2015. The spike in 2022 and 2023

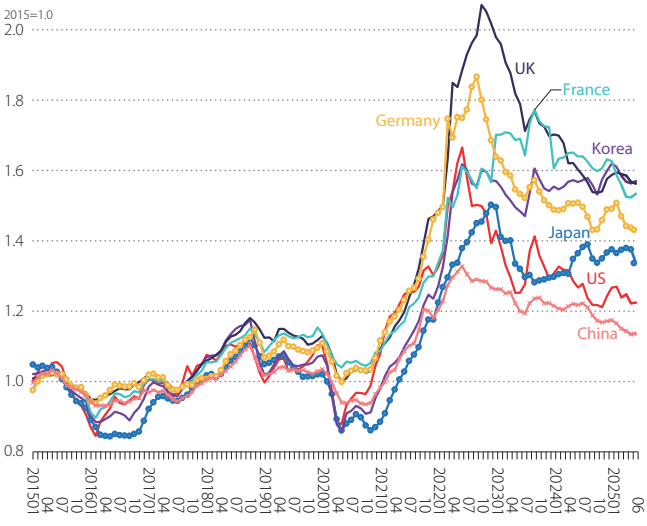


Figure 2.6 Monthly Energy Prices, January 2020–June 2025

Unit: Index (average price at local currency unit in 2015=1.0 in each country). Source: Updated estimates of Nomura and Inaba (2024, 2025). Notes: The energy price is defined as the quality-adjusted price of final energy consumption, measured in the implicit Translog index. The price is seasonally adjusted and includes taxes and subsidies.

has changed real energy costs, that is, cost relative to other prices in the economy, and impacted the energy-intensive sectors quite severely (Box 2).

Energy prices in China, Japan, and Korea have realized a more modest increase due to explicit and implicit subsidies, resulting in significant losses for state-owned or regulated power companies. Other countries in developing Asia also find it politically challenging to raise energy prices to reflect the costs of fossil fuels. Figure 2.7 shows the real energy prices. By June 2025, energy prices in the US and China have fallen below the GDP deflator, meaning they have essentially returned to pre-2020 levels. The prices in Korea and Japan remain elevated relative to 2015. High and stable energy prices, as well as the additional cost burden of low-carbon initiatives, could significantly impact the pace of industrialization in Asia.

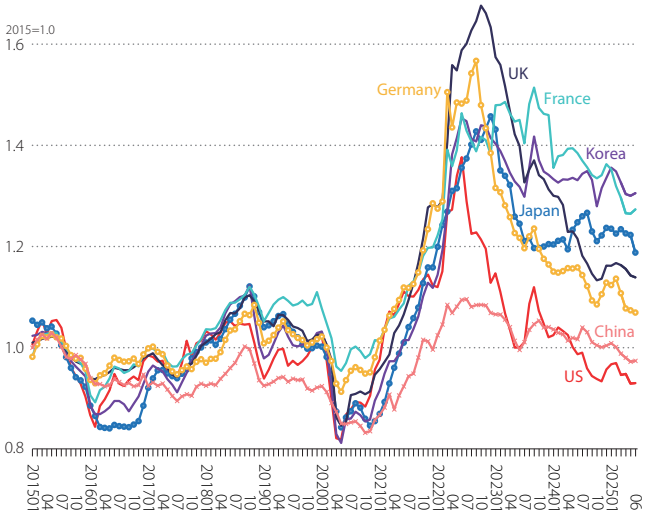
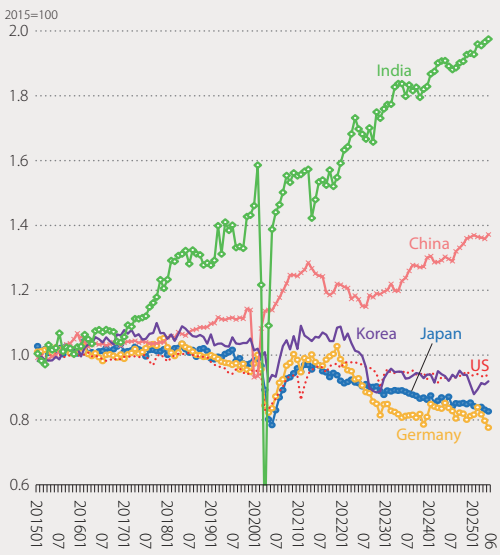


Figure 2.7 Monthly Real Energy Prices, January 2020–June 2025

Unit: Index (2015=1.0 in each country). Source: Updated estimates of Nomura and Inaba (2024, 2025). Notes: Real energy price is defined as the nominal quality-adjusted energy prices in Figure 2.6 divided by the quarterly GDP deflator.

Box 2 Impact of Higher Energy Costs on Energy-Intensive Sectors

The global drive to achieve carbon neutrality by mid-century by high and middle-income countries is expected to unlock growth opportunities for companies with advantages in green technologies. While this demand-side effect of the energy transition appears to offer promising prospects to some sectors, it is crucial to consider the risks on the supply side. Higher energy costs for energy-intensive and trade-exposed (EITE) sectors resulting from low-carbon policies may harm price competitiveness relative to suppliers in countries with low or no carbon prices.



Nomura and Inaba (2024, 2025) developed the monthly EITE manufacturing output index for several industrialized countries. Initially constructed for Japan and Germany, the index now covers six countries, including the US, China, India, and Korea. Figure 2.8 compares the EITE output index of six countries from January

Figure 2.8 Monthly EITE Output Index, January 2015–June 2025

Unit: Index (January 2015=1.0). Source: Updated estimates of Nomura and Inaba (2024, 2025).

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2015 to June 2025. The performance of the EITE output index serves as a test summary indicator for assessing the economic costs of energy and climate policies. The most notable trends are the sharp expansions in India and China, stability in the US, and steep declines in Germany, Korea, and Japan. Since early 2022, Germany has experienced a particularly sharp contraction in EITE output, reflecting the impact of rising energy prices (Figure 2.7), followed by a similar decline in Korea. In contrast, Japan's decline began earlier, following a brief post-pandemic recovery. Over the past several years—marked by rapid decarbonization initiatives and soaring energy costs—EITE output in these advanced economies has fallen by around 20%, indicating a serious erosion of their traditional industrial base.

Figure 2.9 shows the industry sources of monthly changes in EITE output for the six countries presented in Figure 2.8, with the different colors of each bar representing the contribution of five industries to total EITE changes. Even among the three countries that experienced significant declines in EITE production, the main drivers differ. In Japan, the decline was largely driven by iron and steel production, which accounts for a major share of its EITE output. Nippon Steel began expanding its overseas presence by establishing a joint venture with ArcelorMittal in India in December 2019. It is now acquiring U.S. Steel, despite facing stringent regulatory and political conditions. In Germany, the downturn since 2022 has been mainly driven by a contraction in the chemical industry. BASF, the country's largest chemical producer, announced in July 2018 a major investment of EUR 10 billion in an integrated production base in Guangdong, China, and has since expanded the scale of this project. In Korea, the sharp decline in EITE output since early 2022 reflects downturns in both the chemical and steel sectors. In July 2022, POSCO announced a USD 3.5 billion investment to build a second blast furnace in Indonesia. While some of these moves may be driven by growing demand in emerging markets such as India and Indonesia, they may also reflect the unintended consequences of energy and climate policies in advanced economies—potentially accelerating carbon leakage as energy-intensive industries relocate to countries with lower energy costs, thereby undermining the policy objectives of industrial decarbonization without sacrificing domestic EITE manufacturing.

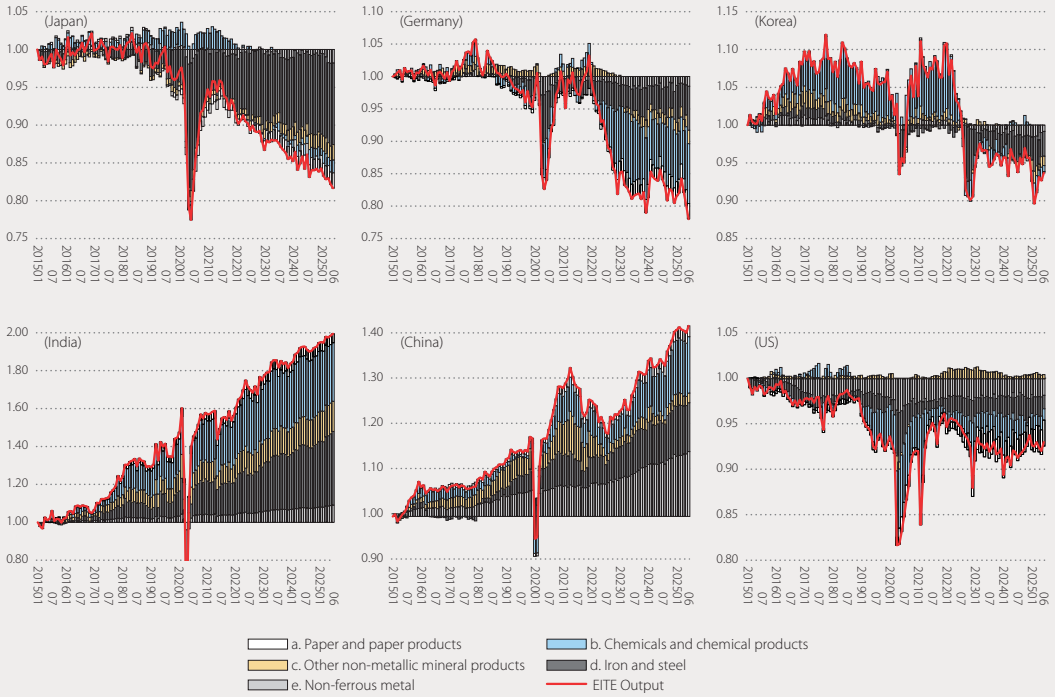

Figure 2.9 Industry Contributions to EITE Output Index, January 2015–June 2025

Unit: Index (January 2015=1.0). Source: Updated estimates of Nomura and Inaba (2024, 2025).

2.2.2 Debt Crisis and Inflation

The pandemic disruption of trade and tourism, followed by the energy and food cost shocks described above, exacerbated the balance of payments (BOP) problems and high foreign debt problems faced by some countries in Asia, such as Sri Lanka, Pakistan, Myanmar, and Lao PDR. To indicate the debt burden, Figure 2.10 presents the interest payments on external debt as a percentage of GDP for the countries with the highest burdens during this period.

Lao PDR incurred debts to finance its infrastructure, including the electric power industry, and suffered a major depreciation and inflation in 2022–2024. Pakistan experienced a severe decline in exports during the pandemic, and the BOP worsened in 2022, leading to a sharp depreciation and high inflation. This is in addition to the high oil prices imported. Following a strong recovery in 2021 and 2022, GDP growth declined to 0.1% in 2023, while interest payments rose to 1.7% of GDP in the same year. Sri Lanka already suffered a severe drop in tourism in 2019 due to terrorist bombings before the pandemic. COVID-19 exacerbated the BOP problems, and the country defaulted on its debt in 2022, resulting in a foreign exchange crisis that led to a 40% inflation rate. Interest payments were 1.8% of GDP in 2021.

Mongolia has accumulated a substantial debt to finance its mining sector, beginning in the 2000s, but does not have a BOP problem, even though it has very high interest payments. Both Fiji and the Maldives borrowed to finance their infrastructure development for the tourism industry and managed to rebound from the COVID-19 shock, avoiding depreciations or high inflation, despite their interest payments reaching approximately 3% of GDP in 2023.

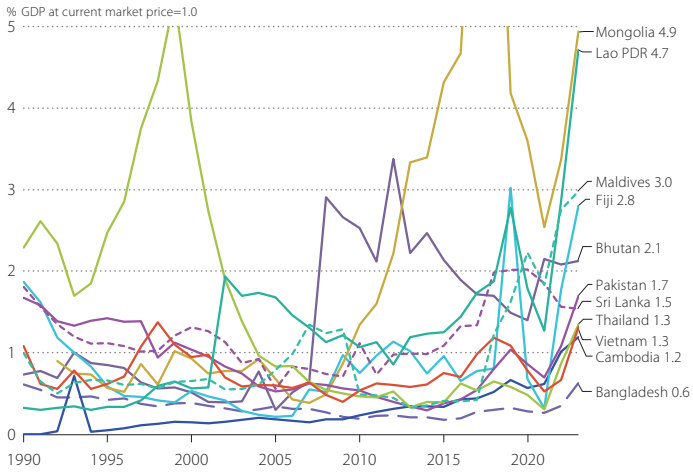

Figure 2.10 Interest Payments on External Debt as Share of GDP, 1990–2023

Unit: Percentage (GDP at current market prices=1.0). Sources: Official national accounts in each country (including adjustments by APO-PDB) and World Bank (2024d).

2.3 Impact of Pandemic and Global Shocks on Productivity

The significant impact of COVID-19 on employment and output, the subsequent Ukraine war, and severe weather events, combined with the resilient recovery in many countries, as noted in Section 2.1, would be expected to have a major effect on productivity. There would certainly be immediate, short-term effects, but it may also have long-term effects. The long-lasting effects of the Global Financial Crisis of 2008 have been much noted, for example, Fernald et al. (2024). We shall have to wait to really see if there are such effects from the pandemic, but there are some early indications.

Table 2.5 gives the average annual growth rates of per-hour average labor productivity (ALP) and total factor productivity (TFP) in Asian regions and their constituent economies for four sub-periods spanning 1970–2023.[11] This analysis aims to demonstrate the long-term performance of Asia and to compare the productivity growth in the 2015–2023 sub-period, encompassing both pandemic damage and recovery phases, with earlier eras. Comparing the last two columns in the ALP panel reveals a generally poorer

performance during 2015–2023 compared to the preceding 2010–2015 sub-period; for the entire Asia27 region, ALP growth declined to 3.8% per year from 4.9%. It fell in 16 economies in the Asia27 group. However, for TFP growth, the picture is more mixed. While it also fell in 17 economies out of Asia27, it rose in China, the largest economy. Thus, for the entire Asia27 region, TFP growth rose slightly to 1.3% per year, compared to 1.1% during 2010–2015.

Table 2.5 Productivity Growth, 1970–2023
——Growth in per-hour GDP at constant prices and total factor productivity

	Per-hour Labor Productivity Growth				TFP Growth			
	1970–1990	1990–2010	2010–2015	2015–2023	1970–1990	1990–2010	2010–2015	2015–2023
APO21	2.5	2.5→	2.9 ↗	2.7 ↘	0.7	0.6 ↘	0.7 ↗	1.0 ↗
Asia27	2.4	4.0 ↗	4.9 ↗	3.8 ↘	0.7	1.3 ↗	1.1 ↘	1.3 ↗
East Asia	2.8	4.5 ↗	6.0 ↗	4.4 ↘	0.9	1.6 ↗	1.6→	1.6→
China	3.0	8.0 ↗	7.9 ↘	5.5 ↘	0.9	2.9 ↗	1.5 ↘	1.7 ↗
Hong Kong	5.4	2.8 ↘	2.3 ↘	1.5 ↘	2.7	1.0 ↘	1.0 ↗	0.7 ↘
Japan	4.1	1.6 ↘	1.1 ↘	0.1 ↘	1.4	0.2 ↘	0.9 ↗	−0.2 ↘
Korea	6.1	5.4 ↘	1.8 ↘	3.4 ↗	1.9	1.4 ↘	0.2 ↘	1.1 ↗
Mongolia	2.9	3.2 ↗	6.1 ↗	2.4 ↘	−0.2	1.4 ↗	−0.4 ↘	−0.1 ↗
ROC	7.0	4.8 ↘	0.8 ↘	3.3 ↗	4.4	2.4 ↘	0.5 ↘	1.5 ↗
SAARC	1.7	4.2 ↗	4.6 ↗	4.2 ↘	0.4	1.7 ↗	1.2 ↘	1.8 ↗
Afghanistan	0.4	−2.1 ↘	4.5 ↗	−4.3 ↘	−2.1	−2.0→	1.4 ↗	−5.1 ↘
Bangladesh	−0.6	3.3 ↗	4.7 ↗	4.9 ↗	−0.9	0.1 ↗	0.1→	−0.2 ↘
Bhutan	3.4	4.6 ↗	6.8 ↗	3.5 ↘	1.4	0.2 ↘	−0.5 ↘	−0.8 ↘
India	1.9	4.6 ↗	4.9 ↗	4.7 ↘	0.7	2.0 ↗	1.6 ↘	2.3 ↗
Maldives	2.5	0.6 ↘	3.6 ↗	1.0 ↘	0.7	−1.6 ↘	0.5 ↗	0.0 ↘
Nepal	1.0	2.5 ↗	3.1 ↗	1.8 ↘	−1.2	−0.4 ↗	1.9 ↗	−0.3 ↘
Pakistan	3.2	2.8 ↘	1.6 ↘	1.5→	1.2	1.0 ↘	1.1 ↗	0.7 ↘
Sri Lanka	2.4	4.0 ↗	6.5 ↗	0.3 ↘	0.7	2.3 ↗	1.2 ↘	−3.4 ↘
ASEAN	2.7	3.1 ↗	3.9 ↗	2.7 ↘	0.7	0.2 ↘	0.3→	0.3→
Brunei	−2.1	−1.1 ↗	−1.1 ↗	−0.7 ↗	0.3	−0.9 ↘	−0.5 ↗	0.1 ↗
Cambodia	−1.4	2.0 ↗	5.3 ↗	2.5 ↘	−2.4	0.4 ↗	−0.3 ↘	−1.6 ↘
Indonesia	3.4	2.4 ↘	4.0 ↗	2.2 ↘	1.4	−0.8 ↘	−0.8→	−0.1 ↗
Lao PDR	2.0	2.7 ↗	5.8 ↗	1.7 ↘	0.7	1.0 ↗	2.2 ↗	−0.5 ↘
Malaysia	3.3	3.0 ↘	2.3 ↘	2.3→	1.0	0.5 ↘	1.1 ↗	0.6 ↘
Myanmar	1.4	3.6 ↗	4.6 ↗	1.5 ↘	−1.1	0.3 ↗	−0.7 ↘	−1.4 ↘
Philippines	1.1	2.1 ↗	3.8 ↗	2.8 ↘	−0.9	0.7 ↗	0.6 ↘	−0.1 ↘
Singapore	3.4	3.2 ↘	2.1 ↘	2.6 ↗	0.8	1.2 ↗	0.3 ↘	0.7 ↗
Thailand	3.4	3.7 ↗	4.4 ↗	2.1 ↘	0.4	−0.4 ↘	0.2 ↗	0.0 ↘
Vietnam	0.0	5.9 ↗	4.8 ↘	5.1 ↗	−0.9	0.9 ↗	0.9→	1.5 ↗
Other Asia	1.0	2.8 ↗	1.7 ↘	2.9 ↗	0.3	0.7 ↗	0.0 ↘	1.3 ↗
Fiji	0.6	0.3 ↘	2.6 ↗	0.0 ↘	−1.1	−0.2 ↗	2.8 ↗	0.1 ↘
Iran	0.4	3.1 ↗	−1.2 ↘	2.4 ↗	0.0	1.7 ↗	−2.3 ↘	2.0 ↗
Turkiye	1.6	2.5 ↗	4.2 ↗	3.2 ↘	−0.5	−0.5→	1.7 ↗	0.3 ↘
US	1.5	1.9 ↗	0.4 ↘	1.3 ↗	0.7	0.7→	0.3 ↘	0.6 ↗

Unit: Percentage (average annual growth rate).
Sources: APO Productivity Database 2025. Notes: Arrows indicate changes compared to the preceding period. See Table 9.11 and Table 9.12 for growth rates every five years since 1990.

On the positive side, ALP rose significantly in Iran (3.6 percentage points), the ROC (2.5 percentage points), Korea (1.5 percentage points), and Singapore (0.5 percentage points) during the 2015–2023 sub-period. Korea and the ROC experienced negative ALP growth from 2010 to 2015, following the Global Financial Crisis, while economic sanctions had a severe impact on Iran. Section 2.1 noted that Korea and the ROC's exports to the world declined during the COVID-19 pandemic; however, exports to all regions except China recovered strongly in 2021 and 2022. This allowed GDP growth to return to the rates seen before the pandemic. With similar growth rates and a much slower growth of labor input, ALP

11: The Databook calculates different measures of productivity to provide a comprehensive picture: per-worker labor productivity is output (GDP) per worker, per-hour labor productivity adjusts for the number of hours worked per worker, and total factor productivity is output divided by an index of all factor inputs (labor and capital, including land and mineral and energy resources). These are described in detail in Chapter 5.

growth accelerated. Singapore's export recovery was significantly weaker, and GDP growth during 2015–2023 was only 3.0% compared to 4.7% previously, resulting in a modest ALP gain. Iran's productivity change is due to the ending of economic sanctions in 2015 and an expansion of trade with the East.

The substantial acceleration in ALP growth for these countries is largely due to significant improvements in TFP rather than merely higher capital accumulation.[12] Their TFP growth improved significantly from 2010–2015 to 2015–2023, from 0.5% to 1.5% in the ROC, from 0.2% to 1.1% in Korea, from 0.3% to 0.7% in Singapore, and from –2.3% to 2.0% in Iran.

The two giant economies, India and China, exhibited similar changes, characterized by lower ALP growth from 2015 to 2023, but higher TFP growth. China's ALP growth fell from 7.9% per year to 5.5%, while TFP growth rose from 1.5% to 1.7%. India's ALP growth declined slightly from 4.9% to 4.7%, but TFP growth increased from 1.6% to 2.3%. Aggregate GDP growth slowed at a faster rate in China, given its slower labor force growth and significantly higher per-capita incomes. Increased tensions in trade relations between China and the US also marked the 2015–2023 period.

In the ASEAN region other than Singapore, only Vietnam registered a positive change in ALP growth from 2010–2015 to 2015–2023, and only a minor improvement at that. The region maintained a steady rate of GDP growth, 5.1% during 2010–2015 and 5.9% during 2015–2023, with the rapid growth of exports discussed earlier. ALP growth in Indonesia fell from 4.0% to 2.2%, the Philippines from 3.8% to 2.8%, Thailand from 4.4% to 2.1%, and Cambodia from 5.3% to 2.5% as all four countries experienced decelerated GDP growth. ALP growth in Malaysia was unchanged. The improvements in TFP growth in ASEAN are better than for ALP growth, rising from –0.8% to –0.1% in Indonesia, and from 0.9% to 1.5% in Vietnam.

Among other countries, Japan's productivity growth declined significantly; ALP growth fell from 1.1% to 0.1% between 2015 and 2023, and TFP growth declined from 0.9% to –0.2%. Sri Lanka was severely impacted by its balance of payments crisis, where ALP growth fell from 6.5% to 0.3%, with a corresponding decline in TFP. ALP growth remained relatively constant in Pakistan and Bangladesh, while Hong Kong's rate fell from 2.3% to 1.5%.

2.4 Trade in Clean Technology Products—Batteries, EVs, and Solar Cells

Section 2.1.3 noted that the export share of GDP, which had risen steadily since 1970, peaked in 2008 for many countries and has since stabilized. The pandemic disrupted trade, but the aggregate share has mostly recovered. This stability, however, masks major shifts in the types of goods traded. It has also been noted COVID-19 shifted demand towards health-related products, and information technology for remote work. The past decade has also seen a shift towards "new energy" products as part of the clean energy transition: solar panels and wind turbines for renewable electricity, electric vehicles for non-fossil fuel transportation, and batteries for cars, large-scale storage, and IT equipment.

Asia plays a crucial role in the global production chain for these IT and new energy goods. China is now the dominant supplier, and consumer, of solar panels and batteries. Japan, Korea, the ROC and ASEAN are major suppliers of IT components including semi-conductor chips. China, Japan and Korea are major producers and consumers of electric vehicles (EVs). Many of these industries are characterized by rapid productivity growth, which contributes to current aggregate TFP growth. In the Information Age, which

12: Section 5.6 explains how labor productivity growth is composed of capital deepening, growth in labor quality, and TFP growth.

began in 1995, Ho, Nomura, and Samuels (2023) attributed an outsized contribution from the IT hardware sector to aggregate TFP growth in the US and Japan. The IT sector and these new energy products could now play a parallel role. These developments have attracted considerable attention, for example, IEA (2022) provides a detailed description of Solar PV supply chains, IEA (2025) discusses the trade in EVs, IEA (2024a) describes the battery supply chain, and SIA (2024) is a report by the Semiconductor Industry Association on their global supply chain.

This section provides a summary of the significant increase in trade flows of clean-technology products between Asia and the US and Europe. Data is taken from the UN Comtrade database. Figure 2.11 gives the imports and exports of lithium-ion batteries (HS code 850760) for 2013–2023 in nominal USD (imports are in c.i.f. values while exports are f.o.b.). Although these are not adjusted for changes in prices, the increase in global imports of batteries has been dramatic since 2015, rising from USD 11 billion to USD 112 billion in 2023. This is led by the significant increase in imports by the US and EU, while Asian countries experience a smaller increase. On the export side, the increase from China is more than tenfold, from USD 4.7 billion to USD 65 billion in 2023 (52% of global exports).

The pattern for world trade in electric vehicles (HS code 870380, pure EVs excluding hybrids) in Figure 2.12 is similar to that of batteries in its dramatic growth, but differs slightly by country of origin. While the increase in imports by the US and EU is large, the increase by the Rest-of-the-World is even greater, from USD 4.6 billion in 2017 to USD 84 billion in 2023. Global imports rose from USD 7 billion to USD 136 billion. On the export side, the US and Japan are minor players with about 5% each in value terms in 2023, while China's share is 24%, the EU 22%, and Korea 10%.

The trade data on solar cells were separately identified in the UN database beginning in 2022; prior to that, the category "Photosensitive semiconductor devices" (HS code 854140 (HS2017 definition)) includes LEDs and solar cells. Figure 2.13 provides information on photosensitive devices for 2013–2023. Trade in these PV devices was flat between 2013 and 2020 in nominal USD, rising rapidly after 2020. Global imports rose from USD 57 billion in 2019 to USD 96 billion in 2023. The price of solar modules has fallen from about USD 0.60 per watt in 2015 to USD 0.15–0.20 in 2023; thus, the quantity growth is more dramatic than in Figure 2.13. Imports by the US, the EU, and the Rest of the World expanded the most, while imports by China fell as they began to raise their production. Imports by Japan also fell. On the export side, China's exports grew from USD 16 billion in 2013 to USD 48 billion in 2023, while ASEAN's exports grew from USD 5 billion to USD 23 billion. Exports from Korea and Japan in nominal dollars fell.

The shift to EVs is likely to continue given the climate policy and energy security goals of many countries and the pace of changes in technology. However, the transition is developing more slowly than previously anticipated. The rise in demand for power storage, for EVs and other devices, is expected to increase as well. The demand for solar cells is expected to rise with the continued decline in costs. A major source of uncertainty lies in the future trade flows of these products, which will be shaped by the industry and trade priorities of the Trump administration in the US, as well as by the responses of the EU, China, and other key economies in the supply chain to US policies. These will affect the location of production of the various components, and thus their trade flows. The impact of these changes on productivity is not yet known and will be the subject of great interest. Since globally observed data are only available up to 2023, it is difficult to fully capture recent trade developments. However, uncertainty has increased through 2024 and into 2025, as discussed in Box 8 (Section 4.2), which focuses specifically on China's exports.

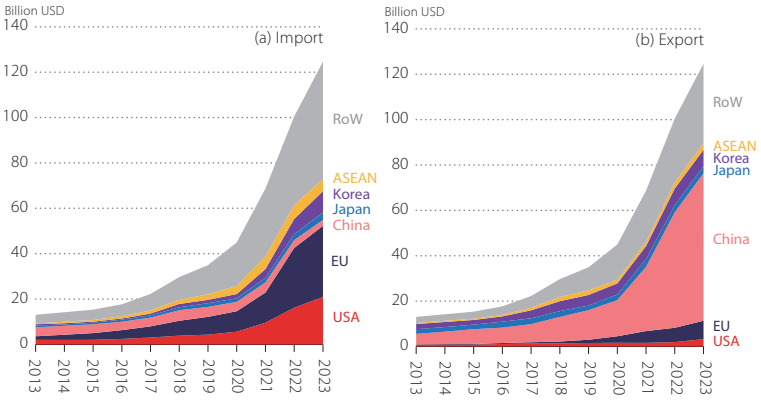

Figure 2.11 World Trade of Lithium-ion Batteries, 2013–2023

Unit: Billion USD. Sources: The United Nations Comtrade Database (accessed June 24, 2025). Note: The corresponding HS code is 850760 for lithium-ion batteries.

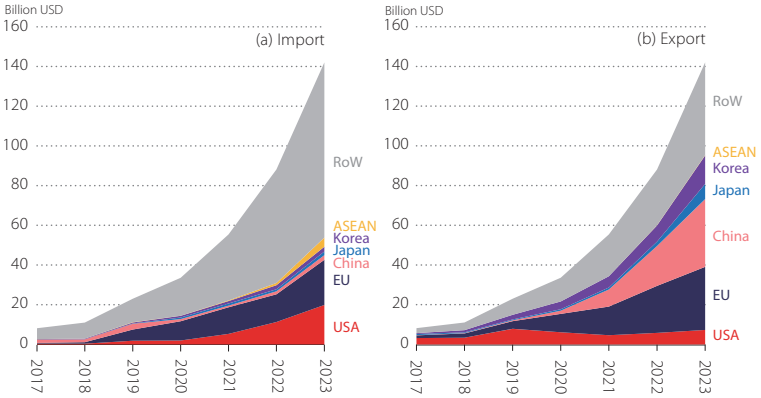

Figure 2.12 World Trade of Electric Vehicles, 2017–2023

Unit: Billion USD. Sources: The United Nations Comtrade Database (accessed June 24, 2025). Note: The corresponding HS code is 870380 for EVs.

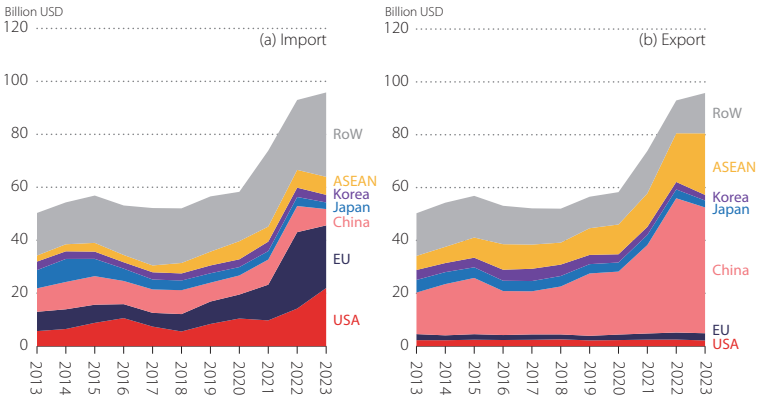

Figure 2.13 World Trade of Solar Cells, 2013–2023

Unit: Billion USD. Sources: The United Nations Comtrade Database (accessed June 24, 2025). Note: The corresponding HS codes are 854140, 854142, and 854143 for solar cells.

3 Economic Transformation of Asia

Highlights

- The economic scale of Asia33 was USD 37.9 trillion in 2023 in terms of exchange-rate-based GDP, which is 37% greater than that of the US. Japan was the largest economy in Asia until 2008 and was overtaken by China the following year.
- Asia is even more dominant in terms of PPP-adjusted GDP. Asia33 was 46% of the world economy and 3.0 times that of the US in 2023. China has overtaken Japan as the largest economy in Asia since 1998 and surpassed the US since 2014. In 2009, India surpassed Japan, becoming the second-largest economy in Asia, while ASEAN's aggregate GDP also reached a comparable level to Japan's around the same time.
- The average annual growth rate of the Asia33 economy was 4.1% from 2015 to 2023. Growth in China and India accounted for 2.1 percentage points and 0.8 percentage points of this regional growth, respectively. In our projections from 2023 to 2035, China's contribution is expected to decline to 1.4 percentage points, while India's is expected to rise to 1.3 percentage points. India is expected to overtake China as Asia's largest economic growth driver in the early 2030s.
- Japan was the highest among Asian countries in per capita GDP at market prices until Singapore overtook it in 1980. This represents a substantial shift from the PPP-based estimates in the 2024 edition of the Databook, which had suggested the crossover occurred in 1991. In this measure, the ROC and Korea surpassed Japan in 2007 and 2014, respectively, both earlier than previously estimated to occur in 2009 and 2018.
- The average per capita GDP of Asia33 was USD 19,500 at current market prices in 2023, which is 24% of the US level. Chinese per capita GDP rose to USD 25,800 in the same year. The ASEAN6, CLMV, and SAARC regional averages were USD 19,200, 10,400, and 9,160, respectively. A significant per capita GDP gap exists between most Asian countries and the US, which is largely attributed to inferior labor productivity.

From the mid-1980s, the story of the world economy was dominated by Asia, where its rapid growth radically transformed its share of world output. Figure 3.1 compares the growth rates of Asia with those of the EU and the US over the observation period from 1970 to 2023, as well as our projection period from 2023 to 2035 (shown with dotted lines). Not surprisingly, the center of gravity in the global economy is gradually shifting towards Asia. In 2023, Asia contributed 48% (44% for Asia27) of world output, compared with 15% for the US and 14% for the EU27, as shown in Figure 3.2. According to our projection of growth in Asia and the rest of the world, the Asian share in global output is expected to continue rising, reaching 54% (50% for Asia27) by 2035.[13] In contrast, the US and the EU27 output shares will fall to 13% and 12%, respectively.

13: Our projections of economic growth for Asia27 are provided in Box 14. Among the 27 economies, 22 publish quarterly national accounts. As of May 2025, our projections incorporate data through the first quarter of 2025 for 14 of these economies, through the fourth quarter of 2024 for seven economies, and through the third quarter of 2024 for one economy, depending on data availability.

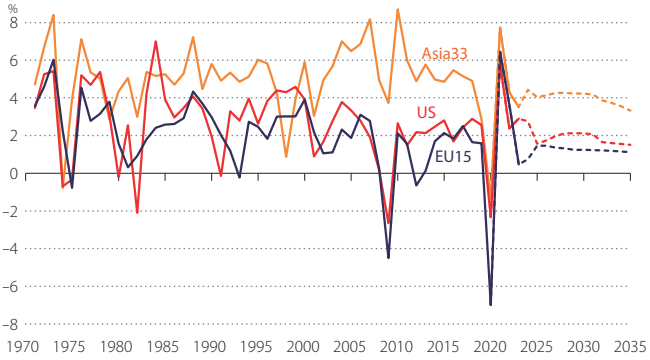

Figure 3.1 GDP Growth of Asia, the EU, and the US, 1970–2035
——Growth in GDP at constant prices from 1970 to 2023 and our projection to 2035

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country (including adjustments by APO-PDB) and our projections (Box 14). Note: Our projections are drawn with dotted lines.

To better understand the dynamics of long-term economic growth within the region, this chapter details the diverse development efforts and achievements through cross-country level comparisons of GDP and other related performance indicators. To facilitate international level comparisons, harmonized GDP for each country is expressed in its equivalent, in a common currency unit, typically the USD, using two sets of conversion rates between the individual national currencies. The choices for conversion rates are the exchange rate and purchasing power parity (PPP). The PPP is the adjustment for differences in price levels between countries, as determined by the International Comparisons Program (ICP). This adjusts for how one USD, converted at market exchange rates, buys a different number of the same, say, apples in different countries.

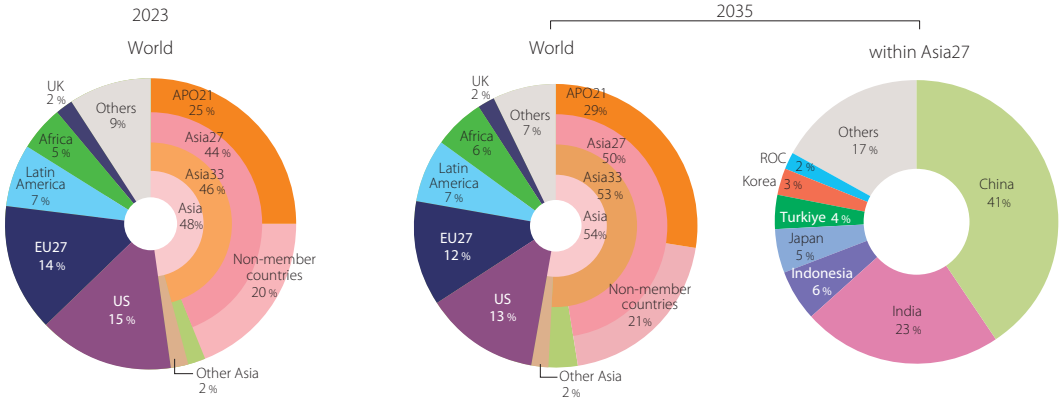

Figure 3.2 Asia's Share in World GDP, 2023 and 2035
——Share of GDP using the 2021 PPP

Unit: Percentage. Sources: Our estimates for the Asia27 economies projections (Box 14) and the IMF (2025) for the rest of the world. Note: See Country Abbreviations (p. 7) for the definitions of Asia, Asia33, Asia27, and APO21.

3.1 Shifting Growth Engines in Asia

Figure 3.3 presents a time-series level comparison of Japan, China, and the EU15 relative to the US, based on GDP at current market prices using exchange rates.[14] The chart covers the entire observation period,

14: The exchange rates used in this Databook are adjusted rates from the Analysis of Main Aggregate rates in the UN Statistics Division's (UNSD) National Accounts Main Aggregate Database. The AMA rates align with the IMF rates (which are primarily the annual average of market or official exchange rates), except during certain periods in countries with official fixed exchange rates and high inflation, when a significant disparity may exist between real GDP growth and growth converted to USD based on IMF rates. In such cases, the AMA adjusts the IMF-based rates by multiplying the growth rate of the GDP deflator relative to the US.

1970–2023, and our projection period of 2023–2035 (as indicated by the dotted lines). A snapshot comparison of all Asian countries is provided in Table 9.1. By this measure, Asia33's GDP was 37% and 47% greater than the US and the EU15, respectively, in 2023. Japan was the largest economy in Asia until 2008. In the following year, China surpassed Japan to become the world's second largest economy, after the US. The turn in Japan's fortunes came in the early 1990s. After that, Japan's stagnation and the rapid growth of developing Asia in the region eroded Japan's prominence in the regional economy.

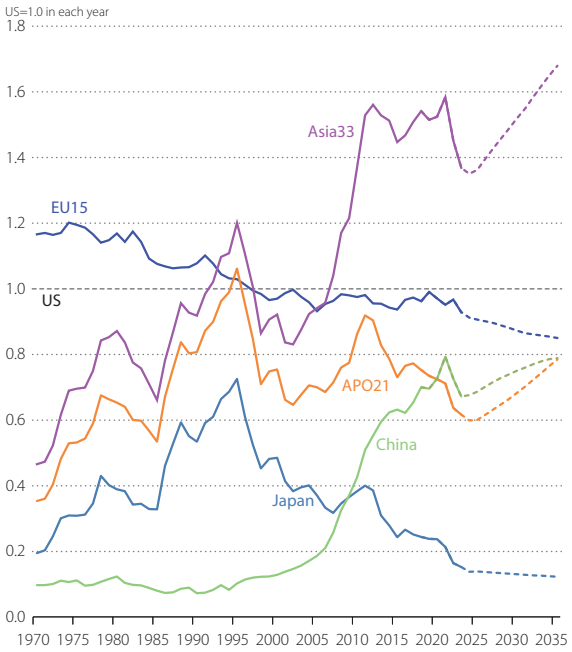

Figure 3.3 Asia and EU Relative to US GDP, Exchange Rates, 1970–2035

—Index of GDP at current market prices from 1970 to 2023 and our projection to 2035, using the exchange rate

Unit: Index (the US=1.0). Sources: Official national accounts in each country (including adjustments by APO-PDB) and our projections (Box 14). Notes: Our projections are drawn with dotted lines. The 2025 exchange rate is based on the average of the January–May period and is assumed to remain constant for 2026 and beyond.

Comparisons based on exchange rates, appear arbitrary, as movements in exchange rates can be volatile and subject to substantial short-term fluctuations. This is due to speculative capital flows and government intervention. Furthermore, comparisons based on exchange rates often underestimate the size of a developing economy and, consequently, the perceived welfare of its residents. The scale of economic ranking changes dramatically in Asia when international price differences are taken into account.[15]

Figure 3.4 presents the price level index (PLI) for GDP. This is measured as the ratio of the PPP for GDP to the market exchange rate (footnote 14), where the PPP is based on the 2021 round of the ICP (World Bank 2024a).[16] The figure displays the PLI for 2021 (circles) and 2023 (vertical bars). In the context of conversion rates, this figure shows how much the exchange rates have failed to reflect country price differentials relative to the US. For all countries, market exchange rates systematically underrepresent the relative price differentials in 2023. Thus, the exchange-rate-based GDP underestimates the economic scales in real terms. While the PPP is subject to criticism, it enables consideration of international price differences and a more accurate measurement of relative sizes.

15: This is because exchange rates reflect trade sector bias (i.e., they are more influenced by the prices of traded goods and services than by those of non-traded goods and services) and thus do not necessarily correct the price differentials among countries. As developing economies tend to have relatively lower wages and, in turn, lower prices for non-traded goods and services, a unit of the local currency has greater purchasing power in the local economy than its exchange rate reflects.

16: Revisions to cross-country level comparisons may be large, especially compared to revisions in cross-country growth comparisons. Box 3 discusses the impacts of the historical PPP revisions.

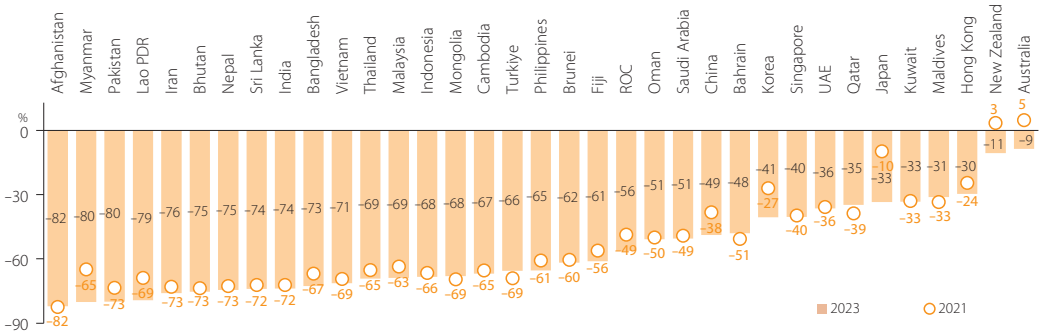

Figure 3.4 Price Level Index for GDP, 2021 and 2023

——Price Level Index (PLI) for GDP in 2021 and 2023

Unit: Percentage. Sources: World Bank (2024a) for PPP and United Nations Statistics Division (UNSD) for the AMA rates. Notes: The PLI is the ratio of PPP for GDP to the exchange rate. The reference country is the US. The revisions in different ICP rounds are provided in Box 3.

After correcting for international price differentials, we see that Asia33 has expanded rapidly. Figure 3.5 presents the level comparisons of real GDP for Asian regions, using PPP as the conversion rate, while Table 9.2 presents the levels for each country. Based on GDP using constant PPP, the weight of the world economy appears more tilted toward Asia in Figure 3.5 than it would if using exchange rates in Figure 3.3, given the large international price differentials indicated in Figure 3.4. The size of Asia33 was 3.0 times that of the US in 2023 (compared to 1.4 times using exchange rates) and overtook the US in 1975 (compared to 2007). Figure 3.5 also shows the rapid expansion of the relative size of the SAARC economy (the regional grouping used in this edition to represent South Asia), 81% of which was accounted for by India in 2023. The size of the SAARC economy is expected to approach the EU15 by the early 2030s. ASEAN also showed strength in its catch-up effort.

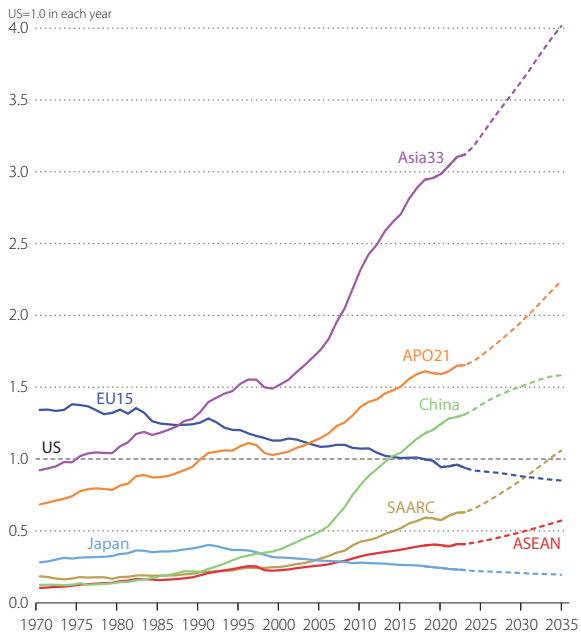

Figure 3.5 Asia and EU Relative to US GDP, 1970–2035

——Index of GDP at current market prices from 1970 to 2023 and our projection to 2035, using the 2021 PPP

Unit: Index (the US=1.0). Sources: Official national accounts in each country (including adjustments by APO-PDB) and our projections (Box 14). Note: Our projections are drawn with dotted lines.

Figure 3.6 illustrates regional comparisons of real GDP growth, while Table 9.3 provides the corresponding numerical data. Since the mid-1990s, the growth rates within Asia have been more pronounced in the CLMV and SAARC regions. The higher growth of these poorer regions is projected to persist in the 2030s as they continue to catch up. In contrast, the growth rate of East Asia is expected to decelerate to around 2% in the early 2030s, while the economies of CLMV and SAARC are projected to maintain growth rates above 6%.

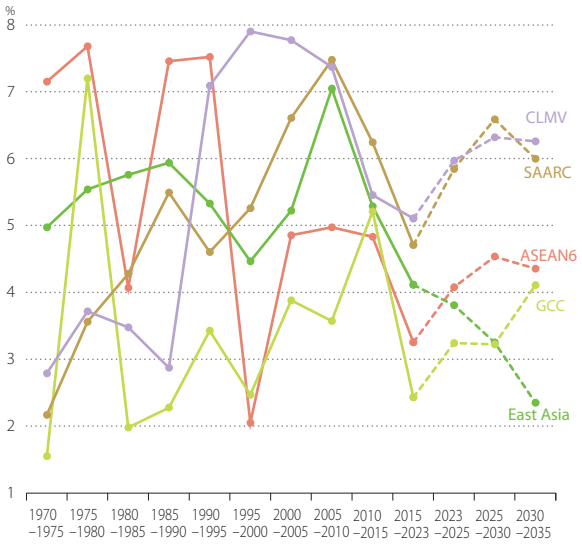

Figure 3.6 GDP Growth by Region, 1970–2035

—GDP growth from 1970 to 2023 and our projection to 2035, using the 2021 PPP

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country (including adjustments by APO-PDB) and our projections (Box 14). Note: Our projections are drawn with dotted lines.

In terms of growth rates and contributions to aggregate Asian growth, a shift is expected making the SAARC region Asia's growth engine. According to our projections, SAARC is expected to surpass East Asia as the leading contributor to Asia's economic growth by 2030 (Figure 3.7a). Of Asia's average annual growth rate of 4.1% between 2015 and 2023, China accounted for 2.1 percentage points, and India for 0.8 percentage points; however, the gap is rapidly closing. India is projected to overtake China as Asia's largest economic growth driver in 2031 (Figure 3.7b). ASEAN's contribution to Asia's economic growth is expected to remain steady at approximately 0.6 percentage points (Figure 3.7a). Within ASEAN, however, the contributions of Vietnam and the Philippines are expected to rise (Figure 3.7c).

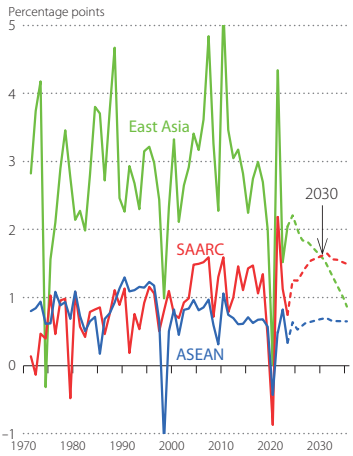

Figure 3.7a Sub-Regions

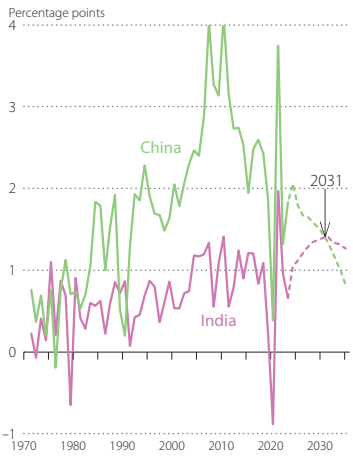

Figure 3.7b China and India

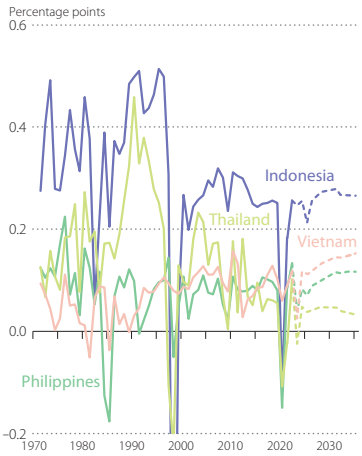

Figure 3.7c ASEAN Countries

Figure 3.7 Drivers of Asia's Economic Growth, 1970–2035

Unit: Percentage point (average annual contributions to the Asia33 growth). Sources: Official national accounts in each country (including adjustments by APO-PDB) and our projections (Box 14). Note: The average annual GDP growth rate in Asia33 is 4.9% in 1970–1990, 5.3% in 1990–2010, 5.3% in 2010–2015, and 4.1% in 2015–2023 (Table 9.3), and 4.0% in our projection period 2023–2035.

Box 3 Reassessing Asia's Economic Size through PPP Revisions

To understand the limitations in the accuracy of GDP level comparisons, it is important to consider the history of PPP revisions. With the release of the ICP 2021 benchmark PPPs in May 2024 (World Bank 2024a), this edition of the Databook adopts the revised estimates for cross-country comparisons (see Section 8.5).

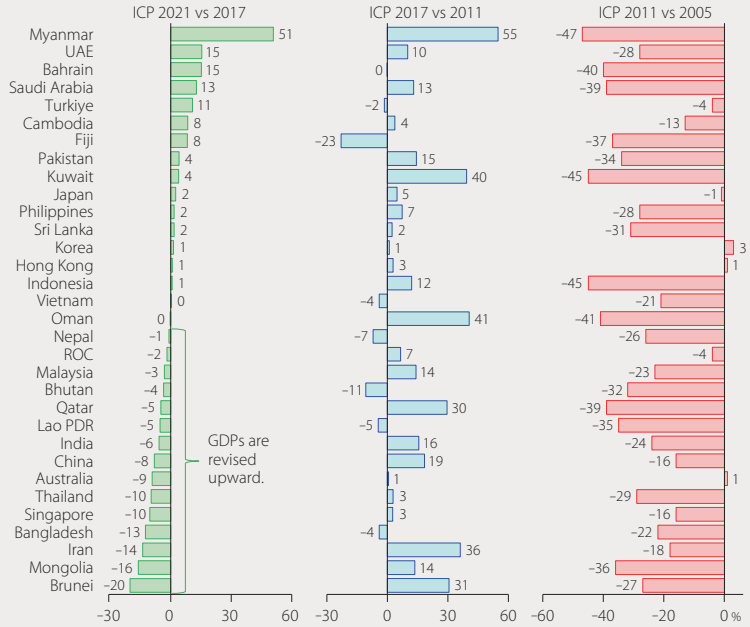

Figure 3.8 PPP Revision History for Asian Countries

——Ratios of ICP 2021 to 2017 (left), 2017 to 2011 (middle), and 2011 to 2005 (right)

Unit: Percentage. Sources: World Bank (2008, 2014, 2020, and 2024a). Note: For each comparison, the PPP of the earlier ICP round is extrapolated to the reference year of the later round: ICP 2017 PPPs are extrapolated to 2021, ICP 2011 to 2017, and ICP 2005 to 2011.

(i) Revision from ICP 2005 to ICP 2011

The 2011 benchmark PPP for most Asian countries is lower than what would be suggested by extrapolating from the 2005 benchmark using each country's GDP deflator, with differences ranging from +3% for Korea to –47% for Myanmar, as shown in the right panel of Figure 3.8. With the exception of Singapore, revisions for more mature economies tend to be smaller (within ±4%), whereas those for rapidly developing economies show larger downward revisions, often exceeding 10%. These revisions effectively raise the relative size of developing Asian economies, bringing them closer to the levels of advanced economies. Notably, PPPs for India and China were revised downward by 24% and 16%, respectively, leading to a considerable improvement in their positions in cross-country level comparisons using the 2011 ICP.

(ii) Revision from ICP 2011 to ICP 2017

The revisions shown in the middle chart of Figure 3.8 represent the difference between the ICP 2017 benchmark PPPs and their extrapolated counterparts based on the ICP 2011 round, which was used for the Databook editions from 2014 to 2019. These revisions are smaller than those just noted for the earlier round, but still, for 17 Asian economies, the 2017 benchmark PPPs were more than 5% higher than their extrapolated values from the 2011 round. For instance, the PPPs for China and India were revised upward by 19% and 16%, respectively. These upward revisions partially offset the downward adjustments made between 2005 and 2011, moderating the relative size increase from the 2005 comparisons.

(iii) Revision from ICP 2017 to ICP 2021

The left panel of Figure 3.8 compares the ICP 2021 estimates with those from the previous ICP 2017 round, which formed the basis for the Databook editions from 2020 to 2024. For Myanmar, this marks a second consecutive revision exceeding 50%, resulting in a significant downward adjustment in its GDP level. The Databook series had previously revised Myanmar's official GDP based on Nomura and Shirane (2016), but further adjustments may be warranted given the latest PPP estimates.

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In the case of Singapore, its 2023 per capita GDP was already estimated to exceed Japan's by over 59% under the previous PPPs. Under the revised figures, Singapore's estimate has been adjusted upward by 10%, while Japan's has been revised downward by 2%, widening the income gap to 64%. The ICP 2021 revision also shifts the historical timing of when Singapore overtook Japan and the US in terms of per capita GDP. According to the new estimates, Singapore surpassed Japan in 1980 (compared to 1991 in the ICP 2017 and 1993 in the ICP 2011) and the US in 1993 (compared to 1995 and 2004, respectively). Such a reassessment of Japan–Singapore bilateral relations may appear far removed from the perceptions held by business leaders familiar with the economic standings of the two countries half a century ago. This discrepancy also occurs in long-term comparisons of labor productivity levels in this Databook (footnote 48, Section 5.2), suggesting that Singapore's historical output may be overstated using this ICP version.

It remains an open question whether these recent revisions offer a more accurate representation of economic realities. Generally, level comparisons across countries are far more susceptible to revision than growth rate comparisons. Readers should keep these caveats in mind when interpreting cross-country economic indicators.

3.2 Catch-Up and Gaps in Per Capita GDP

Asia dominates the global population landscape, as shown in Figure 3.9. In 2023, the region was home to 59% of the world's population (56% for Asia33), making it the most populous region by far. Yet behind this aggregate figure lies striking diversity. As Table 9.4 highlights, eight countries had populations exceeding 100 million, while 12 economies in Asia33 had fewer than 10 million people.

Performance comparisons based on the aggregate GDP discussed in Section 3.1 do not consider the population, and thus do not give an indication of individual well-being. Based on per capita GDP, which adjusts for the differences in population, China and India, two rising giants in the Asian economy, remain substantially less well-off than the US. Conversely, the Asian Tigers (Hong Kong, Korea, Singapore, and the ROC) are close to, or exceed, US levels.

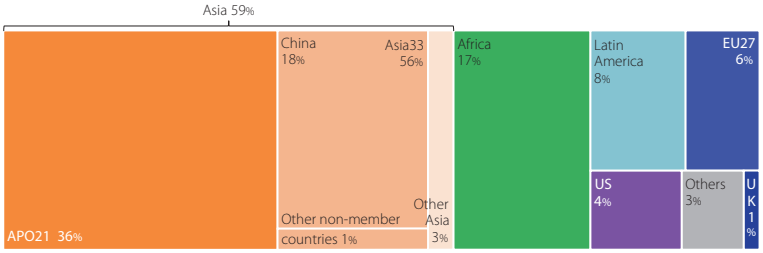

Figure 3.9 Asia in World Population, 2023

Unit: Percentage. Source: United Nations (2024). Note: See Box 4 for the population projections and Country Abbreviations (p. 9) for the definitions of Asia, Asia33, Asia27, and APO21.

Figure 3.10 shows per capita GDP at current prices, using exchange rates as conversion rates, among Japan and the Asian Tigers relative to the US. A snapshot comparison is also presented in Table 9.5. Note that snapshot comparisons can appear arbitrary due to the volatile nature of exchange rates—the comparisons in Table 9.5 change considerably when PPPs are used in Table 9.6.[17]

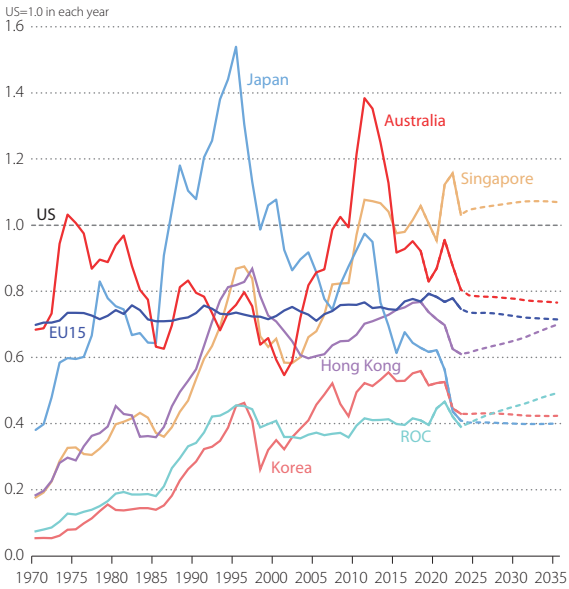

Figure 3.10 Per Capita GDP of Japan and Asian Tigers, Exchange rate, 1970–2035

——Index of GDP at current market prices per person from 1970 to 2023 and our projection to 2035, using the exchange rate

Unit: Index (the US=1.0). Sources: Official national accounts in each country (including adjustments by APO-PDB) and our projections (Box 14). Notes: See Table 9.5 for figures. Our projections are drawn with dotted lines (exchange rates are assumed unchanged after 2023).

Figure 3.11 and Table 9.6 give the per capita GDP at constant market prices using PPP, showing the much less volatile relative GDPs. Japan was the highest among Asian countries until Singapore overtook it in 1980 (See Box 3 for variations in the assessments for this catch-up year). Compared to Figure 3.11, it clearly highlights the dramatic development in ROC and Korea, which overtook Japan in 2007 and 2014, respectively. The current per capita production levels in these two countries are characterized as reaching those heights against a background of cheap exchange rates. According to the PLI for GDP (Figure 3.4), the exchange rate is undervalued by 41% in Korea and 56% in ROC in 2023.

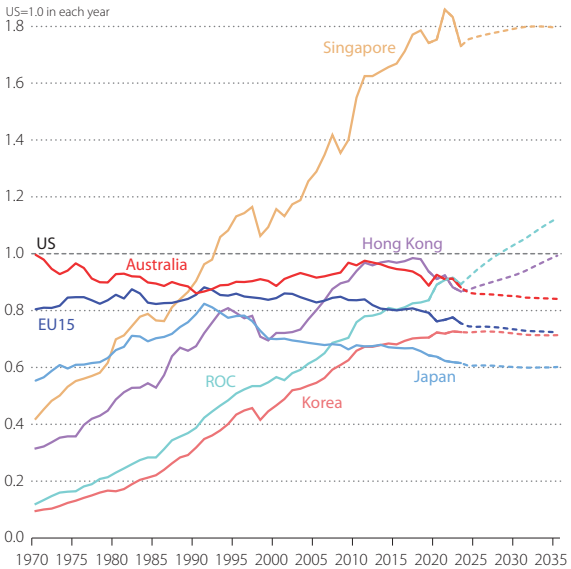

Figure 3.11 Per Capita GDP of Japan and Asian Tigers, 1970–2035

——Index of GDP at current market prices per person from 1970 to 2023 and our projection to 2035, using the 2021 PPP

Unit: Index (the US=1.0). Sources: Official national accounts in each country (including adjustments by APO-PDB) and our projections (Box 14). Notes: See Table 9.6 for figures. Our projections are drawn with dotted lines.

17: Japan suffered from a further excessive yen appreciation in the mid-1990s, which appeared to increase per capita GDP (Figure 3.10) but resulted in a loss of competitiveness and significant stagnation (Hamada and Nomura 2023).

The relative performance of China and India, the two most populous countries in the world (1.42 and 1.43 billion in 2023, respectively), is diminished in this per capita measure due to their population. Their per capita GDP is 31% and 12% of the US in 2023, respectively, as shown in Figure 3.12. The income gap between the US and most Asian countries remains sizable. The levels achieved by Asia33, CLMV, and SAARC were 24%, 13%, and 11% of the US, respectively,[18] indicating significant room for catch-up.[19]

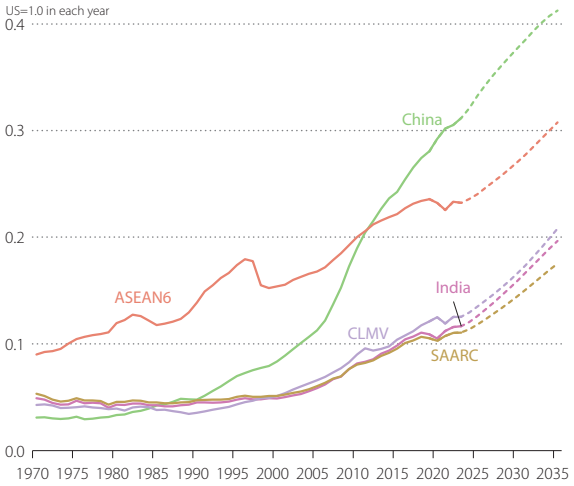

Figure 3.12 Per Capita GDP of China, India, ASEAN, and SAARC, 1970–2035

——Index of GDP at current market prices per person from 1970 to 2023 and our projection to 2035, using the 2021 PPP

Unit: Index (the US=1.0). Sources: Official national accounts in each country (including adjustments by APO-PDB) and our projections (Box 14). Notes: See Table 9.6 for figures. Our projections are drawn with dotted lines.

Table 9.6 also presents individual figures for resource-rich economies. At first glance, figures in 1970, and to a lesser extent those in 1990, suggest that these economies had remarkably higher per capita GDP than Japan and the US. However, the measurement of GDP as an indicator of production is misleading for these countries, as it erroneously includes proceeds from liquidating mineral and energy resources (MER) stock as part of the income flow. In other words, GDP over-evaluates net income in resource-exporting countries because it does not account for the depletion of their MER assets. To provide a rough indication of the extent of distortion, Figure 3.13 compares per capita GDP excluding mining sector production in 2023.[20] The non-mining GDP per person in GCC economies, such as Bahrain, Saudi Arabia, and Kuwait, is almost identical to Japan's USD 50,900, although total GDP per capita is much larger. In Mongolia and Iran, the mining industry's share of GDP is around 20–30%, similar to the lower end of the range seen in the GCC (Figure 7.5). In other resource-rich countries in Asia, the mining share is less than 10%.

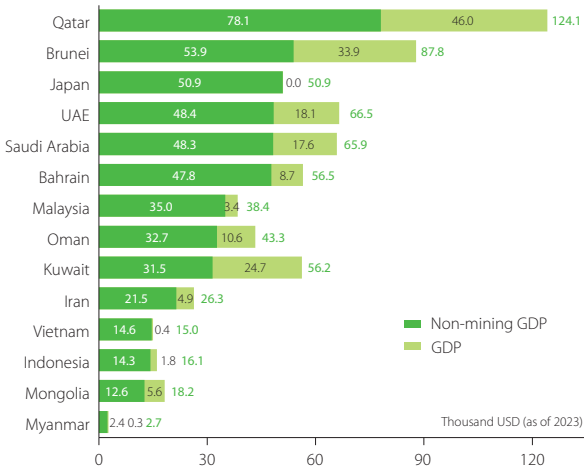

Figure 3.13 Per Capita Non-Mining GDP of Resource-Rich Countries, 2023

——GDP per person (using the 2021 PPP), the reference year 2023

Unit: Thousand USD (as of 2023). Sources: Official national accounts in each country, including adjustments by APO-PDB. Note: The change in mining-sector GDP share from 2000 to 2023 is provided in Figure 7.5.

18: The informal economy is large in developing countries, and the official GDP may not fully reflect its size. For example, Roubaud and Nghiem (2022) point to a significant underestimation of household business in Vietnam, arguing for a possible underestimation of about 20%, although the extent of its inclusion in the official GDP is unclear.

Catching up to the per capita GDP levels of advanced economies is a long-term process that can take several decades. Empirical evidence generally shows a negative relationship between a country's income level and its pace of convergence—poorer economies tend to grow faster, although exceptions exist. By adopting proven practices and technologies from more advanced economies, less developed countries can often accelerate their per capita GDP growth. However, as their income levels converge with those of advanced economies, their growth rates tend to decelerate. Figure 3.14 plots initial per capita GDP levels against average annual growth rates over the last half-century, from 1970 to 2023. The left panel illustrates the relationship for poorer countries with a GDP per capita of less than USD 20,000, while the right panel shows the middle- and high-income countries. The general negative relationship between growth rates and initial income is quite clear.

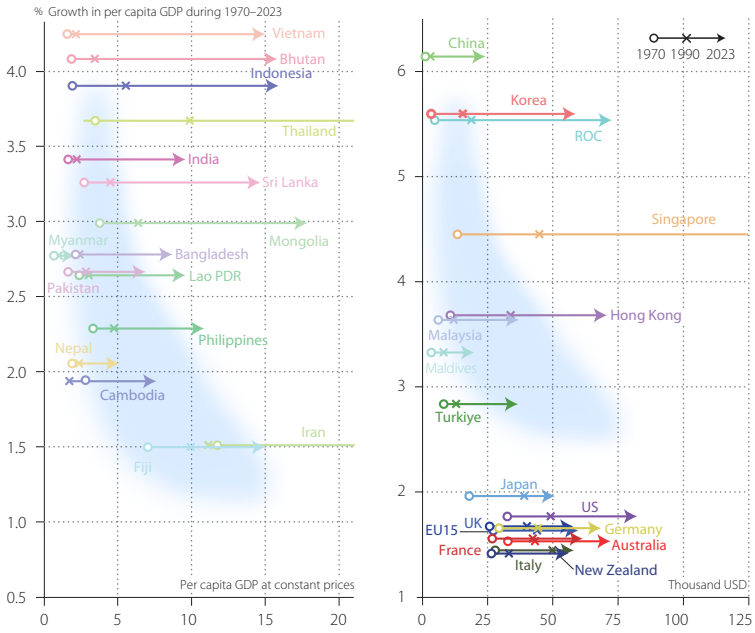

Figure 3.14 Initial Per Capita GDP Level and Growth, 1970–2023

——Growth in GDP at constant prices (using the 2021 PPP), the reference year 2023

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country, including adjustments by APO-PDB. Note: The level of GDP per capita is based on 1970 as the initial point of the arrow, 1990 as the middle point marked with an X, and 2023 as the end point of the arrow.

Table 3.1 summarizes Figure 3.14 by grouping countries with four initial per capita income levels in 1970. The speed of catch-up with the US is defined as the difference in the average annual growth rate of per capita real GDP between each country and the US. It shows that many Asian countries have closed the per capita real GDP gap with the US over the last five decades, although some are more successful than others. One can see that the initial economic level does not fully explain the catch-up process. If it did, the table would have been populated diagonally from top left to bottom right. Singapore and Hong Kong, for example, have high initial incomes in B2 but grew very fast in A2 and A3, respectively, while Cambodia has a low initial income in B4 and grew slowly in A4.

19: Per capita GDP may have underestimated welfare in some economies. For example, in the ROC, Hong Kong, and Japan, Gross National Income (GNI) is consistently higher than GDP, although the fluctuations are within +8%. The Philippines is the exception where the divergence between GNI and GDP has been increasing and has become significant for the past two decades, and GNI was more than 10% higher than GDP in the 2010s, although it has declined rapidly in recent years. (Figure 7.1). The number of Overseas Filipino Workers (OFWs) or Filipino workers who worked abroad during the period of April to September 2023 was estimated at 2.16 million, 77.4% of whom worked in other Asian countries (20.0% in Saudi Arabia and 13.6% in UAE), according to the Philippine Statistics Authority (2024).

20: See Section 8.2.6 for the consideration of MER in the APO-PDB, and Box 12 for the impact of including it as a factor of production in TFP measurement in some resource-rich countries.

Table 3.1 Country Groups by Initial Economic Level and Catching-Up Pace, 1970–2023
——Level and growth of per capita GDP at constant prices (using the 2021 PPP)

Per capita GDP level in 1970, relative to the US	Average annual rate of catch-up to the US during 1970–2023					
	(A6) <–1%	(A5) –1% ≤–< 0%	(A4) 0% ≤–< 1%	(A3) 1% ≤–< 2%	(A2) 2% ≤–< 3%	(A1) 3% ≤
(B1) 60% ≤	Brunei, Kuwait, Qatar, Saudi Arabia, UAE	Australia, Bahrain, EU15, France, Germany, Italy, New Zealand, UK				
(B2) 20% ≤–< 60%		Fiji, Iran	Japan	Hong Kong, Oman, Turkiye	Singapore	
(B3) 10% ≤–< 20%	Afghanistan		Philippines	Malaysia, Maldives, Mongolia, Thailand		ROC
(B4) 0% ≤–< 10%			Bangladesh, Cambodia, Lao PDR, Myanmar, Nepal, Pakistan	India, Sri Lanka	Bhutan, Indonesia, Vietnam	China, Korea

Sources: Official national accounts in each country, including adjustments by APO-PDB. Notes: The annual catch-up rates are based on the difference in per capita GDP growth at constant prices between each country and the US during 1970–2023. Table 6.1 provides another country grouping.

Box 4 Global and Asian Population Trends

The world's population is estimated at 8.1 billion in 2023, of which Asian countries account for 59%, according to the United Nations (2024). India and China account for 17.8% and 17.7% of the world's population, respectively. It has been observed that falling fertility rates and rising living standards go hand in hand, although the direction of causality is less certain. The evolution of the demographic structure reveals important societal dynamics that are not fully captured by the overall population size or growth. As economic behavior, aspirations, and needs vary at different stages of life, changes in a country's age structure can significantly impact its economic development through both supply-side and demand-side effects.

The growth rate of the global population has slowed from its peak of around 2.0% in the 1960s to the current rate of 0.9% per year. With falling fertility rates, the UN projects that the world's population growth rate will decelerate to 0.43% per year by 2050 and turn negative, reaching –0.14% by 2100. Even so, the world population is expected to increase by one-fifth from today's 8.1 billion to 9.6 billion by 2050, and by an additional 5.5% to 10.2 billion by 2100. These estimates are based on the medium-fertility variant. However, with only a slight variation in fertility, particularly in the more populous countries, the total could be higher (10.4 billion by 2050 and 14.4 billion in 2100) or lower (8.9 billion in 2050 and 7.0 billion in 2100). The bottom block of Table 3.2 presents this shift in the world population distribution, with the share from the more developed regions gradually declining from 16% in 2023 to 13% in 2050 and 12% in 2100, compared with 33% in 1950. Conversely, the share of the least developed countries is depicted as rising from today's 14% to a projected 20% in 2050 and 30% in 2100, up from 8% in 1950.

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According to the UN projection, Asia's share will decline from 59% today to 55% in 2050 and 45% in 2100, while Africa's share will rise from 18% to 25% and 37%, respectively. Table 3.2 also shows the 2023 population size of individual Asian countries compared with the 1970 level and the 2050 projection. This table shows that China's population is expected to stabilize around the current level until 2050 and then fall rapidly after that. China has socially engineered the change with its one-child policy, which has made its current population 300–400 million lower than it most likely would have been.

Table 3.2 Distribution of the World Population, 1970–2100

Unit: Millions of persons. Source: Authors' compilation based on the medium-fertility variant in the United Nations (2024). Notes: The "%" columns give the country's share of the change in global population. See Country Abbreviations (p. 7) for the definitions of Asia, Asia33, Asia27, and APO21.

	1970	2023	2050	2100	2021–2050	(%)	2050–2100	(%)
India	540	1,432	1,678	1,509	246	15.5	−169	−31
China	813	1,424	1,265	639	−159	−10	−627	−116
EU27	383	451	422	348	−29	−1.8	−73	−14
US	206	342	380	421	38	2.4	41	7.5
Indonesia	114	280	320	296	40	2.5	−24	−4.5
Pakistan	59	246	370	511	124	7.8	141	26
Bangladesh	68	170	214	209	44	2.8	−5.1	−0.9
Japan	106	125	105	77	−19	−1.2	−28	−5.2
Philippines	37	114	134	115	20	1.2	−20	−3.6
Vietnam	41	100	110	92	10	0.6	−18	−3.3
Iran	29	90	102	80	12	0.7	−21	−4.0
Turkiye	36	87	91	66	4.1	0.3	−26	−4.7
Germany	78	84	78	71	−6.0	−0.4	−7.5	−1.4
Thailand	35	72	67	46	−5.1	−0.3	−21	−3.8
UK	56	68	75	74	7.0	0.4	−1.1	−0.2
France	51	66	68	68	1.8	0.1	0.3	0.0
Italy	53	60	52	35	−7.5	−0.5	−17	−3.1
Myanmar	27	54	59	50	4.7	0.3	−8.8	−1.6
Korea	32	52	45	22	−6.4	−0.4	−23	−4.3
Afghanistan	11	41	76	130	35	2.2	54	10
Malaysia	10	35	44	44	9	0.6	−0.1	0.0
Saudi Arabia	3.5	33	47	71	15	0.9	23	4.3
Nepal	12	30	35	32	4.9	0.3	−2.6	−0.5
Australia	12	26	32	43	6.1	0.4	11	2.0
ROC	15	23	20	10	−3.8	−0.2	−9.5	−1.7
Sri Lanka	12	23	25	21	1.9	0.1	−3.5	−0.6
Cambodia	6.7	17	22	23	4.6	0.3	0.9	0.2
UAE	0.3	10	15	26	4.8	0.3	11	2.0
Lao PDR	2.6	7.6	9.7	9.3	2.1	0.1	−0.5	−0.1
Hong Kong	3.6	7.5	6	2.1	−1.3	−0.1	−4.0	−0.7
Singapore	2.1	5.8	6.1	4.2	0.3	0.0	−1.9	−0.4
New Zealand	2.8	5.2	5.7	5.8	0.6	0.0	0.1	0.0
Oman	0.7	4.9	7.8	12	2.8	0.2	4.3	0.8
Kuwait	0.8	4.8	6.3	10	1.5	0.1	3.2	0.6
Mongolia	1.3	3.4	4.5	5.5	1.1	0.1	1.0	0.2
Qatar	0.1	2.9	4.1	7.2	1.2	0.1	3.1	0.6
Bahrain	0.2	1.6	2.1	3.1	0.6	0.0	1.0	0.2
Fiji	0.5	0.9	1.0	0.9	0.1	0.0	−0.1	0.0
Bhutan	0.3	0.8	0.9	0.7	0.1	0.0	−0.2	0.0
Maldives	0.1	0.5	0.6	0.5	0.1	0.0	−0.1	0.0
Brunei	0.1	0.5	0.5	0.5	0.1	0.0	−0.1	0.0
(region)								
World	3,657	8,057	9,644	10,187	1,588	100	543	100
Africa	361	1,464	2,448	3,807	985	62	1,359	250
Asia	2,111	4,764	5,278	4,624	515	32	−654	−121
APO21	1,164	2,921	3,409	3,174	488	31	−235	−43
Asia27	2,015	4,442	4,811	3,994	370	23	−817	−151
Asia33	2,021	4,499	4,895	4,123	395	25	−771	−142
EastAsia	970	1,635	1,446	755	−188	−12	−691	−127
SAARC	703	1,943	2,399	2,413	456	29	15	2.7
ASEAN	269	668	750	656	82	5.1	−94	−17
ASEAN6	199	507	572	505	65	4.1	−67	−12
CLMV	77	179	200	174	21	1.3	−26	−4.9
GCC	5.5	58	83	129	26	1.6	46	8.4
Europe	655	746	704	593	−42	−2.6	−111	−20
Latin America and the Caribbean	282	657	730	615	73	4.6	−115	−21
Northern America	228	382	426	475	44	2.8	49	8.9
Oceania	19	45	57	73	12	0.8	15	2.8
More developed regions	1,004	1,284	1,274	1,194	−10	−1	−80	−15
Less developed regions	2,652	6,773	8,370	8,993	1,597	101	623	115
Least developed countries	311	1,148	1,933	3,045	786	49	1,112	205

3.3 Sources of Per Capita GDP Gap

To better understand the diverse economic performance across Asian economies, per capita GDP can be decomposed into two key components: labor productivity (measured as real GDP per worker) and the employment rate (the ratio of workers to the total population). This section examines these components in terms of their gap relative to the US in 2023.[21] Figure 3.15 illustrates the percentage point differences in the per capita GDP gap, decomposed into contributions from the labor productivity gap and the employment rate gap. Most Asian countries exhibit a significant per capita GDP gap with the US, and their inferior labor productivity performance is the primary source of this gap. In the Asian region, CLMV, with its younger population structure (Figure 3.18 in Box 5), and East Asia have higher employment rates than the US, which has a modest but positive effect on reducing the gap.

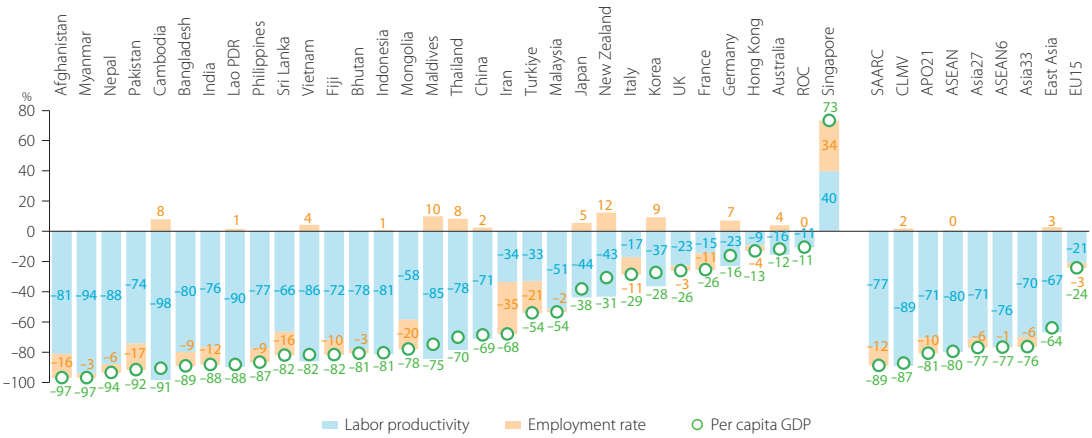

Figure 3.15 Sources of Per Capita GDP Gap, 2023

——Differentials in per capita GDP at constant prices (using the 2021 PPP) relative to the US

Unit: Percentage. Sources: Official national accounts in each country, including adjustments by APO-PDB.

Figure 3.16 presents the two components of per capita GDP growth from 2010 to 2023: labor productivity growth and changes in the employment rate.[22] Around two-thirds of the countries saw an increase in their employment rates during this period. However, in most Asian economies, labor productivity improvements contributed more to per capita GDP growth than employment expansion. This suggests that enhancing labor productivity remains the key to closing the output gap.

21: The gap in a country x's per capita GDP relative to the US is decomposed into the sum of the gaps in labor productivity and employment rate with respect to the US, as in:

$$\underbrace{\ln\left(GDP_x^t / POP_x^t\right) - \ln\left(GDP_{US}^t / POP_{US}^t\right)}_{\text{Gap of per capita GDP}} = \underbrace{\ln\left(GDP_x^t / EMP_x^t\right) - \ln\left(GDP_{US}^t / EMP_{US}^t\right)}_{\text{Gap of labor productivity}} + \underbrace{\ln\left(EMP_x^t / POP_x^t\right) - \ln\left(EMP_{US}^t / POP_{US}^t\right)}_{\text{Gap of employment rate}}$$

where POP_x^t is population of country x in period t and EMP_x^t is the number of employed workers.

22: Country x's per capita GDP is decomposed into the product of its labor productivity and employment rate, as in:

$$\underbrace{\ln\left(GDP_x^t / POP_x^t\right)}_{\text{Per capita GDP}} = \underbrace{\ln\left(GDP_x^t / EMP_x^t\right)}_{\text{Labor productivity}} + \underbrace{\ln\left(EMP_x^t / POP_x^t\right)}_{\text{Employment rate}}$$

where POP_x^t is population of country x in period t and EMP_x^t is the number of employed workers.

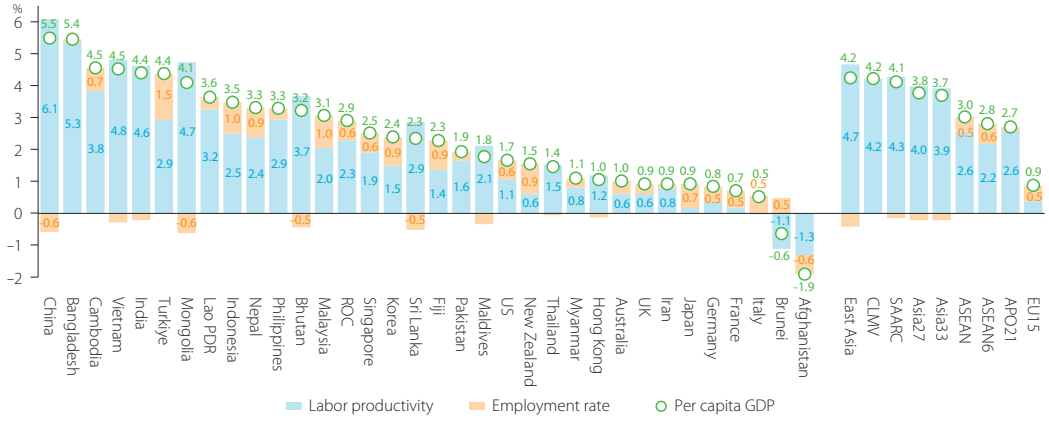

Figure 3.16 Sources of Per Capita GDP Growth, 2010–2023
——Growth in per capita GDP at constant prices (using the 2021 PPP)

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country, including adjustments by APO-PDB.

Box 5 Demographic Dividend in Asian Countries

The population age structure is of interest from both supply and demand perspectives for economic growth. Figure 3.17 shows the shares of the dependent groups in 2023 (aged 0-14 in the left panel and 65-and-over on the right)—ranking the countries by the share of the 65 and over population automatically filters the rich economies towards the top. These economies have a relatively low percentage of the young age group compared to less-developed countries. This suggests that demographic transition tends to run parallel with economic progress, although the direction of causation is uncertain. As countries move from high to low mortality and fertility rates, the demographic transition produces a "boom" generation larger than those immediately before and after. As this boom generation gradually works through a nation's age structure, it produces a "demographic dividend" of economic growth as people reach their prime working years.

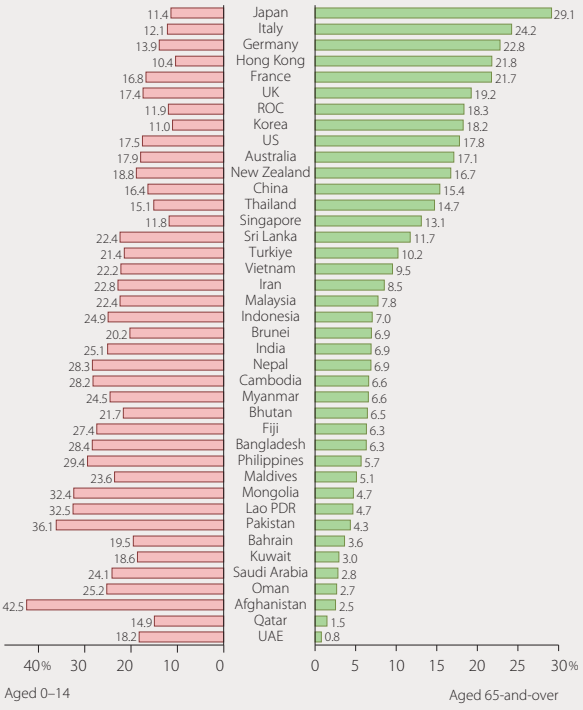

Figure 3.17 Proportion of the Dependent Population, 2023

Unit: Percentage. Sources: Population census and official national accounts in each country. According to the UN projections (United Nations 2024),

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Figure 3.18 and Figure 3.19 track changes in the working population (aged 15-64) relative to the dependent population (aged 0-14 and 65-and-over) by country and country group, respectively. The higher the ratio, the more favorable its demography for economic growth. Japan could have capitalized on the demographic dividend in the 1960s, when its GDP growth exceeded 10% per year for ten consecutive years. Similarly, China, Hong Kong, Korea, Singapore, and Thailand were poised for such a demographic dividend in the 2000s and 2010s. Considering population projections, some ASEAN countries, such as Myanmar and Indonesia, will have to wait for such an opportunity until the 2020s and 2030s, and SAARC countries (except Sri Lanka) until the late 2030s and 2040s.

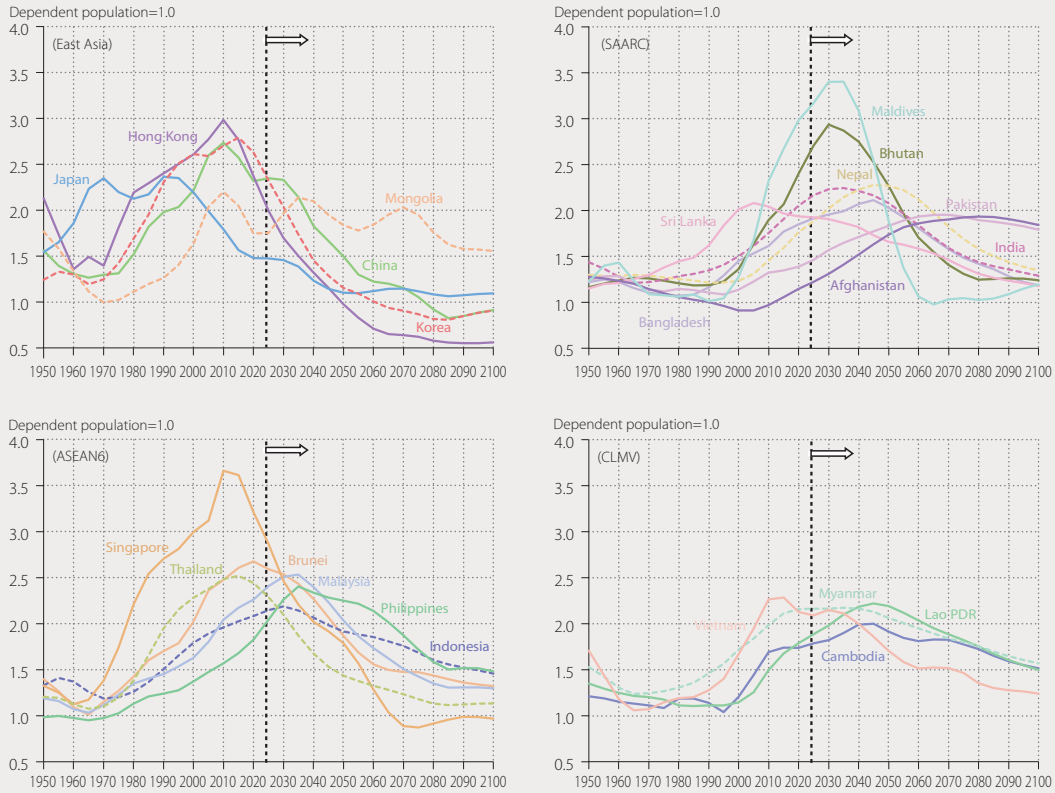

Figure 3.18 Demographic Dividend by Country, 1950–2100

Unit: Index (dependent population (aged 0-14 and 65-and-over)=1.0). Source: United Nations (2024).

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The realization of this dividend is not guaranteed. Favorable demography can produce a wealth creation cycle only if combined with appropriate health, labor, financial, human capital, and growth-enhancing economic policies. These complementary factors cannot be taken for granted but must be cultivated to earn the demographic dividend. As Chapter 5 shows, the contribution of labor to economic growth has been smaller than capital and TFP for most countries (Figure 5.17). This means that aging in countries is not as significant a negative effect if robust growth rates of capital and TFP are maintained. Nevertheless, understanding the demographic shift and its implications is relevant for economic projections, providing valuable foresight for economic policymaking. In our projection of economic growth to 2035 (Box 14, Section 7.2), the changes in demographic structure play an important role in forecasting not only hours worked for the entire economy, but qualitative changes in labor inputs.

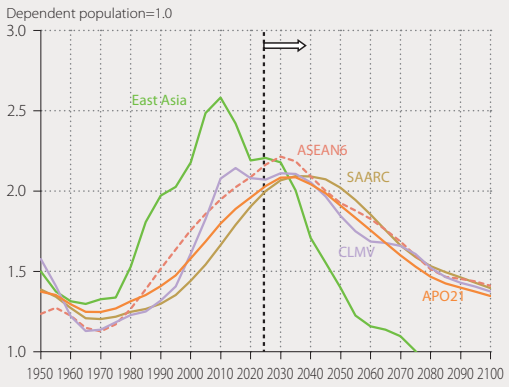


Figure 3.19 Demographic Dividend by Country Group, 1950–2100

Unit: Index (dependent population (aged 0-14 and 65-and-over)=1.0). Source: United Nations (2024).

Changes in female employment have played a crucial role in shaping labor market dynamics. Figure 3.20 illustrates the expansion of the female employment rate from 1970 to 2023. In many countries—such as the Asian Tigers, Pakistan, and Afghanistan—this expansion has been substantial over the past half-century. Despite this progress, considerable growth potential remains across Asian economies. In particular, Muslim-majority countries such as Iran, Pakistan, and Türkiye continue to exhibit significantly lower female employment rates compared to the US, at just 14%, 22%, and 30% in 2023, respectively. These low rates are a key factor underlying their weak overall labor market performance (Figure 3.15) and contribute directly to their low total employment rates, as shown in Figure 3.21.

Figure 3.21 presents cross-country comparisons of employment rates in 1970, 2000, and 2023, based on each country's labor statistics. Employment is defined to include employees, own-account workers, and contributing family workers. The fastest catch-up countries in Group A1 (Table 3.1)—namely China, Korea, and the ROC—have recorded sharp increases in employment rates over the past five decades. Several countries in A2, such as Singapore, also experienced substantial improvements. In contrast, countries that have not succeeded in narrowing the gap generally exhibited only modest growth in employment rates during this period.

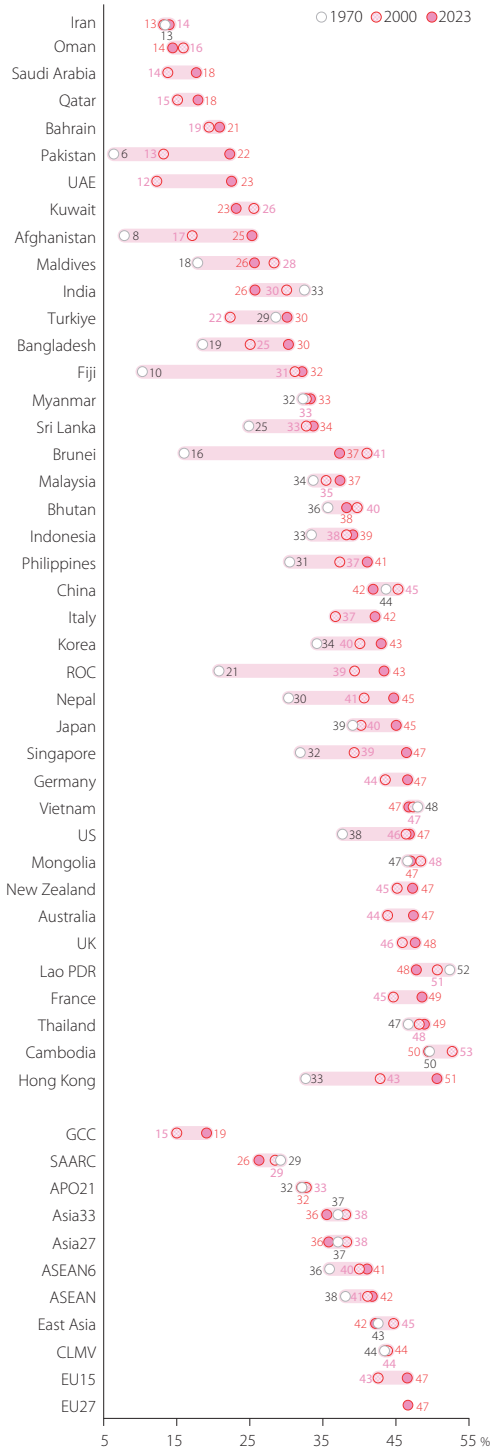


Figure 3.20 Female Employment Share, 1970, 2000, and 2023

——Ratio of female workers to total employment

Unit: Percentage. Sources: Population census and labor force survey in each country (including adjustments by APO-PDB), ILOSTAT database for GCC countries, Australia, EU 15, France, Germany, Italy, New Zealand, and the UK; The EU Labor Force Survey (Eurostat) for the EU 27.

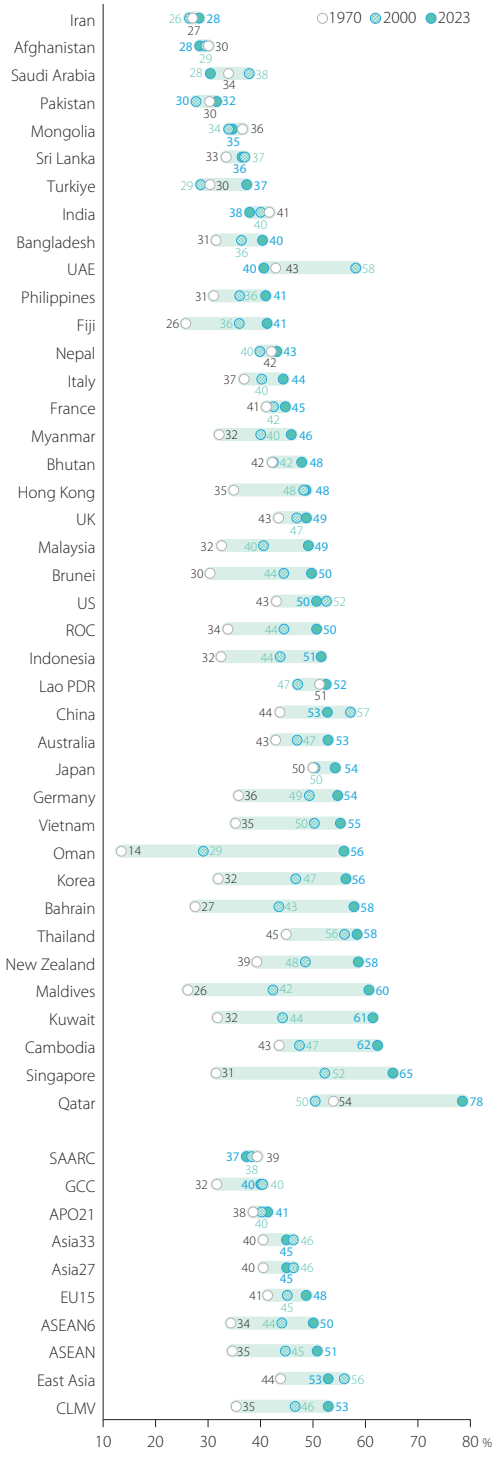


Figure 3.21 Employment Rate, 1970, 2000, and 2023

——Ratio of employment to the total population

Unit: Percentage. Sources: Employment and population data by national statistical offices in each country, including adjustments by APO-PDB.

4 Growth from the Demand Side

Highlights

- In 2023, Asia33 invested 34% of its GDP, well above the 22% of the US and EU15. East Asia reported the highest investment ratio among Asian subregions at 37%, driven by China's 41%. This high rate was not confined to East Asia: several lower-income Asian economies also saw unusually high investment rates. For instance, the Lao PDR reached 46% in 2023 with large-scale infrastructure and hydropower development. Reflecting the investment boom, the household consumption ratio of Asia33 declined to 51% of GDP in 2023 from 56% in 2000.
- Investment in ICT (information and communication technology) and R&D (research and development) capital is becoming increasingly important in several Asian economies. Countries with particularly high shares in 2023 include Singapore (29% for ICT and 9% for R&D), Japan (13% and 14%), Korea (8% and 16%), and Malaysia and Thailand (16% and 5%), compared to 18% and 17% in the US. Despite these examples, the average investment shares in Asia27 remain moderate, at 9% for ICT and 5% for R&D.
- Net export shares in GDP were remarkably high in 2023 for Singapore and the ROC, at 37% and 13%, respectively. In contrast, China and Hong Kong saw their net export shares peak at 8.3% in 2007 and 12% in 2005, but these declined to 2.0% and 0.7%, respectively, by 2023.
- Household consumption has been the main driver of demand-side economic growth, contributing 50% of Asia33's regional growth from 2010 to 2023. Investment accounted for another 38%, reflecting its high share in GDP. Nevertheless, it is household consumption—fueled by income growth—that remains the principal source of expansion. Given the continued rise in incomes, demand for income-elastic goods and services is expected to grow further in the years ahead.

GDP is defined and measured in the SNA using three approaches: production by industry, expenditure on final demand, and income to factor inputs.[23] Demand-side decompositions of GDP are vital in understanding the quality of economic growth. This chapter derives some characteristics of economic growth in Asian countries from an analysis of the expenditure side of GDP.

4.1 Structure of Final Demand across Asia

Figure 4.1 shows comparisons of final demand shares of nominal GDP among country groups, covering 1) household consumption, including consumption of non-profit institutions serving households (NPISHs), 2) government consumption, 3) investment or, in national accounts terminology, gross fixed capital formation (GFCF) plus changes in inventories, and 4) net exports (exports minus imports). Country groups exhibit distinctive features in their final demand composition, reflecting their stage of development and industrial structure.[24]

23: In theory, the three approaches to measuring GDP are accounting identities. They should yield the same result, but in practice, they differ due to factors such as measurement error and estimates of the informal sector. Based on the APO-PDB Metadata Survey 2025 for APO member economies (Section 8.1.1), Japan is an exceptional country that determines GDP from its expenditure-side measurement (the expenditure-side estimate is based on the commodity flow data, in which the data on production/shipment in a detail product classification are used as control totals). In other countries, GDP is estimated from the production side (value-added in industries). Some countries define an additional item, "statistical discrepancy," as the difference in the estimates between production-based GDP and the sum of final expenditures. In the Databook, the statistical discrepancy is mainly attributed to household consumption. Readers should keep in mind this treatment can have some impact on the share of final demand.

In economies undergoing rapid transformation, however, the share of household consumption is more volatile and tends to trend downward. Figure 4.1 gives the GDP shares for 1970, 2000, and 2023 and Table 9.7 provides the numbers. Within Asia, all regions except the Gulf Cooperation Council (GCC) display a decline in household consumption ratios between 1970 and 2023. SAARC maintains the highest share, although it dropped from 78% in 1970 to 62% in 2023. There is also a sharp fall in consumption in CLMV, from 67% in 2000 to 52% in 2023. More recently, in the richer ASEAN6, the share rose from 57% in 2000 to 59% in 2023. In contrast, the US household consumption share has been climbing.[25] Overall, Asian countries invest significantly more than the US and the EU15 as a share of GDP. In 2023, investment accounted for 22% of final demand in the US and the EU15, compared with 34% for Asia33. East Asia has the highest investment ratio (37% in 2023) among the Asian regions in the entire period of our observation. Compared to other components of final demand, the contribution of net exports to the Asian economy has always been more volatile.

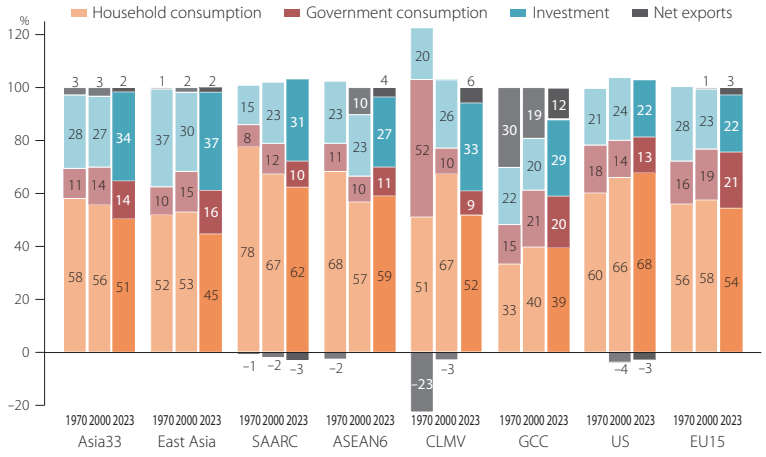


Figure 4.1 Final Demand Shares by Region, 1970, 2000, and 2023
——Shares of final demands to GDP at current market prices

Unit: Percentage. Sources: Official national accounts in each country, including adjustments by APO-PDB. Notes: Final demand shares in the country groups are computed using the PPPs for GDP. Household consumption includes the consumption of NPISHs. Investment consists of GFCF plus changes in inventories.

While regional averages exhibit certain characteristics, there are also significant variations among countries. Figure 4.2 presents the cross-country comparisons of investment shares in domestic final demand for 2000, 2010, and 2023. Countries are listed in descending order of GDP per capita, as shown in the reference chart on the left of Figure 4.2. In the top group, in terms of GDP per capita, investment expansion is remarkable in some GCC countries and Brunei. However, a decline in the investment share since 2000 is evident in Singapore and Hong Kong, partly because of the impact of the COVID-19 pandemic. On the other hand, least developed Asian countries, such as Bangladesh, Cambodia, Lao PDR, Myanmar, and Mongolia, have steadily increased their investment share. Notably, Lao PDR recorded an exceptionally high investment-to-GDP ratio of 46% in 2023, reflecting large-scale infrastructure and energy projects financed by foreign capital. However, investment share remains stagnant, especially in Pakistan, the Philippines, and Fiji, where the current per capita GDP is below USD 16,000.

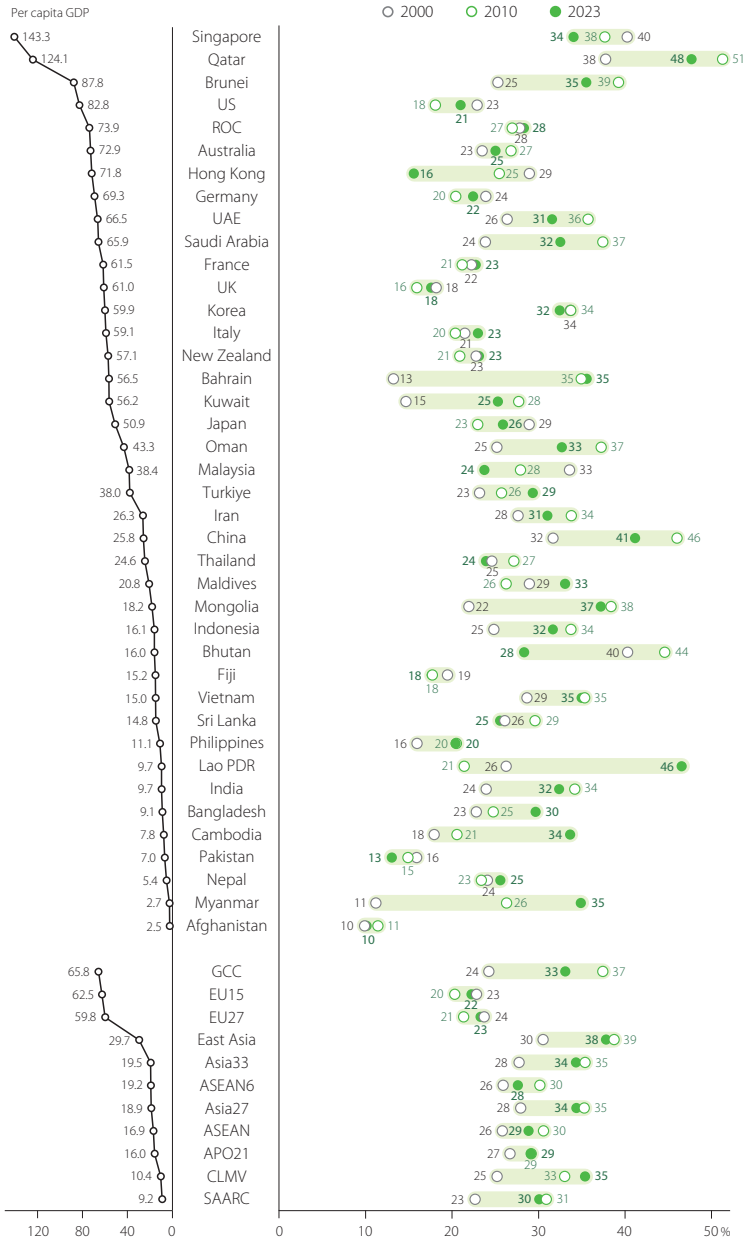
24: Compared to the 2024 edition of Databook (APO 2024), the estimates in this edition reflect the benchmark revisions in Cambodia, Korea, the Maldives, and the ROC (Section 1.1).

25: It is worth noting that the GDP share of government consumption in the EU15 was higher than the average of Asia33 by 7.0 percentage points in 2023 (Table 9.7). Regarding welfare measurement, actual individual consumption, as opposed to household consumption, is preferred because the former considers expenditures by NPISHs and the government on individual consumption goods and services (such as education and health) in addition to household consumption.

Figure 4.2 Investment Share by Country, 2000, 2010, and 2023

——Share of investment in domestic final demand at current market prices

Unit: Percentage. Sources: Official national accounts in each country, including adjustments by APO-PDB. Notes: The investment includes GFCF plus changes in inventories. The domestic final demand is the sum of investment and household and government consumption. The reference chart on the left shows per capita GDP at market prices in 2023, using the 2021 PPP (thousand USD).



While the main driver of economic growth from the demand side is the expansion of household consumption, the impact of investment growth is also evident in Asian countries. Figure 4.3 shows the decomposition of economic growth by final demand from 2010 to 2023.[26] Of the 4.6% average annual growth rate in Asia33 during this period, 2.3 percentage points came from household consumption, followed closely by 1.8 percentage points from investment. Although investment maintains a relatively high share in GDP, household consumption—closely tied to income growth—plays a more fundamental role in sustaining domestic demand. Given rising incomes, demand for income-elastic goods and services is likely to continue expanding in many Asian economies.

The contribution of government consumption to growth is small in most countries in Asia; there are some countries with higher shares – Kuwait, Myanmar, and Fiji. The contribution of exports is significant for most countries, as noted in Chapter 2. Box 6 discusses the development of trade agreements in Asia.

26: The Translog quantity index is adopted for calculating the growth in real GDP. Using this index, we can decompose the growth in real GDP into the contributions by the four components of final demands:

$$\underbrace{\ln\left(GDP^{t} / GDP^{t-1}\right)}_{\text{Real GDP growth}} = \underbrace{\sum_i (1/2)\left(s_i^{t} + s_i^{t-1}\right) \ln\left(Q_i^{t} / Q_i^{t-1}\right)}_{\text{Contribution of final demand } i}$$

where Q_i^t is quantity of final demand i in period t and s_i^t is expenditure share of final demand i in period t. Thus, the real GDP growth may diverge from the official estimates or those presented in Table 9.3.

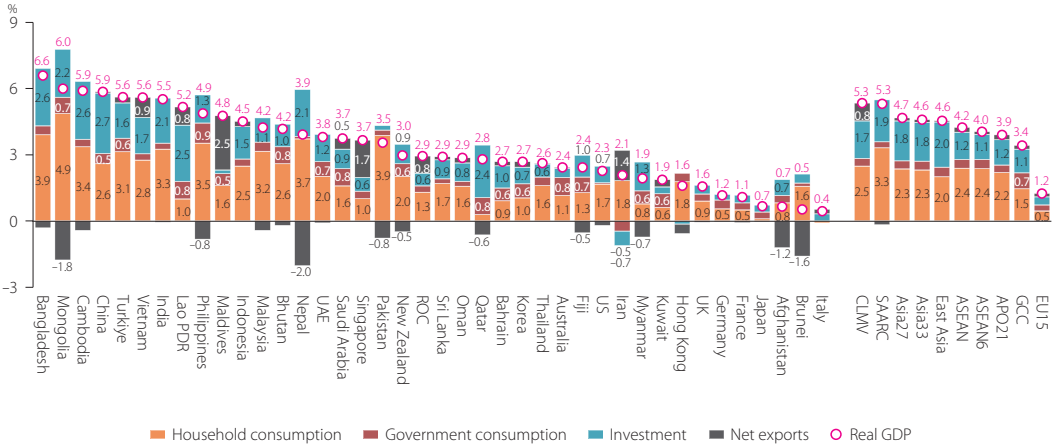


Figure 4.3 Final Demand Contributions to Economic Growth, 2010–2023
——Growth in GDP at constant prices and final demand contributions

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country, including adjustments by APO-PDB.

Box 6 Forging Economic Frameworks: CPTPP, IPEF, and RCEP

East Asia, including Northeast Asia and Southeast Asia, is the region where the development of international production networks (IPNs) in the machinery industry has been the most advanced globally. East Asia has continued to form mega-free trade agreements (FTAs) despite rising geopolitical tensions and the sudden onset of the COVID-19 pandemic.

The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) was signed by 11 countries (Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam) in March 2018 and went into effect with six signatories in December 2018. The last ratifying country, Brunei, joined in July 2023, at which point the agreement took effect for all initial negotiating members. In the same month, the UK formally signed the accession agreement to the CPTPP, marking the geographical extension of the CPTPP from regional to global. CPTPP is a high-quality FTA with high-level liberalization commitments and advanced international rulemaking. Therefore, this may work as a coalition of middle powers supporting a rules-based trading regime.[27]

The Regional Comprehensive Economic Partnership (RCEP) agreement is built on the core of ASEAN economic integration. ASEAN, along with six other countries, negotiated the agreement. However, at the last moment, India withdrew, and thus, 15 countries (10 ASEAN Member States, Australia, China, Japan, Korea, and New Zealand) signed in November 2020.[28] ASEAN took the initiative in designing and implementing

27: Whether a country can join the CPTPP is regarded as a test of its ability to commit to and implement necessary policy reforms. As of June 2025, China (September 2021), the ROC (September 2021), Ecuador (December 2021), Costa Rica (August 2022), Uruguay (December 2022), Ukraine (May 2023), and Indonesia (September 2024) have submitted formal requests for accession. In the accession process to CPTPP, "aspirant economies must: (a) demonstrate the means by which they will comply with all of the existing rules contained in the CPTPP, and (b) undertake to deliver the highest standard of market access offers on goods, services, investment, financial services, government procurement, state-owned enterprises and temporary entry for business persons," (Annex to CPTPP/COM/2019/D002, Jan. 19, 2019). Additionally, approvals from all existing members are needed for the decision on whether to commence the accession process by the TPP Commission and whether to support the TPP Commission's approval.

28: The agreement entered into force in Indonesia on January 2, 2023, and in the Philippines on June 2, 2023. As of June 2025, Myanmar's entry into force remains unclear due to questions over the acceptance of its ratification, rather than it being the sole remaining country. Potential candidates for accession include Hong Kong, Bangladesh, and Sri Lanka.

the agreement. Although the level of liberalization and the rule-making aspects of RCEP fall short of those of the CPTPP, it covers the entire East Asian international production network. It includes the commitment to annual ministerial meetings, a joint committee, four committees, and a secretariat, which enhances communication among member countries to reduce policy risks and support a rules-based trading regime.

A recent salient move is the negotiation over the Indo-Pacific Economic Framework (IPEF) initiated by the US. The US's starting point is akin to its strategy against China, which involves promoting "friend-shoring." However, it is challenging for the US to force ASEAN Member States and others to choose sides and isolate China. Thus, the focus of the negotiation shifts to what can be done in the agreement and how it can contribute to the region. Trade liberalization, or market access, typically at the core of an FTA to attract the interests of participating countries, is not included in the negotiation due to US domestic politics. Thus, IPEF cannot be called an FTA in the GATT/WTO definition. In September 2022, negotiations over the IPEF formally began with 14 countries, including the US, Japan, Australia, New Zealand, Korea, India, Fiji, and seven ASEAN countries (Brunei, Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam).[29] The three ASEAN countries not participating in the IPEF (Myanmar, Lao PDR, and Cambodia) were the ones that greatly increased their dependence on exports to China in the 2010s.

IPEF and RCEP are sometimes regarded as international forums led by the US and China, respectively, and could deepen the US-China confrontation. However, this is unlikely to develop because they have largely overlapped members. The exceptions are that IPEF has the US, India, and Fiji, while RCEP has China, Cambodia, Lao PDR, and Myanmar. This fact may enable the two initiatives to complement rather than deepen the confrontation. Figure 4.4 depicts labor productivity distributions across countries in IPEF and RCEP in which the presence of the US and China mostly explains the differences between the two regions. The overlapping countries are casting votes to make the two initiatives reduce policy risks and maintain a rules-based trading regime.

