THAILAND
INDUSTRIALIZATION
AND ECONOMIC CATCH-UP
HIGHLIGHTS
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ADB Country Diagnostic Studies
THAILAND

FAST FACTS
(as of 2014 or latest available year)

ECONOMY
Nominal GDP $377.8 billion
Real GDP per capita $1,451
2011-2014 average sector share in GDP:
Industry 43%
Agriculture 12%
Services 45%

PEOPLE AND RESOURCES
65.98 million population (2010 population census)

SOCIAL INDICATORS
Poverty incidence 12.6%
96.6% adult literacy
75 years of life expectancy
Infant mortality of 11 per 1,000 live births
95.8% access to safe water
100% electrification rate

TRAVEL AND TOURISM
24.8 million tourists, 18.6% from the People's Republic of China
$31.9 billion in revenues (8.5% of GDP)
2.2 million new jobs (5.8% of total employment)

FOREIGN TRADE
Exports: $2.3 billion (60.1% of GDP)
Imports: $2.9 billion (62.6% of GDP)
Top 3 exports: computer hard drive, electronic microcircuits, road vehicles
Top 3 imports: petroleum, gold, vehicles parts and accessories
Top 3 export trading partners, in order:
People's Republic of China, United States, Japan

This map was produced by the cartography unit of the Asian Development Bank. The boundaries, colors, denominations, and any other information shown on this map do not imply on the part of the Asian Development Bank, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries, colors, denominations, or information.
Thailand joined the ranks of the upper-middle-income countries in 2011, with sustained high growth and rapid poverty reduction. Gross domestic product (GDP) grew an average of 9.5% per year between 1987 and 1996 on the back of political stability, a business-friendly regulatory environment, a large domestic market, open access to foreign investment, and greater participation in regional value chains. In the years following the Asian financial crisis of 1997–1998, growth slowed to an average 3.9% during 2000–2014. The slowdown may have been largely due to a series of shocks that hit the economy—a coup in 2006 and subsequent political unrest; the global financial crisis and demand slump of 2008–2009; and massive flooding in 2011. The series of events dampened investor confidence and affected domestic demand and growth performance. However, some of the reasons for this decline are also structural.

Challenges as an upper-middle-income economy

Thailand has successfully transformed its economy from agriculture to export-oriented manufacturing, while integrating key manufacturing production into the regional value chain, particularly in automobiles and electronics. Moreover, it has established a regional hub for key transport and logistics with a world-class airport, while its economic base has been diversified into tourism, health care, and other services.

As wages rise, however, productivity needs to keep pace for the economy to stay competitive. Thailand boasts a few world-class industries and services, such as automobiles or high-end hospitality, but the bulk of its workforce remains in low-productivity activities in trading and services. The agricultural sector still employs almost 40% of workers. Growth and structural transformation have also largely concentrated in and around Bangkok. The north, northeast, and far south lag behind Bangkok and the central region in economic growth and social development.
Thailand needs to move into the higher-value segment of economic activity and create high-quality jobs. Innovation, adaptation, and use of technology are critical to such growth, driving improvements in productivity and enabling the production of more sophisticated and higher-value goods and services. An educated and skilled workforce, alongside supportive infrastructure and market systems, is essential for attracting investment in high-tech manufacturing, advanced research and design, and high-productivity services.

**Thailand has moved up the product sophistication ladder, but the pace has slowed ...**

![Export Sophistication in Selected Countries, 1980–2013](chart)

This report identifies the main constraints to Thailand’s transition to a more modern industrial and service economy. Further major transformation is in order: this includes accelerating market reform and enhancing competition; upgrading infrastructure for a modern industrial and service economy; improving access to finance and technology for micro, small, and medium-sized enterprises (MSME); establishing effective social and educational policy; and promoting regionally balanced growth and development.
1. **Research and development (R&D) and technology transfer from abroad**

Technology transfer has been a key element in the export-oriented growth strategies pursued among the first crop of Asia’s “miracle” economies. Thailand is now well integrated into regional and global production networks. But to move up the global value chain it needs to enhance efforts to absorb and apply imported technology and develop indigenous high-tech industries.

- Thailand is the 12th largest automobile producer in the world and a leading producer of hard disk drives, making it a major exporter of high-value goods, ranking 14th in the world. However, much of the technology for this is borrowed from multinational firms and has not spilled over into other domestic firms. Innovation is weak in the domestic business community, with relatively low R&D and limited patenting.
- The large majority of local firms remain Tier 2 and 3 suppliers—that is, with relatively low industrial sophistication. Tier 1 suppliers, by contrast, are mainly foreign firms, as are finished goods assemblers. The electronics subsector, notably the production of hard disk drives, relies on imports for high-value inputs.
- R&D spending is low, at about 0.25% of GDP, and has been stagnant near that level for more than a decade. Government has established infrastructure for public research in science and technology, but funding is limited. More private sector R&D is needed, especially in the auto and electronics sectors.
- Support for science, technology, and innovation remains fragmented, and a focused and effective strategy for upgrading supportive infrastructure is needed.
- Legal protection of property rights is weaker in Thailand than in higher-income counterparts in East and Southeast Asia, weakening incentives for innovative research and commercial inventions.
- Stronger links are needed between higher education institutions and the private sector. Limited interaction has tended to focus on needs-based consultancies and the troubleshooting of process bottlenecks, rather than fostering