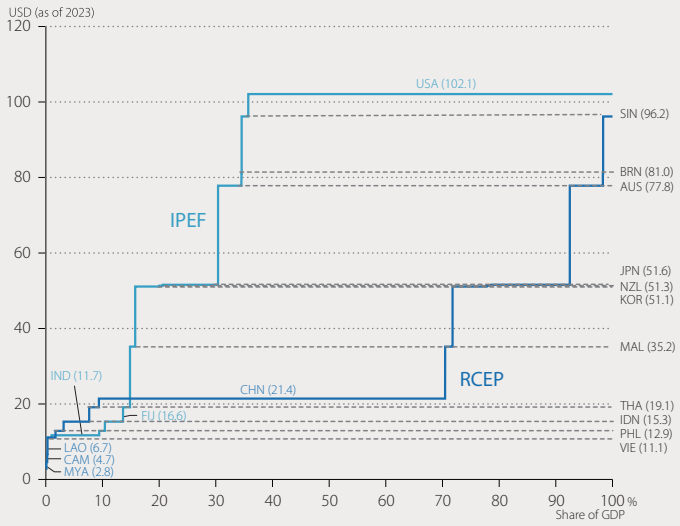


Figure 4.4 Productivity Distributions: IPEF and RCEP Countries, 2023
——GDP per hour (using 2021 PPP), reference year 2023, and GDP share (using exchange rate)

Unit: USD per hour and percentage (share of market-price GDP at current prices). Sources: Official national accounts and APO Productivity Database 2025. Notes: Numbers in parentheses are the per-hour labor productivity level in 2023. Overlapped countries are blacklined.

The return of the Trump administration in January 2025 has already begun to reshape the dynamics of regional trade frameworks. The IPEF, which was a key initiative under the previous Biden administration, faces an uncertain future. The Trump administration's renewed skepticism toward multilateralism and rule-based

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29: Four pillars are posed for the negotiations: (i) fair and resilient trade, (ii) supply chain resilience, (iii) infrastructure, clean energy, and decarbonization, and (iv) tax and anti-corruption. The 14th and most recent entry into the IPEF was Fiji in May 2023, as the first Pacific Island nation to join.

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economic cooperation has cast doubt on the continuation of IPEF negotiations. Meanwhile, CPTPP, from which the US previously withdrew, is unlikely to see any re-engagement under the current administration. In contrast, the RCEP framework remains largely unaffected, and the institutional role of ASEAN may gain greater prominence. As a result, the overlapping members of CPTPP and RCEP may find themselves playing a more critical role in maintaining economic stability and a rule-based trading architecture in the Indo-Pacific region.

4.2 Changing Shape of Domestic Demand

This section describes the characteristics of the factors that influence final demand and their composition in Asia. The difference in demographic structure partly explains the differences in the consumption rate. Figure 4.5 shows that countries with a high proportion of the dependent population (aged 0-14 and 65 or over) tend to have a high household consumption share in their domestic final demand. This is reflected by a higher propensity to consume by individuals in the dependent population and the savings-consumption choices of their households. Asian countries with consumption shares exceeding 65% in 2015 were typically low-income economies with a dependency ratio of 35% or more, such as Afghanistan, Bangladesh, Cambodia, Nepal, Pakistan, and the Philippines. The figure also illustrates the change from 2015 to 2023. Among these six countries, Bangladesh, Cambodia, and the Philippines have seen a decline in their dependency ratios in recent years, which appears to have contributed to a corresponding decrease in their consumption shares. However, in high-income countries such as Singapore, the ROC, Korea, and Japan, the rising dependency ratio—driven primarily by population aging—has not led to an increase in the consumption share; instead, it has contributed to a decline.

Figure 4.5 Dependent Population Ratio and Consumption Share, 2015 and 2023
——Dependent population ratio to total population and consumption share in domestic final demand

Unit: Percentage. Sources: Population data by the national statistical office in each country, World Bank (2024b), official national accounts in each country, and AQALI 2025. Note: The dependent population is people aged 0-14 and over 65.

The decomposition of household consumption reveals a tremendous diversity of consumption patterns among individual countries, partly reflecting their income levels and partially their distinctive social characteristics. Figure 4.6 gives the commodity-group composition of consumption and illustrates the cross-country version of Engel's Law, which states that basic necessities will account for a high proportion of household consumption for lower incomes, and that this proportion falls with rising incomes. More specifically, countries where food and non-alcoholic beverages account for a large proportion of consumption typically have low income, as shown in the reference chart at the left of Figure 4.6. At the other end of the spectrum are rich Asian countries, namely, the Asian Tigers and Japan, with low food but high housing costs. Besides food and non-alcoholic beverages, housing, utilities, and transportation are the other major spending categories. In rich economies, these two categories account for larger shares of household consumption than food and non-alcoholic beverages.

Idiosyncratic spending, such as education in Bangladesh, Cambodia, Korea, Mongolia, the Philippines, Singapore, and Vietnam (accounting for 4–6% of household consumption) and health in the US (accounting for 22%), is not reflected in other countries. In lower-income economies such as Bangladesh and Cambodia, the high share of household spending on education likely reflects both limited public provision and a rising demand for private educational services as incomes gradually increase.

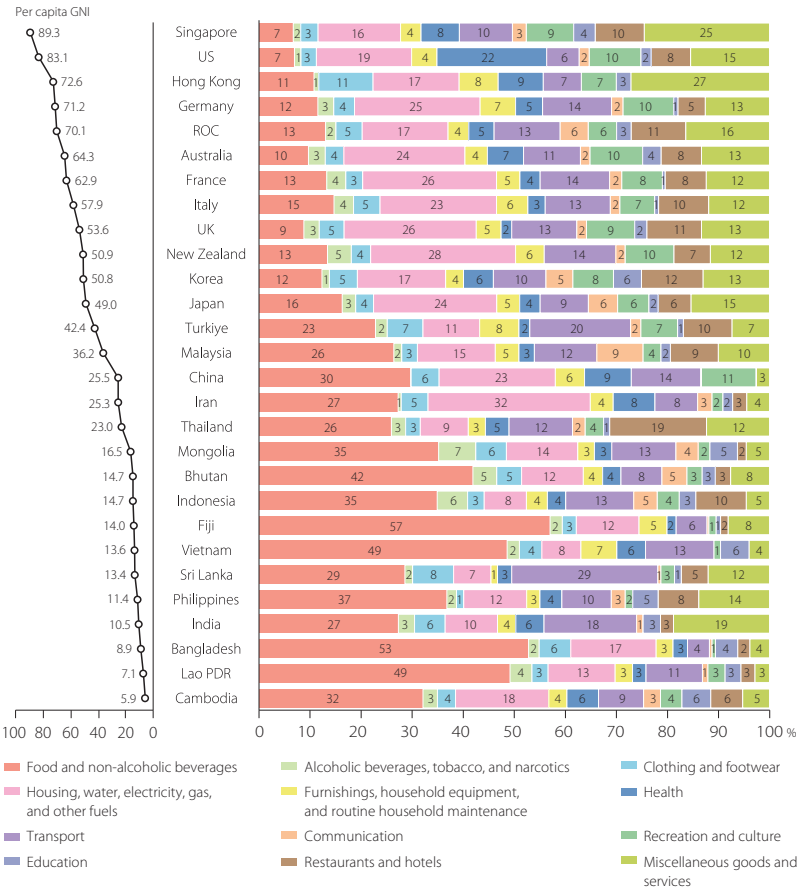

Figure 4.6 Household Consumption by Purpose, 2023

—Share of household consumption at current market prices by purpose

Unit: Percentage. Sources: Official national accounts in each country. Notes: For data on Hong Kong, transportation includes communication; recreation and culture include hotels; miscellaneous goods and services include restaurants. For data on China, food and non-alcoholic beverages include alcoholic beverages, tobacco, and narcotics; transportation includes communication; recreation and culture include education. For data in Vietnam, transportation includes communication. The observation periods for Fiji, France, Germany, Lao PDR, and Vietnam are 2009, 2022, 2022, 2005, and 2016, respectively. The reference chart at the left shows per capita GNI in 2023, using the 2021 PPP for household consumption, the reference year 2023 (thousand USD).

The role of foreign direct investment (FDI) in domestic investment differs considerably among Asian countries. Figure 4.7 shows the FDI inflows as a percentage of GFCF in 2015 and 2023, plus 2019, the year of slowdown in China due in part to US-China trade tensions, and the year just before COVID-19 impacted the world economy. Especially in developing countries, FDI contributes to local human resource development and technology transfer. In 2023, the FDI inflows were over 10% of GFCF in 12 countries of Asia33. They were outstanding in the two global cities, Hong Kong (176% of GFCF) and Singapore (141%),[30] as well as in Bahrain (54%), Mongolia (44%), the Maldives (32%),[31] Cambodia (28%), UAE (28%), and Lao PDR (23%). On the other hand, Japan (2.0%), Bhutan (1.7%), Iran (1.1%), Nepal (0.7%), and Qatar (–0.6%) saw very low FDI inflows in 2023.

Foreign direct investment is generally less prone to rapid outflows than portfolio capital during crisis periods. However, recent experience shows that FDI can also decline abruptly. For example, Sri Lanka defaulted on its external debt in April–May 2022, and its net FDI inflow fell to just around 1.2% of GDP in 2022—well below that of its regional peers—indicating that FDI recovery was limited in the aftermath of the crisis.[32]

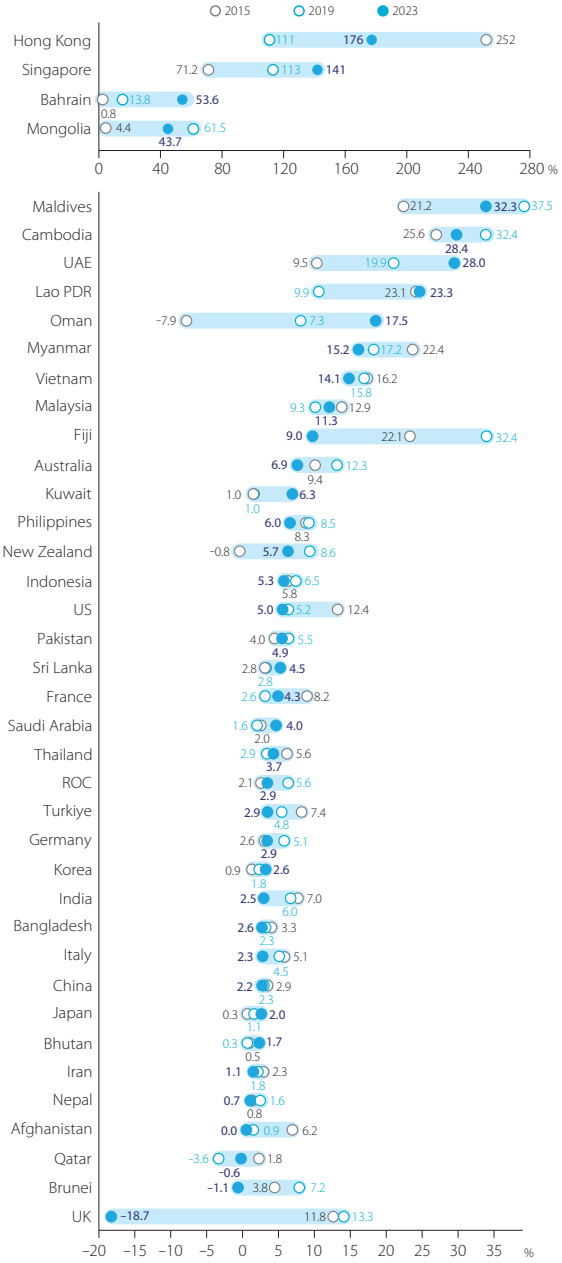

Figure 4.7 FDI Inflows, 2015, 2019, and 2023

——FDI inflows as a percentage of GFCF at current prices

Unit: Percentage. Sources: United Nations Conference on Trade and Development (UNCTAD), *World Investment Report 2024*, and APO Productivity Database 2025.

30: Since FDI includes equity acquisitions, this ratio can exceed 100%. Some of this may pass through Hong Kong and ultimately become real investments in other regions.

31: Since joining China's Belt and Road Initiative in 2014, the Maldives has received substantial Chinese infrastructure investment, including the USD 200 million China–Maldives Friendship Bridge (Basarkar 2024). In parallel, India extended support through a USD 500 million loan in 2021 and a USD 100 million line of credit in 2022 for road, bridge, housing, and cybersecurity projects. Alongside these public infrastructure developments, resort construction also expanded significantly. As a result, nominal GFCF B&C increased fourfold between 2014 and 2018. Meanwhile, the external debt-to-GDP ratio surged from 24% in 2015 to nearly 100% by 2020, reflecting the country's growing reliance on foreign financing. In May 2025, India extended financial support by rolling over a USD 50 million treasury bill (Reuters 2025a), while China had already signed a financial cooperation agreement in September 2024 (Reuters 2024)—including local-currency trade mechanisms and credit facilities—highlighting how the Maldives remains at the center of strategic economic competition between the two powers.

32: Looking ahead, Sri Lanka is now seeking to revive investor confidence. As reported by Reuters (2025b), the government is preparing for renewed talks with the IMF aimed at attracting foreign direct investment, including measures to improve the business environment and stabilize macroeconomic conditions. These efforts reflect a broader recognition that sustainable recovery depends not only on debt restructuring but also on restoring long-term capital inflows.

It is a crucial policy target for low-income countries to create a business-enabling environment, just as it is important for middle-income countries to enhance various business environments. Based on the Economist Intelligence Unit's (EIU) ranking (covering 82 countries worldwide), Singapore and Hong Kong are among the top 10% of the covered countries. Figure 4.8 plots the business environment score and the FDI inflow ratio (averaged over 2015–2023) for the countries represented in Figure 4.7, excluding those with an FDI inflow ratio exceeding 20%. In Iran, Pakistan, Bangladesh, and Sri Lanka, improving the business environment is necessary for attracting FDI. Although Japan is one of the countries with the lowest FDI ratios, as shown in Figure 4.7, this cannot be fully explained by a poor business environment alone. Rather, it suggests the presence of deeper structural barriers, such as regulatory complexity and rigid institutional practices. This view is supported by assessments from international organizations, including the OECD, IMF, and JETRO, which have consistently pointed to administrative burdens, non-transparent procedures, and cultural barriers as key factors limiting inward FDI.

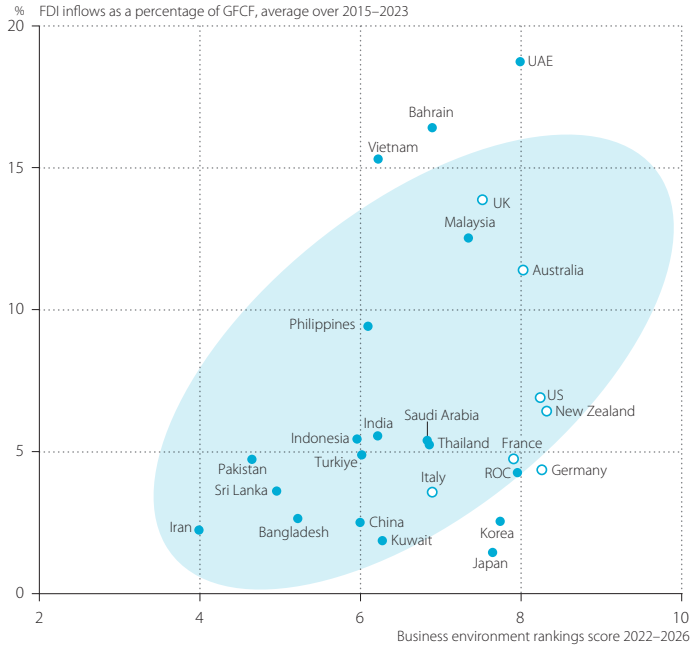

Figure 4.8 Business Environment and FDI Inflow Ratio, 2015–2023
——FDI inflows as a percentage of GFCF at current prices and business environment score

Unit: Percentage for the vertical axis and score for the horizontal axis. Sources: United Nations Conference on Trade and Development (UNCTAD), *World Investment Report 2024*, The Economist, The Economist Intelligence Unit 2021, 2022, and 2023, and APO Productivity Database 2025. Note: The evaluation period is 2022–2026 for Australia, China, Germany, Indonesia, Iran, Japan, Korea, Kuwait, Turkiye, Saudi Arabia, Singapore, Sri Lanka, and the UK.

Investment consists of distinct items ranging from structures to ICT equipment to R&D. Figure 4.9 shows the nominal GFCF share of five types of assets for the Asia27 economies and regions in 2023.[33] Countries are listed in ascending order of the GFCF share in GDP, as shown in the reference chart at the bottom of the figure. For most Asian countries, particularly those with GFCF greater than 30% of GDP, investment is still construction-based (i.e., dwellings, non-residential buildings, and other structures). However, the expansion of ICT capital and R&D is becoming more significant in some countries like Singapore with a share (38% of the GFCF) that surpasses that of the richest countries (in current prices). The next highest shares are the US (36%), Japan (27%), Korea (24%), ROC (23%), Hong Kong (22%), Thailand (21%), and Malaysia (21%).[34]

33: The investment data by type of asset includes our estimates for countries where data is unavailable in their official national accounts (Section 8.2). Although our GFCF estimates are constructed based on 11 classifications of produced assets (Table 8.4), they are aggregated into five groups of assets for this figure. ICT capital is defined as ICT hardware, communications equipment, and computer software.

34: Box 11 discusses the ICT (hardware and software) and R&D capital stocks and their implications. See Section 8.1.4 for the revision history of the estimates on ICT software investment in APO-PDB.

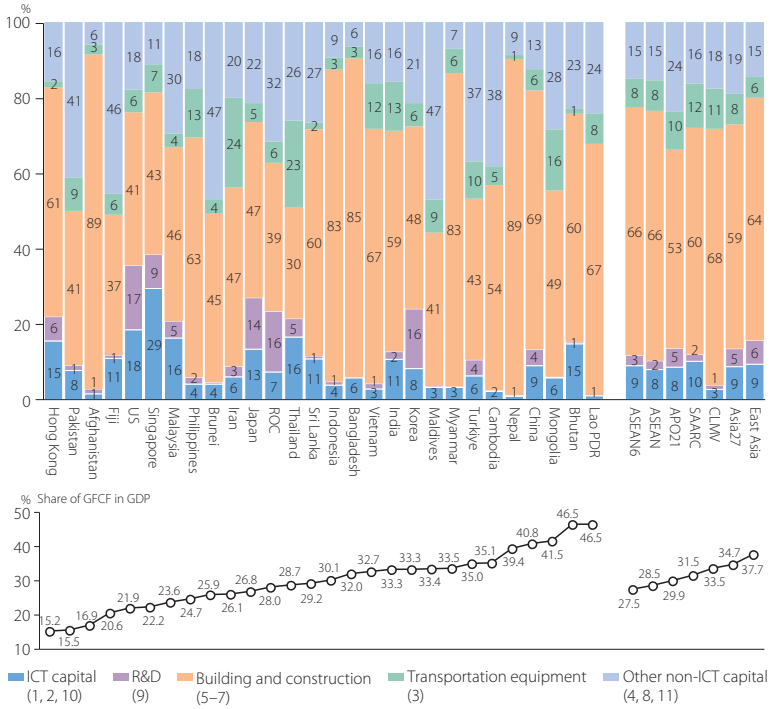

Figure 4.9 Investment Share by Type of Produced Asset, 2023

——Share of GFCF at current prices by type of produced assets

Unit: Percentage. Sources: Official national accounts in each country (including adjustments by APO-PDB) and APO Productivity Database 2025. Notes: Numbers in parentheses of the assets correspond to the code of produced assets, defined in Table 8.4. ICT capital is defined as ICT hardware, communications equipment, and computer software. See Sections 8.1.4 and 8.1.5 for data on software and R&D investment, respectively.

Box 7 Task-wise International Division of Labor in Asia

In the past, the international division of labor was typically industry-wise, that is, production activities of one industry were mostly completed within a country's territory, and final products were traded. Each country tended to specialize in specific industries, depending on its technological level and factor endowment. A developing country typically imported manufactured goods and exported primary products. At the next level of development, it imported machinery and exported garments. The trade pattern in broad commodity classes was mostly one-way; an industry's products were traded from one country to another, but not in both directions.

In the late 1980s, the international division of labor shifted from an industry-wise model to a task-wise one. The representative industry for this type of division of labor is the machinery industry. A machine typically consists of many parts and components, and its production involves many tasks. Task-wise international division of labor was initiated in the operation of export processing zones and was gradually extended to more sophisticated "production networks." This has given rise to the concept of global value chains (GVCs).

Figure 4.10 presents the relationship between export shares and import shares of machinery and transport equipment, averaged over three subperiods: 1990–1999, 2000–2009, and 2010–2023. A striking contrast is observed here between countries that participate in the task-wise international division of labor and those that do not. Japan and Korea are located way above the 45-degree line, which means their machinery export shares are much larger than their import shares. However, note that import shares are not low, ranging from 20% to 35%. Malaysia, Thailand, and China are close to the 45-degree line, around 40% to 60%. These countries are actively exporting and importing these products at the same time. Hong Kong also shows high export/import shares, though some of their trade may be entrepôt, adding only logistics services.

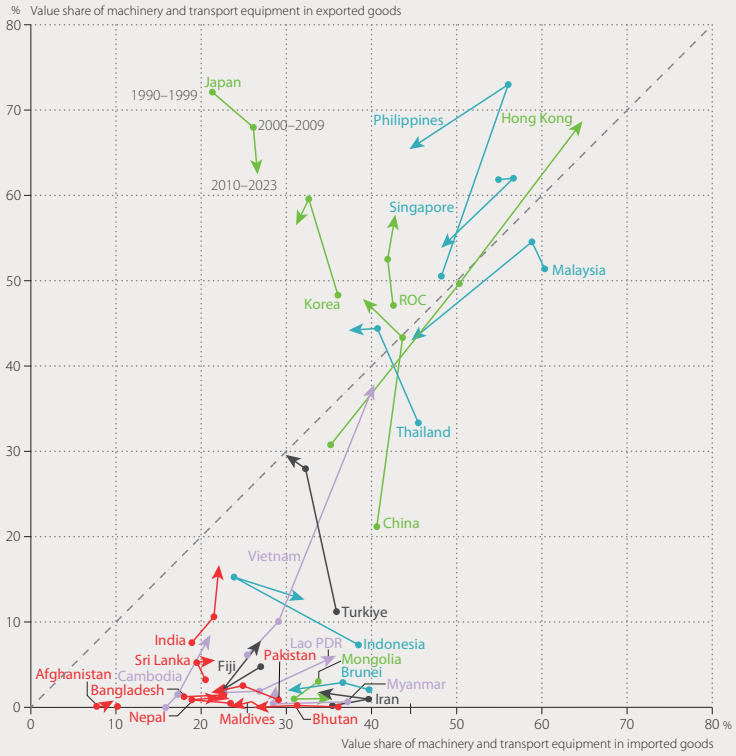

Figure 4.10 Export and Import Shares of Machinery, 1990–2023

——Average value share at current prices over three subperiods: 1990–1999, 2000–2009, and 2010–2023

Unit: Percentage. Source: APO Productivity Database 2025. Notes: The three points of the arrowed lines indicate the average shares over three subperiods: 1990–1999, 2000–2009, and 2010–2023, as described in Japan's estimates. The arrows are colored by region: East Asia (green), SAARC (red), ASEAN6 (blue), CLMV (purple), and Other Asia (black).

This two-way trade in machinery is a type of intra-industry trade (IIT), but it differs from the IIT typically observed in trade between developed countries. The latter is based on horizontal product differentiation, such as the trade of different brands of similar cars. What we observe in Asia is the task-wise international division of labor, with which a large portion of trade is occupied by the back-and-forth trade of parts and components at different levels of processing. This type of trade is observed primarily in limited developing countries, including most countries in Northeast and Southeast Asia, some Eastern European countries, Mexico, and Costa Rica. Particularly in Asia, many countries are involved, and production networks have developed, giving rise to the phrase "Factory Asia" (ADB, 2014).

For these Asian countries, the shares of exports and imports seemed to decline slightly in the 2010s. Even in the 2010s, parts and components trade continued to grow steadily in these countries, but trade in final products expanded even faster (Obashi and Kimura 2018). This means that, as these countries got richer and added to their appeal as a market, the proportion of "network trade" out of total trade declined. Other developing countries worldwide are still in the industry-wise division of labor in their trade patterns. SAARC countries are positioned well below the 45-degree line in Figure 4.10, with import shares ranging from 10% to 30%. Although India showed some upward movement in the 2010s, these countries do not participate in international production networks in machinery. Indonesia and Vietnam are also struggling to enter such networks.

The relationship between the trade balance (or current account balance) and GDP is complex and not well understood, but it is influenced by both micro and macroeconomic policies and shocks. That is, trade balances are influenced by both trade and industry policies, as well as macroeconomic policies such as government deficits. The trade balance of some Asian countries has undergone significant changes during this period, accompanied by substantial shifts in their role within the international division of labor (Box 7).

Figure 4.11 plots the long-term trend of net exports in some selected countries as a share of GDP from 1970 to 2023. In the 1970s, net exports were a significant drag on Singapore and Korea, but both countries have rapidly improved their positions. In 2023, net export shares reached 37.4% for Singapore and 13.1% for the ROC. In contrast, China's and Hong Kong's net export shares peaked at 8.3% in 2007 and 12.2% in 2005, respectively, but declined to 2.0% and 0.7% in 2023—much lower than Germany's levels, which are shown in the right panel. Germany has maintained a net export share of 4–7% since the mid-2000s, which is exceptional for a large economy. Japan's trade balance turned negative in 2011 (–0.6%) and deteriorated further to –2.6% in 2014, largely due to the shutdown of nuclear power plants following the Great East Japan Earthquake in March 2011.

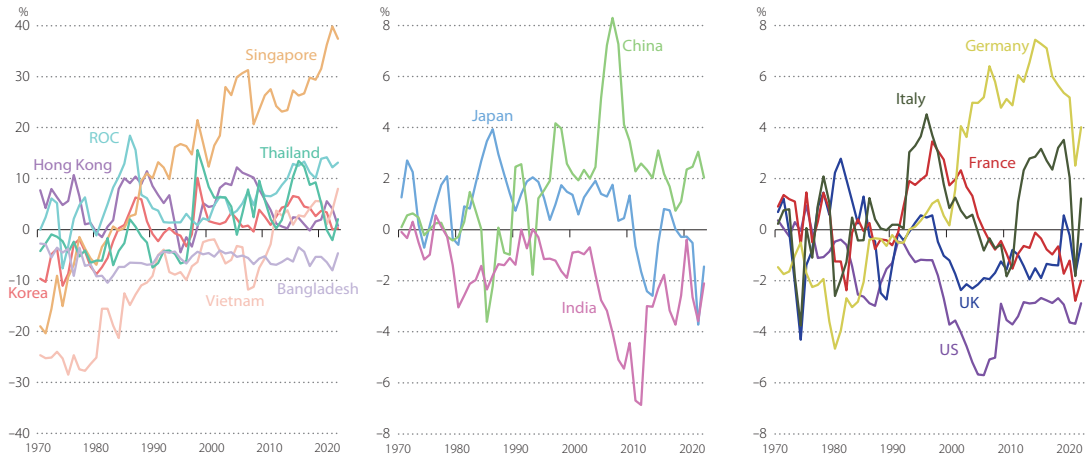

Figure 4.11 Net Export Shares in GDP, 1970–2023
——Shares of net exports to GDP at current market prices

Unit: Percentage. Sources: Official national accounts in each country, including adjustments by APO-PDB.

Figure 4.12 presents the gross export and import shares in GDP in 2023 to show the composition of net exports. In 2023, the export share for Singapore was 182% and 177% for Hong Kong, reflecting their entrepôt function for the region. This explains why the total values of exports and imports are exceptionally high relative to the GDP size in these economies.[35] A trade surplus was recorded in 18 countries of Asia33 in 2023. However, Nepal and Bhutan, whose currencies are tied to the Indian rupee, suffered serious trade deficits of 29% and 25% in 2023, respectively. The impact of the COVID-19 pandemic on tourism was particularly severe in Fiji, with net exports deteriorating to –21% of GDP in 2021. However, they recovered to –12% by 2023 (See Box 1 for the continued recovery in 2024).[36]

35: The 2008 SNA requires that the trade values be recorded to reflect a change in ownership of goods rather than accounting for goods moved for processing without incurring actual transactions. Singapore and Hong Kong have already introduced the 2008 SNA. However, the revisions from the 1993 SNA on the export and import data could have been minor.

36: The tourism-dependent economy of Fiji was hit by the border closure against COVID-19 and the tropical storms that hit the Pacific Island nation, with debt rising sharply from 2019 onwards (Reuters 2023b). The country's GDP growth rate fell to –18.7% in 2019–2020 and –5.0 % in 2020–2021. However, there was a significant rebound in the following years, with a growth rate of 18.1% in 2021–2022 and 7.3% in 2022–2023, indicating an almost complete recovery from the pandemic.

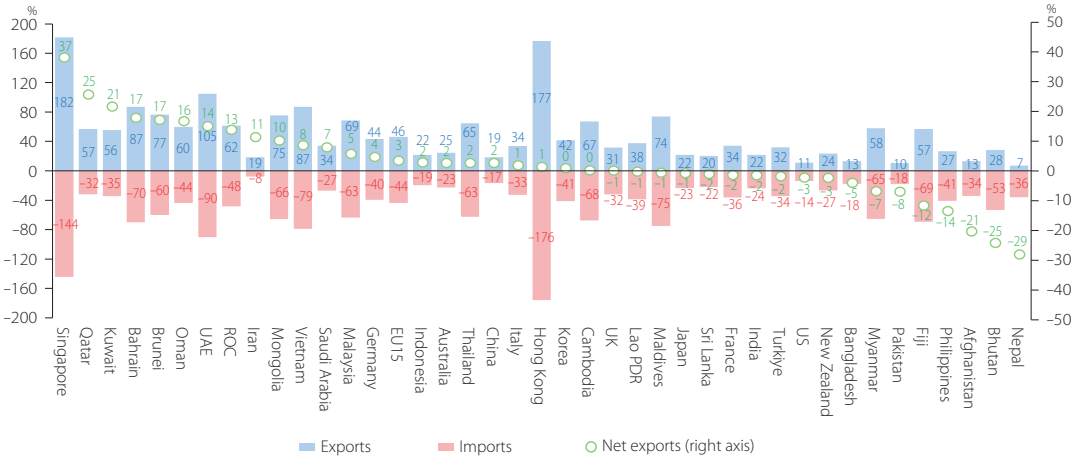

Figure 4.12 Export and Import Share in GDP, 2023
——Share of exports and imports to GDP at current market prices

Unit: Percentage. Sources: Official national accounts in each country, including adjustments by APO-PDB.

Box 8 China's "New Three" Exports: Strength and Uncertainty

The expansion of China's "New Three" exports—solar cells, lithium-ion batteries, and electric vehicles (EVs)—is attracting great attention. Since the COVID-19 pandemic, the export shares of the former "Old Three" goods—home appliances, furniture, and garments—have declined. In contrast, exports of the New Three have grown significantly. By the end of 2023, their combined export value had reached nearly half that of the Old Three. Figure 4.13 shows China's nominal exports of solar cells from January 2017 to March 2025. The total export value of solar cells peaked in early 2023 but has since declined due to falling prices, halving over the two-year period. India raised its customs duties in April 2022, yet Asia remains a major destination for China's solar cell exports. EU27 accounts for 30% of these exports in Q1 2025. However, shipments to the Netherlands—once a rapidly growing destination from 2021 to 2023—have recently declined.[37]

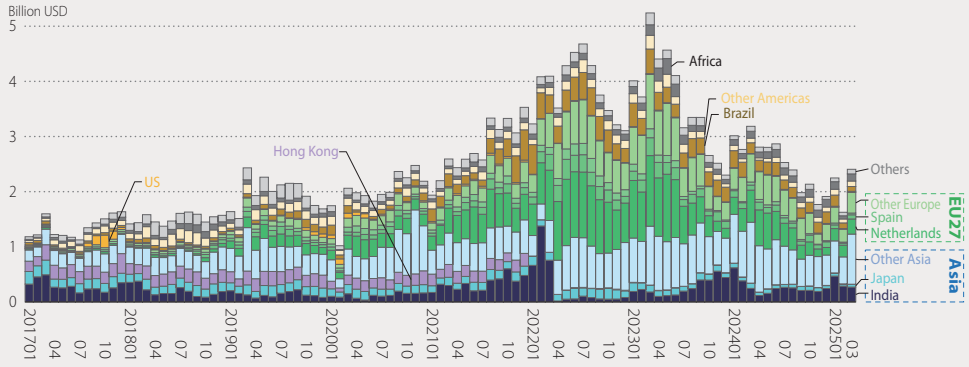

Figure 4.13 China's Solar Cells Export, January 2017–March 2025

Unit: Billions USD. Sources: The United Nations Comtrade Database (accessed May 25, 2025) and official trade statistics in China (accessed May 25, 2025). Note: The corresponding HS codes are 854140, 854142, and 854143 for solar cells.

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Figure 4.14 reveals that China's lithium-ion battery exports—primarily destined for the U.S., Korea, Germany, and Vietnam—reached their peak in early 2023 and, despite a slight dip, have remained broadly steady through March 2025.[38] Meanwhile, Figure 4.15 shows that EV exports peaked in late 2023 and then experienced a gradual decline in nominal terms. Since August 2024, the U.S. has imposed a 100% tariff on Chinese EV imports, with a 25% duty applied to lithium-ion EV batteries, solar cells, and other clean-tech goods under its Section 301 rule. The European Commission added extra duties of 17.4% to 38.1% on Chinese EVs starting July 2024, layered on top of the standard 10% automobile tariff. Under the second Trump administration in 2025, additional tariffs were imposed, and the One Big Beautiful Bill, which passed the House of Representatives on May 22, 2025, points to significant cuts to EV subsidies. Unlike the Old Three, which are driven by consumer demand, the New Three rely heavily on decarbonization policies in the EU, the US, Japan, and other regions. Amid global reductions in EV and clean-energy subsidies, China faces deep uncertainty in sustaining and expanding its New Three exports.

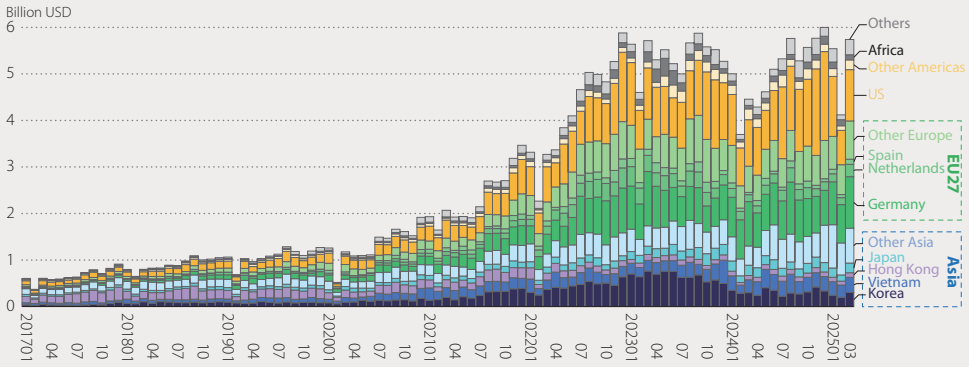

Figure 4.14 China's Lithium-ion Batteries Export, January 2017–March 2025

Unit: Billion USD. Sources: The United Nations Comtrade Database (accessed May 25, 2025) and official trade statistics in China (accessed May 25, 2025). Note: The corresponding HS code is 850760 for lithium-ion batteries.

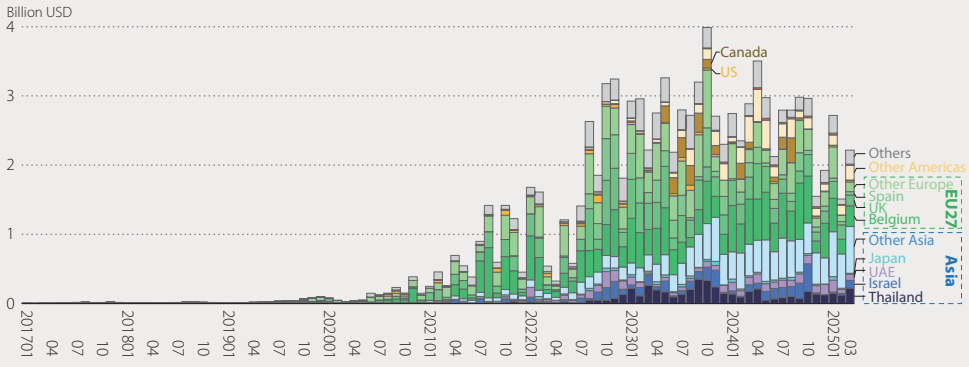

Figure 4.15 China's EV Export, January 2017–March 2025

Unit: Billion USD. Sources: The United Nations Comtrade Database (accessed May 25, 2025) and official trade statistics in China (accessed May 25, 2025). Note: The corresponding HS code is 870380 for EVs.

37: In 2021–2023, China exported a substantial value of solar cells to the Netherlands (Figure 4.13). In recent years, the Netherlands has enshrined its climate targets, including its renewable energy goals, into law. By 2022, the Netherlands generated 14% of its electricity from solar farms, a significant increase from just 1% in 2015 (Reuters 2023a). Some of these imported solar cells were subsequently re-exported from the Netherlands to Germany, France, Poland, and other EU countries.

38: Exports tend to decline in February due to the Spring Festival (typically late January to mid-February) in China, during which many factories shut down for one to two weeks. This seasonality is particularly pronounced for lithium-ion batteries (Figure 4.14).

5 Productivity Growth Drivers

Highlights

- Regarding labor productivity, defined as GDP at constant basic prices per hour worked, the US has maintained a sizeable gap of more than 30%, even against the highest Asian performers. The exception is Singapore, where the gap with the US narrowed to 6% by 2023.
- From 2015 to 2023, labor productivity in Asia27 grew at an average annual rate of 3.8%, down from 4.9% in 2010–2015. China experienced a notable slowdown, from 7.9% to 5.5%. Key drivers of rapid productivity growth from 2015 to 2023 were China, Vietnam (5.1%), Bangladesh (4.9%), and India (4.7%).
- Asia27 TFP growth was severely affected by the COVID-19 pandemic in 2020 but rebounded to an average of 1.3% over 2015–2023. This is lower than the 2.1% rate in 2005–2010, but an improvement from the 1.1% in 2010–2015. SAARC recorded the highest regional TFP growth at 1.8% during 2015–2023, 0.6 percentage points above the 2010-2015 rate. In contrast, TFP growth in ASEAN6 stagnated.
- Long-run growth in Asia27 over 2000–2023 was driven primarily by capital input, which accounted for 57% of the total, 52% from non-ICT capital and 5% from ICT capital. TFP growth also played a substantial role, contributing 27%.
- Capital deepening was the main driver of Asia27's labor productivity growth of 4.5% during 2000–2023, accounting for 47%—42% from non-ICT capital and 5% from ICT. Labor quality and TFP contributed 21% and 32%, respectively. In ASEAN, where regional TFP growth was a moderate 0.6%, 64% of the 3.2% average annual labor productivity growth was driven by improvements in labor quality.

Labor productivity can be measured in various ways, depending on how output and labor inputs are defined—for example, using GDP per worker versus GDP per hour worked. Section 5.1 introduces labor productivity in terms of output per worker.[39] Because workers in high-performing Asian economies tend to work longer hours than those in the US (Figure 8.9), this worker-based metric may portray Asian economies more favorably. Section 5.2, by contrast, examines labor productivity measured by output per hour worked. While this per-hour measure allows for more precise cross-country comparisons in principle, it should be interpreted with caution due to variations in the accuracy and consistency of working hours data across countries (see Section 8.3 for measurement issues).

Starting from Section 5.3, the Jorgensonian growth accounting framework is applied to decompose economic growth into contributions from capital input, labor input, and total factor productivity (TFP),[40] with capital input introduced as another key factor of production.[41] Section 5.7 then turns to energy productivity, which has emerged as a key policy concern for sustainable growth in many Asian countries.

39: GDP is valued at basic prices in this chapter, as opposed to GDP at market prices used in the previous chapters. GDP at basic prices is defined as GDP at market prices minus net indirect taxes on products. This may be regarded as the price received by the seller/producer, which is the basis for TFP accounting. As most Asian countries do not provide official estimates for GDP at basic prices in their national accounts, they are calculated based on available tax data. See Section 8.1.7 for the methods employed for our calculations.

40: The growth accounting approach is based on microeconomic production theory and the nominal accounting balance of inputs and outputs of production. See Jorgenson (2009), Jorgenson, Ho, and Stiroh (2005), and OECD (2001) for a presentation of definitions, theoretical foundations, and several practical issues in measuring productivity.

41: Section 8.2 discusses the measurement of capital stock, i.e., produced assets, land, inventory, and mineral and energy resources (MER), and capital services in APO-PDB.

5.1 Per-Worker Labor Productivity

Cross-country comparisons of per-worker labor productivity levels in 2023, measured as GDP per worker in constant 2023 international dollars (PPP-adjusted), are presented in Figure 5.1. On this measure, Singapore is the leading economy with USD 209,300, which is 32% higher than the US (USD 158,900).[42] The ROC and Hong Kong follow, with labor productivity exceeding USD 100,000 per worker. Korea, Iran, Turkiye, Japan, and Malaysia are in the next tier with over USD 75,000, 38–52% below the US. It is worth noting that Iran has the lowest employment rate in Asia27 (Figure 3.21), which contributes to higher productivity.

Following this group of leaders, many Asian countries have labor productivity levels that are less than 30% of the US's. This pulls down the average Asia27 performance to 26% of the US, 23% for ASEAN6, 16% for SAARC, and 12% for CLMV. For the two most populous countries, China and India, their productivity levels were 28% and 16% of the US level, respectively, in 2023.

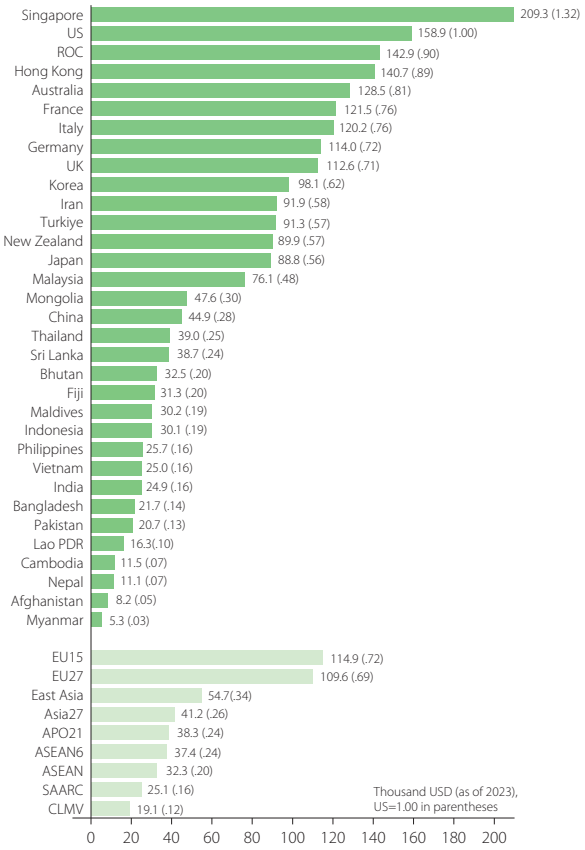

Figure 5.1 Per-Worker Labor Productivity Level, 2023

——GDP at constant basic prices per worker, using the 2021 PPP, the reference year 2023

Unit: Thousand USD. Sources: Official national accounts in each country and APO Productivity Database 2025. Notes: The number in parentheses is the ratio to the US level. See Table 9.8 for the time-series comparison from 1970.

5.2 Per-Hour Labor Productivity

The per-worker labor productivity gaps with the US shown in Figure 5.1 are likely conservative, as workers in many high-performing Asian economies tend to work longer hours than their US counterparts. To account for this difference, total hours worked have been estimated in the AQALI database for the Asia27 economies, although the quality of these estimates may vary considerably across countries.[43]

42: Cross-country comparisons of productivity levels are inherently uncertain and sensitive to data limitations. As such, the estimates should be interpreted as indicative of broad groupings rather than exact rankings. Singapore's per-worker labor productivity in 2023 exceeded that of the US by 32%, up from 25% in 2022, as reported in the 2024 edition of Databook (APO 2024), primarily due to the revision of Singapore's PPP (see Box 3).

Figure 5.2 shows how the productivity gap with the US in 2023 varies depending on which measure of labor productivity is used.[44] The productivity gap with the US widens for all Asian countries when the differences in working hours are considered (marked in light green). The choice of labor productivity measure makes a significant difference for the previously high-performing countries relative to the US, such as Singapore (from 32% higher on a worker basis to 6% lower on an hourly basis)[45] and Hong Kong (from 11% lower to 35% lower). On the other hand, European countries tend to work fewer hours per capita than the US, and the labor productivity gap between the EU15 and the US narrows from 28% on a worker basis to 26% on an hourly basis (marked in dark green).

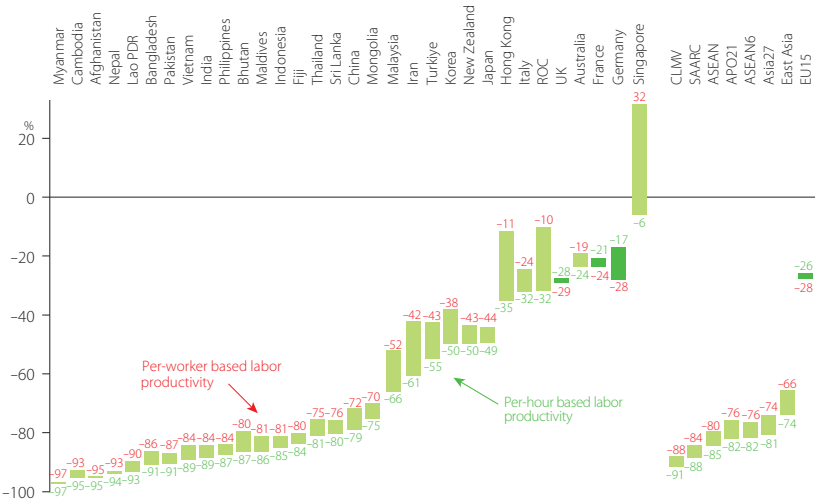

Figure 5.2 Per-Worker versus Per-Hour Labor Productivity Gap, 2023
——Differentials of basic-price GDP at constant prices per worker and hour (using the 2021 PPP) relative to the US

Unit: Percentage. Sources: Official national accounts in each country and APO Productivity Database 2025. Note: Light green is used for countries where the per-hour labor productivity gap is lower than the per-worker gap, while dark green is used for the reverse.

Based on GDP at constant basic prices per hour worked, US labor productivity has maintained a sizeable—though gradually narrowing—lead over high-performing Asian economies for more than half a century from 1970, as shown in Figure 5.3 (see Table 9.10 for numerical details). However, the gap between the US and the regional leader, Singapore, has virtually disappeared since around 2022. Hong Kong and the ROC recorded remarkable improvements—by factors of 7 and 14, respectively—over this period, surpassing Japan in 2006 and 2008. Korea and Turkiye were at similar levels in the early 2000s,[46] but while Turkiye experienced stagnation in the late 2000s, Korea continued to improve, resulting in a widening gap between the two. Japan's stagnation since the mid-2010s marks a notable shift from earlier trends. By the early 2020s, Korea had effectively caught up with Japan in per-hour labor productivity. These trends reflect a structural shift in Japan's position in the region. Rather than setting the pace, Japan now faces the challenge of correcting inefficiencies and adapting to the rise of other Asian economies.

43: Chapter 19 in the SNA 2008 recommends developing the estimate of total actual hours worked as a standardized measure of labor input (United Nations 2009). In the Asian countries studied, only Japan published the data on total hours worked as part of the official national accounts, but not for the whole period studied in this report. Section 8.3.1 explains our estimation procedures for total hours worked. The validity of the per-hour labor productivity measure depends on the accuracy of this estimate. The Databook considers this as a benchmark indicator of labor productivity while continuing to improve its measurements in AQALI.

44: The labor productivity gap for country *x* is the country *x*'s labor productivity divided by the US's labor productivity in Figure 5.2.

45: The 6% gap in per-hour labor productivity in 2023 has halved from the 12% gap in 2022 reported in the 2024 edition of Databook (APO 2024), primarily due to the PPP revision (see Box 3).

46: The productivity estimate for Türkiye appears high relative to its GDP per capita (Table 9.6), mainly due to the low employment-to-population ratio (38% in Figure 3.21). If employment is underreported—possibly due to practical limitations of the Labor Force Survey, such as lower response rates in rural areas, weaknesses in the population registry, or an urban-centric sampling bias—then the actual productivity level may be overstated.

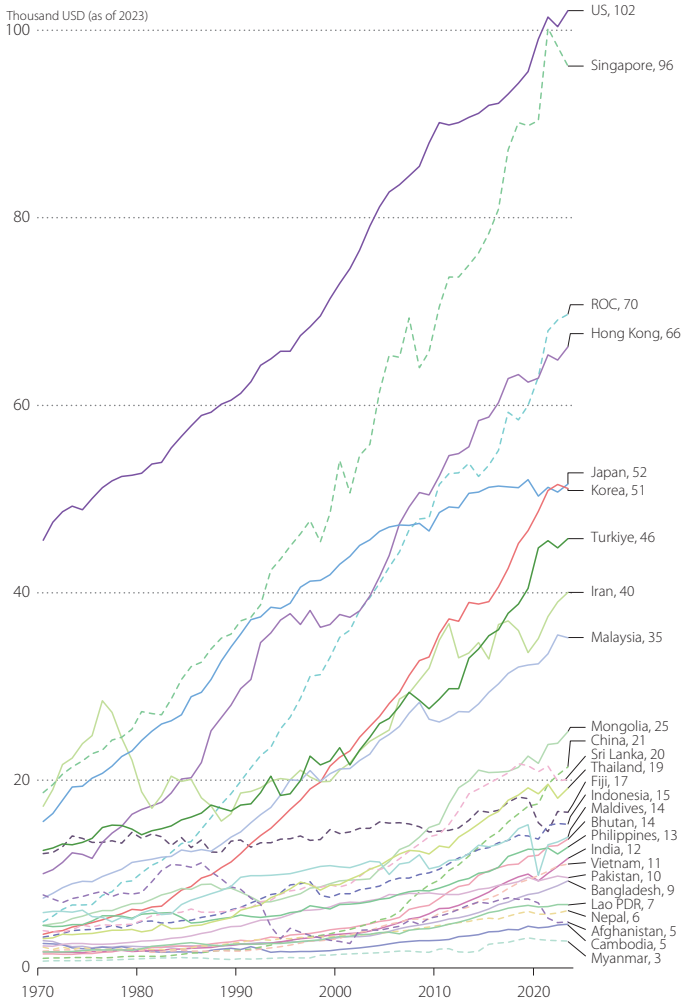

Figure 5.3 Per-Hour Labor Productivity Level in the Long Run, 1970–2023

——GDP at constant basic prices per hour, using the 2021 PPP, the reference year 2023

Unit: Thousand USD. Sources: Official national accounts in each country and APO Productivity Database 2025. Note: See Table 9.10 for the numbers of this figure.

Figure 5.4 compares the average growth rates of hourly labor productivity over more than half a century—across three sub-periods (1970–1990, 1990–2010, and 2010–2023)—for the Asia27 economies and subregions, along with selected reference economies (see Table 9.11 for numerical details). For Asia27 as a whole, labor productivity growth accelerated to 4.3% per year from 2010 to 2023, despite the pandemic-related disruptions. This compares with average growth rates of 4.0% in 1990–2010 and 2.4% in 1970–1990.

Figure 5.5 elaborates on recent productivity performance during the most recent 2010–2023 period, broken down into three sub-periods: 2010–2015, 2015–2019, and 2019–2023, to highlight the impact of the pandemic. As a region, Asia27 recorded robust labor productivity growth of 3.6% per year from 2019 to 2023. This rate, however, was lower than the peak of 4.9% achieved in 2010–2015, driven by exceptional growth in China (7.9%), and fell short of the pre-pandemic level of 4.1% in 2015–2019.

The main contributors to regional productivity growth in the most recent period (2019–2023) were China (5.5%), Iran (4.4%), Bangladesh (4.3%), Vietnam (4.1%), India (4.0%), and the ROC (3.8%). This relatively strong performance, despite pandemic-related disruptions, reflects continued structural transformation in South and Southeast Asia, particularly in export-oriented manufacturing and services. It also suggests that several economies maintained their investment momentum and productivity-enhancing reforms during the crisis period.

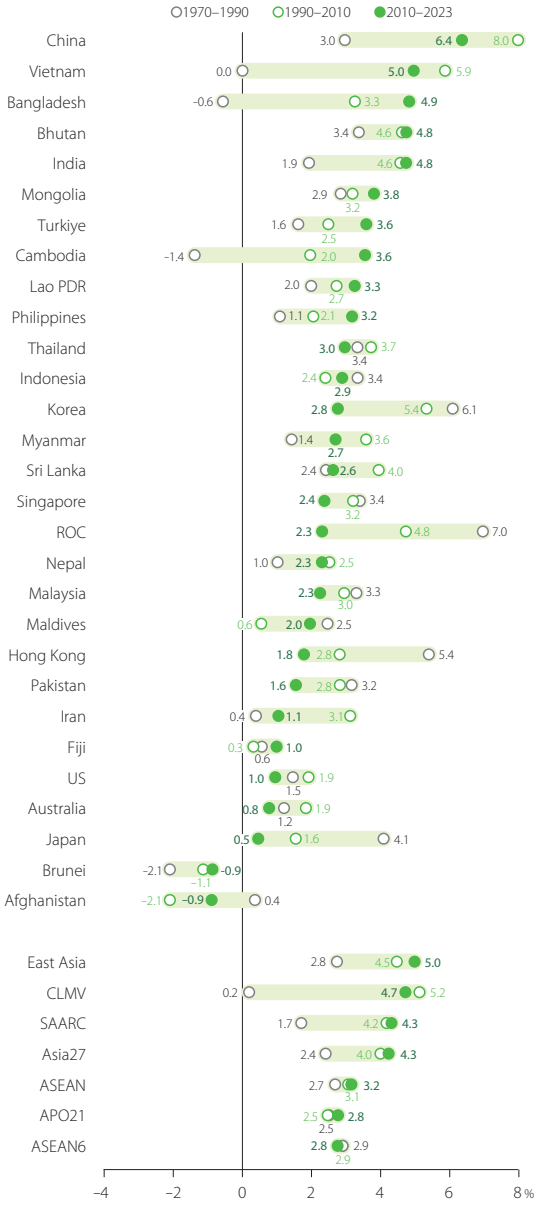

Figure 5.4 Labor Productivity Growth Averaged over Long Periods, 1970–2023

——Growth in per-hour GDP at constant prices over three subperiods: 1970–1990, 1990–2010, and 2010–2023

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country and APO Productivity Database 2025.

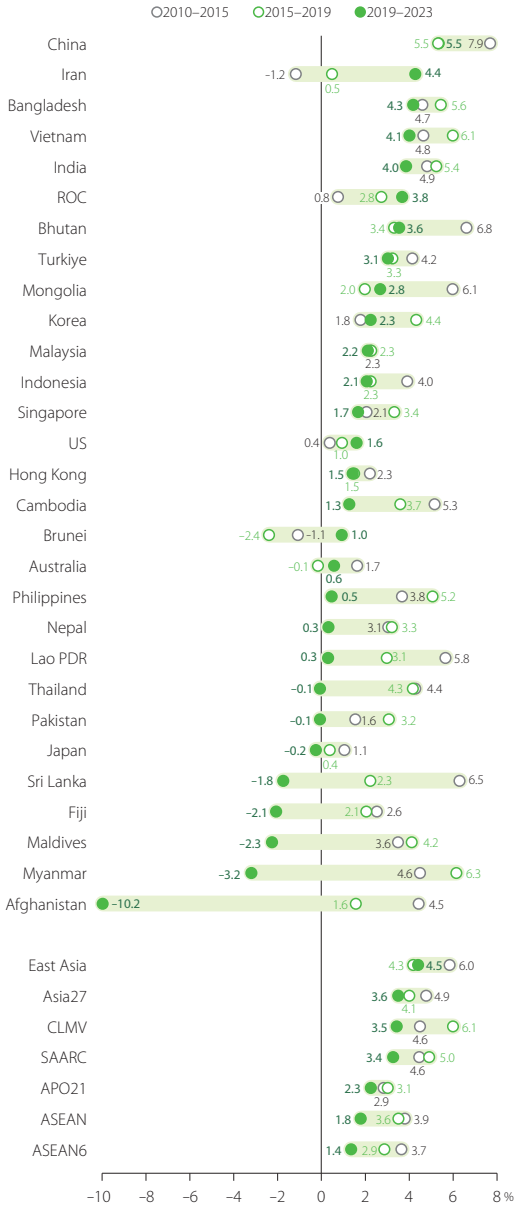

Figure 5.5 Labor Productivity Growth in the Recent Periods, 2010–2023

——Growth in per-hour GDP at constant prices over three subperiods: 2010–2015, 2015–2019, and 2019–2023

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country and APO Productivity Database 2025. Note: See Table 9.11 for growth for 2019–2020 and 2020–2023, which isolates the impact of the COVID-19 pandemic.

The potential for improving labor productivity in Asian countries is significant. Figure 5.6 depicts the per-hour labor productivity levels at constant prices on the vertical axis and the country's share of hours worked in the whole Asia27 region on the horizontal axis in 2023. The figure also illustrates the improvement in productivity levels from 1970 to 2000. The area below each line, which indicates the regional average labor productivity, improved from USD 3.1 per hour worked in 1970 to 7.1 in 2000 and to 19.8 in 2023, measured in constant 2023 USD (Table 9.10). These impressive labor productivity improvements over the past half-century occurred during a period of population growth when the total hours worked in Asia27 rose from 1.7 trillion hours in 1970 to 3.4 trillion in 2000 and 4.1 trillion in 2023. This combination pushed the Asia27 real GDP from USD 5.5 trillion to 24.7 trillion and 76.4 trillion in the respective years (Table 9.2).

The 6.4-fold increase in average Asia27 labor productivity over the past half-century is largely due to a marked narrowing of the productivity gap over this period, as indicated by changes in the shape of the productivity distribution in Figure 5.6. The share of Asian hours worked at less than USD 10 per hour constituted 90% of the total hours worked in Asia27 in 1970 and 2000, but this proportion fell to 10% in 2023 when many regions achieved higher productivity levels. Nevertheless, the labor surplus population in Asia27 is estimated to exceed 300 million, as shown in a simple calculation in Figure 6.10 (Chapter 6). There remains significant potential for catch-up within the Asian region, with regional average labor productivity of USD 26.6 in East Asia compared to USD 15.8 in ASEAN and USD 11.7 in SAARC (Table 9.10). The significant increase in productivity in 2023 is evident in the top line of Figure 5.6.

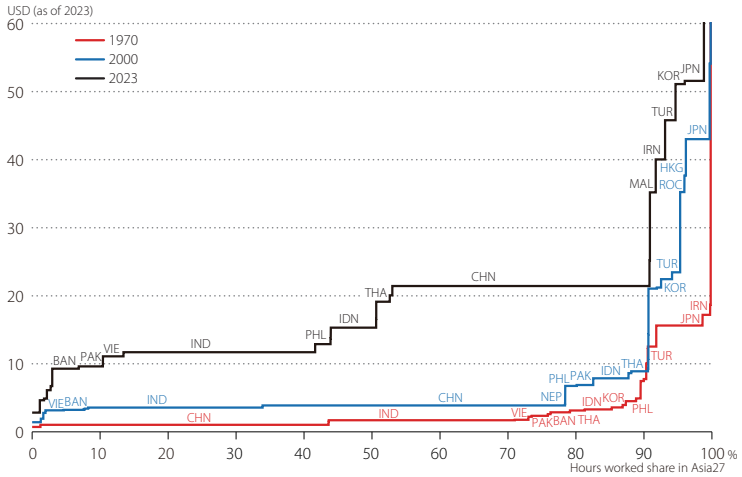

Figure 5.6 Productivity Distributions and Dynamics in Asia, 1970, 2000, and 2023
——GDP per hour (using 2021 PPP), the reference year 2023, and the country's share of hours worked in Asia27

Unit: Constant 2023 international dollars (PPP-adjusted) per hour on the vertical axis, and percentage share of total hours worked on the horizontal axis. Source: APO Productivity Database 2025.

One can identify where countries stand today in terms of their hourly productivity performance, set against the backdrop of Japan's historical experience. Figure 5.7 illustrates the long-term trend of Japan's per-hour labor productivity from 1885 to 2023, represented by the green line, which is expressed relative to Japan's 2023 level (set equal to 1.0).[47] A structural break was observed during World War II when output collapsed. Each country's hourly productivity level relative to Japan in 2023 is mapped against this Japan growth path (marked with circles). Here, the corresponding year can be located when Japan's hourly productivity level was closest to the current level of each country in question. Most Asian countries experienced a level of development similar to Japan's between the late 1950s and the early 1970s. Myanmar and Cambodia, with the lowest hourly productivity in 2023, have levels comparable to those of Japan

47: While one should keep in mind that level comparisons of productivity among countries and over periods are subject to a great degree of data uncertainty, they provide a rough sketch of the productivity divergence in Asia.

in the 1930s. Even if they manage Asia27's long-term productivity growth of 3.5% per year on average, it will take them about 80 years to catch up with Japan's current position.

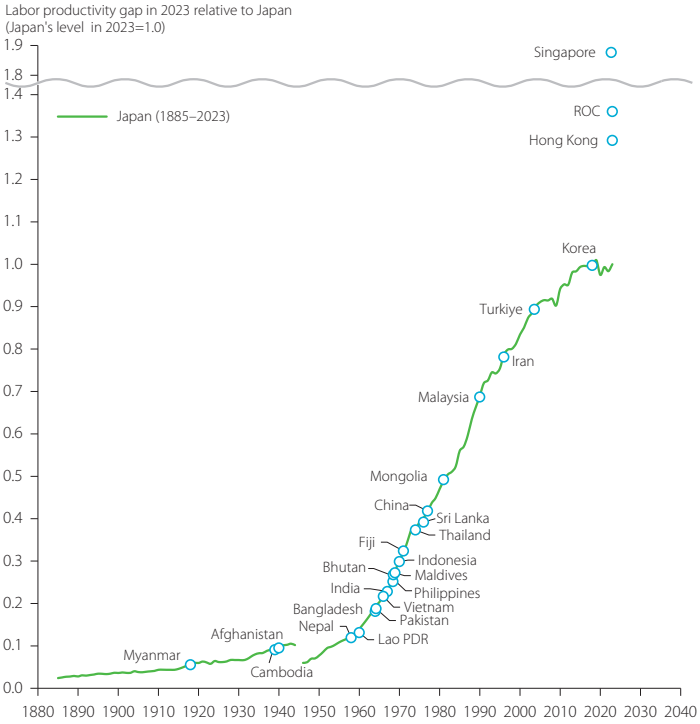

Figure 5.7 Evolution of Japan's Labor Productivity and Asia's 2023 Level

——Japan's per-hour GDP at constant prices from 1885 to 2023 and for Asian countries, using the 2021 PPP

Unit: Index. Sources: Japan's historical GDP is based on Ohkawa, Takamatsu, and Yamamoto (1974) from 1885 to 1954 and the JSNA by the Economic and Social Research Institute, Cabinet Office of Japan, from 1955 to 2023 (including adjustments by APO-PDB). The hours worked data for Japan is based on the KEO Database at Keio University, covering the period from 1955 to 2023. Between 1885 and 1954, the average hours worked per person were assumed to be constant. The labor productivity level of Asian countries in 2023 is based on the APO-PDB 2025.

The productivity leaders among Asian economies are the Asian Tigers, which have already surpassed Japan. Figure 5.8 compares the number of years each country took to raise its labor productivity from 30% to 90% of Japan's current level (based on the unit of measurement used on the y-axis of Figure 5.7). What Japan achieved in 34 years (1970–2004) was accomplished by Hong Kong, the ROC, and Korea in 27, 20, and 25 years, respectively.[48] Although the catch-up pace among latecomers has somewhat increased, this reflects the fact that improvements in labor productivity are typically accompanied by slow-moving transformations in industrial structure and capital composition. Most Asian countries remain clustered near Japan's 1960–1970 level in Figure 5.7, indicating that they will still require considerable time to catch up.

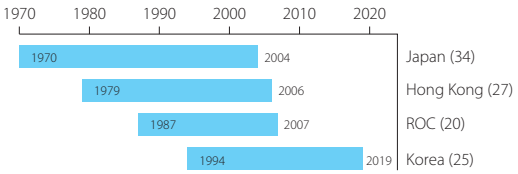

Figure 5.8 Time Taken to Improve Labor Productivity by Japan and Asian Tigers

Unit: Years. Source: See Figure 5.7. Notes: The numbers in parentheses after the country name are the years each country took to raise its labor productivity from 30% to 90% of the current Japanese level.

48: Singapore is excluded from this comparison because, under the ICP 2021 benchmark PPPs published in May 2024 (World Bank 2024a) and newly adopted in this edition of the Databook, its labor productivity in 1970 appears to exceed that of Japan (see Figure 5.3), which is implausible. This likely reflects an overestimation of output and labor productivity levels due to data issues in the revised PPP estimates from ICP 2021 (see Box 3).

Box 9 College Workers' Contribution to Economic Growth

The labor input measure for Asia27 economies in this Databook accounts for differences in wage rates across worker groups defined by gender, education, and age, which reflect differences in relative productivity. The term "labor quality" refers to the productivity effect arising from shifts in workforce composition—for example, an increasing share of highly paid, college-educated workers raises the quality index (see Section 8.3 for details). Growth in labor input is decomposed into changes in total hours worked and changes in labor quality, based on the AQALI database developed by KEO. The database also enables further decomposition of labor input into components for college-educated and non-college-educated workers.

Figure 5.9 illustrates the long-term trends in the share of college-graduate workers among total hours worked in Asian countries. While it may be surprising that college labor is still expanding even in the US, there is even more rapid change in Asia. Korea increased its college share at an accelerated pace since the late 1990s and now accounts for more than 50% of total hours worked.

Among the East Asian countries, Mongolia's high percentage of college workers, with a modest per capita GDP (PPP-adjusted) of USD 18,200 (Table 9.6), is distinctive. Mongolia had many students studying in Russia before 1991, when it became a market economy, and the female employment share was also high (Figure 3.20). Since the beginning of the 2000s, the number of college workers has expanded rapidly. While the country's recent economic growth has relied heavily on expansion in mining (coal and copper) and agriculture (Chapter 6), the higher quality of this labor force indicates the country's growth potential in other more productive sectors.

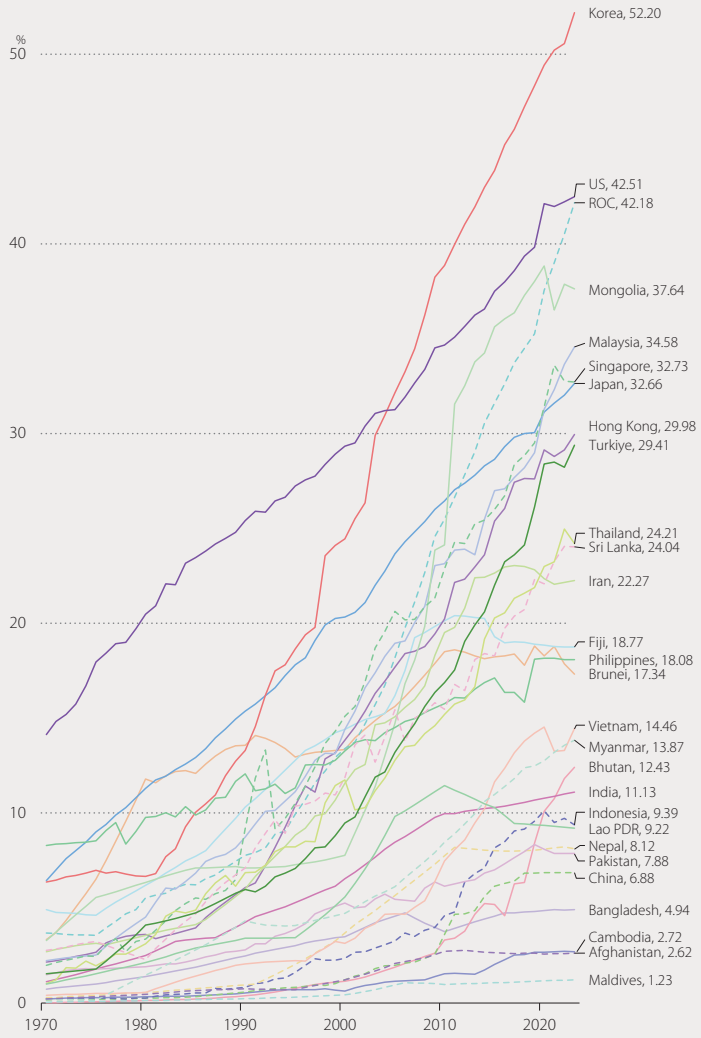

Figure 5.9 College Worker Share, 1970–2023
——Share of college labor in total hours worked

Unit: Percentage. Source: AQALI 2025.

Figure 5.10 shows the contributions of the college and non-college labor input to economic growth in 2000–2023. The countries are listed in descending order of their economic growth rates during this period (see Figure 5.16 for the complete growth accounting, including capital input and TFP). The US, Japan, Korea, ROC, and Hong Kong recorded economic growth due to the expansion of college labor, while non-college labor declined. On the other hand, in the CLMV (except Myanmar), Afghanistan, Bangladesh, Brunei, the Maldives, and Pakistan, economic growth is dominated by the expansion of non-college labor. Within a single country, or even across countries, there can be many differences in the quality of college labor. Despite these limitations as an indicator, it would be useful to understand how improving labor quality contributes to economic growth and to use the indicator to define specific policy goals.

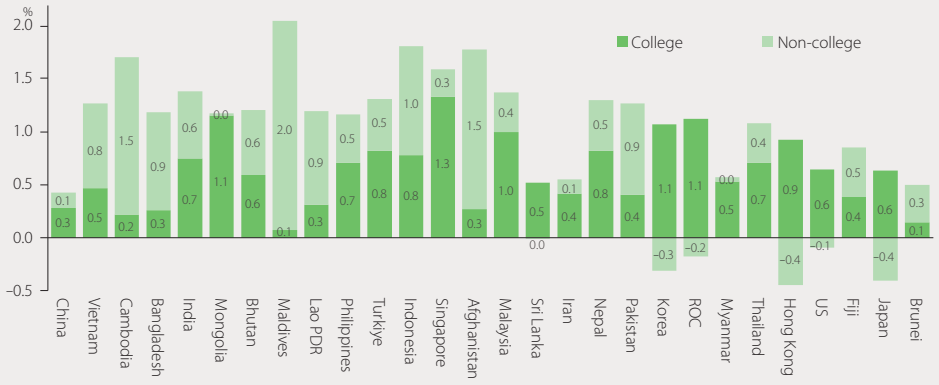

Figure 5.10 College and Non-college Labor Contributions to Economic Growth, 2000–2023

——Contributions of college and non-college labor to economic growth

Unit: Percentage (average annual contributions). Sources: AQALI 2025 and APO Productivity Database 2025.

5.3 Total Factor Productivity

Labor productivity, as discussed in previous sections, is a partial measure of productivity and does not capture overall production efficiency. Low labor productivity may indicate inefficiency, but it can also reflect deliberate choices in production methods, especially under specific capital–labor price conditions. In populous Asian economies with abundant low-skilled labor, production is often organized to utilize this relatively cheap input intensively. As a result, such economies tend to exhibit low labor productivity but high capital productivity. To assess overall efficiency, economists turn to total factor productivity (TFP)—output per unit of combined labor and capital inputs.

Accurately measuring capital input is crucial for accurately estimating TFP. Capital services are defined as the flow of services derived from productive capital stocks, in accordance with the 2008 SNA and OECD guidelines.[49] Estimating capital services requires appropriately constructed capital stocks disaggregated by asset type. The SNA recommends constructing the national balance sheet accounts within the

49: See Chapter 20 on capital services and the national accounts of the 2008 SNA (United Nations 2009). OECD (2009) provides a comprehensive framework for constructing prices and quantities of capital services. In APO-PDB 2025, the Translog index aggregates 23 types of capital inputs (11 types of produced assets, seven types of land, inventory stock, and four types of MER in Table 8.4).

framework of official national accounts. However, this is not a common practice in the national accounts of many Asian countries.[50] Even where estimates of net capital stocks are available for the entire economy, assumptions and methodologies can differ considerably among nations. In response to this challenge, harmonized estimates for capital stocks and services have been constructed and compiled within the APO-PDB based on common methodology and assumptions.

APO-PDB 2025 constructs growth accounts for the Asia27 economies, which decompose the sources of economic growth into growth in ICT and non-ICT capital services,[51] hours worked, labor quality,[52] and TFP. In addition, regional growth accounts are developed for six country groups: Asia27, APO21, East Asia, SAARC, CLMV, and ASEAN6.[53]

Cross-country comparisons of TFP growth for Asia27 and the US are presented in Figure 5.11, covering the period 2010–2023 and compared with the earlier two-decade averages for 1970–1990 and 1990–2010. Asia27 accelerated its average TFP growth from 0.7% in 1970–1990 to 1.3% in 1990–2010 and maintained a similar pace of 1.2% from 2010 to 2023.[54] The slight slowdown in the most recent period reflects the significant impact of the COVID-19 pandemic and the exhaustion of the agriculture labor surplus in the richer countries.

Figure 5.12 further explores the TFP growth performance during 2010–2023 by dividing the period into three sub-periods: 2010–2015, 2015–2019, and 2019–2023 (which captures the pandemic impact). Although nearly half of the Asia27 economies recorded negative TFP growth in the final sub-period, the region achieved a growth rate of 1.1% even in 2019–2023, comparable to 1.1% in 2010–2015 and not drastically below the pre-pandemic pace of 1.6% in 2015–2019 due to the good performance of the two Asian giants. To assess the specific effects of the COVID-19 shock and the subsequent recovery, Table 9.12 provides annual TFP growth estimates for 2019–2020 and 2020–2023. TFP in Asia27 declined sharply by 4.0% in 2020 but rebounded at an average annual rate of 2.8% from 2020 to 2023. This suggests that the pandemic-related slowdown in TFP was temporary for the region.

50: Based on our metadata survey, half of APO member economies do not develop balance sheet accounts within the official national accounts; these countries are Bangladesh, the ROC, Indonesia, the Lao PDR, Mongolia, Nepal, Sri Lanka, and Vietnam (but the National Wealth Survey is available in the ROC for some selected years).

51: Changes in the capital quality are incorporated into the measurement of capital services in two ways: changes in the composition are captured by explicitly differentiating assets into 23 types, and appropriate harmonized prices are used for ICT capital to reflect the rapid quality change embodied in ICT-related assets (Section 8.2). ICT capital is a composite asset of ICT hardware (computers, electronic computing equipment, copying machines, and other office machinery), communications equipment, and computer software. See Box 16 for revision history. Readers should bear in mind that the quality of data on investment in ICT capital varies considerably among countries, despite our best efforts to harmonize the data (Sections 8.1.4 and 8.2.1).

52: In measuring TFP, income generated from domestic production should be separated into labor and capital compensation. The national accounts readily provide estimates of compensation of employees as a component of value added in many countries. Compensation for the self-employed is not separately estimated but is combined with returns to capital in mixed income. The assumption on wages for self-employed and contributing family workers in APO-PDB 2025 is presented in Section 8.3.3. Refer to Box 17 for the sensitivity of our assumptions regarding labor income to the TFP results.

53: See Section 8.5 on the PPPs for output and capital and labor inputs to develop the regional productivity accounts in APO-PDB.

54: China's productivity estimates were revised in this edition based on updated growth accounting methods. Adjustments included imputed rent, labor share, labor quality, the price index for government consumption, and land stock prices (see Section 8.4). As a result, China's average TFP growth was revised downward from 1.4% to 0.9% for 1970–1990, and from 4.0% to 2.9% for 1990–2010, compared to the *APO Productivity Databook 2020*.

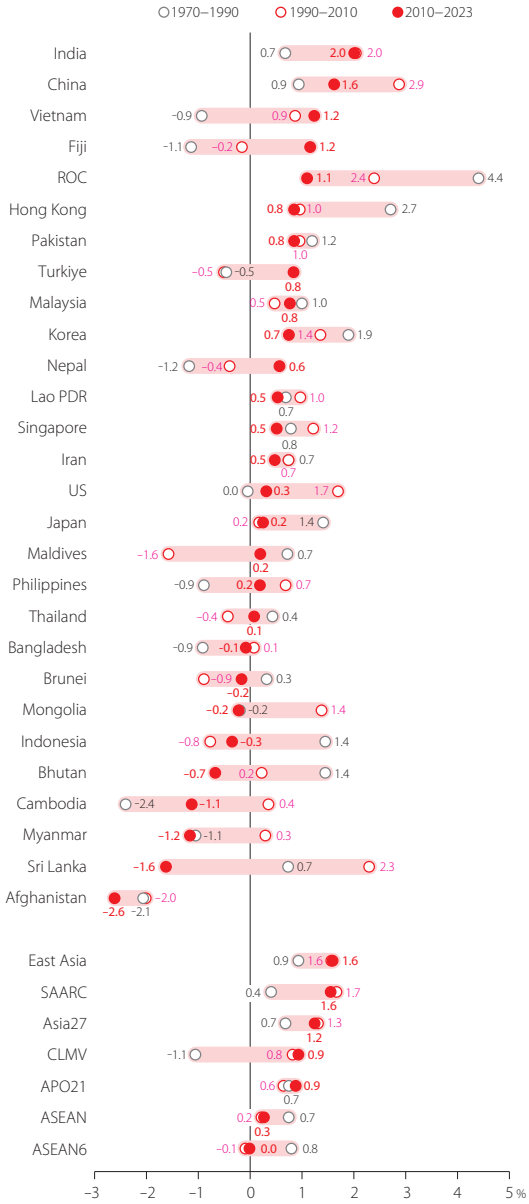

Figure 5.11 TFP Growth Averaged over Long Periods, 1970–2023

——Growth in total factor productivity over three subperiods: 1970–1990, 1990–2010, and 2010–2023

Unit: Percentage (average annual growth rate). Source: APO Productivity Database 2025.

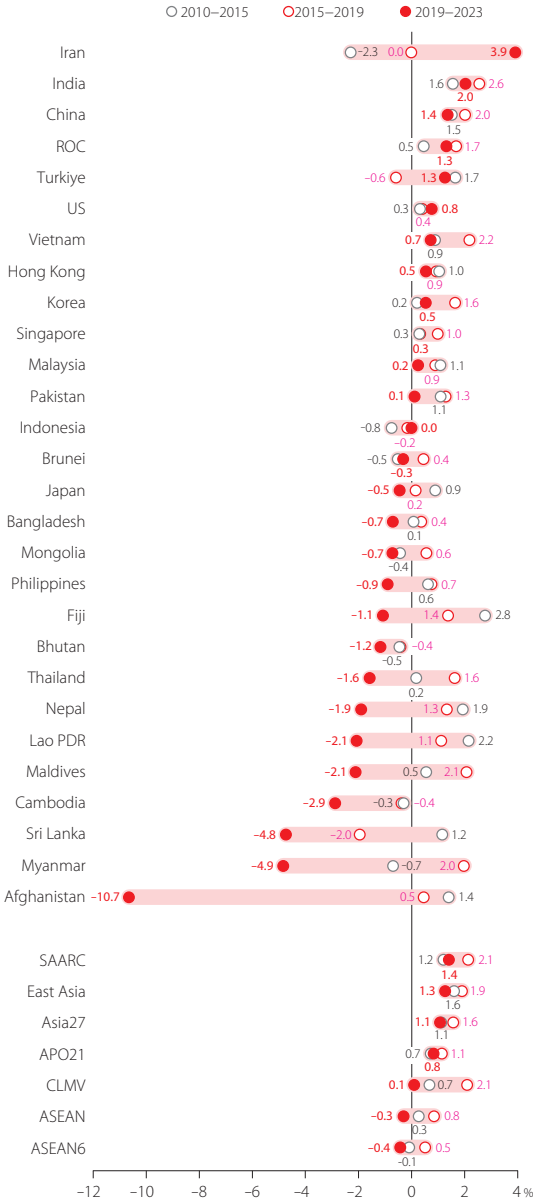

Figure 5.12 TFP Growth in the Recent Periods, 2010–2023

——Growth in total factor productivity over three subperiods: 2010–2015, 2015–2019, and 2019–2023

Unit: Percentage (average annual growth rate). Source: APO Productivity Database 2025. Note: See Table 9.12 for growth for 2019–2020 and 2020–2023, which isolates the impact of the COVID-19 pandemic.

Figure 5.13 compares half-century trends in the TFP index for the Asia27 economies from 1970 to 2023. The long-run performance of TFP varies markedly across countries. Among the Asian Tigers, the ROC experienced the strongest growth—its TFP increased by a factor of 4.5—followed by China (2.7 times), Hong Kong (2.3 times), and Korea (2.1 times). In contrast, Singapore's long-term TFP gain was more modest at 1.6 times, with most of the improvement occurring only from the mid-2000s. TFP growth has stagnated or been negative in ten countries of Asia27, and in four of them, the index rose by less than 20%

over the 53-year period. For some countries, such as Cambodia, Afghanistan, and Myanmar, conflict and instability have led to outright declines in productivity.

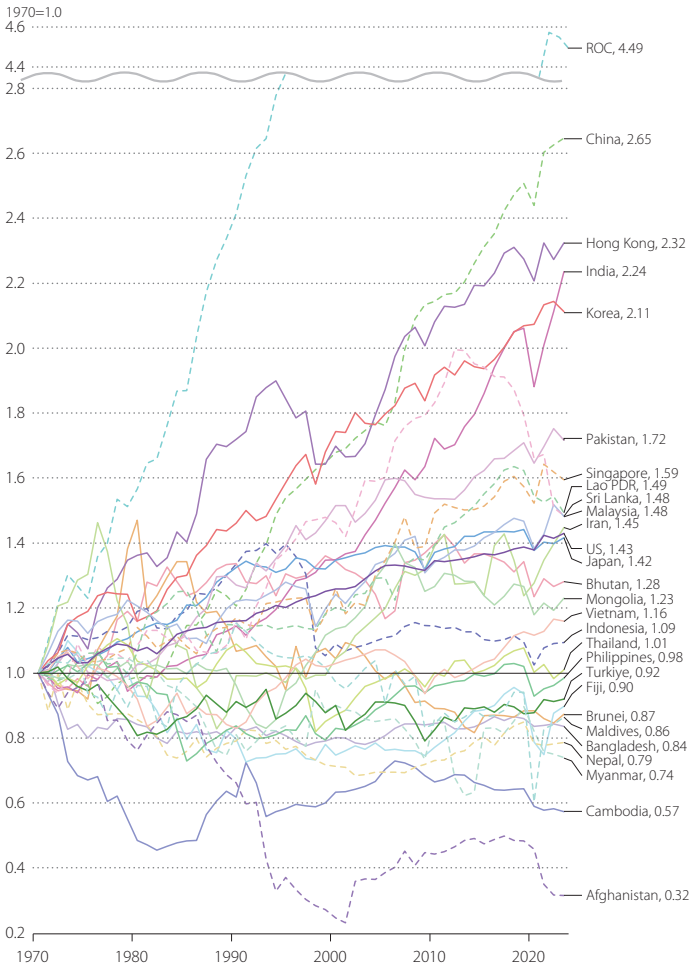

Figure 5.13 Half-Century TFP Changes by Country, 1970–2023

Unit: Index (1970=1.0). Source: APO Productivity Database 2025. Note: The vertical axis is cut off in the middle, as only the ROC exhibits exceptionally high TFP growth.

These outcomes underscore a fundamental insight from development economics: productivity growth is not an automatic byproduct of economic expansion. Structural transformations—such as sectoral shifts from agriculture to industry and services, the adoption of efficient technologies, and the reallocation of resources toward more productive firms—are a prerequisite for sustained TFP improvement. In countries where growth has relied heavily on factor accumulation or external demand, without accompanying efficiency gains, long-run productivity has often stagnated. Conversely, economies like Vietnam have shown notable TFP improvement since the 2010s, reflecting gradual structural upgrading.

Ultimately, the capacity to sustain TFP growth determines whether economic expansion translates into lasting improvements in welfare. While the U.S. provides a benchmark of steady TFP gains through institutional strength and innovation, such models are not immediately replicable across Asia27. For many economies in the region, the priority remains focused on capital accumulation that embodies advanced technologies (Section 5.4), supported by an enabling institutional environment. Without these foundations, sustained productivity growth will be difficult to achieve.

Box 10 TFP and Trade Openness in ASEAN and SAARC

The South Asian Association for Regional Cooperation (SAARC) Charter, established in 1985 (Article II), explicitly states that "such cooperation shall not be a substitute for bilateral and multilateral cooperation but shall complement them." This wording was intended to ensure that the rivalry between India and Pakistan would not obstruct regional cooperation under SAARC. In practice, however, as Bishwakarma and Hu (2022) point out, "the shadow of power politics between two nuclear powers" has consistently limited SAARC's functionality. Approximately 75% of scheduled summits have been postponed due to tensions between the two countries, and the implementation of cooperation initiatives has been repeatedly delayed. Nearly 40 years since its inception, SAARC has yet to achieve its original goals of regional peace, harmony, and economic integration. On April 22, 2025, an armed attack near Pahalgam in Indian-administered Kashmir resulted in the deaths of 26 civilians. In response, India launched strikes on nine locations in Pakistan-administered territory on May 7, 2025.

While political tensions periodically intensify, SAARC's economic potential remains substantial. From a productivity perspective, in particular, noteworthy features emerge when compared with the Association of South-East Asia Nations (ASEAN). While ASEAN has a higher GDP per capita (USD 16,900 versus USD 9,160 in 2023, as shown in Table 9.6) and a smaller population (0.67 versus 1.91 billion in Table 9.4), it is useful to compare them. In recent years, KEO has developed growth accounting frameworks for Afghanistan and the Maldives—non-member economies of APO—thus expanding the analysis to cover all eight SAARC countries in addition to the original six in South Asia.[55] The results of this work are now in this 2025 edition of the Databook.

Figure 5.14 compares ASEAN and SAARC in terms of economic growth rates, intra-regional trade shares, and TFP growth. The two regions were of similar economic size in the 1970s, but since the 2000s, SAARC has recorded an average annual growth rate approximately 1.5 percentage points higher than ASEAN (left panel), and by 2023, its economic size exceeded that of ASEAN by 55%. This higher growth may be attributed to the catch-up effect since the per-capita income in SAARC is about half of ASEAN, but it is useful to examine the sources of this difference in growth.

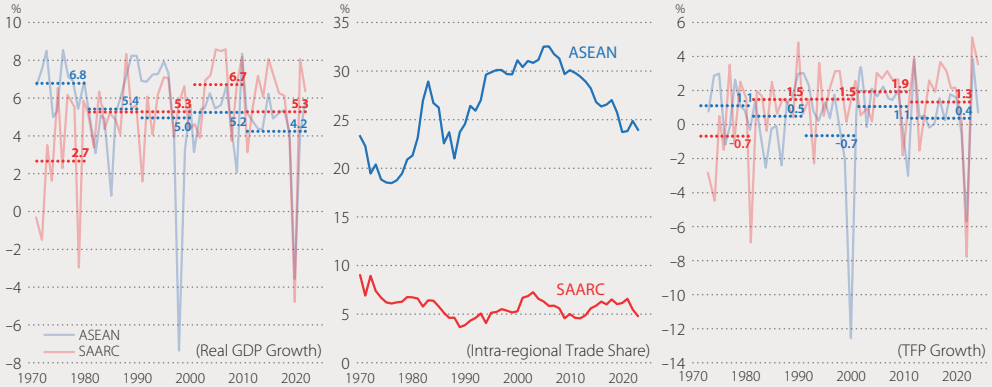

Figure 5.14 Economic Comparison of ASEAN and SAARC, 1970–2023

Unit: Percentage. Sources: Official national accounts and APO Productivity Database 2025.

continued on next page >

55: For an overview of challenges related to long-term time series construction, see Section 8.4. The development of regional growth accounting includes PPP estimates for capital and labor inputs in addition to output; for details, see Section 8.5.

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ASEAN's intra-regional trade share has remained moderate at 20–30%—lower than that of the EU (around 60%) or North America (around 40%)—but it arguably functions as an "externally oriented, network-based integration," heavily reliant on exports to China, the US, and the EU. In contrast, SAARC's intra-regional trade share is only 5–9%, making it one of the least regionally connected economic zones in the world. Beyond political tensions, a strong tendency toward horizontal competition in export structures has hindered the formation of a complementary division of labor within the region.

In general, deeper trade integration is thought to enhance TFP through the exit of less competitive firms, technology transfer via imported capital goods, and economies of scale. However, as shown in the right panel of Figure 5.14, the comparison between ASEAN and SAARC reveals that, contrary to common expectations, the more open trading region (ASEAN) has experienced lower TFP growth. Since the 2000s, intra-regional TFP growth in SAARC has outpaced that of ASEAN by 0.8–0.9 percentage points.

Figure 5.15 shows the country-level contributions to this trend. In SAARC, most of the TFP growth is attributable to India, whereas in ASEAN, it is more evenly distributed across Thailand, Malaysia, the Philippines, and Vietnam. While growth in ASEAN economies has been dominated by vigorous capital deepening, in India—a large, domestically driven, service-oriented economy—stronger TFP growth has been underpinned by institutional transformations such as pro-competition policies, ICT investment, FDI reforms, and intensified market competition in urban areas.

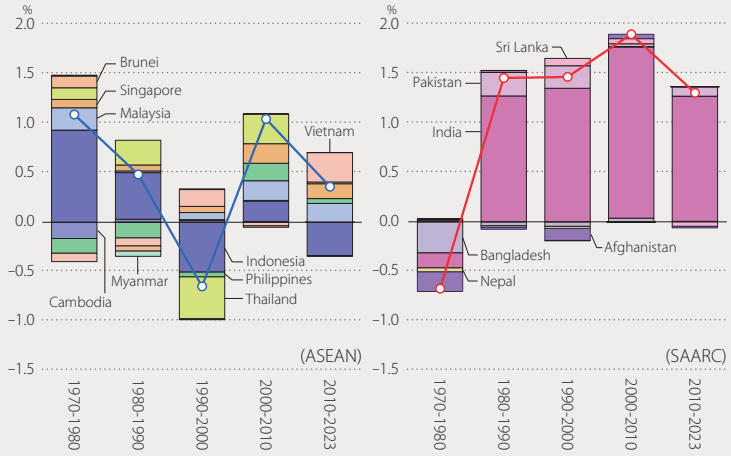

Figure 5.15 TFP Growth Contributions in ASEAN and SAARC, 1970–2023

Unit: Percentage (average annual growth rates). Source: APO Productivity Database 2025.

While this unusual relation between trade openness and productivity provides a compelling insight, it remains a first-order observation. Further analysis is needed to verify the robustness of the data, identify the structural drivers, and examine the long-term sustainability of regional TFP trends. The aftermath of the 1997 Asian financial crisis may explain this unexpected outcome. In the early 2000s, ASEAN economies were still recovering from deep financial and institutional disruptions, most notably in Thailand, Malaysia, and Indonesia. In contrast, India was less exposed to global capital flows and external trade shocks, allowing it to sustain a more stable trajectory of TFP growth. Given that most of SAARC's productivity gains stem from India, there is a critical need to explore whether these gains are being shared across neighboring economies. The limited spillover effects suggest that regional growth remains uneven, raising concerns over inclusiveness and the broader effectiveness of regional integration.

5.4 Sources of Economic Growth

For Asian countries to formulate effective macroeconomic policies, it is essential to identify the key drivers of economic growth. Suppose growth has been driven by capital accumulation rather than by assimilating existing technology from developed countries (measured as TFP growth). In that case, the growth model may be too expensive for less affluent countries to emulate.

Figure 5.16 shows absolute contributions to GDP growth by country and region, averaged from 2000 to 2023. For example, Asia27's average annual growth of 5.2% consists of 0.3 percentage points from ICT capital, 2.7 from non-ICT capital, 0.4 from hours worked, 0.4 from labor quality, and 1.4 from TFP growth. Figure 5.17 presents the percentage contribution of each factor to economic growth, summing to 100% (note that TFP contributions can be negative). The results show that 57% of Asia27's growth was driven by capital accumulation—52% from non-ICT capital and 5% from ICT capital—far exceeding the 27% contribution from TFP growth. This suggests that capital accumulation played a dominant role in the region's growth process. Importantly, much of the technological diffusion was not costless; rather, it was realized through the accumulation of capital that embodied existing technologies.

This high contribution of capital to growth is also evident in various regions and countries in Asia. In these two charts, countries are listed in order of their economic growth rates during this period. Figure 5.16 illustrates that in high-growth countries, which tend to have lower initial per capita incomes, the contributions of TFP and labor quality improvement to economic growth are not necessarily substantial. The exception is India, which has a low initial income but a high TFP contribution of 35%. The contribution shares shown in Figure 5.17 indicate that TFP and labor quality improvement typically play a larger role in higher-income countries,[56] suggesting a greater role for capital accumulation, especially in the early and middle stages of economic development.

In Asia, TFP growth in Hong Kong and the ROC over the past 20 years has been quite significant, explaining 52% and 41% of their economic growth, respectively, as shown in Figure 5.17. Figure 5.18 in Box 11 indicates that the ROC has an R&D stock estimated at three times the ICT capital stock in 2023, the third-largest share in Asia after Korea and Japan. Conversely, ICT capital stock in Hong Kong was nearly twice the size of R&D stock in 2023. Although the direct effects of increased capital input due to R&D and ICT capital stock expansion are already considered in growth accounting (Figure 5.17), the high TFP growth rate may reflect the external effects of such R&D and ICT capital.

Figure 5.21 presents the sources of growth over the entire 1970–2023 period, by five-year intervals, for each country and region group. The pre-2000 behavior for many countries is quite different from the growth of 2000–2023, as discussed earlier. The high TFP growth in Japan in the earlier periods is a striking contrast. On the other hand, TFP contribution in India has been higher since 2000. The US, Korea, the ROC, and Hong Kong have quite consistent positive TFP growth across most of this half-century.

56: Box 9 and Appendix (APO21 economy profiles) provide an alternative view on labor input, focusing on college and non-college labor inputs.

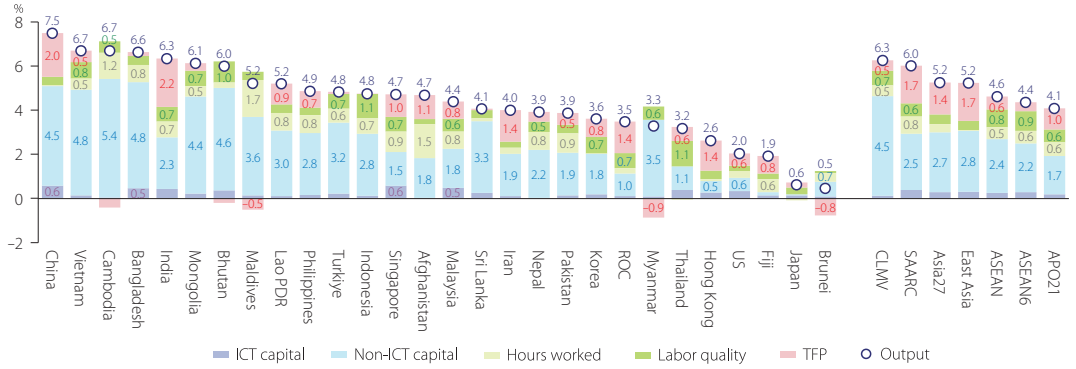

Figure 5.16 Sources of Economic Growth, 2000–2023
——GDP growth and contributions of capital, labor, and TFP

Unit: Percentage (average annual growth rate). Source: APO Productivity Database 2025.

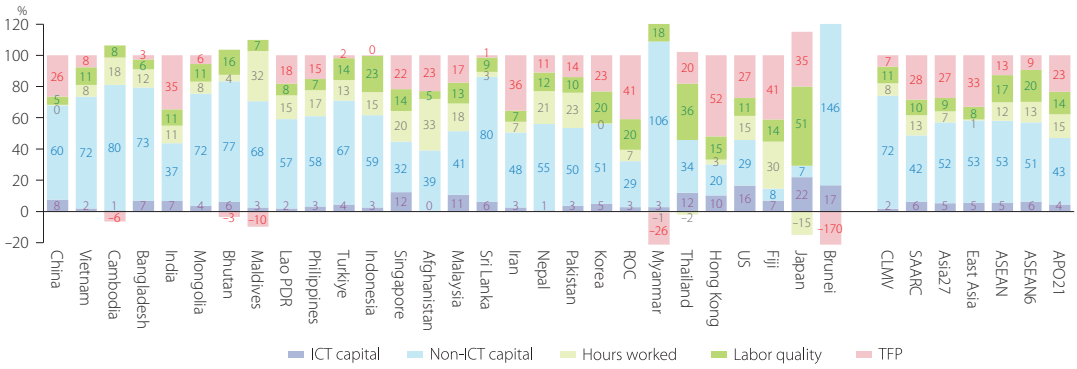

Figure 5.17 Contribution Shares of Economic Growth, 2000–2023
——Contribution shares of capital, labor, and TFP

Unit: Percentage (average annual contribution shares). Source: APO Productivity Database 2025.

Box 11 Rise of ICT and R&D Capital in Asia

The Databook presents the decomposition of capital stock, including ICT and R&D capital. Figure 5.18 shows these stocks relative to GDP in 2023. R&D capital has been regarded as the basis of scientific knowledge and a crucial input for innovation. As shown in Figure 5.18, the ratio of R&D capital to GDP is particularly high in Korea, Japan, the ROC, and the US, followed by Singapore and China. Perhaps it is unsurprising that poorer Asian countries have extremely low ratios of R&D capital to GDP. An extensive gap exists between economies that have reached the high-income level and those that have not. Our conventional understanding is that innovation capability, backed by R&D capital in a well-organized massive national innovation system, is essential for stepping from upper-middle-income to fully developed economies.

However, our ICT capital data may offer a different perspective. ICT capital, as defined here, includes both software and hardware components, such as computers, communication equipment, televisions, radios, and mobile phones. In most developing countries, the stock of ICT capital relative to GDP is substantially larger than that of R&D capital, and the gap with developed countries is notably narrower in ICT than in R&D. Notably, Bhutan, Thailand, and Malaysia exhibit particularly high shares of ICT capital. Bhutan's elevated ratio is primarily attributable to large-scale cryptocurrency mining activities (Forbes 2023a, 2023b; Nomura 2025,

Chapter 5). More broadly, fully developed and newly industrialized economies—such as the Asian Tigers and Japan—tend to hold substantial ICT software capital. However, because embedded software is often classified as hardware, and accounting practices vary significantly across countries, the distinction between ICT hardware and software may not always be meaningful for international comparisons.

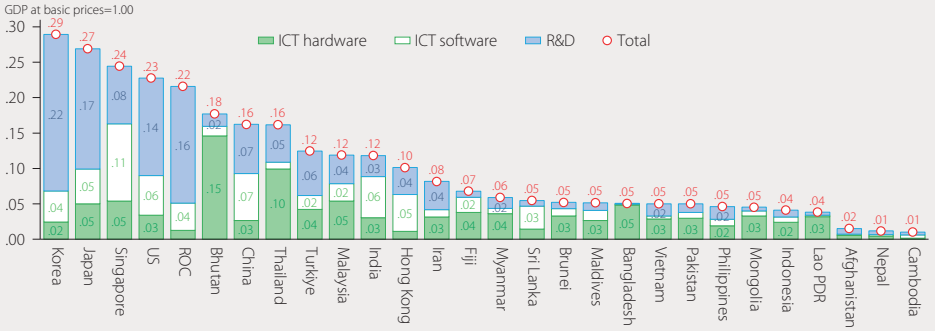

Figure 5.18 ICT and R&D Capital Stock relative to GDP, 2023
——Ratios of the end-of-year capital stocks of ICT and R&D to the basic-price GDP at current prices

Unit: Percentage. Source: APO Productivity Database 2025.

Developing countries typically engage in little frontier innovation but actively adopt and diffuse new technologies—often in ways not captured by formal R&D investment statistics. Over the past two decades, business innovation has increasingly shifted from incremental improvements driven by large-scale R&D to "disruptive innovation" (Bower and Christensen 1995), characterized by trial-and-error processes and a few highly successful outcomes, often referred to as "unicorns" in popular discourse. While much of this innovation is difficult to measure within conventional GDP frameworks, the proliferation of new services—such as social media, e-commerce, digital platforms for matching and outsourcing, e-payments, fintech, and e-government—has been remarkable. Moreover, emerging technologies are transforming traditional sectors, including agriculture, manufacturing, transportation, and tourism. These developments suggest that a development strategy focused solely on heavy R&D and manufacturing may no longer be the only viable path to becoming a fully developed economy.

Tracking the size and growth of ICT capital has become a standard practice in productivity research, following efforts to explain the productivity resurgence in developed economies, particularly in the US during the 1990s (Stiroh 2002; Jorgenson, Ho, and Stiroh 2005).[57] Unlike earlier technological advances, which were largely confined to manufacturing, ICT diffuses across sectors and drives productivity gains in traditionally low-productivity areas such as wholesale and retail, finance, transportation, and telecommunications. Given the service sector's substantial economic share (Table 9.15), the potential for ICT to drive broad-based productivity growth is significant. Policymakers and researchers are increasingly asking how to harness this potential. As with non-ICT capital, it requires time, investment, and adaptation. ICT capability has become a key determinant of long-term growth prospects.[58]

57: While this section focuses on macro-level ICT impacts, firm-level studies also provide supporting evidence that higher ICT investments are associated with greater TFP growth (see, e.g., Gal et al. 2019; Brynjolfsson and Hitt 2000).

58: The 2008 SNA (United Nations 2009) formally acknowledged the importance of the ICT sector by making it identifiable and separable in industry classification and asset types. Building on that, the 2025 SNA—adopted by the UN Statistical Commission in March 2025 (United Nations 2025)—further advances this treatment by incorporating elements such as digital supply-use tables and the formal capitalization of data assets, reflecting the growing analytical importance of digitalization in modern economies.

Japan and the Asian Tigers have led Asia in ICT capital contribution to economic growth. In Japan, this shift began in earnest in the mid-1990s, when ICT capital share in total capital input growth rose from around 20% in the early 1990s to over 40% by the decade's end (Figure 5.19, left).[59] This reallocation coincided with a slowdown in overall investment following the collapse of the asset bubble, prompting a shift from non-ICT to ICT as the more profitable form of capital. The US had made this transition earlier and more gradually. Since the early 1980s, US ICT capital consistently accounted for over 25% of capital input growth, peaking above 40% in the late 1990s (Figure 5.19, right). Over the past 25 years, ICT capital has contributed roughly 40% of capital input growth in both countries, although this share has fluctuated in line with the pace of total capital formation. R&D capital, while smaller in impact, has contributed 10–20% of capital input growth in both economies.

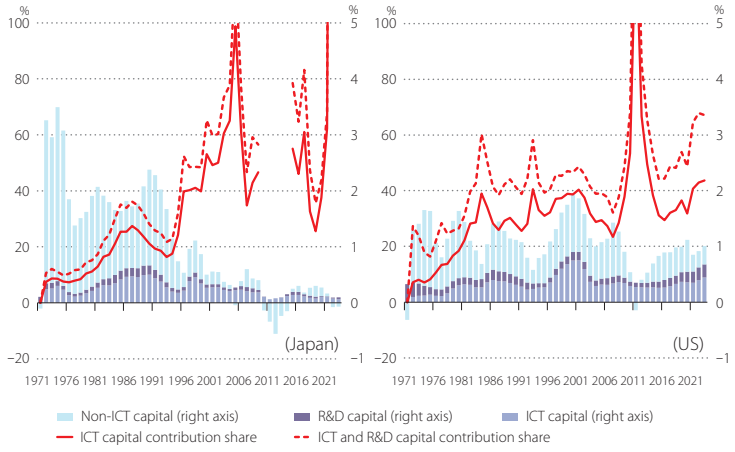

Figure 5.19 ICT and R&D Capital Contribution Share in Japan and the US, 1970–2023
——ICT and R&D capital contribution share in capital input growth

Unit: Percentage. Source: APO Productivity Database 2025.

A similar shift toward ICT and R&D capital allocation is observed in the Asian Tigers (Figure 5.20, left). In these economies, the combined contribution of ICT and R&D capital to total capital input rose from below 20% before the mid-1990s to around 30% by the early 2000s. Since the early 2010s in Hong Kong and the mid-2010s in Singapore, this share reached approximately 40%, approaching the levels seen in Japan and the US. In contrast, the contribution share in the ROC has declined since the early 2010s, suggesting that increasing reliance on ICT and R&D capital is not necessarily essential for sustaining economic growth. China, with its emphasis on construction investment (Figure 4.9), was a latecomer in ICT and R&D capital deepening. Its contribution from these assets began rising around 2000 and peaked at about 23% in the early 2020s (Figure 5.20, right). India has a vast share of IT services in GDP for its level of income, and its ICT capital contribution is higher than China's for most periods.

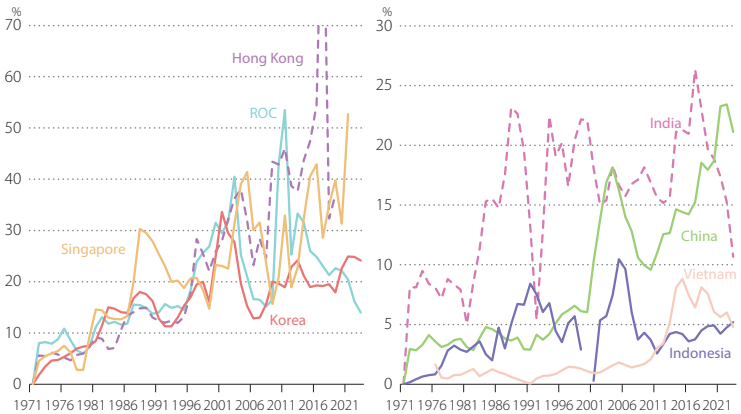

Figure 5.20 ICT and R&D Capital Contribution Share in Selected Countries, 1970–2023
——ICT and R&D capital contribution share in capital input growth

Unit: Percentage. Source: APO Productivity Database 2025.

59: The break in the contribution share for Japan in the left panel of Figure 5.19, from the late 2000s to the early 2010s, is due to the negative growth of total capital input, despite an expansion in IT capital input.


Afghanistan
Bangladesh
Bhutan
Brunei
Cambodia
China
ROC
Fiji
Hong Kong
India
Indonesia
Iran
Japan
Korea
Lao PDR
Malaysia
Maldives
Mongolia
Myanmar
Nepal
%
1970–1975
1975–1980
1980–1985
1985–1990
1990–1995
1995–2000
2000–2005
2005–2010
2010–2015
2015–2023
ICT capital
Non-ICT capital
Hours worked
Labor quality
TFP
Output

Figure 5.21 Sources of Economic Growth by Country and Region, 1970–2023
——GDP growth and contributions of labor, capital, and TFP

Unit: Percentage (average annual growth rate). Source: APO Productivity Database 2025.

5.5 Capital Productivity

Labor productivity is often highlighted because of its close relationship with GDP per capita (Section 3.3). Under the growth accounting framework, the growth of average hourly labor productivity can be decomposed into three components. First, qualitative improvements in labor—captured as quality-adjusted labor input per hour worked—reflect increases in workforce skills (Box 9). Second, capital deepening refers to the extent to which workers are equipped with more capital, measured as capital input per hour worked. Third, TFP captures improvements in the overall efficiency with which labor and capital are used (Section 5.3). In essence, labor productivity growth is driven by better-skilled labor, greater capital intensity, and more efficient use of all production inputs (Section 5.6).

Figure 5.22 examines capital deepening during 2010–2023, broken into three sub-periods: 2010–2015, 2015–2019, and 2019–2023. Most countries experienced sustained capital deepening across all sub-periods, with few exceptions. In the Maldives, investment slowed following an earlier boom (see footnote 31), while in countries like Pakistan, persistently low investment has long been attributed to institutional and structural constraints (Figure 4.2). For Asia27 as a group, the pace of capital deepening has remained steady at 5–6% per year since 2010. This reflects the region's consistently high investment rates, which have led to rapid increases in capital per hour worked. The data suggest that capital deepening is a fundamental feature of the growth process in Asia. Between 2019 and 2023, Bhutan, Cambodia, China, Bangladesh, and Vietnam recorded the highest capital deepening rates. As highlighted in Chapter 2, significant infrastructure investment occurred in Bhutan, China, and Bangladesh.

While labor productivity steadily improved across most countries (with a few exceptions), as shown in Figure 5.4, capital productivity—another partial productivity measure—declined in many cases across different periods, as shown in Figure 5.23. Between 2019 and 2023, labor productivity increased by 5.5% in China and 4.1% in Vietnam (Figure 5.5), driven by rapid capital deepening of 7.3% and 5.4%, respectively (Figure 5.22). However, capital productivity declined by 1.8% and 1.3% in the two countries, respectively. This pattern reflects a common outcome of capital deepening: as more capital is used per worker, capital productivity tends to decline unless offset by sufficient TFP gains. As long as TFP remains stable or improves, such a decline does not imply inefficiency but rather a shift in the input mix that supports labor productivity growth.

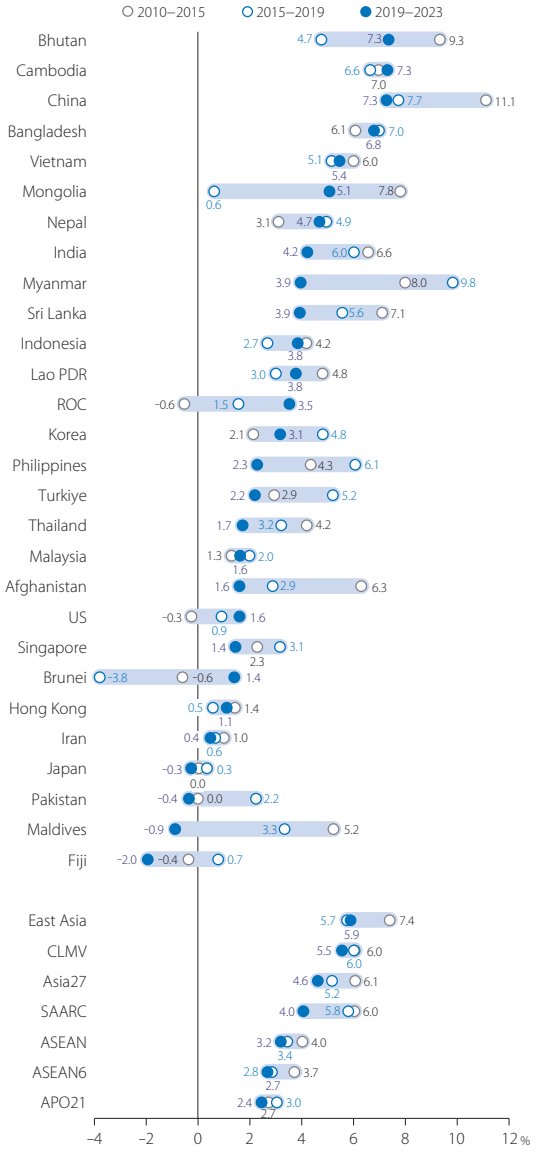

Figure 5.22 Capital Deepening, 2010–2023
——Growth in capital input per hour worked over three subperiods: 2010–2015, 2015–2019, and 2019–2023

Unit: Percentage (average annual growth rate). Source: APO Productivity Database 2025.

Figure 5.23 Capital Productivity Growth, 2010–2023
——Growth in GDP per capital input over three subperiods: 2010–2015, 2015–2019, and 2019–2023

Unit: Percentage (average annual growth rate). Source: APO Productivity Database 2025.

5.6 Sources of Labor Productivity Growth

Capital deepening is expected to raise labor productivity, all else being equal. Figure 5.24 presents the contributions to per-hour labor productivity growth (in percentage points), while Figure 5.25 shows their contribution shares for 2000–2023 (adding up to 100%). In East Asia, capital deepening remains the dominant source of labor productivity growth, accounting for 50% of the total (45% from non-ICT and 5% from ICT capital). Improvements in labor quality contributed 17%, while TFP accounted for 33%. A similar pattern is observed in the SAARC region, where labor quality improvements contributed 24% and TFP 37%. In contrast, in ASEAN, labor quality emerged as the primary driver, accounting for 64% of labor productivity growth, given a relatively modest average TFP growth of 0.6% per year, contributing only 18%. These patterns reflect the different stages and strategies of development across regions. In countries where education and skill formation systems have expanded rapidly, improvements in labor quality can temporarily substitute for slower technological progress.

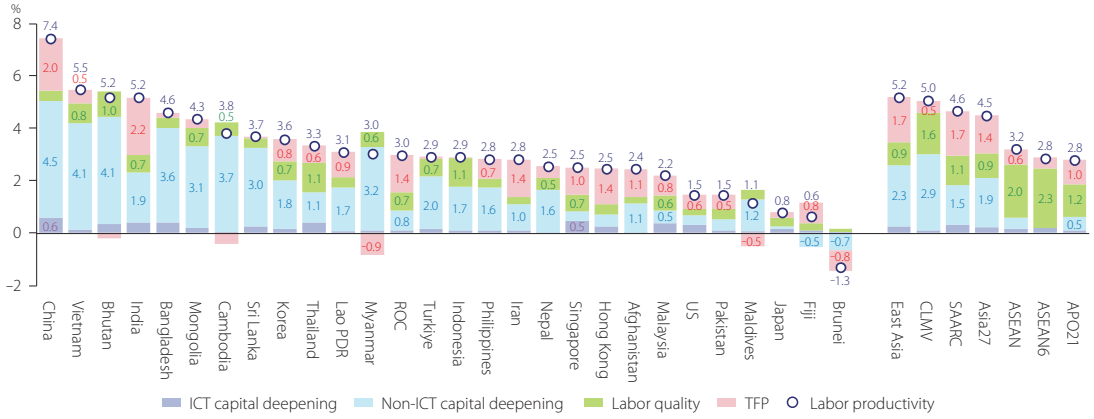

Figure 5.24 Sources of Labor Productivity Growth, 2000–2023
——Decompositions of the growth GDP per hour to ICT and non-ICT capital deepening, labor quality, and TFP

Unit: Percentage (average annual growth rate). Source: APO Productivity Database 2025.

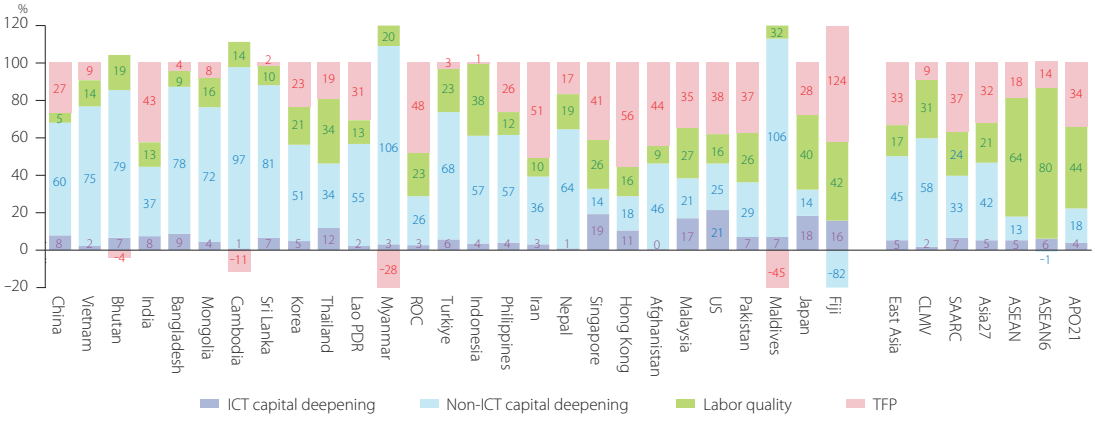

Figure 5.25 Contribution Shares of Labor Productivity Growth, 2000–2023
——Contribution shares of ICT and non-ICT capital deepening, labor quality, and TFP

Unit: Percentage. Source: APO Productivity Database 2025. Note: The countries with negative growth in labor productivity are excluded.

5.7 Energy Productivity

Given the current concerns over energy security and climate change, this section discusses the relationship between output and energy input.[60] In Asia33, to produce 47% of the world's output in 2022, 47% of the world's energy was consumed (Figure 5.26), and 56% of the world's CO_2 was emitted (Figure 5.27), compared to 14%, 10%, and 7%, respectively, for the EU27. This indicates that, at the aggregate level, Asia has lower energy productivity—defined as output per unit of final energy consumption[61]—and a higher carbon intensity of energy use than the EU27. While environmental sustainability is an important long-term objective, growth strategies that prematurely shift focus toward low-carbon transitions without first securing robust productivity foundations may risk delaying broader development goals.

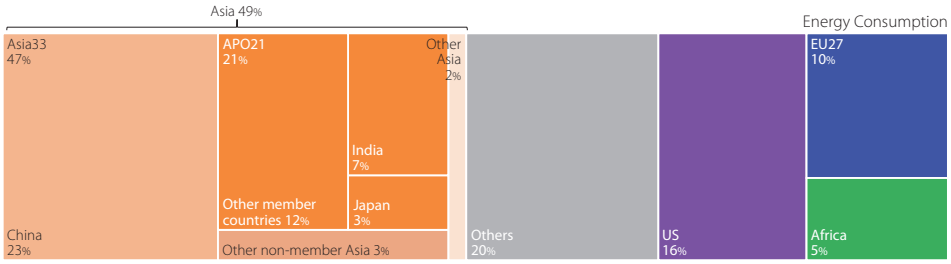

Figure 5.26 Asia in World Energy Consumption, 2022

Unit: Percentage (World final energy consumption=1.0). Data source: IEA (2024c). Note: See Country Abbreviations (p. 7) for the definitions of Asia, Asia33, Asia27, and APO21.

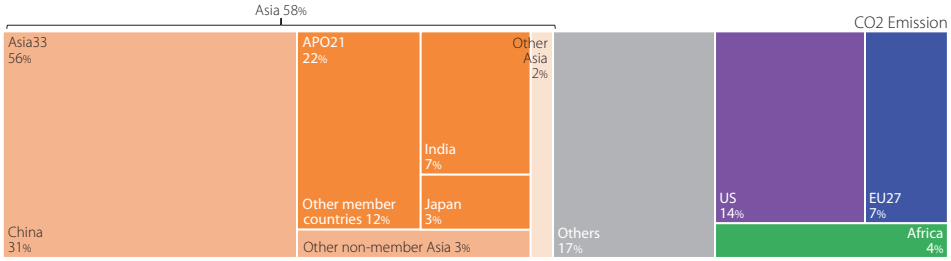

Figure 5.27 Asia in World CO_2 Emissions, 2022

Unit: Percentage (World CO_2 emission from fuel combustion=1.0). Data source: IEA (2024b). Note: See Country Abbreviations (p. 7) for the definitions of Asia, Asia33, Asia27, and APO21.

There is considerable diversity in energy productivity across major regions. Figure 5.28 compares energy productivity trends for Japan, China, Asia33, and the EU15 relative to the US from 1970 to 2022. While such aggregate-level comparisons should be interpreted with caution, they can still offer useful insights. Japan's energy productivity was on par with that of the EU15 in the early 1990s but has since fallen behind. However, this apparent divergence partly may reflect the fact that industrial hollowing-out has been more pronounced in the EU, where a larger share of energy-intensive production has been offshored (see Box 2). As a result, aggregate energy productivity in EU15 may appear to have improved more than it actually has in terms of domestic production efficiency. Despite these limitations, by this gross measure

60: Due to the time lag in obtaining energy and CO_2 emissions data, the final observation year is 2022 in Section 5.7, unlike the rest of the Chapters.

61: Final energy consumption refers to the energy delivered to end-users, distinct from primary energy consumption, which includes losses from energy transformation, transmission, and distribution. This measure sums energy quantities across different types in physical units (e.g., tons of oil equivalent, toe), unlike the Translog index-based energy price measure used in Section 2.2.1.

the energy productivity levels of Japan and the EU15 remain considerably higher than those of the US and Asia33, which have lower energy prices.

China, by contrast, had energy productivity levels below 50% of the US in the 1970s and 1980s. Since the 1990s, however, China has achieved substantial improvements, narrowing the gap to 16% in 2022. This gain partly reflects structural shifts, including a rising share of services and a declining share of manufacturing in GDP (see Box 13).

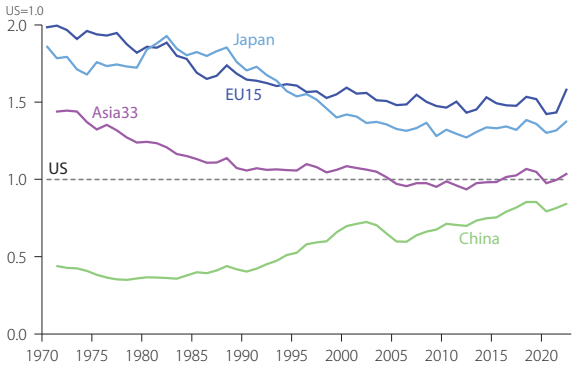

Figure 5.28 Energy Productivity of Japan, China, Asia33, and the EU, 1970–2022
——Index of GDP at constant prices (using the 2021 PPP) per final energy consumption relative to the US

Unit: Index. Sources: Official national accounts in each country (including adjustments by APO-PDB) and IEA (2024c).

Figure 5.29 illustrates the relationship between the two partial productivity indicators of labor and energy in 2022, using a sample of countries, with labor productivity on the vertical axis and energy productivity on the horizontal axis. Less-developed countries with lower labor productivity (such as Bangladesh, Sri Lanka, and the Philippines) tend to have higher energy productivity (bottom-right corner of Figure 5.29). One effective strategy to improve labor productivity in such countries is to expand the manufacturing sector and increase capital accumulation. A deterioration in energy productivity frequently accompanies this. That is, a movement from the bottom right to the top left of the figure.

In the next stage of economic growth, well-developed countries will be able to pay more attention to improving energy productivity by abolishing implicit or explicit subsidies on energy prices, especially electricity prices, and levying heavier taxes on energy consumption (towards the top-right). The C-shape dynamic between labor and energy productivities in Figure 5.29 corresponds to the so-called Environmental Kuznets curve as an inverted U-shape relationship between environmental quality (at the y-axis) and economic development (at the x-axis).

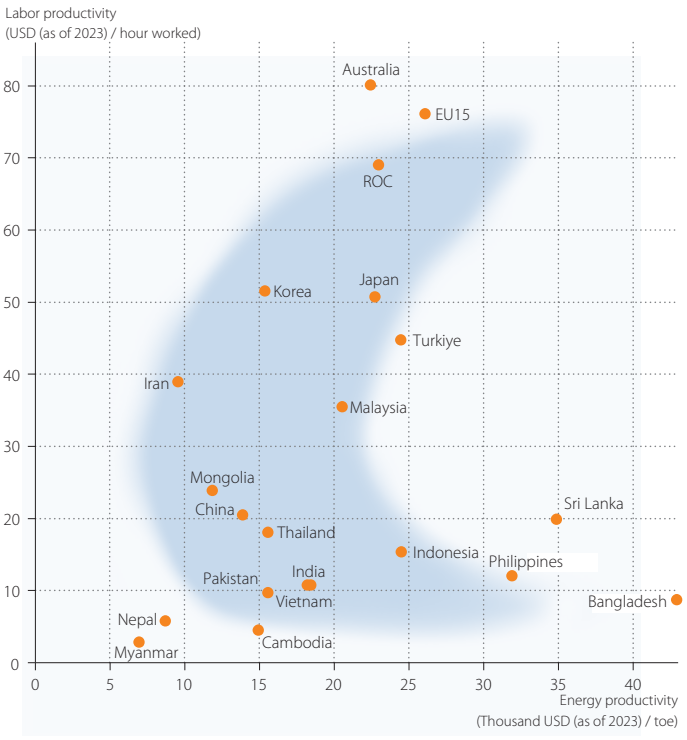

Figure 5.29 Labor Productivity and Energy Productivity, 2022
——Per-hour labor productivity level and energy productivity level

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country (including adjustments by APO-PDB), IEA (2024c), and APO Productivity Database 2025.

Figure 5.30 decomposes the sources of CO_2 emissions growth from fuel combustion in Asian countries from 2000 to 2022, using the Kaya identity. This framework attributes changes in CO_2 emissions to three factors: real GDP growth, the carbon intensity of energy, and the energy intensity of GDP (the inverse of energy productivity). In all countries where CO_2 emissions increased (marked by the circles), output growth was the dominant driver. While energy productivity improved across all countries during this period, these gains were generally insufficient to offset the increase in energy consumption driven by economic expansion.

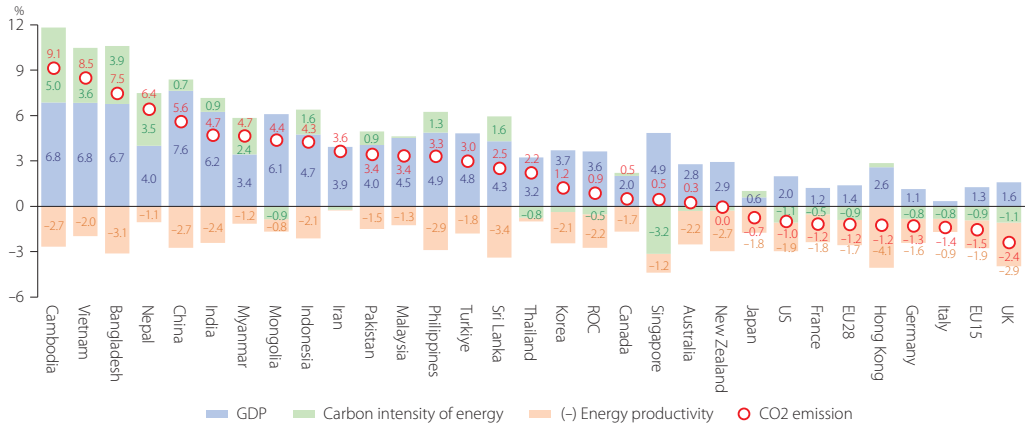

Figure 5.30 Sources of CO_2 Emission Growth, 2000–2022

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country (including adjustments by APO-PDB) and IEA (2024b, 2024c).

While developed countries and a few rich Asian countries have seen a decline in their carbon intensity of energy, in many Asian economies the carbon intensity of energy has increased. This is primarily due to an increase in coal consumption. Japan achieved some improvement in energy efficiency from 2000 to 2022. However, the carbon intensity of energy increased due to the low operation rate of nuclear power plants following the Fukushima Daiichi nuclear disaster in March 2011. Singapore realized a significant improvement (decrease) in the carbon intensity of energy by the shift from oil to LNG in electricity power generation.[62] This helped offset the increases in CO_2 emissions that accompanied strong economic growth, despite a modest improvement in energy productivity.

During this period, the decoupling of GDP growth and CO_2 emissions is evident in several developed countries, particularly in the EU15 and the US. However, this may be largely due to the shift of energy-consuming manufacturing activities to Asian countries, where more energy is required, and more CO_2 is emitted to produce the same output. There is still a need for an international institutional design that can effectively curb global emissions.

5.8 Comparison with OECD Countries

To give readers a wider perspective of the results, this section compares the performances of Asian countries with those of OECD countries, published in the OECD Productivity Database (OECD 2025). For

62: In Singapore, the share of natural gas in electricity generation reached 93% in 2022 from 19% in 2000, compared to the decrease in oil in power generation from 81% in 2000 to 2.6% in 2022 (IEA 2024b). Singapore receives natural gas via pipelines from neighboring Malaysia and Indonesia and imports LNG from Australia, the US, Qatar, and Angola, among other countries (US EIA, August 2021).

this comparison, the growth accounting for Asian countries is re-estimated using the OECD-compliant methodology presented specifically in this section of the Databook. There are two main differences between them. First, land, inventory, and mineral and energy resources are not considered capital inputs in the OECD-compliant methodology.[63] This adjustment would expand the speed of capital accumulation and thus constrain the rate of TFP growth compared to the results in the other sections of the Databook. Second, the change in labor quality is not taken into account. Labor input is measured by hours worked; thus, the calculated TFP growth rate includes the effect of labor quality improvements, unlike the APO method, which separates them.[64] Figure 5.31 provides the revision on the two-decade average TFP growth by country from 2000 to 2023, resulting from these two methodological changes. The higher TFP-OECD effect results in most observations being above the 45-degree line, with China being the most important one below the line. Based on the OECD-compliant methodology, the TFP growth of most Asian countries is increasing by 0–1 percentage point per year.

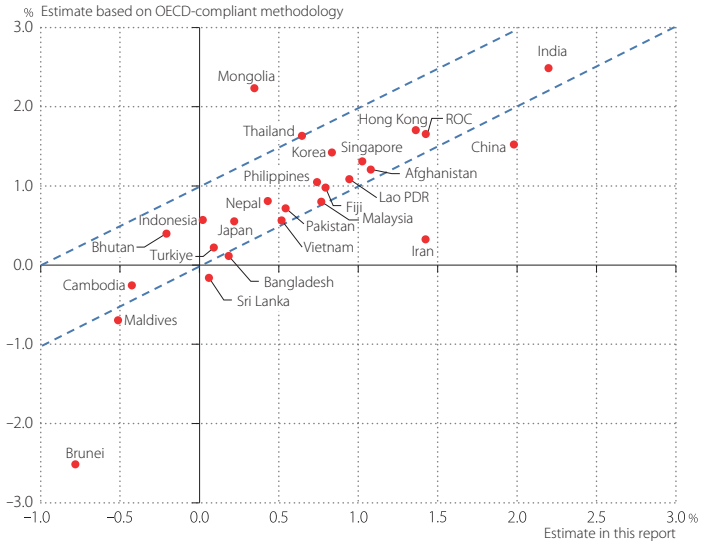

Figure 5.31 Comparison of TFP Estimates Based on Different Methodologies, 2000–2023

Unit: Percentage (average annual growth rate).
Sources: APO Productivity Database 2025.
Note: See footnote 64 for differences between the OECD-compliant methodology and the methodology of this report.

Figure 5.32 compares the sources of growth accounting between Asian countries (based on the OECD-compliant methodology) and OECD countries (OECD 2025) for 2000–2023. Using the common method, we see that Asian countries experience higher TFP growth rates than OECD countries. Though growing at a more subdued pace, the contribution made by TFP in the slower-growing, mature economies should not be underestimated.

63: Due to this methodological change, the rate of return of capital is re-estimated endogenously (Section 8.2.7).

64: The multi-factor productivity in the OECD Productivity Database (OECD 2025), referred to as TFP in this report, defines total input as the weighted average of the growth rates of total hours worked and capital services. Although our methodology is changed to be comparable with theirs in Figure 5.32 and Figure 5.33, readers should keep in mind that two additional differences in assumptions remain. First, capital services of residential buildings are included in our estimates of capital input to be consistent with output that includes the imputed cost of owner-occupied housing. Second, the compensation of capital is defined in our estimates as the residual of the value added and the compensation of labor (compensation for employees, self-employed persons, and contributing family workers). In contrast, the OECD defines it as the imputed value of capital services based on the assumptions of an ex-ante rate of return on capital. Thus, although both apply the same Translog index, the weights to aggregate labor and capital can differ. Other than these, our methodology and assumptions in measuring capital services are designed to be largely consistent with the OECD methodology, and the impact of the differences in assumptions on the volume estimates of capital services is judged to be limited.

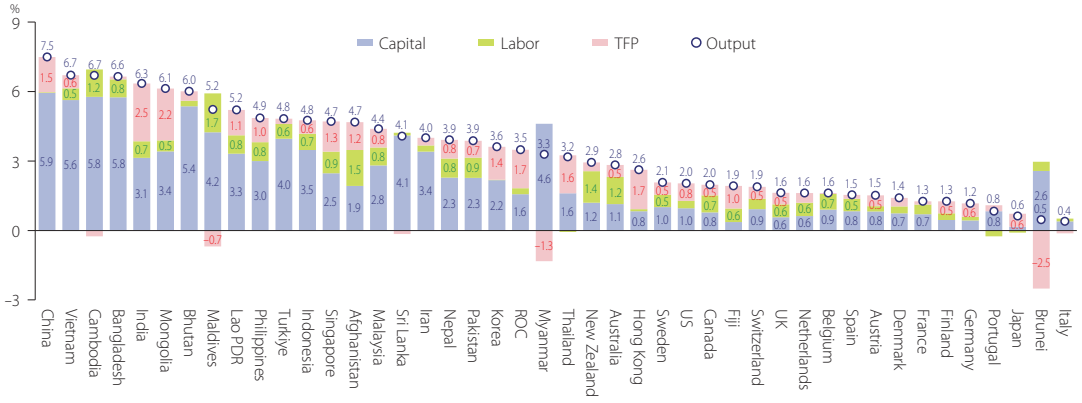

Figure 5.32 Comparison of Sources of Economic Growth with OECD Countries, 2000–2023
——GDP growth and contributions of capital, labor (hours worked), and TFP (based on the OECD-compliant methodology)

Unit: Percentage (average annual growth rate). Sources: APO Productivity Database 2025 for the Asia27 economies and the US. The OECD.Stat (Dataset: Productivity growth rates) and OECD (2025) for OECD countries (except Japan, Korea, Turkiye, and the US). Notes: In this methodology, the impacts of labor quality changes are reflected in TFP, and land, inventory, and MER stock are not included in capital inputs. The ending year for New Zealand is 2021 and other OECD countries (except Japan, Korea, Turkiye, and the US) are 2022.

Figure 5.33 plots the level of per capita GDP in 2023 against the TFP contribution share in growth from 2000 to 2023 for Asia27 (dark dots), alongside OECD countries (white circles). While OECD economies show a wide range of TFP contributions at higher income levels, a similarly broad variation is observed among lower- and middle-income Asian economies. In general, lower-income economies tend to rely more on capital accumulation, leading to a smaller contribution share of TFP.

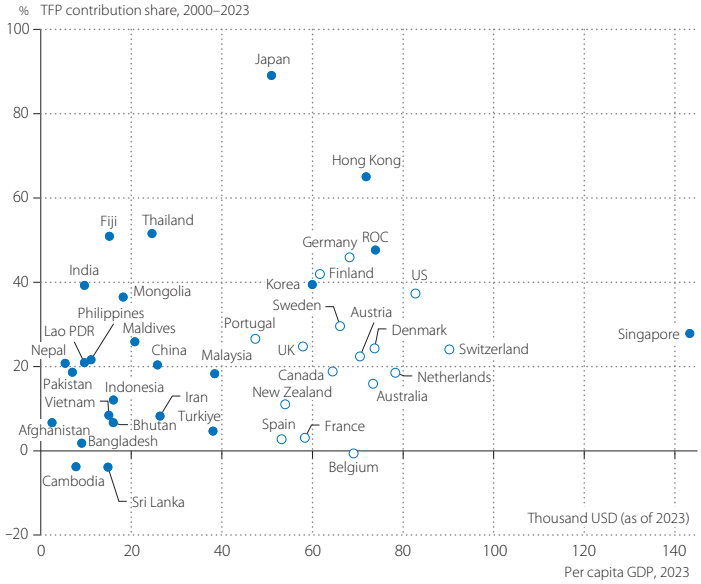

Figure 5.33 Comparison of TFP Contribution Share with OECD Countries, 2000–2023
——Contribution share of TFP in economic growth (based on the OECD-compliant methodology)

Unit: Percentage (contribution share) for the vertical axis and thousand USD for the horizontal axis. Sources: APO Productivity Database 2025 for the Asia27 economies and the US. The OECD.Stat (Dataset: Productivity growth rates and Productivity levels) and OECD (2025) for OECD countries (except Japan, Korea, Turkiye, and the US). Notes: The impacts of labor quality changes are reflected in TFP, and land, inventory, and MER are not included as capital inputs. The ending year for New Zealand is 2021 and other OECD countries (except Japan, Korea, Turkiye, and the US) are 2022.

6 Growth from Industry Perspective

Highlights

- While Asian countries are diversifying and moving away from agriculture, forestry, and fishing, this sector continues to dominate employment, accounting for 29% of total employment in 2023 in Asia27, down from 68% in 1980. Its share in total value added fell more moderately, from 17% to 9% over the same period.
- Manufacturing is a significant sector, accounting for over 18% of total value added in 15 Asia27 countries in 2023. It is particularly prominent at 36% in ROC, 28% in Cambodia, 28% in Korea, 26% in Vietnam, 26% in China, and 25% in Thailand. Manufacturing is primarily driven by machinery and equipment in most Asian economies, with exceptions such as Bangladesh and Cambodia, which focus on light manufacturing, including textiles and the food industry.
- For regional labor productivity growth, the manufacturing sector contribution was a significant 29% in East Asia in 2010–2023 but remained somewhat lower in CLMV at 25% and SAARC at 18%. In SAARC, 45% of labor productivity growth was attributed to improvements in the service sector, compared to 35% in East Asia and the CLMV.

Decomposing aggregate growth accounts to the industry level provides essential insights into the drivers of a country's economic dynamics, which shape the overall performance, strengths, and vulnerability. A broad industry base reflects diversification and sophistication in the economy, making it more resilient in weathering economic shocks. Relying on a narrow industry base leaves an economy more vulnerable to shocks and susceptible to volatility in commodity prices. The different composition of economic activities among countries is one of the main sources of the gap in average labor productivity observed at the aggregate level in Chapter 5. By analyzing the industry structure of the Asian economies, one can trace the path of economic development and identify each country's stage based on its industry characteristics.[65]

6.1 Industrial Structure

Table 3.1 presents country groupings based on stages of development, as measured by long-run economic growth from 1970 (using per capita GDP relative to the US). Table 6.1 regroups countries based on the same set of criteria as in Table 3.1, but applies it to 2023 income levels and focuses on how fast each group is catching up to the US since 2010. Korea and ROC are now rich and no longer in the bottom-right corner as they were in Table 3.1, and Indonesia and the Philippines have also moved in the northwest direction. On the other hand, Afghanistan remains in the bottom-left corner, with very low growth, despite being a low-income country. Pakistan, Myanmar, and Cambodia also stay in the bottom row. China, Malaysia, and Thailand continue to exhibit high rates of catch-up growth.

65: Constructing the industry origins of labor productivity growth requires collecting data from different sources. Data inconsistency issues arising from the fragmentation of national statistical frameworks present enormous hurdles to researchers in this field. The industry data in this chapter is mainly based on official national accounts. Where back data is unavailable, series are spliced together using different benchmarks and growth rates. Data inconsistencies in terms of concepts, coverage, and data sources have yet to be fully treated, although levels of breakdown are deliberately chosen to minimize the potential impact of these inconsistencies. APO-PDB examines the problems of time-series industry data connections in each country, but issues remain. Readers should bear these caveats in mind in interpreting the results.

Table 6.1 Country Groups by Current Economic Level and Catching-Up Pace, 2010–2023
——Level and average annual growth rate of per capita GDP at constant market prices, using the 2021 PPP

Per capita GDP level in 2023, relative to the US	Average annual rate of catch-up to the US during 2010–2023					
	(C6) <–1%	(C5) –1% ≤–< 0%	(C4) 0% ≤–< 1%	(C3) 1% ≤–< 2%	(C2) 2% ≤–< 3%	(C1) 3% ≤
(D1) 100% ≤	Brunei, Qatar		Singapore			
(D2) 70% ≤ - <100%		Australia, EU15, EU27, France, Germany, Hong Kong, Saudi Arabia, UAE, UK	Korea	ROC		
(D3) 40% ≤ - < 70%	Kuwait, Oman	Bahrain, Japan, New Zealand		Malaysia	Turkiye	
(D4) 20% ≤ - < 40%		Iran, Thailand	Maldives		Mongolia	China
(D5) 10% ≤ - < 20%			Fiji, Sri Lanka	Bhutan, Indonesia, Lao PDR, Philippines	India, Vietnam	Bangladesh
(D6) < 10%	Afghanistan		Pakistan	Myanmar, Nepal	Cambodia	

Sources: Official national accounts in each country, including adjustments by APO-PDB. Notes: The annual catch-up rates in the column are based on the estimates for 2010–2023. Another country grouping is provided in Table 3.1.

Countries at the lower rungs of the development ladder tend to have a greater value-added share in their agriculture, forestry, and fishing sector.[66] Based on the measures using the one-digit industry classification, this primary industry dominates in eight countries: Afghanistan, Myanmar, Nepal, Pakistan, Cambodia, Lao PDR, India, and Fiji. Figure 6.1 illustrates the industry composition of the Asia33 economies and regions in 2023, with the GDP per capita (using the 2021 PPP) presented in the left panel.[67] In the figure, the countries are listed in descending order of GDP per capita. There is an obvious negative correlation between the share of the primary industry (represented by the red color) and income per capita. The outliers are rich—New Zealand, with a 6% share in agriculture—and poor—Bangladesh, with only 11% in agriculture versus 23% in manufacturing. The changes in industry shares of value added are presented in Table 9.15.

Adopting technologies from advanced economies remains a crucial pathway for fostering productivity growth in less developed countries. From this perspective, manufacturing has traditionally played a pivotal role in enabling economies to advance in their development trajectories. As of 2023, manufacturing accounted for over 18% of total value added in 15 of Asia33 economies (Figure 6.1). Figure 6.2 compares changes in manufacturing share and TFP growth rates from 2010 to 2023. While a strong positive

66: In Chapter 5, GDP is adjusted to be valued at basic prices for all countries (if the official estimates are unavailable, they are the estimates in APO-PDB). However, the definition of GDP by industry differs among countries in this chapter due to data availability. The industry-level GDP is valued at factor cost for Fiji and Pakistan; at basic prices for Cambodia, Hong Kong, India, Korea, the Lao PDR, Mongolia, Nepal, Singapore, and Vietnam; at producers' prices for Bangladesh, Iran, the ROC, and the Philippines; and at market prices for Indonesia, Japan, Malaysia, Sri Lanka, Thailand, and Turkiye. See Section 8.1.7 for the details.

67: The nine industries are 1–agriculture, forestry, and fishing; 2–mining; 3–manufacturing; 4–electricity, gas, and water supply; 5–construction; 6–wholesale and retail trade, hotels, and restaurants; 7–transport, storage, and communications; 8–finance, real estate, and business activities; and 9–community, social, and personal services. The regional averages of industry shares in value added are calculated based on each country's industry-level GDP, using economy-wide GDP PPPs. These estimates do not account for cross-country differences in the relative prices of industry-specific outputs.

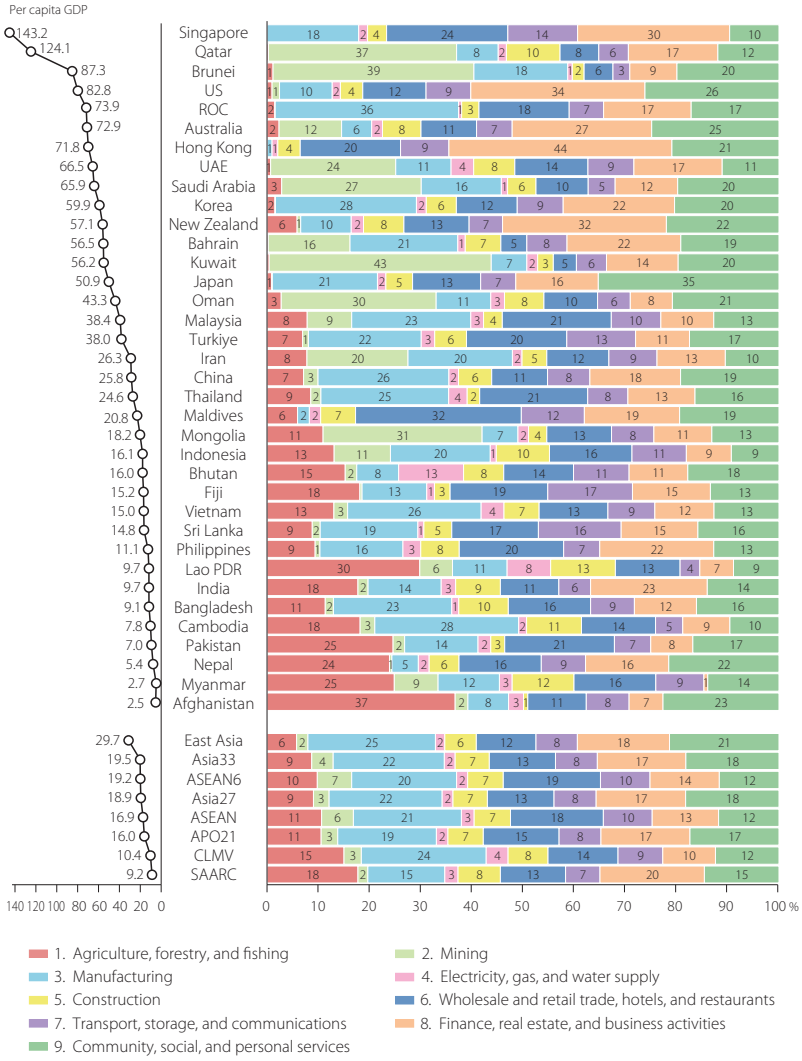

Figure 6.1 Industry Value-added Share, 2023
—Industry share of GDP at current prices

Unit: Percentage. Sources: Official national accounts in each country, including adjustments by APO-PDB. Notes: The left panel shows per capita GDP, using the 2021 PPP for GDP, the reference year 2023 (thousand USD). The countries covered are the Asia33 economies, along with the US, Australia, and New Zealand as reference countries.

correlation between manufacturing and aggregate productivity growth was evident in earlier decades, this relationship appears less robust in the 2010s. Still, the association holds to some extent with China and the ROC in the top-right region and the Maldives, Lao PDR, and Nepal in the bottom-left.

There are some outliers. Thailand is an exception within the middle-income group, where, despite its high 31% share of manufacturing, it recorded a weak 0.1% TFP growth during this period. Conversely, India, with a relatively low 15% manufacturing share, achieved strong TFP gains. While part of this shift may reflect structural movement away from low-productivity agriculture, it is also likely driven by the expansion of high-value service sectors, such as IT and digital outsourcing.

Figure 6.3 illustrates the breakdown of industry GDP shares within the manufacturing group, comprising nine sub-industries, for 17 selected Asian countries and the US, as of 2023.[68] Countries are sorted based on the size of their share of industry 3.8, which includes machinery and equipment manufacturing

68: Manufacturing consists of nine sub-industries: 3.1–food products, beverages, and tobacco products; 3.2–textiles, wearing apparel, and leather products; 3.3–wood and wood products; 3.4–paper, paper products, printing, and publishing; 3.5–coke, refined petroleum products, chemicals, rubber, and plastic products; 3.6–other non-metallic mineral products; 3.7–basic metals; 3.8–machinery and equipment; and 3.9–other manufacturing.

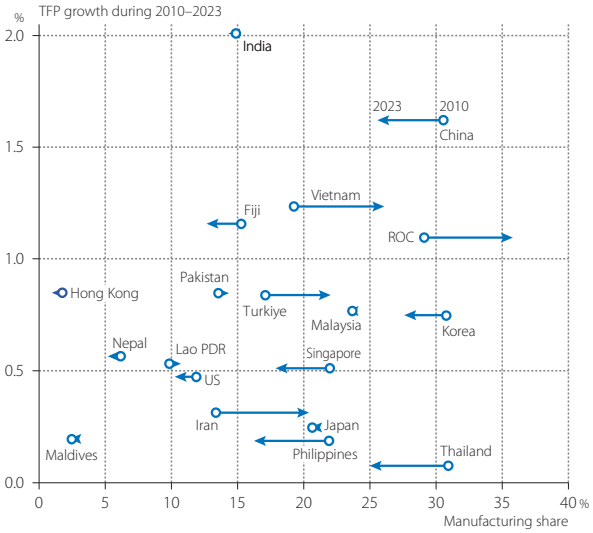

Figure 6.2 Manufacturing GDP Share and TFP Growth, 2010–2023

Unit: Percentage (average annual growth rate for the vertical axis and current-price share for the horizontal axis). Sources: Official national accounts in each country (including adjustments by APO-PDB) and APO Productivity Database 2025. Notes: The arrows show changes in manufacturing share from 2010 (white circle) to 2023 (arrowhead). Countries with negative TFP growth in this period are excluded.

(including vehicles, as shown in the yellow bars). The dominance of machinery and equipment manufacturing is apparent in the Asian Tigers and Japan. At the other end are countries dominated by light manufacturing, e.g., 3.1–food products, beverages, and tobacco products sector in Mongolia, the Philippines, and Fiji; 3.2–textiles, wearing apparel, and leather products in Cambodia and Bangladesh. The industry 3.5—coke, refined petroleum products, chemicals, rubber, and plastic products—has been important for Kuwait, the US, Malaysia, Thailand, India, and Iran, with the shale revolution in the US and geopolitical shifts raising crude imports from Russia to India further reshaping the sector dynamics in 2023. India further reshaping the sector dynamics in 2023.

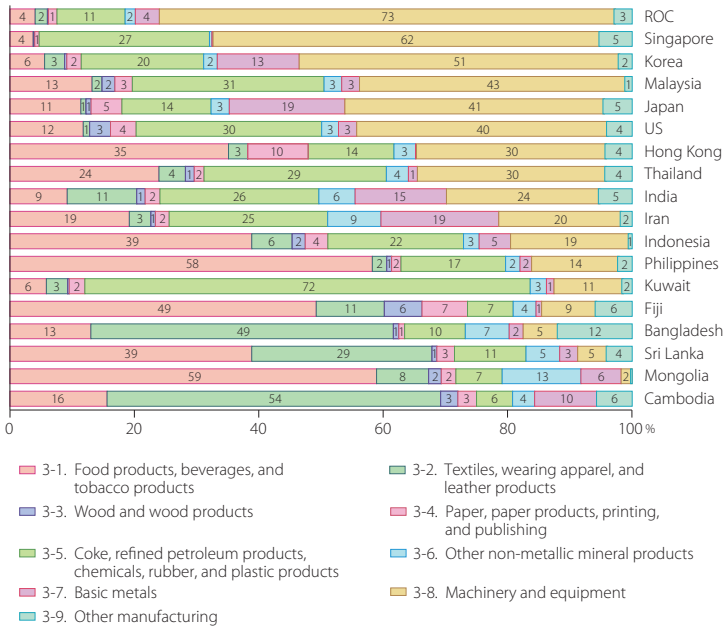

Figure 6.3 Industry Shares of Value Added in Manufacturing, 2023

——Shares of sub-industry GDP at current prices in manufacturing

Unit: Percentage. Sources: Official national accounts in each country, including adjustments by APO-PDB.

Figure 6.4 illustrates the decline in the share of the agriculture, forestry, and fishing industry in total value added over time in poorer Asian economies, those with a per capita GDP lower than 40% of the US in 2023. This could reflect the decline in agricultural output and/or the relatively rapid expansion in other sectors. Particularly in the lower-income countries in Group-D6 (Table 6.1), where the per capita GDP is lower than 10% of the US level in 2023, a declining trend is evident (Figure 6.4, right). There is a tendency for the agricultural GDP share to level off at around 10%, such as in the 2000s in Group-D5 (Figure 6.4, center) and in the 2010s in Group-D4 (Figure 6.4, left). Export-oriented agriculture generates a slightly higher share in Indonesia and Thailand.

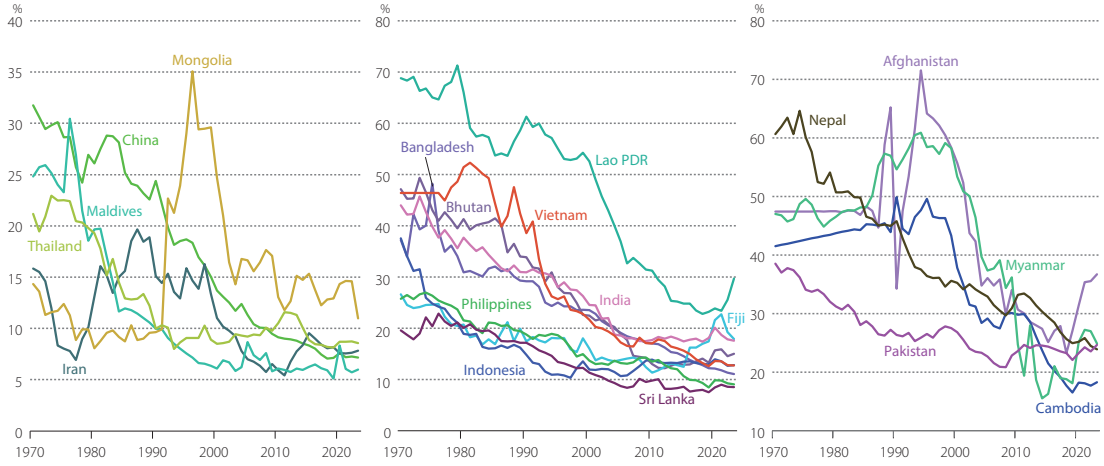

Figure 6.4 Value-added Share of Agriculture, Forestry, and Fishing, 1970–2023
——Share of agriculture, forestry, and fishing sector in GDP at current prices

Unit: Percentage. Sources: Population census and labor force survey in each country, including adjustments by APO-PDB. Note: Countries are grouped according to the per capita income levels in 2023 relative to the US, as defined in Table 6.1.

Box 12 Mineral and Energy Resources as Capital

Omitting the depletion of mineral and energy resources (MER) leads to an overestimation of net income in resource-rich countries and distorts measured TFP growth. Since its 2023 edition, the APO-PDB has incorporated MER as part of capital inputs (see Box 16). The relevant data have been developed at KEO since 2020 as part of the Asia Natural Resources Database (ANRD), which covers a broader range of natural capital, including land assets. A summary of the ANRD 2025 is provided in Section 8.2.6.

Figure 6.5 depicts the impact of considering MER assets on measured TFP for Brunei, Mongolia, and Indonesia (top panels), with bottom reference panels presenting the MER capital share in the total capital stock. Estimates of MER stocks in the ANRD are adjusted in relation to realized production rather than simple reserves. While production measurement involves some margin of error, two key trends emerge regarding the impact of MER on TFP. First, the originally high TFP growth rates—indicated by the dotted lines—for Brunei in the 1970s and Mongolia since the late 2000s appear overstated, as they do not account for the expansion of economically available MER stocks (mainly oil for Brunei and coal for Mongolia). When MER capital is included, as indicated by the bold solid lines, TFP growth becomes more moderate and reflects a more realistic trend in productivity.

On the other hand, the persistent declines in TFP observed in Brunei and Indonesia since the 1980s can largely be attributed to the depletion of MER stocks. When this decline in MER capital is properly accounted for, the estimated TFP path is revised upward. These contrasting effects underscore the importance of incorporating MER into TFP measurement to obtain meaningful productivity assessments in resource-rich countries.

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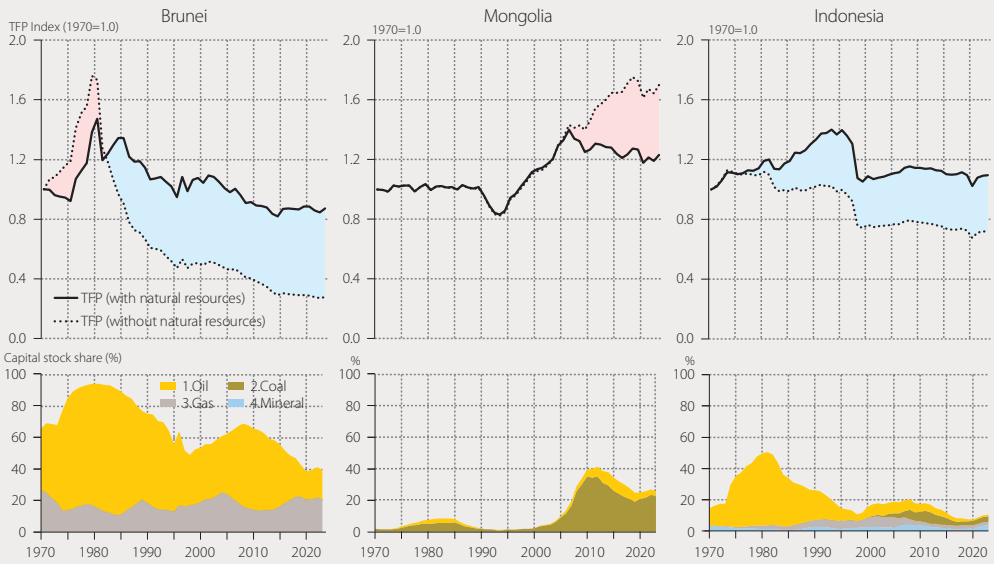


Figure 6.5 Impact of Mineral and Energy Resources on TFP in Selected Countries, 1970–2023

——TFP indices with and without consideration of MER capital

Unit: Index (TFP in 1970=1.0) in the top row and percentage for reference charts in the bottom row. Sources: APO Productivity Database 2025 and ANRD 2025. Notes: In the upper panels, the bold solid lines represent TFP estimates based on a measurement framework that includes MER as capital inputs, while the dotted lines show TFP estimates excluding MER. The bottom reference panels display the share of MER in total nominal net capital stock (including MER).

6.2 Employment Allocation

Despite the relative decline in the share of agriculture, forestry, and fishing in total value added, employment in the sector still accounts for 29% of total employment for Asia33 in 2023. Figure 6.6 shows industry shares in total employment by country and region, ranking them by per-worker labor productivity in 2023, which is presented in the reference at the left.

Figure 6.7 traces the historical trajectory of Japan's employment share of agriculture from 1885 to 2023. The share for each country in 2023 is mapped against this history (as circles). Large shares of agriculture, forestry, and fishing employment—over 30% in 10 countries—correspond to Japan's level at the end of the 1950s and the onset of high economic growth. This may indicate room for improvement in labor productivity and per capita income if more productive industries are developed and jobs are created, following the Japanese model.

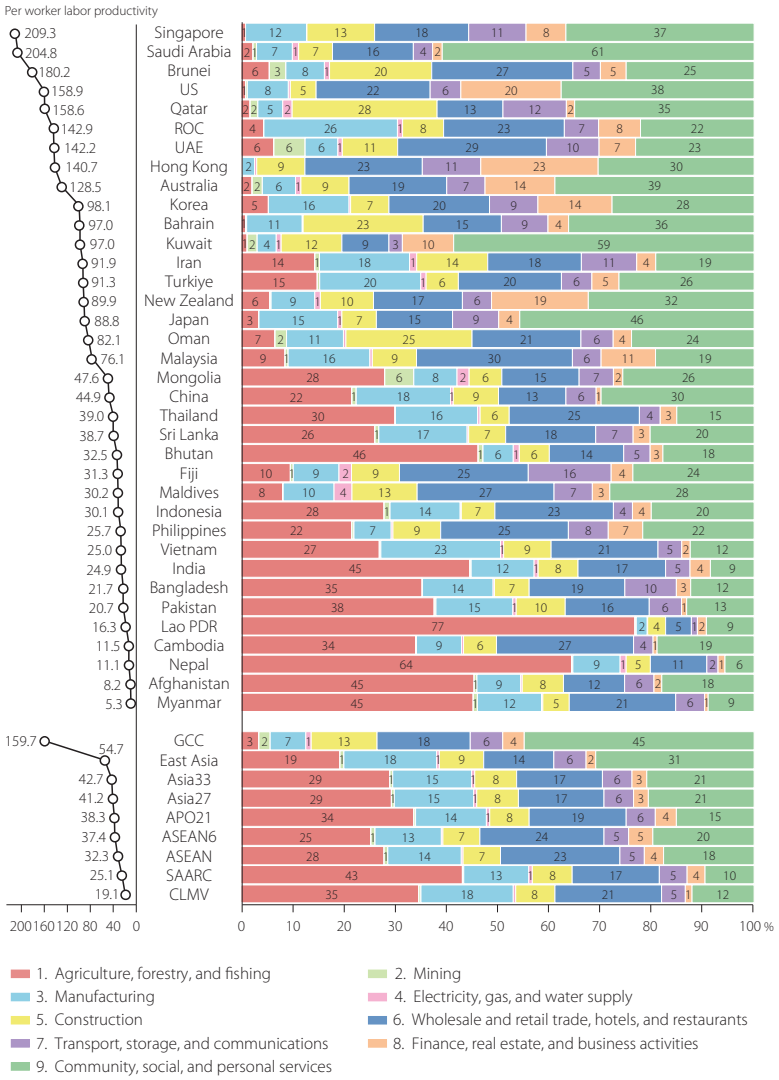


Figure 6.6 Industry Shares of Employment, 2023

Unit: Percentage. Sources: Population census and labor force survey in each country, including adjustments by APO-PDB. Notes: The left panel displays per-worker labor productivity using the 2021 PPP and the reference year 2023 (thousand USD). The countries covered are the Asia33 economies, along with the US, Australia, and New Zealand as reference countries.

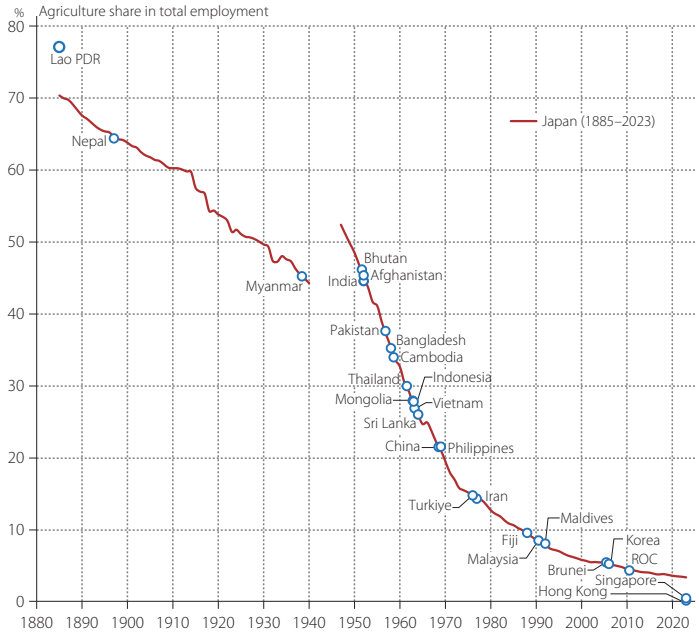


Figure 6.7 Evolution of Japan's Agricultural Employment Share and Asia's 2023 Level

——Share of the number of employment in agriculture, forestry, and fishing for Japan from 1885 to 2023 and for Asian countries

Unit: Percentage. Sources: Population census and labor force survey in each country, including adjustments by APO-PDB. The historical data sources of Japan are Ohkawa, Takamatsu, and Yamamoto (1974) during 1885–1954 and population censuses since 1920.

Figure 6.8 presents the trend of agricultural employment share over time for the same three groups of countries as in Figure 6.4, namely, D4, D5, and D6. These trends suggest that the relative decline in the share of agriculture, forestry, and fishing in total value added has been accompanied by a downward trend in its share in total employment.[69] This trend is unmistakable in most of the countries plotted in Figure 6.8.[70] Between 1970 and 2023, the employment share in this sector dropped from 81% to 22% in China and from 77% to 30% in Thailand.

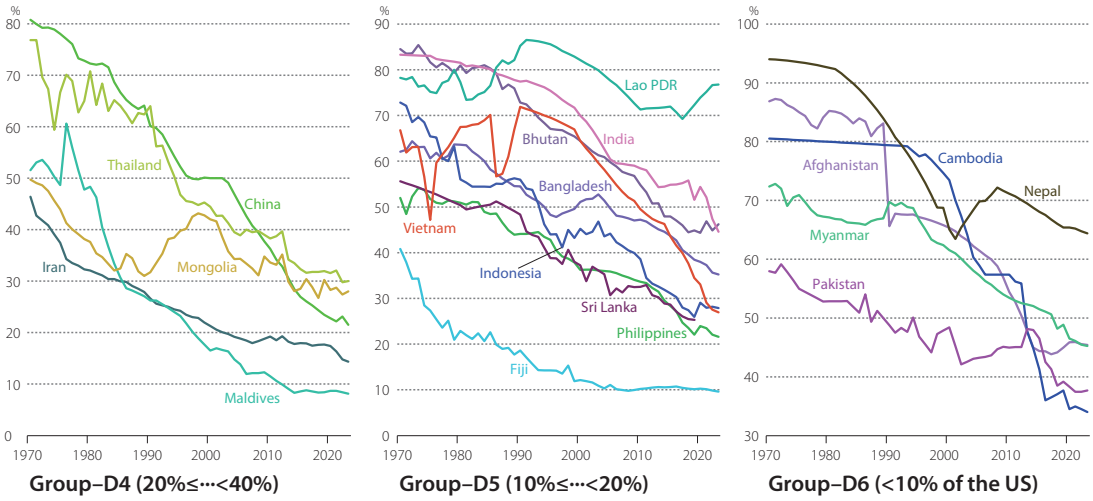


Figure 6.8 Employment Share in Agriculture, Forestry, and Fishing, 1970–2023
——Share of the number of employment in agriculture, forestry, and fishing

Unit: Percentage. Sources: Population census and labor force survey in each country, including adjustments by APO-PDB. Note: Countries are grouped according to the per capita income levels relative to the US, as defined in Table 6.1.

Comparisons of the value-added and employment shares reveal some interesting facts. Agriculture, forestry, and fishing is the only industry sector that consistently has a disproportionately higher employment share than justified by its share in value added across all economies in Asia, except Fiji. This suggests that agriculture is still highly labor-intensive and/or there may be a high level of underemployment in the sector, implying that the labor productivity level is low compared to other industries.[71] Thus, countries with a sizeable agriculture sector often have low per capita GDP. In these cases, shifting out of agriculture will help boost economy-wide labor productivity.

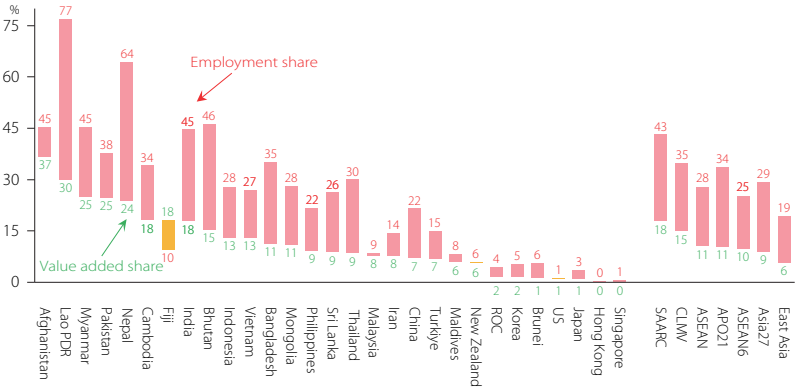
The US is an exception, where the agricultural value-added and employment shares are similar at 1%, as shown in Figure 6.9, suggesting that labor productivity in this sector is higher than that achieved in Asian countries.[72] The reverse is true for the finance, real estate, and business activities industry, which often generates a much greater value-added share than its employment share suggests. In 2023, the sector accounted for 34% of total value added generated by 20% of US employment versus 17% and 3% in Asia27, respectively (Figure 6.1 and Figure 6.6).

69: Nepal's employment-by-industry figures are constructed by interpolating benchmark data from its labor force survey and population census. Figure 6.8 indicates that its share of agriculture has increased since 2001. This reflects the employment share of agriculture at 61% in the population census of 2001 and its share of 70% in the labor force survey of 2008.

70: However, the decline in a share does not always reflect an actual fall in employment for the agriculture sector. Rather, it could reflect total work rising faster than employment in agriculture. Countries experiencing a consistent fall in actual employment in the agriculture sector are, for example, the ROC, Hong Kong, Japan, and Korea. In contrast, employment has risen in Bangladesh, India, Iran, Lao PDR, Nepal, and Pakistan. Other countries such as Indonesia, Malaysia, Singapore, Sri Lanka, Thailand, and Vietnam have yet to establish a trend in employment growth. However, China has seen employment in agriculture falling since the turn of the millennium.

Figure 6.9 Value Added and Employment Share of Agriculture, Forestry, and Fishing, 2023
——Industry share of GDP at current prices and the number of employment

Unit: Percentage. Sources: Official national accounts, population census, and labor force survey in each country, including adjustments by APO-PDB.



When the number of underemployed workers (known as "labor surplus") in each country is estimated, based on the simple assumption that long-run employment share is equivalent to the value-added share of agriculture, forestry, and fishing in the status of zero labor surplus,[73] the labor surplus population in Asia27 exceeds three hundred million in 2023. Figure 6.10 presents the country contributions and regional totals (right panel) of the estimated labor surplus. It suggests a labor surplus of more than 100 million in both India and China in 2023. While China's economic slowdown is notable, the huge labor surplus indicates that the country may follow a different growth trajectory than Japan and South Korea.

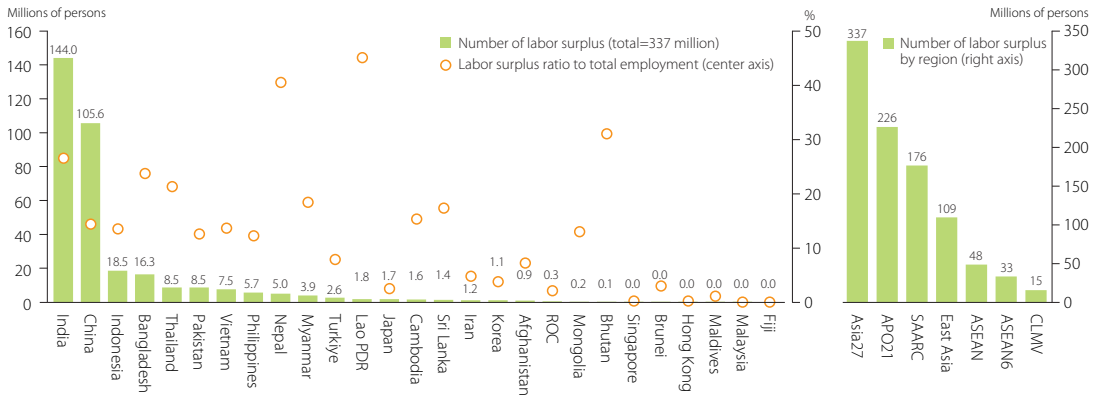


Figure 6.10 Labor Surplus, 2023
——Number and ratio of labor surplus

Unit: Millions of persons on the left and right axes and percentage on the center axis. Sources: Our estimates are based on the APO Productivity Database 2025.

It is the manufacturing sector that largely absorbs workers displaced from the agricultural sector, especially in the initial stages of economic development. Figure 6.11 traces the trajectory of the relationship between the growth of manufacturing GDP and the growth of manufacturing employment for Asian countries and the US over the past five decades. Each point represents the average annual growth rate in each decade, and the arrowhead illustrates the growth rate in the most recent subperiod, 2010–2023. If

71: Gollin, Parente, and Rogerson (2004) and Caselli (2005) demonstrate the negative correlation between the employment share of agriculture and GDP per worker. They show that the agriculture sector was relatively large in less well-off countries, and agricultural labor productivity was lower than in other sectors.
72: Jorgenson, Nomura, and Samuels (2016) indicates agriculture, forestry, and fishery sector is one of the industries which realized a consistently high TFP growth in the US (1.0% on average per year in 1970–2012), compared to its stagnation in Japan's agriculture (–0.1%), reflecting differences in the scale of individual production units, as well as massive public investments (including R&D) in new agricultural technology in the US.
73: In this calculation, the mining sector is excluded from employment and value-added totals.

manufacturing GDP and employment grow at the same rate, a dot will be on a 45-degree line through the origin, running from the lower left to the upper right quadrants. Despite positive gains in manufacturing GDP in Japan, the overall growth in manufacturing employment was negative or slightly positive.

In Korea and the ROC, manufacturing output expansion led to increased employment in the 1970s and 1980s (Figure 6.11a). However, since the 1990s, manufacturing has not been an employment-absorbing sector, regardless of the sound expansion of production in this sector. Thailand's and Singapore's experiences are closer to the 45-degree line through the origin, implying well-balanced output growth and employment in the manufacturing sector. The job-creation role of manufacturing has remained in these countries, but it is diminishing rapidly (Figure 6.11c).

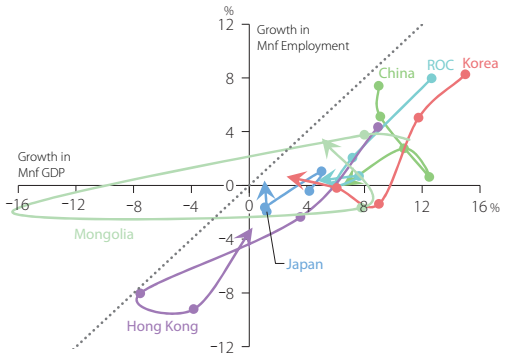


Figure 6.11a: East Asia

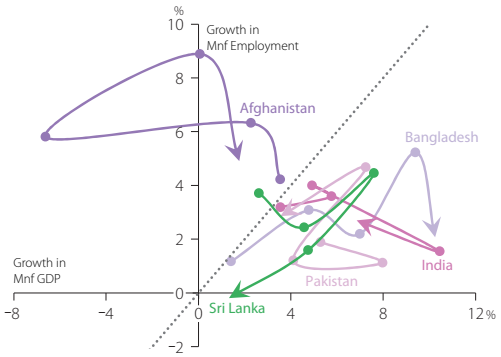


Figure 6.11b: SAARC

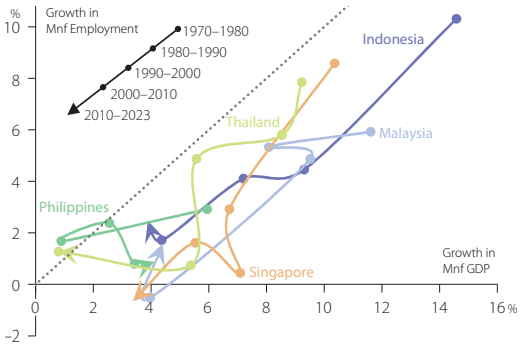


Figure 6.11c: ASEAN6

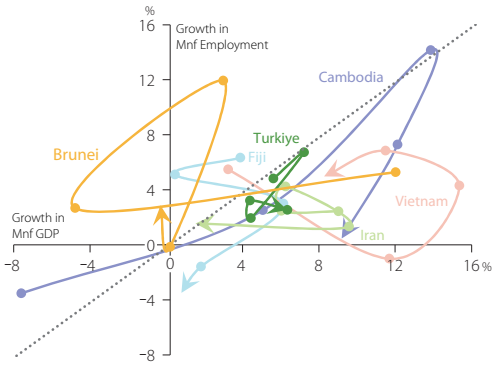


Figure 6.11d: CLMV and Other Asia

Figure 6.11 Job Creation in Manufacturing, 1970–2023
——Growth in manufacturing GDP at constant prices and manufacturing employment

Unit: Percentage (average annual growth rate). Sources: Population census, labor force survey, and official national accounts in each country, including adjustments by APO-PDB. Notes: Each dot represents the average annual growth rate in manufacturing (Mnf) in the 1970s, 1980s, 1990s, 2000s, and 2010s (2010–2023). The arrows indicate the rate in the 2010s.

6.3 Industry Origins of Economic Growth

The industry origins of recent economic growth by country and region (2010–2023) are shown in Figure 6.12. China and India have been the two main drivers of growth among Asian economies, accounting for 2.1 percentage points and 0.8 percentage points of Asia33's growth rate (averaging 4.1% per year) during 2015–2023, respectively, as shown in Figure 3.7. However, the origins of economic growth in China and India differ significantly in their industry composition. China's economic growth has been driven by expansion in the manufacturing sector, whereas India's economic growth has been led by expansion in the service sector. Development in India shifted towards manufacturing only in recent years.

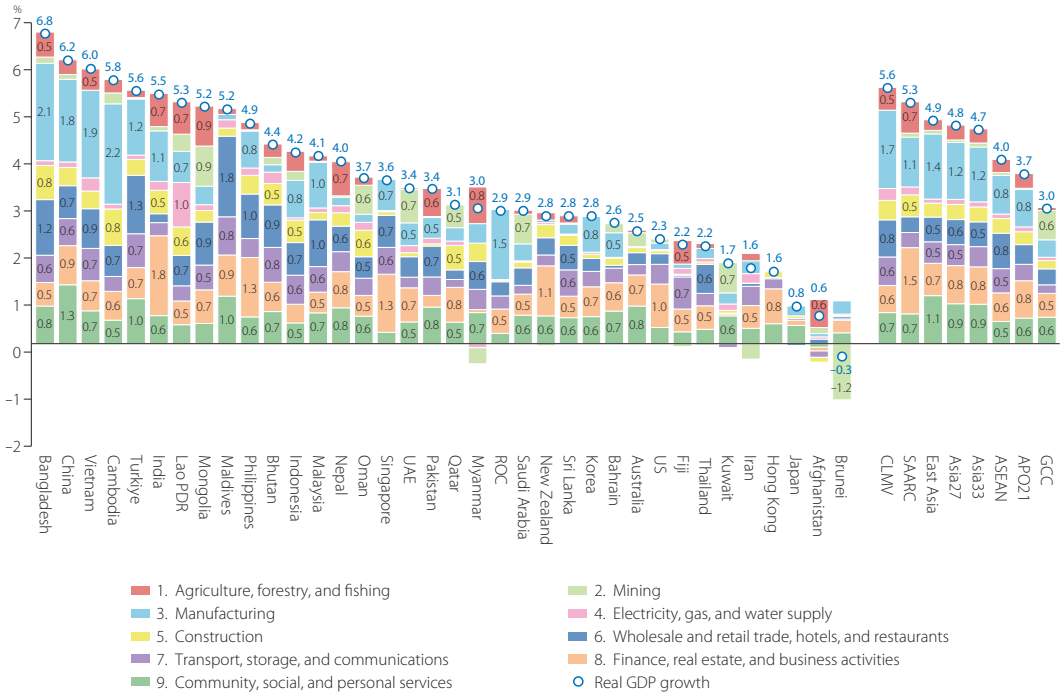


Figure 6.12 Industry Origins of Economic Growth, 2010–2023

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country, including adjustments by APO-PDB. Notes: The circles give the growth rate of GDP, and the components of the vertical bars give the value-added growth contribution of each industry to this aggregate growth.

Figure 6.13 compares industry contributions to economic growth among regional groups for 2010–2023 with the past two-decade averages: 1970–1990 and 1990–2010.[74] For half a century, the contribution of manufacturing to Asian economic growth has been significant in Factory Asia. On average, from 1990 to 2010, 29% of Asia27 economic growth came from manufacturing expansion, well above 18% in the more mature US economy. From 2010 to 2023, the contribution from manufacturing growth declined to 26% even in Asia27, with economic growth driven by the personal services sector backed by income growth. In the US, the manufacturing sector's contribution declined significantly to 6% over the same period, while the financial and other business activities sector increased significantly. The manufacturing contribution was particularly pronounced in the CLMV during the 2010s, whereas it grew less in SAARC and declined in East Asia and ASEAN6.

74: Asian averages are calculated using the Translog index to aggregate each country's industry GDP growth rates based on the two-period average of each country's shares of industry GDP to the gross regional products as weights.

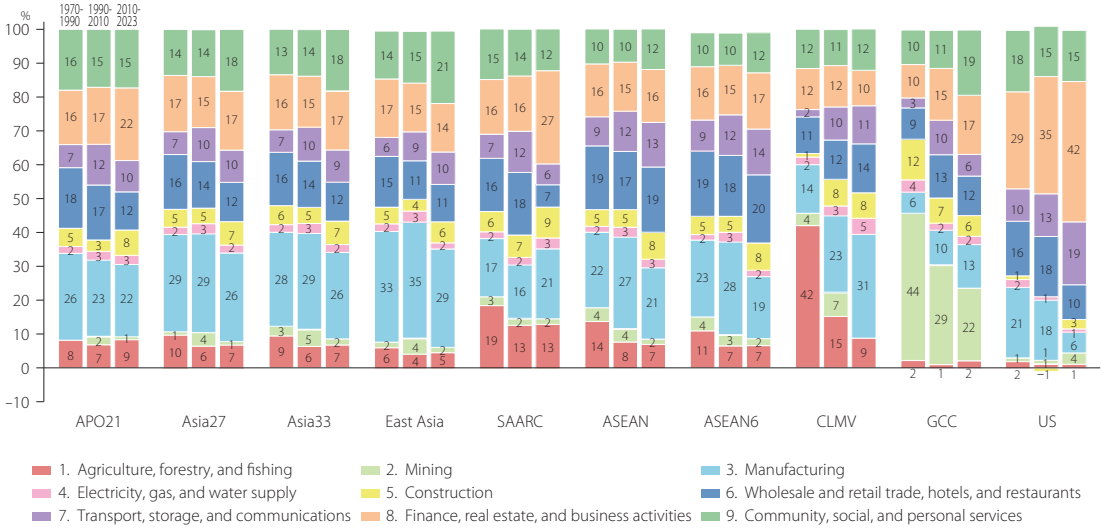


Figure 6.13 Industry Origins of Regional Economic Growth, 1970–2023
——Contribution shares of industry GDP growth by region over three subperiods: 1970–1990, 1990–2010, and 2010–2023

Unit: Percentage. Sources: Official national accounts in each country, including adjustments by APO-PDB.

Going now from regions to individual countries, there are considerable differences in experience among countries in the manufacturing sector's contribution to economic growth. Figure 6.14 illustrates the experience of each country in 2000–2010 (circles) and 2010–2023 (dark dots), sorted by the contribution of manufacturing to economic growth.[75] The left panel gives the absolute percentage point contributions, and the right panel gives the contribution shares. Comparing the two periods,

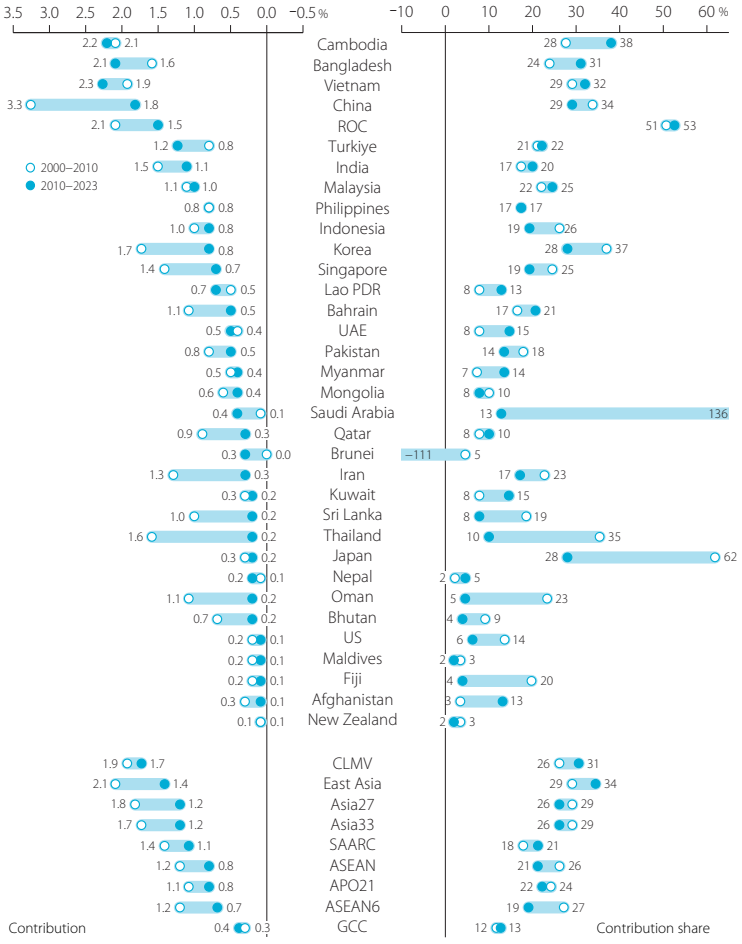


Figure 6.14 Contribution of Manufacturing to Economic Growth, 2000–2023
——Contributions in the left panel and contribution shares in the right panel in 2000–2010 and 2010–2023

Unit: Percentage point (average annual contributions) and percentage (contribution shares). Sources: Official national accounts in each country, including adjustments by APO-PDB.

the role of manufacturing has declined in many countries, partly due to the pandemic's impact. Major exceptions are India, Malaysia, and the CLMV countries. The relative decline is particularly pronounced in Japan and Thailand. The ROC's contribution to economic growth from manufacturing is slightly over 50% in both periods.

Figure 6.15 illustrates the sub-industry origins of the average annual growth in manufacturing GDP for some selected Asian countries from 2010 to 2023.[76] The expansion of ROC's manufacturing sector is characterized by a considerable concentration in 3.8–machinery and equipment sector. Bangladesh, Cambodia, and Vietnam expanded their high manufacturing shares from 2000–2010 to 2010–2023, driving significant economic growth, as shown in Figure 6.14. In Bangladesh, more than half of the annual growth rate of over 10% in this period depended on expanding 3.2–textiles, wearing apparel, and leather products. The expansion of the manufacturing sector, skewed by the growth of the textile sector, is also seen in Cambodia.

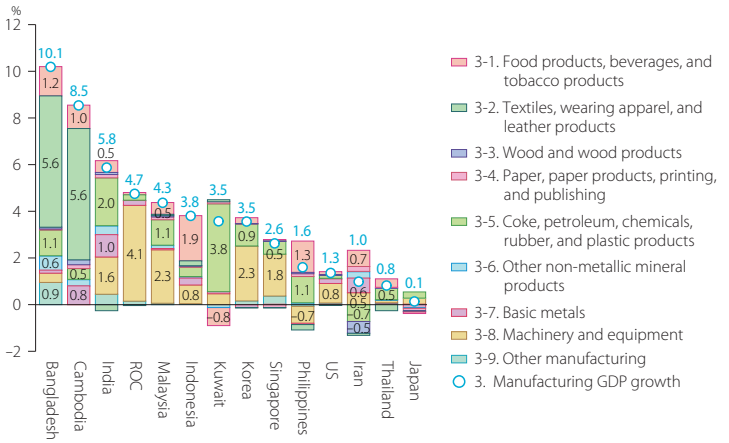


Figure 6.15 Industry Origins of Output Growth in Manufacturing, 2010–2023
——Sub-industry contributions to the manufacturing GDP growth

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country, including adjustments by APO-PDB.

Over the past two decades, the importance of the services sector in Asian economic growth has expanded. While some countries, such as Fiji, have been severely damaged by the pandemic, many Asian countries have experienced a notable impact of the services sector on economic growth, as shown in Figure 6.16. The story behind India's growth has been one of services growth. Modern ICT has enabled India to take an unconventional path in its economic development, bypassing a stage where manufacturing drives growth. Recently, however, the country has been focusing on developing the manufacturing sector under the "Make in India" initiative launched in 2014.[77] From 2010 to 2023, India's manufacturing expansion was led by 3.5–coke, refined petroleum products, chemicals, rubber, and plastic products, and 3.8–machinery and equipment, as shown in Figure 6.15. To further improve per capita GDP and capitalize on the demographic dividend (Box 5), expanding labor-intensive manufacturing in India may be necessary for greater job creation.

75: The Translog quantity index is adopted for calculating the growth in real GDP. Using this index, the growth in real GDP into the products of contributions by industries can be decomposed:
$\underbrace{\ln\left(GDP^{t}/GDP^{t-1}\right)}_{\text{Real GDP growth}} = \underbrace{\Sigma_j (1/2)\left(s_j^{t}+s_j^{t-1}\right)\ln\left(Q_j^{t}/Q_j^{t-1}\right)}_{\text{Contribution of an industry } j}$ where Q_j^t is real GDP of an industry j in period t and s_j^t is the nominal GDP share of an industry j in period t.

76: Translog quantity index is adopted for calculating the growth in real GDP of manufacturing in the same manner as footnote 75.

77: The "Make in India" initiative launched by Prime Minister Narendra Modi in 2014 is based on four pillars (new processes, new infrastructure, new sectors, and new mindset), which have been identified to give a boost to entrepreneurship in India, not only in manufacturing but also in other sectors. See PMINDIA for the details (accessed on June 26, 2025).

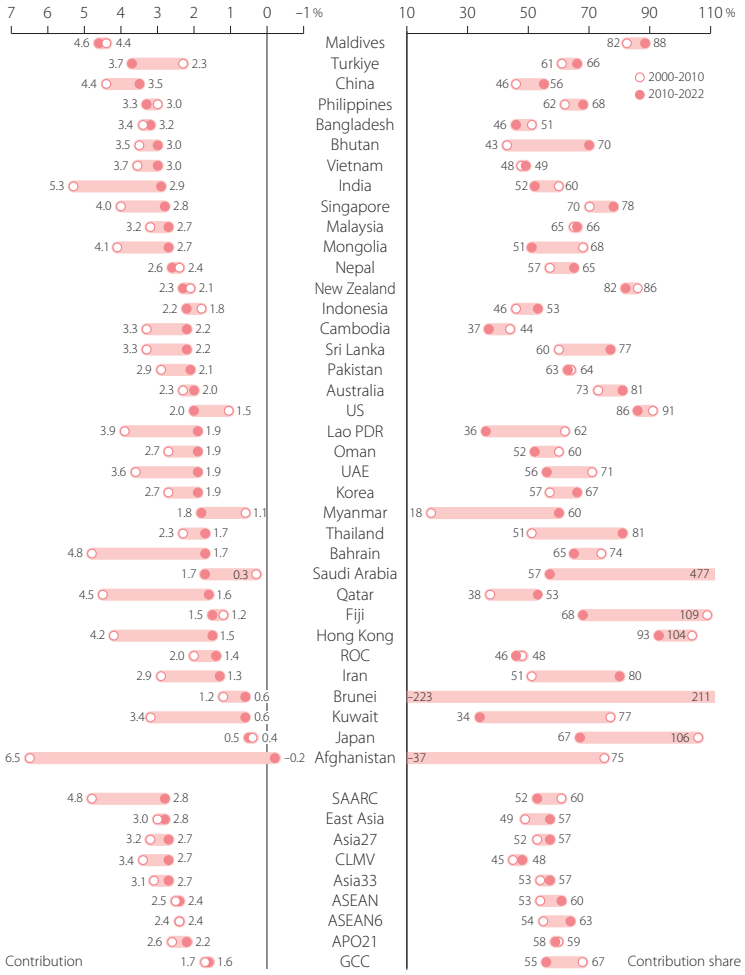


Figure 6.16 Contribution of Service Sector to Economic Growth, 2000–2023

——Contributions and contribution shares in 2000–2010 and 2010–2023

Unit: Percentage point (average annual contributions) and percentage (contribution shares). Sources: Official national accounts in each country, including adjustments by APO-PDB. Note: Services are defined as the total of industries 6–9.

6.4 Industry Origins of Labor Productivity Growth

This section analyzes the industry sources of labor productivity growth in Asia.[78] Figure 6.17 illustrates the industry origins of average annual labor productivity growth for the most recent period, 2010 to 2023.[79] The sector contribution is the growth rate of productivity for that sector multiplied by its value-added weight (footnote 79). Positive labor productivity growth was achieved across all sectors for Asia27 as a whole. The findings highlight that service industries no longer hamper an economy's productivity

78: The data presented in this chapter are subject to greater uncertainty than those in previous chapters, and the quality across countries is also more varied. Employment data in less-developed countries often needs higher frequency and industry details. The industry classification of employment data does not necessarily align with that of industrial output data. Consequently, the quality of labor productivity estimates at the industry level must be improved. Furthermore, estimates of the manufacturing sector should be of better quality than those of the service sector, as many countries have occasional manufacturing censuses but do not have a similar census covering the service sector.

79: Not all Asian countries are included, as employment by industry is unavailable for some countries. Labor productivity growth in Table 9.17 is defined simply as per-worker GDP at constant prices by industry (v_j). The industry decomposition of labor productivity growth for the whole economy (v) in Figure 6.17 (industry contribution in Table 9.17) is based on the equation $v = \sum_j \overline{w}_j v_j^*$ where the weight is value-added shares. In this decomposition, the number of workers, as the denominator of labor productivity (v_j^*), is adjusted by weighting the reciprocal of the ratio of real per-worker GDP by industry to its industry average. Thus, the industry contribution ($\overline{w}_j v_j^*$) is emphasized more in sectors in which the per-worker GDP is higher than the industry average, in comparison with the impact ($\overline{w}_j v_j$) of using the non-adjusted measure of labor productivity.

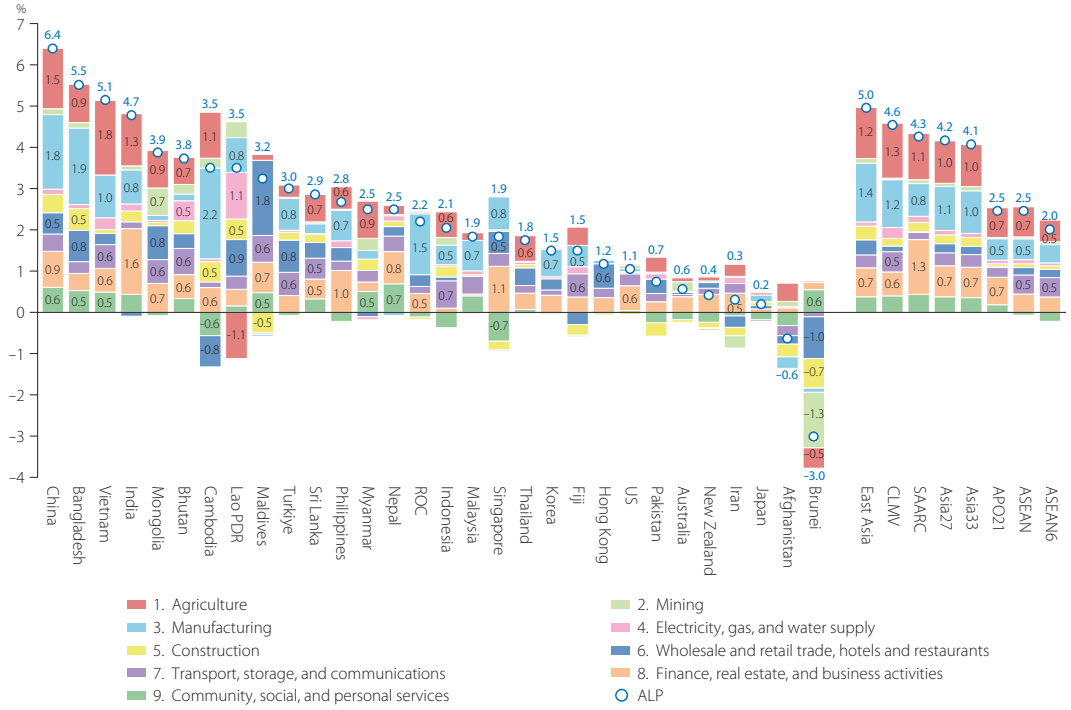


Figure 6.17 Industry Origins of Labor Productivity Growth, 2010–2023
——Growth in per-worker GDP at constant prices and industry contributions

Unit: Percentage (average annual growth rate). Source: APO Productivity Database 2025.

performance but are as capable as manufacturing in achieving productivity growth. There are no significant differences between manufacturing and non-manufacturing sectors in Asia27, i.e., manufacturing (at 4.2% on average per year), agriculture, forestry, and fishing (5.2%), construction (3.6%), electricity (3.3%), and transport, storage, and communications (3.1%) all have sizable growth in labor

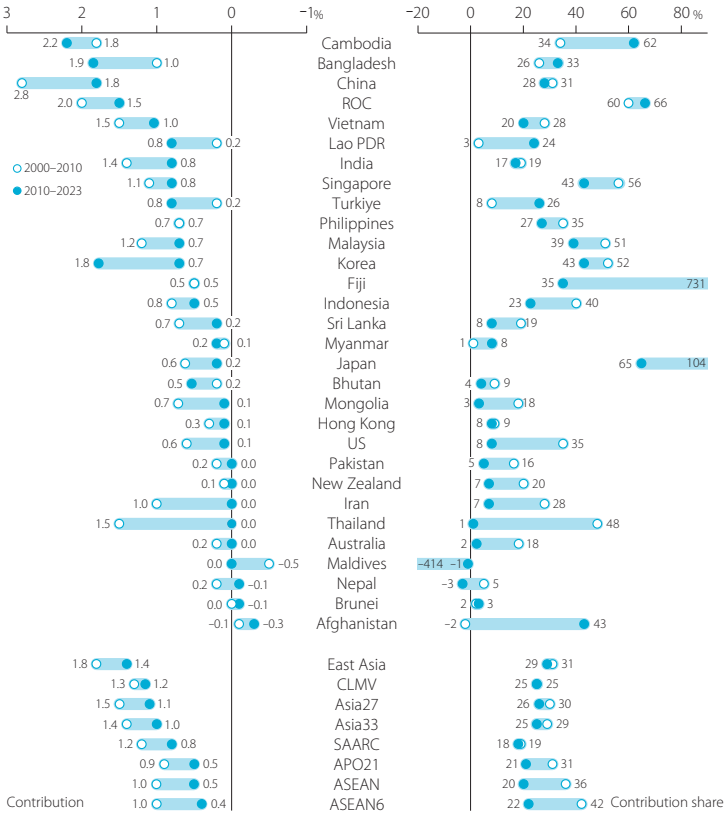


Figure 6.18 Contribution of Manufacturing to Labor Productivity Growth, 2000–2023
——Contributions of manufacturing to per-worker labor productivity growth over two subperiods: 2000–2010 and 2010–2023

Unit: Percentage point (average annual contributions) and percentage (contribution shares). Source: APO Productivity Database 2025.

productivity, as provided in Table 9.17. Agriculture is a major contributor in almost all countries, as underused labor leaves the sector.

Figure 6.18 shows the contribution of manufacturing to aggregate labor productivity growth in each country. The manufacturing sector had been the driving force behind labor productivity growth in the past, but the left panel shows that in many Asian countries, the manufacturing contribution has declined. Its contribution to aggregate labor productivity growth in Malaysia fell to 39% in 2010–2023 from 51% in 2000–2010, and to 43% in Korea from 52%. There are some exceptions where the manufacturing contribution rose, such as Turkiye, Cambodia, Lao PDR, Bangladesh, and the ROC. Surprisingly, in the ROC, a high-income country, manufacturing accounted for a high 66% of labor productivity improvements. In CLMV and SAARC, manufacturing contributed moderately to their progress in regional labor productivity, at 25% and 18%, respectively, between 2010 and 2023.

The service sector has traditionally struggled to raise productivity, but recent advances in ICT are changing this. This sector has many ICT-intensive users and can capture the productivity gains from ICT (Box 11). We observe the growing importance of these services in explaining productivity growth in recent decades. In Asia, the contribution from services matches that of manufacturing (Figure 6.17). Among the four industries in the service sector, three are potentially ICT-employing industries: wholesale and retail trade, hotels, and restaurants; transport, storage, and communications; and finance, real estate, and business activities.

Figure 6.19 presents the contribution of services to labor productivity growth by country in 2000–2010 and 2010–2023 (left panel for absolute contributions, right panel for contribution shares). Services contributed at least one-third or more to aggregate labor productivity growth in most Asian countries. By region, the contribution of services to labor productivity growth remains significant in the SAARC region, at 45%, although it has decreased from 57% in the 2000s. It differs significantly from the 35% share in CLMV and 35% in East Asia.

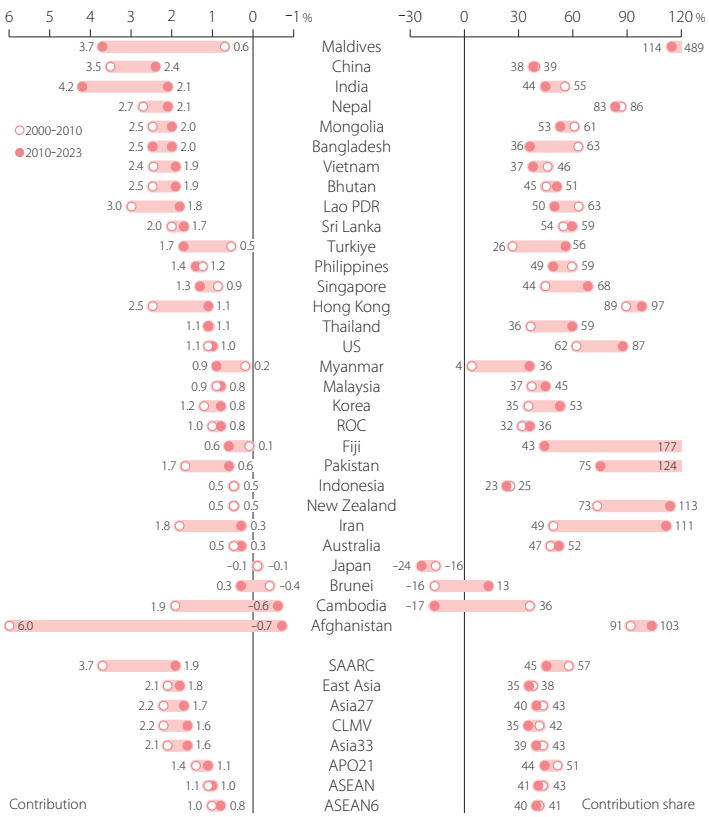


Figure 6.19 Contribution of Service Sector to Labor Productivity Growth, 2000–2023

——Contributions of the service sector to per-worker labor productivity growth in 2000–2010 and 2010–2023

Unit: Percentage point (average annual contributions) and percentage (contribution shares). Source: APO Productivity Database 2025.

Box 13 Premature Deindustrialization in Asia

Deindustrialization, or the shrinkage of the manufacturing sector, has been a major concern in advanced economies for reasons discussed in Rodrik (2016), which identifies a "premature deindustrialization." Rodrik claims that many developing economies in recent periods are starting to lose their share of the manufacturing sector without experiencing full industrialization. Premature deindustrialization may harm economic development because manufacturing is a dynamic sector, typically at the center of sustained economic growth and technological progress (Figure 6.2). The industry has also created massive numbers of jobs for poor populations (Figure 6.11). Additionally, it generates labor flows from rural to urban areas, from informal to formal sectors, and nurtures human capital. Early servicification of the economy without a mature manufacturing sector may jeopardize a smooth transition from developing to developed status.

Rodrik points out that premature deindustrialization is serious, particularly in Latin America and Sub-Saharan Africa. What about in Asia? Figure 6.20 plots GDP shares of the manufacturing sector over time in Asian economies, placing the peak of each country's inverse U shape at the center. The US and Japan graphs are typical images of the rise and fall, with peaks above 30% in 1946 and 1970, respectively. The peaks in manufacturing GDP are reached earlier than in manufacturing employment shares, which are 1970 in the US and 1973 in Japan. Malaysia, Singapore, and Thailand show a similar pattern, with peaks in 2000, 2004, and 2010, respectively. China has a lower income than this group but surprisingly peaked earlier in 1997. The pattern for the ROC and Korea is atypical; the ROC share peaked at 38% in 1986, fell but then rose sharply again, Korea reached 30% in the mid-1990s, stabilized, and then rose to 32% in 2011.

The Philippines' manufacturing share peaked at 30% in 1973 and has since declined steadily, reaching 17% by 2023. Indonesia is just above 20%. Although these are respectable figures, there may still be room for industrialization. India and Pakistan are struggling below 20%.[80] These countries still need to be fully industrialized, requiring further effort to promote the manufacturing sector.

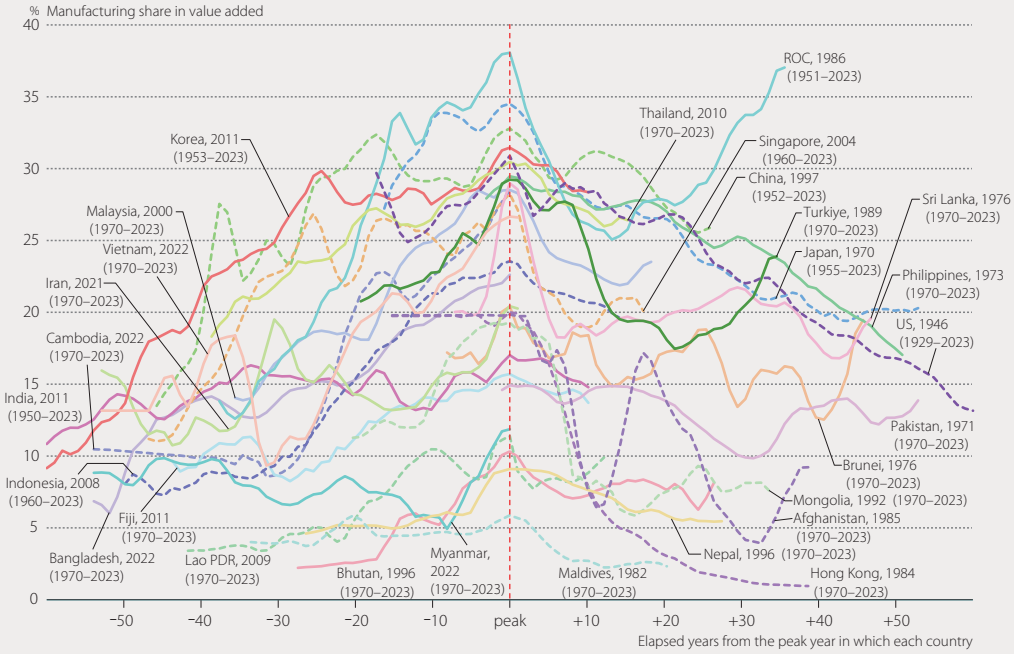


Figure 6.20 Country Peaks in Manufacturing GDP Share, 1970–2023

Unit: Percentage. Sources: Official national accounts in each country (including adjustments by APO-PDB) and APO Productivity Database 2025. Note: The lines present trends based on the three-year moving averages.

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The IMF (2018, Chapter 3) suggests that service sectors can drive economy-wide productivity growth and the decline in manufacturing jobs has contributed little to the rise in labor income inequality in advanced economies. Figure 6.21 graphs the manufacturing share of GDP (five-year moving average) versus per capita GDP over time. It indicates that some low- and middle-income SAARC countries, with low and stagnant shares of manufacturing GDP, have seemingly improved their per capita income levels. However, it is uncertain if these countries will continue to grow fast by skipping the intermediate stage of mature industrialization.

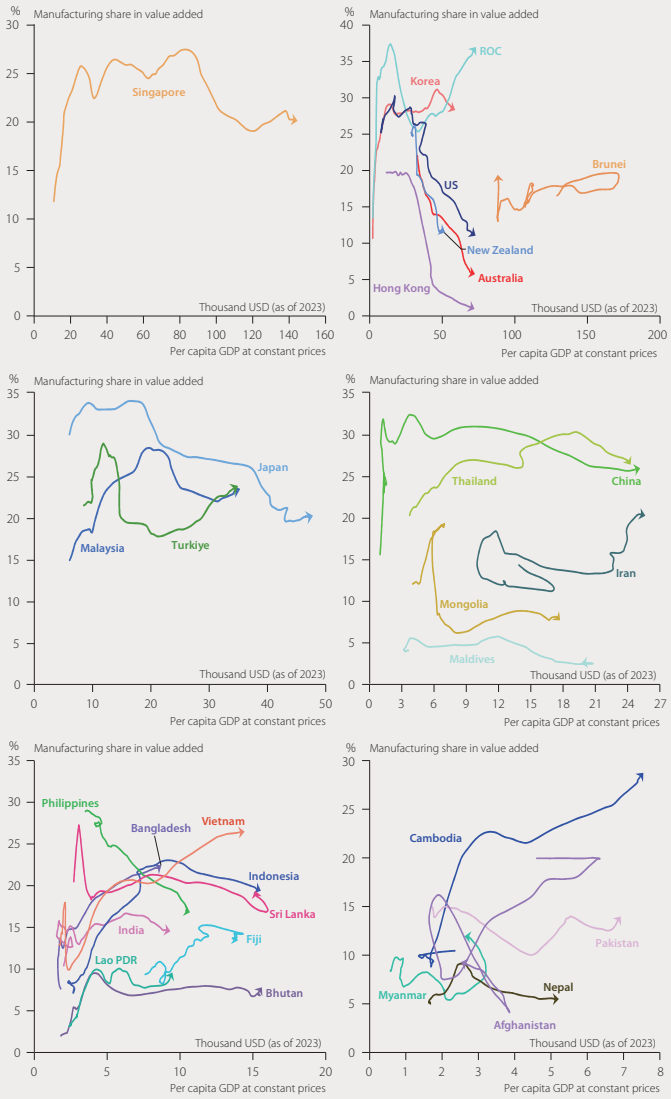

Figure 6.21 Manufacturing GDP Share and Per Capita GDP, 1970–2023

——Five-year moving averages of the share of manufacturing GDP and per capita GDP

Unit: Percentage. Sources: Official national accounts in each country (including adjustments by APO-PDB) and APO Productivity Database 2025.

80: In the 2024 edition of Databook (APO 2024), Cambodia's manufacturing share in GDP peaked at 20% in 2022. However, following the benchmark revision from the year 2000 to 2014 (published in July 2024), the same 2022 peak was revised upward to 29%.

7 Real Income Growth

Highlights

- Real GDP could systematically underestimate (or overestimate) growth in real income if the terms of trade improve (or deteriorate) in some resource-rich countries, where the trading gain has made it possible to sustain a rise in purchasing power with little real GDP growth. The positive trade benefit effects experienced by rich oil countries in the 2000s turned negative in the 2010s, but price spikes after the pandemic and the Russia-Ukraine war have turned positive in some GCC countries from 2010 to 2023.
- Net primary income from citizens working abroad as a percentage of GDP has risen strongly in the Philippines, from 0.8% in 1990 to its peak of 11.8% in 2013. In Bangladesh, it increased from 1.9% to its peak of 7.5% in 2012.
- Five resource-rich countries in Asia33 have enjoyed a trading gain of over 1.0% per annum from 2000 to 2023. Among them, Mongolia managed to raise labor productivity. In contrast, export-oriented, high-productivity-growth Asian countries, such as the Asian Tigers and Japan, have been facing a deteriorating trading gain position as the price of their manufactured products declined and the price of energy imports rose.

Constant-price GDP captures production volume, not real income. An improvement in the "terms of trade," defined as the relative price of a country's exports to imports, explicitly raises real income and, in turn, welfare (Diewert and Morrison 1986; Kohli 2004). Producing the same volume of oil allows higher imports of food when the price of oil rises. In many ways, a favorable change in terms of trade is analogous to technological progress, making it possible to get more for less. For a given trade balance position, a country can either import more in exchange for what it exports or export less to get what it imports.

7.1 Real Income and Terms of Trade

By focusing on production, the real GDP concept does not capture the beneficial effect of the improvement in the terms of trade. In contrast, real income focuses on an economy's consumption possibilities; it captures the impact of a change in the relative price of exports to imports. Real income growth attributed to changes in the terms of trade can be significant when there are large fluctuations in import and export prices, and the economy is highly exposed to international trade, as is the case with many Asian economies, as shown in Figure 4.12.

The distinction between real income and real GDP lies in the differences between the corresponding deflators. Real GDP is calculated from a GDP deflator aggregating prices of household consumption, government consumption, investment, exports, and imports. In contrast, real income is calculated from the prices of domestic expenditure, consisting of household consumption, government consumption, and investment. Therefore, real income can be understood as the domestic expenditure that can be purchased with the current income flow.[81] As such, real income captures the purchasing power of income flow. Furthermore, the Databook adopts the concept of gross national income (GNI) instead of GDP in calculating real income to consider net income transfers from abroad.[82] Applying the method proposed by Diewert and Morrison (1986), the annual growth rate of real income can be fully attributed to three

81: This definition of real income is the same as in Kohli (2004, 2006). An alternative definition is a nominal GDP deflated by the price of household consumption.

components: yearly growth rate of real GDP, real income growth attributed to a change in prices of exports and imports (referred to as the trading gain), and the effect of net income transfer.[83]

Figure 7.1 plots the time series of net primary income from abroad as a percentage of GDP for some selected countries. The role of net primary income from abroad has shifted from negative to positive in Hong Kong, with the transition occurring in the mid-1990s, leading up to the handover of Hong Kong from British rule to China in 1997. Since then, net primary income from abroad has been positive. Net primary income from abroad has risen strongly in the Philippines, increasing from 0.8% in 1990 to a peak of 11.8% in 2013, providing a significant long-term contribution to the purchasing power of Filipinos, largely driven by remittances from many overseas workers.[84] A similar, but moderate, trend can be observed in Bangladesh. Singapore's net primary income from abroad displayed larger fluctuations in the 1980s and the 2000s, and the negative range has been rapidly increasing since the beginning of the 2010s with rising numbers of foreign workers.

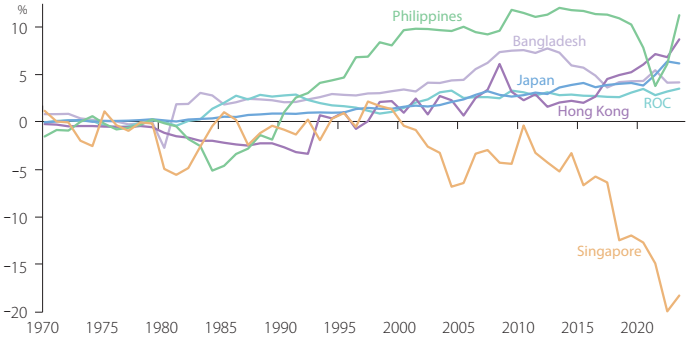

Figure 7.1 Effect of Net Income Transfer on GDP, 1970–2023
——Share of net income transfer in GDP at current market prices

Unit: Percentage. Sources: Official national accounts in each country, including adjustments by APO-PDB.

The crude oil and gas price changes in the recent decade have greatly impacted trading gains in Asian countries. Figure 7.2 compares the trading gain effects between 2000–2010 and 2010–2023. The positive terms-of-trade gains enjoyed by resource-rich oil-exporting countries during the 2000s turned negative in the 2010s. However, the surge in energy prices following the pandemic and the Russia–Ukraine war helped offset these losses in many of those countries. In contrast, resource-importing countries experienced a deterioration in their terms of trade during the post-pandemic period.

Over a long period, the trading gain effect averages out to a small change. But over a shorter period, it could be very significant. Figure 7.3 plots real income growth against real GDP growth over 2000–2023 to show this effect (numbers are provided in Table 9.18). Combining the trading gain effect and net

82: Net income transfers from abroad, in the context of GNI, refer to net primary income received from the rest of the world. This includes cross-border compensation of employees, investment income (such as interest, dividends, and reinvested earnings), and rents. It excludes secondary income such as remittances and foreign aid, which are part of gross national disposable income (GNDI) rather than GNI under the SNA framework.

83: Real income growth can be decomposed into two components as follows:

$$\underbrace{\ln\left(\frac{GNI^t}{GNI^{t-1}}\right)-\ln\left(\frac{P_D^t}{P_D^{t-1}}\right)}_{\text{Real income growth}}=\underbrace{\ln\left(\frac{GNI^t/GDP^t}{GNI^{t-1}/GDP^{t-1}}\right)}_{\text{Income transfer effect}}+\underbrace{\ln\left(GDP^t/GDP^{t-1}\right)-(1/2)\sum_i\left(s_i^t+s_i^{t-1}\right)\ln\left(P_i^t/P_i^{t-1}\right)}_{\text{Real GDP growth}}+$$

$$\underbrace{(1/2)\left(s_X^t+s_X^{t-1}\right)\left(\ln\left(P_X^t/P_X^{t-1}\right)-\ln\left(P_D^t/P_D^{t-1}\right)\right)-(1/2)\left(s_M^t+s_M^{t-1}\right)\left(\ln\left(P_M^t/P_M^{t-1}\right)-\ln\left(P_D^t/P_D^{t-1}\right)\right)}_{\text{Real income growth attributed to changes in the terms of trade (=trading gain)}}$$

where P_i^t is price of final demand i in period t and s_i^t is expenditure share of final demand i in period t. D is domestic expenditure, X is export, and M is import. Note that the real GDP growth based on this formulation may differ from that used in other chapters, since the implicit Translog quantity index is adopted for calculating it.

84: See footnote 18 for details. In the 2018 benchmark revision of the Philippines System of National Accounts (PSNA) published as of April 2020, the net primary income from abroad was revised downward considerably. The pre-revision ratio in PSNA, incorporated for the first time in the *APO Productivity Databook 2020* (October 2020), was three times larger than the revised estimate in this edition.

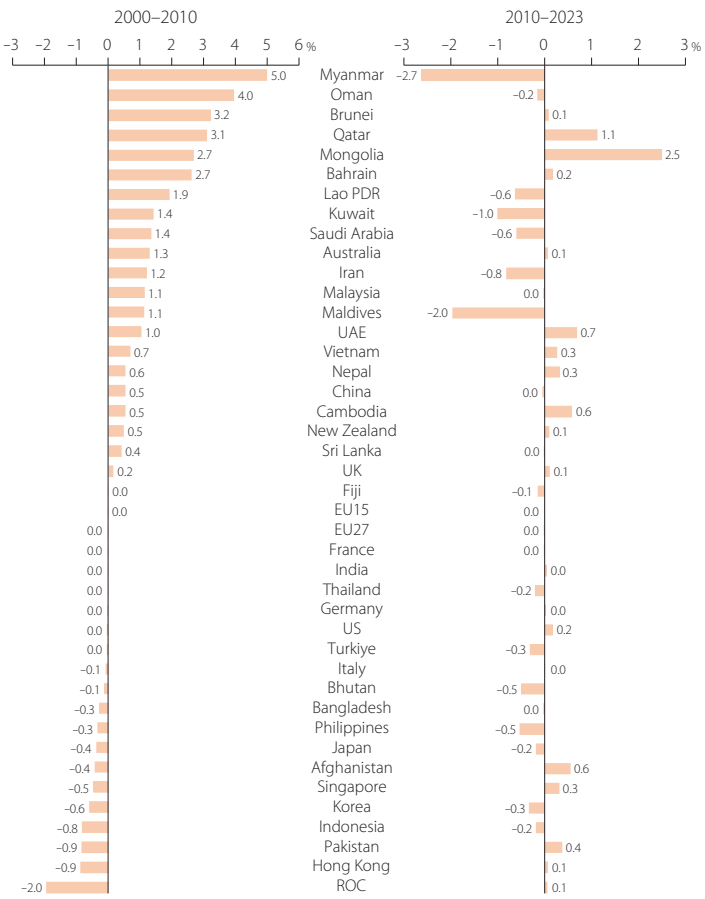

Figure 7.2 Trading Gain Effect, 2000–2023

——Contributions to real income growth in 2000–2010 and 2010–2023

Unit: Percentage point (average annual contributions). Sources: Official national accounts in each country, including adjustments by APO-PDB.

primary income from abroad, real income growth for most countries fell within the margin of ±25% of real GDP growth in the long run. In larger economies, such as the US, the EU15, China, and India, real income growth was almost equivalent to GDP growth from 2000 to 2023. Brunei and Oman were outliers in this period, with real income growth more than 25% higher than GDP growth. On the other hand, Singapore and ROC had income growth lower than GDP growth.

Figure 7.3 Real Income and GDP Growth, 2000–2023

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country, including adjustments by APO-PDB.

7.2 Trading Gain and Productivity Growth

When the trading gain is highly favorable, it can breed complacency, with productivity performances suffering. Resource-rich economies are susceptible to this pitfall because they can reap extremely positive trading gains when commodity prices turn in their favor over a sustained period. However, just as commodity prices can rise, so can they fall. This is when real income growth could suffer if fundamentals for real GDP growth are weak. Figure 7.4 plots the trading gain effect against labor productivity growth from 2000 to 2023. For most countries with little natural resources, the trading gain effect is less than 0.5% per year, plus or minus, over this period. In general, a resource-rich country can suffer from "Dutch disease," a phenomenon where a country's currency is inflated by a commodity boom, making other parts of its economy less competitive and potentially increasing its dependence on mineral and energy resources.[85] This is how resource abundance can easily lead to resource dependence. Five resource-rich Asian countries enjoyed trade gains of over 1.0% per year from 2000 to 2023. Mongolia and Myanmar realized both trading gain and labor productivity growth. In contrast, export-oriented and highly productive Asian countries such as the Asian Tigers and Japan have been facing a deteriorating trading gain position as the prices of their manufactured exports fall with the rise of China's manufacturing and the price of energy imports rises.

Figure 7.4 Trading Gain Effect and Labor Productivity Growth, 2000–2023

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country (including adjustments by APO-PDB) and APO Productivity Database 2025. Note: Labor productivity is defined on an hourly basis.

Figure 7.5 illustrates trading gain effects and changes in the value-added share of the mining sector from 2000 to 2023 in some selected countries. It indicates that large trade-gainers typically have dominant mining sectors, such as petroleum and natural gas (countries in the top-right of Figure 7.5). These countries gain from the positive terms-of-trade effects if resource prices continually rise. However, this makes traditional manufacturing uncompetitive. Then, the story of the Dutch disease may appear. Richness in mineral and energy resources may become a curse if they do not have competitive industries other than mining.

A way to counteract Dutch disease is having broad-based, robust, productivity growth and industry diversification. Figure 7.5 shows that the GCC countries (except Kuwait and UAE) actively reduced their

85: The term originated from The Economist (1977) to describe the overall decline of manufacturing and the subsequent economic crisis in the 1960s in the Netherlands after the discovery of the large natural gas field in the North Sea in 1959.

mining sector share over time, which could reflect the intention of developing industries other than mining. However, Figure 7.4 shows that labor productivity growth rates in these countries remained low or even negative. Even if they wanted to start industrializing, their high income and strong local currency would not allow them to easily develop a manufacturing sector or an internationally competitive service industry. Another concern is their heavy dependence on skilled and unskilled foreign workers.

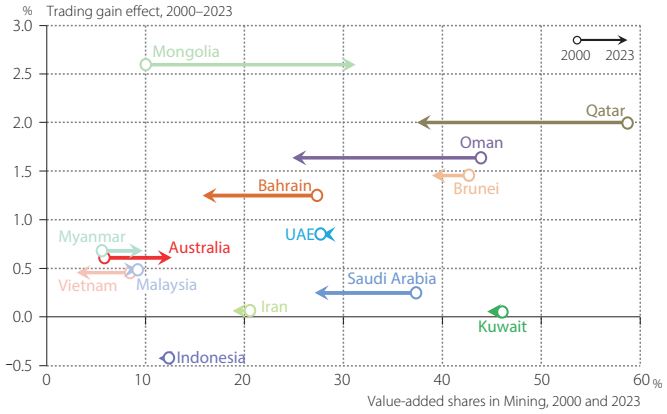

Figure 7.5 Trading Gain Effect and Value-added Share in Mining Sector, 2000–2023

Unit: Percentage (average annual growth rate). Sources: Official national accounts in each country (including adjustments by APO-PDB) and APO Productivity Database 2025. Note: The arrows give the change in VA share between 2000 and 2023, and vertical axis gives the trading gain.

On the other side of the coin are the resource/energy-importing economies. Most of these suffered negative trading gain effects, losing a part of their economic growth due to resource price hikes, particularly in the 2000s (Table 9.18). However, this has strengthened their competitiveness in manufacturing and other productive activities for the future. Figure 7.4 also shows that many Asian countries have achieved high labor productivity growth while accepting a deteriorating trading gain over the long run (bottom-right corner). These countries are typically resource importers whose voracious commodity demand pushes their import prices up. Meanwhile, export prices tend to fall because of their achievement in productivity improvement, resulting in unfavorable movements in the terms of trade. This is particularly true in countries where economic growth depends on export promotion. In such instances, a negative trading gain is a partial side-effect of productivity success. Although the trading gain effect partly negates their real GDP growth, they are better positioned than before their development took off without productivity improvements.

Box 14 Navigating the Economic Horizon: Projections to 2035

The growth accounting in the Databook evaluates the quality of economic growth in each country and region in Asia. A similar framework can be applied to forecast economic growth based on future population structure and technology scenarios. This Box presents our mid-term projections of economic growth and labor productivity for the Asia27 economies through 2035. Our projections reflect the actual economic growth of 2024 and the first quarter of 2025, where available.

Our population projection relies on the United Nations (2024), in which the annual projections are provided by gender and age, as presented in Box 4. This is divided into estimates in different educational attainment categories based on the projections developed in the Wittgenstein Centre Human Capital Data version 3.0 (Lutz, Butz, and KC 2017; Lutz et al. 2018; Samir KC et al. 2024) for each gender and age class.[86] The employment rate in each population class by gender, age, and education is developed in AQALI 2025 (Section 8.3.2).

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86: The Wittgenstein Centre Human Capital Data (version 3.0) was accessed on June 3, 2025. This website presents a set of scenarios for future population and human capital trends in 201 countries by 2100.

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The employment rates in 2023 are assumed to be constant for the future in each population class. Using these populations and the employment rates, employment is estimated by gender, age, and education for 2024–2035.

The employment rate in each class is divided into different categories of employment status, i.e., own-account workers, contributing family workers, and employees, based on the current composition from 2015 to 2023, provided in the AQALI. Based on past trends in each country, the projected employee share is assumed to change gradually by 0–3% per year until 2035. Based on these scenarios, projections of employment rates, cross-classified by gender, age, education, and employment status, are developed through 2035 in each country. The projected average growth rates of total employment per year are presented in Figure 7.6 for the years 2023–2025, 2025–2030, and 2030–2035, with the historical rate from 2010 to 2023 indicated by the black mark. Eight of the Asia27 countries are projected to have negative growth by 2035, including all the East Asia countries.

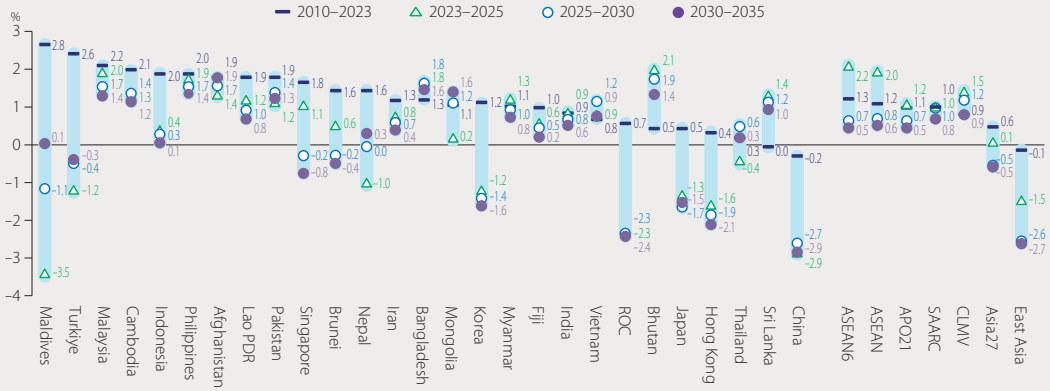

Figure 7.6 Projection of Change in Total Employment, 2023–2035

Unit: Percentage (average annual growth rates). Sources: The estimates are based on the United Nations (2024), Lutz et al. (2018), Samir KC et al. (2024), and AQALI 2025.

In response to this future employment scenario, hours worked, and labor quality are projected through 2035. For each country, the average hours worked per worker are benchmarked at the elementary level of employment estimated for 2015–2023 in AQALI 2025. Based on past trends, average hours worked are assumed to decrease slightly until 2035. The relative wage structure cross-classified by gender, age, education, and status is also provided for 2015–2023 in AQALI 2025. Using these projections, labor quality changes are estimated through 2035.

Figure 7.7 presents the estimates of average annual growth rates of labor quality in each country. In some countries such as Bhutan, Indonesia, Mongolia, and Thailand, the quality growth is expected to fall considerably in the late 2020s and the early 2030s compared to 2010–2023, when labor quality growth was exceptionally high, mainly reflecting the changes in employment status and educational attainment. In Asia27, labor quality changes are projected to slightly increase in the late 2020s and the early 2030s compared to 2010–2023. This indicates that the deteriorations in ASEAN6 are expected to be offset by the improvements in SAARC and East Asia.

There is significant uncertainty in future capital accumulation. As a baseline scenario in our projection, GFCF shares in Asian countries are assumed to follow the long-term trend of Japan. The dotted line in Figure 7.8 presents the past GFCF share since 1885, and the line shows the ten-year moving average. The current level of GFCF share in each Asian country is plotted using the year in which its per-hour labor productivity is equal

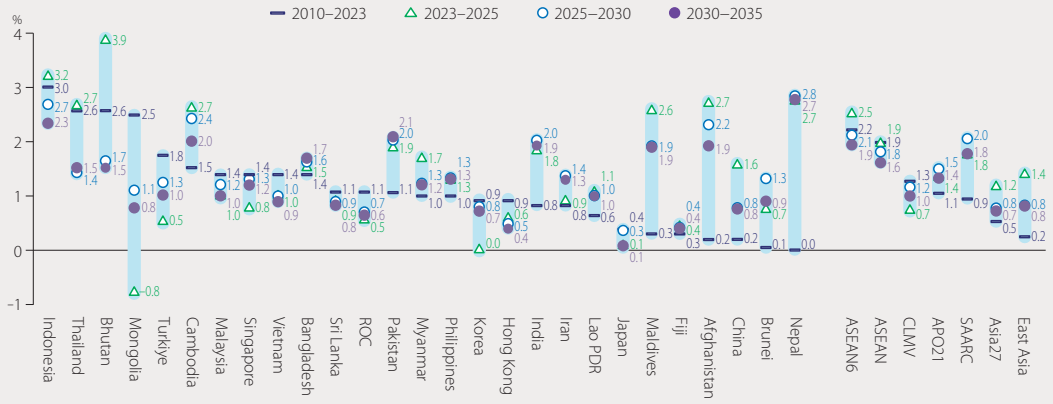

Figure 7.7 Projection of Labor Quality Change, 2023–2035

Unit: Percentage (average annual growth rates). Source: The estimates are based on AQALI 2025.

to the historical Japan share (see Figure 5.7). Based on these historical trends, the future GFCF rate is assumed for each country. Each year's investment is estimated by GDP and determines the beginning-of-the-period capital stock level for the next year, which provides capital services to be used in next year's production.

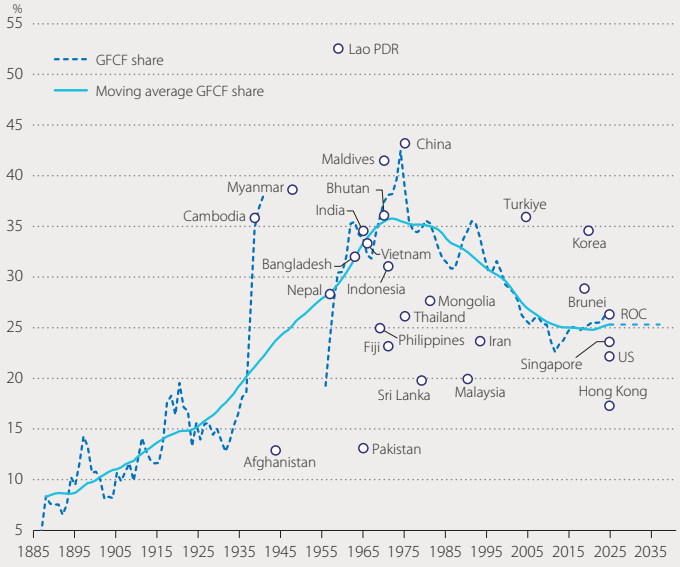

Figure 7.8 Historical GFCF Share of Japan and Current Level of Asia in 2023

——Share of GFCF in GDP at market prices for Japan from 1885 to 2023 and for Asian countries in 2023

Unit: Percentage (current-price share). Source: APO Productivity Database 2025.

Another uncertain source of economic growth is TFP. As a baseline scenario, the TFP growth in 2010–2023 estimated in APO-PDB 2025 is used to provide benchmark estimates. In some countries, however, past achievements reflect events that will not be repeated. In these cases, benchmark projections of TFP growth are set in the following manner. In each Asian country, the future change in TFP is assumed to follow the long-term trend of a leading country in each region. From the first quarter of 2024 to the first quarter of 2025, the actual GDP growth is observed in the quarterly national accounts (QNA) in some Asian countries. The TFP growth rates in 2023–2024 are adjusted, making the economic growth projection equivalent to the GDP estimates in the available QNA (footnote 13, Section 3.1). The benchmark estimate of labor share is provided in APO-PDB 2025 (see Section 8.3.3 and Box 17). The recent estimates are assumed to hold for the 2023–2035 projection period.

Combining the labor, capital, and TFP projections, we get the baseline estimates of economic growth that are presented in Figure 7.9. In Asia27, the recent economic growth in 2010–2023 (4.7% per year on average) is

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projected to decrease slightly to 4.3% during 2023–2025. This includes a further recovery from the COVID-19 pandemic. Furthermore, growth is projected to fall to 4.2% in 2025–2030. The projected regional growth of SAARC (6.6%) in the late 2020s, led by Bangladesh and India, is significantly higher than that projected for East Asia (3.3%), driven in large part by the difference in population growth. In addition, CLMV is expected to be a strong driver of the Asian economy in the late 2020s, with a projected growth rate of 6.3%, the highest in the region. At this stage there is a strong sense of uncertainty about Myanmar's recovery. However, the driving force behind CLMV remains the Vietnamese economy, which is expected to grow at a high rate of 6.9% in the late 2020s and 6.7% in the early 2030s.

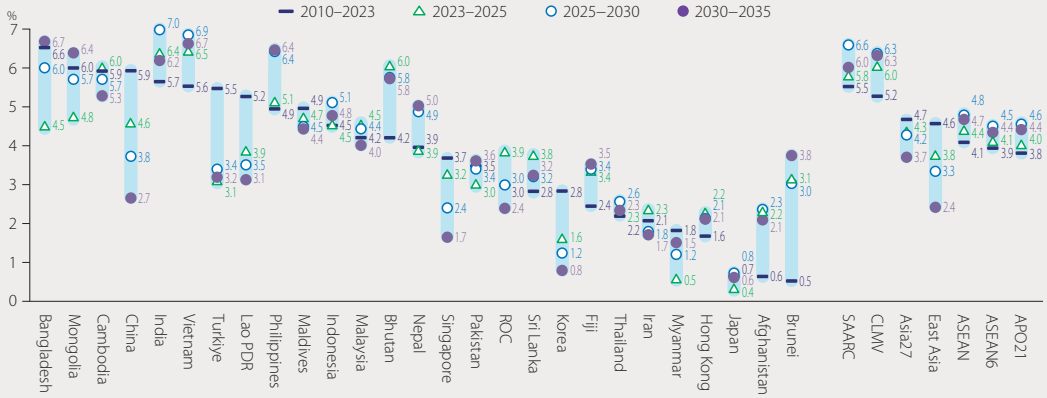

Figure 7.9 Projection of Economic Growth, 2023–2035

Unit: Percentage (average annual growth rates). Sources: The estimates are based on the APO Productivity Database 2025 and AQALI 2025.

Regarding per-hour labor productivity growth, the current rate of improvement in Asia27 (4.3% per year in 2010–2023) is projected to recover to 4.7% in 2023–2025, as shown in Figure 7.10. Thereafter, the improvement is projected to be maintained at 4.9% in 2025–2030 and 4.3% in 2030–2035. The driving forces in labor productivity improvement in Asia in the late 2020s will be East Asia and SAARC, but the regional gap in productivity growth rates is expected to be smaller than that of economic growth rates (Figure 7.9). Labor productivity growth is likely to accelerate in the late 2020s and early 2030s, not only in low-income countries such as Cambodia, Lao PDR, Nepal, the Philippines, and India but also in high-income economies such as Hong Kong, Japan, and the ROC, compared to 2010–2023.

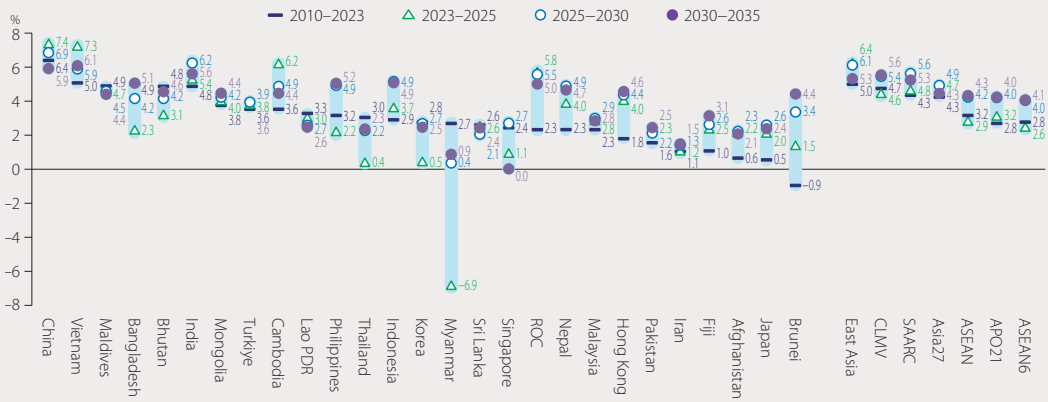

Figure 7.10 Projection of Labor Productivity Growth, 2023–2035

Unit: Percentage (average annual growth rates of per-hour labor productivity). Sources: The estimates are based on the APO Productivity Database 2025 and AQALI 2025.

8 Methodology and Data Framework

This chapter provides technical documentation on the construction of the APO Productivity Database 2025. Section 8.1 describes the measurement of GDP and its components, while Sections 8.2 and 8.3 outline the estimation methods for capital and labor inputs, respectively.

The development of productivity accounts across Asian economies involves varying degrees of data availability, definitional consistency, and institutional capacity. In particular, for earlier years and lower-income countries, limitations in coverage and comparability remain significant. The estimates presented here are therefore best interpreted as harmonized time series constructed for the purpose of international comparison, with an emphasis on internal coherence and relative trends, rather than on precise measurement in an absolute sense. Moreover, discrepancies and anomalies that emerge through cross-country comparison are viewed not merely as deficiencies, but as potential points of insight, prompting reconsideration of estimation assumptions and data structures. The APO-PDB is thus designed as a framework that can evolve iteratively, incorporating such findings to gradually enhance the consistency, replicability, and analytical value of productivity estimates.

8.1 Measurement of Output

8.1.1 SNA Compilation

Understanding data comparability is essential for constructing international databases, and demands continuous effort and specialized expertise. Inconsistencies across countries can stem from differences in one or more of the three key statistical dimensions: definitions, coverage, and methodology. While international definitions and guidelines aim to harmonize national measurement practices, actual implementations often diverge from best practices, with variations in what is omitted or included. Moreover, countries may revise their estimation methods and assumptions in benchmark updates or annual revisions. These factors can contribute to discrepancies in the data and hinder meaningful comparisons of underlying economic performance.

Between February and May 2025, the APO-PDB Metadata Survey 2025 was conducted, focusing on national accounts and other statistical data necessary for international productivity comparisons among APO member economies.[87] Given that most economic performance indicators in this report are linked to GDP, the survey was designed to identify differences in GDP compilation practices across countries. The 2008 SNA serves as the international standard. Since it differs in several conceptual and coverage aspects from earlier versions—namely the 1993 SNA and 1968 SNA—it is important to determine when each country began transitioning to the updated definitions and classifications. This enables the identification of structural breaks in the time series.

Table 8.1 presents the current situation in compilations and data availability of the backward estimates based on the 1968 SNA, the 1993 SNA, and the 2008 SNA (including plans for introducing the 2008 SNA), based on the APO-PDB Metadata Survey 2025 and our further investigations at KEO. For example, this chart indicates that Japan started to publish national accounts based on the 1968 SNA in 1978 (at present, backward estimates based on the 1968 SNA are available from 1955), national accounts based on the 1993 SNA in 2000 (backward estimates based on the 1993 SNA are available from 1980 to 2014), and national accounts based on the 2008 SNA in 2016 (backward estimates based on the 2008 SNA are available from 1994 to 2023).

87: The list of national experts in metadata surveys is provided in Section 1.3.

As shown in Table 8.1, countries differ in the year of SNA adoption, the extent of implementation, and the availability of backward estimates. Among the Asia27, 25 economies—excluding Myanmar and Lao PDR—are currently partially or fully compliant with the 2008 SNA. This edition of the Databook reflects recent major revisions to national accounts. Cambodia adopted the 2008 SNA for the first time in July 2024, and its new estimates are incorporated here. Korea (June 2024), the Maldives (September 2024), and the ROC (January 2025) updated their benchmark-year estimates while maintaining the 2008 SNA framework. However, the starting year of officially SNA-compliant series varies across countries, primarily due to differing approaches to retrospective estimation. Although many countries have adopted the 2008 SNA, compliance remains uneven in terms of scope and detail, particularly regarding the treatment of FISIM, military weapons systems, R&D, and software.[88]

Table 8.1 Implementation of the 1968, 1993, and 2008 SNA

	1968 SNA		1993 SNA		2008 SNA	
	Introduction year	Measurement period	Introduction year	Measurement period	Introduction year	Measurement period
Afghanistan		1973–1990 2002–2003		2002–2018	2020	2016–2023
Bangladesh	1973	1972–1999	2000	1980–2013	2014	1996–2023
Bhutan	2004	1980–2003	2015	2000–2021	2022	2010–2023
Brunei		1974–1998		1985–2013	2014	2010–2023
Cambodia	1993	1993–2009	2009	1993–2019	2024	2000–2022
China	n.a. (MPS was used)		2002	1978–2012	2016	1970–2023
Fiji	1974	1968–2002	2003	1997–2010	2014	2005–2023
Hong Kong			1999	1961–2012	2012	1961–2023
India	1978	1950–2007	2007	1991–2012	2015	2004–2023
Indonesia	1970	1960–2013	2008	2000–2013	2015	2010–2023
Iran	1981	1959–2012	2006	1991–2016	2017	2011–2023
Japan	1978	1955–1998	2000	1980–2014	2016	1994–2023
Korea	1986	1953–1997	2004	1970–2012	2014	1953–2023
Lao PDR	1990	1990–2005	2005	2002–2023		n.a.
Malaysia	1975	1960–2006	2007	2000–2011	2012	2005–2023
Maldives	1980	1976–2000	2001	1984–2015	2017	1995–2023
Mongolia	n.a. (MPS was used)		1995	1980–2012	2015	2010–2023
Myanmar	1967	1952–2022		n.a.		n.a.
Nepal	1975	1974–2004	2006	2000–2019	2021	2010–2023
Pakistan	1988	1981–2000	2004	2000–2012	2013	2000–2023
Philippines	1972	1946–2010	2002	1998–2013	2011	1998–2023
ROC	1988	1951–2005	2005	1951–2012	2014	1951–2023
Singapore		1970–2005	2003	1960–2013	2014	1960–2023
Sri Lanka	1975	1975–2001	2001	1998–2014	2016	2010–2023
Thailand	1975	1972–2012	2012	1990–2019	2016	1990–2023
Turkiye	1987	1987–2006	2008	1998–2015	2016	1998–2023
Vietnam	1989	1986–1992	2000	1986–2020	2022	1995–2023

Sources: APO-PDB Metadata Survey 2025 and our investigation at KEO. Note: The measurement period includes backward estimates that were produced retrospectively following the release of the new SNA statistics.

The APO-PDB reconciles these variations to construct harmonized long-term estimates. In doing so, earlier data based on the 1968 or 1993 SNA continue to be used, except in economies like the ROC, Korea, and Singapore, which already provide backward estimates under the 2008 SNA from the 1950s or 1960s. Additional adjustments are also made to ensure the long-term consistency of GDP estimates at current prices, as described in the procedures below.

Box 15 Korea's 70-Year GDP Revisions: Lessons from Historical Benchmarking

National accounts revisions have a significant impact on economic measurement and policy formulation. This year's Databook reflects the new 2020 benchmark Korean System of National Accounts (KSNA), published in June 2024, and retrospective estimates extending back to 1953, released in December 2024. According to the

88: The introduction of the 2008 SNA is typically undertaken as part of a benchmark revision. In many cases, major changes in the data result from newly available surveys (e.g., a new services survey) or the development of new benchmark data (e.g., a supply and use table), while the adjustments directly attributable to the shift from the 1993 SNA tend to be smaller. Information required to reconcile series across different benchmark years is collected at KEO.

Bank of Korea (2024a), the revised KSNA incorporates expanded administrative data to better capture the informal economy. Additionally, it introduces new series, such as Household Distributional Accounts and Real Personal Gross Disposable Income, resulting in a modest upward revision in GDP growth and GNI per capita. The scope of the revision—covering 70 years—offers particularly useful perspectives for improving economic accounts.

Figure 8.1 illustrates the extent of revisions in nominal economic growth rates over 1953–2023 when shifting from the 2015 benchmark to the 2020 benchmark. The color bars in the figure identify the revisions to the nine major sectors of value added, and the red line graph is the revision to aggregate GDP. Prior to the COVID-19 pandemic, growth was revised upward by an average of around 0.2 percentage points annually. From the 1960s to the mid-1990s, notable upward revisions were observed in 6. Wholesale and retail trade, hotels, and restaurants, and since the 1980s in 3. Manufacturing, offsetting downward revisions in 1. Agriculture and 5. Construction, as well as in 8. Finance, real estate, and business activities after the 2000s.

For Japan, Nomura and Miyagawa (2023a) point out that the nominal GDP for the benchmark year 2015 may have been undervalued by 2.1% in the trade sector due to the transition from conventional Commercial Statistics to the Economic Census, a change that may have led to some under-coverage. Additionally, Nomura and Miyagawa (2023b) suggest a possible undervaluation of 1.2% in non-trade sectors, including business services and manufacturing, due to the omission of secondary products. Japan's official national accounts (JSNA) have tended to take a more conservative approach. It is unlikely that such adjustments will be reflected in the 2020-benchmark JSNA to be released at the end of 2025. Nevertheless, Korea's long-term retrospective revisions suggest that cross-country differences of several percentage points could exist in the estimation of the non-observed economy and secondary production.

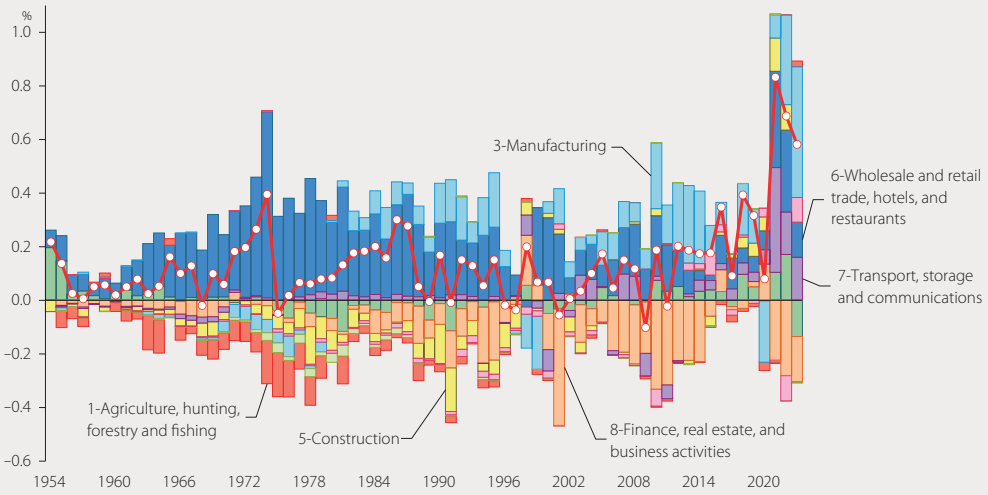

Figure 8.1 Korea's Historical Revision in Nominal GDP, 1953–2023

Unit: percentage point. Source: Authors' compilation based on Bank of Korea's 2015 and 2020 benchmark national accounts.
Note: The line indicates the growth rate gap between the 2020-benchmark and 2015-benchmark KSNA for the period 1953–2023. The bars represent the industry-level contributions to this gap.

Another notable feature of the KSNA revisions is those for the COVID-19 period. According to the 2020 benchmark revision, GDP for 2020–2023 was revised upward by 0.7 percentage points, largely driven by 6. Wholesale and retail trade, hotels, and restaurants and 7. Transport, storage and communications. These revisions reflect structural changes such as expanded commercial margins and e-commerce during the pandemic, and the shift toward remote services, which were better captured through the 2020 Economic Census

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incorporated in the revised KSNA. Korea's long-span revisions provide valuable lessons for countries striving to reconcile statistical rigor with economic reality, highlighting the importance of diversifying data collection approaches and regularly reviewing methodologies.

8.1.2 FISIM Consumption

FISIM is an indirect measure of the value of financial intermediation services provided. It represents a significant portion of the finance sector's output. The 1993 SNA (United Nations 1993) recommended that FISIM be allocated to users (to individual industries and final demands). This contrasts with the 1968 SNA, where the imputed banking services were assigned exclusively to the business sector. The common practice in the 1968 SNA was to create a notional industry that buys the entire service as an intermediate expense and generates an equivalent negative value added. As such, the imputed banking services have no impact on GDP. Therefore, if fully implemented, the 1993/2008 SNA recommendation will impact industry GDP and the overall GDP of the total economy (by the part of FISIM allocated to final demand).

Among the 21 APO member economies, the Lao PDR does not allocate FISIM to final demand in its official national accounts because it does not follow the 1993/2008 SNA recommendation. Thus, the official GDP estimates in these countries are lower than other countries. In addition, in some countries whose national accounts follow the 1993/2008 SNA's recommendation on FISIM, the available data do not cover the entire period of our observations.

To harmonize the GDP concept among countries and over periods, final demands of FISIM are estimated for those countries with missing data in APO-PDB, using available estimates of value added in Imputed Bank Service Charge (IBSC) or financial intermediation (in instances where IBSC data is not available). The ratios of value added from IBSC or financial intermediation on FISIM allocated to final demand are assumed to be identical to the average ratios observed in countries where data is available. Figure 8.2 describes the countries, years, and methods to adjust FISIM in the official national accounts. As illustrated,

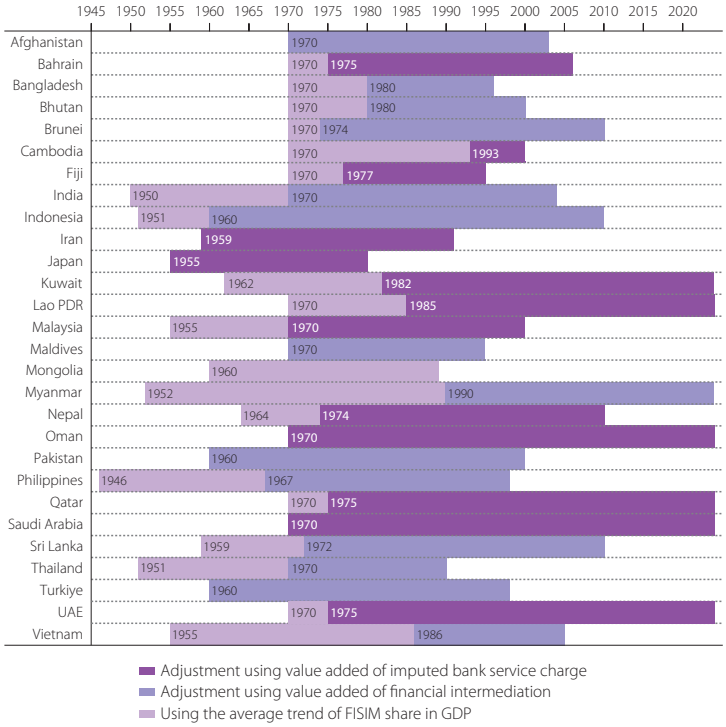

Figure 8.2 Adjustment of FISIM, 1970–2023

Sources: APO-PDB Metadata Survey 2025 and our investigation at KEO.

in instances where both value-added data are unavailable, the trend of the FISIM share on GDP is applied to extrapolate past estimates (the impacts on GDP are minor).

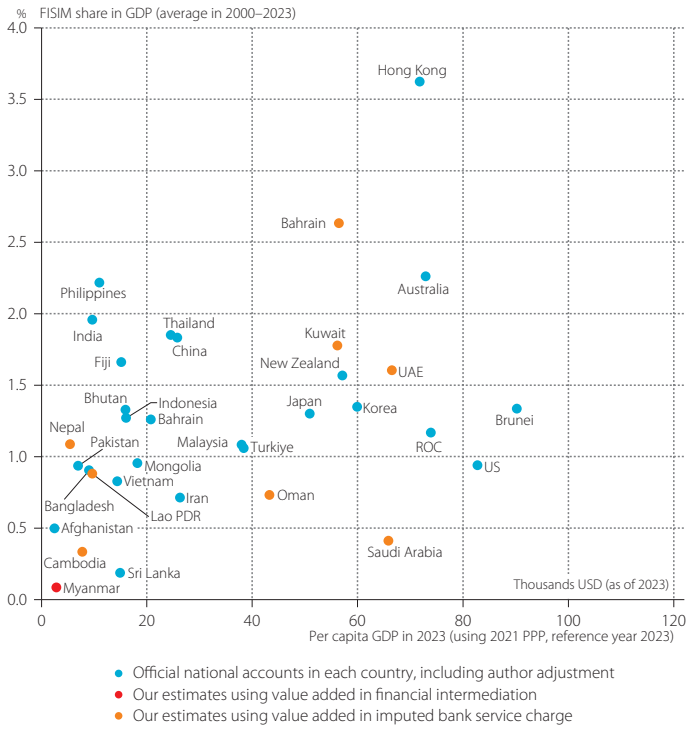

Figure 8.3 plots per capita GDP levels in 2023 and the FISIM share in GDP as an average in 2000–2023 (different colors are used to distinguish the original estimates in the official national accounts from our estimates). In countries where GDP at current prices is adjusted, APO-PDB adjustments for FISIM increase GDP by 0.8–1.1% for Nepal, Lao PDR, and Oman, and less than 0.4% for other countries.

Figure 8.3 FISIM Share in GDP, 2000–2023
——Average share of FISIM production in GDP

Unit: Percentage (current-price share). Sources: Official national accounts in each country and APO Productivity Database 2025.

8.1.3 Government Consumption

Definitions of government output can differ among countries and across periods for a given country. For example, as of February 2012, Thailand officially switched to the 1993 SNA, and its national accounts became compatible with the 1993 framework for the first time. In this series, government consumption includes the consumption of fixed capital (CFC) owned by the government since 1990, as described in Table 8.1. To construct the long time-series data in the Databook, the past data based on the 1968 SNA has been adjusted to be consistent with the new series. In APO-PDB, government capital stock and its CFC for 1970–1989 are estimated, and the past government consumption and GDP at current prices are adjusted accordingly. A similar adjustment on the CFC of the assets owned by the government was conducted for Bangladesh (from 1970 to 1995), Malaysia (1970–1999), Mongolia (1970–2004), and Vietnam (1970–2009).

Another harmonization is conducted for prices of government consumption, consisting primarily of non-market products. In APO-PDB, the quality of the official price index for government consumption has been examined in each country, compared to our cost-index estimate for government consumption based on our measures of the quality-adjusted price indices of capital and labor inputs with zero TFP growth. In the retrospective estimation back to 1970, government consumption price indices were found to show unrealistic trends in the official national accounts in many Asian countries. The official estimates for these periods are adjusted using our cost index estimates. This revision may yield modest impacts on the real GDP growth rates, as one of the differences between the official estimates and the APO-PDB.

8.1.4 Software Investment

The 2008 SNA recommends the capitalization of intellectual property products (IPP), which changes not only GDP but also capital input. One IPP capitalized in the Databook is computer software, including pre-packaged, custom, and own-account software. Among the Asia27 economies, 16 have capitalized all three types of software in the most recent national accounts. Another three countries exclude own-account software in their capitalization, and in two countries (Indonesia and Sri Lanka), only custom software is capitalized (others still do not capitalize software in their national accounts). In addition, the official estimates of software investment availability vary considerably among countries and over periods. Figure 8.4 presents the availability of the official estimates in the national accounts and the benchmark Supply and Use Tables (SUT) and Input-Output Tables (IOT) based on the APO-PDB Metadata Survey 2025 and our investigation at KEO.

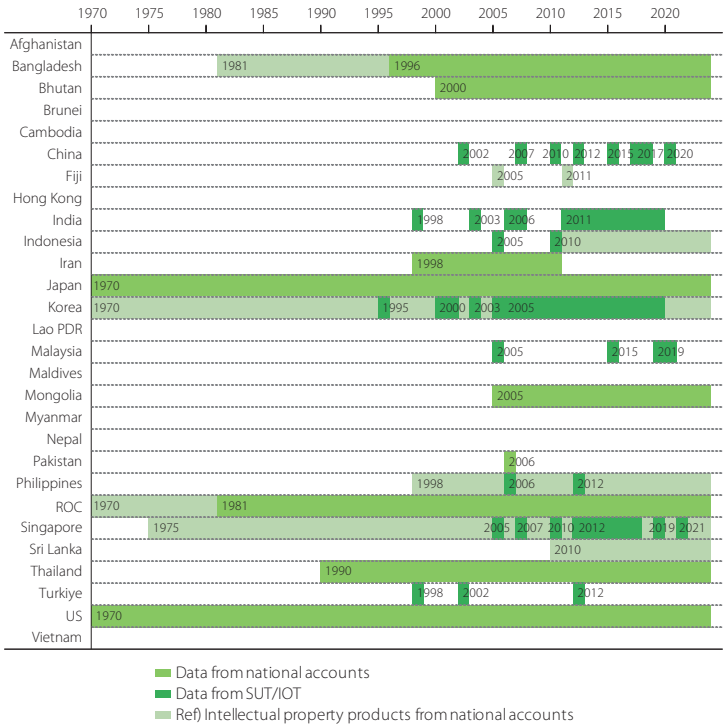

Figure 8.4 Availability of Software Investment Estimates, 1970–2023

Sources: APO-PDB Metadata Survey 2025 and our investigation at KEO.

The Databook tries to include all software as assets for better harmonization, even in countries and periods in which the official estimates were unavailable. The new estimates for software investment were developed at KEO and have been incorporated since APO-PDB 2021. In the revised data set, the labor cost of the domestically produced software is estimated based on the number of workers in software development, which is defined as the sum of 25 (Information and communications technology professionals) and 35 (Information and communications technicians) based on the International Standard Classification of Occupations 2008 (ISCO-08), and the corresponding average wages in the ILO Modeled Estimates (ILOEST database, ILO 2025). Based on this gross measure of labor cost, we deduct the portion of hours worked that is not used for software development. The share excluded is assumed to be equal to shares in countries where we have such data. In addition, by considering the non-labor cost shares (based on experiences in other countries in which the cost compositions in the software industry are available in their SUT/IOT), the total domestic output is estimated. Second, the value of imported software is assumed to be the same as the import of "computer services" recorded in the Balance of Payment in WTO Stats (accessed April 17, 2025). The sum of the domestically produced and imported software values is used to extrapolate the official estimates of software investment (Figure 8.4) or to estimate software investment in the countries that do not have official estimates.

8.1.5 R&D Investment

In the countries that still do not follow the 2008 SNA, R&D expenditure is not allocated to GFCF (they are assigned to intermediate uses). In some cases, even when R&D investments are included in the GFCF, the R&D expenditure is not disclosed separately, hindering the proper measurement of capital stock and service volumes. To harmonize the GDP and capital input concepts among countries, the R&D investment is estimated for those countries in the APO-PDB.

The preferred approach is to collect data on R&D expenditure based on official surveys in each country and then estimate the R&D investment. Figure 8.5 describes the countries, years, and methods to estimate R&D investment and add it to GFCF in the official national accounts. For periods in which R&D expenditure data are unavailable (either in national statistics or in the World Bank's *World Development Indicators*), crude estimates are extrapolated based on trends in the share of R&D investment relative to GFCF or GDP, using the experience of other countries as a reference. These extrapolated values may reflect upward biases, especially when benchmarked against economies with structurally higher R&D shares. This potential overestimation should be taken into account when conducting time-series comparisons.

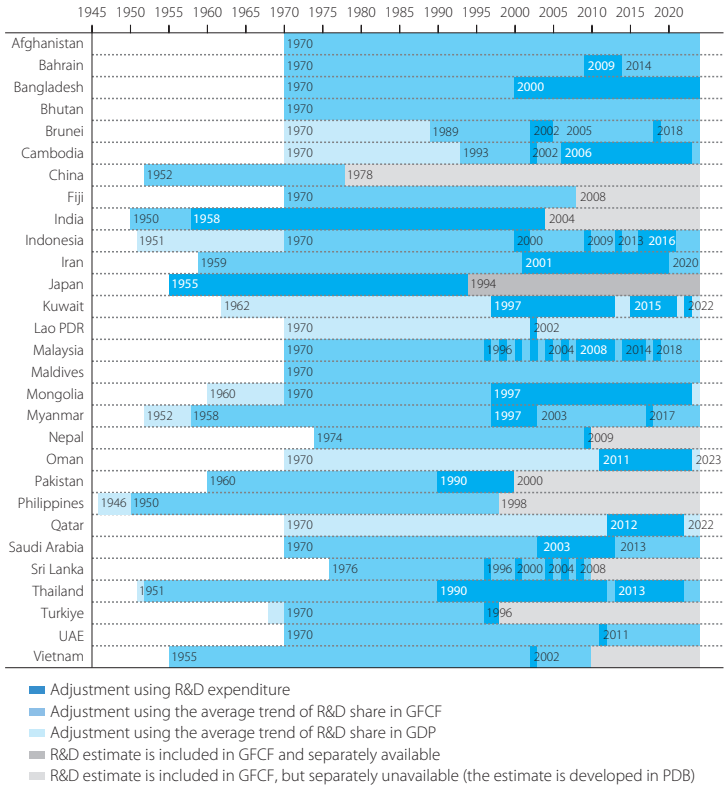

Figure 8.5 Methods for Estimating R&D Investment, 1970–2023

Source: APO Productivity Database 2025.

8.1.6 Net Acquisitions of Valuables

Valuables are incorporated as the third type of produced non-financial assets, after fixed assets and inventory, in the 1993 SNA. They are defined as "goods of considerable value that are not used primarily for purposes of production or consumption but are held as stores of value over time" in para. 10.7 (United Nations 1993).[89] Based on the APO-PDB Metadata Survey 2025 and our investigations at KEO, net acquisitions (acquisitions less disposals) of valuables are recorded as final demand in 11 countries in Asia: Bhutan, India, Iran, Korea, Malaysia, Mongolia, Pakistan, Philippines, ROC, Sri Lanka, and Vietnam. For example, the SNA in India has included this since 1999. However, the estimates of net acquisitions of

89: They are held under the expectation that their prices will not deteriorate and will rise in the long run. Valuables consist of precious stones and metals, artwork (e.g., paintings and sculptures), and other valuables (e.g., jewelry) made from stones and metals.

valuables are not separately published (they are included with changes in inventories) in Korea, Malaysia, and the ROC. Japan's current system of national accounts does not have them in final demand.

In the APO-PDB 2025, the decision was made to harmonize the data by excluding net acquisitions of valuables from final demand as far as possible, given inconsistencies in classification across countries. While this ensures comparability, it may lead to a slight downward bias in GDP levels, particularly in countries where such acquisitions are largely recorded as household consumption. Since the estimated scale is generally small, this treatment is maintained for now, to refine the approach in future revisions.

8.1.7 Basic-Price GDP

GDP can be valued using different price concepts: factor cost, basic prices, and market prices. If the price concept is not standardized across countries, it will interfere with international comparisons. All the countries covered in this Databook officially report GDP at market prices (or at purchasers' prices), but not all countries report GDP at factor cost or GDP at basic prices. The international comparisons in Chapters 3 and 4 are based on GDP at market prices. However, by valuing output and input at the prices that producers receive and pay, the basic-price GDP is a more appropriate measure of output for international comparisons of TFP and industry performance, as it is a measure from the producers' perspective. Hence, Chapter 5 on productivity performance is based on basic-price GDP, including our estimates when not officially available.

These concepts of GDP differ in their treatment of indirect taxes and subsidies (and import duties). Table 8.2 presents the classification of indirect taxes and subsidies, divided as far as possible in accordance with APO-PDB 2025 (notwithstanding significant challenges to the accuracy of the estimates).[90] The difference between basic-price and market-price GDP is "T2. Taxes on products" minus "S2. Subsidies on products." Since the basic-price GDP is available for some Asian economies, such as Hong Kong, India, Korea, Mongolia, Nepal, Singapore, and Sri Lanka, a basic-price GDP calculation must be constructed for all other countries. To obtain the basic-price GDP, T2 is subtracted from the market-price GDP, available for all the countries studied, and S2 is added. The main data sources for estimating T2 and T3 are tax data in national accounts, the IMF's Government Finance Statistics, the SUT/IOT in each country, and other national data. Table 8.3 lists the SUT/IOT used in APO-PDB 2025.

Readers should bear in mind these caveats when interpreting the results in Chapter 6, since the definition of GDP by industry varies among countries due to differences in data availability. GDP is valued at factor cost for Fiji and Pakistan; at basic prices for Bangladesh, Cambodia, Hong Kong, India, Korea, Lao PDR, Mongolia, Nepal, Singapore, and Vietnam; at producers' prices for Iran, the ROC, and the Philippines; and at market prices for Indonesia, Japan, Malaysia, Sri Lanka, Thailand, and Turkiye. (GDP at basic prices is

Table 8.2 Classification of Indirect Taxes and Subsidies

Indirect taxes (T)		Subsidies (S)	
T1	Indirect taxes on production and imports	S1	Subsidies
T2	Indirect taxes on products	S2	Subsidies on products
T2a	Taxes and duties on imports	S2a	Subsidies on imports
T2b	Other taxes on products	S2b	Other subsidies on products
T3	Other indirect taxes on production	S3	Other subsidies on production
T3a	Taxes on payroll or workforce	S3a	Subsidies on payroll or workforce
T3b	Recurrent taxes on land, buildings or other structures	S3b	Subsidies to reduce pollution
T3c	Taxes on the use of fixed assets		
T3d	Other taxes on production		

Source: APO Productivity Database 2025. Notes: As details of these classifications are rarely published in the official SNA, the APO-PDB has approximated them as estimates based on available data and information. The types of T3 and S3 are defined based on para. 7.94 and 7.106, respectively, in the 2008 SNA. In particular, T3b and T3c are further subdivided, corresponding to the APO-PDB asset classification (Table 8.4), and the asset-specific effective property tax rates are used in measuring the user cost of capital in Section 8.2.7.

90: The split estimates of indirect taxes and subsidies have been incorporated since the APO-PDB 2023 to calculate property tax rates in the user cost of capital formula (Section 8.2.7).

GDP at factor cost plus production taxes less production subsidies.) In this sense, the industry data provided in the Databook series should be viewed as a work in progress, as it is challenging to assign a range of uncertainty to the data. These issues will be examined in greater detail in future issues of the Databook.

Table 8.3 SUT/IOTs in Asia

	SUT / IOT
Bangladesh	1976/77, 1981/82, 1986/87, 1992/93, 1993/94, 2000, 2005/06, 2010/11, 2010–2017*
Bhutan	2007, 2014, 2017
Brunei	Benchmark (2005, 2010), Annual (2010–2017*)
Cambodia	Estimate (2003**), Benchmark (2005*), Annual (2010–2017*)
China	Benchmark (1987, 1992, 1997, 2002, 2007, 2012, 2017), Updated (2000, 2005, 2010, 2015, 2018, 2020)
Fiji	1972, 1981, 2002, 2005, 2008, 2011
India	Benchmark (1993/94, 1998/99, 2003/04, 2011/12), Annual (2006/07, 2007/08, 2012/13, 2013/14, 2014/15, 2015/16, 2016/17, 2017/18, 2018/19, 2019/20)
Indonesia	1971, 1975, 1980, 1985, 1990, 1995, 2000, 2005, 2010, 2016
Iran	1962, 1973, 1974, 1986, 1988, 1991, 1999, 2001, 2004, 2011
Japan	1960, 1965, 1970, 1975, 1980, 1985, 1990, 1995, 2000, 2005, 2011, 2015, 2020
Korea	Benchmark (1960, 1963, 1966, 1970, 1975, 1980, 1985, 1990, 1995, 2000, 2005, 2010, 2015, 2020), Updated (1973, 1978, 1983, 1986-1988, 1993, 1998, 2003, 2006–2019, 2021–2022)
Lao PDR	Benchmark (2012), Annual (2010–2017*)
Malaysia	1978, 1983, 1987, 1991, 2000, 2005, 2010, 2015, 2019, 2020
Maldives	1997, 2003, 2014
Mongolia	Benchmark (1963, 1966, 1970, 1977, 1983, 1987, 1997, 2000, 2005, 2010), Annual (2010–2019)
Nepal	2004, 2010
Pakistan	1975/76, 1984/85, 1989/90, 1999/2000
Philippines	1961, 1965, 1969, 1974, 1979, 1985, 1988, 1994, 2000, 2006, 2012
ROC	Benchmark (1981, 1986, 1991, 1996, 2001, 2004, 2006, 2011, 2016, 2021), Extended (1984, 1989, 1994, 1999, 2004), Annual (2006–2021)
Singapore	Benchmark (1973, 1978, 1983, 1988, 2000, 2005, 2007, 2010, 2015), Annual (2012–2014, 2016–2017, 2019, 2021)
Sri Lanka	2006, 2010, 2015
Thailand	1975, 1980, 1985, 1990, 1995, 1998, 2000, 2005, 2010, 2015
Turkiye	1973, 1979, 1985, 1990, 1996, 1998, 2002, 2012
Vietnam	1989, 1996, 2000, 2007, 2012

Sources: Estimates by the national statistics office in each country. *ADB (2018) *Economic Indicators for Southeastern Asia and the Pacific: Input-Output Tables*, Manila: Asian Development Bank. ** Kobayashi, Shintaro, Hajime Tanji, Katsuhiro Saito, Wenfeng Huang, and Minoru Tada (2012) "Industrial Structure of Cambodia and the Role of Agriculture and Fishery in its Development," *Japan Agricultural Research Quarterly*, 43(4).
Note: These SUT/IOT are collected and used in the development of APO Productivity Database 2025, which newly reflects the SUT/IOT of the ROC for 2021, China for 2020, Japan for 2020, Korea for 2020, 2021, and 2022, and the Maldives for 1997, 2003, and 2014.

8.2 Measurement of Capital Input

8.2.1 GFCF by Type of Assets

Quality changes in the aggregate measure of capital input originate from two sources: composition changes in the capital stock by type of asset and quality improvements in each asset type. To consider the asset composition change, APO-PDB 2025 classifies 23 types of assets: 11 produced assets, seven types of land, inventory, and four types of mineral and energy resources (MER). The produced assets consist of three types of building and construction (B&C), five types of machinery, equipment, and other produced assets (M&E), and three types of IPP. Table 8.4 presents the asset classification in APO-PDB 2025.

Detailed investment data is not always available in the official national accounts.[91] For countries where detailed investment data are unavailable from national accounts, 11 types of investment are estimated based on the benchmark and annual SUT/IOT, as well as our estimates of production data for B&C and the product flow of domestic production and export/import of assets for M&E. For IPP, see Sections

91: The availability of GFCF data in the national accounts or benchmark SUT/IOT by country is provided in Figure 8.7 in *APO Productivity Databook 2023* (December 2023). The SUT/IOT used in APO-PDB 2025 is listed in Table 8.3.

8.1.4 and 8.1.5. In particular, where the division into three types of B&C (asset codes 5–7 in Table 8.4) is difficult for countries without detailed construction data, these estimates are still crude, based on the experiences of other countries. Readers are cautioned about data uncertainty and should expect that the decomposition of capital services contributions into ICT and non-ICT capital may be revised for some countries when more reliable data become available.

Table 8.4 Asset Classification

asset code	group	asset code	group
1. ICT hardware	M&E	13. Land for industrial use	Land
2. Communications equipment	M&E	14. Land for commercial use	Land
3. Transportation equipment	M&E	15. Land for residential use	Land
4. Other machinery and equipment and weapon systems	M&E	16. Land for other economic use	Land
5. Dwellings	B&C	17. Land for forest use	Land
6. Non-residential buildings	B&C	18. Land for inland water use	Land
7. Other structures	B&C	19. Inventories	Inventory
8. Cultivated biological resources	M&E	20. Oil	MER
9. Research and development (R&D)	IPP	21. Coal	MER
10. Computer software	IPP	22. Gas	MER
11. Other intellectual property products	IPP	23. Mineral	MER
12. Land for agricultural use	Land		

Sources: APO Productivity Database 2025 and ANRD 2025.

8.2.2 *Produced Assets*

About half of APO member economies publish capital stock estimates in their national accounts systems. Even where official estimates are available, users must be mindful of the differences in methodologies and assumptions used to estimate capital stock and its consumption, as well as the large diversity in the treatment of quality adjustment in price statistics among countries. In APO-PDB 2025, a harmonized framework is applied to estimate capital stock and capital services, covering the Asia27 economies and Japan as a reference country. The asset-specific geometric approach is used to measure net capital stock. The standard parameters for geometric depreciation rates are assumed for the country groups (D1–D6) defined in Table 6.1, as shown in Table 8.5.

Table 8.5 Depreciation Rates of Produced Assets

asset code	δ					
	D1	D2	D3	D4	D5	D6
1. ICT hardware	0.294	0.294	0.294	0.294	0.294	0.294
2. Communications equipment	0.246	0.246	0.246	0.246	0.246	0.246
3. Transportation equipment	0.219	0.219	0.162	0.138	0.138	0.138
4. Other machinery and equipment and weapon systems	0.178	0.178	0.138	0.117	0.117	0.117
5. Dwellings	0.049	0.049	0.041	0.037	0.033	0.033
6. Non-residential buildings	0.084	0.084	0.062	0.056	0.050	0.045
7. Other structures	0.026	0.026	0.019	0.018	0.017	0.016
8. Cultivated biological resources	0.215	0.215	0.202	0.161	0.145	0.131
9. Research and development (R&D)	0.190	0.190	0.180	0.162	0.162	0.162
10. Computer software	0.330	0.330	0.330	0.330	0.330	0.330
11. Other intellectual property products	0.270	0.270	0.270	0.270	0.270	0.270

Source: APO Productivity Database 2025. Note: For the country groups (D1–D6), see Table 6.1.

It is well known that prices of constant-quality ICT capital have been falling rapidly. For cross-country comparisons, it has been noted that there is a great disparity in the treatment of quality adjustment in price statistics among countries. Cross-country comparisons will be significantly biased if some countries adjust their deflators for quality change while others do not. Price harmonization is sometimes used to control methodological differences in the compilation of price indexes, assuming that individual country price data fails to capture quality improvements. If the relative price of ICT to non-ICT capital in the countries compared is set equal to the relative price in the reference country, the harmonized price is formulated as $\Delta \ln \tilde{P}_{IT}^{X} = \Delta \ln P_{nIT}^{X} + (\Delta \ln P_{IT}^{ref} - \Delta \ln P_{nIT}^{ref})$, where the superscript X denotes the country included in the comparisons, P_{IT} is the price of ICT capital, and P_{nIT} is the price of non-ICT capital. The price of ICT capital in the country X, $\tilde{P}_{IT}^{X}$, is computed by the observed prices P_{IT}^{ref} and P_{nIT}^{ref} in the reference country and P_{nIT}^{X} in X. OECD (2024) applies price harmonization to capital services, with the US as a reference country, since the possible error due to using a harmonized price index would be smaller than the bias arising from comparing capital services based on national deflators.

In APO-PDB, the same price harmonization method is applied to adjust the quality improvement for ICT hardware and communications equipment in countries where the appropriate quality-adjusted price data is not available, using Japan's prices, which the Bank of Japan has developed since the 1980s, as a reference country. A similar procedure was applied in cases where the prices for some assets of B&C and M&E were unavailable to estimate missing data based on the relative price of these assets to total GFCF.

8.2.3 Inventory

Inventory stock has been incorporated as a capital input in our productivity account beginning with the APO-PDB 2021. The official estimates of the inventory changes recorded in the national accounts are used to estimate the inventory stock. When the official estimates of the price index for inventory changes fluctuate unrealistically, they are replaced by our estimates of the aggregate price index of products consisting of domestically produced goods (by agriculture, mining, and manufacturing sectors) and imported goods. Estimated inventory stocks tend to be extremely high compared to their GDP from countries where inventory changes are used as a balancing item in the compilation of national accounts. In such cases, inventory stock at the current price is limited to no more than 8% of nominal GDP in APO-PDB 2025.

8.2.4 Stock Loss from Disasters

Natural disasters can significantly impact economic growth, especially in developing economies. Capital stock losses due to natural disasters have been considered in the net capital stock estimates since APO-PDB 2021. This improves the underestimated TFP estimates.[92]

The stock losses in APO-PDB are estimated based on the total estimated damages developed in the Emergency Events Database (EM-DAT) by the Centre for Research on the Epidemiology of Disasters (CRED), Université Catholique de Louvain, Belgium. The data on total damages estimated in EM-DAT are incorporated through two adjustment processes. First, the total value of the damage is divided into damage to gross capital stock and damage to GDP, based on our assumptions at the most detailed levels of disaster types. Second, the gross capital stock is converted into net capital stock in comparison with our estimates of capital stock. Table 8.6 presents the estimated value of damages on the net capital stock of produced assets at constant 2023 price (in parentheses) and the damage ratios to total stock at current prices (in percentages) in the year the disaster occurred from 1970 to 2023. The magnitude of damage to capital stock sorts the top 60 disasters in Asia.

Although the Great East Japan Earthquake in 2011 resulted in the largest damage value to the capital stock (about USD 100 billion), the damage ratio to the total stock is limited to 0.55% due to the large size of the aggregate capital stock and ranked 47th in Table 8.6. Six disasters have a damage ratio of over 3% of capital stock, primarily in the poorest countries. In particular, the 2004 disaster, which resulted in a 13% loss of the Maldives' capital stock, was caused by the tsunami following the Sumatra earthquake. Cyclone Nargis in early May 2008 was the worst natural disaster in Myanmar's recorded history, causing devastating damage equivalent to 6% of its capital stock.

92: The revision of TFP growth from the year before the disaster to the disaster year is provided in Figure 84 in *APO Productivity Databook 2022* (October 2022). In the case of Myanmar's Cyclone Nargis in 2008, the TFP estimate was revised from a negative 9.3% to 5.2%. In other cases, negative TFPs are modified to be close to zero or slightly positive.

Table 8.6 Capital Stock Damages by Natural Disasters, 1970–2023

——Damage ratios on net capital stock at current prices and damages of capital stock at constant prices

	Year	Type	Damage to NCS			Year	Type	Damage to NCS			Year	Type	Damage to NCS	
1 Maldives	2004	E	13.49	(1.01)	21 Sri Lanka	2004	E	1.59	(1.20)	41 Cambodia	2013	F	0.87	(0.34)
2 Myanmar	2008	S	5.85	(2.29)	22 Pakistan	2022	F	1.56	(7.67)	42 Bangladesh	2007	S	0.86	(2.16)
3 Afghanistan	1988	F	4.14	(0.19)	23 Bangladesh	1987	F	1.55	(0.97)	43 Myanmar	1991	F	0.83	(0.05)
4 Nepal	2015	E	3.88	(3.09)	24 Cambodia	2000	F	1.54	(0.18)	44 Fiji	1986	S	0.79	(0.05)
5 Fiji	2016	S	3.85	(0.38)	25 Myanmar	2004	E	1.53	(0.43)	45 Myanmar	1984	O	0.77	(0.03)
6 Lao PDR	1993	S	3.40	(0.33)	26 Afghanistan	1978	F	1.25	(0.03)	46 Bangladesh	1995	S	0.75	(0.77)
7 Pakistan	1973	F	2.95	(1.23)	27 Pakistan	2005	E	1.22	(3.47)	47 China	1998	F	0.74	(42.87)
8 Bangladesh	1988	F	2.89	(1.90)	28 Maldives	1987	F	1.21	(0.02)	48 Nepal	1987	F	0.71	(0.12)
9 Nepal	1980	E	2.84	(0.31)	29 Bangladesh	2004	F	1.18	(2.35)	49 China	1976	E	0.71	(8.55)
10 Bangladesh	1998	F	2.81	(3.51)	30 Philippines	2013	S	1.18	(6.69)	50 Afghanistan	1991	F	0.68	(0.03)
11 Fiji	1972	S	2.48	(0.08)	31 Philippines	1972	F	1.16	(0.87)	51 Myanmar	1988	O	0.66	(0.03)
12 Thailand	2011	F	2.21	(21.31)	32 Cambodia	2011	F	1.14	(0.38)	52 Turkiye	2023	E	0.66	(18.37)
13 Turkiye	1999	E	2.11	(15.25)	33 Sri Lanka	1978	S	1.10	(0.29)	53 Fiji	2012	F	0.62	(0.06)
14 Fiji	1993	S	2.03	(0.17)	34 Fiji	1983	S	1.10	(0.07)	54 China	1996	F	0.59	(28.65)
15 Bangladesh	1991	S	2.00	(1.57)	35 Myanmar	1989	O	1.08	(0.06)	55 Myanmar	1992	F	0.59	(0.03)
16 Cambodia	1991	F	1.96	(0.16)	36 Nepal	1993	F	1.07	(0.25)	56 Philippines	1976	E	0.59	(0.57)
17 Bangladesh	1974	F	1.80	(0.74)	37 Pakistan	1976	F	1.05	(0.47)	57 India	1993	F	0.58	(9.49)
18 Pakistan	2010	F	1.68	(6.07)	38 Myanmar	2023	S	0.99	(1.21)	58 Japan	2011	E	0.55	(87.25)
19 Fiji	1985	S	1.67	(0.10)	39 Vietnam	1996	S	0.93	(0.87)	59 Pakistan	1992	F	0.54	(0.78)
20 ROC	1999	E	1.66	(12.80)	40 Iran	1990	E	0.91	(8.38)	60 Vietnam	1997	S	0.53	(0.56)

Unit: Percentage (ratio at the beginning-of-period net capital stock: NCS) and billion USD (as of 2023 in parentheses. Sources: EM-DAT, CRED, Université Catholique de Louvain, Belgium and APO Productivity Database 2025. Note: S, E, F, and O represent the types of disasters as storms, earthquakes, floods, and others, respectively.

Figure 8.6 presents the estimated capital-output ratio (capital stock coefficient), defined as the ratio of the beginning-of-period net capital stock (all types of produced assets owned by private and public institutions) to the basic-price GDP at current prices. Note that this measure excludes land and MER. Bhutan has a high capital-output ratio among the Asia27 economies, at 4.6 in 2023, reflecting its industry structure, which is heavily skewed toward hydropower generation (Nomura 2025). The exceptionally high capital-output ratio observed for the Maldives (5.3 in 2023) likely reflects a surge in externally financed infrastructure and resort-related investment during the late 2010s (see footnote 31). Compared to the 2000 level in each country, all Asian economies—except Fiji, Mongolia, Malaysia, Singapore, and Thailand—have shown an upward trend in their capital-output ratios.

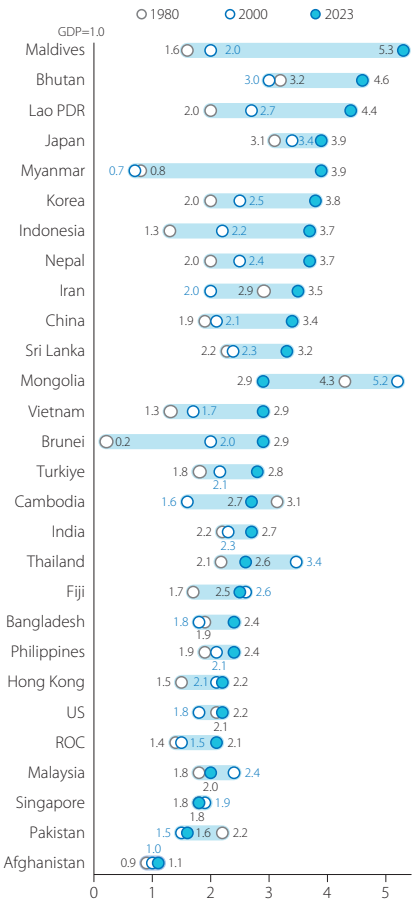

Figure 8.6 Capital-Output Ratio (Produced Assets), 1980–2023

——Ratio of the beginning-of-period net capital stock to basic-price GDP at current prices in 1980, 2000, and 2023

Unit: Percentage. Source: APO Productivity Database 2025. Note: Capital stock consists of produced assets and inventory here (excluding land and MER).

Box 16 Changes in the APO-PDB Measurement Framework

Since its first publication in 2008, the APO Productivity Database (APO-PDB) has undergone these changes: a) an annual update and review of the accuracy of the estimates; b) an update of retrospective estimates following the publication of the latest benchmark estimates; and c) revisions to the measurement framework. Table 8.7 summarizes the history of revisions to the measurement framework (c) in APO-PDB, including expanding the scope of capital inputs and revising labor inputs. The revisions in measuring capital and labor inputs have improved the accuracy of the TFP estimate, which is calculated as the residual.

Table 8.7 Capital and Labor Extensions in the APO-PDB, 2008–2025

	Capital Input							Labor Input	
	B&C	M&E	IPP	INV	Land	MER	Disaster	H	QALI
APO-PDB 2008	○ (3)	○ (5)	○ (3)		←Asia Natural Resource Database (ANRD)			○	
APO-PDB 2009	○ (3)	○ (5)	○ (3)					○	←Asia QALI Database
APO-PDB 2010	○ (3)	○ (5)	○ (3)					○	
APO-PDB 2011	○ (3)	○ (5)	○ (3)					○	
APO-PDB 2012	○ (3)	○ (5)	○ (3)					○	
APO-PDB 2013	○ (3)	○ (5)	○ (3)					○	↓
APO-PDB 2014	○ (3)	○ (5)	○ (3)					○	↓
APO-PDB 2015	○ (3)	○ (5)	○ (3)					○	↓
APO-PDB 2016	○ (3)	○ (5)	○ (3)		↓			○	↓
APO-PDB 2017	○ (3)	○ (5)	○ (3)		↓			○	↓
APO-PDB 2018	○ (3)	○ (5)	○ (3)	↓	↓			○	○
APO-PDB 2019	○ (3)	○ (5)	○ (3)	○ (1)	○ (4)			○	○
APO-PDB 2020	○ (3)	○ (5)	○ (3)	○ (1)	○ (4)	↓	↓	○	○
APO-PDB 2021	○ (3)	○ (5)	○ (3)	○ (1)	○ (4)	↓	○	○	○
APO-PDB 2022	○ (3)	○ (5)	○ (3)	○ (1)	○ (4)	↓	○	○	○
APO-PDB 2023	○ (3)	○ (5)	○ (3)	○ (1)	○ (7)	○ (4)	○	○	○
APO-PDB 2024	○ (3)	○ (5)	○ (3)	○ (1)	○ (7)	○ (4)	○	○	○
APO-PDB 2025	○ (3)	○ (5)	○ (3)	○ (1)	○ (7)	○ (4)	○	○	○

Sources: APO-PDB 2008–2025. Note: A downward arrow indicates the period during which data development took place. A circle indicates that the estimates are incorporated into the APO-PDB and may still be under revision or improvement.

The first major revision was the measurement of labor input. This required tremendous work and research to collect primary data and fill in the missing values, as discussed in Section 8.3. The project to develop the Asia QALI Database (AQALI) began in 2013 at KEO. After five years of intensive work, the first estimates for 23 Asian countries and the US, serving as a reference country, were developed and incorporated into the APO-PDB 2018. The AQALI included the estimates for Bhutan in 2019 and Turkey in 2020, Afghanistan and the Maldives in 2025, now covering 27 countries.

The second major revision was the land stock measurement. The project to build a database on land area and prices began in 2016 at KEO (Section 8.2.5) and has been incorporated from the APO-PDB 2019 onwards, together with the inventory stock (Section 8.2.3). This change has led to an overall upward revision of TFP growth. In addition, the development of MER stocks started in 2020 (Section 8.2.6) at KEO and has been included since the APO-PDB 2023. The MER stock and land stock were redefined as the Asian Natural Resource Database (ANRD), which improves its accuracy. In addition, the impact of some major disasters on produced assets is significant, especially in developing countries, and has been considered in capital stock estimates since the APO-PDB 2021 (Section 8.2.4).

The latest APO-PDB 2025 reflects the aggregated estimates of the most recent AQALI 2025 and ANRD 2025 estimates and is available on the APO website.[93]

93: The detailed estimates of AQALI and ANRD database are not publicly available at present. The productivity accounts involving the details of these two data are called the Augmented Productivity Database (APDB). The APDB is being improved and used for research purposes, including measurements by Diewert, Nomura, and Shimizu (2024).

8.2.5 Land

Land is an important factor of production not only in the agriculture sector but also in the manufacturing and service sectors. It occupies a large share of nominal capital stock in densely populated countries. Despite its importance, the land was not considered a capital input until APO-PDB 2018 due to data availability. In Asia, only Japan and Korea publish estimates of land stocks in their national balance sheets within their system of national accounts.

Table 8.8 Land Classification

Land classification in ANRD		APO-PDB asset code
L0000	Total land	
L1000	Land for economical use	
L1100	Land for agricultural use	12
L1200	Land for non-agricultural use	
L1210	Land for building use	
L1211	Land for industrial use	13
L1212	Land for commercial use	14
L1213	Land for residential use	15
L1220	Land for other use	16
L2000	Land for forest use	17
L3000	Land for inland water use	18

Source: ANRD 2025. Note: Table 8.4 provides the whole list of the APO-PDB asset codes.

Land stock data has been developed at KEO since 2016, and these estimates were incorporated beginning with APO-PDB 2019. Land stock is defined as a natural resource in ANRD, together with MER (Section 8.2.6). The ANRD 2025 used in this edition covers the Asia27 economies. Table 8.8 defines the types of land use. In APO-PDB 2025, four land types for economic use (ANRD code: L1100, L1211, L1212, and L1213) and three other land types (L1220, L2000, and L3000) are treated as non-produced assets (APO-PDB asset code: 12–18).[94]

The land stock data consists of the current and constant prices estimated by seven land-use types. The data on the land area (m^2) is available in FAOSTAT for agricultural use (asset code 12) and in national data resources for non-agricultural use (codes 13-15). For countries in which the data on the national land area for residential use (code 15) is not available, they are estimated based on multiple approaches using available information and our estimates, e.g., the number of households, average area per unit of household, population/household density in rural and urban areas, stock estimates of dwellings (Section 8.2.2), per capita GDP, and so on. When land for industrial use (code 13) is unavailable from national surveys, such as the manufacturing census, it is estimated based on our estimates of the productivity of industry-use land and the manufacturing GDP. Similarly, land for commercial use (code 14) is calculated based on our estimates of the productivity of commercial-use land and the service-sector GDP, if not available in national data resources.

For countries where the land stocks at current prices are not available, samples of land price data are collected to estimate the current-price land stocks. The land price data are available mainly in urban areas.[95] Based on our assumptions about the price gaps between urban and rural areas in each country, these survey prices of urban land areas are discounted to estimate the national-level averages. For land prices used in agriculture, the national-level average price is calculated in each country based on our estimates of the discounted present value of future rents, which are derived from our estimates of mixed income in the agricultural sector and the rate of return (Section 8.3.3).

Although further efforts are required to improve the estimates, Figure 8.7 presents our current estimates of the ratios of total capital stock to basic-price GDP and the land shares of total capital stocks (right axis) as of the beginning of 2023. When including land stocks, the country order of capital-output ratios is

94: The APO-PDB 2022 covered four economic land types and the APO-PDB 2023 and later were revised to cover the entire country land by adding three other land types (Table 8.7). However, this revision has a limited impact on the productivity account since the unit values of land for other uses are much smaller.

95: They are collected from market data and survey results such as *The World Land Value Survey* (Japan Association of Real Estate Appraisers: JAREA), *Report on Survey of Urban Land Prices in the Developing World* (International Housing Coalition: IHC), and *Survey on Business Conditions of Japanese Companies in Asia and Oceania* (Japan External Trade Organization).

considerably revised from Figure 8.6, based only on produced assets. In ROC, Singapore, and Hong Kong, the estimated land shares exceed 70% of total capital stock, almost twice the 38% in Japan and 41% in the US. In general, the growth rate of land stock is about zero or much smaller than the growth rate of productive assets. Considering land stock in the measurement of capital inputs would reduce the estimate of the growth of capital and thus eliminate the bias of underestimating TFP growth rates in many Asian countries.

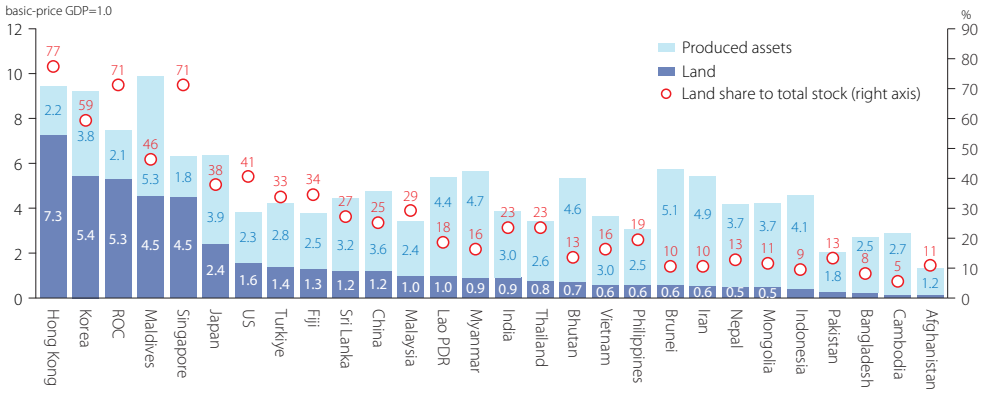

Figure 8.7 Capital-Output Ratio (Produced Assets and Land), 2023
——Ratio of the beginning-of-period net capital stock to basic-price GDP at current prices

Unit: Percentage. Sources: ANRD 2025 and APO Productivity Database 2025.

8.2.6 Mineral and Energy Resources

For resource-rich countries, the mining industry accounts for a large share of GDP (Figure 3.13). However, earlier versions of the APO-PDB did not consider the depletion of mineral and energy resources (MER) assets. In 2020, KEO began developing data on MER stocks for the Asia27 economies, spanning over 50 years, since 1970.[96] The MER data from the ANRD was first incorporated into the APO-PDB in the 2023 edition. APO-PDB 2025 includes the latest available data from ANRD 2025. Table 8.9 defines the classification of MER. In this edition, three types of energy resources (ANRD code: ME101, ME102, and ME103) and one type of mineral resource (ME200), which are defined as an aggregate of 10 types of mineral resources (ME201–ME210), are treated as non-produced assets (APO-PDB asset code: 20–23).

Table 8.9 Classification of MER

MER classification in ANRD		APO-PDB asset code
ME100	Energy resources	
ME101	Oil	20
ME102	Coal	21
ME103	Gas	22
ME200	Mineral resources	23
ME201	Bauxite	
ME202	Copper	
ME203	Gold	
ME204	Iron ore	
ME205	Lead	
ME206	Nickel	
ME207	Phosphate rock	
ME208	Silver	
ME209	Tin	
ME210	Zinc	

Source: ANRD 2025.
Note: Table 8.4 provides the APO-PDB asset code.

Reserves data sometimes fluctuates widely. The ANRD adjusts reserves to match production and sets an upper limit on the number of years of availability.[97] Figure 8.8 compares the ratio of MER stock to nominal GDP in the Asia27 economies and shows that three countries have MER stocks equal to or exceeding GDP in 2023, with a further five countries exceeding 40%,

96: The MER consists of "mineral and energy reserves located on or below the earth's surface that are economically exploitable, given current technology and relative prices" in para 10.179 in the 2008 SNA (United Nations 2009).
97: The main data on reserves and production rely on *International Energy Statistics* by the US Energy Information Administration for energy resources, *Mineral Commodity Summaries 2025* by the US Geological Survey, and *World Mineral Statistics 1995–99* by British Geological Survey for mineral resources, as well as national data sources. Resource rents are from the World Bank (2024b).

as indicated in the left panel.[98] As shown in the right panel, in nine economies, the share of GDP is less than 0.1%, resulting in a negligible impact on net income and growth accounting. The effect on TFP estimates in countries with large MER stocks is discussed in Box 12.

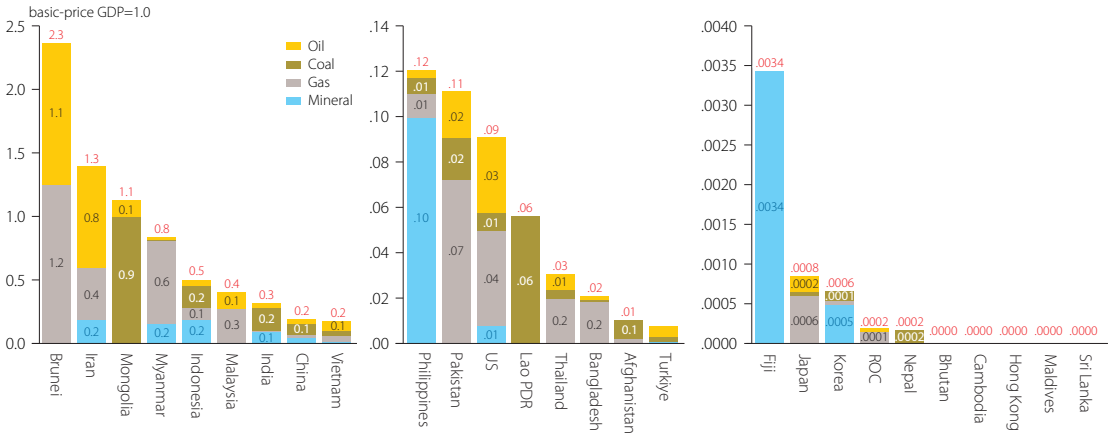

Figure 8.8 MER Capital-Output Ratio, 2023
——Ratio of the beginning-of-period net capital stock of MER to basic-price GDP at current prices

Unit: Percentage. Sources: ANRD 2025 and APO Productivity Database 2025.

8.2.7 Capital Services

In production analysis, capital service provides an appropriate concept of capital input as recommended in the 2008 SNA. The fundamental assumption in measuring capital services is the constant proportionality between the (productive) capital stock and capital services in each type of asset. Thus, capital service growth rates can differ from capital stock growth only at aggregated levels. For aggregating different kinds of capital, the user cost of capital by type of asset is required. This section outlines the methodology of the user cost of capital estimation and presents the estimated results of the endogenous rate of return for Asian countries in APO-PDB.

The user cost of capital of a new asset with a type of asset denoted as k (Table 8.4) of the period t, u_t^k, is defined as $q_{t-1}^k \{r_t + \tau_t^k + (1 + \pi_t^k)\ \delta_t^k - \pi_t^k\}$, where r_t, τ_t^k, δ_t^k, and q_t^k are the expected nominal rate of return, effective property tax rate, cross-section depreciation rate, asset price change, respectively. The asset-specific inflation rate π_t^k is defined as $(q_t^k / q_{t-1}^k - 1)$. The effective property tax rates by type of asset have been considered since the APO-PDB 2023. Our estimates on "T3b. Recurrent taxes on land, buildings or other structures" and "T3c. Taxes on the use of fixed assets" in Table 8.2 are further subdivided, corresponding to the asset classification in Table 8.4.

The APO-PDB follows the ex-post approach that Jorgenson and Griliches (1967) originated. Assuming constant returns to scale and competitive markets, capital compensation (V_t) can be derived from the summation of capital service cost V_t^k over all k asset types. V_t^k is defined as the product of the user cost of capital and the productive capital stock, S_t^k (i.e., $V_t = \sum_k V_t^k = \sum_k u_t^k S_t^k$). Based on this identity and the n-equations of user cost of capital, the n+1 variables of u_t^k and r_t are simultaneously determined, using the observed capital compensation V_t as the total sum of V_t^k that is not observable in each asset.

98: In Myanmar, jade stocks (discussed in Section 8.4) are not covered in the ANRD 2025.

The estimated results of the ex-post real rate of return for the Asia27 economies and the US are presented in Table 8.10 as the five-year averages in the entire observation period 1970–2023. After considering the capital input of MER (Section 8.2.6) and the effective rate of property tax, the nominal rate of return has been revised significantly downwards compared to the previous estimates in the APO-PDB 2022, bringing the nominal rate of return closer to a more reasonable estimate. Between 2015 and 2023, the real rate of return ranged from 2.5–4.2% in Hong Kong, Japan, Korea, and Singapore to over 15% in Afghanistan, Bangladesh, Cambodia, Pakistan, and the Philippines, reflecting the differences in country risk. Aggregate capital services measured in APO-PDB are based on these ex-post estimates of rates of return. The difference between the ex-ante and ex-post approaches may result in a modest difference in the growth measure of capital services, despite substantial differences in the rates of return and capital compensation.

Table 8.10 Average Ex-Post Real Rate of Return in Asia, 1970–2023

	1970–1974	1975–1979	1980–1984	1985–1989	1990–1994	1995–1999	2000–2004	2005–2009	2010–2014	2015–2023
Afghanistan	39.9	40.7	35.6	30.7	−5.6	−51.2	−12.1	8.9	23.3	16.3
Bangladesh	9.2	8.0	10.7	18.6	21.1	18.9	19.6	19.4	19.6	20.9
Bhutan	7.7	11.9	3.0	5.3	1.2	5.7	10.5	7.7	3.8	3.6
Brunei	3.2	11.7	8.5	3.4	4.4	5.5	14.6	13.7	7.8	5.6
Cambodia	21.4	19.8	8.5	−19.1	−12.1	20.9	24.0	23.1	25.1	16.1
China	9.2	7.8	5.6	0.4	3.6	9.9	14.1	9.6	6.6	7.3
Fiji	13.0	13.1	8.6	9.4	16.9	10.2	8.9	9.2	8.5	11.0
Hong Kong	10.4	10.9	0.4	8.4	1.0	3.2	7.5	7.3	3.7	3.2
India	0.2	4.6	−1.0	−0.3	−0.1	1.6	6.8	4.9	1.6	4.1
Indonesia	18.7	12.7	13.3	13.5	13.3	5.9	9.5	10.0	8.8	8.3
Iran	10.6	2.9	−5.5	−7.6	−6.3	−6.0	3.9	2.1	−2.4	−5.6
Japan	−2.2	−3.3	1.1	3.6	0.4	0.8	1.8	2.7	1.8	2.5
Korea	9.9	5.6	3.0	9.5	2.1	0.2	4.2	4.5	2.9	4.2
Lao PDR	−3.0	−15.6	−26.0	−20.8	0.7	−16.8	−0.7	11.3	13.3	7.3
Malaysia	15.8	15.7	6.6	7.2	9.4	11.4	13.9	14.8	14.2	13.5
Maldives	16.4	−4.6	13.9	18.2	12.4	16.1	15.8	10.2	7.9	7.8
Mongolia	10.0	9.4	8.1	12.7	−45.1	−7.1	8.1	7.2	3.1	7.7
Myanmar	29.2	34.9	29.4	12.7	6.2	4.9	5.2	5.8	22.0	−1.6
Nepal	11.7	12.2	7.8	6.4	4.6	4.9	7.2	6.9	2.0	4.8
Pakistan	10.7	8.3	8.2	14.3	13.6	21.2	29.9	22.2	22.5	18.8
Philippines	9.7	11.4	6.6	7.1	6.9	10.5	17.4	14.7	17.9	16.6
ROC	2.2	2.0	1.0	6.6	1.9	2.1	3.5	4.1	5.7	4.0
Singapore	5.1	6.7	5.4	6.4	4.5	3.3	4.5	6.8	3.3	4.1
Sri Lanka	19.4	18.6	3.6	4.7	2.6	4.8	6.5	6.5	16.1	8.7
Thailand	15.0	12.3	9.7	14.9	12.5	7.5	10.4	10.9	11.2	12.0
Turkiye	35.6	14.6	1.1	−2.0	−16.1	−19.9	0.5	17.2	15.5	4.5
Vietnam	13.6	11.2	−14.5	−59.4	−2.9	21.1	20.4	8.5	8.3	10.9
US	4.5	1.9	−0.1	3.9	3.4	6.6	6.2	4.6	6.2	6.1

Unit: Percentage. Source: APO Productivity Database 2025.

8.3 Measurement of Labor Input

8.3.1 Hours Worked

The volume of labor can be measured in three ways: the number of persons in employment, the number of filled jobs, and the hours worked. Given the variations in working patterns and employment legislation over time and across countries, hours worked, if accurately measured, offer the most time-consistent and somewhat internationally comparable unit measuring the volume of each type of labor. This is the primary underlying reason for the importance of choosing the hours actually worked in productivity analysis. It is challenging to accurately estimate the average hours worked, as this information is not always available or comparable across countries. The variety of data sources, definitions, and methodologies available in estimating these labor market variables often leads to a fragmentation of labor market statistics of an individual country, dubious data quality, and incomparability across countries. Here is an attempt to outline some of these intricate measurement issues.

Data on labor volume are derived from two main statistical surveys of establishments and households, each with its respective strengths and weaknesses. Establishment surveys are surveys of firms with stratified sample frames by the size of establishments. The concentration of total employment in a relatively small number of establishments means that this sampling strategy is cost-effective in delivering high-precision labor market estimates with a small sampling error. Questionnaires are designed to align closely with the concepts used in company administration. This has both strengths and weaknesses.

On the other hand, changes in legislation and regulation could be a source of instability to the definitions and the data collected. Furthermore, data companies do not collect data for administrative purposes, and data such as unpaid hours and worker characteristics are unavailable. This greatly limits the variety of labor market data collected through establishments.[99] Information on hours is based on paid hours rather than actual hours worked. Certain categories of employment, most notably the self-employed, are not covered. Sometimes, small firms, informal employment (which can account for more than 50% of employment in developing countries), or the public sector are also excluded. Due to these limitations, labor market data from establishment surveys often require adjustments for omissions and modifications to definitions during the compilation process.

In contrast, household-based labor force surveys (LFS) fully cover the economy. However, they sometimes incorporate age or geographic exclusions and may have imperfect coverage of the armed forces and other institutional households. Nonetheless, they provide valuable data on specific employment groups, such as the self-employed and unpaid family workers, as well as the number of multiple job workers. Employment status in LFS is independently determined and is not subject to the criteria used in company records. Most countries follow the definitions of the International Labour Organization (ILO). As LFSs are surveyed from a socio-economic perspective, they also provide rich data on worker characteristics relevant to productivity analysis.[100]

The common practice of statistical offices has been to combine information from establishment and household surveys in national accounts, to utilize the most reliable aspects of each study. This appears to be the most promising avenue for improving the quality and consistency of data on labor input. However, statistical offices may still differ significantly in their methodologies, particularly in estimating the annual average hours worked per job or person, depending on their starting points, namely LFS data or enterprise data. All these must be considered in international comparisons of productivity.

Figure 8.9 presents a cross-country comparison of average annual hours worked per worker for 2010–2023, relative to the level of the US, based on AQALI 2025. It indicates that workers in Asian countries work much longer than those in the US and the EU. In many countries sampled, the difference in annual hours worked per person relative to the US is more than 10% of the US level.[101] Prolonged working hours are observed across all stages of development, from low-income countries such as Bangladesh and Cambodia to high-income countries like Singapore and Korea. Workers in Japan are likely to work much shorter hours than those in other Asian countries. However, compared with the EU15, hours worked by workers in Japan are still about 14 percentage points greater. Figure 8.10 presents the growth in total

99: Employment is measured based on jobs rather than persons employed, as persons holding multiple jobs with different establishments cannot be identified and will be counted more than once.

100: The major weakness of the LFS, however, is data precision. By relying on the respondents' recollection, their response also depends on perception. Response errors could, therefore, arise from confusion of concepts and imprecise recollection of the respondents concerning work patterns and pay during the reference week. Another source of error originates from the proxy response, which relies on the proxy's perception and knowledge of another household member. A high level of proxy responses could, therefore, reduce the reliability of the data collected.

101: Shorter hours worked in Nepal are due to frequent general strikes called "Banda," mainly by some political parties. According to the Nepal Human Rights Commission, Banda was called 821 times in various regions in 2009, and economic activities were closed during Banda.

hours worked for the Asia27 economies in 2015–2023, compared with those in 2010–2015 and 2005–2010. Singapore experienced a continuous significant slowdown in hours-worked growth over these subperiods. The change in growth rates varies widely by country and over periods.

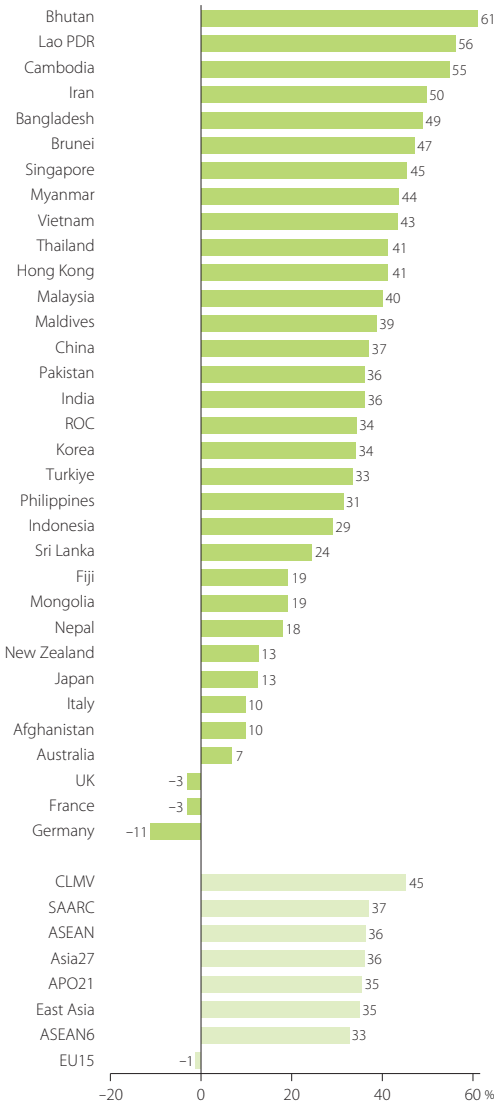

Figure 8.9 Annual Hours Worked Per Worker relative to the US, 2010–2023

——Average annual hours worked per worker on average, percent difference from the US

Unit: Percentage (relative to the US). Sources: Official national accounts and labor force survey in each country (including adjustments by APO-PDB) for Asian countries and OECD Stat for the EU15, France, Germany, Italy, New Zealand, and the UK.

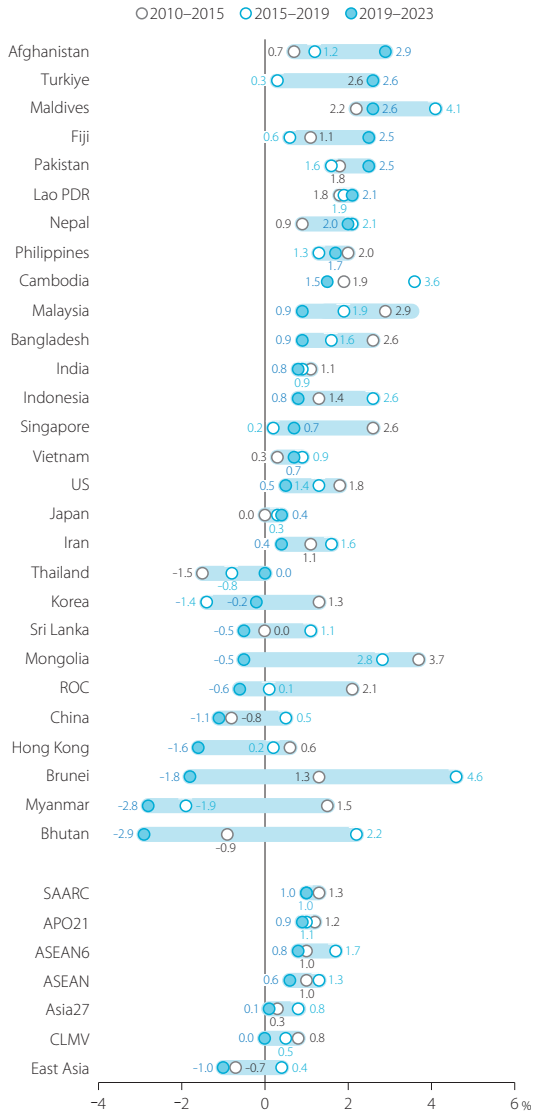

Figure 8.10 Hours Worked Growth in the Recent Periods, 2010–2023

——Growth in total hours worked over three subperiods: 2019–2023, 2015–2019, and 2010–2015

Unit: Percentage (average annual growth rate). Source: AQALI 2025.

8.3.2 Quality-adjusted Labor Input

In productivity analysis, labor inputs at the aggregate level are expected to be quality-adjusted to reflect workforce heterogeneity, as recommended in the 2008 SNA (United Nations 2009).[102] Adjusting total hours worked for quality would require information on worker characteristics to differentiate the workforce into different types. Hours are then weighed by their marginal productivity, which is approximated by data on total compensation. In the stage of high economic growth, labor quality growth can be a significant factor, as well as the increase in hours worked, improvement in the educational attainment of workers, and a shift from the self-employed (e.g., in agriculture or informal service sectors) to employees (in manufacturing or formal service sectors).

Deriving a quality-adjusted labor input (QALI) measure is a data-demanding exercise. Even if LFS provides the required information, researchers often encounter consistency issues, discussed in Section 8.3.1, and sample size problems as they break down the workforce into fine categories. Covering the Asia27 economies, data on employment and wages/incomes have been collected by type of labor category since 2013 at KEO, primarily based on LFS and Population Census. The developed data is referred to as the Asia QALI Database (AQALI), which consists of the number of workers, hours worked per worker, and hourly wages, cross-classified by gender, educational attainment, age, and employment status. The AQALI 2025 estimates total hours worked, labor quality, and QALI, which are incorporated in APO-PDB 2025.[103]

Figure 8.11 compares the average schooling years observed among workers from 1970 to 2023 as an intuitive indicator of labor quality, based on the AQALI 2025. Although there is a significant range in 2023, the average number of years has increased since 1970 in all

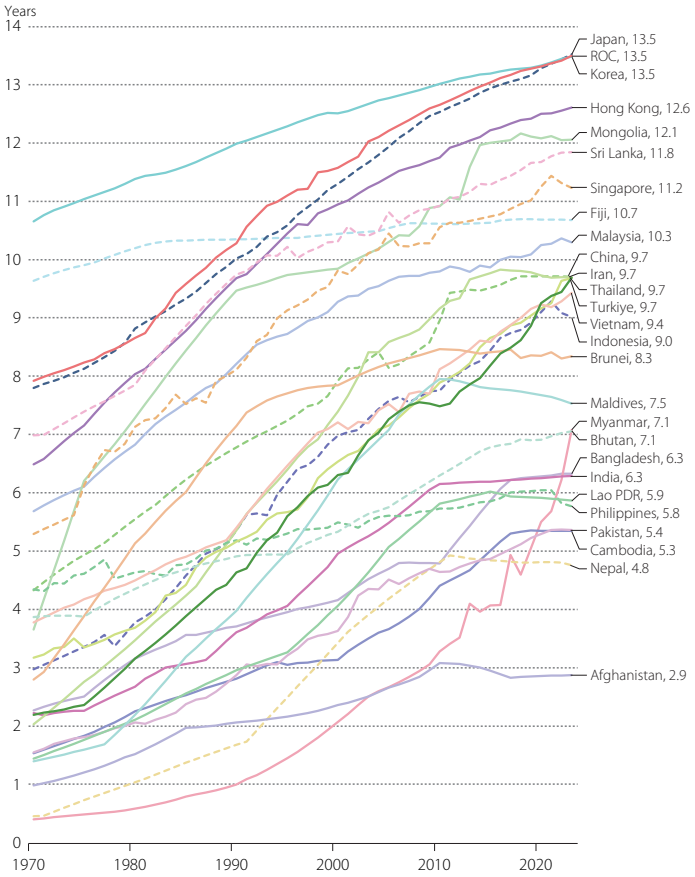

Figure 8.11 Average Schooling Years of Workers, 1970–2023

Unit: Years. Source: AQALI 2025.

102: The SNA 2008 (United Nations 2009, Chapter 19) discusses three standardized measures of labor inputs, evaluating "examples in increasing order of being difficult to measure are full-time equivalents, total actual hours worked, and quality-adjusted labor inputs based on models" (para. 19.42).

103: Data on hours worked by self-employed and contributing family workers by type of labor category in AQALI is also used to estimate labor income within mixed income in APO-PDB (Section 8.3.3). The detailed data sources and methodological framework for QALI are documented in Nomura and Akashi (2017) for six South Asian countries, Nomura (2023) for Vietnam, and Nomura (2025, Chapter 4) for Bhutan. The main labor statistics used in AQALI 2023 are presented in Table 8.9 in the 2023 edition of the Databook (APO 2023). An updated list used in AQALI 2025 is available upon request.

economies. In this measure, three country groups are observed: i) countries with over 11 schooling years on average, ii) countries with 8–11 years, and iii) countries with less than seven years in 2023. The first group mainly consists of East Asian countries; Japan, Korea, and the ROC are the leading countries (13.5 years), followed by Hong Kong, Mongolia, Sri Lanka, and Singapore. The second group is ASEAN6, China, Fiji, Iran, Turkiye, and Vietnam. The third group comprises SAARC and the CLMV countries, except for Vietnam. This chart indicates that improving its average educational background is a lengthy process.

8.3.3 Labor Share

The labor share, defined as the ratio of total labor compensation to GDP at basic prices, is a key factor in determining TFP growth. Estimates of COE (compensation of employees) are not fully available in the official national accounts for all Asian countries. Figure 8.12 summarizes the availability of the COE estimates in the official national accounts and the input-output tables in each country (Table 8.3). The national accounts in Bangladesh, Bhutan, Indonesia, Lao PDR, Myanmar, Pakistan, and Vietnam do not fully publish the COE estimates. In addition, in some countries, such as Cambodia and Iran, estimates are not available for the entire observation period, 1970–2023. In such cases, the COE is estimated or extrapolated from the estimates based on AQALI.

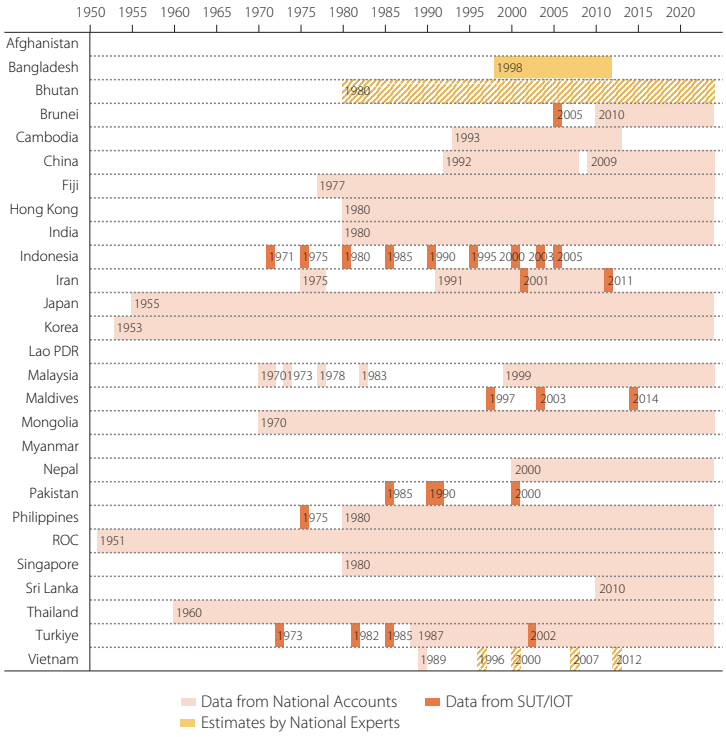

Figure 8.12 Availability of Compensation of Employees Estimates, 1970–2023

Sources: Official national accounts and SUT/IOT in each country. Note: Hatched areas indicate periods during which data mingled with operating surplus or mixed income are available.

The compensation for the self-employed and contributing family workers is not separately estimated in the national accounts but is combined with returns to capital in the mixed income category. This edition of the Databook follows the revised estimates in AQALI 2025 (Section 8.3.2), which apply different methodologies to agriculture and non-agriculture industries. In the agricultural industry, capital income is measured based on our estimates of the returns to capital of land for agricultural use (asset code 12 in Table 8.8) and other fixed assets.[104] Labor income in agriculture is measured as a residual of the basic-price GDP minus our estimates of the returns to capital. In non-agricultural industries, the wage differential ratio (WDR) in hourly wages between non-employees and employees in each elementary labor category is assumed in each country. Time-invariant WDR is taken with a range of 0.2–0.5 by country.[105]

104: Since capital stock is not measured at the industry level in APO-PDB, the capital stock shares are estimated based on the agricultural industry's value-added share if the industry's official estimates are unavailable.

Box 17 Labor Share and Its Sensitivity to TFP Estimates

TFP computations based on the growth accounting framework relies on data that is often difficult to observe. One challenge arises from calculating compensation for self-employed individuals and unpaid family workers. Moreover, certain Asian countries do not include estimates for the Compensation of Employees (COE) in their official national accounts. In the Asia QALI Database (AQALI), labor income for total employment is estimated to be consistent with finely classified labor inputs and wages based on the assumptions described in Section 8.3.3. A reassessment of this assumption in the future would directly impact TFP estimates by revising labor shares. It would indirectly effect estimates of the ex-post rate of return, consequently influencing the aggregate measure of capital services.

The right panel of Figure 8.13 presents the employee income share (the ratio of COE to the basic-price GDP at current prices) in 2023, based on the official national accounts and AQALI 2025 in the Asia27 economies and the US. Among Asian countries, there are substantial variations in the COE share from 18% to 64%. As illustrated in the left panel, these differences do not necessarily correlate with gaps in the share of employees in total employment. For instance, while Brunei and Turkiye exhibit high employee shares of 95% and 76%, respectively, their corresponding COE shares in 2023 are only 30% and 33%. The COE share depends on various factors, such as industry structure and the size of the informal sector, and their estimates are not always precise.

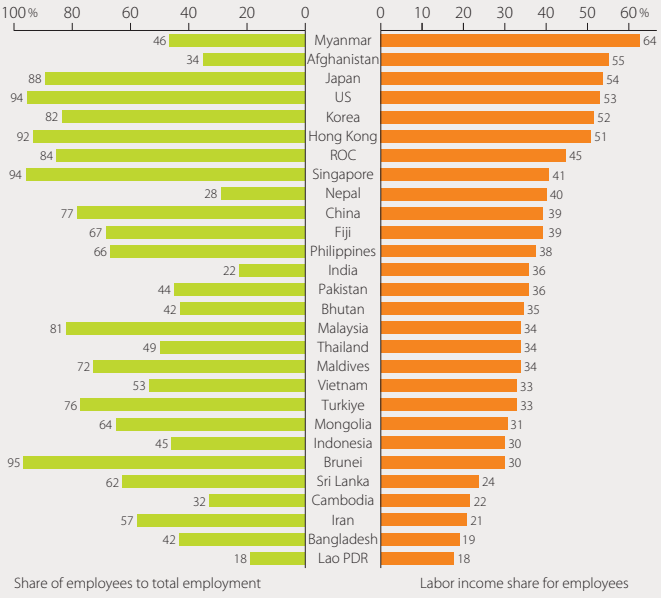

Figure 8.13 Employee Labor Income Share, 2023

Unit: Percentage. Sources: Official national accounts in each country (including adjustments by APO-PDB) and AQALI 2025.

Figure 8.14 illustrates the sensitivity of TFP growth estimates from 2010 to 2023 depending on the different labor income shares. In general, the growth rate of capital input is higher than that of labor input, and therefore, the higher income shares of labor result in higher estimates of TFP growth. In other words, labor productivity (Figure 5.5) improves much faster over a given period than capital productivity (Figure 5.23), the growth of which frequently tends to be negative. The TFP estimate reflects a greater improvement in labor productivity when the labor share increases. In the case of India, one of the countries with the strongest performance in this period, the average TFP growth rate for 2010–2023 is 2.0%. However, if the labor share in its current estimates were overestimated by 10%, the true TFP growth rate would be revised to 1.5%. Given the larger informal economy in Asian countries and the difficulty of capturing income from such sectors, it is appropriate to understand TFP growth rates with an error margin of approximately that shown in Figure 8.14.

105: The WDR is set at 0.5 for Japan, 0.3 for the Asian Tigers, 0.5 for CLMV (except Myanmar), Iran, and Turkiye, and 0.2 for other countries.

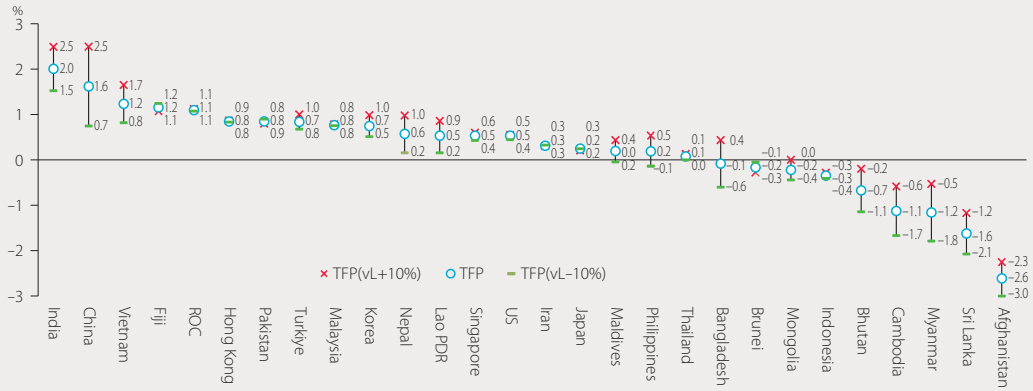

Figure 8.14 Sensitivity of TFP Estimates to Changes in Labor Share, 2010–2023

Unit: Percentage (average annual growth rate). Source: APO Productivity Database 2025.

8.4 Data on Non-Member Economies

For China, multiple data sources have been used; GDP for the whole economy, industry GDP, final demands, employment, and income data are taken from *China Statistical Yearbook* (and *China National Income 1952–1995* for our backward estimates before 1969); time-series data of GFCF by type of asset during 1952–2023 at current and constant prices are estimated at KEO based on *Statistics on Investment in Fixed Assets of China 1950–2000*, *China Statistical Yearbook*, *1987, 1992, 1997, 2002, 2007, 2012, 2015, 2017–2018, and 2020 Input–Output Tables of China, Manufacturing Census in China*, and the import data from *China Customs Statistics*.

The productivity account for China was considerably revised in the APO-PDB 2022 based on our intensive study with Professor W. Erwin Diewert (University of British Columbia). Our revision work on the Chinese growth accounting focused mainly on imputed rent, the labor share, quality-adjusted labor input, the price index on government consumption, and land stock prices. In particular, some imputed rents for free housing and owner-occupied housing (including land) were added to household consumption and GDP in the Chinese official national accounts (Diewert, Nomura, and Shimizu 2024). Our adjustments led us to significantly revise China's TFP growth rate downwards (footnote 54).

For Bhutan, the industry-level productivity account was developed through a collaborative effort between the Department of Macro-Fiscal and Development Finance (DMDF) of the Ministry of Finance (MoF), Royal Government of Bhutan (RGoB), and the KEO at Keio University, with support from the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), as documented in Nomura (2025). While that study covers the period 1990–2022, the APO-PDB 2025 reflects an extension of the estimates to 2023. The aggregate productivity account in the APO-PDB has been retrospectively estimated back to 1970.

For Myanmar, the industry-level productivity account was developed for 1990–2014 by Nomura and Shirane (2016) to correct the significant overestimation of GDP in Myanmar's official national accounts from the late 1990s to the late 2000s, and to incorporate jade production, which is underrepresented in

the official accounts. The APO-PDB includes these estimates. Although productivity estimates for Myanmar are extended through 2023 in the APO-PDB, these values are subject to considerable uncertainty. Following the military coup in February 2021 and the resulting institutional disruption, the reliability and availability of official data have declined substantially. The recent estimates rely on auxiliary sources and continuity assumptions and should be interpreted with caution.[106]

For the Maldives, although the official national accounts are relatively well-developed and aligned with international standards, the small size of the economy, its heavy reliance on fishing and tourism, and its vulnerability to external shocks, necessitate a cautious interpretation of the estimates. The APO-PDB is primarily constructed based on the national accounts published by the Maldives Bureau of Statistics (MBS) and the Government of the Maldives, supplemented by sector-specific indicators to enhance accuracy and consistency. The economic structure of the Maldives has undergone a significant transition: in the 1970s, the economy was predominantly based on fisheries—especially tuna fishing—while the tourism sector began to expand rapidly from the 1980s onward. Accordingly, fishing activity is incorporated using production data from the Ministry of Fisheries and Agriculture, particularly for the earlier period. In contrast, the number of tourists from the Ministry of Tourism, Arts and Culture is used to reflect the growing importance of the tourism sector since the 1980s. In addition to production-side estimates, expenditure-side information, such as private consumption and CPI trends, is used to check the consistency of annual estimates. While every effort has been made to build a coherent time series using the best available data, the estimates remain subject to uncertainty due to structural vulnerability and data volatility. Users are therefore advised to interpret the results with appropriate caution.

For Afghanistan, the APO-PDB is constructed under considerable data limitations. Given the prolonged conflict, institutional fragility, and the dominance of informal and subsistence-based economic activities, the availability and reliability of official national accounts are extremely limited, particularly for the period from the 1990s through the early 2000s, and for detailed sectoral or expenditure breakdowns. The estimates presented are based on international sources, including the UN, World Bank, and IMF. Despite efforts to construct a coherent time series through international benchmarking and structural assumptions, users should exercise caution when interpreting the results. The absence of consistent industry-level data, incomplete price statistics, and the discontinuity of institutional data collection, limit the robustness of both level and growth estimates. While the inclusion of Afghanistan serves to enhance regional coverage within the SAARC group, the figures should be viewed as indicative rather than definitive and used with caution in comparative analysis or policy assessment.

The data sources for the EU15, the EU27, France, Germany, Italy, and the UK are the OECD.Stat (accessed February 1, 2025), OECD (2025), Eurostat (accessed February 1, 2025), and the Office for National Statistics (2024). The data sources for the US, Australia, and New Zealand are the US Bureau of Economic Analysis (accessed March 29, 2025), the Australian Bureau of Statistics (accessed February 15, 2025), and the Stats NZ Tauranga Aotearoa (accessed January 25, 2025), respectively.

The exchange rates used in the Databook series are adjusted, called the Analysis of Main Aggregate (UNSD database) rates, in the UNSD National Accounts Main Aggregate Database. The AMA rates coincide with IMF rates except for some periods in countries with official fixed exchange rates and high inflation, when there could be a serious disparity between real GDP growth and growth converted to

106: The estimates for 2020–2023 are constructed based on quarterly national accounts where available, and employment data from the ILO Modelled Estimates (2025). In the ICP 2021 round, Myanmar's PPP was revised sharply downward compared to the ICP 2017. This revision resulted in a nearly 50% reduction in Myanmar's PPP-based real GDP (see Box 3). While such a revision may reflect improvements in methodology or corrections to previous overestimations, the magnitude of change raises concerns about the robustness of cross-country level comparisons for Myanmar. Users should interpret the absolute levels of Myanmar's real GDP and productivity indicators with caution, focusing more on relative trends rather than absolute levels.

USD based on IMF rates. In such cases, the AMA adjusts the IMF-based rates by multiplying the growth rate of the GDP deflator relative to the US.

The IMF's Government Finance Statistics (GFS) supplements the tax data of member economies. GFS data, together with national accounts for each country, play a key role in adjusting GDP at market prices to GDP at basic prices (Section 8.1.7). From its tax revenue data, "taxes on goods & services" and "taxes on international trade & transactions" are used for calculating T2, indirect taxes on products (Table 8.2). From its expenditure data, "subsidies" are used for S2, subsidies on products. Finally, the energy consumption and CO_2 emissions data in Section 5.7 are based on IEA (2024b, 2024c).

8.5 PPP for Output and Inputs

Purchasing Power Parities (PPPs) are essential tools in economic research and policy analysis, particularly when comparing macroeconomic indicators across countries. They enable the conversion of national currency-denominated economic measures into internationally comparable volume measures by addressing differences in price levels. PPPs are price relatives that indicate the ratio of the prices of identical or similar goods and services across countries, expressed in national currencies. These comparisons offer a more accurate representation of actual output and living standards than market exchange rates, which are frequently influenced by financial flows and short-term volatility. PPPs are produced under the framework of the International Comparison Program (ICP), a global statistical initiative led by the World Bank. The ICP conducts comprehensive surveys to collect harmonized price and expenditure data covering the full spectrum of final goods and services that constitute GDP from the expenditure side. The most recent benchmark PPP estimates, based on the ICP 2021, were released in May 2024 (World Bank 2024a). This iteration features several methodological enhancements that enhance data consistency and facilitate cross-country comparability.

The Databook mainly provides a cross-country comparison of economic volumes. To obtain comparable volume measures, the Databook uses the *constant PPP approach*, which relies not on a time series of PPPs but on one of the benchmark estimates. The APO-PDB 2025 incorporates, for the first time, the benchmark estimates from the ICP 2021 (World Bank 2024a). This approach creates a national series for volumes at the prices of a common reference year, i.e., 2023, and deflates these by the PPP for a fixed year, i.e., 2021. The revision impacts resulting from the adoption of the ICP 2011, 2017, and 2021 benchmarks are discussed in Box 3.

In this Databook, the country aggregations of capital and labor inputs are based on the estimates of PPP for capital and labor inputs, respectively, which are the updates of the estimates developed in Nomura (2018). In most Asian countries, the PPP for output underestimates the PPP for capital input, indicating that capital prices are higher than output prices, and overestimates the PPP for labor inputs, indicating that labor prices are lower than output prices. The PPP estimates for capital and labor inputs have been updated in line with the publication of Databook 2025, based on updates to the AQALI, ANRD, and APO-PDB.

9 Supplementary Tables

Table 9.1 GDP using Exchange Rate, 1970–2023

——GDP at current market prices, using the annual average exchange rate

1970		(%)
Japan	209	100.0
China	104	49.9
India	64	30.4
Turkiye	24	11.7
Iran	11	5.4
Pakistan	10	4.9
Indonesia	10	4.7
Korea	9.1	4.4
Thailand	7.3	3.5
Philippines	6.8	3.2
Bangladesh	6.7	3.2
ROC	5.8	2.8
Saudi Arabia	5.4	2.6
Malaysia	3.9	1.9
Hong Kong	3.8	1.8
Kuwait	3.0	1.4
Sri Lanka	2.8	1.4
Myanmar	2.7	1.3
Singapore	1.9	0.9
Afghanistan	1.7	0.8
Nepal	1.2	0.6
Vietnam	1.2	0.6
UAE	1.1	0.5
Cambodia	0.8	0.4
Qatar	0.5	0.3
Bahrain	0.4	0.2
Oman	0.3	0.1
Brunei	0.2	0.1
Fiji	0.2	0.1
Lao PDR	0.1	0.1
Mongolia	0.1	0.1
Bhutan	0.1	0.0
Maldives	0.0	0.0
(region)		
APO21	380	181.9
Asia27	489	234.0
Asia33	499	239.1
East Asia	332	158.9
SAARC	86	41.3
ASEAN	35	16.7
ASEAN6	30	14.4
CLMV	4.8	2.3
GCC	11	5.1
IPEF	1,438	688.6
RCEP	409	195.7
(reference)		
Australia	45	21.7
France	190	91.0
Germany	314	150.1
Italy	196	93.7
New Zealand	6.6	3.2
UK	134	64.4
US	1,073	514.0
EU15	1,251	599.2

1980		(%)
Japan	1,111	100.0
China	351	31.6
India	190	17.1
Saudi Arabia	165	14.9
Iran	98	8.8
Turkiye	92	8.3
Indonesia	80	7.2
Korea	67	6.0
UAE	44	4.0
ROC	42	3.8
Thailand	33	3.0
Philippines	33	3.0
Kuwait	30	2.7
Hong Kong	29	2.6
Malaysia	25	2.2
Pakistan	24	2.2
Bangladesh	18	1.6
Singapore	12	1.1
Qatar	7.9	0.7
Oman	7.2	0.6
Brunei	6.2	0.6
Myanmar	5.9	0.5
Sri Lanka	4.9	0.4
Afghanistan	3.6	0.3
Bahrain	3.5	0.3
Nepal	2.5	0.2
Fiji	1.2	0.1
Vietnam	1.0	0.1
Cambodia	0.7	0.1
Mongolia	0.5	0.0
Lao PDR	0.3	0.0
Bhutan	0.1	0.0
Maldives	0.1	0.0
(region)		
APO21	1,865	167.9
Asia27	2,232	200.9
Asia33	2,490	224.1
East Asia	1,600	144.0
SAARC	244	21.9
ASEAN	197	17.7
ASEAN6	189	17.0
CLMV	8.0	0.7
GCC	258	23.2
IPEF	4,613	415.3
RCEP	1,922	173.0
(reference)		
Australia	173	15.6
France	528	47.6
Germany	810	72.9
Italy	554	49.9
New Zealand	23	2.1
UK	604	54.4
US	2,857	257.2
EU15	3,339	300.5

1990		(%)
Japan	3,185	100.0
China	434	13.6
India	335	10.5
Korea	292	9.2
Turkiye	204	6.4
ROC	166	5.2
Indonesia	127	4.0
Saudi Arabia	119	3.7
Iran	95	3.0
Thailand	89	2.8
Hong Kong	77	2.4
UAE	51	1.6
Pakistan	49	1.6
Philippines	47	1.5
Malaysia	45	1.4
Singapore	39	1.2
Bangladesh	32	1.0
Kuwait	19	0.6
Oman	13	0.4
Sri Lanka	9.4	0.3
Qatar	7.5	0.2
Vietnam	6.5	0.2
Myanmar	5.7	0.2
Bahrain	4.5	0.1
Nepal	4.3	0.1
Brunei	3.9	0.1
Afghanistan	3.6	0.1
Cambodia	1.8	0.1
Mongolia	1.6	0.0
Fiji	1.4	0.0
Lao PDR	0.9	0.0
Bhutan	0.3	0.0
Maldives	0.3	0.0
(region)		
APO21	4,809	151.0
Asia27	5,257	165.1
Asia33	5,471	171.8
East Asia	4,156	130.5
SAARC	435	13.6
ASEAN	366	11.5
ASEAN6	351	11.0
CLMV	15	0.5
GCC	214	6.7
IPEF	10,504	329.8
RCEP	4,646	145.9
(reference)		
Australia	324	10.2
France	1,017	31.9
Germany	1,539	48.3
Italy	1,058	33.2
New Zealand	45	1.4
UK	1,190	37.4
US	5,963	187.2
EU15	6,426	201.8

2000		(%)
Japan	4,968	100.0
China	1,317	26.5
Korea	598	12.0
India	483	9.7
ROC	331	6.7
Turkiye	274	5.5
Saudi Arabia	191	3.9
Hong Kong	172	3.5
Indonesia	168	3.4
Thailand	127	2.6
Iran	112	2.3
UAE	106	2.1
Singapore	96	1.9
Pakistan	96	1.9
Malaysia	95	1.9
Philippines	84	1.7
Bangladesh	52	1.0
Kuwait	38	0.8
Vietnam	37	0.7
Oman	22	0.5
Sri Lanka	19	0.4
Qatar	18	0.4
Bahrain	8.4	0.2
Myanmar	7.8	0.2
Brunei	6.6	0.1
Nepal	6.5	0.1
Cambodia	3.8	0.1
Afghanistan	3.5	0.1
Lao PDR	1.8	0.0
Fiji	1.7	0.0
Mongolia	1.4	0.0
Maldives	0.9	0.0
Bhutan	0.5	0.0
(region)		
APO21	7,726	155.5
Asia27	9,063	182.4
Asia33	9,447	190.1
East Asia	7,387	148.7
SAARC	661	13.3
ASEAN	626	12.6
ASEAN6	576	11.6
CLMV	50	1.0
GCC	385	7.7
IPEF	17,379	349.8
RCEP	7,974	160.5
(reference)		
Australia	410	8.3
France	1,583	31.9
Germany	2,253	45.4
Italy	1,544	31.1
New Zealand	54	1.1
UK	1,664	33.5
US	10,251	206.3
EU15	9,943	200.1
EU27	9,491	191.0

2010		(%)
China	6,404	100.0
Japan	5,759	89.9
India	1,678	26.2
Korea	1,193	18.6
Turkiye	777	12.1
Indonesia	756	11.8
Saudi Arabia	533	8.3
Iran	512	8.0
ROC	444	6.9
Thailand	342	5.3
UAE	308	4.8
Malaysia	255	4.0
Singapore	240	3.7
Hong Kong	229	3.6
Philippines	208	3.3
Pakistan	194	3.0
Vietnam	147	2.3
Qatar	128	2.0
Bangladesh	126	2.0
Kuwait	118	1.8
Oman	66	1.0
Sri Lanka	58	0.9
Myanmar	37	0.6
Bahrain	27	0.4
Nepal	19	0.3
Afghanistan	15	0.2
Cambodia	14	0.2
Brunei	14	0.2
Lao PDR	7.4	0.1
Mongolia	7.2	0.1
Fiji	3.1	0.0
Maldives	2.6	0.0
Bhutan	1.6	0.0
(region)		
APO21	12,968	202.5
Asia27	19,441	303.6
Asia33	20,621	322.0
East Asia	14,036	219.2
SAARC	2,093	32.7
ASEAN	2,021	31.6
ASEAN6	1,815	28.3
CLMV	206	3.2
GCC	1,180	18.4
IPEF	27,092	423.1
RCEP	16,824	262.7
(reference)		
Australia	1,301	20.3
France	2,334	36.5
Germany	3,240	50.6
Italy	2,090	32.6
New Zealand	147	2.3
UK	2,485	38.8
US	15,049	235.0
EU15	14,667	229.0
EU27	14,595	227.9

2023		(%)
China	18,627	100.0
Japan	4,213	22.6
India	3,625	19.5
Korea	1,839	9.9
Indonesia	1,378	7.4
Turkiye	1,118	6.0
Saudi Arabia	1,084	5.8
ROC	757	4.1
Iran	548	2.9
UAE	533	2.9
Thailand	522	2.8
Singapore	505	2.7
Philippines	437	2.3
Vietnam	430	2.3
Bangladesh	422	2.3
Malaysia	400	2.1
Hong Kong	381	2.0
Pakistan	299	1.6
Qatar	226	1.2
Kuwait	169	0.9
Oman	108	0.6
Sri Lanka	85	0.5
Bahrain	46	0.2
Cambodia	42	0.2
Nepal	39	0.2
Myanmar	29	0.2
Mongolia	21	0.1
Afghanistan	16	0.1
Lao PDR	15	0.1
Brunei	15	0.1
Maldives	6.6	0.0
Fiji	5.4	0.0
Bhutan	3.0	0.0
(region)		
APO21	17,084	91.7
Asia27	35,780	192.1
Asia33	37,946	203.7
East Asia	25,838	138.7
SAARC	4,496	24.1
ASEAN	3,774	20.3
ASEAN6	3,258	17.5
CLMV	517	2.8
GCC	2,166	11.6
IPEF	43,124	231.5
RCEP	30,486	163.7
(reference)		
Australia	1,776	9.5
France	4,196	22.5
Germany	5,934	31.9
Italy	3,518	18.9
New Zealand	256	1.4
UK	3,400	18.3
US	27,721	148.8
EU15	25,738	138.2
EU27	26,515	142.4

Unit: Billion USD.
Sources: Official national accounts in each country, including adjustments by APO-PDB.
Note: See Section 8.1 for the adjustments to harmonize GDP coverage across countries.

Table 9.2 GDP using PPP, 1970–2023

——GDP at constant market prices, using the 2021 PPP, the reference year 2023

1970		(%)	1980		(%)	1990		(%)	2000		(%)	2010		(%)	2023		(%)
Japan	1,876	100.0	Japan	3,088	100.0	Japan	4,847	100.0	China	6,497	100.0	China	16,980	100.0	China	36,381	100.0
India	865	46.1	China	1,310	42.4	China	2,702	55.8	Japan	5,468	84.2	India	6,780	39.9	India	13,880	38.2
China	830	44.3	India	1,176	38.1	India	1,933	39.9	India	3,171	48.8	Japan	5,797	34.1	Japan	6,336	17.4
Saudi Arabia	466	24.8	Saudi Arabia	673	21.8	Indonesia	966	19.9	Indonesia	1,461	22.5	Indonesia	2,433	14.3	Indonesia	4,360	12.0
Iran	337	18.0	Indonesia	527	17.1	Saudi Arabia	897	18.5	Korea	1,351	20.8	Korea	2,180	12.8	Turkiye	3,245	8.9
Turkiye	301	16.0	Iran	469	15.2	Turkiye	744	15.4	Saudi Arabia	1,086	16.7	Iran	1,739	10.2	Korea	3,100	8.5
Indonesia	236	12.6	Turkiye	448	14.5	Korea	679	14.0	Turkiye	1,070	16.5	Turkiye	1,587	9.3	Iran	2,287	6.3
Bangladesh	149	7.9	Korea	250	8.1	Iran	608	12.5	Iran	911	14.0	Saudi Arabia	1,346	7.9	Saudi Arabia	2,191	6.0
Philippines	121	6.5	Thailand	245	7.9	Thailand	536	11.1	Thailand	850	13.1	Thailand	1,342	7.9	ROC	1,731	4.8
Thailand	121	6.5	Philippines	219	7.1	ROC	393	8.1	ROC	777	12.0	ROC	1,174	6.9	Thailand	1,694	4.7
Kuwait	109	5.8	UAE	186	6.0	Pakistan	328	6.8	Pakistan	614	9.5	Pakistan	943	5.6	Bangladesh	1,547	4.3
Pakistan	103	5.5	Pakistan	165	5.4	Philippines	283	5.8	Malaysia	468	7.2	Malaysia	738	4.3	Vietnam	1,507	4.1
Korea	100	5.3	ROC	164	5.3	Malaysia	230	4.7	Philippines	414	6.4	Vietnam	727	4.3	Pakistan	1,496	4.1
Vietnam	68	3.6	Bangladesh	149	4.8	Bangladesh	223	4.6	Bangladesh	336	5.2	Philippines	670	3.9	Malaysia	1,282	3.5
Malaysia	61	3.2	Malaysia	130	4.2	UAE	196	4.0	UAE	329	5.1	Bangladesh	657	3.9	Philippines	1,266	3.5
ROC	57	3.1	Vietnam	105	3.4	Hong Kong	192	4.0	Vietnam	322	5.0	Singapore	525	3.1	Singapore	848	2.3
Afghanistan	53	2.8	Hong Kong	98	3.2	Vietnam	143	2.9	Hong Kong	296	4.6	UAE	501	3.0	UAE	839	2.3
UAE	49	2.6	Kuwait	88	2.8	Singapore	137	2.8	Singapore	287	4.4	Hong Kong	441	2.6	Hong Kong	541	1.5
Hong Kong	40	2.2	Singapore	67	2.2	Sri Lanka	76	1.6	Sri Lanka	128	2.0	Qatar	241	1.4	Qatar	346	1.0
Sri Lanka	33	1.8	Afghanistan	62	2.0	Oman	69	1.4	Oman	104	1.6	Sri Lanka	227	1.3	Sri Lanka	327	0.9
Qatar	31	1.7	Sri Lanka	50	1.6	Kuwait	64	1.3	Kuwait	98	1.5	Kuwait	199	1.2	Kuwait	254	0.7
Singapore	28	1.5	Qatar	41	1.3	Afghanistan	54	1.1	Qatar	78	1.2	Oman	150	0.9	Oman	220	0.6
Nepal	21	1.1	Brunei	37	1.2	Qatar	40	0.8	Myanmar	68	1.0	Myanmar	113	0.7	Nepal	154	0.4
Cambodia	19	1.0	Oman	33	1.1	Nepal	40	0.8	Nepal	63	1.0	Nepal	92	0.5	Myanmar	144	0.4
Myanmar	17	0.9	Myanmar	28	0.9	Myanmar	37	0.8	Brunei	36	0.5	Afghanistan	85	0.5	Cambodia	128	0.4
Brunei	16	0.8	Nepal	25	0.8	Brunei	26	0.5	Afghanistan	31	0.5	Bahrain	63	0.4	Afghanistan	92	0.3
Bahrain	7.4	0.4	Bahrain	15	0.5	Bahrain	16	0.3	Bahrain	27	0.4	Cambodia	59	0.3	Bahrain	89	0.2
Oman	6.1	0.3	Cambodia	9.9	0.3	Cambodia	15	0.3	Cambodia	27	0.4	Lao PDR	38	0.2	Lao PDR	74	0.2
Lao PDR	6.0	0.3	Mongolia	8.5	0.3	Mongolia	14	0.3	Lao PDR	22	0.3	Brunei	37	0.2	Mongolia	64	0.2
Mongolia	4.7	0.3	Lao PDR	8.0	0.3	Lao PDR	13	0.3	Mongolia	16	0.2	Mongolia	30	0.2	Brunei	40	0.1
Fiji	3.6	0.2	Fiji	5.7	0.2	Fiji	7.1	0.1	Fiji	9.0	0.1	Fiji	10	0.1	Fiji	14	0.0
Bhutan	0.6	0.0	Bhutan	1.0	0.0	Bhutan	2.0	0.0	Bhutan	3.1	0.0	Bhutan	7.1	0.0	Bhutan	12	0.0
Maldives	0.4	0.0	Maldives	0.6	0.0	Maldives	1.5	0.0	Maldives	2.9	0.0	Maldives	5.1	0.0	Maldives	9.7	0.0
(region)			(region)			(region)			(region)			(region)			(region)		
APO21	4,551	242.6	APO21	7,409	239.9	APO21	12,407	256.0	APO21	18,062	278.0	APO21	28,190	166.0	APO21	42,397	116.5
Asia27	5,467	291.4	Asia27	8,848	286.5	Asia27	15,231	314.3	Asia27	24,700	380.2	Asia27	45,418	267.5	Asia27	76,441	210.1
Asia33	6,137	327.2	Asia33	9,885	320.1	Asia33	16,514	340.7	Asia33	26,422	406.7	Asia33	47,917	282.2	Asia33	79,994	219.9
East Asia	2,908	155.0	East Asia	4,919	159.3	East Asia	8,828	182.2	East Asia	14,405	221.7	East Asia	26,602	156.7	East Asia	45,167	124.1
SAARC	1,224	65.3	SAARC	1,630	52.8	SAARC	2,657	54.8	SAARC	4,350	67.0	SAARC	8,796	51.8	SAARC	15,963	43.9
ASEAN	693	36.9	ASEAN	1,376	44.5	ASEAN	2,386	49.2	ASEAN	3,955	60.9	ASEAN	6,683	39.4	ASEAN	10,316	28.4
ASEAN6	583	31.1	ASEAN6	1,224	39.6	ASEAN6	2,179	45.0	ASEAN6	3,515	54.1	ASEAN6	5,745	33.8	ASEAN6	8,663	23.8
CLMV	109	5.8	CLMV	151	4.9	CLMV	208	4.3	CLMV	440	6.8	CLMV	938	5.5	CLMV	1,653	4.5
GCC	669	35.7	GCC	1,037	33.6	GCC	1,283	26.5	GCC	1,722	26.5	GCC	2,500	14.7	GCC	3,554	9.8
IPEF	10,611	565.7	IPEF	15,556	503.8	IPEF	23,052	475.6	IPEF	32,401	498.7	IPEF	43,505	256.2	IPEF	60,101	165.2
RCEP	3,981	212.2	RCEP	6,661	215.7	RCEP	11,457	236.4	RCEP	18,460	284.1	RCEP	33,247	195.8	RCEP	55,329	152.1
(reference)			(reference)			(reference)			(reference)			(reference)			(reference)		
Australia	407	21.7	Australia	544	17.6	Australia	732	15.1	Australia	1,039	16.0	Australia	1,411	8.3	Australia	1,853	5.1
France	1,401	74.7	France	1,731	56.1	France	2,293	47.3	France	2,932	45.1	France	3,399	20.0	France	3,921	10.8
Germany	1,393	74.2	Germany	2,004	64.9	Germany	2,566	52.9	Germany	3,187	49.1	Germany	3,640	21.4	Germany	4,059	11.2
Italy	2,240	119.4	Italy	2,979	96.5	Italy	3,750	77.4	Italy	4,578	70.5	Italy	4,999	29.4	Italy	5,796	15.9
New Zealand	1,476	78.7	New Zealand	2,143	69.4	New Zealand	2,717	56.1	New Zealand	3,220	49.6	New Zealand	3,312	19.5	New Zealand	3,309	9.1
UK	1,476	78.7	UK	2,143	69.4	UK	2,717	56.1	UK	3,220	49.6	UK	3,312	19.5	UK	3,309	9.1
US	6,634	353.7	US	9,070	293.7	US	12,423	256.3	US	17,377	267.5	US	20,659	121.7	US	26,294	72.3
EU15	8,908	474.9	EU15	12,204	395.2	EU15	15,601	321.9	EU15	19,625	302.1	EU15	22,183	130.6	EU15	24,997	68.7
									EU27	19,593	301.6	EU27	22,395	131.9	EU27	25,754	70.8

Unit: Billion USD.
Sources: Official national accounts in each country, including adjustments by APO-PDB.
Note: See Section 8.1 for the adjustments to harmonize GDP coverage across countries.

Table 9.3 GDP Growth, 1990–2023

——Growth in GDP at constant prices

1990–1995		1995–2000		2000–2005		2005–2010		2010–2015		2015–2023		2019–2020		2020–2023	
China	10.0	Qatar	9.8	Kuwait	12.6	Qatar	13.4	Mongolia	9.8	Bangladesh	6.2	Bangladesh	3.3	Maldives	13.7
Malaysia	9.2	Vietnam	8.0	Afghanistan	12.5	China	11.0	Lao PDR	7.6	Vietnam	5.9	Iran	3.3	India	7.7
Thailand	8.7	Cambodia	7.9	Qatar	9.0	Bhutan	9.7	Bangladesh	7.3	China	5.1	Vietnam	3.1	Turkiye	7.1
Singapore	8.6	Myanmar	7.8	Cambodia	8.5	Bahrain	8.6	Cambodia	7.2	Cambodia	5.1	ROC	2.9	Fiji	6.8
Korea	8.4	China	7.5	Vietnam	8.3	India	8.2	China	7.0	India	4.9	Turkiye	1.8	Saudi Arabia	6.5
Vietnam	8.3	UAE	6.6	China	8.2	Vietnam	7.9	Turkiye	6.8	Turkiye	4.7	China	0.9	Philippines	6.4
ROC	7.6	Lao PDR	6.5	Bahrain	8.0	Maldives	7.4	India	6.5	Philippines	4.3	Lao PDR	−0.4	UAE	6.3
Indonesia	7.5	Maldives	6.5	Iran	7.4	Afghanistan	7.4	Sri Lanka	6.5	Maldives	4.3	Korea	−0.7	Bangladesh	5.8
Kuwait	6.9	Bhutan	6.2	Bhutan	7.0	Singapore	7.2	Qatar	6.4	Indonesia	3.9	Pakistan	−0.9	Malaysia	5.7
Pakistan	6.6	Singapore	6.2	India	7.0	Bangladesh	7.2	Myanmar	6.1	Nepal	3.9	Afghanistan	−2.1	China	5.5
Maldives	6.5	ROC	6.0	Mongolia	6.3	Cambodia	7.0	Bhutan	5.8	Lao PDR	3.7	Indonesia	−2.1	Vietnam	5.4
Hong Kong	5.9	Pakistan	6.0	Bangladesh	6.2	Sri Lanka	6.5	Philippines	5.8	Malaysia	3.7	Nepal	−2.5	Oman	5.4
Sri Lanka	5.6	India	5.4	Myanmar	5.6	Mongolia	6.4	Maldives	5.7	Pakistan	3.6	Brunei	−2.6	Iran	5.3
Bahrain	5.3	Korea	5.3	Malaysia	5.3	Indonesia	5.6	UAE	5.5	Mongolia	3.6	Qatar	−2.8	Cambodia	4.9
Nepal	5.0	Bahrain	5.0	Thailand	5.2	Iran	5.5	Indonesia	5.4	Iran	3.5	Singapore	−3.0	Indonesia	4.6
Oman	4.9	Malaysia	5.0	Korea	5.2	Lao PDR	5.5	Saudi Arabia	5.3	Bhutan	3.2	Cambodia	−3.3	Mongolia	4.5
Lao PDR	4.8	Sri Lanka	4.9	Pakistan	5.1	Philippines	4.9	Afghanistan	5.2	Singapore	3.0	Saudi Arabia	−3.8	Singapore	4.3
India	4.5	Philippines	4.5	Lao PDR	4.9	Myanmar	4.7	Malaysia	5.2	ROC	3.0	Japan	−4.3	Nepal	3.9
Myanmar	4.2	Iran	4.4	Singapore	4.9	Korea	4.4	Vietnam	5.1	UAE	3.0	Kuwait	−4.3	Bhutan	3.9
Bangladesh	3.9	Bangladesh	4.3	Sri Lanka	4.9	Nepal	4.3	Singapore	4.7	Saudi Arabia	2.8	Oman	−4.4	Pakistan	3.5
Qatar	3.8	Turkiye	4.1	UAE	4.8	ROC	4.2	Oman	4.4	Korea	2.7	Mongolia	−4.5	Korea	3.4
UAE	3.7	Nepal	4.1	Turkiye	4.8	Thailand	3.9	Nepal	4.1	Bahrain	2.4	Malaysia	−4.6	Lao PDR	3.3
Iran	3.7	Brunei	4.0	Philippines	4.7	Hong Kong	3.8	Fiji	3.7	Oman	2.0	Thailand	−4.8	ROC	3.2
Cambodia	3.7	Mongolia	3.6	Indonesia	4.6	Malaysia	3.8	Kuwait	3.6	Fiji	1.6	Bahrain	−4.9	Hong Kong	2.0
Turkiye	3.2	Oman	3.2	Hong Kong	4.1	Oman	3.6	Pakistan	3.4	Thailand	0.9	Sri Lanka	−5.1	Bahrain	1.8
Philippines	3.2	Hong Kong	2.8	ROC	4.1	UAE	3.6	Thailand	3.3	Kuwait	0.8	UAE	−5.6	Japan	1.7
Saudi Arabia	2.9	Fiji	2.0	Maldives	3.9	Pakistan	3.4	Bahrain	3.0	Hong Kong	0.8	India	−5.8	Qatar	1.4
Fiji	2.6	Kuwait	1.7	Oman	3.7	Turkiye	3.1	ROC	2.9	Brunei	0.7	Hong Kong	−6.5	Kuwait	1.3
Bhutan	2.4	Japan	1.1	Nepal	3.4	Saudi Arabia	2.3	Hong Kong	2.9	Qatar	0.6	Bhutan	−8.6	Thailand	0.9
Brunei	2.3	Saudi Arabia	0.9	Saudi Arabia	2.0	Kuwait	1.5	Korea	2.7	Sri Lanka	0.6	Myanmar	−10.1	Brunei	−0.2
Japan	1.3	Indonesia	0.7	Fiji	2.0	Fiji	0.7	Japan	1.1	Japan	0.4	Philippines	−10.1	Sri Lanka	−1.3
Mongolia	−1.8	Thailand	0.5	Japan	1.2	Japan	0.0	Brunei	0.3	Myanmar	−0.8	Fiji	−18.7	Myanmar	−4.6
Afghanistan	−5.5	Afghanistan	−5.2	Brunei	0.9	Brunei	−0.2	Iran	−0.1	Afghanistan	−2.2	Maldives	−39.9	Afghanistan	−9.0
(region)		(region)		(region)		(region)		(region)		(region)		(region)		(region)	
APO21	4.3	APO21	3.2	APO21	4.5	APO21	4.4	APO21	4.2	APO21	3.5	APO21	−2.8	APO21	5.0
Asia27	5.4	Asia27	4.3	Asia27	5.5	Asia27	6.7	Asia27	5.3	Asia27	4.2	Asia27	−1.2	Asia27	5.2
Asia33	5.2	Asia33	4.2	Asia33	5.4	Asia33	6.5	Asia33	5.3	Asia33	4.1	Asia33	−1.4	Asia33	5.2
East Asia	5.3	East Asia	4.5	East Asia	5.2	East Asia	7.0	East Asia	5.3	East Asia	4.1	East Asia	0.0	East Asia	4.7
SAARC	4.6	SAARC	5.3	SAARC	6.6	SAARC	7.5	SAARC	6.2	SAARC	4.7	SAARC	−4.5	SAARC	6.8
ASEAN	7.5	ASEAN	2.6	ASEAN	5.2	ASEAN	5.3	ASEAN	4.9	ASEAN	3.5	ASEAN	−3.3	ASEAN	4.2
ASEAN6	7.5	ASEAN6	2.0	ASEAN6	4.9	ASEAN6	5.0	ASEAN6	4.8	ASEAN6	3.3	ASEAN6	−4.1	ASEAN6	4.2
CLMV	7.1	CLMV	7.9	CLMV	7.8	CLMV	7.4	CLMV	5.5	CLMV	5.1	CLMV	1.0	CLMV	4.4
GCC	3.4	GCC	2.5	GCC	3.9	GCC	3.6	GCC	5.2	GCC	2.4	GCC	−4.2	GCC	5.5
IPEF	3.2	IPEF	3.6	IPEF	3.2	IPEF	2.6	IPEF	3.3	IPEF	2.8	IPEF	−3.1	IPEF	4.4
RCEP	5.6	RCEP	4.0	RCEP	5.2	RCEP	6.6	RCEP	5.2	RCEP	4.0	RCEP	−0.6	RCEP	4.6
(reference)		(reference)		(reference)		(reference)		(reference)		(reference)		(reference)		(reference)	
Australia	3.2	Australia	3.8	Australia	3.4	Australia	2.7	Australia	2.8	Australia	2.3	Australia	2.1	Australia	3.0
France	1.4	France	2.9	France	1.7	France	0.9	France	1.1	France	1.1	France	−7.7	France	3.4
Germany	2.0	Germany	2.0	Germany	0.6	Germany	1.2	Germany	1.7	Germany	0.9	Germany	−4.2	Germany	1.6
Italy	1.3	Italy	2.1	Italy	0.9	Italy	−0.3	Italy	−0.7	Italy	1.1	Italy	−9.3	Italy	4.6
New Zealand	3.1	New Zealand	3.0	New Zealand	3.9	New Zealand	1.5	New Zealand	2.9	New Zealand	3.0	New Zealand	0.2	New Zealand	3.2
UK	1.3	UK	3.6	UK	2.5	UK	0.5	UK	1.9	UK	1.3	UK	−10.6	UK	4.6
US	2.5	US	4.2	US	2.5	US	1.0	US	2.2	US	2.3	US	−2.3	US	3.7
EU15	1.6	EU15	3.0	EU15	1.7	EU15	0.7	EU15	1.0	EU15	1.4	EU15	−7.0	EU15	3.5
		EU27	2.8	EU27	1.7	EU27	1.0	EU27	1.0	EU27	1.6	EU27	−5.7	EU27	3.3

Unit: Percentage (average annual growth rate).
Sources: Official national accounts in each country, including adjustments by APO-PDB.
Note: See Section 8.1 for the adjustments to harmonize GDP coverage across countries.

Table 9.4 Population, 1970–2023

1970		(%)	1980		(%)	1990		(%)	2000		(%)	2010		(%)	2023		(%)
China	830	40.5	China	987	39.3	China	1,143	37.7	China	1,267	36.0	China	1,341	33.8	India	1,438	32.4
India	546	26.6	India	687	27.4	India	865	28.5	India	1,058	30.0	India	1,243	31.4	China	1,410	31.8
Indonesia	116	5.7	Indonesia	147	5.9	Indonesia	179	5.9	Indonesia	206	5.9	Indonesia	238	6.0	Indonesia	271	6.1
Japan	105	5.1	Japan	117	4.7	Japan	124	4.1	Pakistan	138	3.9	Pakistan	174	4.4	Pakistan	214	4.8
Bangladesh	71	3.5	Bangladesh	85	3.4	Pakistan	112	3.7	Japan	127	3.6	Bangladesh	147	3.7	Bangladesh	171	3.9
Pakistan	61	3.0	Pakistan	83	3.3	Bangladesh	109	3.6	Bangladesh	124	3.5	Japan	128	3.2	Japan	124	2.8
Vietnam	43	2.1	Vietnam	54	2.1	Vietnam	66	2.2	Vietnam	78	2.2	Philippines	92	2.3	Philippines	114	2.6
Philippines	37	1.8	Philippines	48	1.9	Philippines	61	2.0	Philippines	77	2.2	Vietnam	87	2.2	Vietnam	100	2.3
Turkiye	36	1.7	Thailand	45	1.8	Turkiye	56	1.9	Turkiye	68	1.9	Iran	74	1.9	Iran	87	2.0
Thailand	34	1.7	Turkiye	45	1.8	Iran	55	1.8	Iran	64	1.8	Turkiye	74	1.9	Turkiye	85	1.9
Korea	32	1.6	Iran	39	1.5	Thailand	55	1.8	Thailand	61	1.7	Thailand	66	1.7	Thailand	69	1.6
Iran	28	1.4	Korea	38	1.5	Korea	43	1.4	Korea	47	1.3	Korea	50	1.2	Myanmar	54	1.2
Myanmar	27	1.3	Myanmar	33	1.3	Myanmar	40	1.3	Myanmar	45	1.3	Myanmar	49	1.2	Korea	52	1.2
ROC	15	0.7	ROC	18	0.7	ROC	20	0.7	Malaysia	23	0.7	Malaysia	29	0.7	Afghanistan	37	0.8
Sri Lanka	13	0.6	Sri Lanka	15	0.6	Malaysia	18	0.6	Nepal	23	0.6	Afghanistan	26	0.7	Malaysia	33	0.8
Nepal	11	0.6	Nepal	15	0.6	Nepal	18	0.6	ROC	22	0.6	Nepal	26	0.7	Saudi Arabia	33	0.7
Malaysia	11	0.5	Malaysia	14	0.6	Sri Lanka	17	0.6	Afghanistan	20	0.6	Saudi Arabia	24	0.6	Nepal	29	0.6
Afghanistan	11	0.5	Afghanistan	13	0.5	Afghanistan	12	0.4	Sri Lanka	19	0.5	ROC	23	0.6	ROC	23	0.5
Cambodia	6.8	0.3	Cambodia	6.6	0.3	Saudi Arabia	11	0.4	Saudi Arabia	16	0.5	Sri Lanka	21	0.5	Sri Lanka	22	0.5
Hong Kong	4.0	0.2	Saudi Arabia	6.0	0.2	Cambodia	8.8	0.3	Cambodia	12	0.3	Cambodia	14	0.3	Cambodia	16	0.4
Saudi Arabia	3.6	0.2	Hong Kong	5.1	0.2	Hong Kong	5.7	0.2	Hong Kong	6.7	0.2	UAE	8.3	0.2	UAE	13	0.3
Lao PDR	2.5	0.1	Lao PDR	3.2	0.1	Lao PDR	4.1	0.1	Lao PDR	5.2	0.1	Hong Kong	7.0	0.2	Lao PDR	7.7	0.2
Singapore	2.1	0.1	Singapore	2.4	0.1	Singapore	3.0	0.1	Singapore	4.0	0.1	Lao PDR	6.3	0.2	Hong Kong	7.5	0.2
Mongolia	1.2	0.1	Mongolia	1.7	0.1	Kuwait	2.1	0.1	UAE	3.0	0.1	Singapore	5.1	0.1	Singapore	5.9	0.1
Kuwait	0.7	0.0	Kuwait	1.4	0.1	Mongolia	2.1	0.1	Oman	2.4	0.1	Kuwait	2.9	0.1	Oman	5.1	0.1
Oman	0.7	0.0	Oman	1.1	0.0	UAE	1.8	0.1	Mongolia	2.4	0.1	Oman	2.8	0.1	Kuwait	4.5	0.1
Fiji	0.5	0.0	UAE	1.0	0.0	Oman	1.6	0.1	Kuwait	1.9	0.1	Mongolia	2.8	0.1	Mongolia	3.5	0.1
Bhutan	0.3	0.0	Fiji	0.6	0.0	Fiji	0.7	0.0	Fiji	0.8	0.0	Qatar	1.7	0.0	Qatar	2.8	0.1
UAE	0.2	0.0	Bhutan	0.4	0.0	Bhutan	0.6	0.0	Bahrain	0.6	0.0	Bahrain	1.2	0.0	Bahrain	1.6	0.0
Bahrain	0.2	0.0	Bahrain	0.3	0.0	Bahrain	0.5	0.0	Qatar	0.6	0.0	Fiji	0.9	0.0	Fiji	0.9	0.0
Brunei	0.1	0.0	Qatar	0.2	0.0	Qatar	0.4	0.0	Bhutan	0.6	0.0	Bhutan	0.7	0.0	Bhutan	0.8	0.0
Maldives	0.1	0.0	Brunei	0.2	0.0	Brunei	0.3	0.0	Brunei	0.3	0.0	Brunei	0.4	0.0	Maldives	0.5	0.0
Qatar	0.1	0.0	Maldives	0.2	0.0	Maldives	0.2	0.0	Maldives	0.3	0.0	Maldives	0.3	0.0	Brunei	0.5	0.0
(region)			(region)			(region)			(region)			(region)			(region)		
APO21	1,175	57.3	APO21	1,469	58.5	APO21	1,823	60.0	APO21	2,166	61.4	APO21	2,508	63.2	APO21	2,876	64.8
Asia27	2,043	99.7	Asia27	2,503	99.6	Asia27	3,019	99.4	Asia27	3,499	99.3	Asia27	3,925	99.0	Asia27	4,378	98.7
Asia33	2,049	100.0	Asia33	2,513	100.0	Asia33	3,036	100.0	Asia33	3,524	100.0	Asia33	3,966	100.0	Asia33	4,438	100.0
East Asia	987	48.2	East Asia	1,167	46.4	East Asia	1,338	44.1	East Asia	1,473	41.8	East Asia	1,551	39.1	East Asia	1,620	36.5
SAARC	713	34.8	SAARC	898	35.7	SAARC	1,134	37.3	SAARC	1,383	39.2	SAARC	1,639	41.3	SAARC	1,912	43.1
ASEAN	279	13.6	ASEAN	354	14.1	ASEAN	435	14.3	ASEAN	511	14.5	ASEAN	586	14.8	ASEAN	673	15.2
ASEAN6	200	9.8	ASEAN6	257	10.2	ASEAN6	316	10.4	ASEAN6	371	10.5	ASEAN6	430	10.8	ASEAN6	494	11.1
CLMV	79	3.9	CLMV	97	3.8	CLMV	119	3.9	CLMV	140	4.0	CLMV	156	3.9	CLMV	179	4.0
GCC	5.6	0.3	GCC	10	0.4	GCC	17	0.6	GCC	25	0.7	GCC	41	1.0	GCC	60	1.3
IPEF	79	3.9	IPEF	97	3.8	IPEF	119	3.9	IPEF	140	4.0	IPEF	156	3.9	IPEF	179	4.0
RCEP	200	9.8	RCEP	257	10.2	RCEP	316	10.4	RCEP	371	10.5	RCEP	430	10.8	RCEP	494	11.1
(reference)			(reference)			(reference)			(reference)			(reference)			(reference)		
Australia	13	0.6	Australia	15	0.6	Australia	17	0.6	Australia	19	0.5	Australia	22	0.6	Australia	27	0.6
France	52	2.5	France	55	2.2	France	58	1.9	France	61	1.7	France	65	1.6	France	68	1.5
Germany	78	3.8	Germany	78	3.1	Germany	79	2.6	Germany	81	2.3	Germany	80	2.0	Germany	85	1.9
Italy	54	2.6	Italy	56	2.2	Italy	57	1.9	Italy	57	1.6	Italy	60	1.5	Italy	59	1.3
New Zealand	2.8	0.1	New Zealand	3.2	0.1	New Zealand	3.3	0.1	New Zealand	3.7	0.1	New Zealand	4.2	0.1	New Zealand	5.0	0.1
UK	56	2.7	UK	56	2.2	UK	57	1.9	UK	59	1.7	UK	63	1.6	UK	68	1.5
US	205	10.0	US	227	9.0	US	250	8.2	US	282	8.0	US	309	7.8	US	335	7.5
EU15	342	16.7	EU15	357	14.2	EU15	366	12.1	EU15	377	10.7	EU15	397	10.0	EU15	417	9.4
			EU27	405	16.1	EU27	418	13.8	EU27	428	12.2	EU27	441	11.1	EU27	448	10.1

Unit: Millions of persons.
Sources: Population census and other official data in each country, including interpolations in APO-PDB.

Table 9.5 Per Capita GDP using Exchange Rate, 1970–2023

——GDP at current market prices per person, using the annual average exchange rate

1970		(%)
Japan	2.00	100.0
Hong Kong	0.96	48.3
Singapore	0.93	46.4
Turkiye	0.68	34.3
Fiji	0.43	21.4
Iran	0.40	19.9
ROC	0.39	19.7
Maldives	0.37	18.6
Malaysia	0.36	17.9
Korea	0.28	14.1
Sri Lanka	0.23	11.4
Bhutan	0.22	10.9
Thailand	0.21	10.6
Philippines	0.18	9.3
Pakistan	0.17	8.4
Afghanistan	0.16	8.1
China	0.13	6.3
Cambodia	0.12	5.9
India	0.12	5.8
Nepal	0.11	5.5
Myanmar	0.10	5.0
Bangladesh	0.09	4.7
Mongolia	0.09	4.7
Indonesia	0.09	4.3
Lao PDR	0.05	2.4
Vietnam	0.03	1.4
Bahrain	1.88	94.4
Kuwait	4.00	200.6
Oman	0.45	22.6
Qatar	4.97	249.1
Saudi Arabia	1.51	75.8
UAE	4.28	214.6
Brunei	1.72	86.4
(region)		
APO21	0.32	16.2
Asia27	0.24	12.0
Asia33	0.24	12.2
East Asia	0.34	16.9
SAARC	0.12	6.1
ASEAN	0.12	6.2
ASEAN6	0.15	7.5
CLMV	0.06	3.0
GCC	1.92	96.1
IPEF	1.25	62.8
RCEP	0.32	16.2
(reference)		
Australia	3.58	179.4
France	3.66	183.4
Germany	4.03	202.2
Italy	3.64	182.3
New Zealand	2.35	117.8
UK	2.42	121.2
US	5.23	262.3
EU15	3.66	183.3

1980		(%)
Japan	9.49	100.0
Hong Kong	5.70	60.1
Singapore	5.00	52.7
Iran	2.52	26.5
ROC	2.37	24.9
Turkiye	2.07	21.8
Fiji	1.92	20.2
Malaysia	1.78	18.7
Korea	1.74	18.4
Thailand	0.74	7.8
Philippines	0.69	7.2
Maldives	0.61	6.4
Indonesia	0.54	5.7
China	0.36	3.7
Sri Lanka	0.33	3.5
Bhutan	0.32	3.4
Pakistan	0.29	3.1
Afghanistan	0.29	3.0
Mongolia	0.28	3.0
India	0.28	2.9
Bangladesh	0.21	2.2
Myanmar	0.18	1.9
Nepal	0.17	1.8
Cambodia	0.11	1.2
Lao PDR	0.10	1.1
Vietnam	0.02	0.2
Bahrain	10.3	108.5
Kuwait	21.8	229.9
Oman	6.61	69.6
Qatar	35.4	373.3
Saudi Arabia	27.3	287.9
UAE	42.3	445.4
Brunei	33.0	347.7
(region)		
APO21	1.27	13.4
Asia27	0.89	9.4
Asia33	0.99	10.4
East Asia	1.37	14.5
SAARC	0.27	2.9
ASEAN	0.56	5.9
ASEAN6	0.74	7.8
CLMV	0.08	0.9
GCC	25.5	268.7
IPEF	3.30	34.8
RCEP	1.27	13.4
(reference)		
Australia	11.8	124.4
France	9.58	101.0
Germany	10.3	109.0
Italy	9.82	103.5
New Zealand	7.40	78.0
UK	10.73	113.0
US	12.6	132.5
EU15	9.34	98.5

1990		(%)
Japan	25.8	100.0
Hong Kong	13.5	52.3
Singapore	12.8	49.5
ROC	8.16	31.7
Korea	6.81	26.4
Turkiye	3.62	14.0
Malaysia	2.50	9.7
Fiji	1.85	7.2
Iran	1.72	6.7
Thailand	1.63	6.3
Maldives	1.32	5.1
Philippines	0.77	3.0
Mongolia	0.76	3.0
Indonesia	0.71	2.8
Sri Lanka	0.55	2.2
Bhutan	0.53	2.0
Pakistan	0.44	1.7
India	0.39	1.5
China	0.38	1.5
Afghanistan	0.31	1.2
Bangladesh	0.29	1.1
Nepal	0.24	0.9
Lao PDR	0.22	0.8
Cambodia	0.20	0.8
Myanmar	0.14	0.6
Vietnam	0.10	0.4
Bahrain	9.25	35.9
Kuwait	9.10	35.3
Oman	8.22	31.9
Qatar	17.8	69.2
Saudi Arabia	11.14	43.2
UAE	28.9	112.3
Brunei	15.4	59.9
(region)		
APO21	2.64	10.2
Asia27	1.74	6.8
Asia33	1.80	7.0
East Asia	3.11	12.1
SAARC	0.38	1.5
ASEAN	0.84	3.3
ASEAN6	1.11	4.3
CLMV	0.12	0.5
GCC	12.57	48.8
IPEF	6.24	24.2
RCEP	2.63	10.2
(reference)		
Australia	19.0	73.7
France	17.5	67.9
Germany	19.4	75.3
Italy	18.7	72.4
New Zealand	13.8	53.5
UK	20.8	80.7
US	23.9	92.7
EU15	17.5	68.1

2000		(%)
Japan	39.1	100.0
Hong Kong	25.8	65.8
Singapore	23.9	60.9
ROC	14.8	37.9
Korea	12.7	32.5
Turkiye	4.05	10.3
Malaysia	4.04	10.3
Maldives	3.29	8.4
Fiji	2.09	5.3
Thailand	2.09	5.3
Iran	1.75	4.5
Philippines	1.09	2.8
China	1.04	2.7
Sri Lanka	1.01	2.6
Indonesia	0.82	2.1
Bhutan	0.76	1.9
Pakistan	0.69	1.8
Mongolia	0.60	1.5
Vietnam	0.47	1.2
India	0.46	1.2
Bangladesh	0.42	1.1
Lao PDR	0.35	0.9
Cambodia	0.32	0.8
Nepal	0.29	0.7
Afghanistan	0.18	0.5
Myanmar	0.17	0.4
Bahrain	13.2	33.7
Kuwait	20.6	52.7
Oman	9.36	23.9
Qatar	29.5	75.5
Saudi Arabia	11.83	30.2
UAE	35.3	90.2
Brunei	20.5	52.3
(region)		
APO21	3.57	9.1
Asia27	2.59	6.6
Asia33	2.68	6.8
East Asia	5.02	12.8
SAARC	0.48	1.2
ASEAN	1.23	3.1
ASEAN6	1.55	4.0
CLMV	0.36	0.9
GCC	15.6	39.8
IPEF	8.75	22.4
RCEP	4.04	10.3
(reference)		
Australia	21.6	55.1
France	26.1	66.6
Germany	27.7	70.7
Italy	27.1	69.3
New Zealand	14.6	37.4
UK	28.3	72.2
US	36.3	92.8
EU15	26.3	67.3
EU27	22.2	56.6

2010		(%)
Singapore	47.2	100.0
Japan	45.0	95.2
Hong Kong	32.6	68.9
Korea	24.1	51.0
ROC	19.2	40.6
Turkiye	10.5	22.3
Malaysia	8.92	18.9
Maldives	8.40	17.8
Iran	6.88	14.6
Thailand	5.18	11.0
China	4.78	10.1
Fiji	3.45	7.3
Indonesia	3.18	6.7
Sri Lanka	2.80	5.9
Mongolia	2.61	5.5
Bhutan	2.39	5.1
Philippines	2.26	4.8
Vietnam	1.69	3.6
India	1.35	2.9
Lao PDR	1.18	2.5
Pakistan	1.12	2.4
Cambodia	1.00	2.1
Bangladesh	0.86	1.8
Myanmar	0.76	1.6
Nepal	0.70	1.5
Afghanistan	0.57	1.2
Bahrain	21.7	46.0
Kuwait	40.7	86.1
Oman	23.7	50.2
Qatar	75.3	159.3
Saudi Arabia	22.2	47.0
UAE	37.3	79.0
Brunei	35.4	75.0
(region)		
APO21	5.17	10.9
Asia27	4.95	10.5
Asia33	5.20	11.0
East Asia	9.05	19.2
SAARC	1.28	2.7
ASEAN	3.45	7.3
ASEAN6	4.22	8.9
CLMV	1.32	2.8
GCC	28.9	61.1
IPEF	11.9	25.2
RCEP	7.90	16.7
(reference)		
Australia	59.1	125.0
France	36.1	76.3
Germany	40.4	85.4
Italy	34.9	74.0
New Zealand	35.2	74.6
UK	39.6	83.8
US	48.7	103.0
EU15	36.9	78.2
EU27	33.1	70.1

2023		(%)
Singapore	85.4	100.0
Hong Kong	50.5	59.2
Korea	35.6	41.6
Japan	33.9	39.7
ROC	32.3	37.9
Maldives	14.3	16.8
China	13.2	15.5
Turkiye	13.1	15.3
Malaysia	12.0	14.0
Thailand	7.57	8.9
Iran	6.31	7.4
Fiji	5.89	6.9
Mongolia	5.83	6.8
Indonesia	5.08	5.9
Vietnam	4.29	5.0
Bhutan	3.93	4.6
Sri Lanka	3.85	4.5
Philippines	3.83	4.5
Cambodia	2.56	3.0
India	2.52	3.0
Bangladesh	2.47	2.9
Lao PDR	2.00	2.3
Pakistan	1.39	1.6
Nepal	1.36	1.6
Myanmar	0.53	0.6
Afghanistan	0.44	0.5
Bahrain	29.3	34.3
Kuwait	37.5	43.9
Oman	21.3	24.9
Qatar	81.0	94.8
Saudi Arabia	32.6	38.1
UAE	42.3	49.5
Brunei	33.6	39.3
(region)		
APO21	5.94	7.0
Asia27	8.17	9.6
Asia33	8.55	10.0
East Asia	15.9	18.7
SAARC	2.35	2.8
ASEAN	5.61	6.6
ASEAN6	6.59	7.7
CLMV	2.89	3.4
GCC	36.2	42.4
IPEF	16.7	19.6
RCEP	13.3	15.6
(reference)		
Australia	66.6	78.0
France	61.4	71.9
Germany	70.2	82.2
Italy	59.6	69.8
New Zealand	51.0	59.8
UK	49.7	58.2
US	82.8	96.9
EU15	61.8	72.3
EU27	59.2	69.3

Unit: Thousand USD.
Sources: Official national accounts in each country, including adjustments by APO-PDB.
Note: See Section 8.1 for the adjustments to harmonize GDP coverage across countries.

Table 9.6 Per Capita GDP, 1970–2023

——GDP at constant market prices per person, using the 2021 PPP, the reference year 2023

1970		(%)	1980		(%)	1990		(%)	2000		(%)	2010		(%)	2023		(%)
Japan	17.9	100.0	Singapore	27.9	100.0	Singapore	45.0	100.0	Singapore	71.2	100.0	Singapore	103.5	100.0	Singapore	143.3	100.0
Singapore	13.6	75.7	Japan	26.4	94.6	Japan	39.2	87.1	Hong Kong	44.4	62.3	Hong Kong	62.7	60.6	ROC	73.9	51.6
Iran	11.9	66.1	Hong Kong	19.4	69.7	Hong Kong	33.6	74.7	Japan	43.1	60.5	ROC	50.7	49.0	Hong Kong	71.8	50.1
Hong Kong	10.2	57.0	Iran	12.1	43.3	ROC	19.3	42.8	ROC	34.9	48.9	Japan	45.3	43.7	Korea	59.9	41.8
Turkiye	8.45	47.1	Turkiye	10.0	35.9	Korea	15.8	35.2	Korea	28.7	40.3	Korea	44.0	42.5	Japan	50.9	35.6
Fiji	6.88	38.4	Malaysia	9.34	33.5	Turkiye	13.2	29.3	Malaysia	19.9	27.9	Malaysia	25.8	24.9	Malaysia	38.4	26.8
Malaysia	5.58	31.2	ROC	9.20	33.0	Malaysia	12.7	28.2	Turkiye	15.8	22.1	Iran	23.4	22.6	Turkiye	38.0	26.5
Afghanistan	4.89	27.3	Fiji	8.99	32.2	Iran	11.0	24.5	Iran	14.2	19.9	Turkiye	21.5	20.8	Iran	26.3	18.4
ROC	3.90	21.7	Korea	6.56	23.5	Thailand	9.83	21.8	Thailand	14.0	19.7	Thailand	20.4	19.7	China	25.8	18.0
Mongolia	3.76	21.0	Thailand	5.47	19.6	Fiji	9.66	21.5	Fiji	11.2	15.7	Maldives	16.5	16.0	Thailand	24.6	17.2
Maldives	3.57	19.9	Mongolia	5.12	18.4	Maldives	7.08	15.7	Maldives	10.7	15.1	China	12.7	12.2	Maldives	20.8	14.5
Thailand	3.52	19.6	Afghanistan	4.95	17.7	Mongolia	6.92	15.4	Indonesia	7.08	9.9	Fiji	11.3	10.9	Mongolia	18.2	12.7
Philippines	3.31	18.5	Philippines	4.55	16.3	Indonesia	5.39	12.0	Sri Lanka	6.72	9.4	Sri Lanka	11.0	10.6	Indonesia	16.1	11.2
Korea	3.09	17.2	Maldives	3.74	13.4	Philippines	4.66	10.4	Mongolia	6.55	9.2	Mongolia	10.7	10.3	Bhutan	16.0	11.2
Cambodia	2.78	15.5	Indonesia	3.57	12.8	Afghanistan	4.56	10.1	Philippines	5.41	7.6	Bhutan	10.5	10.2	Fiji	15.2	10.6
Sri Lanka	2.64	14.8	Sri Lanka	3.39	12.2	Sri Lanka	4.47	9.9	Bhutan	5.19	7.3	Indonesia	10.24	9.9	Vietnam	15.0	10.5
Lao PDR	2.39	13.3	Lao PDR	2.49	8.9	Bhutan	3.42	7.6	China	5.13	7.2	Vietnam	8.36	8.1	Sri Lanka	14.8	10.4
Bangladesh	2.09	11.7	Bhutan	2.35	8.4	Lao PDR	3.07	6.8	Pakistan	4.45	6.2	Philippines	7.25	7.0	Philippines	11.1	7.7
Indonesia	2.03	11.3	Pakistan	2.00	7.2	Pakistan	2.93	6.5	Lao PDR	4.29	6.0	Lao PDR	6.03	5.8	Lao PDR	9.66	6.7
Bhutan	1.85	10.3	Vietnam	1.95	7.0	China	2.36	5.3	Vietnam	4.15	5.8	India	5.45	5.3	India	9.65	6.7
Nepal	1.82	10.1	Bangladesh	1.75	6.3	India	2.23	5.0	India	3.00	4.2	Pakistan	5.44	5.3	Bangladesh	9.05	6.3
Pakistan	1.70	9.5	India	1.71	6.1	Nepal	2.20	4.9	Nepal	2.75	3.9	Bangladesh	4.46	4.3	Cambodia	7.76	5.4
Vietnam	1.59	8.8	Nepal	1.71	6.1	Vietnam	2.16	4.8	Bangladesh	2.71	3.8	Cambodia	4.30	4.2	Pakistan	6.97	4.9
India	1.58	8.8	Cambodia	1.51	5.4	Bangladesh	2.04	4.5	Cambodia	2.29	3.2	Nepal	3.50	3.4	Nepal	5.37	3.7
China	1.00	5.6	China	1.33	4.8	Cambodia	1.73	3.9	Afghanistan	1.57	2.2	Afghanistan	3.20	3.1	Myanmar	2.66	1.9
Myanmar	0.61	3.4	Myanmar	0.86	3.1	Myanmar	0.93	2.1	Myanmar	1.50	2.1	Myanmar	2.31	2.2	Afghanistan	2.50	1.7
Bahrain	35.3	196.9	Bahrain	44.9	161.0	Bahrain	33.2	73.8	Bahrain	43.0	60.4	Bahrain	51.1	49.4	Bahrain	56.5	39.4
Kuwait	147.9	825.2	Kuwait	64.6	231.7	Kuwait	30.6	68.0	Kuwait	52.7	74.0	Kuwait	68.4	66.1	Kuwait	56.2	39.2
Oman	8.86	49.4	Oman	30.4	109.1	Oman	42.6	94.7	Oman	43.3	60.7	Oman	54.1	52.3	Oman	43.3	30.2
Qatar	285.1	1590.9	Qatar	183.2	657.0	Qatar	94.5	209.8	Qatar	127.6	179.1	Qatar	141.6	136.8	Qatar	124.1	86.6
Saudi Arabia	130.8	729.9	Saudi Arabia	111.3	399.1	Saudi Arabia	84.3	187.3	Saudi Arabia	67.1	94.2	Saudi Arabia	56.1	54.2	Saudi Arabia	65.9	46.0
UAE	198.8	1109.0	UAE	178.6	640.3	UAE	110.5	245.6	UAE	109.7	154.0	UAE	60.6	58.6	UAE	66.5	46.4
Brunei	119.7	667.6	Brunei	195.2	699.9	Brunei	102.8	228.4	Brunei	109.6	153.9	Brunei	95.5	92.3	Brunei	87.8	61.3
(region)			(region)			(region)			(region)			(region)			(region)		
APO21	3.87	21.6	APO21	5.04	18.1	APO21	6.81	15.1	APO21	8.34	11.7	APO21	11.2	10.9	APO21	16.0	11.1
Asia27	2.68	14.9	Asia27	3.54	12.7	Asia27	5.05	11.2	Asia27	7.06	9.9	Asia27	11.6	11.2	Asia27	18.9	13.2
Asia33	3.00	16.7	Asia33	3.93	14.1	Asia33	5.44	12.1	Asia33	7.50	10.5	Asia33	12.1	11.7	Asia33	19.5	13.6
East Asia	2.95	16.4	East Asia	4.22	15.1	East Asia	6.60	14.7	East Asia	9.78	13.7	East Asia	17.1	16.6	East Asia	29.7	20.7
SAARC	1.72	9.6	SAARC	1.82	6.5	SAARC	2.34	5.2	SAARC	3.15	4.4	SAARC	5.37	5.2	SAARC	9.16	6.4
ASEAN	2.48	13.8	ASEAN	3.89	13.9	ASEAN	5.49	12.2	ASEAN	7.74	10.9	ASEAN	11.4	11.0	ASEAN	16.9	11.8
ASEAN6	2.91	16.3	ASEAN6	4.77	17.1	ASEAN6	6.89	15.3	ASEAN6	9.47	13.3	ASEAN6	13.4	12.9	ASEAN6	19.2	13.4
CLMV	1.38	7.7	CLMV	1.56	5.6	CLMV	1.75	3.9	CLMV	3.14	4.4	CLMV	6.01	5.8	CLMV	10.4	7.2
GCC	120.6	672.9	GCC	102.6	368.0	GCC	75.2	167.1	GCC	69.8	97.9	GCC	61.2	59.1	GCC	65.8	45.9
IPEF	9.25	51.6	IPEF	11.1	39.9	IPEF	13.7	30.4	IPEF	16.3	22.9	IPEF	19.1	18.5	IPEF	25.0	17.4
RCEP	3.16	17.6	RCEP	4.40	15.8	RCEP	6.49	14.4	RCEP	9.34	13.1	RCEP	15.6	15.1	RCEP	25.9	18.1
(reference)			(reference)			(reference)			(reference)			(reference)			(reference)		
Australia	32.2	179.9	Australia	37.0	132.8	Australia	42.9	95.3	Australia	54.6	76.7	Australia	64.0	61.9	Australia	72.9	50.9
France	26.8	149.6	France	36.4	130.3	France	44.1	98.0	France	52.5	73.6	France	56.2	54.3	France	61.5	42.9
Germany	28.8	160.8	Germany	38.0	136.4	Germany	47.3	105.0	Germany	56.2	78.9	Germany	62.3	60.2	Germany	69.3	48.4
Italy	27.4	153.0	Italy	38.0	136.2	Italy	47.9	106.4	Italy	56.5	79.4	Italy	55.4	53.5	Italy	59.1	41.3
New Zealand	26.7	149.1	New Zealand	29.4	105.5	New Zealand	33.2	73.8	New Zealand	39.9	56.1	New Zealand	46.7	45.2	New Zealand	57.1	39.9
UK	25.2	140.5	UK	30.7	110.2	UK	40.1	89.0	UK	49.8	69.9	UK	54.2	52.3	UK	61.0	42.5
US	32.4	180.5	US	39.9	143.1	US	49.8	110.6	US	61.6	86.4	US	66.8	64.5	US	82.8	57.8
EU15	26.0	145.3	EU15	34.2	122.5	EU15	42.6	94.6	EU15	52.0	73.0	EU15	55.9	54.0	EU15	62.5	43.6
									EU27	45.7	64.2	EU27	50.8	49.1	EU27	59.8	41.7

Unit: Thousand USD.
Sources: Official national accounts in each country, including adjustments by APO-PDB.
Note: See Section 8.1 for the adjustments to harmonize GDP coverage across countries.

Table 9.7 Final Demand Shares in GDP, 1970–2023

——Shares of final demands to GDP at current prices

	1970				1990				2000				2010				2023			
	Household consumption	Government consumption	Investment	Net exports	Household consumption	Government consumption	Investment	Net exports	Household consumption	Government consumption	Investment	Net exports	Household consumption	Government consumption	Investment	Net exports	Household consumption	Government consumption	Investment	Net exports
Afghanistan	90.2	6.5	5.5	−2.2	88.6	6.0	8.2	−2.8	117.4	8.6	13.8	−39.8	84.7	17.9	13.2	−15.9	89.1	19.6	12.2	−21.0
Bahrain	67.8	14.8	21.3	−3.9	62.1	23.4	12.8	1.8	48.9	17.3	10.1	23.8	41.2	12.4	28.6	17.8	38.8	14.6	29.4	17.2
Bangladesh	93.5	1.6	7.6	−2.7	84.8	4.6	17.4	−6.8	75.9	5.0	23.8	−4.6	74.1	5.1	26.0	−5.2	68.1	5.7	31.0	−4.7
Bhutan	76.9	27.1	25.0	−28.9	53.8	26.4	23.1	−3.3	47.4	23.4	47.6	−18.4	50.5	20.4	56.8	−27.7	69.6	20.0	35.3	−24.9
Brunei	22.2	8.3	14.2	55.3	39.1	21.8	19.7	19.5	30.4	25.5	18.9	25.3	14.7	22.2	23.7	39.4	31.1	22.8	29.6	16.5
Cambodia	68.6	22.6	10.6	−1.8	95.6	5.7	6.9	−8.3	86.5	5.1	20.0	−11.5	80.6	6.5	22.5	−9.6	60.6	6.1	33.7	−0.4
China	60.3	9.9	29.8	0.1	54.1	12.4	31.0	2.5	51.4	15.5	30.9	2.2	38.4	13.9	44.3	3.5	42.0	15.8	40.2	2.0
ROC	55.9	17.7	26.4	0.0	52.3	18.0	25.5	4.2	55.2	15.7	27.2	1.8	53.2	15.1	25.1	6.6	48.7	13.7	24.5	13.1
Fiji	66.9	14.0	22.3	−3.1	73.5	17.1	14.0	−4.7	67.4	17.3	20.4	−5.1	72.6	15.0	18.8	−6.4	71.7	20.8	19.8	−12.2
Hong Kong	66.2	5.7	20.4	7.7	57.5	6.8	27.2	8.5	58.6	9.4	27.6	4.4	61.4	8.9	23.9	5.9	70.6	13.3	15.5	0.7
India	74.0	9.4	16.7	−0.1	62.4	11.8	27.2	−1.4	64.0	12.8	24.1	−0.9	57.2	11.6	35.6	−4.4	58.8	10.4	33.0	−2.1
Indonesia	73.0	8.2	21.1	−2.2	61.8	7.9	27.7	2.5	61.1	6.4	22.2	10.3	56.1	9.0	33.0	1.9	59.5	7.4	30.9	2.2
Iran	54.3	17.6	28.7	−0.6	55.9	11.7	40.5	−8.1	51.8	15.1	25.4	7.8	44.1	18.9	32.1	4.9	51.4	10.3	27.6	10.7
Japan	46.8	10.5	41.5	1.3	49.9	13.4	36.0	0.7	53.7	16.5	28.4	1.4	56.9	19.2	22.6	1.3	54.5	20.8	26.2	−1.4
Korea	73.4	9.8	26.4	−9.6	50.1	10.6	40.2	−0.9	54.7	10.6	33.0	1.7	51.2	13.5	32.8	2.5	49.9	17.6	32.3	0.3
Kuwait	39.8	13.2	12.3	34.7	59.6	37.4	15.7	−12.7	42.2	21.1	10.9	25.9	30.0	16.7	17.8	35.4	36.6	22.5	19.9	21.0
Lao PDR	79.6	35.0	21.5	−36.0	78.5	7.2	27.4	−13.2	77.5	6.7	29.9	−14.1	72.9	10.7	22.7	−6.2	43.9	10.1	46.8	−0.8
Malaysia	57.4	18.2	20.2	4.2	52.6	13.4	31.9	2.0	43.8	10.0	27.1	19.0	48.1	12.6	23.4	15.9	60.5	11.9	22.5	5.1
Maldives	37.2	12.0	18.0	32.8	34.8	14.0	24.3	26.9	40.2	18.7	23.9	17.2	51.7	20.8	25.7	1.7	50.9	17.0	33.4	−1.3
Mongolia	77.8	24.1	32.6	−34.6	64.8	20.4	31.4	−16.7	72.4	14.4	24.3	−11.1	55.2	12.7	42.1	−10.0	44.0	12.9	33.5	9.5
Myanmar	90.7	8.1	10.1	−8.9	90.8	7.6	7.9	−6.3	84.9	3.6	11.2	0.4	42.6	4.7	16.8	36.0	58.4	11.7	37.4	−7.4
Nepal	90.9	5.4	6.4	−2.7	83.1	6.2	20.3	−9.7	75.9	6.4	26.0	−8.2	85.6	8.6	28.6	−22.7	89.0	6.9	32.8	−28.7
Oman	25.0	11.2	16.8	47.0	43.2	23.7	20.8	12.4	37.7	18.6	18.9	24.7	33.2	16.2	29.1	21.5	37.9	18.7	27.4	16.0
Pakistan	76.6	10.3	15.8	−2.7	71.6	14.1	19.2	−4.9	76.1	9.9	16.2	−2.2	79.9	10.9	15.9	−6.7	83.3	10.3	14.0	−7.6
Philippines	66.2	10.1	24.6	−0.8	70.1	10.6	26.3	−7.0	71.7	11.1	15.7	1.5	70.2	9.7	20.4	−0.4	76.5	14.3	23.3	−14.1
Qatar	21.7	20.3	23.4	34.6	28.1	32.2	18.7	20.9	15.6	19.3	21.1	44.0	16.8	13.7	31.8	37.7	24.0	15.3	35.6	25.0
Saudi Arabia	32.6	15.8	22.4	29.2	46.6	28.8	15.7	8.9	36.5	25.6	19.4	18.5	32.4	20.0	31.2	16.4	39.7	23.0	30.1	7.3
Singapore	69.0	11.8	38.2	−19.0	44.8	9.5	35.7	10.1	42.0	10.5	35.2	12.3	36.3	9.7	27.7	26.3	31.3	10.0	21.2	37.4
Sri Lanka	79.4	6.3	16.9	−2.5	81.0	7.0	18.7	−6.7	73.0	7.5	28.3	−8.9	67.0	8.5	31.6	−7.1	68.9	6.8	25.9	−1.6
Thailand	67.0	11.9	25.3	−4.2	55.8	10.0	41.7	−7.4	55.6	13.5	22.5	8.4	53.0	15.8	25.5	5.7	58.2	16.4	23.4	2.0
Turkiye	76.9	7.9	15.6	−0.4	68.7	9.3	23.2	−1.2	66.9	11.9	23.7	−2.6	62.7	14.9	26.8	−4.3	59.4	13.1	30.0	−2.4
UAE	30.1	6.3	32.6	30.9	49.6	9.9	25.9	14.7	55.7	9.3	23.2	11.9	42.5	9.4	28.7	19.4	46.7	12.0	26.9	14.4
Vietnam	38.8	64.2	21.7	−24.7	80.1	14.8	14.3	−9.1	61.5	11.4	29.2	−2.1	58.1	10.4	37.2	−5.6	51.1	8.8	32.1	8.0
(region)																				
APO21	60.7	11.2	28.8	−0.6	57.0	11.9	31.8	−0.7	58.8	12.9	26.0	2.3	57.1	13.7	28.7	0.4	58.1	12.6	29.0	0.3
Asia27	61.0	10.9	28.7	−0.6	56.7	11.9	31.6	−0.2	57.0	13.6	27.2	2.2	50.2	13.8	34.4	1.6	50.1	14.3	34.6	1.1
Asia33	57.7	11.4	27.9	3.1	55.9	13.1	30.4	0.6	55.8	14.1	26.6	3.4	49.2	13.9	34.1	2.7	49.6	14.6	34.3	1.6
East Asia	51.9	10.4	37.1	0.6	51.5	12.9	34.2	1.4	53.0	15.3	29.9	1.8	44.7	15.0	37.2	3.1	42.9	17.1	38.1	1.9
SAARC	77.1	8.3	15.3	−0.7	66.4	11.3	24.7	−2.5	67.4	11.6	22.9	−1.9	61.6	11.1	32.3	−5.0	62.2	10.0	30.8	−2.9
ASEAN	66.3	16.3	22.8	−5.3	61.6	9.7	30.2	−1.5	58.6	9.5	23.3	8.6	54.8	10.9	28.8	5.6	58.1	10.5	27.8	3.6
ASEAN6	68.6	10.5	23.4	−2.5	59.6	9.4	31.8	−0.7	57.3	9.6	23.0	10.1	54.2	11.2	28.1	6.5	59.3	10.8	26.6	3.3
CLMV	53.0	49.9	19.2	−22.1	82.4	12.6	13.8	−8.8	68.4	9.3	25.3	−3.0	58.0	9.3	32.6	0.1	52.4	9.0	33.4	5.2
GCC	33.4	14.8	21.6	30.2	47.3	26.0	17.6	9.2	40.0	21.4	19.6	19.0	33.2	16.6	29.5	20.6	39.7	19.5	29.0	11.7
IPEF	59.2	15.6	25.1	0.1	59.8	14.4	26.6	−0.8	61.9	13.9	24.9	−0.7	61.6	15.3	24.3	−1.2	61.5	13.5	26.1	−1.1
RCEP	54.5	11.8	34.1	−0.3	53.8	12.6	33.0	0.6	54.1	14.4	28.2	3.2	46.5	14.4	35.7	3.4	47.2	15.6	35.3	1.9
(reference)																				
Australia	54.3	13.9	32.1	−0.3	57.3	18.6	24.2	−0.1	58.0	18.5	23.4	0.1	53.8	18.7	26.5	1.0	51.3	22.2	24.4	2.1
France	53.4	17.3	28.3	0.9	54.7	21.5	24.4	−0.6	53.9	22.6	21.8	1.7	55.4	24.2	21.3	−0.9	54.8	24.1	23.1	−2.0
Germany	51.1	16.5	33.9	−1.5	55.8	19.4	25.0	−0.2	56.6	19.5	23.8	0.2	55.9	19.6	19.3	5.1	52.8	21.7	21.5	4.0
Italy	58.0	15.1	26.7	0.2	57.0	19.7	23.1	0.2	60.1	17.8	21.3	0.8	60.4	20.7	20.7	−1.8	58.1	18.0	22.7	1.2
New Zealand	64.2	14.9	23.8	−2.9	60.2	18.4	20.5	0.9	57.9	17.1	22.0	3.0	57.7	19.7	20.4	2.3	58.1	21.1	23.7	−3.0
UK	60.3	16.3	22.7	0.7	61.6	16.6	23.2	−1.4	66.2	16.7	18.3	−1.2	63.9	21.5	16.2	−1.6	62.5	20.4	17.6	−0.6
US	60.3	18.0	21.4	0.4	63.9	15.9	21.5	−1.3	66.0	14.0	23.7	−3.7	68.2	16.7	18.7	−3.5	67.9	13.4	21.5	−2.9
EU15	56.1	16.1	28.2	−0.4	56.4	19.5	24.7	−0.6	57.5	19.2	22.6	0.6	57.0	21.7	20.0	1.2	54.4	21.2	21.6	2.8
EU27									55.9	19.8	23.4	0.9	55.8	21.7	20.9	1.6	52.8	21.1	22.4	3.7

Unit: Percentage.

Sources: Official national accounts in each country, including adjustments by APO-PDB.

Notes: Final demand shares in country groups are computed using the PPP for GDP. Household consumption includes the consumption of NPISHs. The investment consists of GFCF plus changes in inventories.

Table 9.8 Per-Worker Labor Productivity Level, 1970–2023

——GDP at constant basic prices per worker, using the 2021 PPP, the reference year 2023

1970		(%)	1980		(%)	1990		(%)	2000		(%)	2010		(%)	2023		(%)
Iran	43.3	100.0	Singapore	58.1	100.0	Singapore	83.9	100.0	Singapore	129.9	100.0	Singapore	163.5	100.0	Singapore	209.3	100.0
Singapore	40.9	94.5	Japan	52.1	89.7	Japan	74.3	88.6	Hong Kong	87.8	67.6	Hong Kong	120.7	73.8	ROC	142.9	68.3
Japan	35.4	81.7	Iran	47.4	81.5	Hong Kong	67.8	80.8	Japan	81.1	62.5	ROC	106.3	65.0	Hong Kong	140.7	67.2
Hong Kong	27.9	64.4	Hong Kong	41.9	72.1	Iran	47.4	56.5	ROC	76.9	59.2	Japan	87.2	53.3	Korea	98.1	46.9
Turkiye	25.0	57.7	Turkiye	28.6	49.2	ROC	44.4	52.9	Korea	56.6	43.6	Iran	83.1	50.8	Iran	91.9	43.9
Fiji	22.7	52.5	Fiji	26.0	44.8	Turkiye	36.6	43.6	Iran	53.0	40.8	Korea	80.1	49.0	Turkiye	91.3	43.6
Malaysia	16.6	38.5	Malaysia	25.5	43.9	Korea	32.7	39.0	Turkiye	49.5	38.1	Turkiye	62.5	38.2	Japan	88.8	42.4
Afghanistan	15.2	35.1	ROC	23.4	40.3	Malaysia	32.5	38.7	Malaysia	47.7	36.7	Malaysia	58.3	35.7	Malaysia	76.1	36.3
Maldives	12.0	27.7	Korea	16.5	28.4	Fiji	24.6	29.4	Fiji	26.6	20.4	Thailand	30.5	18.7	Mongolia	47.6	22.7
ROC	11.3	26.1	Afghanistan	15.5	26.8	Maldives	20.4	24.4	Maldives	22.3	17.2	Sri Lanka	26.7	16.3	China	44.9	21.4
Philippines	10.1	23.3	Mongolia	14.0	24.1	Mongolia	16.5	19.6	Thailand	22.3	17.1	Fiji	26.3	16.1	Thailand	39.0	18.6
Korea	9.7	22.3	Philippines	12.3	21.2	Thailand	15.8	18.9	Mongolia	17.5	13.4	Mongolia	25.7	15.8	Sri Lanka	38.7	18.5
Mongolia	9.3	21.5	Maldives	12.0	20.6	Afghanistan	14.3	17.1	Sri Lanka	17.3	13.3	Maldives	23.0	14.1	Bhutan	32.5	15.5
Thailand	7.7	17.8	Thailand	10.4	17.9	Sri Lanka	12.8	15.2	Indonesia	15.6	12.0	Indonesia	21.7	13.3	Fiji	31.3	15.0
Sri Lanka	7.5	17.3	Sri Lanka	9.8	16.9	Indonesia	12.2	14.6	Pakistan	15.1	11.6	China	20.4	12.5	Maldives	30.2	14.4
Bangladesh	6.4	14.8	Indonesia	9.2	15.8	Philippines	12.0	14.3	Philippines	14.3	11.0	Bhutan	20.2	12.3	Indonesia	30.1	14.4
Indonesia	6.0	13.9	Pakistan	6.4	11.0	Pakistan	9.8	11.7	Bhutan	11.9	9.2	Philippines	17.6	10.7	Philippines	25.7	12.3
Cambodia	5.9	13.6	Bhutan	5.5	9.6	Bhutan	8.3	9.9	China	8.2	6.3	Pakistan	16.7	10.2	Vietnam	25.0	11.9
Pakistan	5.3	12.2	Lao PDR	4.9	8.5	Lao PDR	6.2	7.4	Lao PDR	8.1	6.2	Vietnam	13.4	8.2	India	24.9	11.9
Bhutan	4.3	9.8	Bangladesh	4.9	8.5	Bangladesh	6.0	7.1	Vietnam	7.6	5.8	India	13.3	8.1	Bangladesh	21.7	10.4
Lao PDR	4.1	9.5	Vietnam	4.2	7.3	India	5.2	6.2	India	7.4	5.7	Bangladesh	10.8	6.6	Pakistan	20.7	9.9
Vietnam	4.1	9.5	Cambodia	4.0	6.9	Nepal	4.9	5.8	Bangladesh	7.2	5.5	Lao PDR	10.7	6.5	Lao PDR	16.3	7.8
Nepal	3.9	8.9	India	3.7	6.4	Cambodia	4.3	5.1	Nepal	6.1	4.7	Afghanistan	9.7	5.9	Cambodia	11.5	5.5
India	3.5	8.2	Nepal	3.4	5.9	Vietnam	4.2	5.0	Afghanistan	5.0	3.8	Nepal	8.2	5.0	Nepal	11.1	5.3
China	2.1	4.9	China	2.5	4.3	China	3.8	4.5	Cambodia	4.5	3.4	Cambodia	7.0	4.3	Afghanistan	8.2	3.9
Myanmar	1.8	4.1	Myanmar	2.3	4.0	Myanmar	2.3	2.8	Myanmar	3.4	2.6	Myanmar	4.8	2.9	Myanmar	5.3	2.6
Bahrain	126.9	293.3	Bahrain	115.2	198.5	Bahrain	79.2	94.4	Bahrain	98.2	75.6	Bahrain	88.7	54.3	Bahrain	97.0	46.3
Kuwait	493.0	1139.1	Kuwait	191.9	330.4	Kuwait	75.3	89.8	Kuwait	126.4	97.4	Kuwait	125.8	77.0	Kuwait	97.0	46.3
Oman	129.5	299.3	Oman	185.2	318.9	Oman	198.2	236.3	Oman	171.0	131.6	Oman	117.8	72.1	Oman	82.1	39.2
Qatar	530.7	1226.2	Qatar	341.0	587.2	Qatar	183.7	219.0	Qatar	253.5	195.2	Qatar	189.0	115.6	Qatar	158.6	75.8
Saudi Arabia	365.3	844.1	Saudi Arabia	218.4	376.0	Saudi Arabia	177.1	211.2	Saudi Arabia	168.2	129.5	Saudi Arabia	130.5	79.8	Saudi Arabia	204.8	97.8
UAE	402.9	930.9	UAE	291.2	501.5	UAE	186.3	222.1	UAE	164.1	126.4	UAE	133.4	81.6	UAE	142.2	67.9
Brunei	401.1	927.0	Brunei	564.8	972.6	Brunei	262.2	312.7	Brunei	251.7	193.8	Brunei	208.4	127.5	Brunei	180.2	86.1
(region)			(region)			(region)			(region)			(region)			(region)		
APO21	10.0	23.1	APO21	12.3	21.1	APO21	16.6	19.8	APO21	20.5	15.8	APO21	27.0	16.5	APO21	38.3	18.3
Asia27	6.6	15.1	Asia27	7.9	13.7	Asia27	10.6	12.7	Asia27	15.0	11.5	Asia27	24.4	14.9	Asia27	41.2	19.7
Asia33	7.3	16.9	Asia33	8.8	15.2	Asia33	11.5	13.7	Asia33	15.9	12.3	Asia33	25.5	15.6	Asia33	42.7	20.4
East Asia	6.8	15.6	East Asia	8.5	14.7	East Asia	11.6	13.8	East Asia	17.0	13.1	East Asia	29.8	18.2	East Asia	54.7	26.1
SAARC	4.3	9.9	SAARC	4.4	7.6	SAARC	6.1	7.2	SAARC	8.5	6.5	SAARC	14.1	8.6	SAARC	25.1	12.0
ASEAN	7.0	16.3	ASEAN	9.7	16.7	ASEAN	12.3	14.6	ASEAN	16.7	12.9	ASEAN	23.0	14.0	ASEAN	32.3	15.4
ASEAN6	8.4	19.3	ASEAN6	11.9	20.5	ASEAN6	15.3	18.3	ASEAN6	20.8	16.0	ASEAN6	27.9	17.1	ASEAN6	37.4	17.9
CLMV	3.8	8.8	CLMV	3.9	6.7	CLMV	3.9	4.7	CLMV	6.6	5.0	CLMV	11.1	6.8	CLMV	19.1	9.1
GCC	372.9	861.6	GCC	229.0	394.4	GCC	168.2	200.5	GCC	168.7	129.9	GCC	134.5	82.3	GCC	159.7	76.3
IPEF	22.3	51.4	IPEF	25.2	43.4	IPEF	30.3	36.1	IPEF	36.5	28.1	IPEF	43.3	26.5	IPEF	56.0	26.8
RCEP	7.5	17.4	RCEP	9.3	16.0	RCEP	12.0	14.3	RCEP	17.1	13.2	RCEP	28.2	17.2	RCEP	48.2	23.0
(reference)			(reference)			(reference)			(reference)			(reference)			(reference)		
Australia	70.0	161.7	Australia	80.3	138.2	Australia	86.3	102.9	Australia	108.2	83.3	Australia	118.6	72.6	Australia	128.5	61.4
France	57.6	133.1	France	78.0	134.3	France	95.4	113.8	France	109.1	84.0	France	118.8	72.7	France	121.5	58.0
Germany	72.2	167.0	Germany	94.7	163.1	Germany	110.0	131.2	Germany	102.5	78.9	Germany	108.8	66.6	Germany	114.0	54.4
Italy	67.0	154.8	Italy	90.7	156.2	Italy	108.7	129.6	Italy	126.7	97.5	Italy	120.8	73.9	Italy	120.2	57.4
New Zealand	62.7	144.8	New Zealand	64.0	110.3	New Zealand	65.5	78.1	New Zealand	75.8	58.4	New Zealand	83.0	50.8	New Zealand	89.9	42.9
UK	52.1	120.5	UK	62.0	106.8	UK	76.4	91.1	UK	95.6	73.6	UK	104.2	63.7	UK	112.6	53.8
US	73.2	169.1	US	81.6	140.4	US	94.4	112.6	US	114.1	87.8	US	138.5	84.7	US	158.9	75.9
EU15	56.4	130.2	EU15	72.9	125.6	EU15	87.3	104.0	EU15	103.1	79.4	EU15	109.5	67.0	EU15	114.9	54.9
									EU27	93.1	71.7	EU27	101.8	62.2	EU27	109.6	52.4

Unit: Thousand USD (as of 2023).
Source: APO Productivity Database 2025.

Table 9.9 Per-Worker Labor Productivity Growth, 1990–2023

——Growth in GDP at constant prices per worker, using the 2021 PPP

1990–1995		1995–2000		2000–2005		2005–2010		2010–2015		2015–2023		2019–2020		2020–2023	
Kuwait	10.6	China	6.4	Afghanistan	8.7	China	10.6	Mongolia	7.7	China	5.7	Turkiye	6.4	Maldives	11.5
China	9.0	Oman	6.4	China	7.5	India	7.0	Sri Lanka	7.0	Saudi Arabia	5.5	Vietnam	5.0	Saudi Arabia	8.3
Malaysia	6.6	Vietnam	6.1	Kuwait	6.3	Bhutan	6.9	China	6.7	Vietnam	5.4	Iran	4.8	India	7.7
Thailand	6.5	Myanmar	5.3	Cambodia	6.2	Vietnam	5.5	Bangladesh	5.8	Bangladesh	5.1	Kuwait	4.3	China	5.9
Indonesia	6.4	ROC	5.1	Vietnam	5.9	Iran	5.4	Lao PDR	5.7	India	4.7	ROC	2.9	Vietnam	4.6
Korea	6.0	Korea	5.0	India	4.6	Sri Lanka	5.3	India	5.0	Cambodia	3.4	Bangladesh	2.6	Bangladesh	4.5
Vietnam	5.9	Qatar	4.7	Turkiye	4.2	Mongolia	5.1	Myanmar	4.6	Bhutan	3.3	Brunei	2.3	Iran	4.4
ROC	5.9	Singapore	4.2	Thailand	3.8	Afghanistan	4.7	Cambodia	4.5	Mongolia	2.9	China	1.4	Malaysia	4.0
Pakistan	4.8	Turkiye	4.2	Indonesia	3.7	Bangladesh	4.6	Bhutan	4.2	ROC	2.7	Bhutan	0.4	Bhutan	3.6
Hong Kong	4.6	Lao PDR	4.2	Malaysia	3.7	Nepal	3.5	Philippines	4.1	Turkiye	2.5	Korea	0.0	Cambodia	3.3
Singapore	4.5	India	4.1	Bhutan	3.6	Korea	3.4	Maldives	3.8	Malaysia	2.2	Bahrain	−1.0	ROC	3.1
Sri Lanka	4.4	Cambodia	3.8	Iran	3.6	Myanmar	3.2	Vietnam	3.8	Philippines	2.2	Hong Kong	−1.3	Mongolia	3.0
Bhutan	3.5	Pakistan	3.7	Bangladesh	3.6	Hong Kong	3.1	Afghanistan	3.7	Iran	2.1	Singapore	−1.4	Indonesia	2.6
India	3.0	Bhutan	3.6	Myanmar	3.5	ROC	3.1	Indonesia	3.5	Singapore	1.9	Indonesia	−1.5	Fiji	2.3
Bahrain	2.9	Philippines	3.1	Korea	3.5	Lao PDR	3.0	Turkiye	3.5	Indonesia	1.8	Cambodia	−1.8	Nepal	2.0
Nepal	2.6	Bangladesh	2.6	Sri Lanka	3.4	Indonesia	2.9	Fiji	3.5	Nepal	1.8	Lao PDR	−2.5	UAE	2.0
Myanmar	2.4	Mongolia	2.5	ROC	3.4	Cambodia	2.8	Nepal	3.3	Pakistan	1.8	Saudi Arabia	−2.6	Singapore	1.9
Turkiye	1.8	Nepal	1.9	Singapore	3.3	Philippines	2.7	Thailand	3.1	Lao PDR	1.7	Philippines	−2.7	Turkiye	1.6
Qatar	1.7	Sri Lanka	1.6	Hong Kong	3.2	Thailand	2.5	Singapore	1.8	Korea	1.6	Sri Lanka	−2.8	Hong Kong	1.6
Iran	1.3	Bahrain	1.4	Mongolia	2.7	Maldives	2.1	Malaysia	1.8	Hong Kong	1.1	Pakistan	−3.0	Pakistan	1.5
Lao PDR	1.2	Japan	1.2	Lao PDR	2.7	Singapore	1.3	ROC	1.6	Thailand	1.1	UAE	−3.6	Korea	1.4
Bangladesh	1.1	Maldives	1.2	Pakistan	2.4	Bahrain	0.6	Korea	1.4	Maldives	1.0	Japan	−3.6	Lao PDR	1.3
Saudi Arabia	0.7	Malaysia	1.1	Nepal	2.2	Turkiye	0.4	Pakistan	1.4	Bahrain	0.5	Oman	−3.7	Japan	1.2
Maldives	0.6	UAE	1.1	Fiji	2.0	Malaysia	0.3	Hong Kong	1.2	UAE	0.5	Qatar	−3.8	Philippines	0.8
Japan	0.6	Fiji	1.0	Philippines	1.4	Japan	0.1	Bahrain	1.0	Sri Lanka	0.3	Malaysia	−4.4	Qatar	0.7
Fiji	0.5	Iran	0.9	Japan	1.4	Pakistan	−0.3	Japan	0.7	Fiji	0.0	Afghanistan	−5.7	Thailand	0.2
Philippines	0.3	Brunei	0.8	Oman	1.1	UAE	−1.8	UAE	0.5	Japan	−0.2	Mongolia	−5.9	Brunei	−1.0
Mongolia	−1.4	Hong Kong	0.6	Qatar	0.2	Brunei	−1.9	Saudi Arabia	0.3	Qatar	−0.8	Nepal	−7.0	Sri Lanka	−1.4
Brunei	−1.6	Thailand	0.3	Maldives	−1.5	Fiji	−2.2	Kuwait	−0.5	Brunei	−1.1	India	−7.2	Bahrain	−1.7
Cambodia	−2.9	Kuwait	−0.2	Brunei	−1.9	Saudi Arabia	−2.6	Brunei	−1.1	Oman	−1.5	Thailand	−7.4	Oman	−3.3
UAE	−3.6	Indonesia	−1.6	UAE	−2.3	Qatar	−6.1	Iran	−1.4	Myanmar	−1.6	Myanmar	−9.4	Kuwait	−5.7
Oman	−9.3	Saudi Arabia	−1.7	Saudi Arabia	−2.5	Kuwait	−6.4	Qatar	−2.2	Kuwait	−2.9	Fiji	−15.2	Myanmar	−6.0
Afghanistan	−12.7	Afghanistan	−8.5	Bahrain	−2.7	Oman	−8.6	Oman	−4.9	Afghanistan	−4.4	Maldives	−43.6	Afghanistan	−11.5
(region)		(region)		(region)		(region)		(region)		(region)		(region)		(region)	
APO21	2.4	APO21	1.8	APO21	2.6	APO21	2.9	APO21	2.8	APO21	2.6	APO21	−3.1	APO21	3.9
Asia27	3.9	Asia27	3.0	Asia27	4.2	Asia27	5.6	Asia27	4.3	Asia27	3.8	Asia27	−1.2	Asia27	4.7
Asia33	3.8	Asia33	2.8	Asia33	4.0	Asia33	5.4	Asia33	4.3	Asia33	3.7	Asia33	−1.3	Asia33	4.7
East Asia	4.3	East Asia	3.4	East Asia	4.5	East Asia	6.7	East Asia	4.9	East Asia	4.5	East Asia	0.5	East Asia	5.0
SAARC	2.9	SAARC	3.8	SAARC	4.2	SAARC	6.0	SAARC	4.7	SAARC	4.3	SAARC	−6.0	SAARC	6.5
ASEAN	5.5	ASEAN	0.7	ASEAN	3.5	ASEAN	2.9	ASEAN	3.3	ASEAN	2.2	ASEAN	−2.0	ASEAN	2.2
ASEAN6	5.7	ASEAN6	0.3	ASEAN6	3.4	ASEAN6	2.5	ASEAN6	3.2	ASEAN6	1.6	ASEAN6	−2.9	ASEAN6	1.8
CLMV	4.5	CLMV	5.6	CLMV	5.5	CLMV	5.0	CLMV	4.0	CLMV	4.3	CLMV	2.4	CLMV	3.3
GCC	0.3	GCC	−0.2	GCC	−1.5	GCC	−3.0	GCC	−0.3	GCC	2.3	GCC	−2.2	GCC	3.5
IPEF	1.6	IPEF	2.1	IPEF	1.8	IPEF	1.7	IPEF	2.0	IPEF	2.0	IPEF	−2.4	IPEF	3.1
RCEP	4.3	RCEP	2.8	RCEP	4.2	RCEP	5.7	RCEP	4.5	RCEP	3.9	RCEP	0.2	RCEP	4.2
(reference)		(reference)		(reference)		(reference)		(reference)		(reference)		(reference)		(reference)	
Australia	2.4	Australia	2.2	Australia	1.3	Australia	0.5	Australia	1.5	Australia	0.1	Australia	3.9	Australia	−0.6
France	1.3	France	1.3	France	1.2	France	0.5	France	0.7	France	−0.1	France	−7.7	France	1.4
Germany	−2.4	Germany	1.0	Germany	0.9	Germany	0.3	Germany	0.7	Germany	0.1	Germany	−3.5	Germany	0.8
Italy	2.0	Italy	1.1	Italy	−0.4	Italy	−0.6	Italy	−0.4	Italy	0.2	Italy	−7.2	Italy	3.0
New Zealand	1.2	New Zealand	1.7	New Zealand	1.0	New Zealand	0.8	New Zealand	1.0	New Zealand	0.3	New Zealand	−1.1	New Zealand	0.9
UK	2.2	UK	2.3	UK	1.5	UK	0.2	UK	0.6	UK	0.6	UK	−9.7	UK	4.0
US	1.5	US	2.3	US	2.3	US	1.6	US	0.7	US	1.3	US	3.3	US	1.0
EU15	1.9	EU15	1.4	EU15	0.9	EU15	0.3	EU15	0.6	EU15	0.2	EU15	−5.6	EU15	1.9
		EU27	1.8	EU27	1.2	EU27	0.6	EU27	0.7	EU27	0.5	EU27	−4.4	EU27	1.7

Unit: Percentage (average annual growth rate).
Source: APO Productivity Database 2025.

Table 9.10 Per-Hour Labor Productivity Level, 1970–2023

——GDP at constant basic prices per hour, using the 2021 PPP, the reference year 2023

1970		(%)	1980		(%)	1990		(%)	2000		(%)	2010		(%)	2023		(%)
Singapore	18.7	100.0	Singapore	27.3	100.0	Singapore	37.0	100.0	Singapore	54.1	100.0	Singapore	70.5	100.0	Singapore	96.2	100.0
Iran	17.2	92.1	Japan	24.2	88.7	Japan	35.6	96.1	Japan	43.0	79.5	Hong Kong	52.4	74.4	ROC	69.7	72.5
Japan	15.6	83.6	Iran	18.8	68.8	Hong Kong	29.7	80.4	Hong Kong	37.7	69.6	ROC	51.5	73.1	Hong Kong	66.2	68.9
Turkiye	12.5	67.1	Hong Kong	16.9	61.9	ROC	19.9	53.8	ROC	35.3	65.1	Japan	48.6	68.9	Japan	51.6	53.6
Fiji	12.2	65.2	Turkiye	14.2	52.0	Iran	18.6	50.4	Turkiye	23.5	43.3	Korea	35.6	50.5	Korea	51.1	53.2
Hong Kong	10.1	53.8	Fiji	13.8	50.6	Turkiye	17.4	46.9	Korea	22.5	41.5	Iran	34.9	49.5	Turkiye	45.8	47.6
Afghanistan	7.8	41.5	Malaysia	11.4	41.8	Malaysia	14.5	39.2	Malaysia	21.2	39.2	Turkiye	28.7	40.6	Iran	40.0	41.6
Malaysia	7.5	40.0	ROC	10.1	37.0	Fiji	13.6	36.9	Iran	21.1	38.9	Malaysia	26.2	37.2	Malaysia	35.2	36.6
Maldives	5.9	31.5	Afghanistan	8.0	29.4	Korea	12.2	33.0	Fiji	14.3	26.5	Mongolia	15.3	21.7	Mongolia	25.2	26.2
ROC	4.9	26.3	Mongolia	6.9	25.1	Maldives	9.7	26.1	Maldives	10.7	19.9	Fiji	14.6	20.7	China	21.4	22.3
Mongolia	4.6	24.3	Korea	6.1	22.5	Afghanistan	8.4	22.6	Mongolia	9.3	17.1	Sri Lanka	14.2	20.2	Sri Lanka	20.1	20.9
Philippines	4.5	24.2	Maldives	5.8	21.4	Mongolia	8.1	21.8	Thailand	8.9	16.4	Thailand	13.0	18.4	Thailand	19.1	19.9
Sri Lanka	4.0	21.2	Philippines	5.7	20.9	Indonesia	6.5	17.5	Sri Lanka	8.6	15.9	Maldives	10.8	15.3	Fiji	16.6	17.3
Korea	3.6	19.2	Sri Lanka	5.0	18.4	Sri Lanka	6.4	17.4	Indonesia	7.9	14.6	Indonesia	10.5	14.9	Indonesia	15.3	15.9
Indonesia	3.3	17.7	Indonesia	4.9	18.1	Thailand	6.1	16.6	Pakistan	6.9	12.7	China	9.3	13.2	Maldives	14.0	14.5
Thailand	3.1	16.8	Thailand	3.8	14.0	Philippines	5.6	15.2	Philippines	6.7	12.5	Philippines	8.5	12.1	Bhutan	13.7	14.3
Bangladesh	2.9	15.4	Pakistan	2.9	10.5	Pakistan	4.5	12.0	Bhutan	4.2	7.7	Pakistan	7.9	11.1	Philippines	12.9	13.4
Cambodia	2.6	13.9	Bangladesh	2.2	8.2	Bhutan	2.9	7.9	China	3.9	7.2	Bhutan	7.4	10.5	India	11.7	12.2
Pakistan	2.4	12.6	Lao PDR	2.0	7.5	Nepal	2.7	7.4	India	3.6	6.6	India	6.3	8.9	Vietnam	11.1	11.5
Nepal	2.2	11.9	Nepal	2.0	7.3	Bangladesh	2.6	6.9	Nepal	3.4	6.3	Vietnam	5.8	8.2	Pakistan	9.6	10.0
Vietnam	1.8	9.5	Bhutan	1.9	7.0	Lao PDR	2.5	6.9	Lao PDR	3.3	6.1	Afghanistan	5.5	7.8	Bangladesh	9.3	9.7
India	1.7	9.1	Vietnam	1.8	6.6	India	2.5	6.8	Bangladesh	3.2	6.0	Bangladesh	4.9	7.0	Lao PDR	6.7	7.0
Lao PDR	1.7	9.1	India	1.8	6.6	Cambodia	2.0	5.3	Vietnam	3.2	5.8	Nepal	4.5	6.4	Nepal	6.1	6.4
Bhutan	1.5	7.9	Cambodia	1.8	6.6	China	1.9	5.1	Afghanistan	2.8	5.2	Lao PDR	4.4	6.2	Afghanistan	4.9	5.1
China	1.0	5.5	China	1.2	4.5	Vietnam	1.8	4.8	Cambodia	1.9	3.6	Cambodia	2.9	4.2	Cambodia	4.7	4.8
Myanmar	0.7	3.9	Myanmar	1.0	3.5	Myanmar	1.0	2.6	Myanmar	1.4	2.6	Myanmar	2.0	2.8	Myanmar	2.8	3.0
Brunei	173.4	927.5	Brunei	244.6	895.6	Brunei	113.8	307.7	Brunei	109.6	202.4	Brunei	90.7	128.7	Brunei	81.0	84.3
(region)			(region)			(region)			(region)			(region)			(region)		
APO21	4.7	25.0	APO21	5.8	21.1	APO21	7.8	21.0	APO21	9.6	17.8	APO21	12.7	18.1	APO21	18.3	19.0
Asia27	3.1	16.7	Asia27	3.8	13.9	Asia27	5.1	13.7	Asia27	7.1	13.0	Asia27	11.4	16.1	Asia27	19.8	20.5
East Asia	3.2	17.4	East Asia	4.1	15.1	East Asia	5.6	15.2	East Asia	8.1	14.9	East Asia	13.8	19.6	East Asia	26.6	27.6
SAARC	2.0	11.0	SAARC	2.1	7.7	SAARC	2.9	7.8	SAARC	4.0	7.5	SAARC	6.7	9.5	SAARC	11.7	12.2
ASEAN	3.3	17.6	ASEAN	4.5	16.3	ASEAN	5.6	15.3	ASEAN	7.6	14.0	ASEAN	10.4	14.8	ASEAN	15.8	16.4
ASEAN6	4.1	21.7	ASEAN6	5.6	20.6	ASEAN6	7.3	19.7	ASEAN6	9.7	18.0	ASEAN6	13.1	18.5	ASEAN6	18.7	19.5
CLMV	1.6	8.7	CLMV	1.7	6.1	CLMV	1.7	4.6	CLMV	2.7	5.1	CLMV	4.7	6.7	CLMV	8.7	9.1
IPEF	11.0	59.0	IPEF	12.6	46.0	IPEF	15.0	40.7	IPEF	18.1	33.5	IPEF	21.5	30.5	IPEF	28.3	29.4
RCEP	3.6	19.3	RCEP	4.5	16.4	RCEP	5.8	15.7	RCEP	8.0	14.9	RCEP	13.0	18.5	RCEP	23.5	24.5
(reference)			(reference)			(reference)			(reference)			(reference)			(reference)		
Australia	38.1	203.8	Australia	44.2	161.7	Australia	48.6	131.2	Australia	61.2	113.1	Australia	70.3	99.7	Australia	77.8	80.9
France	28.9	154.6	France	43.2	158.1	France	58.0	156.8	France	70.0	129.4	France	77.1	109.4	France	81.0	84.2
									Germany	69.9	129.1	Germany	76.3	108.3	Germany	84.9	88.2
									Italy	68.5	126.5	Italy	68.0	96.5	Italy	69.3	72.1
						New Zealand	36.2	97.9	New Zealand	41.3	76.3	New Zealand	47.3	67.1	New Zealand	51.3	53.4
UK	29.4	157.2	UK	38.3	140.3	UK	47.3	127.7	UK	61.3	113.3	UK	69.1	98.0	UK	73.9	76.8
US	45.6	244.2	US	52.7	193.1	US	61.3	165.6	US	73.0	134.8	US	90.1	127.8	US	102.1	106.2
									EU15	64.0	118.1	EU15	69.8	99.0	EU15	75.7	78.7

Unit: USD.
Source: APO Productivity Database 2025.

Table 9.11 Per-Hour Labor Productivity Growth, 1990–2023

——Growth in GDP at constant basic prices per hour, using the 2021 PPP

1990–1995		1995–2000		2000–2005		2005–2010		2010–2015		2015–2023		2019–2020		2020–2023	
China	9.0	Korea	5.7	Afghanistan	8.4	China	11.2	China	7.9	China	5.5	Turkiye	10.2	Maldives	11.5
Korea	6.5	ROC	5.5	Vietnam	7.6	Bhutan	7.5	Bhutan	6.8	Vietnam	5.1	Brunei	7.9	India	7.7
Malaysia	6.5	China	5.5	China	6.3	India	6.9	Sri Lanka	6.5	Bangladesh	4.9	ROC	5.0	China	6.8
Thailand	6.3	Vietnam	5.4	Cambodia	5.6	Iran	6.4	Mongolia	6.1	India	4.7	Iran	4.4	Bangladesh	5.1
Indonesia	6.3	Myanmar	5.3	Thailand	5.2	Mongolia	6.0	Lao PDR	5.8	Bhutan	3.5	Korea	4.4	Mongolia	4.8
Vietnam	6.1	Turkiye	4.7	Sri Lanka	4.6	Sri Lanka	5.4	Cambodia	5.3	Korea	3.4	Vietnam	4.1	Bhutan	4.5
ROC	5.9	Lao PDR	4.1	Korea	4.5	Afghanistan	5.2	India	4.9	ROC	3.3	Bangladesh	1.8	Iran	4.4
Pakistan	4.8	India	4.0	India	4.5	Bangladesh	5.0	Vietnam	4.8	Turkiye	3.2	China	1.5	Vietnam	4.1
Sri Lanka	4.8	Mongolia	4.0	Mongolia	4.0	Korea	4.7	Bangladesh	4.7	Philippines	2.8	Bhutan	1.1	Indonesia	3.6
Hong Kong	4.8	Pakistan	3.9	Bhutan	3.9	Vietnam	4.5	Myanmar	4.6	Singapore	2.6	Hong Kong	0.7	ROC	3.4
Singapore	3.9	Singapore	3.7	ROC	3.9	ROC	3.7	Afghanistan	4.5	Cambodia	2.5	Singapore	0.6	Cambodia	3.0
Bhutan	3.6	Bhutan	3.6	Singapore	3.8	Hong Kong	3.5	Thailand	4.4	Iran	2.4	Malaysia	0.4	Malaysia	2.7
India	3.0	Bangladesh	3.2	Iran	3.7	Nepal	3.4	Turkiye	4.2	Mongolia	2.4	Philippines	−0.1	Nepal	2.3
Nepal	2.5	Cambodia	2.8	Bangladesh	3.5	Myanmar	3.3	Indonesia	4.0	Malaysia	2.3	Indonesia	−2.4	Fiji	2.3
Myanmar	2.3	Philippines	2.8	Myanmar	3.5	Lao PDR	3.0	Philippines	3.8	Indonesia	2.2	Lao PDR	−2.5	Singapore	2.1
Japan	1.8	Japan	2.0	Indonesia	3.3	Philippines	2.7	Maldives	3.6	Thailand	2.1	Sri Lanka	−3.0	Hong Kong	1.7
Iran	1.5	Nepal	2.0	Malaysia	3.2	Cambodia	2.6	Nepal	3.1	Nepal	1.8	Thailand	−3.4	Korea	1.6
Bangladesh	1.4	Maldives	1.3	Hong Kong	3.1	Indonesia	2.4	Fiji	2.6	Lao PDR	1.7	Mongolia	−3.4	Lao PDR	1.3
Turkiye	1.4	Malaysia	1.1	Lao PDR	2.7	Thailand	2.4	Malaysia	2.3	Pakistan	1.5	Japan	−3.5	Pakistan	1.2
Lao PDR	1.2	Thailand	1.1	Pakistan	2.6	Maldives	1.6	Hong Kong	2.3	Myanmar	1.5	Cambodia	−3.8	Thailand	1.1
Philippines	0.8	Sri Lanka	1.0	Turkiye	2.5	Singapore	1.5	Singapore	2.1	Hong Kong	1.5	Pakistan	−3.9	Japan	0.8
Maldives	0.8	Iran	1.0	Nepal	2.2	Turkiye	1.5	Korea	1.8	Maldives	1.0	Nepal	−5.7	Turkiye	0.7
Fiji	0.2	Fiji	0.8	Philippines	2.0	Malaysia	1.0	Pakistan	1.6	Sri Lanka	0.3	Afghanistan	−5.9	Philippines	0.7
Mongolia	−1.2	Brunei	0.8	Japan	1.8	Japan	0.7	Japan	1.1	Japan	0.1	Myanmar	−6.1	Brunei	−1.3
Brunei	−1.5	Hong Kong	0.0	Fiji	1.5	Pakistan	0.1	ROC	0.8	Fiji	0.0	India	−7.3	Sri Lanka	−1.4
Cambodia	−3.2	Indonesia	−2.3	Maldives	−1.5	Fiji	−1.2	Brunei	−1.1	Brunei	−0.7	Fiji	−15.3	Cambodia	−3.2
Afghanistan	−13.7	Afghanistan	−8.3	Brunei	−1.9	Brunei	−1.9	Iran	−1.2	Afghanistan	−4.3	Maldives	−43.6	Afghanistan	−13.7
(region)		(region)		(region)		(region)		(region)		(region)		(region)		(region)	
APO21	2.5	APO21	1.8	APO21	2.7	APO21	2.9	APO21	2.9	APO21	2.7	APO21	−2.8	APO21	4.0
Asia27	4.0	Asia27	2.6	Asia27	3.6	Asia27	5.9	Asia27	4.9	Asia27	3.8	Asia27	−1.0	Asia27	5.1
East Asia	4.4	East Asia	2.8	East Asia	3.5	East Asia	7.3	East Asia	6.0	East Asia	4.4	East Asia	0.8	East Asia	5.8
SAARC	2.9	SAARC	3.8	SAARC	4.2	SAARC	5.9	SAARC	4.6	SAARC	4.2	SAARC	−6.2	SAARC	6.5
ASEAN	5.4	ASEAN	0.5	ASEAN	3.9	ASEAN	2.6	ASEAN	3.9	ASEAN	2.7	ASEAN	−1.3	ASEAN	2.9
ASEAN6	5.6	ASEAN6	0.2	ASEAN6	3.5	ASEAN6	2.3	ASEAN6	3.7	ASEAN6	2.2	ASEAN6	−1.8	ASEAN6	2.5
CLMV	4.6	CLMV	5.1	CLMV	6.4	CLMV	4.4	CLMV	4.6	CLMV	4.8	CLMV	2.5	CLMV	3.9
IPEF	1.7	IPEF	2.1	IPEF	1.9	IPEF	1.5	IPEF	2.1	IPEF	2.1	IPEF	−2.3	IPEF	3.3
RCEP	4.4	RCEP	2.2	RCEP	3.5	RCEP	6.1	RCEP	5.5	RCEP	3.9	RCEP	0.5	RCEP	4.9
(reference)		(reference)		(reference)		(reference)		(reference)		(reference)		(reference)		(reference)	
Australia	2.3	Australia	2.4	Australia	1.8	Australia	0.9	Australia	1.7	Australia	0.2	Australia	6.1	Australia	−1.2
France	1.9	France	1.9	France	1.5	France	0.4	France	0.9	France	0.0	France	0.4	France	−0.9
		Germany	1.9	Germany	1.4	Germany	0.4	Germany	1.0	Germany	0.7	Germany	0.8	Germany	0.1
		Italy	1.1	Italy	0.1	Italy	−0.2	Italy	0.2	Italy	0.1	Italy	3.1	Italy	−0.9
New Zealand	0.9	New Zealand	1.8	New Zealand	1.2	New Zealand	1.5	New Zealand	1.1	New Zealand	0.4	New Zealand	1.4	New Zealand	0.6
UK	2.5	UK	2.7	UK	1.7	UK	0.7	UK	0.3	UK	0.6	UK	2.2	UK	0.3
US	1.4	US	2.1	US	2.5	US	1.7	US	0.4	US	1.3	US	3.6	US	1.0
				EU15	1.1	EU15	0.6	EU15	0.9	EU15	0.5	EU15	2.0	EU15	−0.2

Unit: Percentage (average annual growth rate). Source: APO Productivity Database 2025.

Table 9.12 TFP Growth, 1990–2023

——Growth in total factor productivity

1990–1995		1995–2000		2000–2005		2005–2010		2010–2015		2015–2023		2019–2020		2020–2023	
China	4.9	Mongolia	3.7	Afghanistan	9.0	China	3.9	Fiji	2.8	India	2.3	Iran	3.0	Maldives	11.9
Vietnam	3.4	ROC	2.6	Mongolia	3.2	Bhutan	3.6	Lao PDR	2.2	Iran	2.0	ROC	2.2	India	5.8
Sri Lanka	3.4	Brunei	1.9	Iran	2.8	Iran	3.0	Nepal	1.9	China	1.7	Turkiye	0.4	Fiji	4.3
ROC	3.3	Korea	1.9	Thailand	2.4	Afghanistan	2.7	Turkiye	1.7	ROC	1.5	Korea	0.2	Iran	4.2
Pakistan	1.8	China	1.7	India	2.4	Sri Lanka	2.7	India	1.6	Vietnam	1.5	Brunei	−0.1	China	2.7
Korea	1.6	Pakistan	1.7	Cambodia	2.1	India	2.5	China	1.5	Korea	1.1	Vietnam	−0.9	Malaysia	2.3
India	1.6	India	1.7	Hong Kong	1.9	Hong Kong	2.1	Afghanistan	1.4	Hong Kong	0.7	China	−2.7	Indonesia	2.2
Hong Kong	1.4	Cambodia	1.6	Sri Lanka	1.8	Singapore	2.1	Sri Lanka	1.2	Pakistan	0.7	Bangladesh	−2.8	Philippines	1.9
Malaysia	1.0	Myanmar	1.4	Philippines	1.7	ROC	2.0	Pakistan	1.1	Singapore	0.7	Hong Kong	−3.0	Hong Kong	1.7
Singapore	0.9	Iran	1.4	ROC	1.7	Lao PDR	1.5	Malaysia	1.1	Malaysia	0.6	Singapore	−3.4	Singapore	1.6
Indonesia	0.9	Sri Lanka	1.3	Malaysia	1.6	Korea	1.3	Hong Kong	1.0	Turkiye	0.3	Pakistan	−3.7	Turkiye	1.6
Myanmar	0.6	Lao PDR	1.0	Lao PDR	1.5	Philippines	1.2	Japan	0.9	Fiji	0.1	Japan	−4.7	Mongolia	1.4
Japan	−0.1	Vietnam	0.9	Singapore	1.3	Nepal	1.0	Vietnam	0.9	Brunei	0.1	Lao PDR	−5.0	Pakistan	1.4
Lao PDR	−0.1	Bhutan	0.6	Pakistan	1.0	Bangladesh	0.9	Philippines	0.6	Thailand	0.0	Afghanistan	−5.5	Vietnam	1.3
Philippines	−0.3	Singapore	0.5	China	1.0	Indonesia	0.6	Maldives	0.5	Maldives	0.0	Malaysia	−5.9	Bhutan	1.2
Mongolia	−0.4	Turkiye	0.5	Vietnam	0.8	Thailand	0.3	ROC	0.5	Philippines	−0.1	Indonesia	−6.7	ROC	1.0
Iran	−0.4	Japan	0.4	Japan	0.7	Fiji	0.2	Singapore	0.3	Mongolia	−0.1	Mongolia	−7.2	Japan	0.9
Bhutan	−0.5	Philippines	0.1	Korea	0.6	Myanmar	0.1	Korea	0.2	Indonesia	−0.1	Thailand	−7.2	Korea	0.6
Bangladesh	−0.6	Fiji	−0.1	Fiji	0.4	Malaysia	−0.1	Thailand	0.2	Japan	−0.2	Sri Lanka	−7.7	Thailand	0.3
Nepal	−0.7	Bangladesh	−0.1	Indonesia	0.4	Japan	−0.3	Bangladesh	0.1	Bangladesh	−0.2	Nepal	−8.0	Nepal	0.1
Turkiye	−0.8	Malaysia	−0.6	Turkiye	0.2	Pakistan	−0.7	Cambodia	−0.3	Nepal	−0.3	Bhutan	−8.4	Bangladesh	0.0
Fiji	−1.2	Nepal	−1.4	Bangladesh	0.2	Mongolia	−1.0	Mongolia	−0.4	Lao PDR	−0.5	Cambodia	−8.9	Brunei	−0.4
Cambodia	−1.2	Maldives	−1.5	Nepal	−0.5	Cambodia	−1.2	Bhutan	−0.5	Bhutan	−0.8	Myanmar	−8.9	Cambodia	−0.9
Thailand	−1.3	Hong Kong	−1.6	Myanmar	−1.0	Maldives	−1.5	Brunei	−0.5	Myanmar	−1.4	India	−9.1	Lao PDR	−1.1
Maldives	−1.9	Thailand	−3.2	Brunei	−1.3	Vietnam	−1.6	Myanmar	−0.7	Cambodia	−1.6	Philippines	−9.4	Myanmar	−3.5
Brunei	−2.3	Indonesia	−5.0	Maldives	−1.4	Brunei	−1.9	Indonesia	−0.8	Sri Lanka	−3.4	Fiji	−17.3	Brunei	−2.3
Afghanistan	−11.6	Afghanistan	−8.2	Bhutan	−2.8	Turkiye	−2.0	Iran	−2.3	Afghanistan	−5.1	Maldives	−44.3	Afghanistan	−11.6
(region)		(region)		(region)		(region)		(region)		(region)		(region)		(region)	
APO21	0.5	APO21	0.0	APO21	1.2	APO21	0.9	APO21	0.7	APO21	1.0	APO21	−4.9	APO21	2.7
Asia27	1.3	Asia27	0.5	Asia27	1.3	Asia27	2.1	Asia27	1.1	Asia27	1.3	Asia27	−4.0	Asia27	2.8
East Asia	1.6	East Asia	0.9	East Asia	0.9	East Asia	2.9	East Asia	1.6	East Asia	1.6	East Asia	−2.6	East Asia	2.5
SAARC	1.3	SAARC	1.5	SAARC	2.0	SAARC	1.8	SAARC	1.2	SAARC	1.8	SAARC	−8.0	SAARC	4.5
ASEAN	1.1	ASEAN	−2.3	ASEAN	1.5	ASEAN	0.5	ASEAN	0.3	ASEAN	0.3	ASEAN	−5.8	ASEAN	1.5
ASEAN6	0.6	ASEAN6	−2.9	ASEAN6	1.2	ASEAN6	0.7	ASEAN6	−0.1	ASEAN6	0.0	ASEAN6	−6.4	ASEAN6	1.6
CLMV	2.5	CLMV	1.1	CLMV	0.8	CLMV	−1.1	CLMV	0.7	CLMV	1.1	CLMV	−2.3	CLMV	0.9
(reference)		(reference)		(reference)		(reference)		(reference)		(reference)		(reference)		(reference)	
US	0.7	US	0.9	US	1.1	US	0.2	US	0.3	US	0.6	US	−0.6	US	1.2

Unit: Percentage (average annual growth rate). Source: APO Productivity Database 2025.

Table 9.13 Economic Growth and Contributions of Labor, Capital, and TFP, 1970–2023

		Output	Labor				Capital				TFP	
			Hours Worked		Labor Quality		ICT		Non–ICT			
Afghanistan	1970–1975	2.6	1.3	(51)	−0.2	(−6)	0.0	(0)	1.9	(75)	−0.5	(−20)
	1975–1980	0.7	0.2	(29)	−0.2	(−31)	0.0	(0)	5.7	(770)	−4.9	(−668)
	1980–1985	2.2	−1.9	(−87)	−0.4	(−20)	0.0	(0)	2.3	(106)	2.2	(101)
	1985–1990	−5.3	−0.1	(2)	−0.3	(6)	0.0	(0)	0.2	(−3)	−5.0	(95)
	1990–1995	−5.5	5.2	(−94)	−0.4	(8)	0.0	(0)	1.3	(−24)	−11.6	(210)
	1995–2000	−5.2	2.2	(−42)	−0.4	(7)	0.0	(0)	1.2	(−23)	−8.2	(158)
	2000–2005	12.5	3.3	(27)	−0.3	(−3)	0.0	(0)	0.5	(4)	9.0	(72)
	2005–2010	7.4	1.5	(20)	1.0	(14)	0.0	(0)	2.1	(29)	2.7	(37)
	2010–2015	5.2	0.4	(9)	0.5	(9)	0.0	(0)	2.9	(55)	1.4	(27)
	2015–2023	−2.2	1.2	(−52)	−0.1	(3)	0.0	(0)	1.8	(−79)	−5.1	(228)
	1970–2023	1.0	1.3	(126)	−0.1	(−8)	0.0	(1)	2.0	(189)	−2.2	(−208)
Bhutan	1970–1975	4.0	1.4	(36)	0.5	(12)	0.0	(0)	2.9	(73)	−0.8	(−21)
	1975–1980	7.6	1.4	(18)	0.1	(1)	0.0	(0)	2.3	(31)	3.8	(50)
	1980–1985	6.1	1.2	(20)	0.3	(5)	0.0	(0)	3.2	(52)	1.3	(22)
	1985–1990	7.6	1.2	(16)	2.0	(26)	0.0	(0)	2.8	(38)	1.5	(20)
	1990–1995	2.4	−0.6	(−24)	0.9	(40)	0.2	(9)	2.2	(95)	−0.5	(−20)
	1995–2000	6.2	1.1	(18)	0.6	(9)	0.8	(13)	3.2	(51)	0.6	(9)
	2000–2005	7.0	1.1	(16)	0.9	(13)	0.2	(3)	7.6	(108)	−2.8	(−40)
	2005–2010	9.7	0.7	(7)	1.0	(10)	0.5	(5)	3.9	(40)	3.6	(37)
	2010–2015	5.8	−0.3	(−6)	1.2	(20)	0.1	(2)	5.3	(91)	−0.5	(−8)
	2015–2023	3.2	−0.2	(−7)	0.8	(26)	0.5	(17)	2.8	(89)	−0.8	(−25)
	1970–2023	5.8	0.6	(11)	0.8	(14)	0.3	(4)	3.6	(62)	0.5	(8)
Cambodia	1970–1975	−5.4	−0.3	(5)	0.1	(−2)	0.0	(1)	2.8	(−51)	−8.0	(148)
	1975–1980	−7.4	−1.5	(21)	0.1	(−2)	0.0	(0)	0.5	(−7)	−6.5	(88)
	1980–1985	1.4	0.9	(66)	0.2	(11)	0.0	(0)	0.4	(27)	−0.1	(−4)
	1985–1990	7.3	1.3	(18)	0.4	(5)	0.0	(0)	0.7	(10)	4.9	(68)
	1990–1995	3.7	2.5	(68)	0.5	(13)	0.0	(0)	1.9	(51)	−1.2	(−33)
	1995–2000	7.9	2.3	(30)	0.7	(9)	0.0	(0)	3.2	(40)	1.6	(21)
	2000–2005	8.5	1.3	(15)	0.5	(6)	0.0	(0)	4.5	(54)	2.1	(25)
	2005–2010	7.0	1.6	(23)	0.3	(5)	0.0	(0)	6.2	(88)	−1.2	(−17)
	2010–2015	7.2	0.7	(10)	1.4	(19)	0.1	(1)	5.3	(74)	−0.3	(−4)
	2015–2023	5.1	1.1	(22)	0.1	(3)	0.0	(1)	5.4	(107)	−1.6	(−32)
	1970–2023	3.6	1.0	(28)	0.4	(11)	0.0	(0)	3.2	(89)	−1.0	(−29)
ROC	1970–1975	9.8	1.8	(19)	0.1	(1)	0.3	(3)	3.4	(35)	4.2	(43)
	1975–1980	11.2	1.7	(16)	1.1	(10)	0.2	(2)	3.4	(30)	4.8	(43)
	1980–1985	7.9	1.2	(15)	0.2	(3)	0.3	(3)	2.6	(33)	3.5	(45)
	1985–1990	9.6	1.0	(10)	0.8	(8)	0.3	(3)	2.4	(25)	5.1	(53)
	1990–1995	7.6	1.0	(13)	0.6	(8)	0.3	(3)	2.4	(32)	3.3	(44)
	1995–2000	6.0	0.3	(4)	0.6	(10)	0.6	(9)	2.0	(34)	2.6	(42)
	2000–2005	4.1	0.1	(3)	0.9	(21)	0.2	(6)	1.2	(29)	1.7	(42)
	2005–2010	4.2	0.2	(5)	0.9	(22)	0.0	(1)	1.0	(24)	2.0	(48)
	2010–2015	2.9	1.0	(36)	0.6	(21)	0.1	(2)	0.7	(25)	0.5	(16)
	2015–2023	3.0	−0.1	(−4)	0.5	(16)	0.1	(2)	1.1	(37)	1.5	(49)
	1970–2023	6.4	0.8	(12)	0.6	(10)	0.2	(3)	2.0	(31)	2.8	(44)
Hong Kong	1970–1975	6.5	2.0	(30)	0.1	(2)	0.2	(2)	2.8	(43)	1.4	(22)
	1975–1980	11.3	2.0	(18)	0.7	(7)	0.2	(2)	3.6	(32)	4.8	(42)
	1980–1985	5.4	0.9	(16)	0.6	(11)	0.3	(5)	3.0	(57)	0.6	(11)
	1985–1990	8.0	0.2	(2)	1.0	(13)	0.3	(4)	2.4	(30)	4.1	(51)
	1990–1995	5.9	0.6	(10)	0.9	(15)	0.4	(6)	2.7	(45)	1.4	(24)
	1995–2000	2.8	1.5	(52)	0.5	(16)	0.6	(22)	1.9	(69)	−1.6	(−60)
	2000–2005	4.1	0.5	(13)	0.3	(6)	0.4	(9)	1.0	(25)	1.9	(47)
	2005–2010	3.8	0.2	(5)	0.3	(7)	0.4	(10)	0.9	(24)	2.1	(55)
	2010–2015	2.9	0.3	(11)	0.6	(21)	0.3	(12)	0.6	(19)	1.0	(36)
	2015–2023	0.8	−0.4	(−51)	0.4	(52)	0.1	(14)	−0.1	(−8)	0.7	(93)
	1970–2023	4.9	0.7	(14)	0.5	(11)	0.3	(6)	1.8	(36)	1.6	(33)
Indonesia	1970–1975	8.3	1.4	(17)	0.8	(9)	0.0	(0)	4.1	(50)	2.0	(24)
	1975–1980	7.8	1.4	(18)	0.5	(7)	0.1	(1)	4.2	(54)	1.5	(20)
	1980–1985	4.7	1.4	(30)	0.4	(9)	0.1	(2)	2.7	(59)	0.0	(0)
	1985–1990	7.5	0.9	(12)	1.2	(16)	0.2	(2)	2.9	(39)	2.3	(31)
	1990–1995	7.5	0.5	(7)	2.4	(32)	0.2	(3)	3.5	(47)	0.9	(12)
	1995–2000	0.7	1.1	(156)	1.0	(131)	0.1	(17)	3.5	(480)	−5.0	(−684)
	2000–2005	4.6	0.5	(11)	1.4	(31)	0.2	(4)	2.1	(46)	0.4	(8)
	2005–2010	5.6	1.1	(20)	0.6	(11)	0.1	(2)	3.1	(56)	0.6	(11)
	2010–2015	5.4	0.5	(10)	2.1	(40)	0.1	(2)	3.4	(62)	−0.8	(−14)
	2015–2023	3.9	0.7	(18)	0.5	(14)	0.1	(2)	2.7	(68)	−0.1	(−2)
	1970–2023	5.5	0.9	(17)	1.1	(20)	0.1	(2)	3.2	(58)	0.2	(3)
Bangladesh	1970–1975	−4.2	0.7	(−18)	0.0	(−1)	0.0	(0)	−0.5	(11)	−4.5	(107)
	1975–1980	4.2	1.5	(35)	0.8	(20)	0.0	(1)	0.9	(21)	1.0	(24)
	1980–1985	3.3	1.3	(39)	0.4	(13)	0.1	(2)	2.2	(66)	−0.7	(−20)
	1985–1990	4.7	1.3	(28)	0.4	(9)	0.1	(2)	2.4	(51)	0.5	(10)
	1990–1995	3.9	1.2	(31)	0.5	(13)	0.1	(2)	2.7	(70)	−0.6	(−16)
	1995–2000	4.3	0.5	(12)	0.1	(3)	0.2	(4)	3.7	(85)	−0.1	(−3)
	2000–2005	6.2	1.2	(19)	0.4	(6)	0.5	(7)	4.0	(65)	0.2	(3)
	2005–2010	7.2	0.9	(12)	0.3	(4)	0.7	(10)	4.5	(62)	0.9	(12)
	2010–2015	7.3	0.9	(13)	0.8	(11)	0.5	(7)	5.0	(69)	0.1	(1)
	2015–2023	6.2	0.4	(6)	0.3	(4)	0.3	(5)	5.4	(88)	−0.2	(−3)
	1970–2023	4.4	1.0	(22)	0.4	(9)	0.2	(5)	3.2	(72)	−0.3	(−8)
Brunei	1970–1975	5.1	0.5	(10)	0.3	(5)	0.0	(0)	6.0	(117)	−1.7	(−33)
	1975–1980	11.9	0.8	(7)	0.3	(3)	0.2	(1)	1.3	(11)	9.4	(79)
	1980–1985	−4.1	0.4	(−10)	0.2	(−6)	0.0	(−1)	−2.9	(72)	−1.8	(45)
	1985–1990	−2.8	1.0	(−36)	0.5	(−17)	0.2	(−5)	0.2	(−8)	−4.6	(166)
	1990–1995	2.3	0.8	(35)	0.2	(10)	0.2	(10)	3.4	(145)	−2.3	(−100)
	1995–2000	4.0	0.6	(16)	0.1	(2)	0.1	(3)	1.2	(31)	1.9	(49)
	2000–2005	0.9	0.5	(61)	0.2	(22)	0.1	(7)	1.3	(150)	−1.3	(−140)
	2005–2010	−0.2	0.4	(−252)	0.1	(−88)	0.1	(−89)	1.1	(−703)	−1.9	(1232)
	2010–2015	0.3	0.3	(108)	−0.1	(−26)	0.1	(42)	0.5	(178)	−0.5	(−201)
	2015–2023	0.7	0.4	(57)	0.1	(15)	0.0	(4)	0.1	(16)	0.1	(9)
	1970–2023	1.8	0.6	(32)	0.2	(11)	0.1	(6)	1.2	(66)	−0.3	(−15)
China	1970–1975	4.2	1.6	(39)	0.4	(10)	0.0	(1)	2.8	(68)	−0.7	(−18)
	1975–1980	4.9	1.6	(33)	0.3	(5)	0.0	(1)	2.6	(52)	0.5	(9)
	1980–1985	8.3	1.9	(23)	0.5	(6)	0.0	(1)	2.8	(33)	3.0	(36)
	1985–1990	6.2	1.3	(21)	0.4	(7)	0.1	(1)	3.3	(54)	1.0	(17)
	1990–1995	10.0	0.5	(5)	1.0	(10)	0.1	(1)	3.5	(35)	4.9	(49)
	1995–2000	7.5	0.9	(12)	0.4	(5)	0.2	(3)	4.2	(56)	1.7	(23)
	2000–2005	8.2	0.9	(11)	0.8	(9)	0.7	(9)	4.9	(60)	1.0	(12)
	2005–2010	11.0	−0.1	(−1)	0.9	(8)	0.5	(4)	5.8	(53)	3.9	(36)
	2010–2015	7.0	−0.4	(−6)	0.7	(9)	0.5	(7)	4.8	(68)	1.5	(22)
	2015–2023	5.1	−0.1	(−3)	−0.3	(−6)	0.6	(11)	3.3	(65)	1.7	(33)
	1970–2023	7.1	0.8	(11)	0.5	(6)	0.3	(4)	3.8	(53)	1.8	(26)
Fiji	1970–1975	5.6	1.8	(32)	0.9	(16)	0.0	(0)	2.5	(45)	0.4	(8)
	1975–1980	3.7	1.5	(42)	1.4	(37)	0.0	(1)	2.7	(72)	−1.9	(−52)
	1980–1985	0.7	1.2	(173)	1.1	(149)	0.1	(9)	1.5	(213)	−3.1	(−445)
	1985–1990	3.7	1.3	(35)	1.4	(37)	0.2	(5)	0.9	(23)	0.0	(1)
	1990–1995	2.6	1.1	(44)	1.4	(53)	0.1	(3)	1.2	(44)	−1.2	(−44)
	1995–2000	2.0	0.7	(34)	0.7	(34)	0.0	(1)	0.7	(35)	−0.1	(−5)
	2000–2005	2.0	0.2	(12)	0.5	(27)	0.1	(4)	0.7	(37)	0.4	(20)
	2005–2010	0.7	0.8	(114)	0.4	(52)	0.1	(11)	−0.8	(−112)	0.2	(35)
	2010–2015	3.7	0.5	(13)	0.1	(2)	0.2	(5)	0.2	(5)	2.8	(75)
	2015–2023	1.6	0.7	(46)	0.2	(12)	0.2	(11)	0.3	(22)	0.1	(9)
	1970–2023	2.6	1.0	(38)	0.8	(29)	0.1	(4)	1.0	(37)	−0.2	(−8)
India	1970–1975	2.8	1.8	(64)	0.3	(11)	0.1	(2)	0.8	(27)	−0.1	(−4)
	1975–1980	3.1	1.9	(62)	0.5	(17)	0.1	(2)	1.1	(36)	−0.5	(−17)
	1980–1985	5.0	1.6	(31)	0.8	(15)	0.1	(2)	1.1	(23)	1.4	(28)
	1985–1990	5.8	1.4	(25)	0.9	(15)	0.2	(4)	1.3	(22)	1.9	(34)
	1990–1995	5.0	1.3	(27)	0.4	(9)	0.2	(5)	1.4	(27)	1.6	(32)
	1995–2000	5.7	1.1	(20)	1.0	(17)	0.3	(6)	1.6	(28)	1.7	(30)
	2000–2005	6.5	1.3	(20)	0.6	(9)	0.3	(5)	1.9	(30)	2.4	(37)
	2005–2010	7.8	0.5	(7)	1.2	(15)	0.5	(7)	3.1	(40)	2.5	(32)
	2010–2015	6.1	0.7	(11)	0.8	(12)	0.5	(8)	2.6	(42)	1.6	(26)
	2015–2023	5.5	0.5	(9)	0.3	(6)	0.4	(7)	2.0	(36)	2.3	(42)
	1970–2023	5.3	1.2	(22)	0.7	(12)	0.3	(5)	1.7	(32)	1.5	(28)
Iran	1970–1975	9.5	0.6	(6)	0.6	(6)	0.1	(1)	3.0	(31)	5.3	(56)
	1975–1980	−2.9	0.9	(−30)	0.1	(−3)	0.0	(0)	1.7	(−60)	−5.5	(192)
	1980–1985	3.8	0.9	(24)	0.1	(3)	0.1	(1)	1.2	(30)	1.6	(42)
	1985–1990	1.3	1.0	(73)	0.7	(50)	0.0	(3)	1.2	(88)	−1.6	(−115)
	1990–1995	3.7	0.5	(15)	0.5	(14)	0.1	(4)	2.9	(79)	−0.4	(−11)
	1995–2000	4.4	0.8	(18)	0.3	(7)	0.1	(2)	1.7	(40)	1.4	(33)
	2000–2005	7.4	0.8	(10)	0.4	(6)	0.2	(3)	3.2	(43)	2.8	(38)
	2005–2010	5.5	−0.2	(−3)	0.4	(6)	0.1	(2)	2.3	(41)	3.0	(53)
	2010–2015	−0.1	0.3	(−494)	0.3	(−623)	0.1	(−151)	1.6	(−2835)	−2.3	(4203)
	2015–2023	3.5	0.2	(7)	0.1	(3)	0.0	(1)	1.2	(33)	2.0	(56)
	1970–2023	3.6	0.6	(16)	0.3	(9)	0.1	(2)	1.9	(54)	0.7	(19)

		Output	Labor				Capital				TFP	
			Hours Worked		Labor Quality		ICT		Non–ICT			
Japan	1970–1975	4.4	−0.4	(−10)	1.0	(23)	0.2	(5)	2.7	(61)	0.9	(20)
	1975–1980	4.7	0.7	(14)	0.8	(18)	0.2	(4)	1.5	(32)	1.5	(32)
	1980–1985	4.3	0.5	(11)	0.6	(15)	0.4	(9)	1.4	(33)	1.4	(33)
	1985–1990	4.9	0.4	(8)	0.6	(12)	0.5	(10)	1.6	(32)	1.8	(38)
	1990–1995	1.3	−0.2	(−18)	0.4	(32)	0.2	(19)	1.0	(73)	−0.1	(−4)
	1995–2000	1.0	−0.6	(−54)	0.4	(40)	0.3	(33)	0.5	(44)	0.4	(37)
	2000–2005	1.2	−0.3	(−28)	0.5	(40)	0.2	(20)	0.1	(12)	0.7	(56)
	2005–2010	0.0	−0.4	(829)	0.4	(−880)	0.1	(−310)	0.1	(−157)	−0.3	(617)
	2010–2015	1.0	0.0	(−2)	0.2	(18)	0.1	(11)	−0.1	(−12)	0.9	(85)
	2015–2023	0.4	0.2	(46)	0.2	(53)	0.1	(20)	0.1	(17)	−0.2	(−35)
	1970–2023	2.2	0.0	(−1)	0.5	(23)	0.2	(11)	0.8	(38)	0.7	(30)
Lao PDR	1970–1975	4.1	1.0	(24)	0.1	(3)	0.0	(0)	1.8	(44)	1.2	(29)
	1975–1980	1.6	0.1	(9)	0.2	(9)	0.0	(0)	1.3	(78)	0.1	(4)
	1980–1985	6.6	0.5	(8)	0.2	(3)	0.1	(1)	2.5	(39)	3.3	(50)
	1985–1990	2.8	1.7	(62)	0.1	(5)	0.1	(2)	2.6	(94)	−1.8	(−63)
	1990–1995	4.8	1.6	(34)	0.1	(3)	0.2	(3)	3.0	(62)	−0.1	(−3)
	1995–2000	6.5	1.1	(17)	0.5	(8)	0.1	(1)	3.8	(58)	1.0	(16)
	2000–2005	4.9	0.9	(19)	0.4	(8)	0.2	(3)	2.0	(40)	1.5	(30)
	2005–2010	5.5	0.9	(17)	0.8	(14)	0.2	(3)	2.2	(39)	1.5	(27)
	2010–2015	7.6	0.6	(9)	0.6	(8)	0.1	(1)	4.1	(54)	2.2	(28)
	2015–2023	3.7	0.7	(19)	0.0	(0)	0.0	(1)	3.4	(92)	−0.5	(−13)
	1970–2023	4.7	0.9	(19)	0.3	(6)	0.1	(2)	2.7	(57)	0.8	(16)
Maldives	1970–1975	1.1	1.2	(109)	0.1	(11)	0.0	(1)	1.0	(93)	−1.3	(−114)
	1975–1980	5.6	1.8	(33)	0.5	(9)	0.0	(1)	2.7	(49)	0.5	(9)
	1980–1985	9.5	1.8	(19)	0.5	(5)	0.1	(1)	6.4	(67)	0.7	(8)
	1985–1990	10.0	1.3	(13)	0.5	(5)	0.1	(1)	5.2	(52)	2.9	(29)
	1990–1995	6.5	1.8	(27)	0.9	(14)	0.1	(1)	5.7	(87)	−1.9	(−30)
	1995–2000	6.5	1.7	(26)	0.9	(14)	0.1	(2)	5.2	(80)	−1.5	(−23)
	2000–2005	3.9	2.0	(52)	0.2	(4)	0.2	(5)	2.9	(74)	−1.4	(−35)
	2005–2010	7.4	2.5	(34)	1.1	(15)	0.2	(3)	5.1	(68)	−1.5	(−20)
	2010–2015	5.7	0.9	(16)	0.1	(2)	0.2	(4)	3.9	(68)	0.5	(10)
	2015–2023	4.3	1.4	(32)	0.2	(4)	0.0	(0)	2.8	(65)	0.0	(−1)
	1970–2023	6.0	1.6	(27)	0.5	(8)	0.1	(2)	4.0	(67)	−0.3	(−5)
Myanmar	1970–1975	3.6	1.1	(32)	−0.1	(−3)	0.0	(0)	2.1	(59)	0.4	(10)
	1975–1980	7.1	1.3	(18)	0.7	(9)	0.1	(2)	4.8	(68)	0.2	(2)
	1980–1985	4.8	1.2	(26)	0.6	(12)	0.1	(2)	5.1	(105)	−2.1	(−44)
	1985–1990	0.5	1.4	(293)	0.7	(154)	0.0	(8)	0.9	(190)	−2.6	(−546)
	1990–1995	4.2	1.3	(30)	0.2	(6)	0.1	(1)	2.0	(48)	0.6	(15)
	1995–2000	7.8	1.6	(21)	0.5	(7)	0.2	(3)	4.0	(51)	1.4	(19)
	2000–2005	5.6	1.1	(20)	0.7	(13)	0.1	(2)	4.7	(84)	−1.0	(−18)
	2005–2010	4.7	0.7	(15)	0.7	(15)	0.1	(2)	3.1	(66)	0.1	(2)
	2010–2015	6.1	0.6	(10)	0.6	(10)	0.2	(3)	5.4	(89)	−0.7	(−12)
	2015–2023	−0.8	−1.6	(201)	0.5	(−59)	0.0	(−2)	1.8	(−225)	−1.4	(185)
	1970–2023	4.1	0.7	(18)	0.5	(13)	0.1	(2)	3.3	(81)	−0.6	(−14)
Pakistan	1970–1975	3.7	1.2	(33)	0.7	(19)	0.0	(1)	1.7	(45)	0.0	(1)
	1975–1980	5.7	1.7	(30)	1.0	(17)	0.0	(0)	2.5	(44)	0.5	(8)
	1980–1985	6.0	1.4	(24)	0.1	(2)	0.0	(1)	2.4	(41)	1.9	(32)
	1985–1990	7.8	1.4	(18)	1.1	(14)	0.1	(1)	2.9	(37)	2.4	(30)
	1990–1995	6.6	0.9	(14)	0.8	(12)	0.1	(1)	3.0	(46)	1.8	(28)
	1995–2000	6.0	0.9	(15)	0.3	(5)	0.0	(0)	3.0	(51)	1.7	(29)
	2000–2005	5.1	0.9	(17)	0.5	(11)	0.2	(3)	2.6	(50)	1.0	(20)
	2005–2010	3.4	1.1	(32)	0.1	(4)	0.3	(8)	2.7	(78)	−0.7	(−21)
	2010–2015	3.4	0.7	(19)	0.5	(16)	0.0	(1)	1.1	(32)	1.1	(32)
	2015–2023	3.6	0.9	(24)	0.4	(10)	0.1	(3)	1.6	(44)	0.7	(19)
	1970–2023	5.0	1.1	(22)	0.5	(11)	0.1	(2)	2.3	(46)	1.0	(20)
Singapore	1970–1975	8.8	2.6	(29)	0.5	(6)	0.3	(3)	4.8	(54)	0.7	(8)
	1975–1980	8.6	2.3	(27)	0.6	(7)	0.3	(3)	3.4	(40)	2.0	(23)
	1980–1985	6.5	1.4	(21)	1.3	(20)	0.6	(9)	4.3	(66)	−1.1	(−16)
	1985–1990	7.7	2.1	(28)	0.7	(9)	0.8	(10)	2.5	(33)	1.6	(20)
	1990–1995	8.6	2.1	(24)	1.7	(19)	0.7	(8)	3.2	(38)	0.9	(11)
	1995–2000	6.2	1.1	(18)	1.0	(16)	0.6	(9)	3.0	(48)	0.5	(9)
	2000–2005	4.9	0.5	(10)	1.0	(21)	0.5	(10)	1.5	(31)	1.3	(27)
	2005–2010	7.2	2.4	(33)	0.4	(6)	0.4	(6)	1.9	(26)	2.1	(28)
	2010–2015	4.7	1.1	(24)	0.6	(12)	0.8	(17)	2.0	(42)	0.3	(6)
	2015–2023	3.0	0.1	(5)	0.6	(21)	0.6	(19)	1.0	(33)	0.7	(22)
	1970–2023	6.4	1.5	(23)	0.8	(13)	0.6	(9)	2.7	(42)	0.9	(14)

		Output	Labor				Capital				TFP	
			Hours Worked		Labor Quality		ICT		Non–ICT			
Korea	1970–1975	9.5	1.6	(16)	0.2	(3)	0.1	(1)	4.1	(43)	3.5	(36)
	1975–1980	7.8	1.3	(17)	0.5	(7)	0.4	(5)	6.0	(78)	−0.5	(−6)
	1980–1985	9.1	1.1	(12)	1.7	(19)	0.4	(4)	3.5	(39)	2.3	(25)
	1985–1990	10.0	1.6	(16)	1.4	(14)	0.5	(5)	4.2	(41)	2.3	(23)
	1990–1995	8.4	1.0	(12)	1.6	(19)	0.4	(4)	3.8	(45)	1.6	(19)
	1995–2000	5.7	0.0	(0)	0.7	(12)	0.5	(10)	2.6	(45)	1.9	(33)
	2000–2005	5.0	0.2	(4)	1.2	(25)	0.4	(8)	2.5	(50)	0.6	(12)
	2005–2010	4.4	−0.1	(−3)	1.0	(22)	0.1	(3)	2.1	(48)	1.3	(29)
	2010–2015	3.1	0.6	(21)	0.6	(19)	0.1	(3)	1.6	(51)	0.2	(7)
	2015–2023	2.6	−0.4	(−15)	0.4	(15)	0.1	(4)	1.4	(55)	1.1	(42)
	1970–2023	6.3	0.6	(10)	0.9	(14)	0.3	(5)	3.1	(49)	1.4	(22)
Malaysia	1970–1975	7.4	1.3	(18)	0.4	(5)	0.0	(1)	3.4	(46)	2.3	(31)
	1975–1980	7.7	1.3	(17)	0.8	(10)	0.1	(1)	4.1	(53)	1.4	(19)
	1980–1985	5.0	1.3	(25)	0.8	(17)	0.1	(2)	4.5	(91)	−1.7	(−35)
	1985–1990	6.5	1.3	(20)	0.7	(11)	0.2	(3)	2.3	(36)	2.0	(30)
	1990–1995	9.2	1.0	(11)	1.1	(12)	0.4	(4)	5.7	(62)	1.0	(10)
	1995–2000	5.0	1.3	(26)	0.6	(11)	0.5	(10)	3.3	(66)	−0.6	(−12)
	2000–2005	5.3	0.7	(13)	0.8	(16)	0.8	(15)	1.4	(26)	1.6	(30)
	2005–2010	3.8	1.0	(26)	0.5	(12)	0.6	(14)	1.9	(50)	−0.1	(−2)
	2010–2015	5.2	1.1	(20)	0.4	(8)	0.4	(8)	2.2	(42)	1.1	(21)
	2015–2023	3.7	0.5	(14)	0.6	(17)	0.2	(6)	1.7	(46)	0.6	(15)
	1970–2023	5.8	1.0	(18)	0.7	(12)	0.3	(6)	3.0	(52)	0.7	(13)
Mongolia	1970–1975	6.5	0.5	(8)	2.4	(37)	0.1	(1)	3.0	(46)	0.5	(8)
	1975–1980	5.4	0.8	(15)	0.6	(11)	0.1	(2)	4.5	(83)	−0.6	(−12)
	1980–1985	6.6	0.8	(12)	0.5	(7)	0.2	(2)	5.1	(78)	0.1	(1)
	1985–1990	3.8	1.4	(36)	0.2	(6)	0.1	(2)	2.9	(75)	−0.7	(−20)
	1990–1995	−1.8	−0.2	(12)	−1.2	(66)	0.0	(−2)	−0.1	(4)	−0.4	(20)
	1995–2000	3.6	−0.1	(−2)	0.1	(3)	0.1	(3)	−0.3	(−8)	3.7	(104)
	2000–2005	6.3	0.5	(8)	1.0	(16)	0.3	(5)	1.3	(21)	3.2	(50)
	2005–2010	6.4	0.0	(0)	0.2	(4)	0.4	(6)	6.8	(106)	−1.0	(−16)
	2010–2015	9.8	1.1	(11)	1.0	(11)	0.0	(0)	8.1	(82)	−0.4	(−5)
	2015–2023	3.6	0.4	(10)	0.6	(16)	0.2	(5)	2.5	(71)	−0.1	(−2)
	1970–2023	4.9	0.5	(10)	0.6	(11)	0.1	(3)	3.3	(67)	0.4	(8)
Nepal	1970–1975	1.0	1.8	(176)	0.3	(26)	0.1	(6)	0.9	(91)	−2.0	(−199)
	1975–1980	2.9	1.9	(64)	0.3	(10)	0.1	(2)	1.8	(61)	−1.1	(−37)
	1980–1985	3.2	1.1	(32)	2.3	(70)	0.1	(2)	2.3	(71)	−2.4	(−75)
	1985–1990	6.0	0.7	(11)	2.0	(34)	0.0	(1)	2.4	(41)	0.8	(14)
	1990–1995	5.0	1.5	(30)	1.9	(37)	0.0	(0)	2.3	(46)	−0.7	(−13)
	1995–2000	4.1	1.3	(32)	2.1	(51)	0.1	(1)	2.0	(50)	−1.4	(−35)
	2000–2005	3.4	0.8	(23)	1.4	(41)	0.0	(1)	1.7	(50)	−0.5	(−15)
	2005–2010	4.3	0.5	(12)	0.8	(18)	0.0	(0)	2.0	(47)	1.0	(23)
	2010–2015	4.1	0.6	(14)	−0.1	(−1)	0.0	(0)	1.6	(40)	1.9	(48)
	2015–2023	3.9	1.2	(31)	0.0	(1)	0.0	(1)	2.9	(75)	−0.3	(−7)
	1970–2023	3.8	1.1	(30)	1.0	(27)	0.0	(1)	2.1	(54)	−0.5	(−12)
Philippines	1970–1975	6.2	1.9	(31)	0.1	(2)	0.2	(2)	3.5	(56)	0.5	(9)
	1975–1980	5.5	1.1	(20)	0.8	(14)	0.1	(2)	4.7	(84)	−1.1	(−20)
	1980–1985	−0.5	1.2	(−237)	0.4	(−80)	0.2	(−49)	3.5	(−710)	−5.7	(1176)
	1985–1990	5.6	1.0	(17)	0.7	(12)	0.1	(1)	1.2	(21)	2.7	(48)
	1990–1995	3.2	1.0	(31)	0.1	(3)	0.1	(3)	2.2	(71)	−0.3	(−8)
	1995–2000	4.5	0.7	(16)	1.0	(22)	0.3	(8)	2.4	(53)	0.1	(2)
	2000–2005	4.7	1.1	(23)	0.2	(3)	0.2	(5)	1.5	(32)	1.7	(37)
	2005–2010	4.9	0.9	(19)	0.5	(10)	0.1	(2)	2.2	(45)	1.2	(24)
	2010–2015	5.8	0.8	(13)	0.4	(7)	0.1	(2)	3.8	(67)	0.6	(11)
	2015–2023	4.3	0.6	(14)	0.3	(7)	0.1	(3)	3.4	(77)	−0.1	(−2)
	1970–2023	4.4	1.0	(23)	0.4	(10)	0.2	(4)	2.9	(65)	0.0	(−1)
Sri Lanka	1970–1975	3.5	0.8	(22)	0.2	(7)	0.0	(1)	1.9	(56)	0.5	(15)
	1975–1980	4.8	0.9	(18)	0.2	(4)	0.0	(1)	2.5	(53)	1.1	(24)
	1980–1985	4.7	0.1	(3)	1.1	(24)	0.1	(2)	2.8	(59)	0.6	(12)
	1985–1990	3.6	1.5	(43)	0.5	(15)	0.0	(0)	0.8	(23)	0.7	(20)
	1990–1995	5.6	0.4	(7)	1.0	(18)	0.0	(1)	0.7	(12)	3.4	(61)
	1995–2000	4.9	2.0	(40)	0.2	(4)	0.1	(2)	1.4	(29)	1.3	(26)
	2000–2005	4.9	0.0	(1)	1.0	(20)	0.2	(4)	1.8	(37)	1.8	(37)
	2005–2010	6.5	0.4	(6)	−0.1	(−2)	0.2	(3)	3.4	(52)	2.7	(41)
	2010–2015	6.5	0.0	(0)	0.3	(5)	0.2	(3)	4.8	(74)	1.2	(18)
	2015–2023	0.6	0.1	(18)	0.4	(67)	0.4	(64)	3.1	(562)	−3.4	(−611)
	1970–2023	4.3	0.6	(14)	0.5	(11)	0.1	(3)	2.4	(55)	0.7	(17)

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		Output	Labor				Capital				TFP	
			Hours Worked		Labor Quality		ICT		Non–ICT			
Thailand	1970–1975	5.5	0.9	(17)	1.4	(26)	0.1	(1)	2.7	(49)	0.4	(8)
	1975–1980	7.4	2.7	(36)	1.1	(15)	0.2	(3)	3.2	(42)	0.3	(4)
	1980–1985	5.3	1.0	(19)	1.9	(35)	0.3	(6)	3.2	(60)	−1.1	(−20)
	1985–1990	9.8	1.5	(15)	1.9	(19)	0.4	(4)	4.0	(41)	2.0	(21)
	1990–1995	8.1	0.7	(9)	1.7	(21)	0.7	(9)	6.3	(77)	−1.3	(−16)
	1995–2000	0.7	−0.2	(−23)	1.9	(266)	0.1	(12)	2.1	(289)	−3.2	(−444)
	2000–2005	5.3	0.1	(1)	1.8	(35)	0.4	(7)	0.6	(11)	2.4	(46)
	2005–2010	3.7	0.5	(13)	0.8	(22)	0.7	(19)	1.4	(37)	0.3	(9)
	2010–2015	2.9	−0.6	(−21)	1.7	(59)	0.5	(18)	1.1	(38)	0.2	(6)
	2015–2023	1.7	−0.2	(−10)	0.6	(35)	0.1	(4)	1.2	(70)	0.0	(1)
	1970–2023	4.9	0.6	(12)	1.4	(29)	0.3	(7)	2.5	(51)	0.0	(0)
Vietnam	1970–1975	4.3	3.1	(71)	0.4	(10)	0.0	(0)	1.2	(27)	−0.3	(−8)
	1975–1980	4.5	1.7	(39)	0.7	(16)	0.0	(0)	3.3	(75)	−1.3	(−30)
	1980–1985	3.0	1.9	(62)	0.3	(10)	0.0	(1)	1.8	(61)	−1.0	(−34)
	1985–1990	3.1	1.5	(49)	0.1	(3)	0.0	(0)	2.5	(81)	−1.0	(−34)
	1990–1995	8.3	1.0	(12)	0.1	(1)	0.0	(0)	3.8	(45)	3.4	(42)
	1995–2000	8.0	1.0	(12)	0.1	(2)	0.1	(1)	6.0	(75)	0.9	(11)
	2000–2005	8.3	0.3	(3)	1.1	(13)	0.1	(1)	6.1	(73)	0.8	(10)
	2005–2010	7.9	1.4	(17)	0.7	(9)	0.1	(1)	7.4	(93)	−1.6	(−21)
	2010–2015	5.1	0.1	(3)	0.4	(8)	0.2	(4)	3.5	(69)	0.9	(17)
	2015–2023	5.9	0.4	(6)	0.8	(13)	0.1	(2)	3.2	(54)	1.5	(25)
	1970–2023	5.9	1.2	(20)	0.5	(8)	0.1	(1)	3.8	(66)	0.3	(5)
APO21	1970–1975	4.9	1.2	(25)	0.3	(6)	0.1	(3)	2.6	(54)	0.6	(13)
	1975–1980	4.4	1.5	(34)	0.4	(10)	0.1	(3)	2.3	(52)	0.1	(2)
	1980–1985	4.7	1.2	(27)	0.5	(11)	0.2	(5)	2.0	(42)	0.7	(15)
	1985–1990	5.8	1.2	(20)	0.7	(12)	0.3	(6)	2.1	(36)	1.6	(27)
	1990–1995	4.3	0.9	(21)	0.6	(13)	0.2	(5)	2.1	(50)	0.5	(11)
	1995–2000	3.3	0.8	(23)	0.6	(17)	0.3	(9)	1.7	(52)	0.0	(0)
	2000–2005	4.4	0.8	(19)	0.7	(15)	0.2	(5)	1.5	(34)	1.2	(28)
	2005–2010	4.4	0.7	(15)	0.7	(15)	0.2	(4)	2.0	(45)	0.9	(20)
	2010–2015	4.1	0.6	(14)	0.8	(19)	0.2	(5)	1.8	(45)	0.7	(18)
	2015–2023	3.7	0.5	(13)	0.4	(10)	0.1	(4)	1.7	(46)	1.0	(27)
	1970–2023	4.4	0.9	(21)	0.5	(12)	0.2	(5)	2.0	(45)	0.7	(17)
East Asia	1970–1975	4.7	1.4	(29)	0.4	(9)	0.2	(4)	2.8	(60)	−0.1	(−1)
	1975–1980	5.2	1.6	(31)	0.3	(6)	0.1	(3)	2.1	(40)	1.1	(20)
	1980–1985	5.8	1.8	(32)	0.5	(9)	0.3	(5)	2.0	(34)	1.2	(21)
	1985–1990	5.9	1.3	(22)	0.5	(8)	0.3	(6)	2.3	(39)	1.5	(26)
	1990–1995	5.3	0.5	(9)	1.0	(19)	0.2	(4)	2.1	(39)	1.6	(29)
	1995–2000	4.5	0.9	(20)	0.4	(9)	0.3	(6)	2.0	(45)	0.9	(20)
	2000–2005	5.2	0.8	(16)	0.8	(15)	0.3	(5)	2.4	(45)	0.9	(18)
	2005–2010	7.0	−0.1	(−2)	0.9	(12)	0.2	(3)	3.2	(46)	2.9	(41)
	2010–2015	5.3	−0.3	(−7)	0.7	(13)	0.3	(5)	3.1	(59)	1.6	(30)
	2015–2023	4.1	−0.1	(−3)	−0.2	(−5)	0.4	(9)	2.5	(61)	1.6	(39)
	1970–2023	5.2	0.7	(14)	0.5	(9)	0.3	(5)	2.5	(47)	1.3	(25)
ASEAN	1970–1975	6.5	1.5	(23)	0.5	(8)	0.1	(1)	3.7	(56)	0.8	(12)
	1975–1980	7.0	1.5	(21)	0.4	(6)	0.1	(2)	3.8	(55)	1.2	(17)
	1980–1985	3.8	1.3	(33)	0.5	(13)	0.2	(5)	3.1	(81)	−1.3	(−33)
	1985–1990	7.1	1.1	(16)	0.7	(10)	0.2	(3)	2.7	(39)	2.3	(32)
	1990–1995	7.3	0.8	(11)	1.0	(13)	0.3	(5)	4.1	(56)	1.1	(15)
	1995–2000	2.7	0.9	(32)	0.8	(29)	0.2	(7)	3.1	(116)	−2.3	(−84)
	2000–2005	5.2	0.5	(10)	1.1	(20)	0.3	(6)	1.9	(36)	1.5	(28)
	2005–2010	5.3	1.0	(19)	0.6	(12)	0.3	(6)	2.8	(53)	0.5	(10)
	2010–2015	4.9	0.4	(8)	1.1	(23)	0.3	(6)	2.8	(57)	0.3	(5)
	2015–2023	3.7	0.4	(10)	0.5	(14)	0.2	(4)	2.4	(64)	0.3	(7)
	1970–2023	5.3	0.9	(17)	0.7	(14)	0.2	(4)	3.0	(57)	0.4	(8)
CLMV	1970–1975	2.8	1.9	(70)	0.4	(15)	0.0	(0)	1.5	(54)	−1.1	(−39)
	1975–1980	3.7	1.2	(33)	0.8	(21)	0.0	(1)	3.1	(82)	−1.3	(−36)
	1980–1985	3.5	1.6	(45)	0.4	(12)	0.0	(1)	2.1	(62)	−0.7	(−20)
	1985–1990	2.9	1.5	(52)	0.2	(9)	0.0	(1)	2.2	(77)	−1.1	(−38)
	1990–1995	7.1	1.2	(16)	0.1	(1)	0.0	(0)	3.3	(47)	2.5	(35)
	1995–2000	7.9	1.2	(15)	0.2	(3)	0.1	(1)	5.4	(68)	1.1	(14)
	2000–2005	7.8	0.5	(7)	0.9	(12)	0.1	(1)	5.5	(70)	0.8	(10)
	2005–2010	7.4	1.2	(16)	0.7	(10)	0.1	(1)	6.5	(88)	−1.1	(−15)
	2010–2015	5.5	0.3	(6)	0.5	(8)	0.2	(3)	3.8	(70)	0.7	(12)
	2015–2023	5.1	0.1	(2)	0.6	(12)	0.1	(2)	3.1	(62)	1.1	(21)
	1970–2023	5.3	1.0	(19)	0.5	(9)	0.1	(1)	3.6	(68)	0.1	(3)

		Output	Labor				Capital				TFP	
			Hours Worked		Labor Quality		ICT		Non–ICT			
Turkiye	1970–1975	5.6	0.9	(16)	0.2	(4)	0.1	(2)	5.5	(98)	−1.1	(−20)
	1975–1980	2.3	0.4	(18)	0.4	(15)	0.1	(3)	4.6	(198)	−3.1	(−134)
	1980–1985	4.7	0.5	(10)	0.1	(3)	0.1	(2)	2.7	(56)	1.4	(29)
	1985–1990	5.4	0.8	(16)	0.4	(7)	0.2	(4)	2.9	(54)	1.1	(20)
	1990–1995	3.2	0.4	(13)	0.4	(11)	0.1	(3)	3.1	(98)	−0.8	(−25)
	1995–2000	4.1	−0.2	(−4)	0.6	(14)	0.3	(7)	2.8	(69)	0.5	(13)
	2000–2005	4.8	0.7	(16)	1.0	(20)	0.1	(3)	2.7	(57)	0.2	(4)
	2005–2010	3.1	0.6	(18)	0.5	(16)	0.3	(9)	3.8	(121)	−2.0	(−63)
	2010–2015	6.8	0.9	(13)	0.7	(11)	0.3	(4)	3.2	(47)	1.7	(24)
	2015–2023	4.7	0.4	(9)	0.6	(12)	0.2	(3)	3.2	(68)	0.3	(7)
	1970–2023	4.5	0.6	(12)	0.5	(11)	0.2	(4)	3.4	(77)	−0.2	(−4)
US	1970–1975	2.6	0.5	(19)	0.1	(3)	0.1	(4)	1.3	(49)	0.6	(24)
	1975–1980	3.6	1.6	(44)	0.1	(2)	0.2	(6)	1.1	(29)	0.7	(19)
	1980–1985	3.1	0.8	(25)	0.2	(6)	0.3	(10)	0.7	(23)	1.1	(36)
	1985–1990	3.2	1.2	(39)	0.2	(7)	0.3	(11)	0.9	(28)	0.5	(16)
	1990–1995	2.5	0.7	(26)	0.3	(13)	0.3	(11)	0.6	(22)	0.7	(28)
	1995–2000	4.2	1.3	(30)	0.3	(7)	0.7	(15)	1.0	(25)	0.9	(22)
	2000–2005	2.5	0.0	(−1)	0.2	(8)	0.4	(15)	0.8	(33)	1.1	(45)
	2005–2010	1.0	−0.4	(−44)	0.3	(33)	0.3	(33)	0.5	(56)	0.2	(22)
	2010–2015	2.2	1.0	(46)	0.2	(10)	0.3	(12)	0.4	(18)	0.3	(14)
	2015–2023	2.3	0.5	(24)	0.2	(9)	0.4	(16)	0.6	(27)	0.6	(25)
	1970–2023	2.7	0.7	(26)	0.2	(8)	0.3	(12)	0.8	(29)	0.7	(25)
Asia27	1970–1975	4.8	1.4	(28)	0.4	(7)	0.1	(2)	2.7	(56)	0.3	(6)
	1975–1980	4.5	1.5	(34)	0.3	(8)	0.1	(2)	2.3	(52)	0.2	(4)
	1980–1985	5.2	1.5	(29)	0.6	(11)	0.2	(4)	2.1	(40)	0.8	(16)
	1985–1990	5.8	1.2	(21)	0.6	(10)	0.3	(5)	2.3	(39)	1.5	(25)
	1990–1995	5.4	0.7	(13)	0.8	(14)	0.2	(3)	2.4	(44)	1.3	(25)
	1995–2000	4.3	0.9	(20)	0.5	(12)	0.3	(6)	2.2	(51)	0.5	(11)
	2000–2005	5.5	0.9	(16)	0.7	(13)	0.3	(5)	2.3	(43)	1.3	(24)
	2005–2010	6.6	0.3	(5)	0.7	(11)	0.2	(4)	3.2	(49)	2.1	(32)
	2010–2015	5.2	0.2	(3)	0.6	(12)	0.3	(5)	3.0	(58)	1.1	(21)
	2015–2023	4.3	0.2	(5)	0.0	(0)	0.3	(7)	2.5	(57)	1.3	(31)
	1970–2023	5.1	0.8	(17)	0.5	(10)	0.2	(4)	2.5	(49)	1.1	(21)
SAARC	1970–1975	2.2	1.6	(75)	0.3	(14)	0.0	(2)	0.9	(42)	−0.7	(−33)
	1975–1980	3.4	1.8	(54)	0.6	(17)	0.1	(2)	1.4	(41)	−0.4	(−13)
	1980–1985	4.8	1.5	(30)	0.7	(14)	0.1	(2)	1.4	(30)	1.2	(24)
	1985–1990	5.6	1.4	(25)	0.9	(15)	0.2	(3)	1.5	(27)	1.6	(29)
	1990–1995	4.9	1.3	(27)	0.5	(10)	0.2	(4)	1.6	(33)	1.3	(27)
	1995–2000	5.5	1.0	(19)	0.8	(14)	0.3	(5)	1.9	(34)	1.5	(28)
	2000–2005	6.3	1.2	(20)	0.6	(9)	0.3	(4)	2.2	(35)	2.0	(32)
	2005–2010	7.2	0.7	(9)	0.9	(13)	0.5	(7)	3.3	(46)	1.8	(25)
	2010–2015	5.9	0.7	(12)	0.7	(13)	0.4	(7)	2.8	(47)	1.2	(21)
	2015–2023	5.2	0.6	(11)	0.3	(6)	0.3	(6)	2.2	(42)	1.8	(34)
	1970–2023	5.1	1.2	(23)	0.6	(12)	0.2	(5)	1.9	(38)	1.2	(23)
ASEAN6	1970–1975	7.1	1.4	(19)	0.7	(10)	0.1	(1)	3.9	(54)	1.1	(16)
	1975–1980	7.4	1.6	(22)	0.5	(7)	0.1	(2)	3.9	(53)	1.2	(17)
	1980–1985	3.9	1.3	(32)	0.7	(17)	0.2	(5)	3.2	(83)	−1.5	(−38)
	1985–1990	7.5	1.1	(15)	1.1	(14)	0.3	(3)	2.8	(37)	2.3	(31)
	1990–1995	7.4	0.7	(9)	1.5	(21)	0.4	(5)	4.2	(57)	0.6	(9)
	1995–2000	2.1	0.8	(36)	1.1	(52)	0.2	(10)	3.0	(141)	−2.9	(−138)
	2000–2005	4.9	0.5	(11)	1.2	(24)	0.3	(7)	1.6	(33)	1.2	(26)
	2005–2010	4.9	0.9	(19)	0.6	(12)	0.3	(7)	2.4	(48)	0.7	(14)
	2010–2015	4.8	0.4	(8)	1.5	(31)	0.3	(7)	2.6	(55)	−0.1	(−2)
	2015–2023	3.4	0.5	(14)	0.5	(15)	0.2	(5)	2.2	(65)	0.0	(1)
	1970–2023	5.2	0.9	(17)	0.9	(17)	0.2	(4)	2.9	(56)	0.3	(5)

Unit: Percentage (average annual growth rate) and percentage points (contributions written in parentheses).
Source: APO Productivity Database 2025.

Table 9.14 TFP and Capital Deepening in Labor Productivity Growth, 1970–2023

		Labor Productivity	Labor Quality		Capital deepening				TFP	
					ICT		Non–ICT			
Afghanistan	1970–1975	0.3	−0.2	(−48)	0.0	(0)	1.0	(309)	−0.5	(−161)
	1975–1980	0.4	−0.2	(−64)	0.0	(0)	5.5	(1561)	−4.9	(−1397)
	1980–1985	5.8	−0.4	(−8)	0.0	(0)	4.0	(69)	2.2	(38)
	1985–1990	−5.0	−0.3	(7)	0.0	(0)	0.4	(−8)	−5.0	(101)
	1990–1995	−13.7	−0.4	(3)	0.0	(0)	−1.6	(12)	−11.6	(85)
	1995–2000	−8.3	−0.4	(4)	0.0	(0)	0.3	(−3)	−8.2	(99)
	2000–2005	8.4	−0.3	(−4)	0.0	(0)	−0.3	(−4)	9.0	(108)
	2005–2010	5.2	1.0	(19)	0.0	(0)	1.4	(27)	2.7	(53)
	2010–2015	4.5	0.5	(11)	0.0	(0)	2.6	(58)	1.4	(31)
	2015–2023	−4.3	−0.1	(1)	0.0	(0)	0.9	(−21)	−5.1	(120)
	1970–2023	−0.9	−0.1	(10)	0.0	(−1)	1.4	(−159)	−2.2	(250)
Bhutan	1970–1975	0.7	0.5	(67)	0.0	(0)	1.1	(148)	−0.8	(−116)
	1975–1980	4.5	0.1	(2)	0.0	(0)	0.6	(14)	3.8	(83)
	1980–1985	3.3	0.3	(10)	0.0	(0)	1.6	(49)	1.3	(41)
	1985–1990	5.0	2.0	(40)	0.0	(0)	1.5	(30)	1.5	(30)
	1990–1995	3.6	0.9	(26)	0.2	(6)	2.9	(81)	−0.5	(−13)
	1995–2000	3.6	0.6	(16)	0.7	(20)	1.7	(48)	0.6	(16)
	2000–2005	3.9	0.9	(23)	0.1	(3)	5.7	(145)	−2.8	(−72)
	2005–2010	7.5	1.0	(13)	0.4	(6)	2.5	(33)	3.6	(48)
	2010–2015	6.8	1.2	(18)	0.2	(2)	5.9	(87)	−0.5	(−7)
	2015–2023	3.5	0.8	(24)	0.6	(16)	2.9	(83)	−0.8	(−23)
	1970–2023	4.2	0.8	(20)	0.2	(6)	2.7	(63)	0.5	(11)
Cambodia	1970–1975	−4.7	0.1	(−2)	0.0	(1)	3.2	(−69)	−8.0	(170)
	1975–1980	−2.8	0.1	(−4)	0.0	(0)	3.6	(−130)	−6.5	(234)
	1980–1985	−1.3	0.2	(−11)	0.0	(0)	−1.4	(108)	−0.1	(4)
	1985–1990	3.3	0.4	(11)	0.0	(0)	−2.0	(−62)	4.9	(151)
	1990–1995	−3.2	0.5	(−15)	0.0	(0)	−2.4	(78)	−1.2	(38)
	1995–2000	2.8	0.7	(25)	0.0	(1)	0.5	(17)	1.6	(58)
	2000–2005	5.6	0.5	(8)	0.0	(0)	3.0	(53)	2.1	(38)
	2005–2010	2.6	0.3	(12)	0.0	(1)	3.5	(131)	−1.2	(−44)
	2010–2015	5.3	1.4	(26)	0.1	(1)	4.2	(79)	−0.3	(−6)
	2015–2023	2.5	0.1	(6)	0.0	(2)	4.0	(158)	−1.6	(−65)
	1970–2023	1.1	0.4	(37)	0.0	(1)	1.7	(157)	−1.0	(−95)
ROC	1970–1975	6.4	0.1	(2)	0.2	(3)	1.9	(30)	4.2	(65)
	1975–1980	8.1	1.1	(14)	0.2	(2)	2.0	(24)	4.8	(60)
	1980–1985	5.7	0.2	(4)	0.2	(4)	1.7	(30)	3.5	(62)
	1985–1990	7.8	0.8	(10)	0.2	(3)	1.7	(21)	5.1	(66)
	1990–1995	5.9	0.6	(11)	0.2	(4)	1.8	(30)	3.3	(56)
	1995–2000	5.5	0.6	(11)	0.6	(10)	1.8	(33)	2.6	(46)
	2000–2005	3.9	0.9	(22)	0.2	(6)	1.1	(28)	1.7	(44)
	2005–2010	3.7	0.9	(24)	0.0	(1)	0.8	(21)	2.0	(54)
	2010–2015	0.8	0.6	(78)	0.0	(2)	−0.3	(−39)	0.5	(58)
	2015–2023	3.3	0.5	(15)	0.1	(2)	1.2	(38)	1.5	(46)
	1970–2023	5.0	0.6	(13)	0.2	(4)	1.4	(27)	2.8	(57)
Hong Kong	1970–1975	2.9	0.1	(4)	0.1	(4)	1.3	(43)	1.4	(49)
	1975–1980	7.4	0.7	(10)	0.2	(3)	1.8	(24)	4.8	(64)
	1980–1985	3.6	0.6	(16)	0.3	(7)	2.2	(61)	0.6	(16)
	1985–1990	7.7	1.0	(14)	0.3	(4)	2.2	(29)	4.1	(53)
	1990–1995	4.8	0.9	(19)	0.4	(7)	2.1	(44)	1.4	(30)
	1995–2000	0.0	0.5	(−1046)	0.5	(−1183)	0.6	(−1447)	−1.6	(3776)
	2000–2005	3.1	0.3	(9)	0.3	(10)	0.6	(19)	1.9	(63)
	2005–2010	3.5	0.3	(7)	0.4	(10)	0.8	(22)	2.1	(60)
	2010–2015	2.3	0.6	(27)	0.3	(14)	0.3	(14)	1.0	(46)
	2015–2023	1.5	0.4	(27)	0.1	(9)	0.2	(15)	0.7	(49)
	1970–2023	3.6	0.5	(15)	0.3	(8)	1.2	(32)	1.6	(45)
Indonesia	1970–1975	4.3	0.8	(18)	0.0	(0)	1.6	(37)	2.0	(45)
	1975–1980	3.7	0.5	(15)	0.1	(3)	1.5	(42)	1.5	(41)
	1980–1985	0.6	0.4	(76)	0.1	(10)	0.1	(10)	0.0	(4)
	1985–1990	4.8	1.2	(25)	0.2	(3)	1.2	(24)	2.3	(47)
	1990–1995	6.3	2.4	(39)	0.2	(3)	2.7	(44)	0.9	(14)
	1995–2000	−2.3	1.0	(−42)	0.1	(−4)	1.7	(−73)	−5.0	(218)
	2000–2005	3.3	1.4	(44)	0.2	(5)	1.3	(40)	0.4	(11)
	2005–2010	2.4	0.6	(26)	0.1	(3)	1.1	(45)	0.6	(26)
	2010–2015	4.0	2.1	(53)	0.1	(3)	2.5	(63)	−0.8	(−19)
	2015–2023	2.2	0.5	(24)	0.1	(3)	1.7	(76)	−0.1	(−4)
	1970–2023	2.9	1.1	(37)	0.1	(3)	1.5	(53)	0.2	(6)
Bangladesh	1970–1975	−5.7	0.0	(−1)	0.0	(0)	−1.3	(23)	−4.5	(78)
	1975–1980	0.8	0.8	(102)	0.0	(5)	−1.1	(−129)	1.0	(122)
	1980–1985	0.6	0.4	(70)	0.1	(11)	0.8	(130)	−0.7	(−111)
	1985–1990	2.1	0.4	(20)	0.1	(4)	1.1	(53)	0.5	(23)
	1990–1995	1.4	0.5	(35)	0.1	(5)	1.5	(104)	−0.6	(−44)
	1995–2000	3.2	0.1	(4)	0.1	(5)	3.1	(96)	−0.1	(−5)
	2000–2005	3.5	0.4	(11)	0.4	(12)	2.5	(72)	0.2	(4)
	2005–2010	5.0	0.3	(6)	0.6	(13)	3.2	(64)	0.9	(18)
	2010–2015	4.7	0.8	(17)	0.4	(9)	3.5	(73)	0.1	(2)
	2015–2023	4.9	0.3	(5)	0.2	(5)	4.6	(93)	−0.2	(−4)
	1970–2023	2.2	0.4	(18)	0.2	(10)	1.9	(88)	−0.3	(−15)
Brunei	1970–1975	1.3	0.3	(21)	0.0	(−3)	2.7	(211)	−1.7	(−129)
	1975–1980	5.6	0.3	(5)	0.1	(2)	−4.2	(−76)	9.4	(168)
	1980–1985	−7.1	0.2	(−3)	0.0	(0)	−5.5	(78)	−1.8	(26)
	1985–1990	−8.2	0.5	(−6)	0.1	(−1)	−4.2	(51)	−4.6	(56)
	1990–1995	−1.5	0.2	(−15)	0.2	(−12)	0.4	(−24)	−2.3	(151)
	1995–2000	0.8	0.1	(12)	0.0	(5)	−1.3	(−166)	1.9	(249)
	2000–2005	−1.9	0.2	(−11)	0.0	(−1)	−0.8	(44)	−1.3	(67)
	2005–2010	−1.9	0.1	(−7)	0.1	(−6)	−0.3	(13)	−1.9	(100)
	2010–2015	−1.1	−0.1	(6)	0.1	(−8)	−0.6	(54)	−0.5	(48)
	2015–2023	−0.7	0.1	(−14)	0.0	(−1)	−0.9	(123)	0.1	(−8)
	1970–2023	−1.4	0.2	(−13)	0.1	(−4)	−1.4	(100)	−0.3	(18)
China	1970–1975	1.4	0.4	(31)	0.0	(1)	1.7	(123)	−0.7	(−55)
	1975–1980	2.1	0.3	(13)	0.0	(1)	1.3	(63)	0.5	(23)
	1980–1985	4.8	0.5	(11)	0.0	(1)	1.2	(25)	3.0	(63)
	1985–1990	3.7	0.4	(12)	0.1	(2)	2.2	(59)	1.0	(27)
	1990–1995	9.0	1.0	(11)	0.1	(2)	3.0	(34)	4.9	(54)
	1995–2000	5.5	0.4	(7)	0.2	(4)	3.1	(57)	1.7	(32)
	2000–2005	6.3	0.8	(12)	0.7	(11)	3.9	(62)	1.0	(15)
	2005–2010	11.2	0.9	(8)	0.5	(4)	5.9	(53)	3.9	(35)
	2010–2015	7.9	0.7	(8)	0.5	(7)	5.2	(66)	1.5	(19)
	2015–2023	5.5	−0.3	(−5)	0.6	(10)	3.5	(64)	1.7	(31)
	1970–2023	5.7	0.5	(8)	0.3	(5)	3.1	(55)	1.8	(32)
Fiji	1970–1975	1.8	0.9	(48)	0.0	(−2)	0.6	(30)	0.4	(24)
	1975–1980	0.7	1.4	(202)	0.0	(2)	1.2	(177)	−1.9	(−282)
	1980–1985	−1.5	1.1	(−70)	0.1	(−3)	0.5	(−36)	−3.1	(210)
	1985–1990	1.2	1.4	(110)	0.2	(14)	−0.3	(−27)	0.0	(3)
	1990–1995	0.2	1.4	(835)	0.1	(34)	−0.1	(−79)	−1.2	(−690)
	1995–2000	0.8	0.7	(85)	0.0	(1)	0.2	(26)	−0.1	(−13)
	2000–2005	1.5	0.5	(35)	0.1	(4)	0.5	(34)	0.4	(27)
	2005–2010	−1.2	0.4	(−32)	0.0	(−3)	−1.8	(156)	0.2	(−21)
	2010–2015	2.6	0.1	(2)	0.2	(6)	−0.4	(−15)	2.8	(107)
	2015–2023	0.0	0.2	(3525)	0.1	(2411)	−0.4	(−8711)	0.1	(2875)
	1970–2023	0.6	0.8	(130)	0.1	(12)	0.0	(−6)	−0.2	(−35)
India	1970–1975	0.5	0.3	(68)	0.0	(11)	0.2	(46)	−0.1	(−24)
	1975–1980	0.6	0.5	(94)	0.1	(10)	0.5	(89)	−0.5	(−93)
	1980–1985	2.9	0.8	(27)	0.1	(4)	0.6	(21)	1.4	(49)
	1985–1990	3.8	0.9	(23)	0.2	(6)	0.8	(20)	1.9	(51)
	1990–1995	3.0	0.4	(15)	0.2	(7)	0.8	(27)	1.6	(52)
	1995–2000	4.0	1.0	(24)	0.3	(7)	1.1	(27)	1.7	(42)
	2000–2005	4.5	0.6	(13)	0.3	(6)	1.2	(27)	2.4	(54)
	2005–2010	6.9	1.2	(18)	0.5	(7)	2.7	(39)	2.5	(36)
	2010–2015	4.9	0.8	(15)	0.5	(10)	2.2	(44)	1.6	(31)
	2015–2023	4.7	0.3	(7)	0.4	(8)	1.7	(36)	2.3	(49)
	1970–2023	3.6	0.7	(18)	0.3	(7)	1.2	(33)	1.5	(42)
Iran	1970–1975	7.3	0.6	(8)	0.0	(1)	1.3	(19)	5.3	(73)
	1975–1980	−5.5	0.1	(−1)	0.0	(0)	0.0	(1)	−5.5	(100)
	1980–1985	1.4	0.1	(9)	0.0	(3)	−0.4	(−30)	1.6	(117)
	1985–1990	−1.5	0.7	(−44)	0.0	(−2)	−0.7	(45)	−1.6	(101)
	1990–1995	1.5	0.5	(34)	0.1	(8)	1.3	(85)	−0.4	(−27)
	1995–2000	1.0	0.3	(34)	0.1	(6)	−0.9	(−87)	1.4	(148)
	2000–2005	3.7	0.4	(12)	0.2	(5)	0.3	(9)	2.8	(74)
	2005–2010	6.4	0.4	(6)	0.1	(2)	2.9	(46)	3.0	(46)
	2010–2015	−1.2	0.3	(−29)	0.1	(−6)	0.7	(−60)	−2.3	(195)
	2015–2023	2.4	0.1	(4)	0.0	(1)	0.4	(16)	2.0	(80)
	1970–2023	1.6	0.3	(21)	0.1	(4)	0.5	(31)	0.7	(44)

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		Labor Productivity	Labor Quality		Capital deepening				TFP	
					ICT		Non–ICT			
Japan	1970–1975	5.1	1.0	(20)	0.2	(5)	3.0	(58)	0.9	(17)
	1975–1980	3.6	0.8	(23)	0.2	(4)	1.1	(31)	1.5	(41)
	1980–1985	3.5	0.6	(18)	0.4	(10)	1.1	(31)	1.4	(41)
	1985–1990	4.2	0.6	(14)	0.5	(11)	1.3	(31)	1.8	(44)
	1990–1995	1.8	0.4	(24)	0.3	(15)	1.2	(65)	−0.1	(−3)
	1995–2000	2.0	0.4	(20)	0.4	(19)	0.8	(42)	0.4	(19)
	2000–2005	1.8	0.5	(27)	0.3	(15)	0.4	(21)	0.7	(38)
	2005–2010	0.7	0.4	(64)	0.2	(27)	0.4	(54)	−0.3	(−45)
	2010–2015	1.1	0.2	(17)	0.1	(11)	−0.1	(−10)	0.9	(82)
	2015–2023	0.1	0.2	(287)	0.1	(90)	−0.1	(−85)	−0.2	(−192)
	1970–2023	2.3	0.5	(23)	0.2	(11)	0.9	(38)	0.7	(29)
Lao PDR	1970–1975	2.2	0.1	(6)	0.0	(−1)	0.9	(42)	1.2	(53)
	1975–1980	1.4	0.2	(11)	0.0	(0)	1.2	(84)	0.1	(5)
	1980–1985	5.5	0.2	(3)	0.1	(1)	2.0	(36)	3.3	(60)
	1985–1990	−1.0	0.1	(−12)	0.0	(−4)	0.5	(−51)	−1.8	(167)
	1990–1995	1.2	0.1	(12)	0.1	(11)	1.0	(87)	−0.1	(−10)
	1995–2000	4.1	0.5	(12)	0.1	(2)	2.5	(61)	1.0	(25)
	2000–2005	2.7	0.4	(15)	0.1	(5)	0.7	(25)	1.5	(55)
	2005–2010	3.0	0.8	(26)	0.1	(4)	0.6	(21)	1.5	(49)
	2010–2015	5.8	0.6	(10)	0.1	(1)	3.0	(52)	2.2	(37)
	2015–2023	1.7	0.0	(1)	0.0	(0)	2.2	(127)	−0.5	(−28)
	1970–2023	2.6	0.3	(11)	0.1	(2)	1.5	(58)	0.8	(29)
Maldives	1970–1975	−1.6	0.1	(−8)	0.0	(0)	−0.4	(27)	−1.3	(81)
	1975–1980	1.4	0.5	(35)	0.0	(2)	0.4	(27)	0.5	(36)
	1980–1985	4.2	0.5	(12)	0.1	(1)	2.9	(69)	0.7	(18)
	1985–1990	5.9	0.5	(9)	0.0	(1)	2.4	(41)	2.9	(49)
	1990–1995	0.8	0.9	(120)	0.0	(6)	1.7	(226)	−1.9	(−252)
	1995–2000	1.3	0.9	(70)	0.1	(8)	1.8	(132)	−1.5	(−110)
	2000–2005	−1.5	0.2	(−10)	0.2	(−10)	−0.5	(31)	−1.4	(90)
	2005–2010	1.6	1.1	(69)	0.1	(9)	1.8	(112)	−1.5	(−90)
	2010–2015	3.6	0.1	(4)	0.2	(5)	2.7	(76)	0.5	(15)
	2015–2023	1.0	0.2	(16)	−0.1	(−6)	0.9	(93)	0.0	(−2)
	1970–2023	1.6	0.5	(30)	0.1	(4)	1.4	(83)	−0.3	(−17)
Myanmar	1970–1975	1.3	−0.1	(−7)	0.0	(1)	1.0	(77)	0.4	(29)
	1975–1980	4.4	0.7	(15)	0.1	(3)	3.4	(78)	0.2	(4)
	1980–1985	2.1	0.6	(27)	0.1	(4)	3.6	(171)	−2.1	(−102)
	1985–1990	−2.0	0.7	(−37)	0.0	(−1)	−0.1	(7)	−2.6	(132)
	1990–1995	2.3	0.2	(10)	0.1	(2)	1.4	(59)	0.6	(28)
	1995–2000	5.3	0.5	(10)	0.2	(4)	3.1	(59)	1.4	(27)
	2000–2005	3.5	0.7	(20)	0.1	(2)	3.8	(107)	−1.0	(−29)
	2005–2010	3.3	0.7	(21)	0.1	(3)	2.4	(72)	0.1	(3)
	2010–2015	4.6	0.6	(13)	0.1	(3)	4.6	(99)	−0.7	(−15)
	2015–2023	1.5	0.5	(30)	0.0	(3)	2.5	(161)	−1.4	(−95)
	1970–2023	2.6	0.5	(20)	0.1	(3)	2.5	(99)	−0.6	(−22)
Pakistan	1970–1975	1.3	0.7	(57)	0.0	(1)	0.5	(38)	0.0	(4)
	1975–1980	2.6	1.0	(37)	0.0	(0)	1.2	(45)	0.5	(18)
	1980–1985	3.6	0.1	(4)	0.0	(1)	1.5	(42)	1.9	(53)
	1985–1990	5.2	1.1	(20)	0.1	(1)	1.7	(33)	2.4	(45)
	1990–1995	4.8	0.8	(16)	0.1	(1)	2.2	(45)	1.8	(38)
	1995–2000	3.9	0.3	(8)	0.0	(0)	1.9	(49)	1.7	(44)
	2000–2005	2.6	0.5	(21)	0.1	(5)	0.9	(34)	1.0	(40)
	2005–2010	0.1	0.1	(186)	0.2	(298)	0.5	(623)	−0.7	(−1007)
	2010–2015	1.6	0.5	(33)	0.0	(0)	0.0	(−2)	1.1	(69)
	2015–2023	1.5	0.4	(23)	0.1	(5)	0.4	(28)	0.7	(45)
	1970–2023	2.7	0.5	(20)	0.1	(2)	1.0	(39)	1.0	(38)
Singapore	1970–1975	4.0	0.5	(12)	0.2	(5)	2.6	(66)	0.7	(17)
	1975–1980	3.6	0.6	(18)	0.2	(5)	0.8	(23)	2.0	(55)
	1980–1985	3.2	1.3	(40)	0.5	(17)	2.5	(76)	−1.1	(−32)
	1985–1990	2.8	0.7	(24)	0.6	(22)	0.0	(−1)	1.6	(55)
	1990–1995	3.9	1.7	(43)	0.5	(12)	0.8	(21)	0.9	(24)
	1995–2000	3.7	1.0	(26)	0.5	(13)	1.7	(46)	0.5	(15)
	2000–2005	3.8	1.0	(27)	0.5	(12)	1.0	(25)	1.3	(35)
	2005–2010	1.5	0.4	(27)	0.2	(12)	−1.1	(−73)	2.1	(134)
	2010–2015	2.1	0.6	(26)	0.7	(31)	0.6	(29)	0.3	(14)
	2015–2023	2.6	0.6	(25)	0.5	(21)	0.7	(28)	0.7	(26)
	1970–2023	3.1	0.8	(27)	0.4	(14)	0.9	(31)	0.9	(28)

		Labor Productivity	Labor Quality		Capital deepening				TFP	
					ICT		Non–ICT			
Korea	1970–1975	5.9	0.2	(4)	0.1	(2)	2.1	(36)	3.5	(58)
	1975–1980	4.8	0.5	(11)	0.3	(7)	4.4	(92)	−0.5	(−10)
	1980–1985	6.9	1.7	(25)	0.3	(5)	2.5	(36)	2.3	(33)
	1985–1990	6.9	1.4	(21)	0.5	(7)	2.6	(39)	2.3	(34)
	1990–1995	6.5	1.6	(24)	0.3	(5)	3.0	(45)	1.6	(25)
	1995–2000	5.7	0.7	(12)	0.5	(9)	2.6	(45)	1.9	(33)
	2000–2005	4.5	1.2	(27)	0.4	(9)	2.3	(51)	0.6	(13)
	2005–2010	4.7	1.0	(21)	0.2	(3)	2.3	(48)	1.3	(27)
	2010–2015	1.8	0.6	(31)	0.1	(3)	1.0	(54)	0.2	(11)
	2015–2023	3.4	0.4	(11)	0.1	(3)	1.8	(53)	1.1	(32)
	1970–2023	5.0	0.9	(18)	0.3	(5)	2.4	(48)	1.4	(28)
Malaysia	1970–1975	4.1	0.4	(9)	0.0	(1)	1.4	(34)	2.3	(56)
	1975–1980	4.4	0.8	(18)	0.1	(2)	2.1	(48)	1.4	(33)
	1980–1985	1.7	0.8	(50)	0.1	(5)	2.5	(148)	−1.7	(−104)
	1985–1990	3.1	0.7	(22)	0.2	(5)	0.3	(9)	2.0	(63)
	1990–1995	6.5	1.1	(17)	0.3	(5)	4.0	(63)	1.0	(15)
	1995–2000	1.1	0.6	(49)	0.4	(34)	0.8	(70)	−0.6	(−53)
	2000–2005	3.2	0.8	(26)	0.7	(22)	0.1	(2)	1.6	(50)
	2005–2010	1.0	0.5	(45)	0.4	(42)	0.2	(20)	−0.1	(−7)
	2010–2015	2.3	0.4	(18)	0.3	(14)	0.5	(21)	1.1	(48)
	2015–2023	2.3	0.6	(28)	0.2	(8)	0.9	(39)	0.6	(25)
	1970–2023	2.9	0.7	(23)	0.3	(9)	1.3	(43)	0.7	(25)
Mongolia	1970–1975	5.1	2.4	(48)	0.1	(1)	2.0	(40)	0.5	(10)
	1975–1980	3.1	0.6	(19)	0.1	(4)	3.1	(97)	−0.6	(−20)
	1980–1985	4.0	0.5	(12)	0.1	(4)	3.3	(83)	0.1	(2)
	1985–1990	−0.7	0.2	(−34)	0.0	(−4)	−0.2	(33)	−0.7	(105)
	1990–1995	−1.2	−1.2	(99)	0.0	(−3)	0.3	(−26)	−0.4	(31)
	1995–2000	4.0	0.1	(3)	0.1	(3)	0.0	(1)	3.7	(93)
	2000–2005	4.0	1.0	(25)	0.3	(6)	−0.4	(−10)	3.2	(79)
	2005–2010	6.0	0.2	(4)	0.4	(6)	6.4	(107)	−1.0	(−16)
	2010–2015	6.1	1.0	(17)	0.0	(0)	5.5	(90)	−0.4	(−7)
	2015–2023	2.4	0.6	(24)	0.2	(7)	1.7	(72)	−0.1	(−3)
	1970–2023	3.2	0.6	(17)	0.1	(4)	2.2	(67)	0.4	(12)
Nepal	1970–1975	−2.0	0.3	(−13)	0.1	(−3)	−0.3	(15)	−2.0	(101)
	1975–1980	−0.3	0.3	(−94)	0.0	(−15)	0.4	(−144)	−1.1	(353)
	1980–1985	1.5	2.3	(153)	0.0	(3)	1.6	(109)	−2.4	(−165)
	1985–1990	4.9	2.0	(42)	0.0	(1)	2.0	(41)	0.8	(17)
	1990–1995	2.5	1.9	(75)	0.0	(1)	1.3	(51)	−0.7	(−26)
	1995–2000	2.0	2.1	(105)	0.0	(3)	1.3	(65)	−1.4	(−73)
	2000–2005	2.2	1.4	(63)	0.0	(2)	1.3	(58)	−0.5	(−23)
	2005–2010	3.4	0.8	(22)	0.0	(0)	1.7	(48)	1.0	(29)
	2010–2015	3.1	−0.1	(−2)	0.0	(0)	1.2	(40)	1.9	(62)
	2015–2023	1.8	0.0	(2)	0.0	(1)	2.0	(113)	−0.3	(−16)
	1970–2023	1.9	1.0	(54)	0.0	(2)	1.3	(68)	−0.5	(−24)
Philippines	1970–1975	1.9	0.1	(7)	0.1	(4)	1.2	(61)	0.5	(28)
	1975–1980	2.8	0.8	(28)	0.1	(2)	3.0	(110)	−1.1	(−40)
	1980–1985	−3.5	0.4	(−11)	0.2	(−6)	1.6	(−46)	−5.7	(162)
	1985–1990	3.2	0.7	(22)	0.0	(1)	−0.2	(−7)	2.7	(84)
	1990–1995	0.8	0.1	(10)	0.1	(9)	0.9	(113)	−0.3	(−32)
	1995–2000	2.8	1.0	(35)	0.3	(11)	1.4	(51)	0.1	(3)
	2000–2005	2.0	0.2	(8)	0.2	(8)	−0.1	(−5)	1.7	(89)
	2005–2010	2.7	0.5	(19)	0.1	(2)	0.9	(35)	1.2	(44)
	2010–2015	3.8	0.4	(11)	0.1	(3)	2.6	(69)	0.6	(16)
	2015–2023	2.8	0.3	(11)	0.1	(4)	2.5	(88)	−0.1	(−3)
	1970–2023	2.0	0.4	(22)	0.1	(6)	1.5	(73)	0.0	(−2)
Sri Lanka	1970–1975	1.8	0.2	(13)	0.0	(1)	1.0	(57)	0.5	(28)
	1975–1980	2.9	0.2	(6)	0.0	(1)	1.6	(54)	1.1	(39)
	1980–1985	4.4	1.1	(26)	0.1	(2)	2.7	(60)	0.6	(13)
	1985–1990	0.6	0.5	(98)	0.0	(−6)	−0.7	(−123)	0.7	(131)
	1990–1995	4.8	1.0	(21)	0.0	(1)	0.3	(6)	3.4	(71)
	1995–2000	1.0	0.2	(16)	0.1	(6)	−0.5	(−43)	1.3	(120)
	2000–2005	4.6	1.0	(21)	0.2	(5)	1.6	(35)	1.8	(40)
	2005–2010	5.4	−0.1	(−3)	0.2	(3)	2.7	(50)	2.7	(49)
	2010–2015	6.5	0.3	(5)	0.2	(3)	4.8	(74)	1.2	(18)
	2015–2023	0.3	0.4	(141)	0.3	(134)	2.9	(1119)	−3.4	(−1295)
	1970–2023	3.1	0.5	(16)	0.1	(4)	1.7	(56)	0.7	(24)

		Labor Productivity	Labor Quality		Capital deepening				TFP	
					ICT		Non–ICT			
Thailand	1970–1975	3.0	1.4	(46)	0.0	(2)	1.2	(38)	0.4	(14)
	1975–1980	0.9	1.1	(117)	0.1	(15)	−0.6	(−65)	0.3	(33)
	1980–1985	3.1	1.9	(60)	0.3	(9)	2.0	(65)	−1.1	(−34)
	1985–1990	6.3	1.9	(30)	0.3	(5)	2.1	(33)	2.0	(32)
	1990–1995	6.3	1.7	(28)	0.7	(11)	5.2	(82)	−1.3	(−21)
	1995–2000	1.1	1.9	(170)	0.1	(9)	2.3	(205)	−3.2	(−284)
	2000–2005	5.2	1.8	(35)	0.4	(7)	0.5	(10)	2.4	(47)
	2005–2010	2.4	0.8	(34)	0.6	(27)	0.6	(25)	0.3	(14)
	2010–2015	4.4	1.7	(39)	0.6	(14)	1.9	(43)	0.2	(4)
	2015–2023	2.1	0.6	(28)	0.1	(5)	1.4	(67)	0.0	(1)
	1970–2023	3.4	1.4	(42)	0.3	(9)	1.6	(48)	0.0	(1)
Vietnam	1970–1975	−1.1	0.4	(−38)	0.0	(1)	−1.2	(106)	−0.3	(32)
	1975–1980	1.5	0.7	(48)	0.0	(1)	2.1	(141)	−1.3	(−90)
	1980–1985	−0.5	0.3	(−60)	0.0	(−3)	0.2	(−33)	−1.0	(196)
	1985–1990	0.2	0.1	(47)	0.0	(2)	1.1	(561)	−1.0	(−511)
	1990–1995	6.1	0.1	(2)	0.0	(0)	2.5	(41)	3.4	(57)
	1995–2000	5.4	0.1	(2)	0.0	(1)	4.4	(81)	0.9	(16)
	2000–2005	7.6	1.1	(14)	0.1	(1)	5.7	(74)	0.8	(11)
	2005–2010	4.5	0.7	(16)	0.1	(2)	5.3	(118)	−1.6	(−36)
	2010–2015	4.8	0.4	(8)	0.2	(4)	3.3	(69)	0.9	(19)
	2015–2023	5.1	0.8	(15)	0.1	(3)	2.8	(54)	1.5	(28)
	1970–2023	3.5	0.5	(14)	0.1	(2)	2.6	(76)	0.3	(8)
APO21	1970–1975	2.6	0.5	(21)	0.1	(4)	1.3	(50)	0.6	(24)
	1975–1980	1.6	0.8	(49)	0.1	(5)	0.7	(42)	0.1	(5)
	1980–1985	2.4	0.9	(39)	0.2	(8)	0.5	(22)	0.7	(31)
	1985–1990	3.5	1.3	(36)	0.3	(7)	0.4	(13)	1.6	(44)
	1990–1995	2.5	1.1	(43)	0.1	(6)	0.8	(32)	0.5	(19)
	1995–2000	1.8	1.1	(61)	0.2	(12)	0.5	(27)	0.0	(0)
	2000–2005	2.7	1.4	(51)	0.1	(5)	0.0	(−1)	1.2	(45)
	2005–2010	2.9	1.4	(49)	0.1	(3)	0.5	(17)	0.9	(30)
	2010–2015	2.9	1.6	(57)	0.1	(4)	0.4	(15)	0.7	(25)
	2015–2023	2.7	0.7	(27)	0.1	(4)	0.9	(33)	1.0	(36)
	1970–2023	2.6	1.1	(42)	0.1	(6)	0.6	(24)	0.7	(29)
East Asia	1970–1975	2.3	0.7	(31)	0.1	(6)	1.5	(66)	−0.1	(−3)
	1975–1980	2.5	0.6	(22)	0.1	(4)	0.8	(32)	1.1	(42)
	1980–1985	2.6	0.9	(35)	0.2	(8)	0.3	(10)	1.2	(46)
	1985–1990	3.6	0.8	(24)	0.3	(8)	0.9	(26)	1.5	(42)
	1990–1995	4.4	1.8	(41)	0.1	(3)	0.9	(20)	1.6	(35)
	1995–2000	2.8	0.8	(28)	0.2	(8)	0.9	(32)	0.9	(32)
	2000–2005	3.5	1.5	(44)	0.2	(5)	0.8	(23)	0.9	(27)
	2005–2010	7.3	1.8	(24)	0.2	(2)	2.5	(34)	2.9	(39)
	2010–2015	6.0	1.4	(23)	0.2	(4)	2.8	(46)	1.6	(27)
	2015–2023	4.4	−0.4	(−10)	0.4	(9)	2.9	(65)	1.6	(36)
	1970–2023	4.0	0.9	(23)	0.2	(5)	1.5	(38)	1.3	(34)
ASEAN	1970–1975	2.9	1.3	(44)	0.0	(1)	0.8	(27)	0.8	(28)
	1975–1980	3.2	1.0	(32)	0.1	(2)	0.9	(28)	1.2	(37)
	1980–1985	0.6	1.3	(235)	0.1	(25)	0.4	(64)	−1.3	(−224)
	1985–1990	4.2	1.8	(44)	0.2	(4)	−0.1	(−2)	2.3	(55)
	1990–1995	5.4	2.5	(46)	0.3	(5)	1.5	(28)	1.1	(21)
	1995–2000	0.5	2.0	(404)	0.1	(22)	0.7	(133)	−2.3	(−459)
	2000–2005	3.9	2.7	(71)	0.2	(5)	−0.5	(−13)	1.5	(38)
	2005–2010	2.6	1.7	(67)	0.2	(8)	0.1	(4)	0.5	(21)
	2010–2015	3.9	2.9	(75)	0.2	(5)	0.5	(12)	0.3	(7)
	2015–2023	2.7	1.2	(45)	0.1	(4)	1.1	(41)	0.3	(10)
	1970–2023	3.0	1.8	(62)	0.1	(5)	0.6	(19)	0.4	(15)
CLMV	1970–1975	−0.9	0.8	(−88)	0.0	(2)	−0.6	(67)	−1.1	(119)
	1975–1980	1.4	1.4	(101)	0.0	(1)	1.3	(92)	−1.3	(−94)
	1980–1985	0.3	0.8	(259)	0.0	(11)	0.2	(49)	−0.7	(−219)
	1985–1990	0.0	0.5	(−5631)	0.0	(−153)	0.6	(−6894)	−1.1	(12778)
	1990–1995	4.6	0.2	(4)	0.0	(1)	1.9	(41)	2.5	(55)
	1995–2000	5.1	0.5	(9)	0.1	(1)	3.5	(69)	1.1	(21)
	2000–2005	6.4	2.2	(34)	0.1	(1)	3.4	(53)	0.8	(12)
	2005–2010	4.4	1.7	(39)	0.1	(2)	3.7	(84)	−1.1	(−25)
	2010–2015	4.6	1.1	(24)	0.1	(3)	2.7	(58)	0.7	(15)
	2015–2023	4.8	1.4	(28)	0.1	(2)	2.3	(47)	1.1	(23)
	1970–2023	3.2	1.1	(34)	0.1	(2)	1.9	(60)	0.1	(4)

		Labor Productivity	Labor Quality		Capital deepening				TFP	
					ICT		Non–ICT			
Turkiye	1970–1975	1.9	0.2	(12)	0.1	(5)	2.7	(143)	−1.1	(−60)
	1975–1980	0.6	0.4	(63)	0.1	(9)	3.3	(582)	−3.1	(−553)
	1980–1985	2.5	0.1	(5)	0.1	(4)	0.9	(36)	1.4	(55)
	1985–1990	1.5	0.4	(25)	0.1	(9)	0.0	(−3)	1.1	(68)
	1990–1995	1.4	0.4	(26)	0.1	(5)	1.7	(128)	−0.8	(−59)
	1995–2000	4.7	0.6	(12)	0.3	(7)	3.2	(70)	0.5	(12)
	2000–2005	2.5	1.0	(38)	0.1	(3)	1.3	(50)	0.2	(8)
	2005–2010	1.5	0.5	(33)	0.2	(17)	2.7	(184)	−2.0	(−134)
	2010–2015	4.2	0.7	(17)	0.2	(6)	1.6	(38)	1.7	(39)
	2015–2023	3.2	0.6	(18)	0.1	(4)	2.2	(68)	0.3	(10)
	1970–2023	2.4	0.5	(20)	0.1	(6)	2.0	(81)	−0.2	(−6)
US	1970–1975	1.8	0.1	(4)	0.1	(6)	1.0	(55)	0.6	(35)
	1975–1980	1.1	0.1	(6)	0.2	(18)	0.1	(10)	0.7	(65)
	1980–1985	1.8	0.2	(11)	0.3	(16)	0.2	(13)	1.1	(61)
	1985–1990	1.2	0.2	(19)	0.3	(24)	0.1	(12)	0.5	(44)
	1990–1995	1.4	0.3	(22)	0.2	(16)	0.2	(11)	0.7	(50)
	1995–2000	2.1	0.3	(15)	0.6	(27)	0.3	(13)	0.9	(45)
	2000–2005	2.5	0.2	(8)	0.4	(15)	0.8	(32)	1.1	(44)
	2005–2010	1.7	0.3	(19)	0.3	(20)	0.8	(49)	0.2	(12)
	2010–2015	0.4	0.2	(54)	0.2	(47)	−0.3	(−78)	0.3	(77)
	2015–2023	1.3	0.2	(15)	0.3	(24)	0.2	(16)	0.6	(44)
	1970–2023	1.5	0.2	(14)	0.3	(19)	0.3	(22)	0.7	(44)
Asia27	1970–1975	2.2	0.7	(30)	0.1	(4)	1.2	(54)	0.3	(12)
	1975–1980	1.7	0.6	(38)	0.1	(4)	0.8	(46)	0.2	(11)
	1980–1985	2.4	1.1	(45)	0.2	(7)	0.3	(14)	0.8	(34)
	1985–1990	3.4	1.0	(30)	0.2	(6)	0.7	(21)	1.5	(42)
	1990–1995	4.0	1.5	(38)	0.1	(3)	1.0	(25)	1.3	(34)
	1995–2000	2.6	1.0	(40)	0.2	(8)	0.9	(34)	0.5	(19)
	2000–2005	3.6	1.6	(43)	0.2	(5)	0.6	(18)	1.3	(35)
	2005–2010	5.9	1.5	(26)	0.2	(3)	2.1	(36)	2.1	(36)
	2010–2015	4.9	1.3	(27)	0.2	(5)	2.2	(45)	1.1	(23)
	2015–2023	3.8	0.0	(−1)	0.3	(8)	2.3	(59)	1.3	(34)
	1970–2023	3.5	1.0	(28)	0.2	(5)	1.3	(37)	1.1	(30)
SAARC	1970–1975	−0.1	0.4	(−299)	0.0	(−25)	0.1	(−69)	−0.7	(493)
	1975–1980	0.8	0.8	(107)	0.0	(5)	0.3	(44)	−0.4	(−56)
	1980–1985	2.7	1.0	(36)	0.1	(3)	0.5	(18)	1.2	(43)
	1985–1990	3.5	1.2	(35)	0.2	(5)	0.5	(15)	1.6	(45)
	1990–1995	2.9	0.8	(27)	0.1	(5)	0.7	(23)	1.3	(45)
	1995–2000	3.8	1.3	(33)	0.2	(5)	0.8	(21)	1.5	(40)
	2000–2005	4.2	1.0	(24)	0.2	(5)	0.9	(22)	2.0	(49)
	2005–2010	5.9	1.8	(30)	0.4	(7)	1.9	(33)	1.8	(31)
	2010–2015	4.6	1.3	(29)	0.4	(8)	1.7	(37)	1.2	(26)
	2015–2023	4.2	0.6	(14)	0.3	(7)	1.6	(37)	1.8	(42)
	1970–2023	3.3	1.0	(30)	0.2	(6)	0.9	(29)	1.2	(35)
ASEAN6	1970–1975	3.5	1.7	(48)	0.0	(1)	0.7	(19)	1.1	(31)
	1975–1980	3.0	1.4	(46)	0.1	(3)	0.3	(10)	1.2	(41)
	1980–1985	0.6	1.8	(324)	0.1	(26)	0.1	(12)	−1.5	(−262)
	1985–1990	4.6	2.9	(62)	0.2	(4)	−0.8	(−16)	2.3	(50)
	1990–1995	5.6	3.9	(69)	0.3	(5)	0.8	(15)	0.6	(11)
	1995–2000	0.2	2.8	(1637)	0.1	(58)	0.2	(108)	−2.9	(−1704)
	2000–2005	3.5	3.0	(86)	0.2	(6)	−1.0	(−28)	1.2	(35)
	2005–2010	2.3	1.7	(72)	0.2	(9)	−0.2	(−10)	0.7	(29)
	2010–2015	3.7	3.9	(104)	0.2	(5)	−0.3	(−7)	−0.1	(−3)
	2015–2023	2.2	1.2	(55)	0.1	(5)	0.8	(38)	0.0	(2)
	1970–2023	2.9	2.4	(82)	0.2	(5)	0.1	(4)	0.3	(9)

Unit: Percentage (average annual growth rate) and percentage points (contributions written in parentheses).
Source: APO Productivity Database 2025.

Table 9.15 Industry Value-added Share, 1980–2023

——Shares of industry GDP at current prices by industry

	1980				1990				2000				2010				2023			
	Agriculture	Manufacturing	Service	Others	Agriculture	Manufacturing	Service	Others	Agriculture	Manufacturing	Service	Others	Agriculture	Manufacturing	Service	Others	Agriculture	Manufacturing	Service	Others
Afghanistan	47.5	19.8	18.1	14.6	34.3	19.0	18.2	28.5	55.7	16.1	21.9	6.2	30.7	6.5	56.1	6.7	36.7	8.0	49.0	6.2
Bahrain	0.7	10.9	45.6	42.8	0.7	11.1	58.0	30.2	0.6	11.4	55.1	32.9	0.3	14.7	55.3	29.6	0.3	21.0	54.3	24.4
Bangladesh	31.0	13.8	38.3	7.2	29.3	12.7	40.7	7.6	23.8	14.7	44.7	8.6	17.3	19.0	44.4	9.5	11.4	23.1	52.9	12.7
Bhutan	41.4	2.7	47.5	8.4	34.0	7.6	43.2	15.3	22.7	8.0	43.5	25.8	13.3	8.4	44.1	34.1	15.3	8.2	53.8	22.8
Brunei	0.2	19.4	9.3	71.1	0.9	13.8	35.8	49.5	1.0	18.3	34.3	46.4	0.7	14.6	31.9	52.7	1.2	18.3	38.1	42.5
Cambodia	43.8	10.0	40.7	5.5	49.9	8.6	37.5	4.0	37.8	16.9	39.1	6.2	29.8	21.0	42.4	6.7	18.2	28.1	38.6	15.1
China	26.1	32.5	31.9	9.6	24.4	28.2	38.2	9.2	13.7	29.9	44.3	12.1	9.1	30.6	46.5	13.8	7.2	25.6	56.1	11.2
ROC	7.8	34.4	46.2	11.6	4.2	32.3	55.0	8.4	2.1	25.8	66.3	5.8	1.6	29.1	64.5	4.8	1.6	35.8	58.6	4.0
Fiji	21.0	10.8	58.7	9.5	17.7	10.5	63.8	8.1	16.3	13.3	62.6	7.9	11.7	15.3	67.1	5.9	18.2	12.6	64.3	4.9
Hong Kong	0.8	20.5	70.5	8.2	0.2	14.9	77.3	7.6	0.1	4.8	87.3	7.8	0.1	1.8	93.0	5.2	0.0	1.0	93.5	5.5
India	37.8	15.7	39.1	7.4	31.1	15.4	44.2	9.3	24.8	13.7	51.7	9.8	18.0	14.9	54.4	12.7	17.8	14.3	54.4	13.5
Indonesia	19.2	10.8	46.0	24.1	15.1	16.7	54.9	13.4	12.2	21.2	51.9	14.7	14.2	22.4	42.4	21.1	13.1	19.5	44.8	22.5
Iran	13.1	12.3	49.5	25.2	15.1	18.5	49.0	17.4	11.0	14.6	47.8	26.7	5.9	13.4	46.3	34.4	7.8	20.4	45.3	26.5
Japan	3.5	27.4	57.7	11.4	2.4	26.5	59.4	11.6	1.5	22.2	67.1	9.1	1.2	20.7	71.6	6.5	1.0	20.5	71.6	6.9
Korea	15.7	24.5	48.9	10.9	8.1	27.8	52.1	12.0	4.1	29.4	57.9	8.6	2.2	30.8	60.1	6.9	1.5	27.6	63.0	7.9
Kuwait	0.3	5.6	27.1	67.0	1.6	11.2	49.1	38.1	0.6	6.5	44.2	48.7	0.4	5.3	41.4	52.9	0.4	6.9	44.1	48.5
Lao PDR	65.9	3.7	23.0	7.4	61.2	5.1	24.3	9.4	52.5	10.7	24.6	12.2	31.4	9.8	40.4	18.4	29.8	10.7	31.9	27.5
Malaysia	22.7	19.0	42.0	16.3	15.5	22.9	45.2	16.4	8.6	29.2	46.5	15.7	10.2	23.7	48.9	17.2	7.9	23.3	54.0	14.8
Maldives	19.7	5.0	67.7	7.6	10.0	4.4	80.5	5.1	6.1	5.0	82.4	6.6	6.1	2.5	83.8	7.7	6.0	2.3	82.7	9.0
Mongolia	8.1	16.6	56.7	18.7	9.6	19.4	50.6	20.3	24.7	7.4	52.6	15.3	13.1	7.6	50.0	29.4	11.0	7.0	45.4	36.7
Myanmar	46.5	9.5	40.8	3.1	54.7	7.7	35.1	2.5	53.4	8.4	31.2	7.0	24.7	5.4	19.6	50.3	24.9	12.0	40.0	23.1
Nepal	50.7	5.1	39.4	4.8	45.8	5.9	41.9	6.4	35.2	8.9	47.4	8.5	33.2	6.2	51.5	9.2	23.9	5.2	62.5	8.4
Oman	2.5	0.6	28.2	68.7	2.9	2.9	40.5	53.6	2.2	5.6	39.4	52.7	1.4	10.4	35.9	52.4	2.8	10.7	45.9	40.7
Pakistan	31.2	14.5	45.6	8.7	26.3	14.1	50.9	8.7	26.8	9.6	55.0	8.5	23.6	13.5	54.6	8.2	24.6	14.3	53.6	7.5
Philippines	21.7	28.3	36.0	13.9	19.0	27.5	43.0	10.5	13.9	25.3	51.1	9.7	13.7	21.9	53.9	10.4	9.4	16.2	62.4	12.0
Qatar	0.5	3.3	23.5	72.7	0.8	13.0	42.8	43.5	0.4	5.4	29.5	64.7	0.1	8.9	32.4	58.6	0.3	8.1	42.7	48.9
Saudi Arabia	1.0	4.0	27.5	67.5	5.7	8.4	44.9	40.9	5.0	9.4	40.8	44.8	2.6	10.9	38.9	47.6	2.9	15.6	47.5	34.0
Singapore	1.6	27.5	62.2	8.7	0.3	25.6	67.3	6.8	0.1	27.7	65.1	7.1	0.0	22.0	71.8	6.2	0.0	17.9	76.6	5.5
Sri Lanka	20.3	21.3	47.9	10.5	17.4	19.9	53.6	9.0	11.6	20.3	59.9	8.2	10.1	20.5	59.0	10.4	8.8	19.1	63.9	8.2
Thailand	19.3	23.3	50.6	6.7	10.0	27.1	53.1	9.8	8.5	28.4	54.8	8.3	10.5	30.9	49.6	9.0	8.6	25.0	58.5	8.0
Turkiye	21.1	22.2	48.2	8.5	13.9	28.1	47.8	10.2	11.2	20.9	58.9	9.0	10.2	17.1	62.0	10.7	6.9	22.0	61.0	10.0
UAE	0.5	3.9	32.5	63.1	1.1	7.4	43.4	48.1	2.1	12.5	47.3	38.1	0.7	8.5	47.6	43.2	0.7	10.8	51.6	36.9
Vietnam	51.4	12.5	32.5	3.5	38.7	7.9	43.3	10.1	21.9	17.3	44.6	16.2	17.3	19.2	45.9	17.6	13.1	26.1	46.9	14.0
(region)																				
APO21	15.4	22.0	50.4	12.2	12.0	22.9	53.8	11.2	10.2	20.6	58.5	10.6	10.0	19.8	58.1	12.1	10.6	19.4	57.6	12.4
Asia27	17.3	23.5	47.2	12.0	14.4	23.8	50.8	11.0	11.3	23.1	54.5	11.1	9.8	24.0	53.3	12.9	9.1	22.2	56.9	11.9
Asia33	15.6	21.5	45.3	17.6	13.7	22.6	50.4	13.3	10.9	22.2	53.7	13.2	9.4	23.3	52.7	14.6	8.8	21.8	56.5	12.9
East Asia	10.3	28.7	50.2	10.8	9.6	27.1	52.5	10.7	7.4	26.2	56.0	10.3	6.5	28.0	54.1	11.3	5.8	25.1	59.0	10.2
SAARC	36.4	15.5	40.1	7.9	30.2	15.0	45.4	9.5	24.9	13.3	52.3	9.5	18.6	15.0	54.6	11.9	17.8	15.0	54.4	12.8
ASEAN	21.9	17.8	43.4	16.9	15.9	20.6	51.4	12.1	12.1	23.8	51.5	12.7	12.5	23.5	48.0	16.0	10.7	21.1	52.4	15.8
ASEAN6	18.6	18.5	44.5	18.4	13.4	21.7	52.4	12.4	10.1	24.7	52.7	12.5	11.4	24.5	48.9	15.3	9.8	20.5	53.8	15.9
CLMV	50.7	11.3	34.2	3.8	43.6	7.8	40.3	8.3	29.3	15.6	41.2	13.9	19.5	17.3	42.2	21.0	15.1	24.4	45.1	15.4
GCC	0.8	4.1	28.5	66.5	4.4	8.3	44.8	42.4	3.7	9.4	41.9	44.9	1.7	9.8	40.5	48.0	1.9	13.2	47.9	37.0
IPEF	6.9	21.6	60.5	11.0	5.7	19.9	64.7	9.7	4.7	17.8	68.7	8.8	5.5	16.1	68.7	9.7	6.4	14.5	68.5	10.7
RCEP	12.7	25.4	49.1	12.8	11.0	24.8	52.8	11.5	8.6	25.2	55.0	11.2	7.7	26.6	52.8	12.9	6.7	23.5	58.0	11.8
(reference)																				
US	2.2	21.0	67.0	9.9	1.6	17.6	72.8	8.0	1.0	15.1	76.6	7.3	1.0	11.9	79.8	7.4	1.0	10.2	81.3	7.5
Australia	5.8	18.4	57.3	18.4	3.4	13.6	66.5	16.4	3.8	12.0	70.3	13.9	2.5	7.9	69.1	20.5	2.4	5.9	69.9	21.8
New Zealand	10.1	25.1	54.9	9.8	6.4	19.2	65.0	9.4	8.3	16.6	66.4	8.7	7.1	11.7	69.7	11.5	5.9	9.9	73.3	11.0

Unit: Percentage.

Sources: Official national accounts in each country, including adjustments by APO-PDB.

Notes: Services are defined as the total of industries 6–9. Others are defined as the total of industries 2, 4, and 5 of nine industries, which consist of 1–agriculture; 2–mining; 3–manufacturing; 4–electricity, gas, and water supply; 5–construction; 6–wholesale and retail trade, hotels, and restaurants; 7–transport, storage, and communications; 8–finance, real estate, and business activities; and 9–community, social, and personal services. See the Online Appendix for the concordance with the ISIC, Revisions 3 and 4.

Table 9.16 Industry Origins of Economic Growth, 2010–2023

——Contributions to economic growth by industry

	1. Agriculture		2. Mining		3. Manufacturing		4. Electricity, gas, and water supply		5. Construction		6. Wholesale and retail trade, hotels, and restaurants		7. Transport, storage, and communications		8. Finance, real estate, and business activities		9. Community, social, and personal services		Total economy
Afghanistan	2.4	(0.6)	8.1	(0.1)	1.8	(0.1)	2.9	(0.1)	−5.1	(−0.1)	0.5	(0.1)	−1.4	(−0.1)	−0.5	(−0.1)	−1.0	(−0.1)	0.6
Bahrain	2.9	(0.0)	0.8	(0.2)	3.1	(0.5)	1.3	(0.0)	2.3	(0.2)	1.3	(0.1)	4.5	(0.3)	2.8	(0.6)	3.7	(0.7)	2.6
Bangladesh	3.8	(0.5)	8.3	(0.1)	10.2	(2.1)	7.8	(0.1)	9.1	(0.8)	7.6	(1.2)	6.4	(0.6)	4.3	(0.5)	5.2	(0.8)	6.8
Bhutan	2.1	(0.3)	6.4	(0.2)	1.3	(0.2)	1.6	(0.2)	2.4	(0.5)	9.7	(0.9)	7.1	(0.8)	5.7	(0.6)	4.5	(0.7)	4.4
Brunei	2.1	(0.0)	−2.7	(−1.2)	2.4	(0.3)	2.8	(0.0)	1.7	(0.0)	1.4	(0.1)	1.2	(0.0)	3.4	(0.3)	1.4	(0.2)	−0.3
Cambodia	1.2	(0.3)	19.9	(0.2)	9.0	(2.2)	7.0	(0.1)	10.5	(0.8)	3.8	(0.7)	6.9	(0.3)	6.5	(0.6)	5.1	(0.5)	5.8
China	4.1	(0.3)	3.5	(0.1)	6.5	(1.8)	5.3	(0.1)	6.1	(0.4)	6.8	(0.7)	8.5	(0.6)	4.8	(0.9)	7.7	(1.3)	6.2
ROC	−0.9	(−0.0)	−1.3	(−0.0)	4.8	(1.5)	−1.3	(−0.0)	1.0	(0.0)	1.7	(0.3)	4.3	(0.3)	3.0	(0.5)	1.2	(0.2)	2.9
Fiji	3.1	(0.5)	−8.4	(−0.1)	0.6	(0.1)	6.6	(0.1)	1.1	(0.0)	−0.2	(−0.0)	4.9	(0.7)	3.0	(0.5)	1.9	(0.3)	2.2
Hong Kong	−3.1	(−0.0)	−3.1	(−0.0)	0.2	(0.0)	−1.1	(−0.0)	3.3	(0.1)	−0.3	(−0.0)	2.0	(0.2)	2.0	(0.8)	2.4	(0.4)	1.6
India	4.0	(0.7)	3.4	(0.1)	6.9	(1.1)	7.9	(0.2)	6.1	(0.5)	2.5	(0.2)	4.4	(0.3)	8.7	(1.8)	4.6	(0.6)	5.5
Indonesia	3.2	(0.4)	1.8	(0.2)	3.9	(0.8)	4.4	(0.1)	4.9	(0.5)	4.4	(0.7)	7.4	(0.6)	4.4	(0.4)	4.6	(0.5)	4.2
Iran	2.0	(0.2)	−0.8	(−0.3)	1.3	(0.3)	4.2	(0.2)	0.2	(0.0)	0.6	(0.1)	5.0	(0.4)	3.4	(0.5)	2.7	(0.3)	1.6
Japan	−1.2	(−0.0)	−2.4	(−0.0)	1.1	(0.2)	−0.3	(−0.0)	1.1	(0.1)	−0.4	(0.0)	0.6	(0.0)	0.7	(0.1)	1.1	(0.4)	0.8
Korea	−0.1	(0.0)	−2.6	(−0.0)	2.6	(0.8)	2.2	(0.0)	1.7	(0.1)	2.3	(0.3)	4.0	(0.3)	3.1	(0.7)	3.1	(0.6)	2.8
Kuwait	2.9	(0.0)	0.9	(0.7)	3.7	(0.2)	7.1	(0.1)	2.8	(0.1)	0.6	(0.0)	−0.9	(−0.1)	0.3	(0.0)	3.4	(0.6)	1.7
Lao PDR	2.7	(0.7)	2.4	(0.4)	8.1	(0.7)	15.4	(1.0)	8.5	(0.6)	3.9	(0.7)	8.2	(0.3)	7.5	(0.5)	4.0	(0.4)	5.3
Malaysia	1.2	(0.1)	0.0	(0.0)	4.4	(1.0)	3.6	(0.1)	4.0	(0.2)	5.5	(1.0)	6.3	(0.6)	4.1	(0.5)	5.2	(0.7)	4.1
Maldives	2.0	(0.1)		( )	4.8	(0.1)	9.0	(0.2)	3.3	(0.2)	5.1	(1.8)	6.4	(0.8)	5.5	(0.9)	5.6	(1.0)	5.2
Mongolia	6.3	(0.9)	4.7	(0.9)	5.0	(0.4)	5.4	(0.1)	6.1	(0.3)	6.2	(0.9)	6.7	(0.5)	5.7	(0.7)	3.1	(0.4)	5.2
Myanmar	3.4	(0.8)	−8.3	(−0.4)	6.4	(0.4)	−0.2	(−0.1)	5.8	(0.4)	5.0	(0.6)	6.1	(0.4)	21.9	(0.1)	8.2	(0.7)	3.0
Nepal	2.7	(0.7)	5.2	(0.0)	3.3	(0.2)	8.7	(0.2)	4.5	(0.3)	3.2	(0.6)	5.3	(0.4)	5.2	(0.8)	4.9	(0.8)	4.0
Oman	9.3	(0.2)	1.7	(0.6)	1.8	(0.2)	10.4	(0.2)	8.2	(0.6)	5.7	(0.5)	7.1	(0.4)	4.7	(0.5)	3.8	(0.6)	3.7
Pakistan	2.6	(0.6)	0.3	(0.0)	3.6	(0.5)	5.9	(0.1)	1.7	(0.1)	3.4	(0.7)	3.7	(0.4)	3.4	(0.3)	4.9	(0.8)	3.4
Philippines	1.4	(0.2)	1.2	(0.0)	4.1	(0.8)	4.9	(0.2)	6.5	(0.4)	5.1	(1.0)	6.1	(0.4)	6.6	(1.3)	4.8	(0.6)	4.9
Qatar	9.2	(0.0)	0.7	(0.5)	3.1	(0.3)	12.2	(0.1)	7.4	(0.5)	3.7	(0.2)	4.1	(0.2)	5.8	(0.8)	4.6	(0.5)	3.1
Saudi Arabia	3.4	(0.1)	1.4	(0.7)	3.3	(0.4)	2.0	(0.0)	2.8	(0.1)	4.2	(0.4)	3.9	(0.2)	4.3	(0.5)	3.5	(0.6)	2.9
Singapore	2.2	(0.0)		( )	3.4	(0.7)	1.3	(0.0)	1.8	(0.1)	3.3	(0.7)	4.6	(0.6)	4.2	(1.3)	2.4	(0.2)	3.6
Sri Lanka	1.7	(0.2)	0.4	(0.0)	1.3	(0.2)	1.3	(0.0)	2.1	(0.2)	3.4	(0.5)	4.3	(0.6)	4.5	(0.5)	3.1	(0.6)	2.8
Thailand	1.1	(0.1)	−2.0	(−0.0)	0.8	(0.2)	2.5	(0.1)	1.9	(0.1)	3.4	(0.6)	3.5	(0.3)	4.5	(0.5)	2.0	(0.3)	2.2
Turkiye	2.2	(0.2)	2.4	(0.0)	6.1	(1.2)	4.0	(0.1)	3.8	(0.3)	7.7	(1.3)	6.0	(0.7)	5.0	(0.7)	5.6	(1.0)	5.6
UAE	3.6	(0.0)	2.1	(0.7)	5.4	(0.5)	4.0	(0.2)	1.1	(0.1)	3.0	(0.4)	2.9	(0.2)	4.6	(0.7)	4.7	(0.5)	3.4
Vietnam	3.1	(0.5)	−1.4	(−0.0)	8.1	(1.9)	8.1	(0.3)	6.3	(0.4)	6.9	(0.9)	7.5	(0.7)	5.5	(0.7)	6.3	(0.7)	6.0
(region)																			
APO21	3.1	(0.3)	0.9	(0.0)	4.1	(0.8)	4.5	(0.1)	4.4	(0.3)	3.0	(0.4)	4.4	(0.4)	4.9	(0.8)	3.1	(0.6)	3.7
Asia27	3.5	(0.3)	1.9	(0.1)	5.3	(1.2)	4.8	(0.1)	5.1	(0.3)	4.3	(0.6)	6.1	(0.5)	4.9	(0.8)	5.0	(0.9)	4.8
Asia33	3.5	(0.3)	1.8	(0.1)	5.3	(1.2)	4.8	(0.1)	5.0	(0.3)	4.3	(0.5)	5.9	(0.4)	4.9	(0.8)	4.9	(0.9)	4.7
East Asia	3.8	(0.2)	3.4	(0.1)	5.4	(1.4)	4.2	(0.1)	5.0	(0.3)	4.6	(0.5)	6.6	(0.5)	3.9	(0.7)	5.3	(1.1)	4.9
SAARC	3.7	(0.7)	3.4	(0.1)	6.8	(1.1)	7.5	(0.2)	6.1	(0.5)	3.1	(0.3)	4.5	(0.3)	8.1	(1.5)	4.6	(0.7)	5.3
ASEAN	2.5	(0.3)	0.8	(0.1)	3.8	(0.8)	4.5	(0.1)	4.8	(0.3)	4.5	(0.8)	6.2	(0.5)	4.9	(0.6)	4.1	(0.5)	4.0
ASEAN6	2.3	(0.2)	1.0	(0.1)	3.1	(0.7)	3.6	(0.1)	4.6	(0.3)	4.3	(0.8)	6.0	(0.5)	4.8	(0.6)	3.8	(0.5)	3.8
CLMV	3.0	(0.5)	−1.7	(−0.0)	8.0	(1.7)	8.0	(0.3)	6.4	(0.4)	6.3	(0.8)	7.4	(0.6)	5.6	(0.6)	6.2	(0.7)	5.6
GCC	3.8	(0.1)	1.4	(0.6)	3.7	(0.4)	4.2	(0.1)	3.1	(0.2)	3.6	(0.3)	3.5	(0.2)	4.1	(0.5)	3.8	(0.6)	3.0
IPEF	3.2	(0.2)	2.6	(0.1)	2.9	(0.4)	3.4	(0.1)	3.5	(0.2)	2.3	(0.3)	4.6	(0.4)	3.7	(0.9)	2.1	(0.5)	3.0
RCEP	3.4	(0.2)	2.4	(0.1)	5.1	(1.3)	4.4	(0.1)	4.9	(0.3)	4.7	(0.6)	6.5	(0.5)	4.0	(0.7)	5.3	(1.0)	4.7
(reference)																			
US	1.6	(0.0)	4.0	(0.1)	1.3	(0.1)	1.3	(0.0)	1.7	(0.1)	2.0	(0.2)	5.1	(0.4)	2.9	(1.0)	1.3	(0.4)	2.3
Australia	2.1	(0.1)	3.7	(0.3)	3.4	(0.0)	0.6	(0.0)	1.5	(0.1)	2.3	(0.3)	3.1	(0.2)	2.5	(0.7)	3.4	(0.8)	2.5
New Zealand	2.6	(0.2)	−3.8	(−0.0)	2.8	(0.1)	1.5	(0.0)	4.2	(0.3)	3.1	(0.4)	3.2	(0.2)	3.6	(1.1)	2.8	(0.6)	2.8

Unit: Percentage (average annual growth rate) and percentage points (contributions written in parentheses).
Source: APO Productivity Database 2025.

Table 9.17 Industry Origins of Labor Productivity Growth, 2010–2023

——Contributions to labor productivity by industry

	1. Agriculture	2. Mining	3. Manufacturing	4. Electricity, gas, and water supply	5. Construction	6. Wholesale and retail trade, hotels, and restaurants	7. Transport, storage, and communications	8. Finance, real estate, and business activities	9. Community, social, and personal services	Total economy
Afghanistan	3.0 (0.4)	−0.5 (0.1)	−3.1 (−0.3)	−8.1 (−0.0)	−7.4 (−0.3)	−2.7 (−0.2)	−4.2 (−0.2)	−8.8 (0.1)	−3.9 (−0.3)	−0.6
Bahrain	1.5 (0.0)	−0.7 (0.2)	2.0 (0.4)	−1.5 (−0.0)	0.2 (−0.3)	−0.4 (−0.2)	2.1 (0.1)	0.0 (0.5)	1.5 (0.0)	0.7
Bangladesh	5.2 (0.9)	12.7 (0.1)	8.2 (1.9)	5.8 (0.1)	5.2 (0.5)	4.9 (0.8)	2.8 (0.3)	−0.2 (0.4)	2.7 (0.5)	5.5
Brunei	−7.8 (−0.5)	−2.8 (−1.3)	−0.4 (−0.1)	5.0 (0.0)	0.0 (−0.7)	−2.7 (−1.0)	−1.4 (−0.1)	1.3 (0.2)	2.6 (0.6)	−3.0
Cambodia	4.3 (1.1)	19.4 (0.2)	8.5 (2.2)	0.9 (0.1)	3.2 (0.5)	−2.7 (−0.8)	2.1 (0.1)	2.4 (0.6)	−1.9 (−0.6)	3.5
China	9.0 (1.5)	6.5 (0.1)	6.5 (1.8)	6.5 (0.1)	6.5 (0.4)	4.9 (0.5)	4.9 (0.4)	4.9 (0.9)	4.9 (0.6)	6.4
ROC	−0.3 (−0.0)	0.9 (0.0)	4.4 (1.5)	−1.2 (−0.0)	−0.1 (−0.1)	1.6 (0.3)	2.6 (0.2)	2.0 (0.5)	−0.4 (−0.1)	2.2
Fiji	2.5 (0.4)	−6.0 (−0.0)	4.1 (0.5)	7.8 (0.2)	−2.4 (−0.3)	−2.0 (−0.3)	2.6 (0.6)	−0.7 (0.4)	0.9 (0.0)	1.5
Hong Kong	−2.5 (−0.0)	0.0 ( )	3.4 (0.1)	−1.1 (−0.0)	1.3 (0.0)	1.8 (0.6)	2.1 (0.2)	−0.1 (0.4)	0.6 (0.0)	1.2
India	3.2 (1.3)	5.9 (0.1)	4.2 (0.8)	2.7 (0.2)	2.3 (0.3)	−0.4 (−0.1)	1.3 (0.2)	2.7 (1.6)	2.2 (0.4)	4.7
Indonesia	6.1 (0.6)	−0.2 (0.2)	1.4 (0.5)	2.1 (0.0)	1.1 (0.3)	1.6 (0.1)	8.0 (0.7)	−7.0 (0.1)	0.3 (−0.4)	2.1
Iran	2.0 (0.3)	−6.1 (−0.3)	−0.2 (−0.0)	0.0 (0.2)	−1.2 (−0.2)	−1.3 (−0.3)	3.3 (0.2)	3.4 (0.5)	0.4 (−0.1)	0.3
Japan	−1.7 (0.1)	−1.9 (−0.0)	0.7 (0.2)	−0.3 (−0.0)	1.6 (0.1)	0.3 (0.1)	−0.3 (−0.0)	0.0 (0.1)	−0.2 (−0.2)	0.2
Korea	2.2 (0.0)	5.0 (0.0)	1.9 (0.7)	1.3 (0.0)	0.4 (0.0)	2.3 (0.3)	1.6 (0.1)	1.4 (0.4)	0.8 (0.0)	1.5
Kuwait	1.0 (0.0)	−2.5 (0.7)	1.3 (0.2)	2.8 (0.1)	−0.1 (−0.3)	−0.8 (−0.1)	−2.5 (−0.1)	−3.0 (−0.3)	−1.6 (−2.3)	−2.0
Malaysia	2.2 (0.2)	−3.4 (−0.0)	2.8 (0.7)	2.3 (0.1)	2.7 (0.0)	1.6 (0.0)	3.9 (0.4)	−0.2 (−0.0)	3.8 (0.4)	1.9
Maldives	3.8 (0.1)	0.0 ( )	3.3 (0.0)	0.0 (0.0)	−4.4 (−0.5)	2.6 (1.8)	3.5 (0.6)	−0.1 (0.7)	3.7 (0.5)	3.2
Mongolia	9.8 (0.9)	−0.7 (0.7)	1.5 (0.1)	2.7 (0.1)	2.6 (0.1)	5.9 (0.8)	7.5 (0.6)	3.0 (0.7)	1.0 (−0.1)	3.9
Nepal	2.1 (0.2)	3.3 (0.0)	0.0 (−0.1)	6.1 (0.1)	0.6 (0.1)	−0.3 (0.2)	2.4 (0.4)	1.2 (0.8)	2.8 (0.7)	2.5
Oman	7.2 (−0.3)	−9.3 (0.5)	−5.1 (−0.6)	−11.1 (0.1)	5.6 (−0.4)	−2.0 (−1.0)	−8.7 (−0.2)	−1.0 (0.1)	−1.1 (−0.8)	−2.5
Pakistan	2.2 (0.4)	−10.8 (−0.0)	0.7 (0.0)	5.7 (0.1)	−2.8 (−0.3)	1.4 (0.4)	0.5 (0.2)	4.5 (0.3)	1.8 (−0.3)	0.7
Philippines	4.8 (0.6)	1.3 (0.0)	3.2 (0.7)	5.0 (0.2)	0.3 (0.0)	2.4 (0.3)	3.7 (0.2)	1.6 (1.0)	1.0 (−0.2)	2.8
Qatar	4.9 (−0.1)	8.0 (0.6)	2.8 (0.2)	−3.9 (−0.1)	5.9 (−0.2)	−1.5 (−0.5)	−6.1 (−0.7)	6.6 (0.8)	−2.5 (−1.5)	−1.5
Saudi Arabia	8.3 (0.1)	4.9 (0.8)	2.9 (0.3)	1.1 (0.0)	7.5 (0.4)	6.0 (0.6)	5.3 (0.2)	10.9 (0.6)	0.8 (−0.8)	2.2
Singapore	−6.5 (−0.0)	0.0 ( )	4.0 (0.8)	13.7 (0.0)	−0.6 (−0.2)	2.4 (0.5)	2.0 (0.3)	2.1 (1.1)	−0.4 (−0.7)	1.9
Sri Lanka	6.0 (0.7)	2.4 (0.0)	1.5 (0.2)	−0.4 (−0.0)	0.4 (0.2)	2.5 (0.4)	3.3 (0.5)	5.0 (0.5)	2.0 (0.3)	2.9
Thailand	3.9 (0.6)	−1.5 (−0.0)	−0.5 (−0.0)	1.1 (0.1)	2.3 (0.1)	2.5 (0.4)	1.2 (0.2)	0.0 (0.4)	0.3 (0.1)	1.8
Turkiye	2.6 (0.3)	0.5 (0.0)	3.6 (0.8)	−0.8 (−0.0)	1.5 (0.2)	4.9 (0.8)	2.7 (0.6)	−1.0 (0.4)	1.1 (−0.1)	3.0
UAE	−11.0 (−0.4)	−9.8 (0.1)	3.4 (0.3)	1.8 (0.1)	−1.2 (−0.2)	−3.6 (−1.1)	−2.3 (−0.2)	3.3 (0.6)	4.6 (0.3)	−0.6
Vietnam	5.3 (1.8)	1.8 (0.0)	3.1 (1.0)	6.1 (0.3)	2.6 (0.1)	3.4 (0.3)	4.4 (0.6)	−1.7 (0.6)	4.2 (0.5)	5.1
(region)										
APO21	3.3 (0.7)	0.8 (0.0)	1.8 (0.5)	1.1 (0.1)	1.2 (0.1)	0.6 (0.0)	2.0 (0.2)	0.2 (0.7)	0.5 (0.2)	2.5
Asia27	5.2 (1.0)	3.7 (0.1)	4.2 (1.1)	3.3 (0.1)	3.6 (0.2)	2.0 (0.2)	3.2 (0.3)	1.1 (0.7)	2.3 (0.4)	4.2
Asia33	5.2 (1.0)	3.5 (0.1)	4.1 (1.0)	3.3 (0.1)	3.6 (0.2)	2.0 (0.2)	3.1 (0.3)	1.2 (0.7)	2.2 (0.4)	4.1
East Asia	8.6 (1.2)	6.4 (0.1)	5.4 (1.4)	5.2 (0.1)	5.4 (0.3)	3.2 (0.4)	3.5 (0.3)	3.2 (0.7)	2.7 (0.4)	5.0
SAARC	3.2 (1.1)	4.9 (0.1)	4.1 (0.8)	3.2 (0.2)	2.3 (0.2)	0.3 (0.0)	1.3 (0.2)	2.6 (1.3)	2.1 (0.4)	4.3
ASEAN	4.8 (0.7)	−0.5 (0.1)	1.3 (0.5)	3.2 (0.1)	1.4 (0.1)	1.7 (0.2)	4.7 (0.5)	−1.0 (0.4)	0.7 (−0.1)	2.5
ASEAN6	5.2 (0.5)	−0.8 (0.1)	1.2 (0.4)	2.3 (0.1)	1.3 (0.1)	1.8 (0.2)	5.1 (0.5)	−2.1 (0.4)	0.2 (−0.2)	2.0
CLMV	4.0 (1.3)	−1.0 (−0.0)	4.1 (1.2)	6.7 (0.3)	2.6 (0.2)	2.4 (0.1)	4.0 (0.5)	5.7 (0.6)	3.6 (0.4)	4.6
GCC	1.4 (0.0)	−2.7 (0.6)	1.8 (0.3)	1.0 (0.0)	3.0 (0.1)	1.6 (0.0)	−0.2 (−0.0)	4.5 (0.5)	0.7 (−0.7)	0.7
IPEF	3.2 (0.6)	3.0 (0.1)	0.7 (0.2)	0.2 (0.1)	0.4 (0.0)	0.1 (−0.1)	2.4 (0.3)	0.2 (0.7)	0.2 (0.1)	1.9
RCEP	7.4 (1.1)	4.4 (0.1)	4.5 (1.2)	5.0 (0.1)	4.5 (0.3)	2.7 (0.3)	3.8 (0.4)	1.4 (0.6)	2.5 (0.3)	4.4
(reference)										
US	0.9 (0.0)	5.0 (0.1)	0.6 (0.1)	1.1 (0.0)	−0.9 (−0.1)	1.1 (0.0)	2.7 (0.3)	1.0 (0.6)	0.5 (0.0)	1.1
Australia	−0.6 (0.1)	0.8 (0.2)	0.2 (0.0)	0.0 (0.0)	−0.5 (−0.1)	1.3 (0.0)	0.8 (0.1)	0.2 (0.4)	0.7 (−0.2)	0.6
New Zealand	2.5 (0.1)	−4.5 (−0.0)	0.2 (0.0)	−3.6 (−0.0)	−0.3 (−0.1)	1.8 (0.1)	1.7 (0.1)	−0.2 (0.4)	0.1 (−0.2)	0.4

Unit: Percentage (average annual growth rate) and percentage points (contributions written in parentheses).
Source: APO Productivity Database 2025.

Table 9.18 Real Income and Terms of Trade, 2000–2023

——Growth in real income, real GDP, trading gain, and net primary income transfer from abroad

2000–2005	Real income	Real GDP	Trading gain	Net primary income from abroad
Afghanistan	11.3	12.5	−1.7	0.5
Mongolia	10.6	6.3	4.5	−0.2
Iran	10.0	7.6	2.8	−0.3
China	9.2	8.2	0.9	0.1
Vietnam	8.8	8.3	0.5	−0.1
Cambodia	8.4	8.6	−0.1	0.0
Myanmar	8.4	5.6	2.8	0.0
Bhutan	7.8	7.0	1.0	−0.3
Malaysia	7.2	5.3	1.2	0.8
Lao PDR	7.0	4.9	1.7	0.3
India	6.7	7.0	−0.3	0.1
Bangladesh	6.3	6.2	−0.1	0.2
Sri Lanka	5.6	4.9	0.6	0.1
Pakistan	4.9	5.1	−0.7	0.4
Maldives	4.8	4.0	0.3	0.6
Thailand	4.7	5.2	0.0	−0.5
Korea	4.6	5.2	−0.6	0.0
Turkiye	4.4	4.7	0.2	−0.6
Indonesia	4.0	4.6	−1.0	0.4
Philippines	4.0	4.7	−0.8	0.1
Singapore	3.9	5.1	0.0	−1.2
Hong Kong	3.0	4.1	−1.0	−0.1
ROC	2.7	4.1	−1.6	0.2
Nepal	2.4	2.4	0.0	0.0
Fiji	1.4	2.0	0.0	−0.6
Japan	1.0	1.2	−0.3	0.2
Bahrain	9.9	8.4	1.5	0.0
Kuwait	12.0	12.8	0.3	−1.2
Oman	8.2	3.7	4.3	0.2
Qatar	12.0	9.1	5.2	−2.3
Saudi Arabia	3.8	1.7	2.1	−0.1
UAE	6.5	4.9	1.6	−0.1
Brunei	6.1	0.9	5.2	0.0
(reference)				
Australia	4.3	3.3	1.2	−0.2
France	1.7	1.7	0.0	0.0
Germany	0.9	0.6	0.0	0.3
Italy	0.9	0.8	0.0	0.1
New Zealand	4.3	3.9	0.6	−0.2
UK	2.9	2.5	0.3	0.2
US	2.5	2.5	0.0	0.0
EU15	1.9	1.7	0.1	0.1

2005–2010	Real income	Real GDP	Trading gain	Net primary income from abroad
Myanmar	11.9	4.7	7.3	0.0
China	11.3	11.0	0.2	0.1
Afghanistan	8.9	7.4	0.8	0.7
Vietnam	8.5	7.9	0.9	−0.3
India	8.4	8.2	0.3	−0.1
Cambodia	8.3	7.0	1.2	0.1
Bhutan	7.6	9.7	−1.3	−0.8
Singapore	7.5	7.3	−1.0	1.3
Bangladesh	7.3	7.2	−0.5	0.6
Lao PDR	6.9	5.5	2.2	−0.8
Sri Lanka	6.7	6.5	0.2	0.0
Maldives	6.3	7.5	2.0	−3.1
Mongolia	5.8	6.3	0.9	−1.4
Nepal	5.5	4.3	1.1	0.1
Iran	5.4	5.5	−0.3	0.2
Indonesia	5.3	5.6	−0.7	0.4
Malaysia	5.2	3.8	1.1	0.3
Philippines	5.2	4.9	0.1	0.3
Korea	3.9	4.4	−0.6	0.2
Thailand	3.9	3.9	0.0	0.1
Hong Kong	3.3	3.8	−0.8	0.3
Pakistan	2.8	3.4	−1.0	0.3
Turkiye	2.7	3.1	−0.3	−0.1
ROC	1.9	4.2	−2.3	0.1
Fiji	0.4	0.6	0.0	−0.2
Japan	−0.4	0.0	−0.4	0.1
Bahrain	11.1	8.6	3.8	−1.3
Kuwait	3.4	1.4	2.5	−0.5
Oman	6.6	3.5	3.6	−0.5
Qatar	14.8	13.3	1.0	0.6
Saudi Arabia	3.2	2.4	0.6	0.2
UAE	3.7	3.6	0.5	−0.3
Brunei	1.0	−0.2	1.3	−0.1
(reference)				
Australia	4.2	2.8	1.4	0.0
France	1.1	0.9	0.0	0.1
Germany	1.3	1.2	−0.1	0.2
Italy	−0.6	−0.4	−0.1	−0.1
New Zealand	2.2	1.5	0.4	0.3
UK	0.3	0.5	0.1	−0.2
US	1.1	1.0	−0.1	0.2
EU15	0.7	0.8	0.0	0.0
EU27	0.9	1.0	0.0	0.0

2010–2015	Real income	Real GDP	Trading gain	Net primary income from abroad
Mongolia	10.7	9.9	0.8	−0.1
Lao PDR	8.2	7.6	0.2	0.4
Maldives	7.7	5.8	1.0	0.9
Cambodia	7.7	7.2	0.7	−0.2
Afghanistan	7.2	5.2	1.1	0.9
China	7.2	7.0	0.2	0.0
Sri Lanka	7.0	6.7	0.6	−0.3
Myanmar	7.0	6.1	1.0	−0.1
Bangladesh	6.8	7.3	−0.1	−0.3
Turkiye	6.6	6.9	−0.3	0.0
India	6.2	6.5	−0.3	0.0
Philippines	5.5	5.8	−0.3	0.0
Vietnam	5.3	5.1	0.6	−0.4
Malaysia	5.1	5.2	−0.2	0.1
Indonesia	5.0	5.4	−0.3	−0.1
Bhutan	4.7	5.8	−0.8	−0.3
Nepal	4.5	4.1	0.3	0.2
Thailand	3.7	3.3	0.6	−0.2
Pakistan	3.6	3.4	−0.2	0.4
ROC	3.4	2.9	0.6	−0.1
Fiji	3.1	3.7	0.0	−0.6
Korea	3.1	2.7	0.3	0.0
Hong Kong	2.9	2.9	0.1	−0.1
Singapore	2.4	4.6	−0.9	−1.3
Japan	1.2	1.1	−0.1	0.2
Iran	−3.0	−0.1	−3.0	0.0
Bahrain	2.3	3.0	−1.7	0.9
Kuwait	−1.3	3.6	−5.4	0.5
Oman	2.8	4.4	−2.1	0.5
Qatar	5.3	6.4	−2.8	1.7
Saudi Arabia	2.4	5.3	−3.1	0.2
UAE	4.0	5.3	−1.4	0.1
Brunei	0.3	0.3	−1.1	1.1
(reference)				
Australia	1.7	2.8	−1.4	0.3
France	1.1	1.0	0.2	−0.1
Germany	1.8	1.7	0.1	0.1
Italy	−0.6	−0.6	0.1	−0.1
New Zealand	3.7	3.1	0.2	0.3
UK	1.9	1.9	0.4	−0.4
US	2.4	2.2	0.2	0.0
EU15	1.0	1.0	0.1	−0.1
EU27	1.2	1.1	0.0	0.0

2015–2023	Real income	Real GDP	Trading gain	Net primary income from abroad
Mongolia	6.6	3.5	3.6	−0.5
Bangladesh	6.0	6.2	0.1	−0.2
Vietnam	6.0	5.9	0.1	0.0
India	5.1	4.9	0.3	0.0
China	4.9	5.1	−0.2	0.0
Turkiye	4.6	4.8	−0.3	0.1
Pakistan	4.5	3.6	0.7	0.2
Nepal	4.2	3.8	0.4	0.0
Cambodia	4.1	5.1	0.5	−1.5
Iran	4.0	3.5	0.5	0.0
Indonesia	3.9	4.0	−0.1	0.1
Malaysia	3.7	3.7	0.1	0.0
Philippines	3.6	4.3	−0.7	−0.1
Bhutan	3.1	3.2	−0.3	0.2
ROC	2.8	3.0	−0.3	0.1
Singapore	2.5	3.1	1.1	−1.7
Lao PDR	2.4	3.7	−1.2	−0.1
Korea	2.1	2.7	−0.7	0.2
Thailand	1.9	2.2	−0.7	0.3
Hong Kong	1.7	0.8	0.1	0.8
Fiji	1.5	1.6	−0.2	0.1
Japan	0.4	0.4	−0.3	0.2
Sri Lanka	0.1	0.5	−0.4	−0.1
Maldives	−0.3	4.2	−3.8	−0.6
Afghanistan	−3.3	−2.2	0.2	−1.3
Myanmar	−6.0	−0.7	−4.9	−0.4
Bahrain	3.7	2.5	1.3	−0.2
Kuwait	2.7	0.8	1.7	0.2
Oman	2.6	1.9	1.1	−0.4
Qatar	4.1	0.6	3.6	−0.1
Saudi Arabia	3.6	2.8	1.0	−0.2
UAE	4.9	2.9	2.0	0.0
Brunei	0.6	0.7	0.8	−0.9
(reference)				
Australia	3.1	2.2	1.0	−0.1
France	1.0	1.1	−0.1	0.0
Germany	1.1	0.9	0.0	0.2
Italy	1.1	1.1	0.0	0.0
New Zealand	2.8	2.9	0.0	−0.1
UK	1.5	1.3	−0.1	0.2
US	2.4	2.3	0.2	−0.1
EU15	1.4	1.4	−0.1	0.1
EU27	1.1	1.5	−0.1	−0.4

2022–2023	Real income	Real GDP	Trading gain	Net primary income from abroad
Mongolia	16.7	6.9	7.7	2.1
Turkiye	14.8	8.5	6.4	0.0
Philippines	9.7	4.2	0.8	4.7
India	8.1	4.1	4.0	0.0
Vietnam	5.7	3.8	2.3	−0.4
Fiji	5.7	7.1	−1.5	0.0
Thailand	5.4	3.7	1.0	0.7
Afghanistan	5.3	2.7	2.7	0.0
Bangladesh	4.4	4.3	0.1	0.0
Hong Kong	4.3	3.4	−0.8	1.7
China	4.1	4.3	−0.3	0.0
Lao PDR	4.0	1.7	1.7	0.6
Bhutan	3.8	0.5	3.8	−0.4
Pakistan	3.5	0.1	4.0	−0.6
Cambodia	3.4	3.4	0.3	−0.3
Indonesia	3.0	4.9	−1.9	0.1
Japan	2.5	1.5	1.2	−0.2
Korea	2.4	1.7	0.2	0.5
Nepal	2.2	2.3	−0.7	0.6
ROC	1.1	0.0	0.8	0.3
Malaysia	0.9	1.7	−1.1	0.3
Iran	−0.2	5.5	−5.7	0.0
Sri Lanka	−0.5	−0.9	1.0	−0.6
Myanmar	−2.6	0.2	0.3	−3.2
Singapore	−4.2	1.3	−7.6	2.0
Maldives	−5.5	5.6	−7.4	−3.7
Bahrain	−4.6	−5.4	2.3	−1.5
Kuwait	−16.7	−4.7	−11.9	0.0
Oman	−4.6	1.6	−5.5	−0.7
Qatar	−3.9	−1.2	−3.4	0.7
Saudi Arabia	−6.5	−1.1	−5.4	0.0
UAE	4.0	3.1	0.2	0.7
Brunei	−8.5	2.9	−11.4	0.0
(reference)				
Australia	0.2	1.2	−1.9	0.9
France	0.1	0.8	0.2	−0.9
Germany	0.7	−0.9	1.4	0.1
Italy	2.0	0.8	2.6	−1.4
New Zealand	−0.6	−0.1	0.1	−0.6
UK	−0.3	0.2	0.7	−1.2
US	2.9	2.9	0.2	−0.2
EU15	0.7	0.1	1.0	−0.4
EU27	−0.1	2.0	0.7	−2.9

Unit: Percentage (average annual growth rate).
Sources: Official national accounts in each country, including adjustments by APO-PDB.

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Appendix APO21 Economy Profiles

Bangladesh

Key Indicators

GDP in 2023	1,547	Billion USD (as of 2023)	
(exchange rate based)	422	Billion USD (as of 2023)	
Per capita GDP in 2023	9.1	Thousand USD (as of 2023)	
(exchange rate based)	2.5	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	21.7	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	9.3	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	26.9	USD (as of 2023)	
Energy productivity levels in 2022	42.9	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	72.8	g-CO2 per USD (as of 2023)	

Number of employment in 2023	68,711	Thousands persons	
Employment rate in 2023	40.2	%	
Female employment share in 2023	30.3	%	
Average schooling years of workers in 2023	6.3	Years	
Investment share in 2023	31.0	%	
ICT investment share in GFCF in 2023	5.7	%	
Agriculture share in GDP in 2023	11.4	%	
Manufacturing share in GDP in 2023	23.1	%	
Agriculture share in employment in 2023	35.3	%	

(%: average annual growth rate)	1970 –80	1980 –90	1990 –2000	2000 –10	2010 –23	2019 –20	2020 –21	2021 –22	2022 –23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	0.0	4.0	4.1	6.7	6.6	3.3	6.2	6.8	4.3	4.6	6.2	7.1	6.2
Labor input growth	3.5	3.5	2.4	3.3	3.1	1.9	1.9	2.7	–1.5	3.8	3.5	3.3	3.1
Labor quality growth	1.0	0.8	0.6	0.8	1.4	0.4	0.5	0.6	0.1	1.5	1.6	1.7	1.5
Hours worked growth	2.5	2.7	1.8	2.5	1.7	1.5	1.4	2.1	–1.5	2.3	1.8	1.6	1.5
College labor input growth	11.5	11.5	7.2	2.7	6.0	3.0	3.0	2.0	–1.1	5.0	4.9	5.0	4.5
Non–college labor input growth	3.2	2.9	1.8	3.3	2.6	1.7	1.6	2.8	–1.5	3.5	3.1	2.8	2.7
ICT capital input growth	12.3	18.2	15.3	27.8	11.7	3.2	6.3	5.9	3.0	8.4	7.8	13.0	9.5
Non–ICT capital input growth	0.3	4.5	6.1	7.5	8.1	8.1	7.5	7.7	7.7	7.9	7.5	7.1	7.4
Per-worker labor productivity growth	–2.6	2.0	1.9	4.1	5.3	2.6	5.6	4.8	3.1	2.8	4.4	5.5	4.5
Per–hour labor productivity growth	–2.5	1.3	2.3	4.2	4.9	1.8	4.8	4.7	5.8	2.3	4.4	5.5	4.6
Capital productivity growth	–0.3	–4.6	–6.2	–8.1	–8.2	–7.8	–7.4	–7.6	–7.5	–3.3	–1.3	–0.3	–1.7
TFP growth	–1.7	–0.1	–0.4	0.5	–0.1	–2.8	0.4	0.5	–0.9	–2.2	–0.2	0.9	–0.1

Production

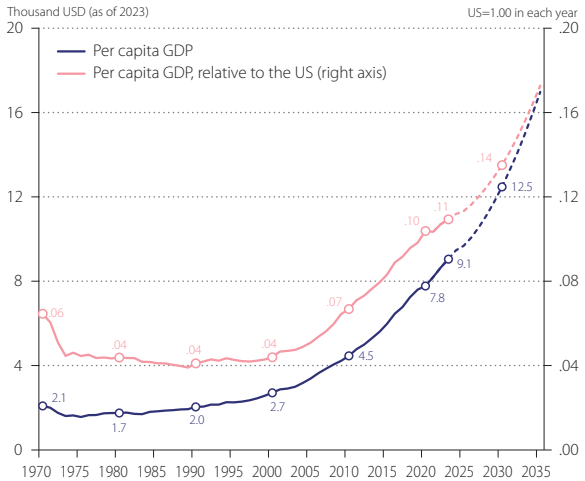

Figure 1 Per Capita GDP

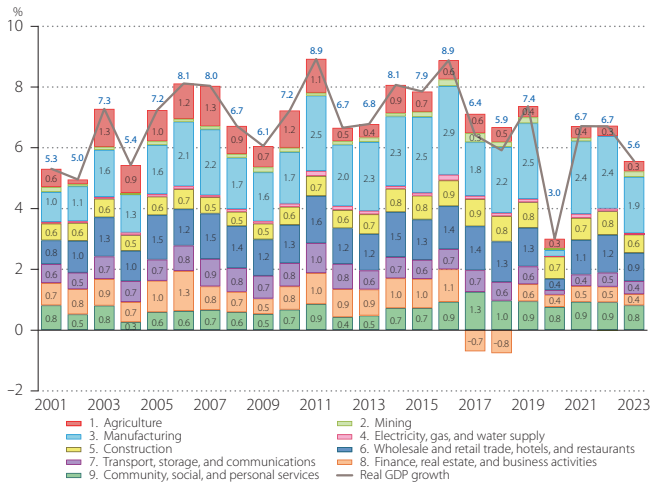

Figure 2 Industry Origins of Economic Growth

Labor

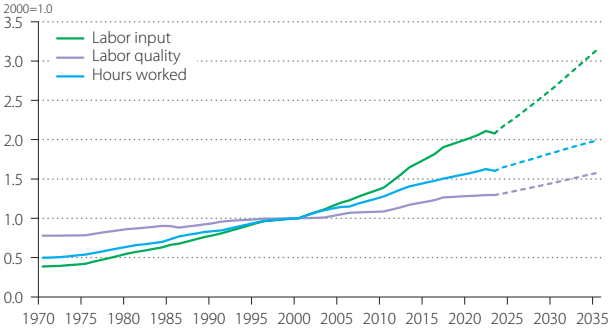

Figure 3 Labor Inputs

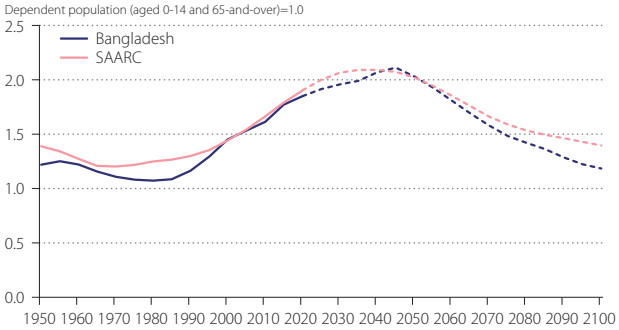

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

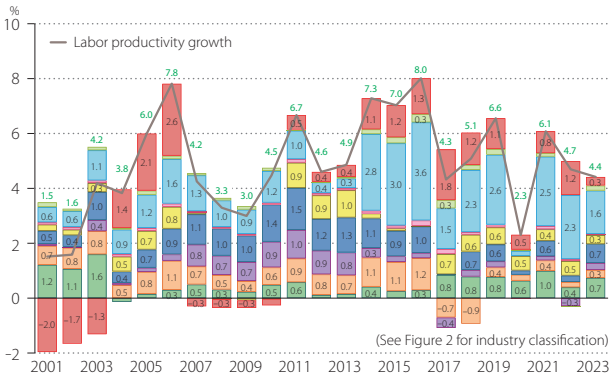

Figure 7 Industry Origins of Labor Productivity Growth

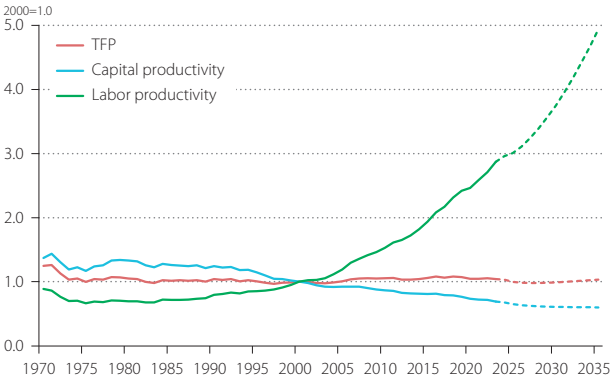

Figure 8 Productivity Indicators

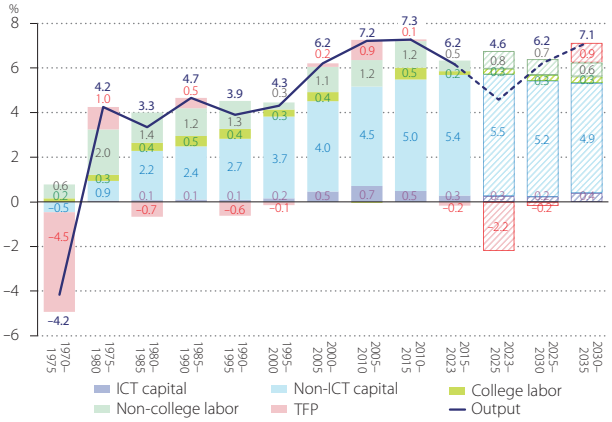

Figure 9 Decomposition of Economic Growth

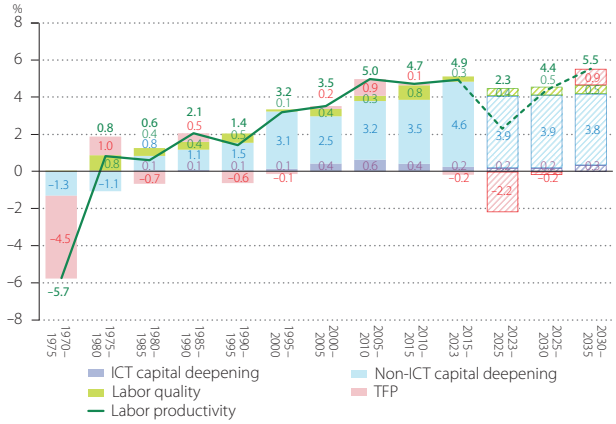

Figure 10 Decomposition of Labor Productivity Growth

App.

Cambodia

Key Indicators

GDP in 2023	128	Billion USD (as of 2023)
(exchange rate based)	42	Billion USD (as of 2023)
Per capita GDP in 2023	7.8	Thousand USD (as of 2023)
(exchange rate based)	2.6	Thousand USD (as of 2023)
Per-worker labor productivity level in 2023	11.5	Thousand USD per worker (as of 2023)
Per-hour labor productivity level in 2023	4.7	USD per hour worked (as of 2023)
Capital stock per hour worked in 2023	15.0	USD (as of 2023)
Energy productivity levels in 2022	14.9	Thousand USD per toe (as of 2023)
Carbon intensity of GDP in 2022	129.6	g-CO2 per USD (as of 2023)

Number of employment in 2023	10,188	Thousands persons
Employment rate in 2023	62.0	%
Female employment share in 2023	49.6	%
Average schooling years of workers in 2023	5.3	Years
Investment share in 2023	33.7	%
ICT investment share in GFCF in 2023	2.1	%
Agriculture share in GDP in 2023	18.2	%
Manufacturing share in GDP in 2023	28.1	%
Agriculture share in employment in 2023	34.0	%

(%: average annual growth rate)	1970 –80	1980 –90	1990 –2000	2000 –10	2010 –23	2019 –20	2020 –21	2021 –22	2022 –23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	–6.4	4.3	5.8	7.7	5.9	–3.3	4.7	6.5	3.4	6.0	5.8	5.4	5.5
Labor input growth	–2.3	4.2	7.4	4.6	3.9	–1.1	4.1	1.9	1.4	2.5	3.3	2.9	2.9
Labor quality growth	0.3	0.8	1.4	0.9	1.5	–1.5	1.8	0.1	0.0	2.7	2.4	2.0	2.1
Hours worked growth	–2.7	3.4	5.9	3.6	2.3	0.5	2.3	1.8	1.5	–0.1	0.9	0.9	0.8
College labor input growth	1.8	7.6	8.3	14.0	6.8	0.5	4.1	2.3	1.7	2.6	4.0	4.8	3.9
Non–college labor input growth	–2.4	4.1	7.3	4.2	3.6	–1.2	4.1	1.9	1.4	2.5	3.2	2.7	2.8
ICT capital input growth	–12.1	7.1	25.3	15.0	18.1	8.0	2.1	6.3	33.2	30.0	4.0	11.5	13.1
Non–ICT capital input growth	2.6	0.8	4.5	9.1	9.2	10.3	8.8	8.5	7.5	6.8	7.2	7.1	7.1
Per-worker labor productivity growth	–3.9	0.7	0.4	4.5	3.8	–1.8	3.0	4.9	2.1	4.8	4.4	4.2	4.2
Per–hour labor productivity growth	–3.7	1.0	–0.2	4.1	3.6	–3.8	2.5	4.6	1.9	6.2	4.9	4.5	4.7
Capital productivity growth	–0.1	0.0	–3.8	–9.1	–9.2	–10.4	–8.7	–8.5	–7.6	–0.9	–1.4	–1.7	–1.9
TFP growth	–7.2	2.4	0.2	0.5	–1.1	–8.9	–2.0	0.8	–1.6	1.0	0.3	0.1	0.2

Production

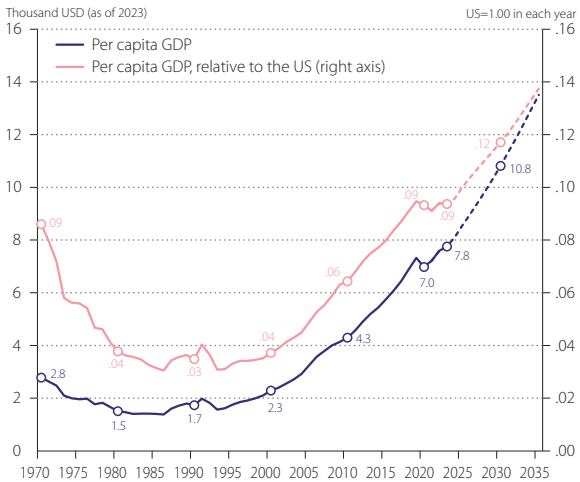

Figure 1 Per Capita GDP

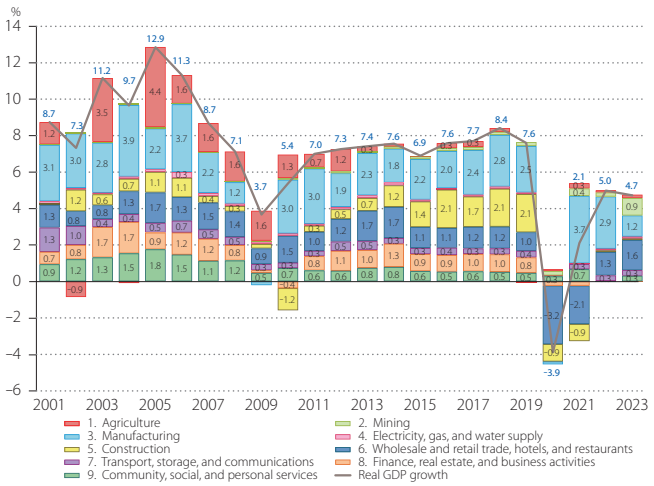

Figure 2 Industry Origins of Economic Growth

Labor

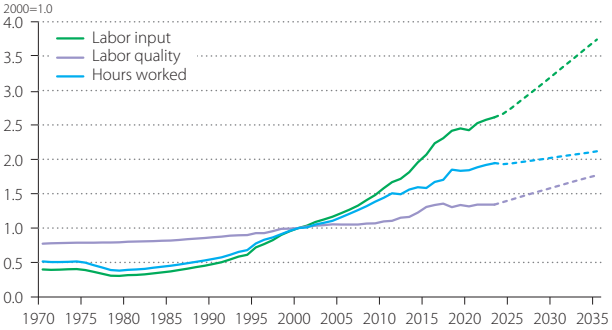

Figure 3 Labor Inputs

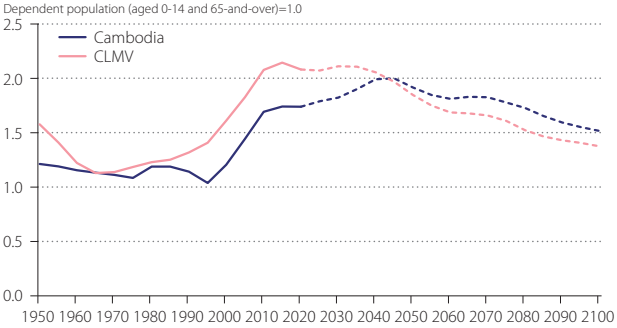

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

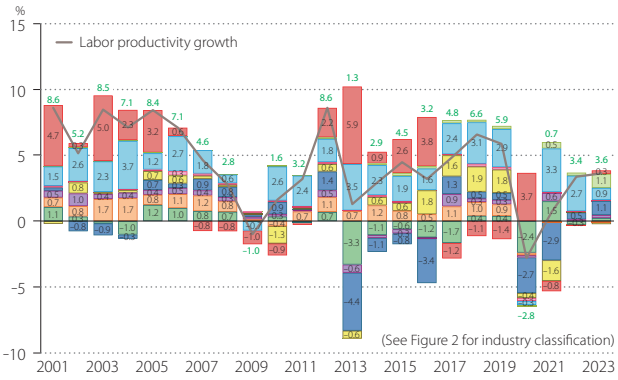

Figure 7 Industry Origins of Labor Productivity Growth

Figure 8 Productivity Indicators

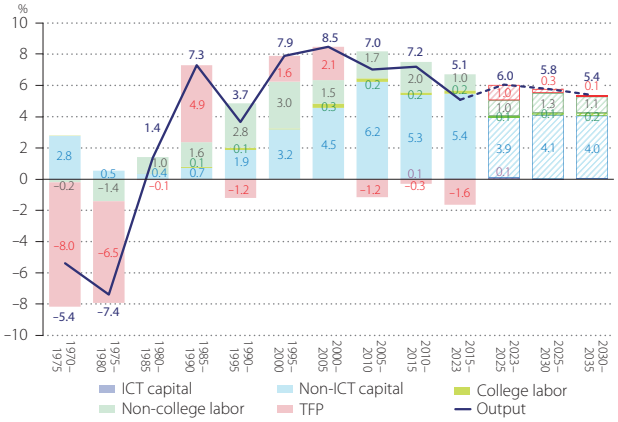

Figure 9 Decomposition of Economic Growth

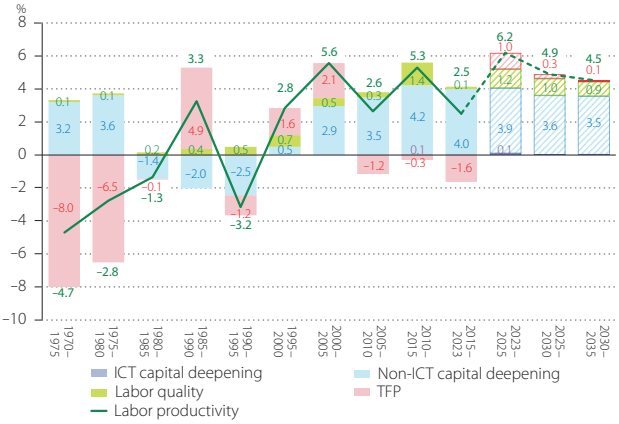

Figure 10 Decomposition of Labor Productivity Growth

App.

ROC

Key Indicators

GDP in 2023	1,731	Billion USD (as of 2023)	
(exchange rate based)	757	Billion USD (as of 2023)	
Per capita GDP in 2023	73.9	Thousand USD (as of 2023)	
(exchange rate based)	32.3	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	142.9	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	69.7	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	156.7	USD (as of 2023)	
Energy productivity levels in 2022	23.0	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	160.4	g-CO2 per USD (as of 2023)	

Number of employment in 2023	11,818	Thousands persons
Employment rate in 2023	50.5	%
Female employment share in 2023	43.4	%
Average schooling years of workers in 2023	13.5	Years
Investment share in 2023	24.5	%
ICT investment share in GFCF in 2023	7.2	%
Agriculture share in GDP in 2023	1.6	%
Manufacturing share in GDP in 2023	35.8	%
Agriculture share in employment in 2023	4.4	%

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	10.5	8.7	6.8	4.1	3.0	2.9	6.6	2.5	0.5	3.9	3.0	2.4	2.7
Labor input growth	4.4	2.9	2.2	2.1	1.8	−0.8	0.5	2.4	0.6	−1.4	−1.8	−2.1	−1.7
Labor quality growth	1.1	0.9	1.1	1.7	1.1	1.3	1.4	1.6	0.9	0.5	0.7	0.6	0.6
Hours worked growth	3.3	2.0	1.1	0.3	0.7	−2.1	−0.9	0.8	−0.4	−1.9	−2.5	−2.7	−2.3
College labor input growth	12.9	12.4	11.5	8.3	4.9	4.0	3.0	5.5	3.5	0.4	−0.6	−0.9	−0.3
Non-college labor input growth	3.5	1.4	0.1	−0.5	−0.7	−4.9	−1.8	−0.6	−2.5	−3.4	−3.5	−3.8	−3.5
ICT capital input growth	18.6	18.9	20.5	4.6	3.0	3.5	3.7	4.6	2.4	8.5	7.4	9.2	7.9
Non-ICT capital input growth	7.7	6.1	5.4	2.4	1.9	2.1	2.8	3.6	2.9	1.6	1.7	1.4	1.7
Per-worker labor productivity growth	7.3	6.4	5.5	3.2	2.3	2.9	7.1	2.7	−0.4	6.2	5.3	4.8	4.8
Per-hour labor productivity growth	7.2	6.8	5.7	3.8	2.3	5.0	7.5	1.7	0.9	5.8	5.5	5.0	5.0
Capital productivity growth	−7.8	−6.4	−6.1	−2.5	−2.0	−2.1	−2.7	−3.6	−2.9	2.0	1.1	0.6	0.7
TFP growth	4.5	4.3	2.9	1.9	1.1	2.2	4.9	−0.6	−1.3	3.6	2.9	2.5	2.5

Production

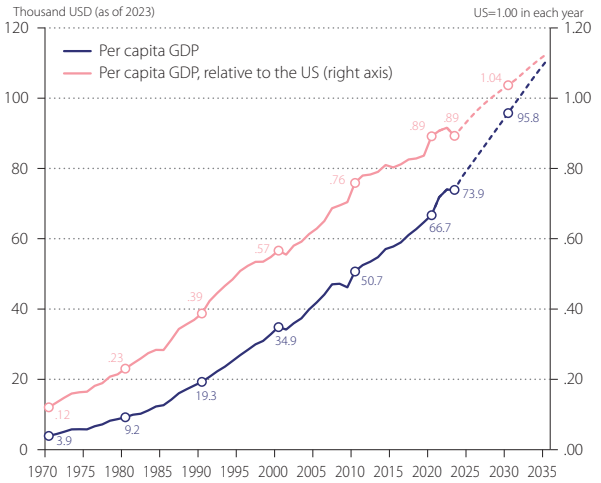

Figure 1 Per Capita GDP

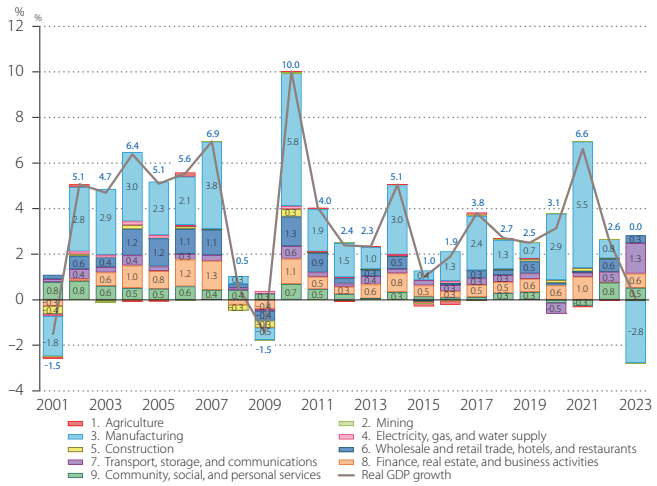

Figure 2 Industry Origins of Economic Growth

Labor

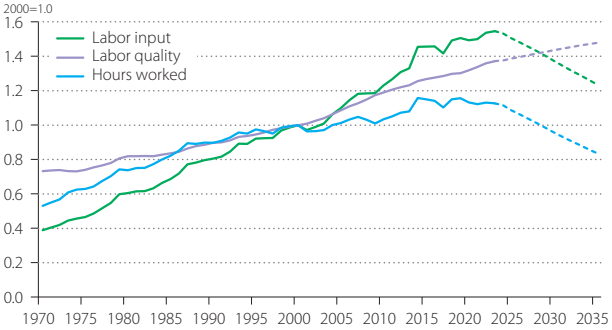

Figure 3 Labor Inputs

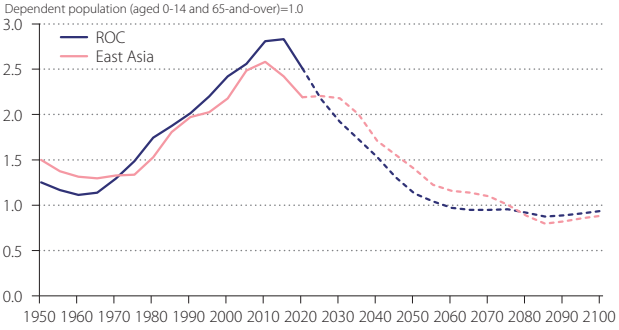

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

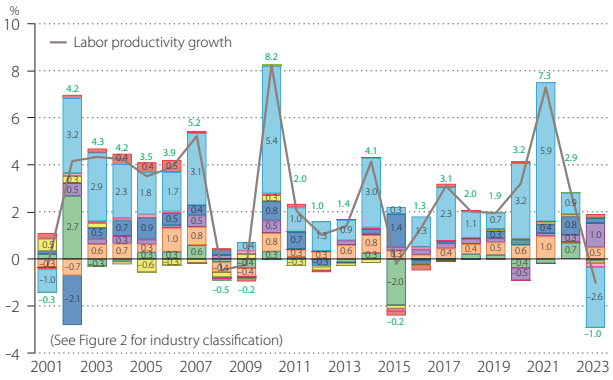

Figure 7 Industry Origins of Labor Productivity Growth

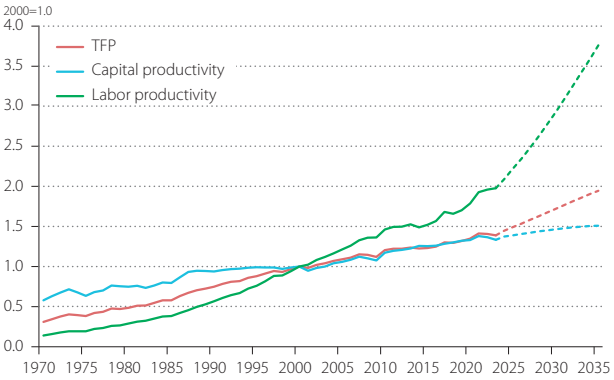

Figure 8 Productivity Indicators

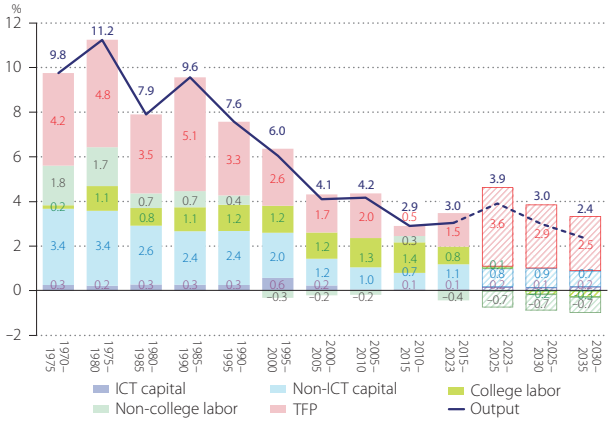

Figure 9 Decomposition of Economic Growth

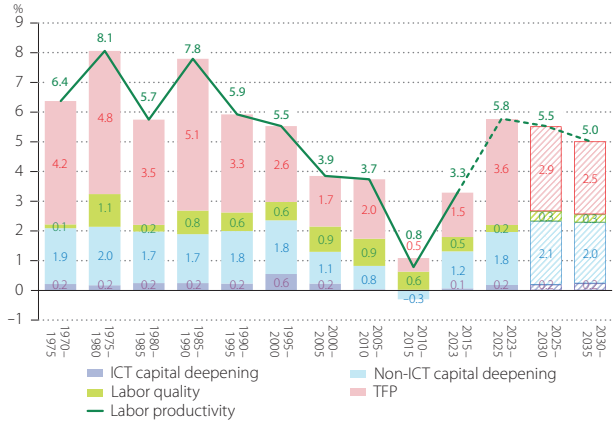

Figure 10 Decomposition of Labor Productivity Growth

App.

Fiji

Key Indicators

GDP in 2023	14	Billion USD (as of 2023)	Number of employment in 2023	380	Thousands persons
(exchange rate based)	5	Billion USD (as of 2023)	Employment rate in 2023	41.1	%
Per capita GDP in 2023	15.2	Thousand USD (as of 2023)	Female employment share in 2023	32.2	%
(exchange rate based)	5.9	Thousand USD (as of 2023)	Average schooling years of workers in 2023	12.3	Years
Per-worker labor productivity level in 2023	31.3	Thousand USD per worker (as of 2023)	Investment share in 2023	19.8	%
Per-hour labor productivity level in 2023	16.6	USD per hour worked (as of 2023)	ICT investment share in GFCF in 2023	10.8	%
Capital stock per hour worked in 2023	45.3	USD (as of 2023)	Agriculture share in GDP in 2023	18.2	%
Energy productivity levels in 2022	n.a.	Thousand USD per toe (as of 2023)	Manufacturing share in GDP in 2023	12.6	%
Carbon intensity of GDP in 2022	112.9	g-CO2 per USD (as of 2023)	Agriculture share in employment in 2023	9.6	%

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	4.7	2.2	2.3	1.3	2.4	−18.7	−5.0	18.1	7.3	3.4	3.4	3.6	3.8
Labor input growth	5.7	4.6	4.0	2.1	1.7	−3.2	1.5	4.4	7.7	1.3	1.2	0.7	1.5
Labor quality growth	2.3	2.3	2.1	1.0	0.3	0.1	0.1	0.1	0.0	0.4	0.4	0.4	0.4
Hours worked growth	3.4	2.4	1.8	1.2	1.4	−3.4	1.5	4.3	7.6	0.9	0.8	0.4	1.2
College labor input growth	6.4	7.9	5.1	4.1	1.0	−3.6	1.3	4.2	7.8	1.8	1.6	1.5	2.1
Non–college labor input growth	5.5	3.5	3.4	0.9	2.1	−3.1	1.7	4.5	7.6	1.1	0.9	0.3	1.2
ICT capital input growth	2.6	16.4	5.5	3.7	6.6	2.8	0.7	3.9	6.7	11.7	7.2	10.0	8.9
Non–ICT capital input growth	5.2	2.5	2.0	0.0	0.6	0.2	−1.2	0.2	2.2	1.2	1.5	1.6	1.5
Per-worker labor productivity growth	1.3	−0.5	0.8	−0.1	1.4	−15.2	−6.5	13.7	−0.5	2.8	2.9	3.4	2.8
Per–hour labor productivity growth	1.3	−0.1	0.5	0.2	1.0	−15.3	−6.5	13.8	−0.4	2.5	2.7	3.2	2.6
Capital productivity growth	−5.1	−2.8	−2.0	−0.1	−0.8	−0.5	1.0	−0.3	−2.4	1.6	1.7	1.5	1.3
TFP growth	−0.7	−1.5	−0.6	0.3	1.2	−17.3	−5.2	15.8	2.4	1.8	2.0	2.1	2.0

Production

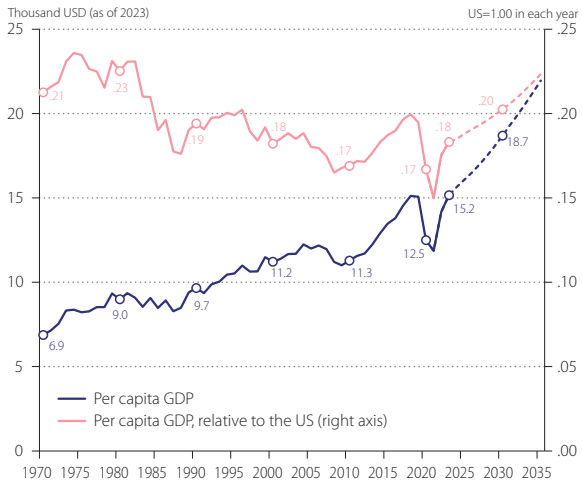

Figure 1 Per Capita GDP

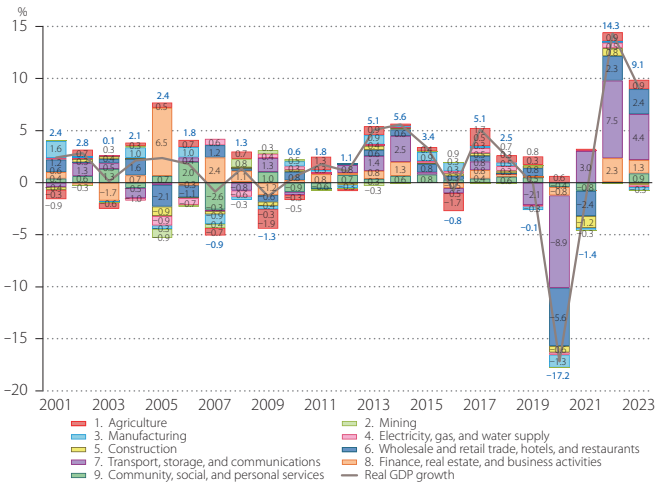

Figure 2 Industry Origins of Economic Growth

Labor

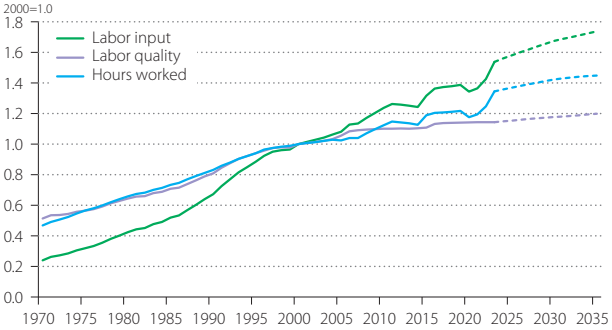

Figure 3 Labor Inputs

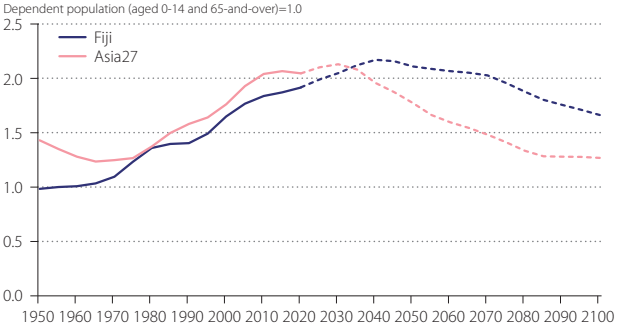

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

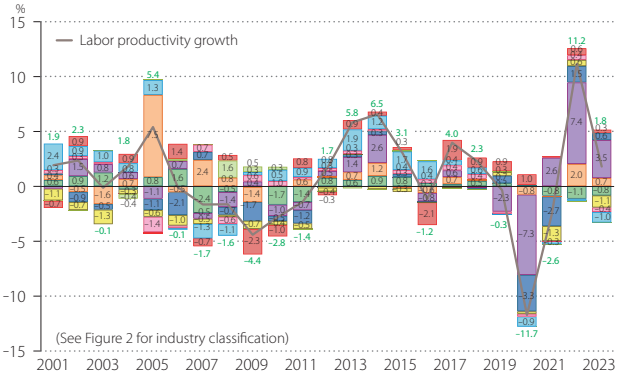

Figure 7 Industry Origins of Labor Productivity Growth

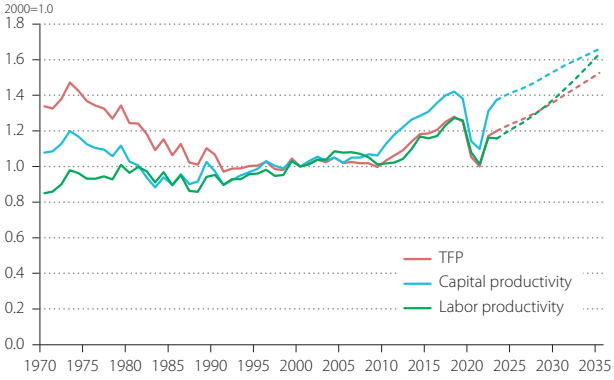

Figure 8 Productivity Indicators

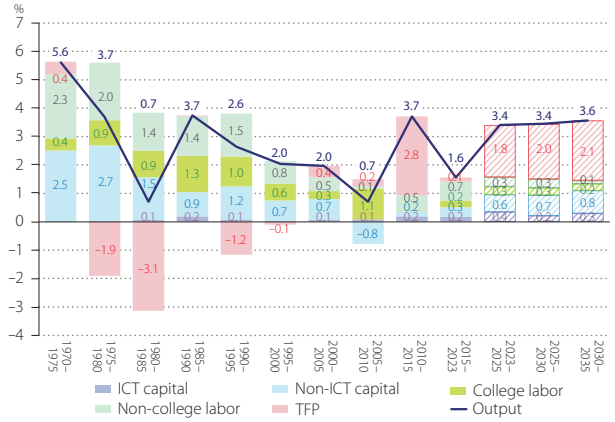

Figure 9 Decomposition of Economic Growth

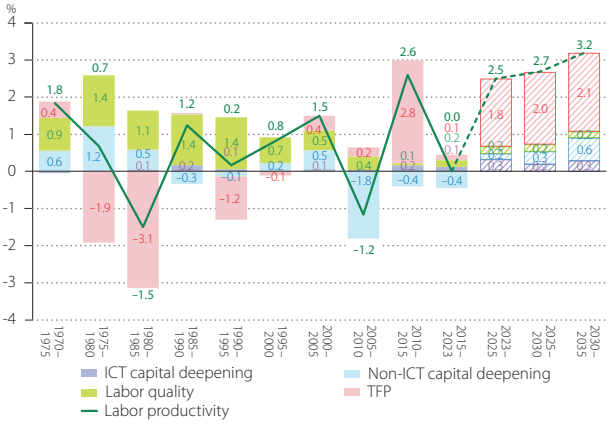

Figure 10 Decomposition of Labor Productivity Growth

Hong Kong

Key Indicators

GDP in 2023	541	Billion USD (as of 2023)	
(exchange rate based)	381	Billion USD (as of 2023)	
Per capita GDP in 2023	71.8	Thousand USD (as of 2023)	
(exchange rate based)	50.5	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	140.7	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	66.2	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	167.2	USD (as of 2023)	
Energy productivity levels in 2022	73.7	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	62.6	g-CO2 per USD (as of 2023)	

Number of employment in 2023	3,651	Thousands persons
Employment rate in 2023	48.4	%
Female employment share in 2023	50.7	%
Average schooling years of workers in 2023	12.6	Years
Investment share in 2023	15.5	%
ICT investment share in GFCF in 2023	15.5	%
Agriculture share in GDP in 2023	0.0	%
Manufacturing share in GDP in 2023	1.0	%
Agriculture share in employment in 2023	0.2	%

(%: average annual growth rate)	1970 –80	1980 –90	1990 –2000	2000 –10	2010 –23	2019 –20	2020 –21	2021 –22	2022 –23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	8.9	6.7	4.3	4.0	1.6	–6.5	6.1	–3.5	3.3	2.2	2.1	2.2	2.3
Labor input growth	4.5	2.6	3.3	1.2	0.7	–5.6	2.1	–1.7	1.9	–1.2	–1.8	–2.1	–1.5
Labor quality growth	0.8	1.6	1.3	0.5	0.9	1.6	–0.1	1.0	0.8	0.6	0.5	0.4	0.5
Hours worked growth	3.7	1.0	2.0	0.7	–0.2	–7.2	2.3	–2.6	1.1	–1.7	–2.3	–2.5	–2.0
College labor input growth	9.7	11.4	10.8	6.0	3.9	–1.2	1.4	0.1	2.9	0.2	–0.6	–1.1	–0.4
Non–college labor input growth	4.1	1.5	1.5	–1.0	–1.5	–9.0	2.7	–3.2	1.1	–2.5	–2.9	–3.2	–2.6
ICT capital input growth	17.0	19.2	18.6	9.7	5.8	2.0	3.2	4.4	3.9	8.8	5.5	8.7	7.1
Non–ICT capital input growth	7.0	5.8	4.9	2.2	0.4	–1.1	–1.0	–1.1	–0.2	0.4	0.5	0.4	0.4
Per-worker labor productivity growth	4.1	4.8	2.6	3.2	1.2	–1.3	6.3	–2.7	1.3	3.9	4.0	4.3	3.9
Per–hour labor productivity growth	5.2	5.7	2.4	3.3	1.8	0.7	3.9	–0.9	2.2	4.0	4.4	4.7	4.3
Capital productivity growth	–7.2	–6.1	–5.6	–2.8	–0.8	0.8	0.8	0.6	0.0	1.3	1.3	1.1	1.1
TFP growth	3.1	2.3	–0.1	2.0	0.8	–3.0	5.2	–2.3	2.2	2.5	2.8	2.9	2.7

Production

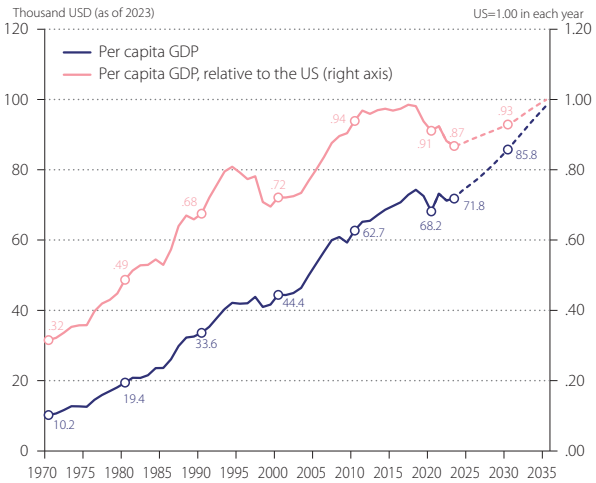

Figure 1 Per Capita GDP

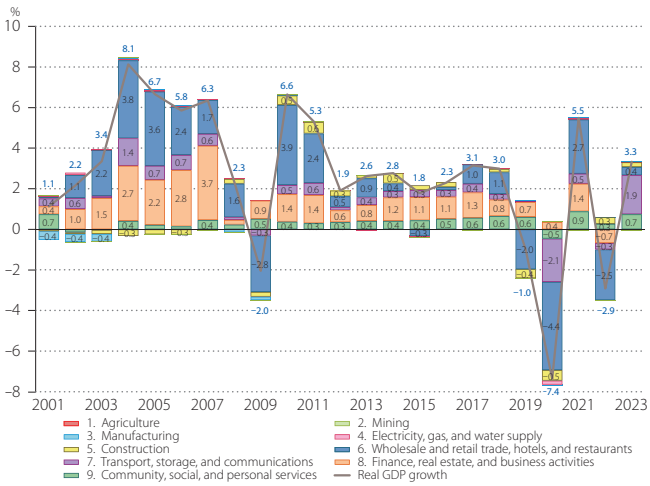

Figure 2 Industry Origins of Economic Growth

Labor

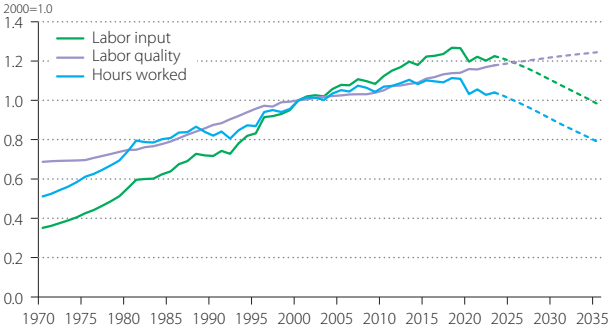

Figure 3 Labor Inputs

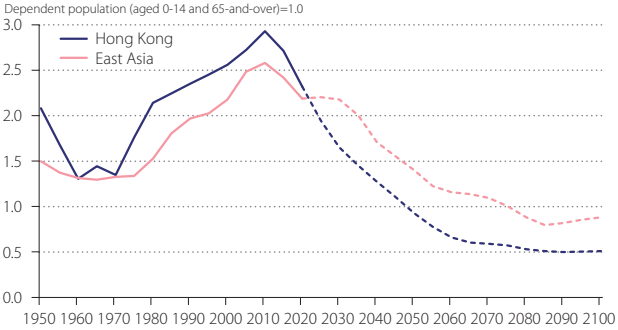

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

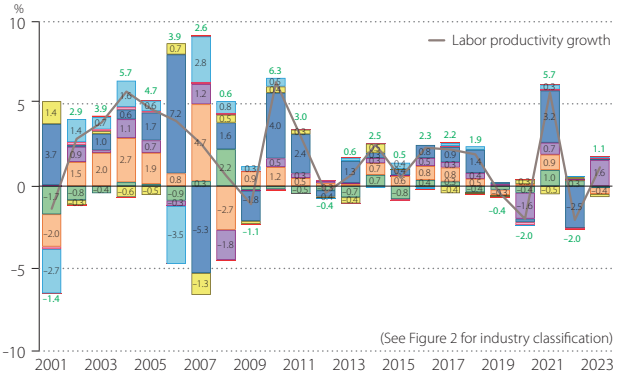

Figure 7 Industry Origins of Labor Productivity Growth

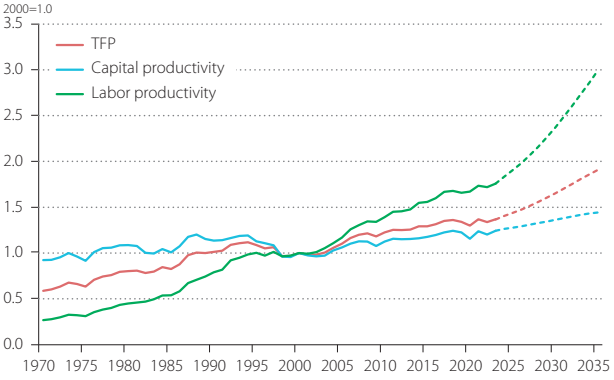

Figure 8 Productivity Indicators

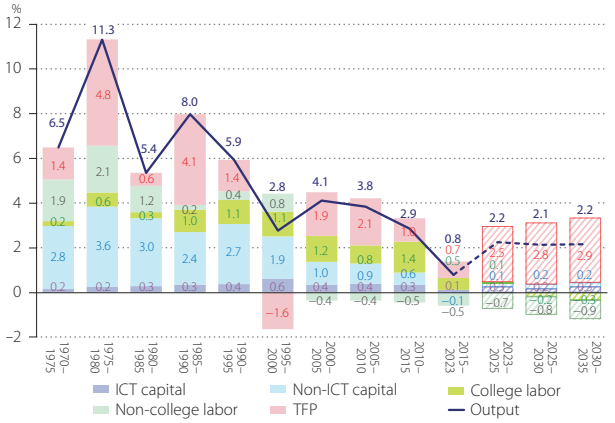

Figure 9 Decomposition of Economic Growth

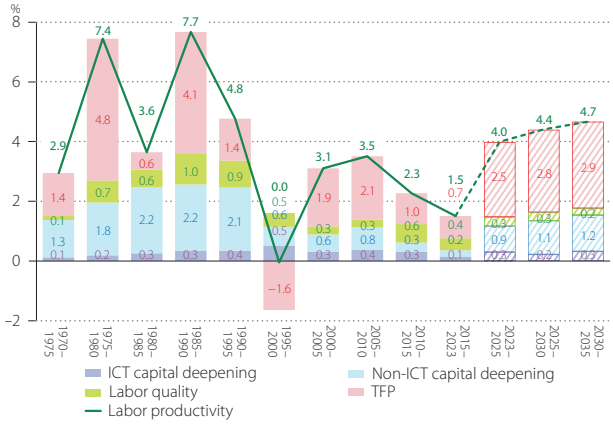

Figure 10 Decomposition of Labor Productivity Growth

App.

India

Key Indicators

GDP in 2023	13,880	Billion USD (as of 2023)	
(exchange rate based)	3,625	Billion USD (as of 2023)	
Per capita GDP in 2023	9.7	Thousand USD (as of 2023)	
(exchange rate based)	2.5	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	24.9	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	11.7	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	39.4	USD (as of 2023)	
Energy productivity levels in 2022	18.5	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	202.9	g-CO2 per USD (as of 2023)	

Number of employment in 2023	543,534	Thousands persons
Employment rate in 2023	37.8	%
Female employment share in 2023	25.8	%
Average schooling years of workers in 2023	6.3	Years
Investment share in 2023	33.0	%
ICT investment share in GFCF in 2023	10.6	%
Agriculture share in GDP in 2023	17.8	%
Manufacturing share in GDP in 2023	14.3	%
Agriculture share in employment in 2023	44.1	%

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	3.1	5.0	5.0	7.6	5.5	–5.8	12.9	6.0	4.1	6.4	7.1	6.4	6.5
Labor input growth	3.0	3.2	2.8	3.0	1.8	1.4	1.2	1.2	1.4	2.8	2.9	2.4	2.6
Labor quality growth	0.6	1.1	1.0	1.5	0.8	0.5	0.5	0.5	0.5	1.8	2.0	1.9	1.8
Hours worked growth	2.4	2.0	1.8	1.5	1.0	0.9	0.8	0.7	0.9	0.9	0.8	0.5	0.7
College labor input growth	12.0	8.2	5.9	6.3	2.6	2.4	2.1	2.1	2.3	3.9	4.2	3.7	3.8
Non–college labor input growth	2.2	2.3	2.0	1.7	1.4	1.0	0.8	0.8	0.9	2.2	2.1	1.6	1.8
ICT capital input growth	16.3	21.2	14.5	14.7	12.3	7.0	5.7	4.4	3.6	10.7	10.0	13.4	10.9
Non–ICT capital input growth	4.0	4.8	4.9	6.6	6.1	4.7	4.5	5.0	5.7	4.8	5.4	5.3	5.3
Per-worker labor productivity growth	0.4	3.4	3.6	5.8	4.8	–7.2	8.4	7.0	7.8	5.4	6.3	5.8	6.1
Per–hour labor productivity growth	0.5	3.4	3.5	5.7	4.8	–7.3	8.3	6.9	7.8	5.4	6.3	5.8	6.1
Capital productivity growth	–4.1	–5.3	–5.4	–7.1	–6.6	–5.1	–4.6	–4.9	–5.4	1.0	1.3	0.2	0.3
TFP growth	–0.3	1.7	1.6	2.4	2.0	–9.1	6.6	5.0	5.7	2.6	3.1	2.5	3.0

Production

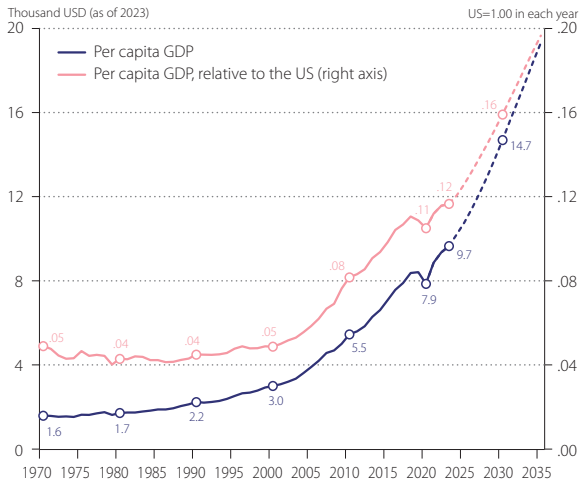

Figure 1 Per Capita GDP

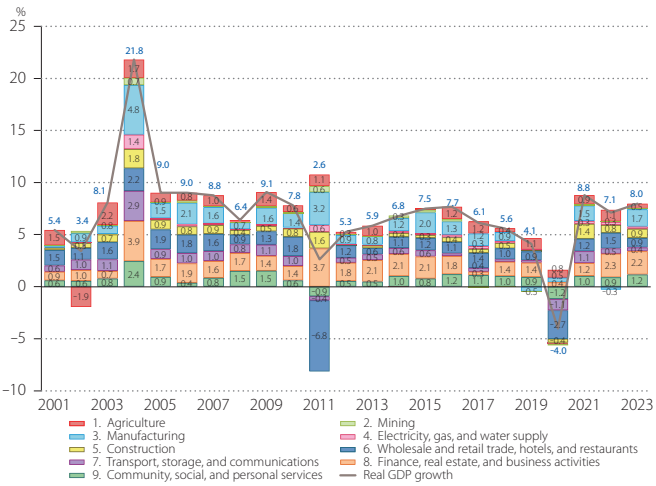

Figure 2 Industry Origins of Economic Growth

Labor

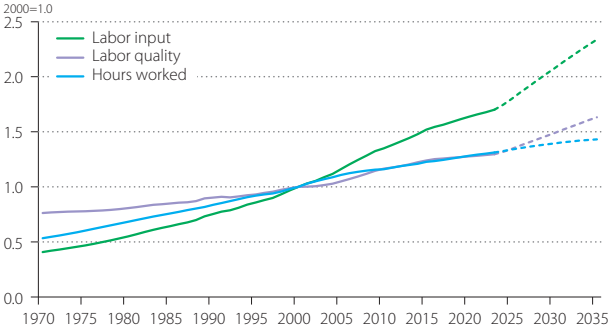

Figure 3 Labor Inputs

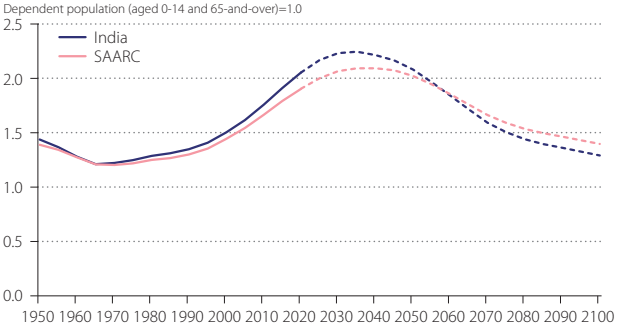

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

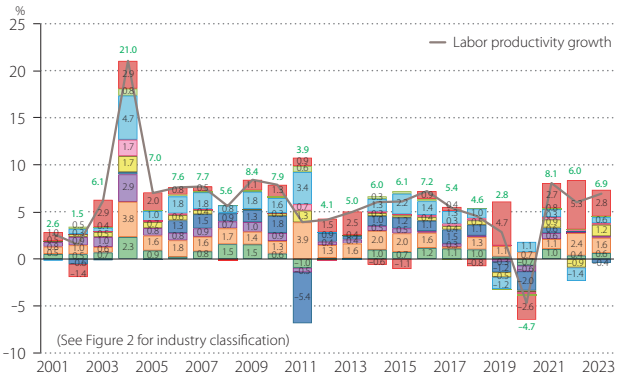

Figure 7 Industry Origins of Labor Productivity Growth

Figure 8 Productivity Indicators

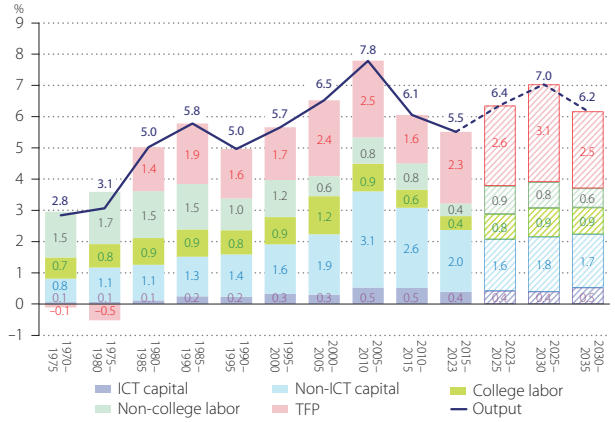

Figure 9 Decomposition of Economic Growth

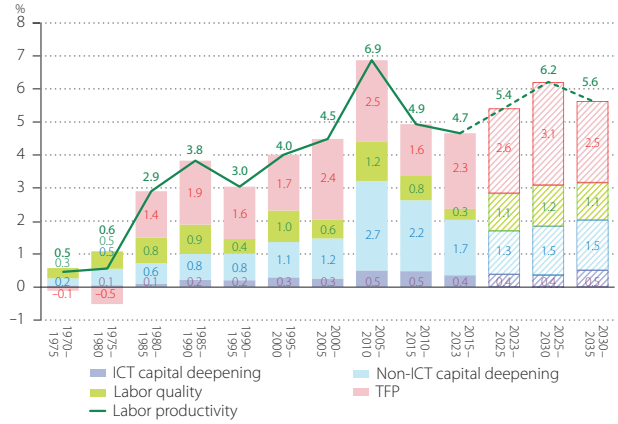

Figure 10 Decomposition of Labor Productivity Growth

App.

Indonesia

Key Indicators

GDP in 2023	4,360	Billion USD (as of 2023)	
(exchange rate based)	1,378	Billion USD (as of 2023)	
Per capita GDP in 2023	16.1	Thousand USD (as of 2023)	
(exchange rate based)	5.1	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	30.1	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	15.3	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	84.3	USD (as of 2023)	
Energy productivity levels in 2022	24.5	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	163.6	g-CO2 per USD (as of 2023)	

Number of employment in 2023	139,242	Thousands persons
Employment rate in 2023	51.3	%
Female employment share in 2023	39.2	%
Average schooling years of workers in 2023	9.0	Years
Investment share in 2023	30.9	%
ICT investment share in GFCF in 2023	3.8	%
Agriculture share in GDP in 2023	13.1	%
Manufacturing share in GDP in 2023	19.5	%
Agriculture share in employment in 2023	27.9	%

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	8.0	6.1	4.1	5.1	4.5	−2.1	3.6	5.2	4.9	4.5	5.1	4.8	4.9
Labor input growth	5.9	5.8	6.4	5.0	4.5	4.0	−8.8	3.1	5.2	3.9	2.9	2.3	3.0
Labor quality growth	1.9	2.4	4.3	2.8	3.0	3.7	−2.3	−0.6	−0.5	3.2	2.7	2.3	2.4
Hours worked growth	4.0	3.4	2.1	2.2	1.6	0.3	−6.5	3.6	5.7	0.8	0.2	−0.1	0.6
College labor input growth	23.0	11.5	21.2	11.9	8.5	7.5	−16.1	5.6	1.4	3.0	3.7	3.7	3.4
Non-college labor input growth	5.6	5.6	5.2	3.8	3.2	2.6	−5.8	2.1	6.6	4.3	2.5	1.7	2.8
ICT capital input growth	23.3	21.1	13.4	13.2	8.8	6.3	6.1	7.9	6.6	9.8	8.2	11.3	9.5
Non-ICT capital input growth	6.4	4.3	5.8	4.2	5.1	5.1	4.4	4.5	4.2	3.4	3.6	3.8	3.7
Per-worker labor productivity growth	4.2	2.9	2.4	3.3	2.5	−1.5	4.1	1.6	2.0	4.1	4.7	4.7	4.4
Per-hour labor productivity growth	4.0	2.7	2.0	2.9	2.9	−2.4	10.1	1.5	−0.8	3.7	4.9	4.9	4.3
Capital productivity growth	−6.4	−4.4	−5.9	−4.3	−5.1	−5.2	−4.4	−4.5	−4.2	0.9	1.4	0.9	0.7
TFP growth	1.7	1.2	−2.0	0.5	−0.3	−6.7	5.1	1.2	0.3	0.8	1.7	1.6	1.4

Production

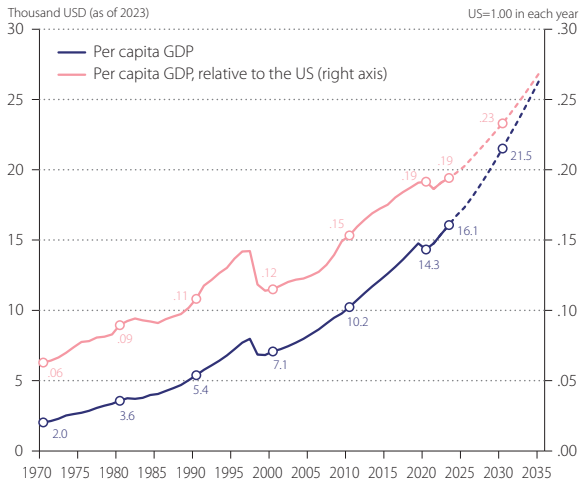

Figure 1 Per Capita GDP

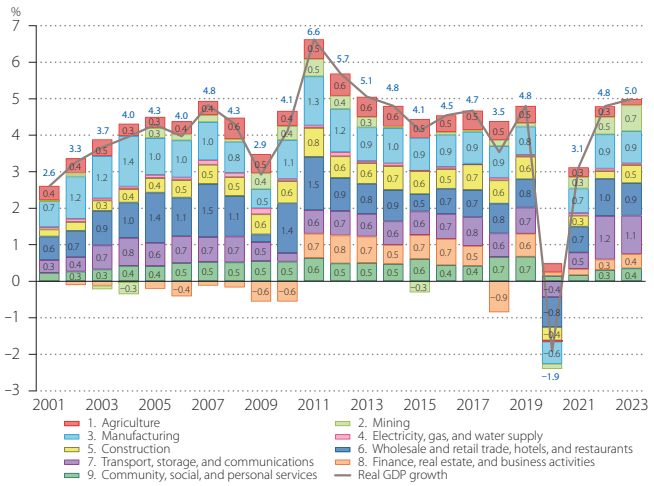

Figure 2 Industry Origins of Economic Growth

Labor

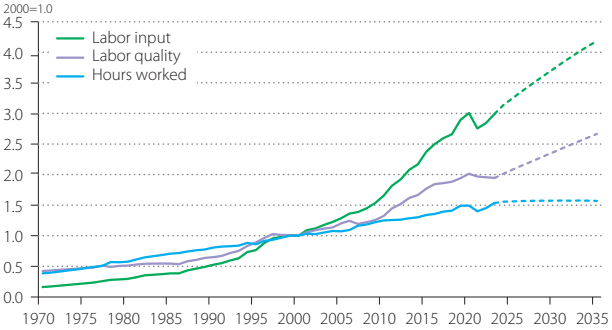

Figure 3 Labor Inputs

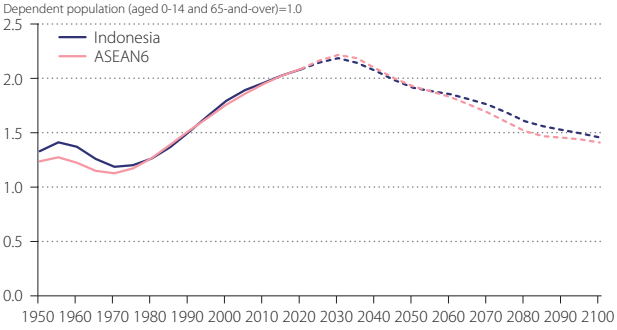

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

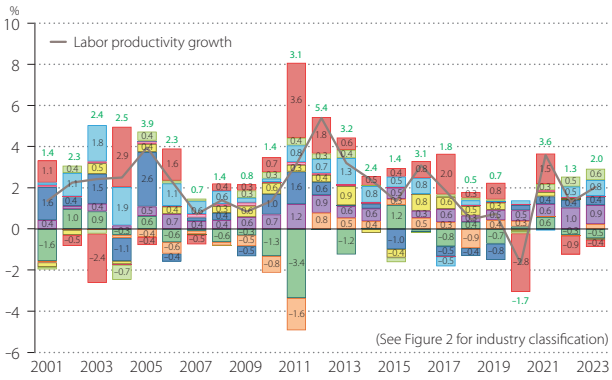

Figure 7 Industry Origins of Labor Productivity Growth

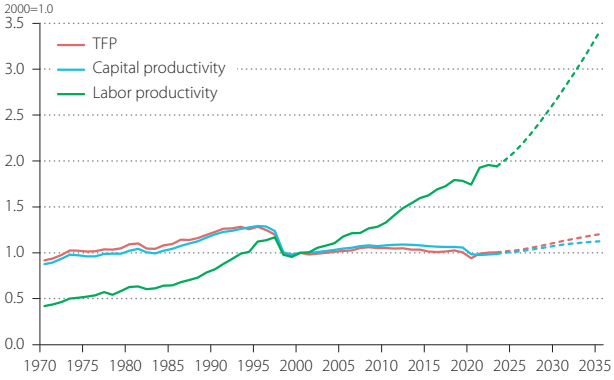

Figure 8 Productivity Indicators

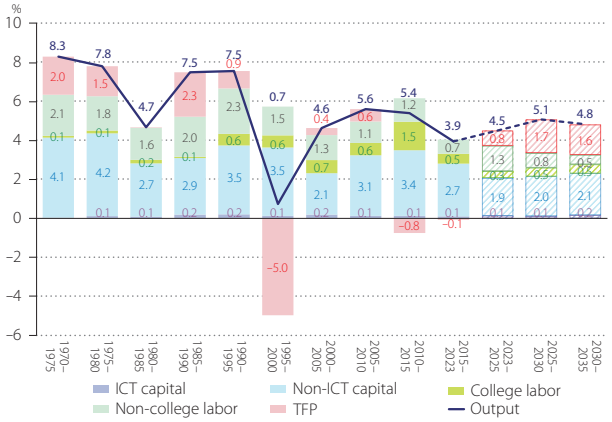

Figure 9 Decomposition of Economic Growth

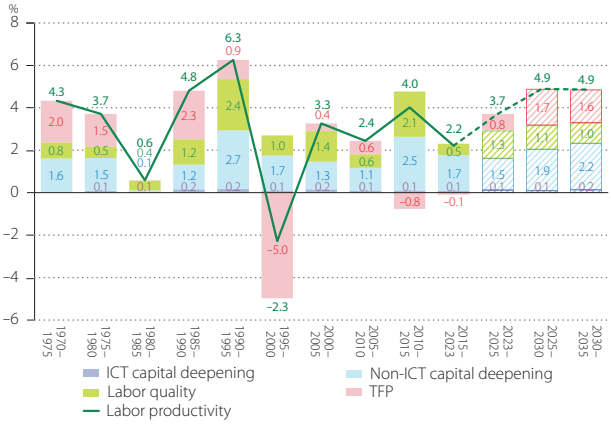

Figure 10 Decomposition of Labor Productivity Growth

Iran

Key Indicators

GDP in 2023	2,287	Billion USD (as of 2023)	
(exchange rate based)	548	Billion USD (as of 2023)	
Per capita GDP in 2023	26.3	Thousand USD (as of 2023)	
(exchange rate based)	6.3	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	91.9	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	40.0	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	138.6	USD (as of 2023)	
Energy productivity levels in 2022	9.6	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	326.8	g-CO2 per USD (as of 2023)	

Number of employment in 2023	24,502	Thousands persons	
Employment rate in 2023	28.2	%	
Female employment share in 2023	13.8	%	
Average schooling years of workers in 2023	9.7	Years	
Investment share in 2023	27.6	%	
ICT investment share in GFCF in 2023	6.0	%	
Agriculture share in GDP in 2023	7.8	%	
Manufacturing share in GDP in 2023	20.4	%	
Agriculture share in employment in 2023	14.4	%	

(%: average annual growth rate)	1970 –80	1980 –90	1990 –2000	2000 –10	2010 –23	2019 –20	2020 –21	2021 –22	2022 –23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	3.3	2.6	4.0	6.5	2.1	3.3	5.5	4.9	5.6	2.3	1.9	1.8	2.2
Labor input growth	3.6	3.8	4.6	3.3	1.9	–0.1	0.0	1.2	2.8	2.0	1.9	1.5	1.8
Labor quality growth	1.2	1.2	1.7	1.9	0.8	1.0	1.1	0.2	–0.2	0.9	1.4	1.3	1.1
Hours worked growth	2.4	2.7	2.8	1.4	1.1	–1.1	–1.1	0.9	3.0	1.1	0.5	0.2	0.7
College labor input growth	4.7	7.4	10.0	6.4	2.7	–1.4	–1.1	1.5	3.3	3.1	2.5	2.2	2.5
Non–college labor input growth	3.4	3.1	2.5	1.1	1.0	1.6	1.3	0.8	2.2	0.8	1.0	0.5	0.9
ICT capital input growth	8.5	14.4	16.3	18.6	4.7	0.9	2.1	3.6	2.3	3.6	3.2	7.9	5.0
Non–ICT capital input growth	3.3	1.7	3.1	3.5	1.7	0.4	0.1	1.4	1.6	–0.8	–0.6	–0.5	–0.5
Per-worker labor productivity growth	0.9	0.0	1.1	4.5	0.8	4.8	7.0	3.9	2.4	1.5	1.2	1.4	1.4
Per–hour labor productivity growth	0.9	–0.1	1.2	5.1	1.1	4.4	6.6	4.0	2.6	1.2	1.4	1.6	1.6
Capital productivity growth	–3.2	–1.8	–3.2	–3.6	–1.7	–0.4	0.0	–1.4	–1.5	3.0	2.5	2.3	2.2
TFP growth	–0.1	0.0	0.5	2.9	0.3	3.0	5.4	3.6	3.7	2.3	1.9	1.8	2.1

Production

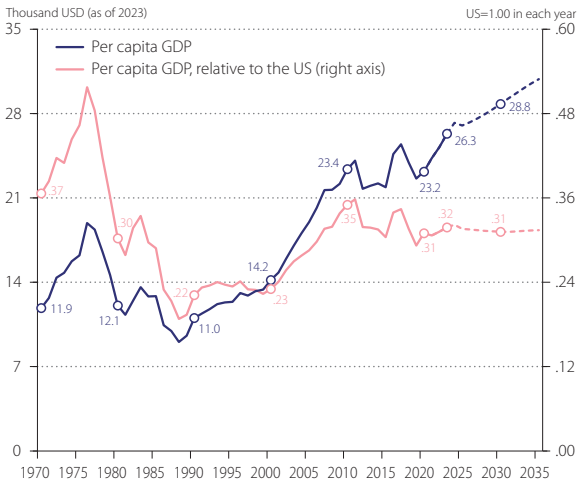

Figure 1 Per Capita GDP

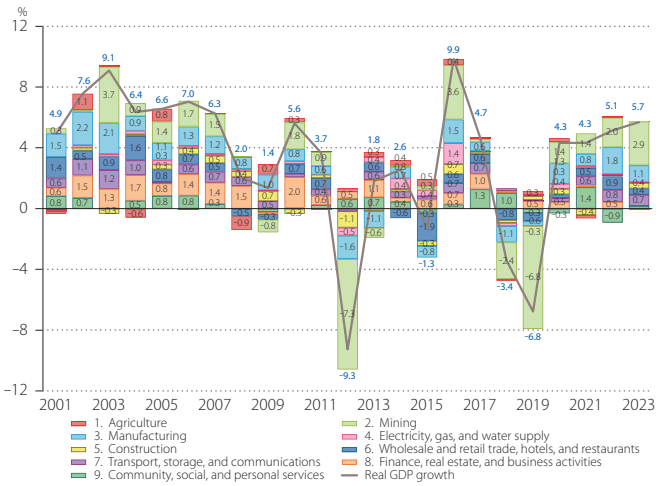

Figure 2 Industry Origins of Economic Growth

Labor

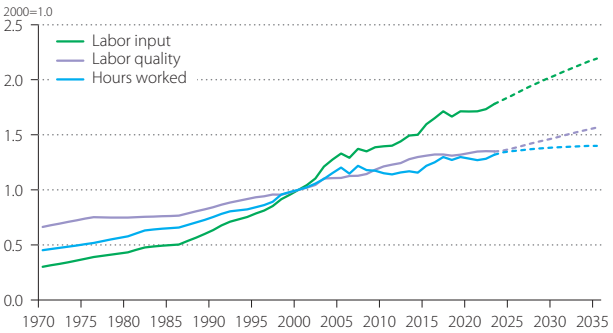

Figure 3 Labor Inputs

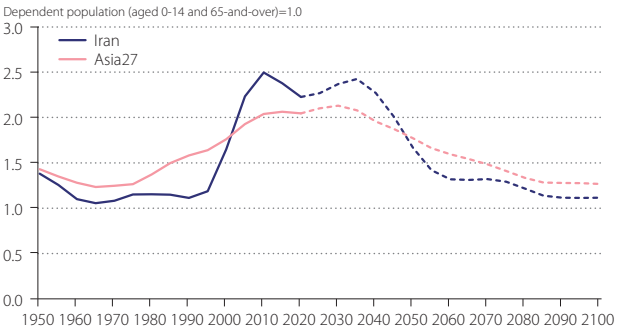

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

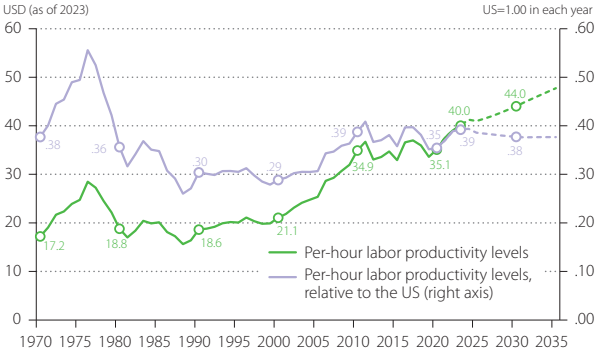

Figure 6 Per-Hour Labor Productivity Level

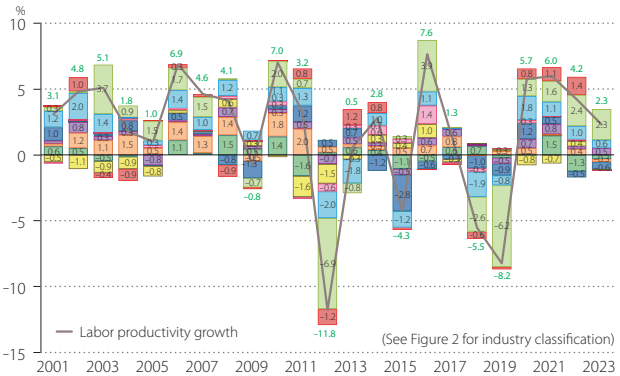

Figure 7 Industry Origins of Labor Productivity Growth

Figure 8 Productivity Indicators

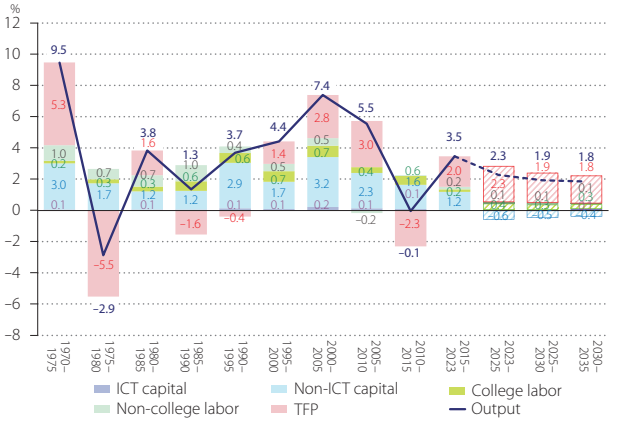

Figure 9 Decomposition of Economic Growth

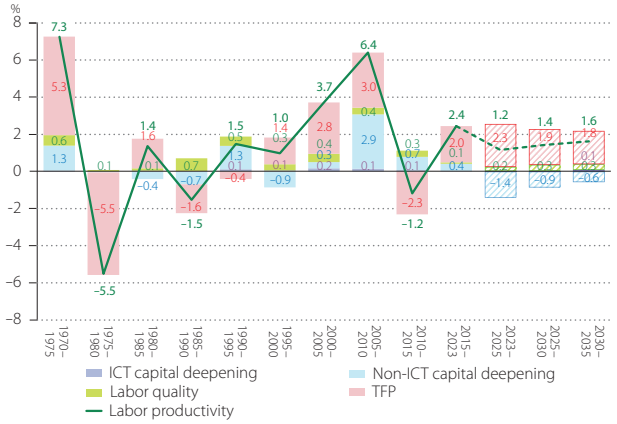

Figure 10 Decomposition of Labor Productivity Growth

App.

Japan

Key Indicators

GDP in 2023	6,336	Billion USD (as of 2023)	
(exchange rate based)	4,213	Billion USD (as of 2023)	
Per capita GDP in 2023	50.9	Thousand USD (as of 2023)	
(exchange rate based)	33.9	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	88.8	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	51.6	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	167.3	USD (as of 2023)	
Energy productivity levels in 2022	22.7	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	165.7	g-CO2 per USD (as of 2023)	

Number of employment in 2023	67,106	Thousands persons
Employment rate in 2023	54.0	%
Female employment share in 2023	45.1	%
Average schooling years of workers in 2023	13.5	Years
Investment share in 2023	26.2	%
ICT investment share in GFCF in 2023	13.3	%
Agriculture share in GDP in 2023	0.9	%
Manufacturing share in GDP in 2023	18.9	%
Agriculture share in employment in 2023	3.4	%

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	5.0	4.5	1.2	0.6	0.7	−4.3	2.8	0.8	1.4	0.4	0.8	0.6	0.7
Labor input growth	1.8	1.8	0.0	0.2	0.6	0.4	1.3	2.1	0.3	−1.5	−1.5	−1.7	−1.5
Labor quality growth	1.6	1.1	0.7	0.8	0.4	1.2	0.5	0.2	0.4	0.1	0.3	0.1	0.2
Hours worked growth	0.2	0.7	−0.7	−0.6	0.2	−0.7	0.8	1.9	−0.2	−1.6	−1.8	−1.8	−1.6
College labor input growth	7.7	6.1	3.6	3.1	2.8	4.1	5.4	6.9	2.8	−0.4	−0.1	−0.5	−0.1
Non-college labor input growth	0.7	0.5	−1.4	−1.4	−1.0	−2.2	−1.7	−1.3	−1.6	−2.4	−2.8	−2.9	−2.7
ICT capital input growth	12.0	17.8	8.9	4.8	2.6	2.7	2.0	1.7	1.5	6.0	4.0	7.0	5.3
Non-ICT capital input growth	5.3	3.7	1.8	0.3	0.0	0.2	−0.2	−0.1	0.0	0.0	0.1	−0.1	0.0
Per-worker labor productivity growth	3.9	3.6	0.9	0.7	0.1	−3.6	2.3	0.1	1.3	1.7	2.4	2.2	2.1
Per-hour labor productivity growth	4.4	3.8	1.9	1.2	0.5	−3.5	1.9	−1.0	1.6	2.0	2.6	2.4	2.4
Capital productivity growth	−5.6	−4.5	−2.3	−0.7	−0.2	−0.4	0.0	−0.1	−0.1	−0.1	0.3	0.1	0.1
TFP growth	1.2	1.6	0.2	0.2	0.2	−4.7	1.9	−0.3	1.3	1.0	1.5	1.4	1.4

Production

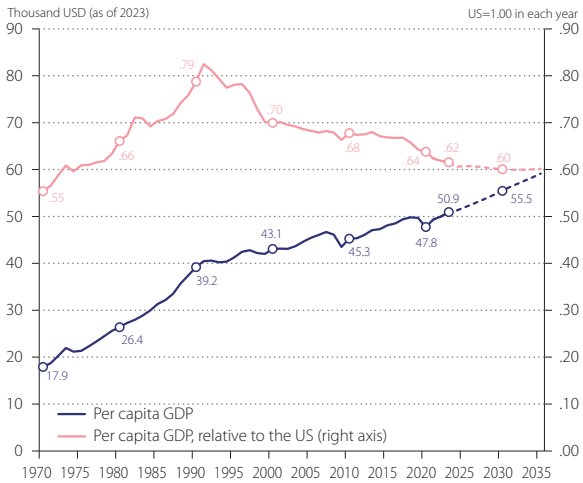

Figure 1 Per Capita GDP

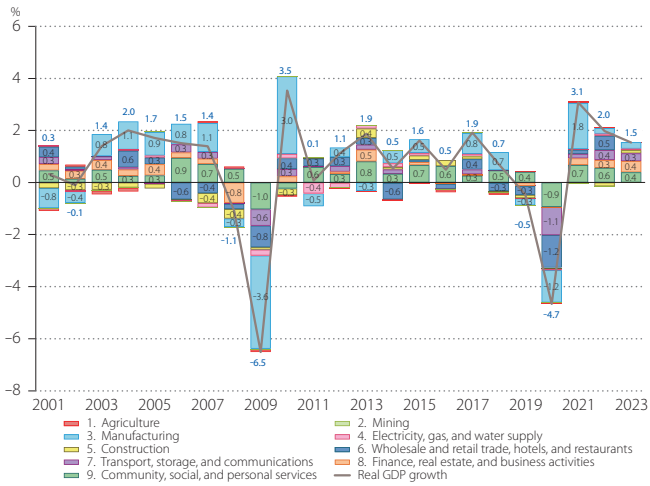

Figure 2 Industry Origins of Economic Growth

Labor

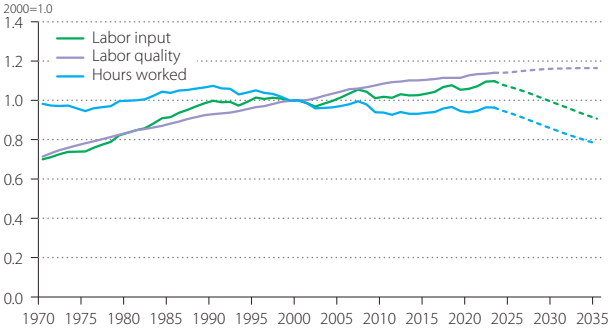

Figure 3 Labor Inputs

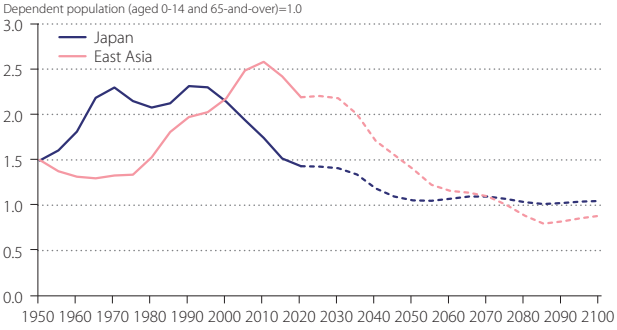

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

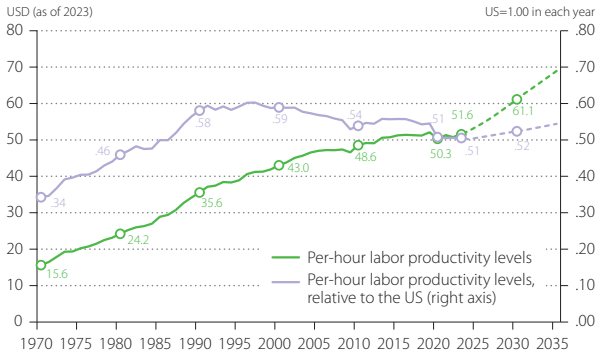

Figure 6 Per-Hour Labor Productivity Level

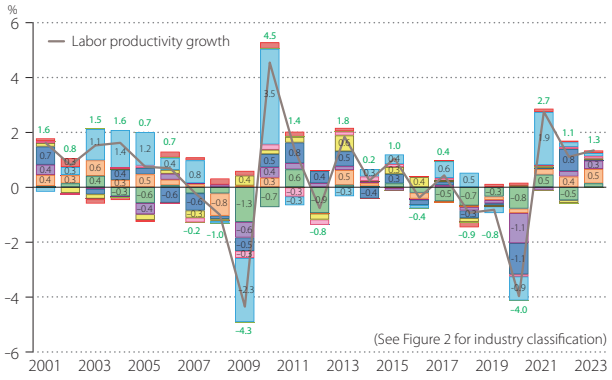

Figure 7 Industry Origins of Labor Productivity Growth

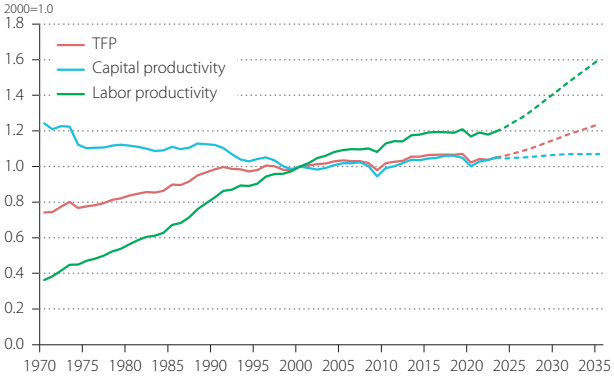

Figure 8 Productivity Indicators

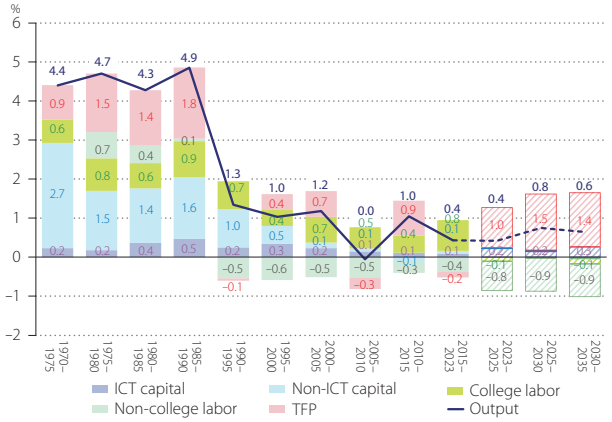

Figure 9 Decomposition of Economic Growth

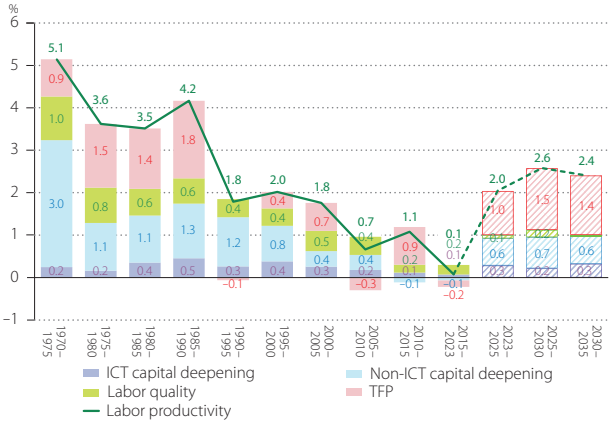

Figure 10 Decomposition of Labor Productivity Growth

App.

Korea

Key Indicators

GDP in 2023	3,100	Billion USD (as of 2023)	
(exchange rate based)	1,839	Billion USD (as of 2023)	
Per capita GDP in 2023	59.9	Thousand USD (as of 2023)	
(exchange rate based)	35.6	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	98.1	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	51.1	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	229.4	USD (as of 2023)	
Energy productivity levels in 2022	15.4	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	196.9	g-CO2 per USD (as of 2023)	

Number of employment in 2023	28,972	Thousands persons
Employment rate in 2023	56.0	%
Female employment share in 2023	43.1	%
Average schooling years of workers in 2023	13.5	Years
Investment share in 2023	32.3	%
ICT investment share in GFCF in 2023	8.1	%
Agriculture share in GDP in 2023	1.5	%
Manufacturing share in GDP in 2023	27.6	%
Agriculture share in employment in 2023	5.3	%

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	9.2	10.0	6.9	4.8	2.7	–0.7	5.1	2.9	2.1	1.6	1.2	0.8	1.2
Labor input growth	4.1	5.8	3.1	2.2	0.9	–4.7	0.3	2.3	3.8	1.1	–0.8	–1.0	–0.2
Labor quality growth	0.9	3.1	2.1	2.2	0.9	0.6	0.3	0.4	1.1	0.0	0.8	0.7	0.7
Hours worked growth	3.3	2.7	0.9	0.1	0.0	–5.2	0.0	1.9	2.7	1.1	–1.5	–1.7	–0.9
College labor input growth	3.6	10.9	7.2	5.6	2.7	–2.4	1.6	2.7	6.2	2.1	0.4	–0.1	1.0
Non–college labor input growth	4.3	4.1	1.0	–0.9	–1.8	–8.4	–1.8	1.5	–0.5	–1.0	–3.5	–3.7	–3.0
ICT capital input growth	23.4	22.5	18.2	6.9	3.4	4.4	4.3	4.0	3.5	8.0	4.5	7.3	6.0
Non–ICT capital input growth	9.5	8.2	7.2	5.1	3.3	2.9	3.0	3.0	2.8	2.4	2.2	1.6	2.0
Per-worker labor productivity growth	5.4	6.8	5.5	3.5	1.6	0.0	3.1	0.4	0.8	2.8	2.6	2.4	2.4
Per–hour labor productivity growth	5.4	6.9	6.1	4.6	2.8	4.4	4.5	1.3	–0.9	0.5	2.7	2.5	2.0
Capital productivity growth	–9.7	–8.7	–7.8	–5.3	–3.2	–3.0	–3.0	–3.0	–2.8	–1.1	–1.1	–1.1	–1.3
TFP growth	1.5	2.3	1.8	0.9	0.7	0.2	2.9	0.5	–1.5	–0.3	0.5	0.4	0.2

Production

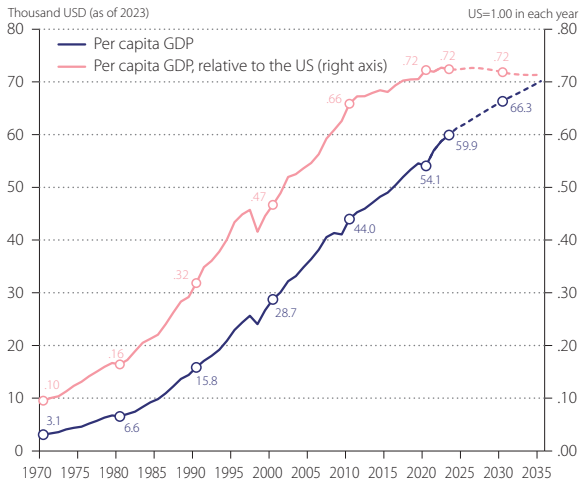

Figure 1 Per Capita GDP

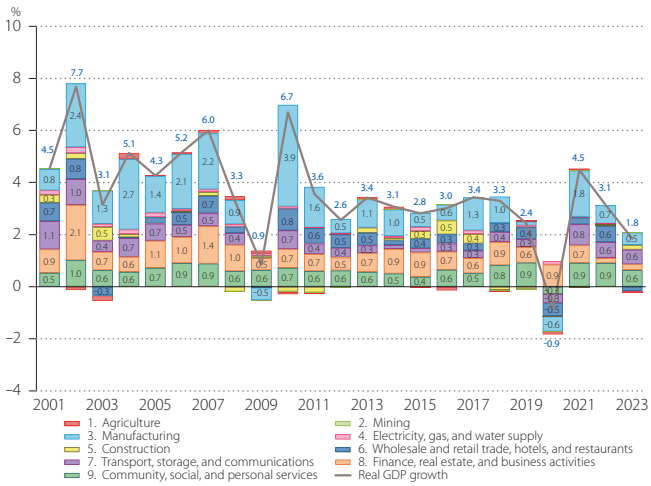

Figure 2 Industry Origins of Economic Growth

Labor

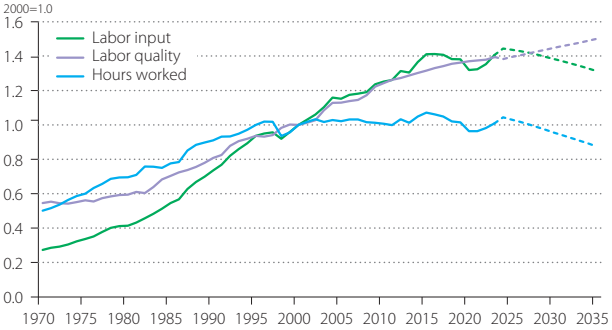

Figure 3 Labor Inputs

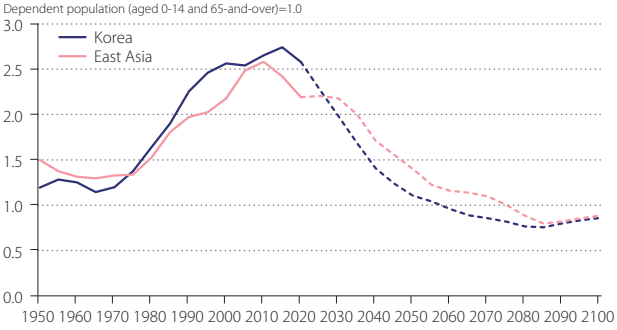

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

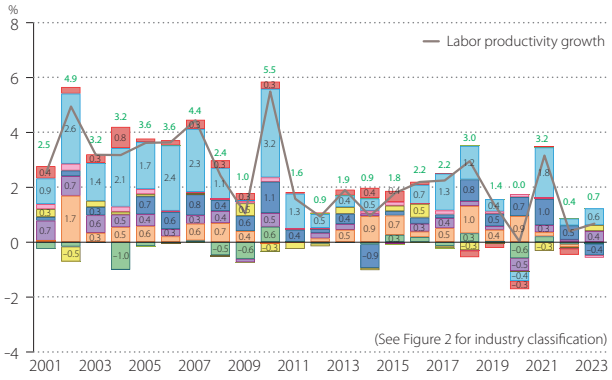

Figure 7 Industry Origins of Labor Productivity Growth

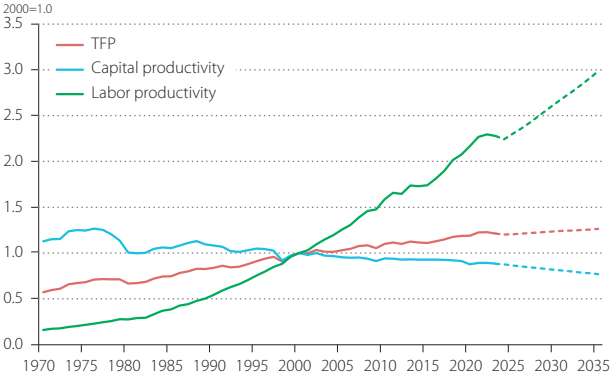

Figure 8 Productivity Indicators

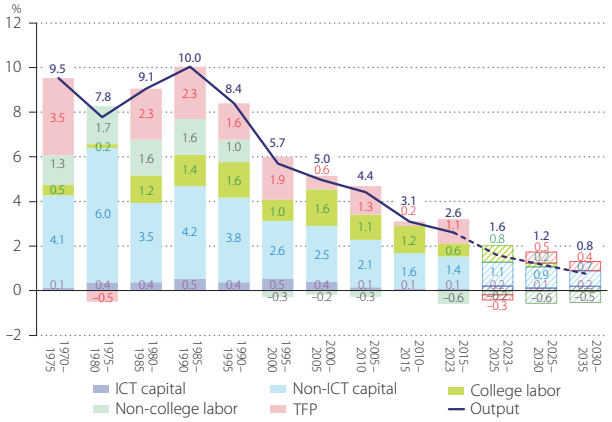

Figure 9 Decomposition of Economic Growth

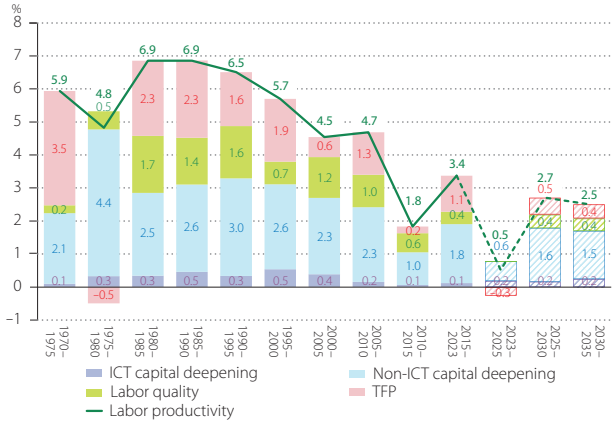

Figure 10 Decomposition of Labor Productivity Growth

App.

Lao PDR

Key Indicators

GDP in 2023	74	Billion USD (as of 2023)	Number of employment in 2023	4,001	Thousands persons
(exchange rate based)	15	Billion USD (as of 2023)	Employment rate in 2023	52.2	%
Per capita GDP in 2023	9.7	Thousand USD (as of 2023)	Female employment share in 2023	47.9	%
(exchange rate based)	2.0	Thousand USD (as of 2023)	Average schooling years of workers in 2023	5.9	Years
Per-worker labor productivity level in 2023	16.3	Thousand USD per worker (as of 2023)	Investment share in 2023	46.8	%
Per-hour labor productivity level in 2023	6.7	USD per hour worked (as of 2023)	ICT investment share in GFCF in 2023	0.9	%
Capital stock per hour worked in 2023	34.0	USD (as of 2023)	Agriculture share in GDP in 2023	29.8	%
Energy productivity levels in 2022	n.a.	Thousand USD per toe (as of 2023)	Manufacturing share in GDP in 2023	10.7	%
Carbon intensity of GDP in 2022	n.a.	g-CO2 per USD (as of 2023)	Agriculture share in employment in 2023	76.8	%

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	2.9	4.7	5.6	5.2	5.2	−0.4	2.8	5.5	1.7	3.9	3.5	3.2	3.4
Labor input growth	1.3	2.8	3.7	3.9	2.6	2.3	2.2	2.1	2.1	2.0	1.9	1.6	1.8
Labor quality growth	0.3	0.3	0.7	1.5	0.6	0.1	0.1	0.1	0.1	1.1	1.0	1.0	1.0
Hours worked growth	1.1	2.5	3.0	2.4	1.9	2.2	2.1	2.0	2.0	1.0	0.8	0.6	0.8
College labor input growth	8.8	7.4	8.6	8.7	1.5	2.2	2.2	2.1	2.1	4.6	4.8	4.4	4.4
Non–college labor input growth	1.1	2.6	3.2	3.0	2.8	2.3	2.2	2.1	2.1	1.4	1.0	0.6	1.0
ICT capital input growth	0.2	19.5	11.4	11.5	3.5	−3.9	−3.5	9.8	3.8	7.6	12.4	10.4	10.2
Non–ICT capital input growth	3.3	4.9	6.3	3.5	5.9	6.2	5.2	5.6	6.8	6.4	5.6	5.0	5.6
Per-worker labor productivity growth	1.8	2.2	2.7	2.8	3.2	−2.5	0.7	3.4	−0.3	2.8	2.5	2.4	2.3
Per–hour labor productivity growth	1.8	2.2	2.7	2.8	3.3	−2.5	0.7	3.4	−0.3	3.0	2.7	2.7	2.5
Capital productivity growth	−3.3	−4.9	−6.4	−3.6	−5.8	−6.0	−5.0	−5.6	−6.7	−2.5	−2.2	−1.8	−2.4
TFP growth	0.6	0.8	0.5	1.5	0.5	−5.0	−1.2	1.1	−3.3	−0.8	−0.8	−0.6	−0.9

Production

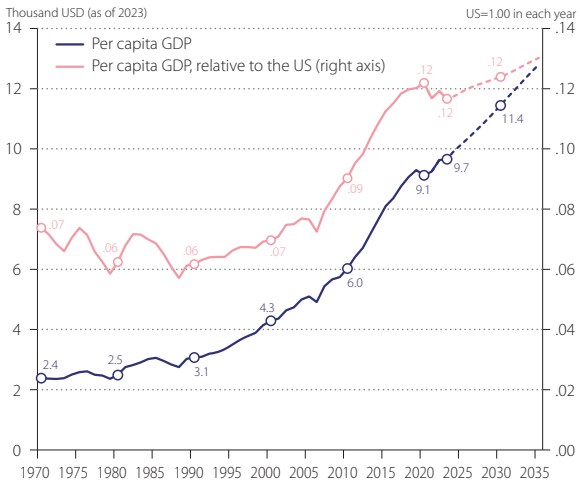

Figure 1 Per Capita GDP

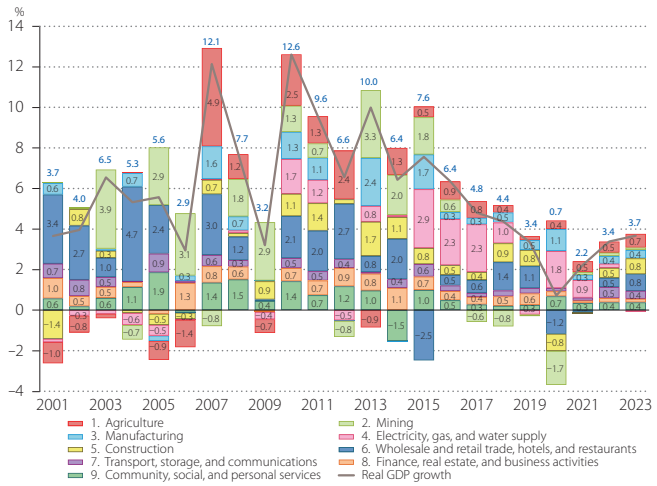

Figure 2 Industry Origins of Economic Growth

Labor

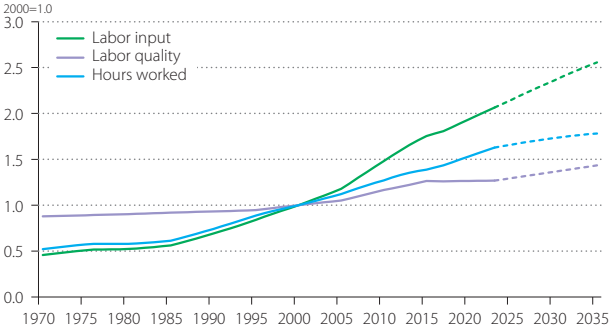

Figure 3 Labor Inputs

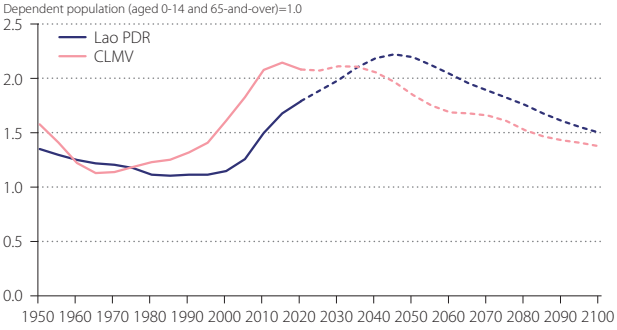

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

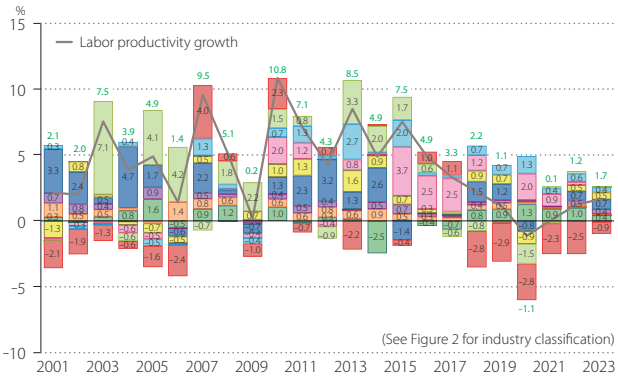

Figure 7 Industry Origins of Labor Productivity Growth

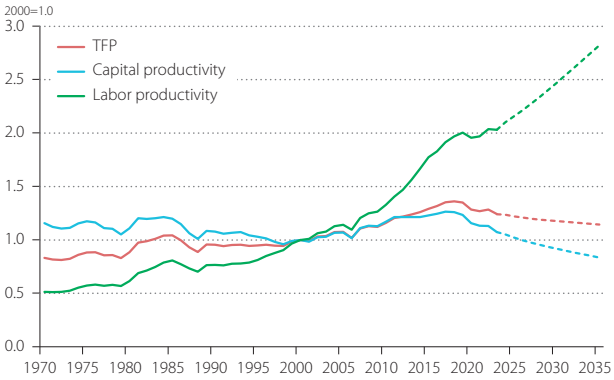

Figure 8 Productivity Indicators

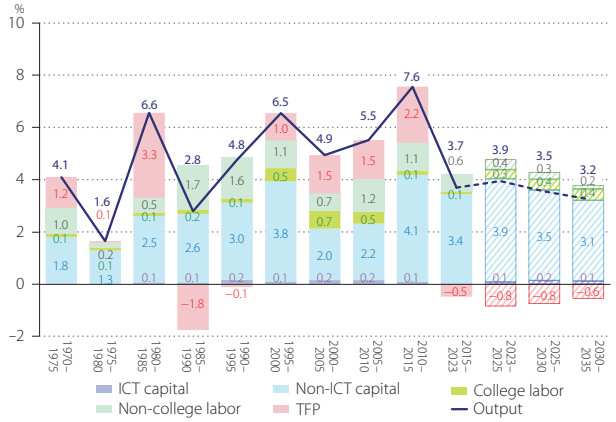

Figure 9 Decomposition of Economic Growth

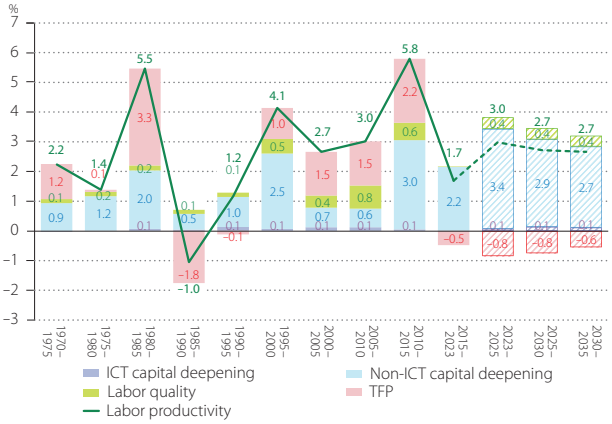

Figure 10 Decomposition of Labor Productivity Growth

Malaysia

Key Indicators

GDP in 2023	1,282	Billion USD (as of 2023)	
(exchange rate based)	400	Billion USD (as of 2023)	
Per capita GDP in 2023	38.4	Thousand USD (as of 2023)	
(exchange rate based)	12.0	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	76.1	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	35.2	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	101.4	USD (as of 2023)	
Energy productivity levels in 2022	20.5	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	197.3	g-CO2 per USD (as of 2023)	

Number of employment in 2023	16,317	Thousands persons
Employment rate in 2023	48.9	%
Female employment share in 2023	37.4	%
Average schooling years of workers in 2023	11.9	Years
Investment share in 2023	22.5	%
ICT investment share in GFCF in 2023	16.2	%
Agriculture share in GDP in 2023	7.9	%
Manufacturing share in GDP in 2023	23.3	%
Agriculture share in employment in 2023	8.6	%

(%: average annual growth rate)	1970 –80	1980 –90	1990 –2000	2000 –10	2010 –23	2019 –20	2020 –21	2021 –22	2022 –23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	7.6	5.7	7.1	4.6	4.2	–4.6	4.9	10.6	1.6	4.5	4.4	4.0	4.0
Labor input growth	4.8	5.3	5.7	4.4	3.4	0.0	1.5	7.0	5.7	2.7	2.6	2.2	2.7
Labor quality growth	1.5	2.0	2.4	1.9	1.4	5.0	–0.1	2.3	3.2	1.0	1.2	1.0	1.2
Hours worked growth	3.3	3.3	3.3	2.4	2.0	–5.0	1.6	4.7	2.5	1.7	1.5	1.2	1.5
College labor input growth	8.6	11.5	8.7	7.8	5.4	3.9	4.4	9.5	7.6	4.3	3.7	3.1	3.8
Non–college labor input growth	4.3	4.0	4.5	2.2	1.5	–3.8	–1.5	4.3	3.6	0.8	1.2	0.8	1.2
ICT capital input growth	16.7	21.9	22.7	16.5	7.4	2.9	3.1	4.6	5.5	8.8	6.5	10.6	8.3
Non–ICT capital input growth	6.2	5.6	7.2	2.6	3.3	2.2	1.8	2.8	3.0	1.0	1.2	1.2	1.3
Per-worker labor productivity growth	4.3	2.4	3.8	2.0	2.0	–4.4	4.6	8.3	–1.0	2.5	2.7	2.6	2.3
Per–hour labor productivity growth	4.2	2.4	3.8	2.1	2.3	0.4	3.3	5.9	–1.0	2.8	2.9	2.9	2.6
Capital productivity growth	–6.2	–5.7	–7.6	–3.4	–3.5	–2.3	–1.8	–2.8	–3.1	3.0	2.8	2.2	2.1
TFP growth	1.9	0.1	0.2	0.8	0.8	–5.9	3.2	6.2	–2.5	2.6	2.4	2.1	1.9

Production

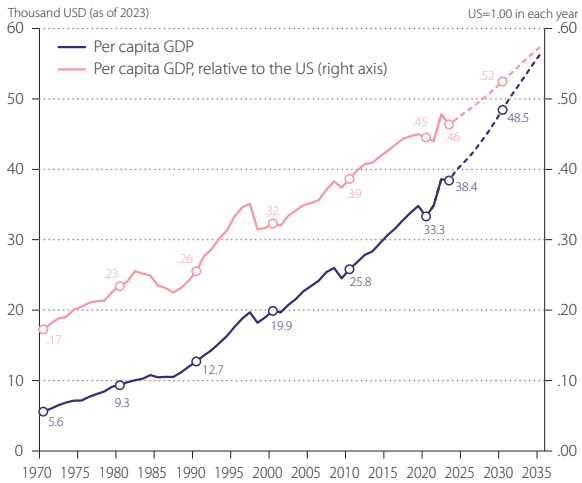

Figure 1 Per Capita GDP

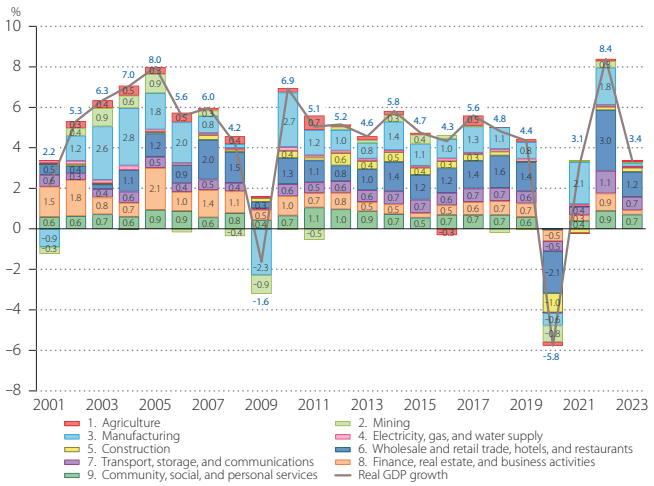

Figure 2 Industry Origins of Economic Growth

Labor

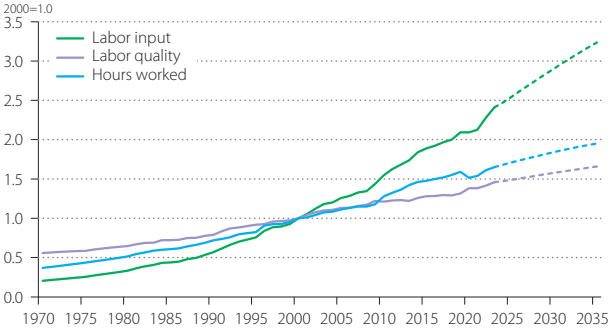

Figure 3 Labor Inputs

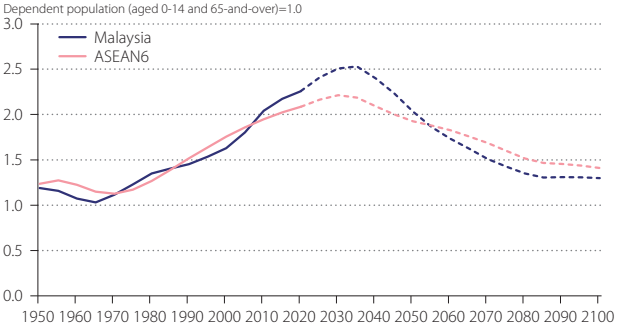

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

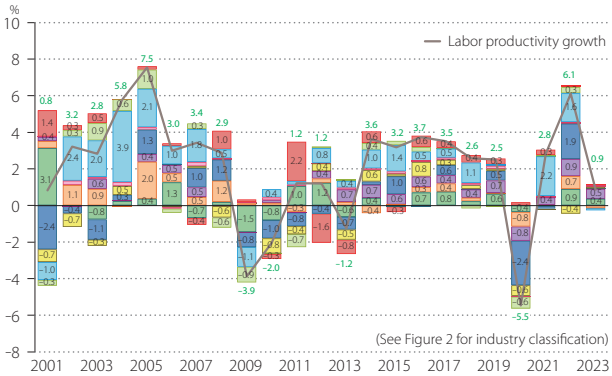

Figure 7 Industry Origins of Labor Productivity Growth

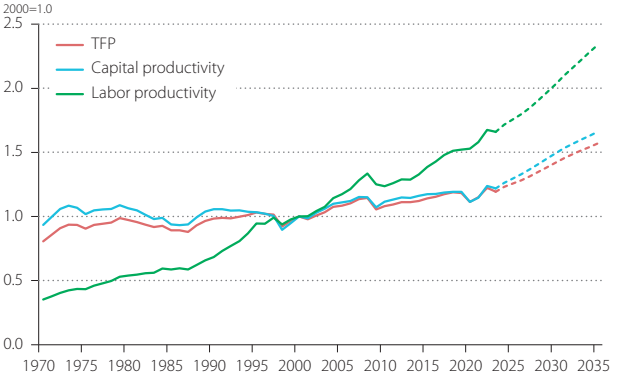

Figure 8 Productivity Indicators

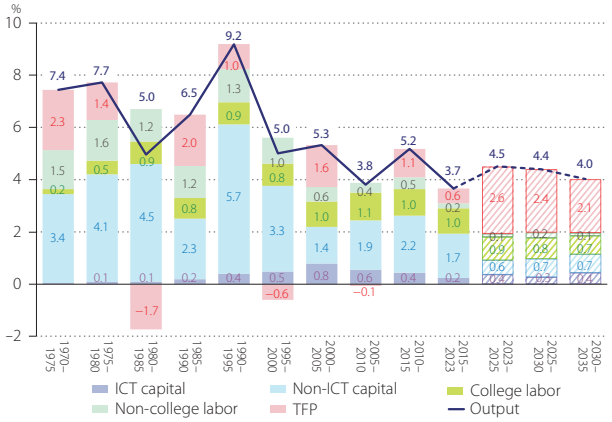

Figure 9 Decomposition of Economic Growth

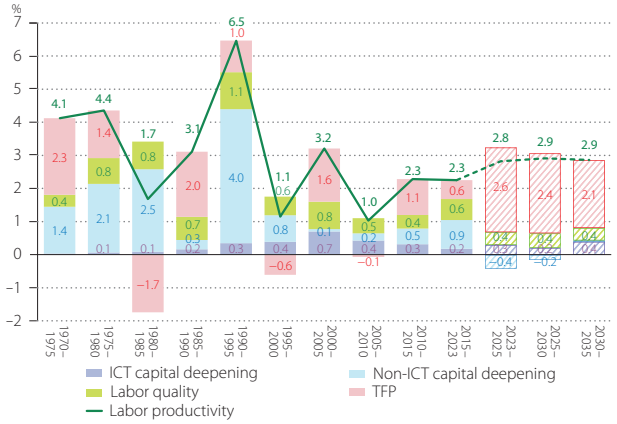

Figure 10 Decomposition of Labor Productivity Growth

App.

Mongolia

Key Indicators

GDP in 2023	64	Billion USD (as of 2023)	
(exchange rate based)	21	Billion USD (as of 2023)	
Per capita GDP in 2023	18.2	Thousand USD (as of 2023)	
(exchange rate based)	5.8	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	47.6	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	25.2	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	92.2	USD (as of 2023)	
Energy productivity levels in 2022	11.9	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	438.0	g-CO2 per USD (as of 2023)	

Number of employment in 2023	1,216	Thousands persons
Employment rate in 2023	34.5	%
Female employment share in 2023	47.1	%
Average schooling years of workers in 2023	12.1	Years
Investment share in 2023	33.5	%
ICT investment share in GFCF in 2023	5.6	%
Agriculture share in GDP in 2023	11.0	%
Manufacturing share in GDP in 2023	7.0	%
Agriculture share in employment in 2023	28.0	%

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	5.9	5.2	0.9	6.3	6.0	−4.5	1.6	4.8	7.0	4.8	5.7	6.4	5.9
Labor input growth	6.0	4.8	−2.2	4.3	4.7	−2.6	−12.2	12.5	1.3	0.0	2.7	2.8	2.2
Labor quality growth	4.2	1.2	−1.7	3.0	2.5	−1.6	−4.9	8.1	−0.6	−0.8	1.1	0.8	0.6
Hours worked growth	1.8	3.6	−0.5	1.3	2.1	−1.0	−7.2	4.3	1.9	0.8	1.5	2.0	1.6
College labor input growth	20.3	15.2	1.9	11.7	8.8	−16.3	−21.9	28.9	3.9	2.2	3.0	3.5	3.1
Non-college labor input growth	3.4	2.4	−3.3	0.9	−0.4	16.6	−0.2	−7.0	−2.2	−3.0	2.2	1.8	0.9
ICT capital input growth	25.2	15.3	9.1	19.2	8.7	11.5	8.3	10.2	7.6	14.0	10.6	12.7	11.7
Non-ICT capital input growth	5.9	5.8	−0.2	5.5	6.8	5.1	3.6	4.0	4.9	1.4	2.1	2.9	2.5
Per-worker labor productivity growth	4.1	1.6	0.6	3.9	4.7	−5.9	4.9	0.1	4.0	4.6	4.6	4.8	4.6
Per-hour labor productivity growth	4.1	1.6	1.4	5.0	3.8	−3.4	8.8	0.5	5.1	4.0	4.2	4.4	4.3
Capital productivity growth	−5.9	−5.9	0.1	−5.7	−6.8	−5.3	−3.7	−4.1	−4.9	3.0	3.3	3.3	2.6
TFP growth	−0.1	−0.3	1.7	1.1	−0.2	−7.2	3.1	−2.0	3.1	3.6	3.2	3.4	3.3

Production

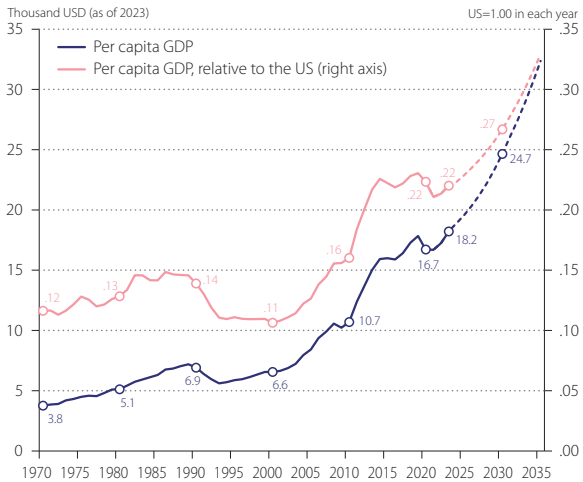

Figure 1 Per Capita GDP

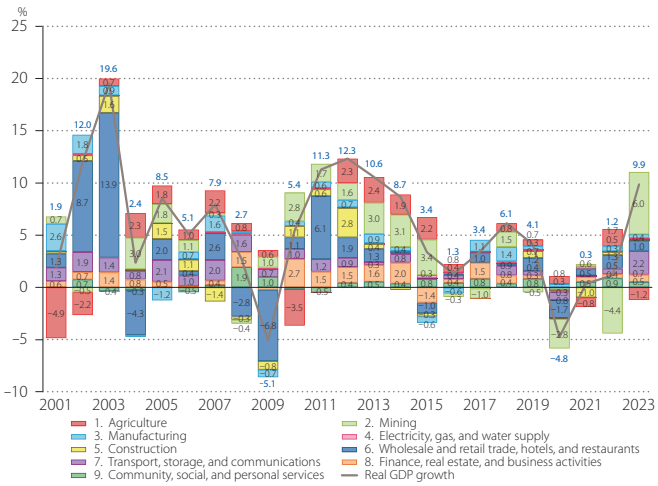

Figure 2 Industry Origins of Economic Growth

Labor

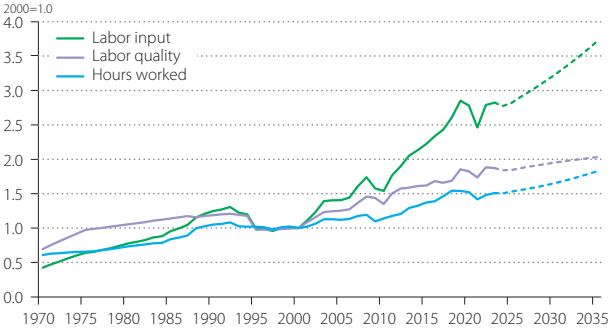

Figure 3 Labor Inputs

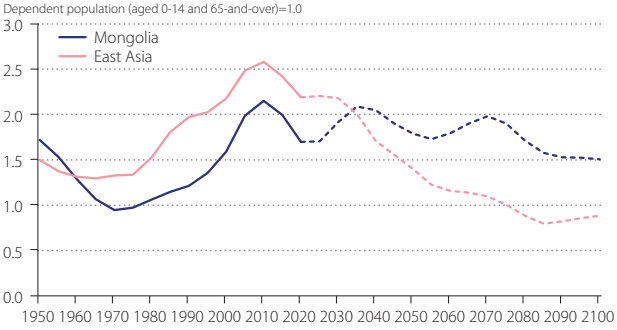

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

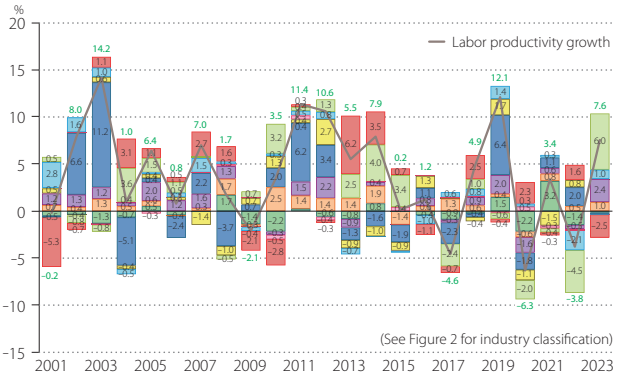

Figure 7 Industry Origins of Labor Productivity Growth

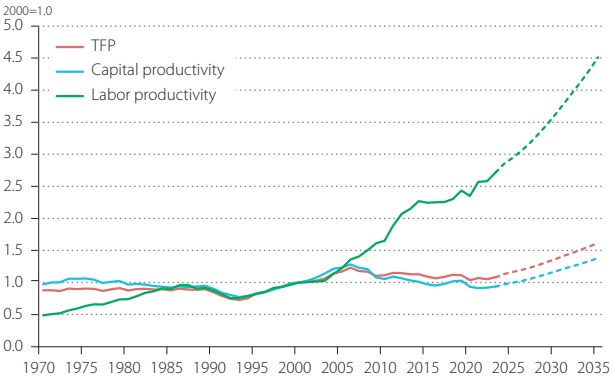

Figure 8 Productivity Indicators

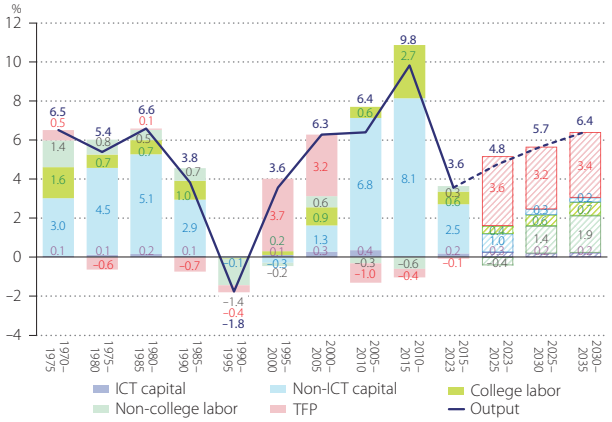

Figure 9 Decomposition of Economic Growth

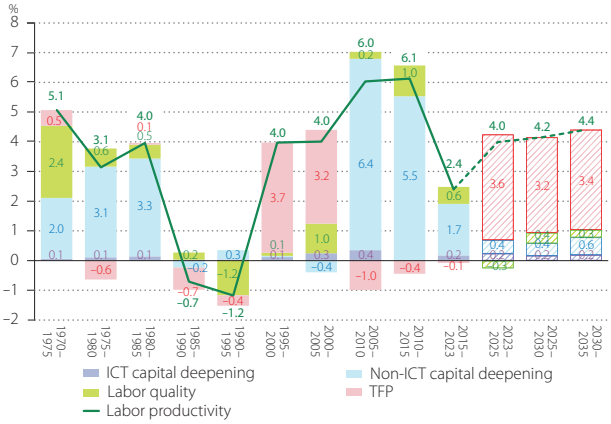

Figure 10 Decomposition of Labor Productivity Growth

App.

Nepal

Key Indicators

GDP in 2023	154	Billion USD (as of 2023)	Number of employment in 2023	12,298	Thousands persons
(exchange rate based)	39	Billion USD (as of 2023)	Employment rate in 2023	42.9	%
Per capita GDP in 2023	5.4	Thousand USD (as of 2023)	Female employment share in 2023	44.8	%
(exchange rate based)	1.4	Thousand USD (as of 2023)	Average schooling years of workers in 2023	4.8	Years
Per-worker labor productivity level in 2023	11.1	Thousand USD per worker (as of 2023)	Investment share in 2023	32.8	%
Per-hour labor productivity level in 2023	6.1	USD per hour worked (as of 2023)	ICT investment share in GFCF in 2023	0.7	%
Capital stock per hour worked in 2023	23.0	USD (as of 2023)	Agriculture share in GDP in 2023	23.9	%
Energy productivity levels in 2022	8.7	Thousand USD per toe (as of 2023)	Manufacturing share in GDP in 2023	5.2	%
Carbon intensity of GDP in 2022	95.4	g-CO2 per USD (as of 2023)	Agriculture share in employment in 2023	64.4	%

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	2.0	4.6	4.6	3.9	3.9	–2.5	4.4	5.1	2.3	3.9	4.9	5.0	4.6
Labor input growth	3.6	4.9	5.5	2.8	1.6	3.4	4.4	3.3	–2.1	2.7	2.8	3.0	2.5
Labor quality growth	0.5	3.5	3.2	1.8	0.0	0.2	0.4	0.2	0.3	2.7	2.8	2.7	2.6
Hours worked growth	3.1	1.4	2.3	1.1	1.6	3.2	4.0	3.1	–2.3	0.0	0.0	0.3	–0.1
College labor input growth	8.9	8.9	16.8	8.5	1.9	3.8	5.0	3.7	–2.5	4.0	4.4	4.7	3.9
Non–college labor input growth	3.4	4.7	3.9	0.8	1.5	3.2	4.1	3.1	–1.8	1.8	1.7	1.7	1.5
ICT capital input growth	20.7	11.9	11.1	5.4	9.2	11.6	7.8	7.2	3.3	7.1	8.1	11.5	8.9
Non–ICT capital input growth	3.3	6.1	5.6	4.8	5.7	8.3	6.3	6.3	5.9	4.8	5.4	5.7	5.5
Per-worker labor productivity growth	–1.2	3.6	2.3	2.8	2.4	–7.0	0.8	3.4	1.8	4.9	4.9	4.7	4.6
Per–hour labor productivity growth	–1.1	3.2	2.2	2.8	2.3	–5.7	0.3	2.1	4.6	4.0	4.9	4.7	4.7
Capital productivity growth	–3.4	–6.1	–5.6	–4.8	–5.7	–8.3	–6.3	–6.2	–5.8	–0.9	–0.6	–0.8	–1.1
TFP growth	–1.5	–0.8	–1.0	0.3	0.6	–8.0	–0.8	0.5	0.6	0.3	0.9	0.8	0.7

Production

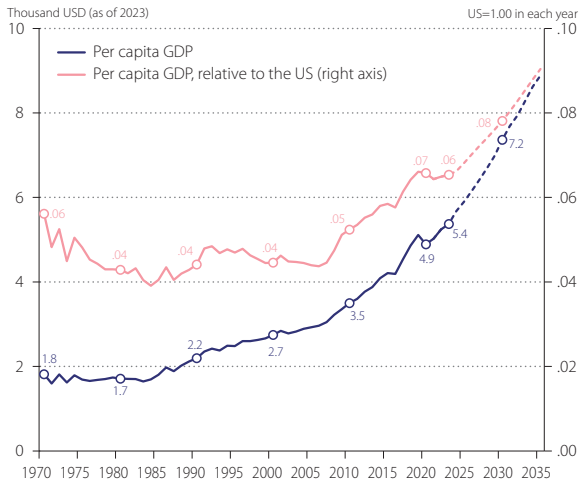

Figure 1 Per Capita GDP

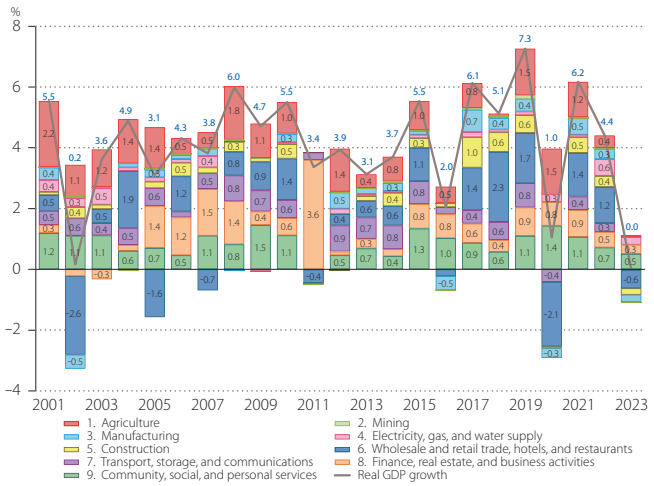

Figure 2 Industry Origins of Economic Growth

Labor

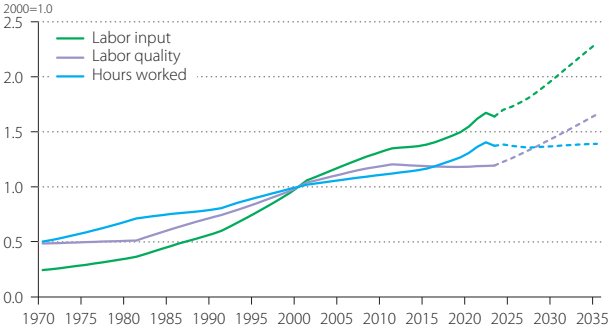

Figure 3 Labor Inputs

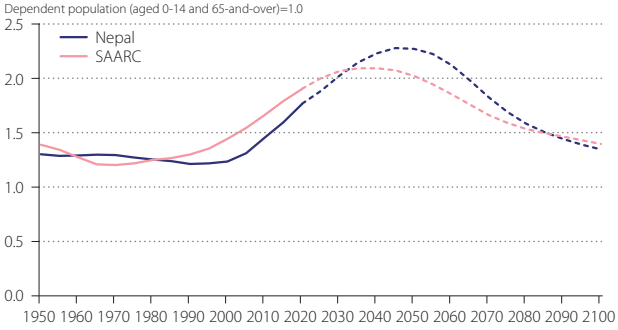

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

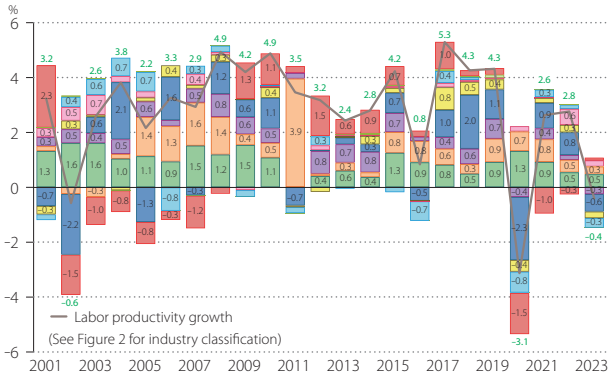

Figure 7 Industry Origins of Labor Productivity Growth

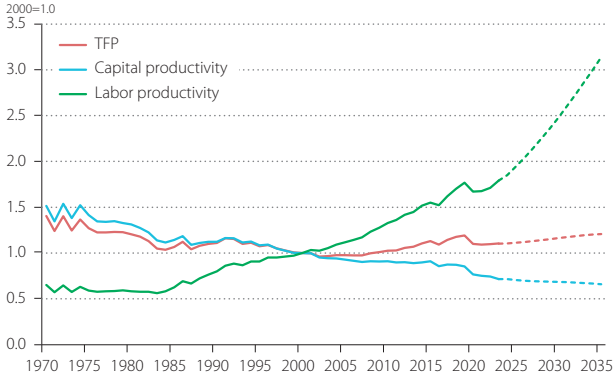

Figure 8 Productivity Indicators

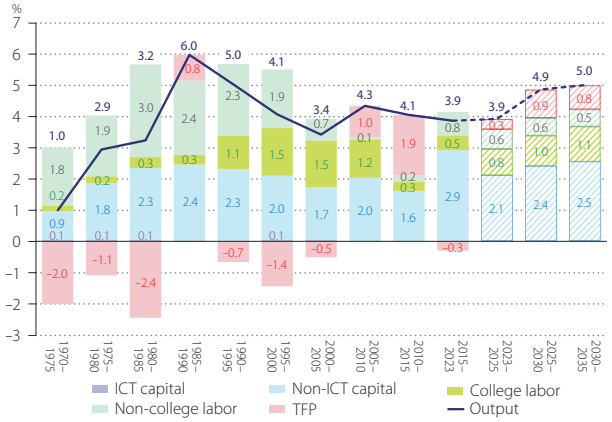

Figure 9 Decomposition of Economic Growth

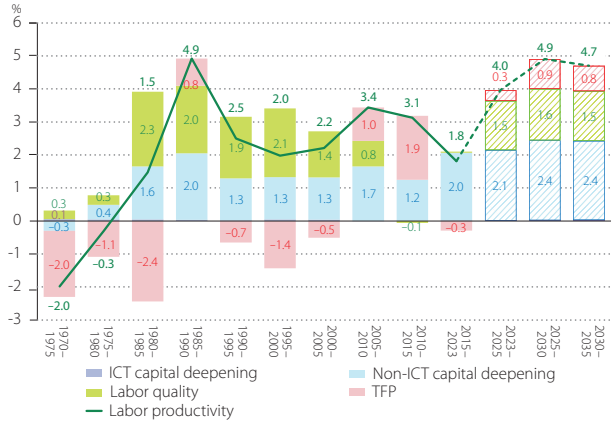

Figure 10 Decomposition of Labor Productivity Growth

App.

Pakistan

Key Indicators

GDP in 2023	1,496	Billion USD (as of 2023)	
(exchange rate based)	299	Billion USD (as of 2023)	
Per capita GDP in 2023	7.0	Thousand USD (as of 2023)	
(exchange rate based)	1.4	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	20.7	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	9.6	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	14.9	USD (as of 2023)	
Energy productivity levels in 2022	15.6	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	143.9	g-CO2 per USD (as of 2023)	

Number of employment in 2023	67,585	Thousands persons
Employment rate in 2023	31.5	%
Female employment share in 2023	22.3	%
Average schooling years of workers in 2023	5.2	Years
Investment share in 2023	14.0	%
ICT investment share in GFCF in 2023	7.6	%
Agriculture share in GDP in 2023	24.6	%
Manufacturing share in GDP in 2023	14.3	%
Agriculture share in employment in 2023	37.7	%

(%: average annual growth rate)	1970 –80	1980 –90	1990 –2000	2000 –10	2010 –23	2019 –20	2020 –21	2021 –22	2022 –23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	4.7	6.9	6.3	4.3	3.5	–0.9	5.8	4.7	0.1	3.0	3.4	3.6	3.2
Labor input growth	4.3	3.6	3.0	4.0	3.0	3.2	3.4	2.1	1.8	2.5	3.2	3.3	3.0
Labor quality growth	1.6	1.1	1.1	1.0	1.1	0.1	0.3	0.1	0.1	1.9	2.0	2.1	1.9
Hours worked growth	2.7	2.5	1.9	3.0	2.0	3.0	3.1	2.1	1.7	0.6	1.2	1.2	1.2
College labor input growth	5.9	6.8	8.1	5.3	4.0	–0.9	–0.7	2.2	1.8	3.5	4.5	5.0	4.3
Non–college labor input growth	4.2	3.2	2.1	3.6	2.7	4.9	5.0	2.1	1.8	2.2	2.7	2.5	2.5
ICT capital input growth	8.3	15.8	6.8	20.4	4.7	10.8	12.8	5.1	–2.2	1.6	5.0	9.6	5.7
Non–ICT capital input growth	4.7	6.3	5.8	4.0	2.5	2.4	2.0	0.8	2.7	1.4	2.1	2.4	2.1
Per-worker labor productivity growth	1.9	4.3	4.3	1.0	1.6	–3.0	3.6	2.7	–1.7	1.7	2.0	2.3	1.8
Per–hour labor productivity growth	2.0	4.4	4.4	1.3	1.6	–3.9	2.7	2.7	–1.7	2.3	2.2	2.5	2.0
Capital productivity growth	–4.6	–6.4	–5.7	–4.2	–2.5	–2.6	–2.3	–0.9	–2.5	1.6	1.2	1.0	0.9
TFP growth	0.3	2.1	1.8	0.1	0.8	–3.7	3.0	3.3	–2.2	1.1	0.8	0.8	0.6

Production

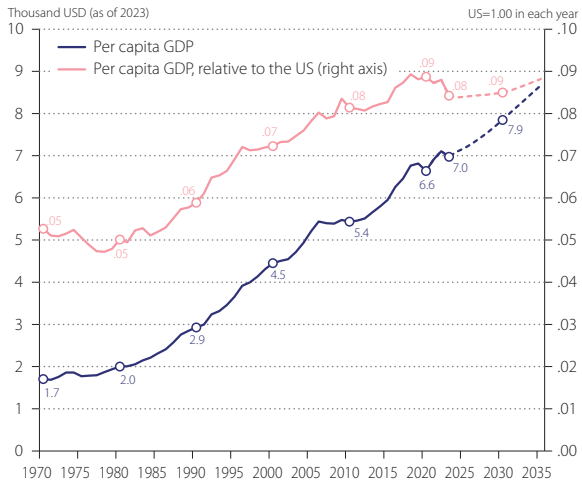

Figure 1 Per Capita GDP

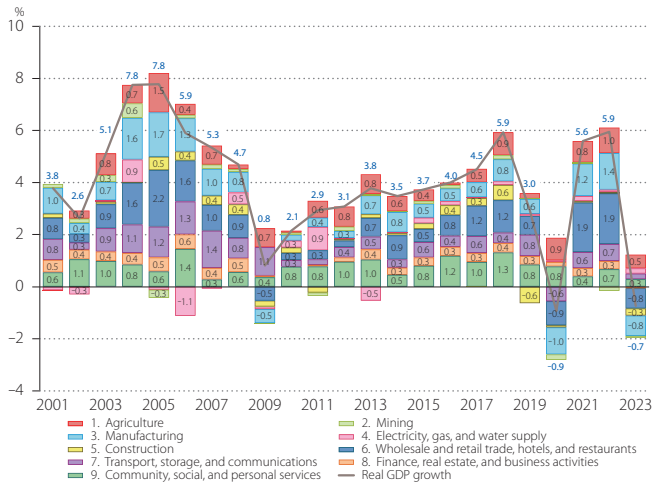

Figure 2 Industry Origins of Economic Growth

Labor

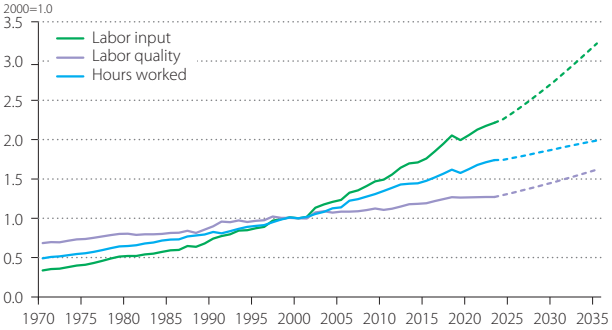

Figure 3 Labor Inputs

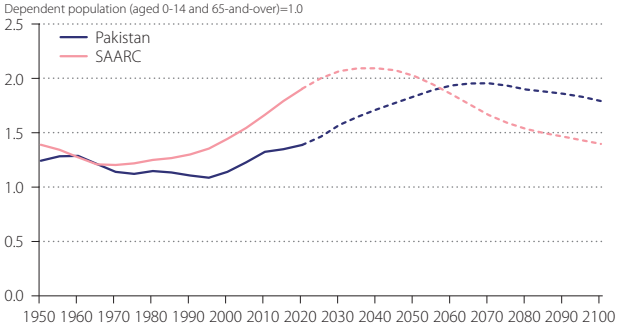

Figure 4 Demographic Dividend

Productivity

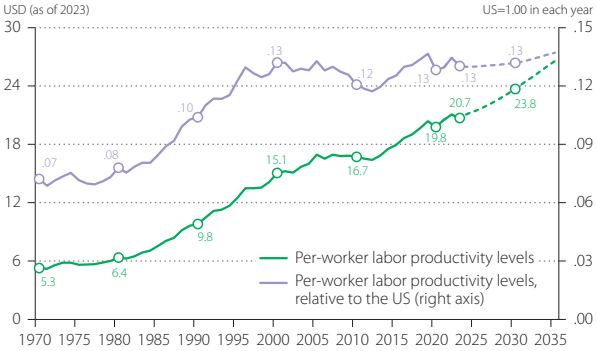

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

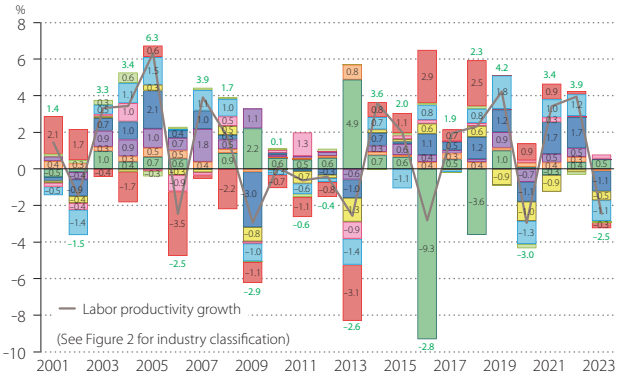

Figure 7 Industry Origins of Labor Productivity Growth

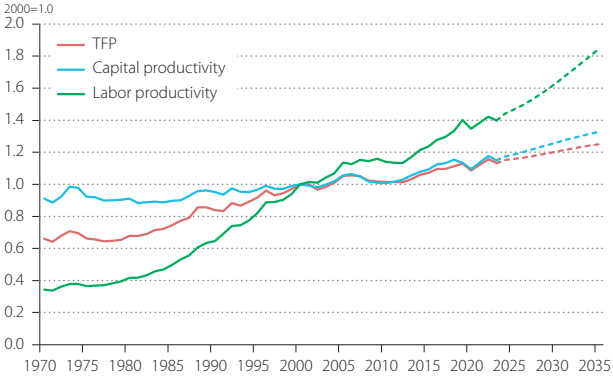

Figure 8 Productivity Indicators

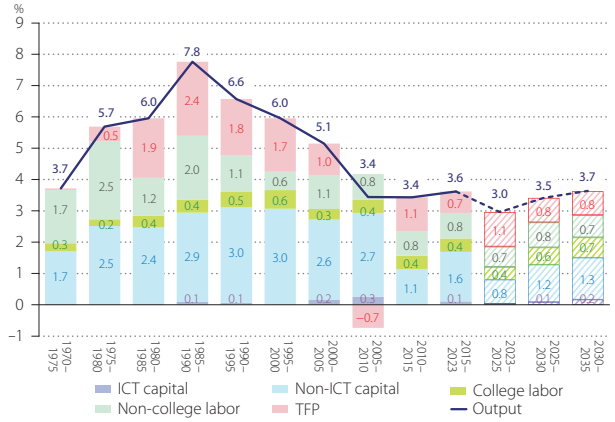

Figure 9 Decomposition of Economic Growth

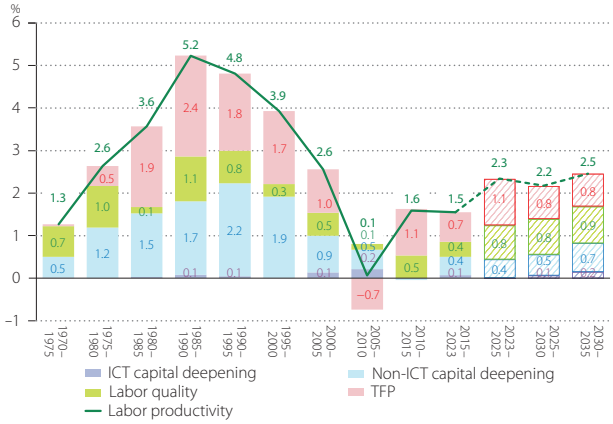

Figure 10 Decomposition of Labor Productivity Growth

Philippines

Key Indicators

GDP in 2023	1,266	Billion USD (as of 2023)	
(exchange rate based)	437	Billion USD (as of 2023)	
Per capita GDP in 2023	11.1	Thousand USD (as of 2023)	
(exchange rate based)	3.8	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	25.7	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	12.9	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	38.9	USD (as of 2023)	
Energy productivity levels in 2022	31.9	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	120.1	g-CO2 per USD (as of 2023)	

Number of employment in 2023	46,557	Thousands persons
Employment rate in 2023	40.8	%
Female employment share in 2023	41.1	%
Average schooling years of workers in 2023	10.4	Years
Investment share in 2023	23.3	%
ICT investment share in GFCF in 2023	4.1	%
Agriculture share in GDP in 2023	9.4	%
Manufacturing share in GDP in 2023	16.2	%
Agriculture share in employment in 2023	21.6	%

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	5.9	2.6	3.8	4.8	4.9	−10.1	6.1	8.6	4.3	5.1	6.4	6.4	6.1
Labor input growth	4.6	4.1	3.2	3.3	2.7	−11.1	6.3	12.8	−1.5	4.2	2.9	2.5	2.6
Labor quality growth	1.1	1.4	1.2	0.8	1.0	−1.0	1.2	−0.9	0.3	1.3	1.3	1.3	1.2
Hours worked growth	3.6	2.7	2.0	2.5	1.7	−10.0	5.1	13.7	−1.8	2.9	1.5	1.2	1.4
College labor input growth	7.6	7.3	5.3	5.5	4.0	−13.9	8.1	18.1	−2.2	5.1	3.8	3.6	3.4
Non–college labor input growth	3.4	2.5	2.2	1.9	1.8	−9.3	5.3	9.6	−1.1	3.6	2.2	1.7	2.0
ICT capital input growth	8.3	10.2	11.8	7.3	8.9	7.0	5.5	5.3	3.9	8.3	8.6	12.8	9.8
Non–ICT capital input growth	7.2	3.9	4.1	3.2	5.9	5.6	2.0	3.8	4.5	4.1	4.4	4.8	4.5
Per-worker labor productivity growth	2.0	−0.2	1.7	2.1	2.9	−2.7	2.0	−2.4	2.8	3.2	4.7	5.1	4.5
Per–hour labor productivity growth	2.3	−0.1	1.8	2.3	3.2	−0.1	1.0	−5.1	6.2	2.2	4.9	5.2	4.7
Capital productivity growth	−7.2	−4.0	−4.3	−3.3	−5.9	−5.7	−2.1	−3.7	−4.4	0.9	1.9	1.5	1.1
TFP growth	−0.3	−1.5	−0.1	1.5	0.2	−9.4	2.4	1.1	2.3	0.9	2.6	2.5	2.2

Production

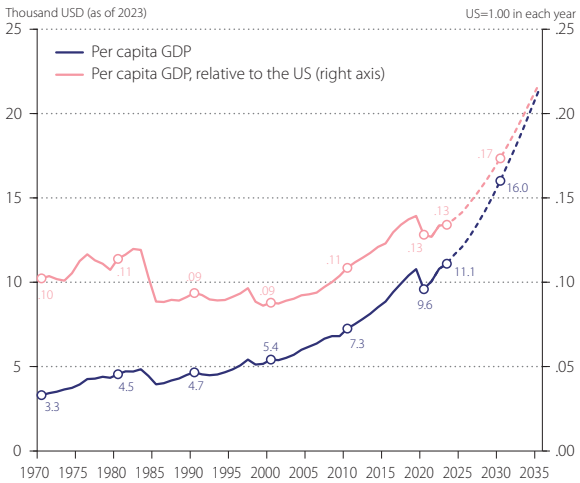

Figure 1 Per Capita GDP

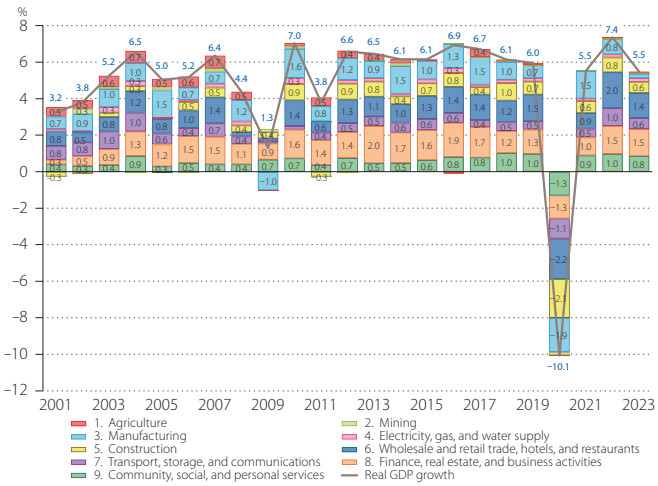

Figure 2 Industry Origins of Economic Growth

Labor

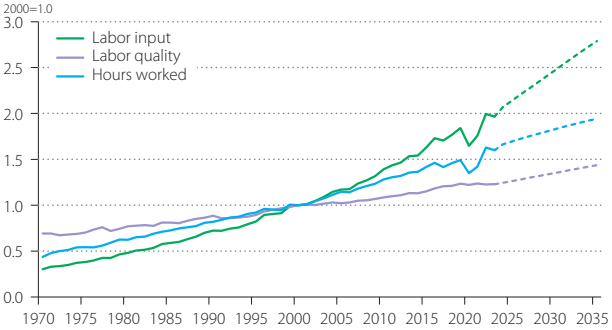

Figure 3 Labor Inputs

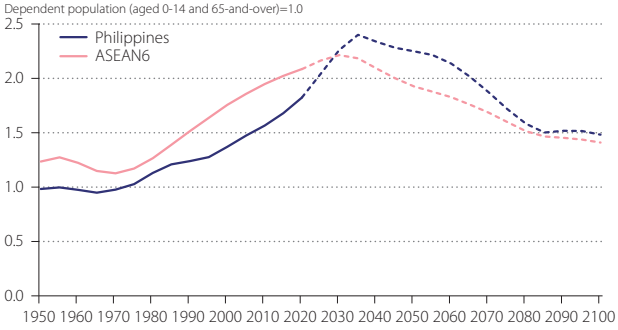

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

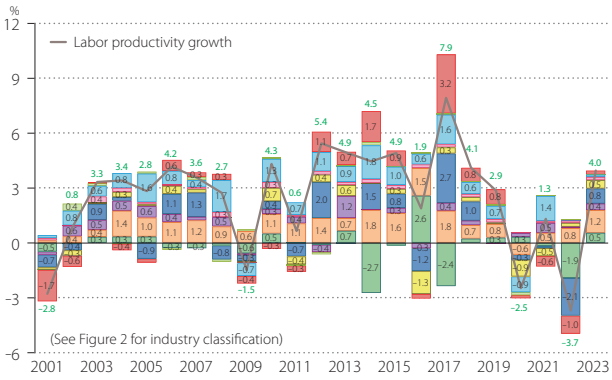

Figure 7 Industry Origins of Labor Productivity Growth

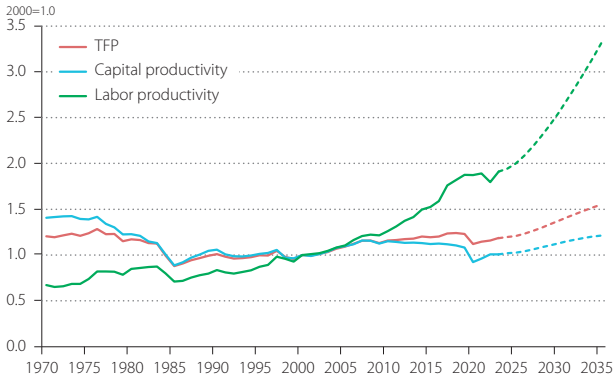

Figure 8 Productivity Indicators

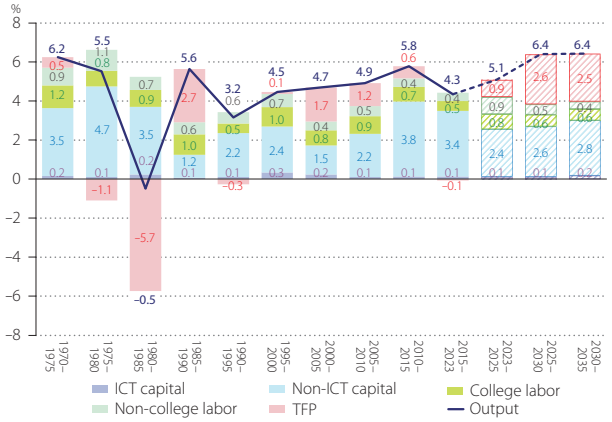

Figure 9 Decomposition of Economic Growth

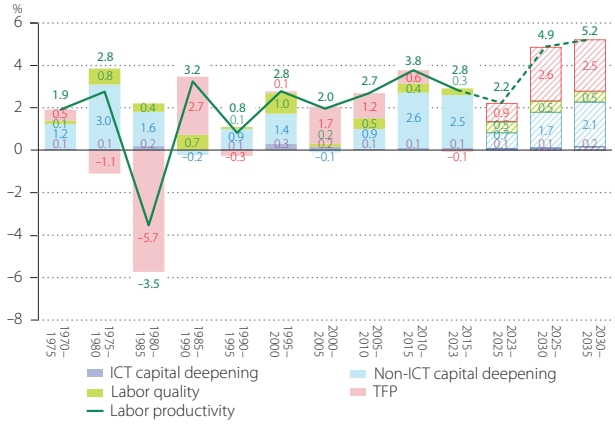

Figure 10 Decomposition of Labor Productivity Growth

Singapore

Key Indicators

GDP in 2023	848	Billion USD (as of 2023)	
(exchange rate based)	505	Billion USD (as of 2023)	
Per capita GDP in 2023	143.3	Thousand USD (as of 2023)	
(exchange rate based)	85.4	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	209.3	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	96.2	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	189.6	USD (as of 2023)	
Energy productivity levels in 2022	43.1	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	58.9	g-CO2 per USD (as of 2023)	

Number of employment in 2023	3,840	Thousands persons
Employment rate in 2023	64.9	%
Female employment share in 2023	46.5	%
Average schooling years of workers in 2023	10.6	Years
Investment share in 2023	21.2	%
ICT investment share in GFCF in 2023	29.3	%
Agriculture share in GDP in 2023	0.0	%
Manufacturing share in GDP in 2023	17.9	%
Agriculture share in employment in 2023	0.6	%

(%: average annual growth rate)	1970 –80	1980 –90	1990 –2000	2000 –10	2010 –23	2019 –20	2020 –21	2021 –22	2022 –23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	8.7	7.1	7.4	6.0	3.7	–3.0	7.4	3.9	1.5	3.2	2.4	1.7	2.2
Labor input growth	6.1	6.3	6.5	5.0	2.7	–1.4	0.3	7.5	2.4	3.0	1.0	0.2	1.1
Labor quality growth	1.2	2.2	3.0	1.6	1.4	2.1	3.3	1.6	–1.2	0.8	1.3	1.2	1.0
Hours worked growth	4.9	4.1	3.6	3.4	1.3	–3.6	–3.0	5.9	3.6	2.2	–0.3	–0.9	0.2
College labor input growth	9.7	13.5	17.8	9.5	5.2	1.8	5.0	8.2	1.8	4.0	2.2	1.2	2.1
Non–college labor input growth	5.7	5.2	2.7	2.0	0.2	–5.2	–5.6	6.4	3.2	1.6	–0.7	–1.3	–0.3
ICT capital input growth	14.9	23.2	14.6	10.3	11.9	6.1	8.6	9.5	7.2	9.8	6.0	8.6	7.7
Non–ICT capital input growth	8.6	6.6	6.1	3.3	2.7	1.2	–2.1	3.4	2.9	0.7	0.6	0.1	0.6
Per-worker labor productivity growth	3.5	3.7	4.4	2.3	1.9	–1.4	10.0	–0.9	–3.4	2.1	2.6	2.4	2.0
Per–hour labor productivity growth	3.8	3.0	3.8	2.6	2.4	0.6	10.4	–2.0	–2.1	1.1	2.7	2.6	2.0
Capital productivity growth	–8.7	–7.4	–6.7	–3.9	–3.5	–1.9	0.8	–4.1	–3.4	1.4	1.1	0.5	0.6
TFP growth	1.3	0.3	0.7	1.7	0.5	–3.4	7.7	–1.5	–1.5	1.0	1.2	0.9	0.9

Production

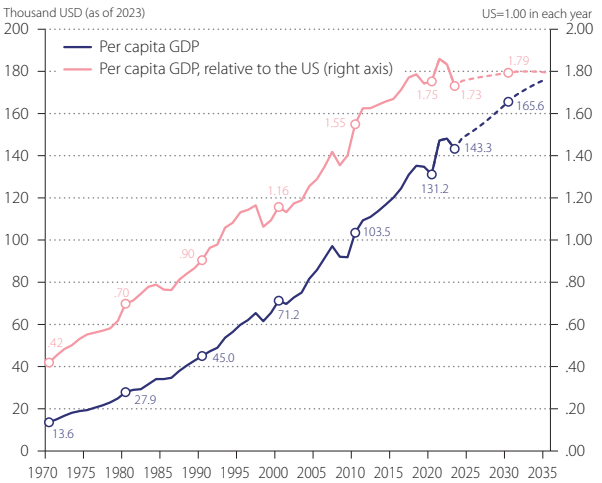

Figure 1 Per Capita GDP

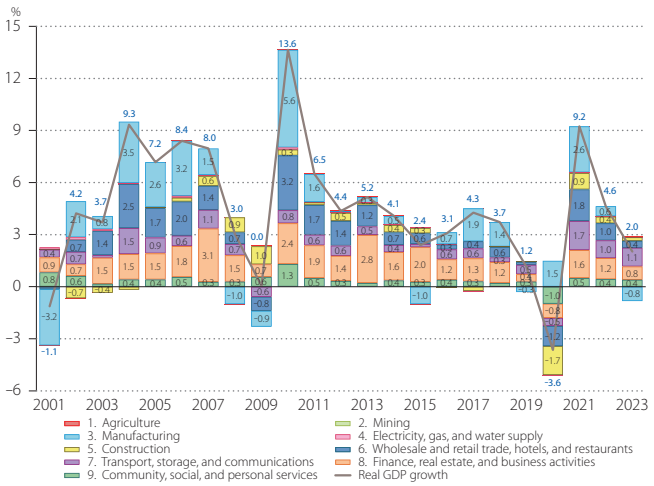

Figure 2 Industry Origins of Economic Growth

Labor

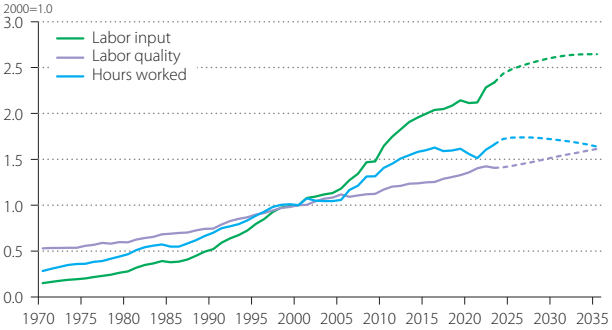

Figure 3 Labor Inputs

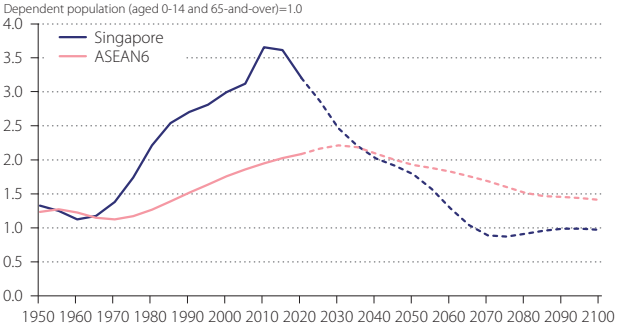

Figure 4 Demographic Dividend

Productivity

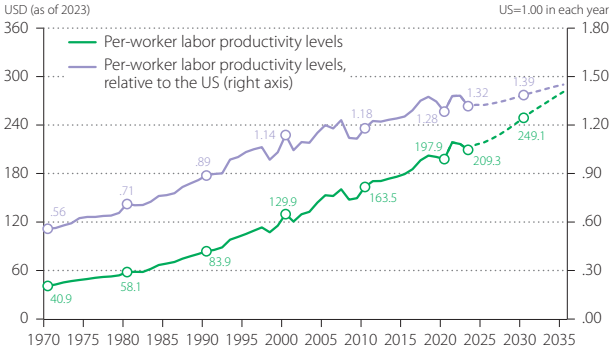

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

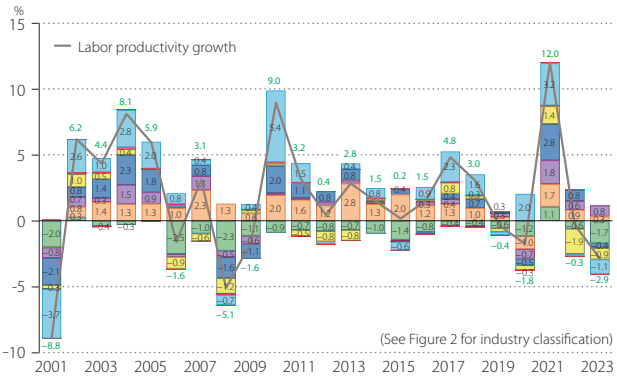

Figure 7 Industry Origins of Labor Productivity Growth

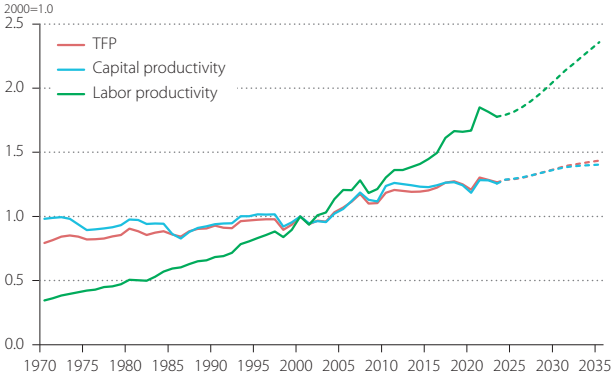

Figure 8 Productivity Indicators

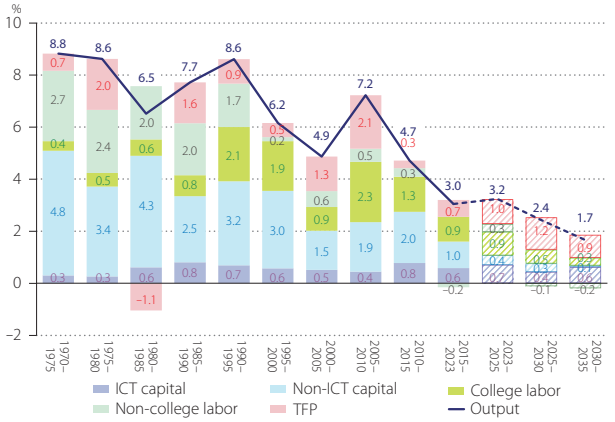

Figure 9 Decomposition of Economic Growth

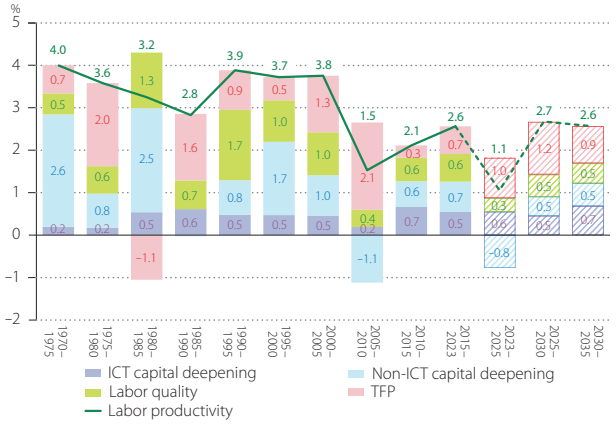

Figure 10 Decomposition of Labor Productivity Growth

Sri Lanka

Key Indicators

GDP in 2023	327	Billion USD (as of 2023)
(exchange rate based)	85	Billion USD (as of 2023)
Per capita GDP in 2023	14.8	Thousand USD (as of 2023)
(exchange rate based)	3.9	Thousand USD (as of 2023)
Per-worker labor productivity level in 2023	38.7	Thousand USD per worker (as of 2023)
Per-hour labor productivity level in 2023	20.1	USD per hour worked (as of 2023)
Capital stock per hour worked in 2023	69.6	USD (as of 2023)
Energy productivity levels in 2022	34.9	Thousand USD per toe (as of 2023)
Carbon intensity of GDP in 2022	58.8	g-CO2 per USD (as of 2023)

Number of employment in 2023	8,010	Thousands persons
Employment rate in 2023	36.3	%
Female employment share in 2023	33.7	%
Average schooling years of workers in 2023	11.8	Years
Investment share in 2023	25.9	%
ICT investment share in GFCF in 2023	10.7	%
Agriculture share in GDP in 2023	8.8	%
Manufacturing share in GDP in 2023	19.1	%
Agriculture share in employment in 2023	26.1	%

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	4.1	4.2	5.2	5.7	2.8	–5.1	4.1	–7.4	–0.7	3.8	3.2	3.2	3.0
Labor input growth	2.2	3.4	3.5	1.6	1.3	–2.1	2.6	2.0	–0.6	2.1	2.0	1.7	1.7
Labor quality growth	0.5	1.7	1.2	0.9	1.1	0.0	1.3	1.6	0.9	0.9	0.9	0.8	0.9
Hours worked growth	1.8	1.7	2.3	0.7	0.2	–2.1	1.3	0.4	–1.6	1.2	1.1	0.8	0.8
College labor input growth	0.4	12.2	6.8	4.4	3.8	–2.3	6.2	4.0	–1.3	2.7	2.8	2.5	2.4
Non–college labor input growth	2.4	2.2	2.6	0.4	–0.4	–1.9	–0.4	0.3	–0.1	1.6	1.2	0.9	1.0
ICT capital input growth	13.8	7.3	9.2	19.5	14.1	13.3	14.8	8.5	4.5	14.2	8.3	9.9	9.5
Non–ICT capital input growth	4.3	3.6	2.2	4.6	5.6	4.6	3.3	3.1	1.5	1.6	2.4	2.0	2.1
Per-worker labor productivity growth	2.7	2.6	3.0	4.4	2.9	–2.8	2.7	–7.8	1.0	2.4	1.9	2.2	2.0
Per–hour labor productivity growth	2.4	2.5	2.9	5.0	2.6	–3.0	2.8	–7.8	0.8	2.6	2.1	2.4	2.2
Capital productivity growth	–4.3	–3.5	–2.2	–4.8	–5.8	–5.0	–3.7	–3.3	–1.6	1.7	0.6	0.9	0.7
TFP growth	0.8	0.6	2.3	2.2	–1.6	–7.7	0.7	–10.3	–1.7	1.7	0.7	1.1	0.8

Production

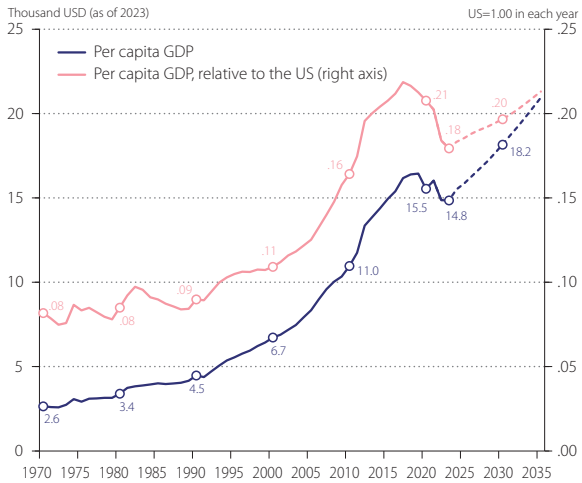

Figure 1 Per Capita GDP

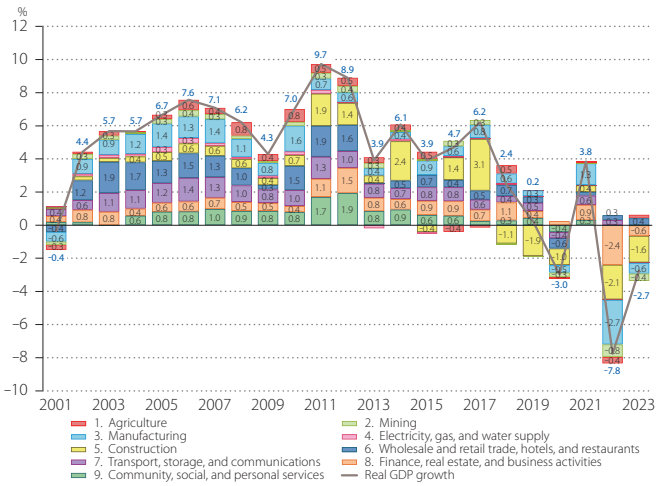

Figure 2 Industry Origins of Economic Growth

Labor

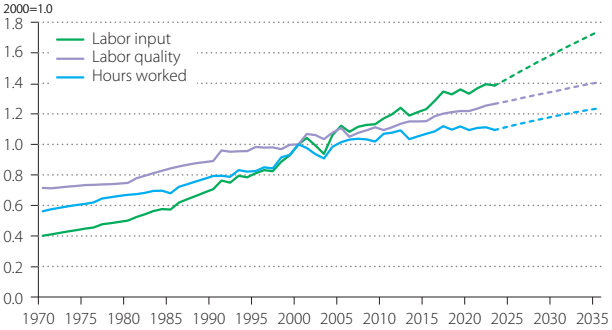

Figure 3 Labor Inputs

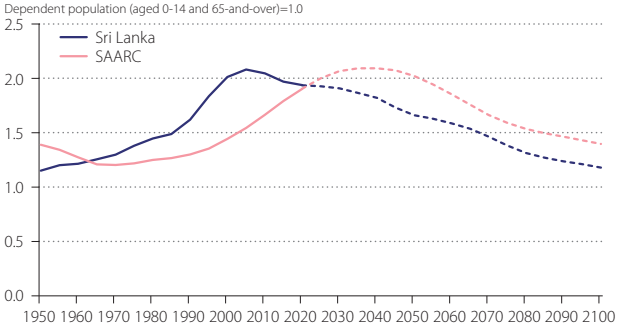

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

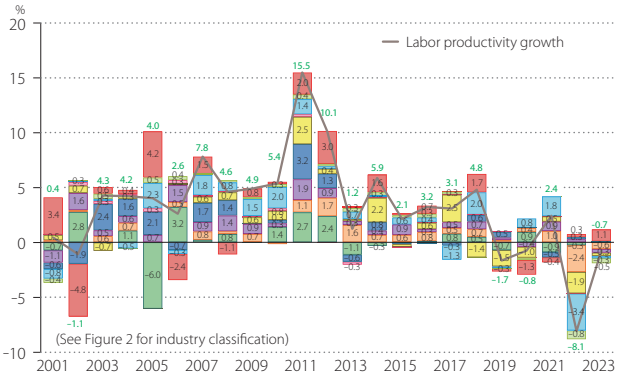

Figure 7 Industry Origins of Labor Productivity Growth

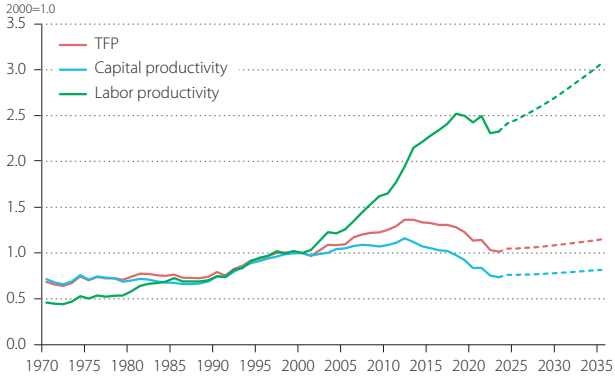

Figure 8 Productivity Indicators

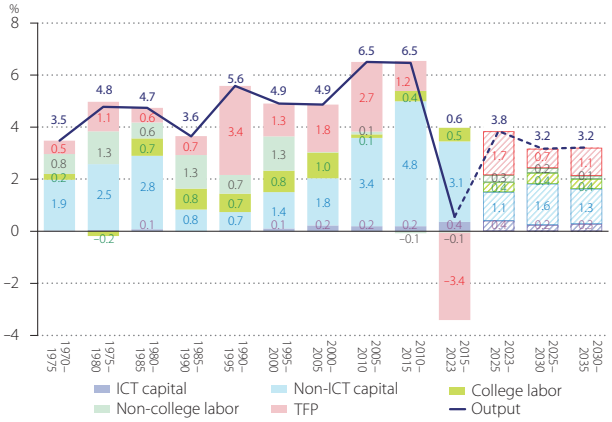

Figure 9 Decomposition of Economic Growth

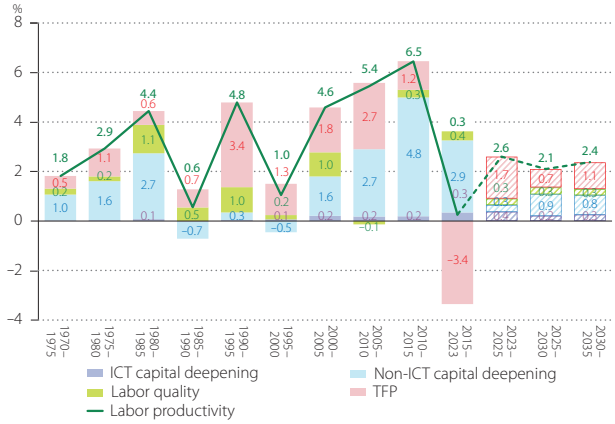

Figure 10 Decomposition of Labor Productivity Growth

App.

Thailand

Key Indicators

GDP in 2023	1,694	Billion USD (as of 2023)	
(exchange rate based)	522	Billion USD (as of 2023)	
Per capita GDP in 2023	24.6	Thousand USD (as of 2023)	
(exchange rate based)	7.6	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	39.0	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	19.1	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	48.8	USD (as of 2023)	
Energy productivity levels in 2022	15.6	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	163.4	g-CO2 per USD (as of 2023)	

Number of employment in 2023	40,059	Thousands persons
Employment rate in 2023	58.1	%
Female employment share in 2023	49.0	%
Average schooling years of workers in 2023	9.7	Years
Investment share in 2023	23.4	%
ICT investment share in GFCF in 2023	16.5	%
Agriculture share in GDP in 2023	8.6	%
Manufacturing share in GDP in 2023	25.0	%
Agriculture share in employment in 2023	30.0	%

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	7.0	7.8	4.6	4.6	1.8	−4.8	−1.1	5.0	−1.2	2.3	2.6	2.3	2.1
Labor input growth	7.7	7.3	5.4	4.1	1.8	−0.9	−4.5	15.2	−4.6	4.6	1.7	1.5	1.6
Labor quality growth	3.2	4.4	4.7	3.4	2.6	2.0	−0.4	4.6	−1.0	2.7	1.4	1.5	1.5
Hours worked growth	4.5	2.8	0.7	0.7	−0.8	−2.9	−4.1	10.6	−3.6	1.9	0.3	0.0	0.1
College labor input growth	15.1	11.4	6.9	3.9	3.5	2.8	−3.6	17.2	−6.7	6.3	2.9	2.5	2.6
Non-college labor input growth	6.2	5.2	3.9	4.4	−0.1	−5.3	−5.7	12.5	−1.5	2.1	−0.1	−0.3	0.0
ICT capital input growth	14.4	20.8	12.6	13.9	4.8	−0.8	1.9	2.6	3.3	7.0	4.3	8.6	6.3
Non-ICT capital input growth	4.9	6.4	7.2	1.7	2.0	2.3	1.3	1.7	1.5	1.4	1.6	1.2	1.4
Per-worker labor productivity growth	3.0	4.2	3.4	3.1	1.9	−7.4	2.1	−2.3	0.7	2.7	2.0	2.0	2.0
Per-hour labor productivity growth	2.0	4.7	3.7	3.8	3.0	−3.4	5.7	−8.1	5.6	0.4	2.2	2.3	2.2
Capital productivity growth	−5.0	−6.8	−7.4	−2.4	−2.3	−2.1	−1.3	−1.7	−1.6	0.4	0.8	0.5	0.4
TFP growth	0.4	0.5	−2.2	1.4	0.1	−7.2	2.4	−4.3	2.7	−0.6	0.8	0.6	0.7

Production

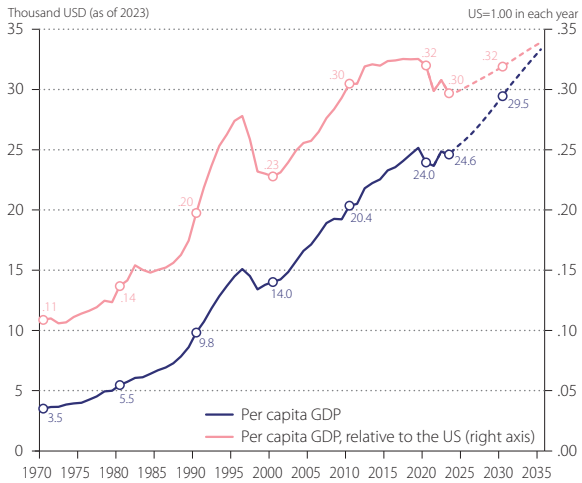

Figure 1 Per Capita GDP

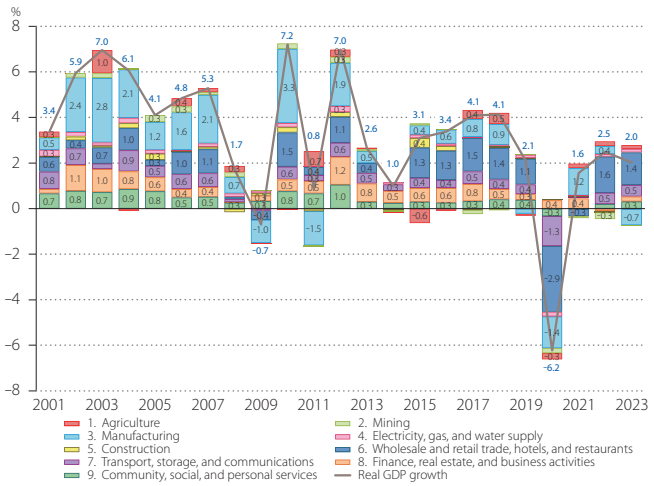

Figure 2 Industry Origins of Economic Growth

Labor

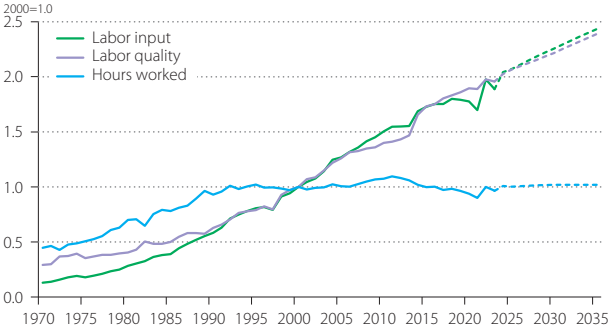

Figure 3 Labor Inputs

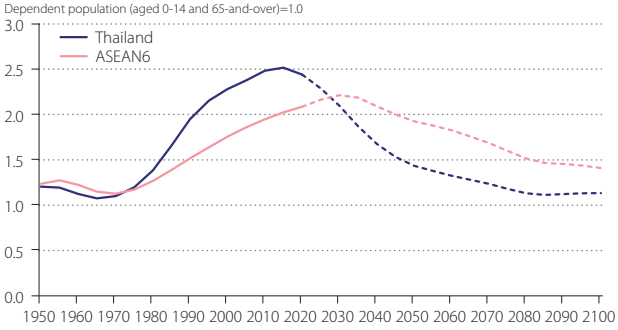

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

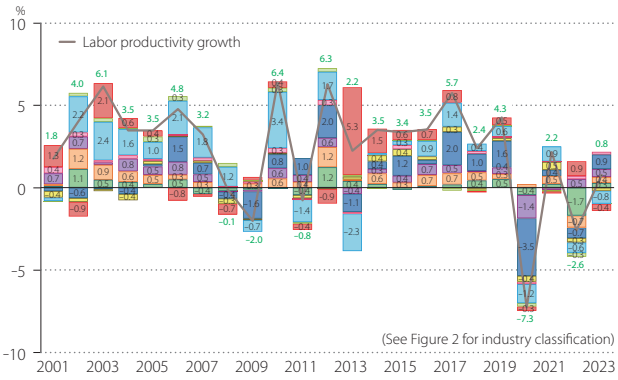

Figure 7 Industry Origins of Labor Productivity Growth

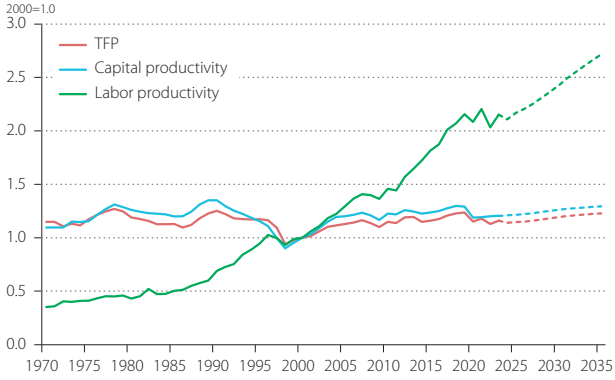

Figure 8 Productivity Indicators

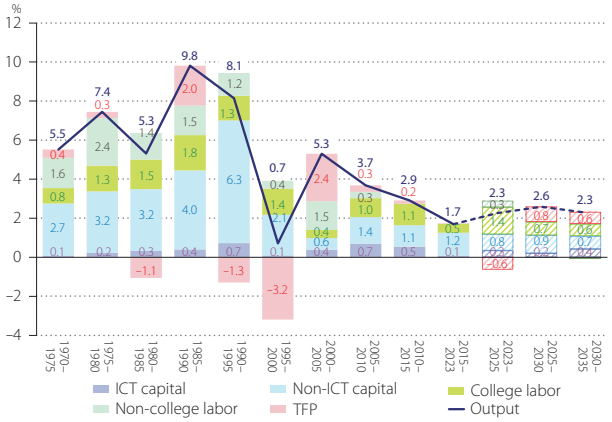

Figure 9 Decomposition of Economic Growth

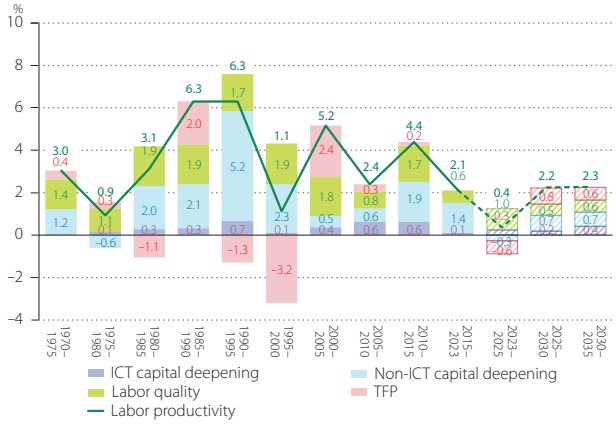

Figure 10 Decomposition of Labor Productivity Growth

App.

Turkiye

Key Indicators

GDP in 2023	3,087	Billion USD (as of 2023)	
(exchange rate based)	907	Billion USD (as of 2023)	
Per capita GDP in 2023	36.2	Thousand USD (as of 2023)	
(exchange rate based)	10.6	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	89.3	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	44.8	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	91.4	USD (as of 2023)	
Energy productivity levels in 2022	22.7	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	153.2	g-CO2 per USD (as of 2023)	

Number of employment in 2023	30,901	Thousands persons
Employment rate in 2023	36.2	%
Female employment share in 2023	29.8	%
Average schooling years of workers in 2023	9.4	Years
Investment share in 2023	35.0	%
ICT investment share in GFCF in 2023	6.2	%
Agriculture share in GDP in 2023	7.2	%
Manufacturing share in GDP in 2023	24.7	%
Agriculture share in employment in 2023	15.8	%

(%: average annual growth rate)	1970 –80	1980 –90	1990 –2000	2000 –10	2010 –23	2019 –20	2020 –21	2021 –22	2022 –23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	4.0	5.1	3.6	3.9	5.5	1.8	10.8	5.4	5.0	3.1	3.4	3.2	3.4
Labor input growth	3.9	4.3	2.3	4.1	3.7	–4.7	9.4	7.5	4.3	–0.2	0.8	0.6	0.8
Labor quality growth	1.2	1.2	1.7	2.2	1.8	3.6	0.3	0.4	1.5	0.5	1.3	1.0	1.1
Hours worked growth	2.8	3.1	0.6	2.0	1.9	–8.4	9.1	7.1	2.8	–0.7	–0.5	–0.4	–0.3
College labor input growth	12.7	7.0	5.8	9.0	7.0	1.6	9.2	6.2	7.4	2.7	2.7	2.1	2.8
Non–college labor input growth	3.3	3.9	1.7	2.6	1.7	–9.1	9.6	8.4	2.2	–2.4	–1.0	–1.0	–1.0
ICT capital input growth	14.5	16.1	14.9	9.8	9.7	8.8	9.5	6.3	2.7	7.0	6.1	9.6	7.3
Non–ICT capital input growth	6.8	3.6	4.1	5.0	5.1	4.9	4.5	5.5	4.1	3.2	2.4	2.1	2.5
Per-worker labor productivity growth	1.4	2.5	3.0	2.3	2.9	6.4	3.7	–1.1	2.2	4.3	3.8	3.5	3.6
Per–hour labor productivity growth	1.2	2.0	3.0	2.0	3.6	10.2	1.7	–1.7	2.2	3.8	3.9	3.6	3.6
Capital productivity growth	–6.8	–3.7	–4.2	–5.1	–5.2	–5.0	–4.6	–5.5	–4.0	–0.2	0.9	0.9	0.3
TFP growth	–2.1	1.2	–0.1	–0.9	0.8	0.4	4.6	–0.7	0.8	0.9	1.5	1.4	1.3

Production

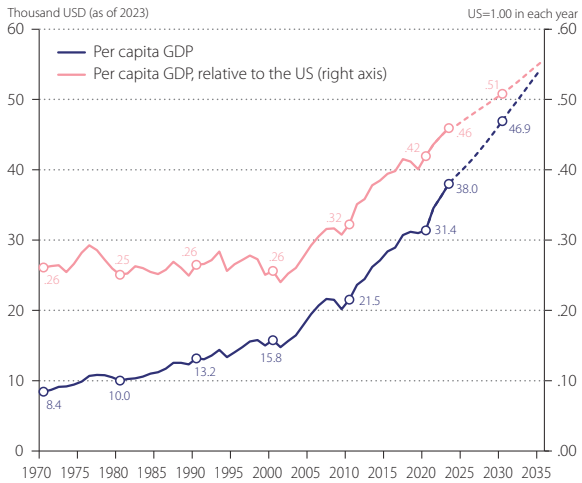

Figure 1 Per Capita GDP

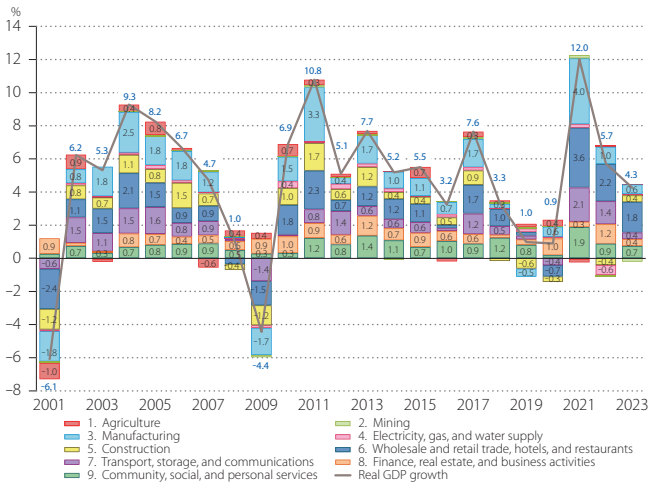

Figure 2 Industry Origins of Economic Growth

Labor

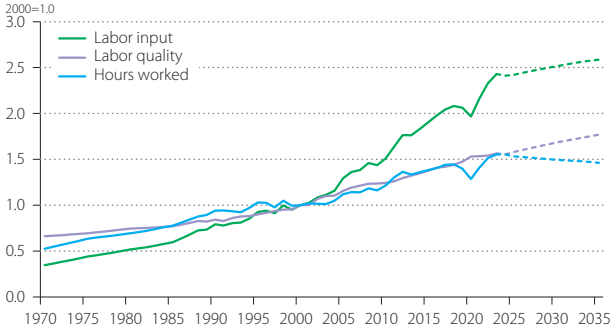

Figure 3 Labor Inputs

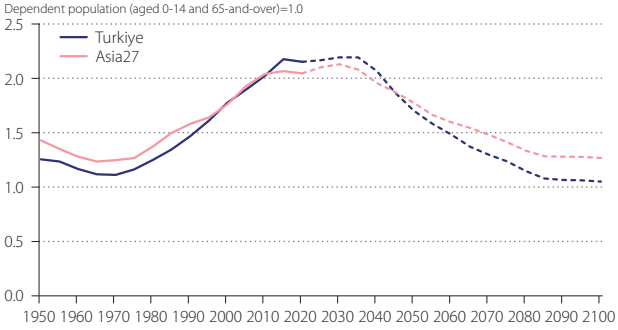

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

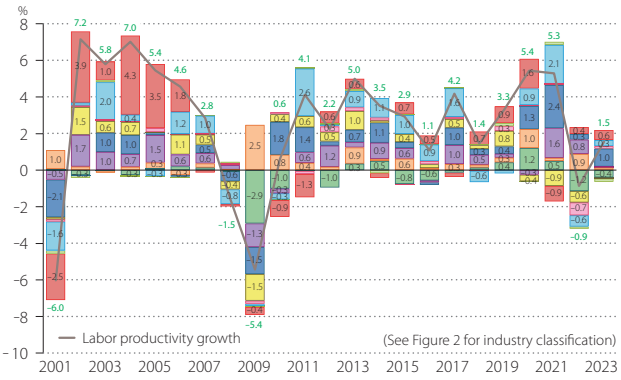

Figure 7 Industry Origins of Labor Productivity Growth

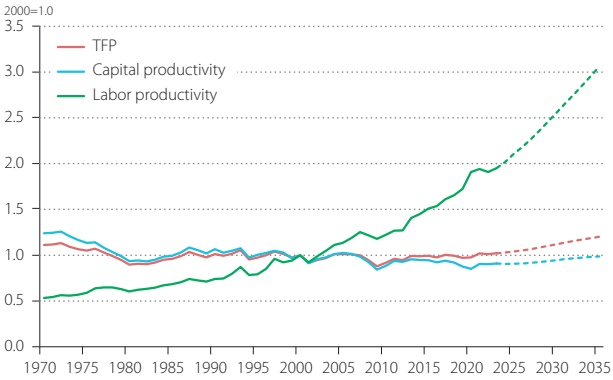

Figure 8 Productivity Indicators

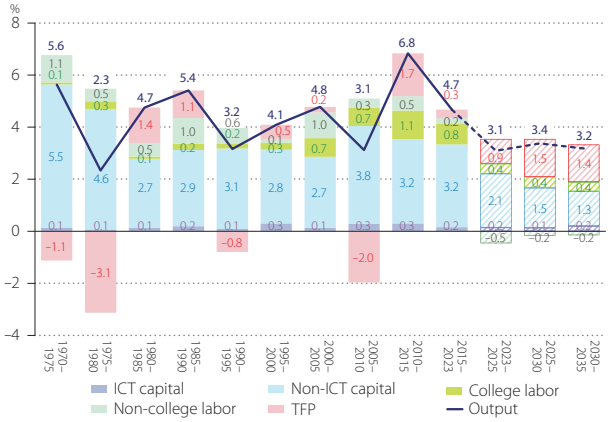

Figure 9 Decomposition of Economic Growth

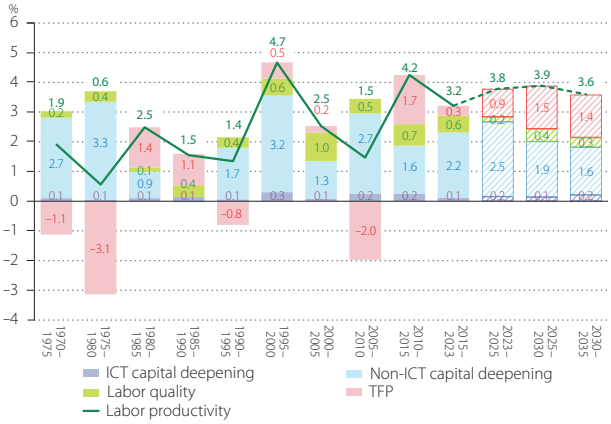

Figure 10 Decomposition of Labor Productivity Growth

Vietnam

Key Indicators

GDP in 2023	1,507	Billion USD (as of 2023)	
(exchange rate based)	430	Billion USD (as of 2023)	
Per capita GDP in 2023	15.0	Thousand USD (as of 2023)	
(exchange rate based)	4.3	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	25.0	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	11.1	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	38.6	USD (as of 2023)	
Energy productivity levels in 2022	18.2	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	216.5	g-CO2 per USD (as of 2023)	

Number of employment in 2023	55,121	Thousands persons
Employment rate in 2023	55.0	%
Female employment share in 2023	46.8	%
Average schooling years of workers in 2023	9.4	Years
Investment share in 2023	32.1	%
ICT investment share in GFCF in 2023	2.8	%
Agriculture share in GDP in 2023	13.1	%
Manufacturing share in GDP in 2023	26.1	%
Agriculture share in employment in 2023	26.9	%

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	4.4	3.1	8.2	8.1	5.6	3.1	3.4	9.0	3.8	6.5	6.9	6.7	6.5
Labor input growth	5.2	3.6	2.7	4.4	2.0	1.1	–2.5	5.5	2.8	0.3	2.0	1.5	1.6
Labor quality growth	1.0	0.4	0.3	2.4	1.4	2.2	–1.4	1.9	1.3	1.0	1.0	0.9	1.0
Hours worked growth	4.2	3.2	2.4	2.1	0.6	–1.1	–1.2	3.6	1.5	–0.7	1.0	0.6	0.6
College labor input growth	7.9	15.8	6.3	10.5	5.6	1.3	–11.3	4.7	10.1	2.3	4.0	3.5	4.0
Non–college labor input growth	5.2	3.4	2.5	3.6	1.2	1.1	–0.5	5.7	1.1	–0.3	1.5	0.8	0.9
ICT capital input growth	11.6	18.1	17.0	24.2	16.5	10.8	11.6	8.0	1.8	6.8	10.2	13.2	10.2
Non–ICT capital input growth	5.2	4.7	8.1	11.1	6.0	6.4	6.2	5.9	6.0	5.6	5.9	5.9	5.9
Per-worker labor productivity growth	0.2	–0.2	6.0	5.7	4.8	5.0	5.4	6.0	2.5	5.7	5.6	5.8	5.5
Per–hour labor productivity growth	0.2	–0.2	5.7	6.1	5.0	4.1	4.6	5.4	2.3	7.3	5.9	6.1	5.9
Capital productivity growth	–5.2	–4.6	–8.0	–11.1	–6.1	–6.5	–6.3	–5.8	–5.9	0.9	0.8	0.6	0.3
TFP growth	–0.8	–1.0	2.2	–0.4	1.2	–0.9	1.1	3.3	–0.6	3.4	2.7	2.8	2.6

Production

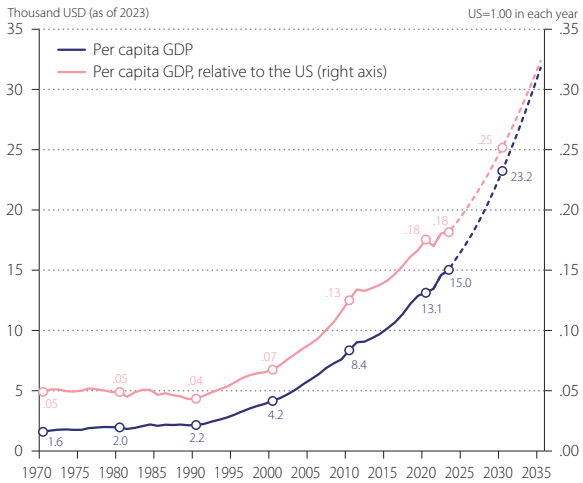

Figure 1 Per Capita GDP

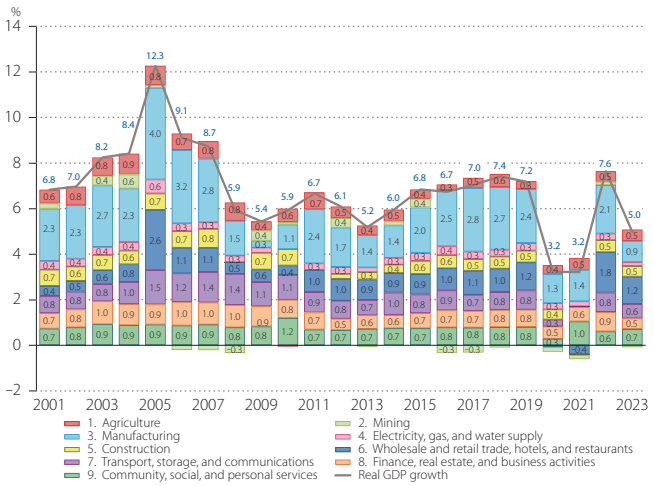

Figure 2 Industry Origins of Economic Growth

Labor

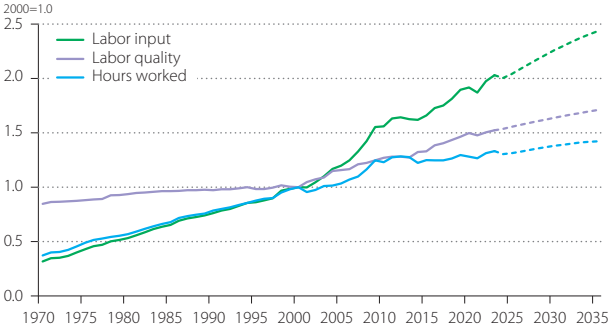

Figure 3 Labor Inputs

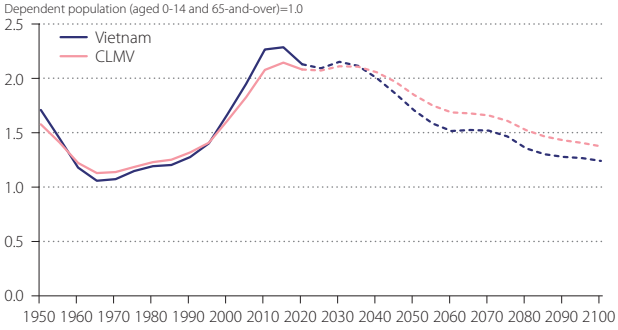

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

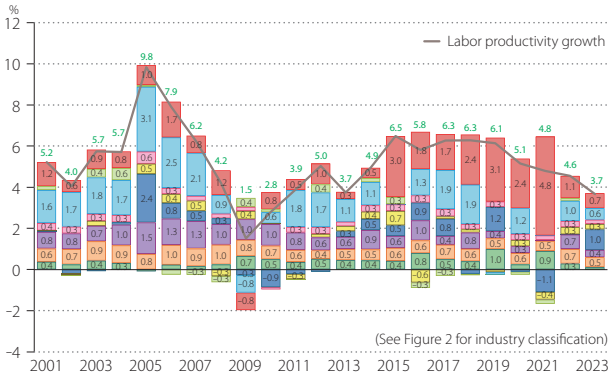

Figure 7 Industry Origins of Labor Productivity Growth

Figure 8 Productivity Indicators

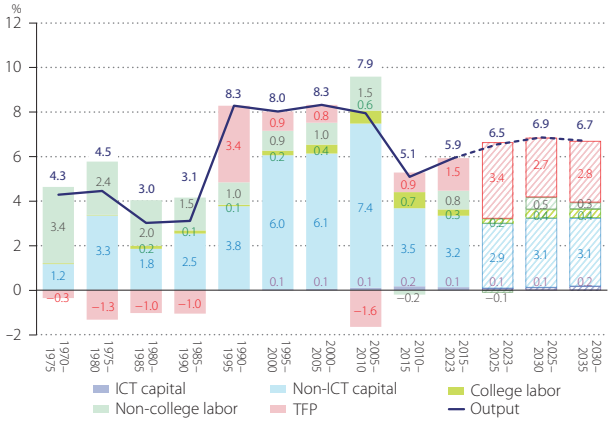

Figure 9 Decomposition of Economic Growth

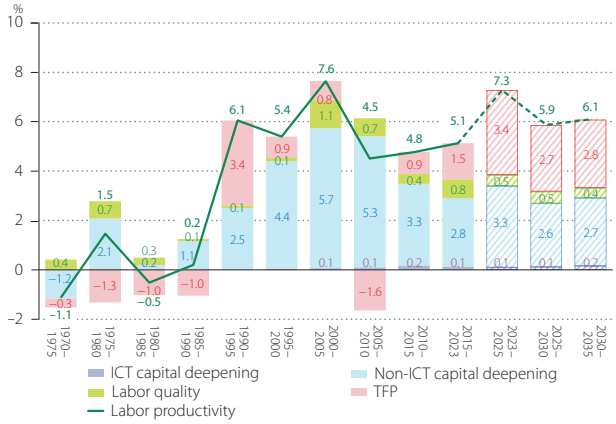

Figure 10 Decomposition of Labor Productivity Growth

APO21

Key Indicators

GDP in 2023	45,879	Billion USD (as of 2023)	
(exchange rate based)	17,084	Billion USD (as of 2023)	
Per capita GDP in 2023	16.0	Thousand USD (as of 2023)	
(exchange rate based)	5.9	Thousand USD (as of 2023)	
Per-worker labor productivity level in 2023	38.3	Thousand USD per worker (as of 2023)	
Per-hour labor productivity level in 2023	18.3	USD per hour worked (as of 2023)	
Capital stock per hour worked in 2023	59.1	USD (as of 2023)	
Energy productivity levels in 2022	20.3	Thousand USD per toe (as of 2023)	
Carbon intensity of GDP in 2022	n.a.	g-CO2 per USD (as of 2023)	

Number of employment in 2023	1,184,876	Thousands persons	
Employment rate in 2023	41.2	%	
Female employment share in 2023	32.2	%	
Average schooling years of workers in 2023	7.9	Years	
Investment share in 2023	28.9	%	
ICT investment share in GFCF in 2023	8.5	%	
Agriculture share in GDP in 2023	10.6	%	
Manufacturing share in GDP in 2023	19.4	%	
Agriculture share in employment in 2023	33.7	%	

(%: average annual growth rate)	1970–80	1980–90	1990–2000	2000–10	2010–23	2019–20	2020–21	2021–22	2022–23	projection 2023–25	2025–30	2030–35	2023–35
GDP growth	4.9	5.2	3.8	4.5	3.7	–2.8	7.1	4.7	3.2	4.0	4.6	4.4	4.3
Labor input growth	3.2	3.4	2.7	3.0	2.1	0.4	0.4	3.4	1.6	2.2	2.1	1.8	2.0
Labor quality growth	0.7	1.1	1.1	1.4	1.1	0.6	0.2	0.9	0.5	1.4	1.5	1.4	1.4
Hours worked growth	2.5	2.3	1.6	1.6	1.1	–0.2	0.2	2.5	1.1	0.8	0.6	0.4	0.6
College labor input growth	8.9	8.1	6.4	5.9	3.7	1.5	0.6	5.2	2.4	3.2	3.1	2.9	3.0
Non–college labor input growth	2.5	2.5	1.7	1.8	1.3	–0.2	0.2	2.4	1.1	1.6	1.5	1.2	1.4
ICT capital input growth	12.5	18.2	10.9	6.9	5.6	4.4	4.2	3.8	3.0	2.7	2.9	3.0	2.9
Non–ICT capital input growth	5.4	4.4	4.1	3.4	3.7	3.3	2.9	3.5	3.6	3.5	3.8	3.9	3.8
Per-worker labor productivity growth	2.0	3.0	2.1	2.8	2.7	–3.1	5.4	3.1	3.4	3.4	3.9	3.9	3.8
Per–hour labor productivity growth	2.1	3.0	2.2	2.8	2.8	–2.8	5.9	2.7	3.6	3.2	4.0	4.0	3.8
Capital productivity growth	–5.6	–4.9	–4.5	–3.6	–3.7	–3.4	–2.9	–3.4	–3.5	0.3	0.5	0.3	0.1
TFP growth	0.4	1.1	0.2	1.0	0.9	–4.9	4.4	1.7	2.1	1.5	1.9	1.8	1.8

Production

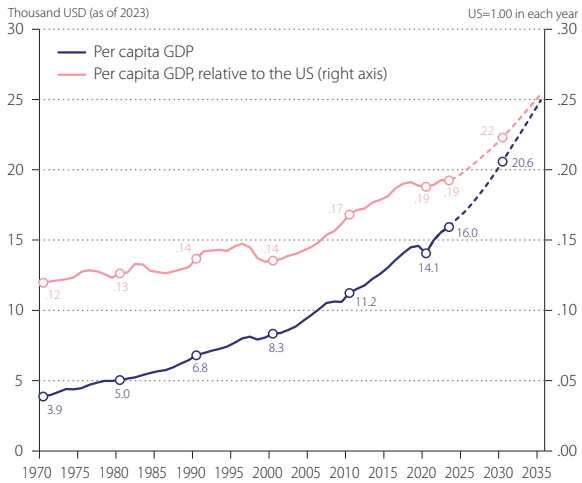

Figure 1 Per Capita GDP

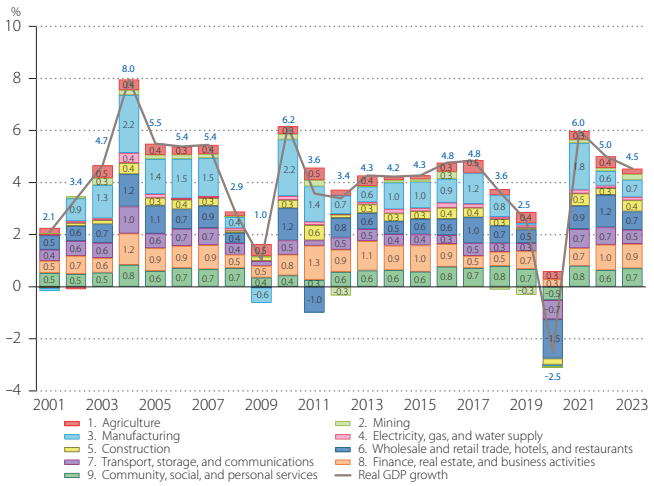

Figure 2 Industry Origins of Economic Growth

Labor

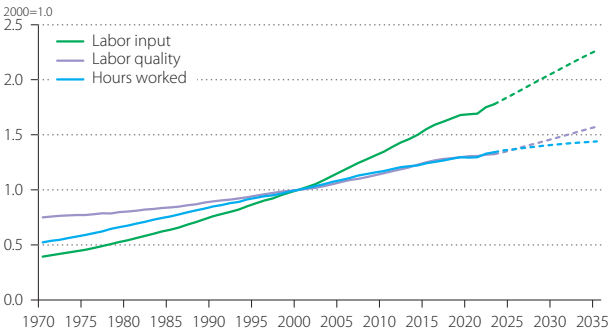

Figure 3 Labor Inputs

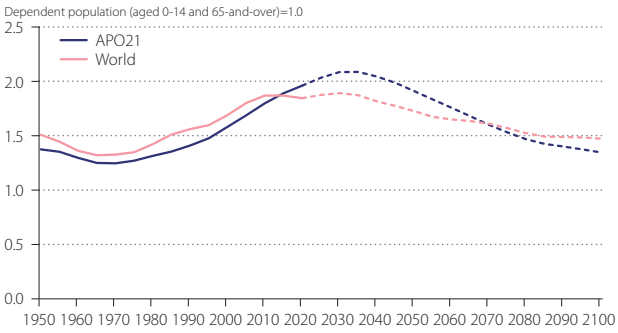

Figure 4 Demographic Dividend

Productivity

Figure 5 Per-Worker Labor Productivity Level

Figure 6 Per-Hour Labor Productivity Level

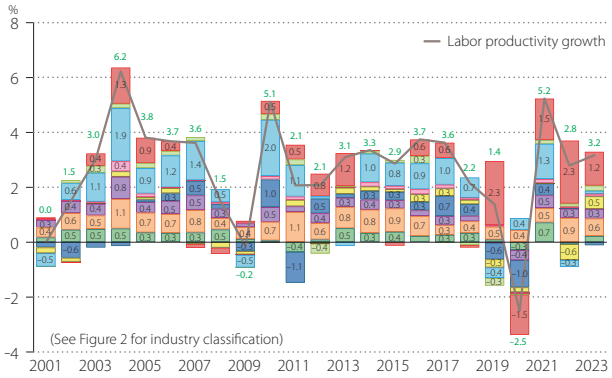

Figure 7 Industry Origins of Labor Productivity Growth

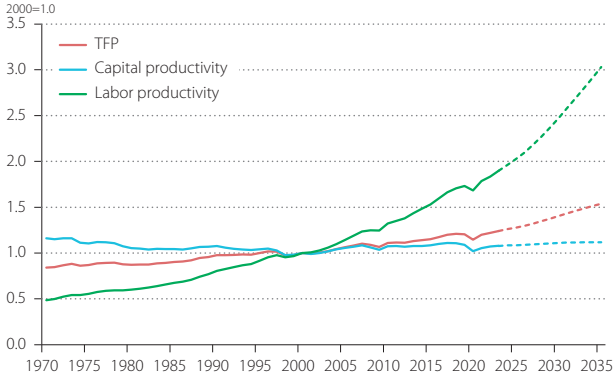

Figure 8 Productivity Indicators

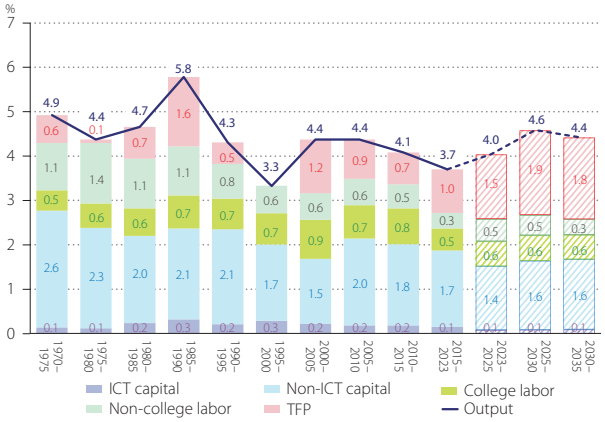

Figure 9 Decomposition of Economic Growth

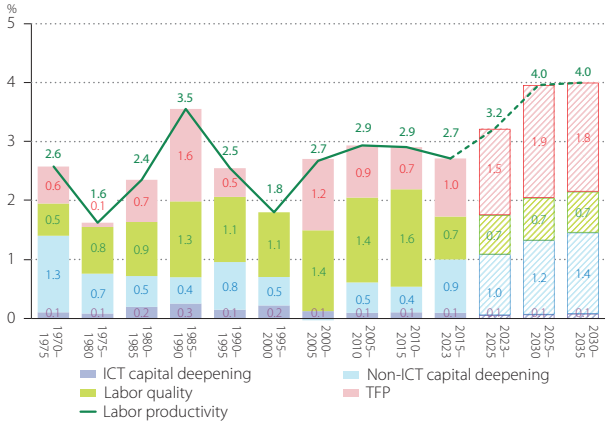

Figure 10 Decomposition of Labor Productivity Growth

App.

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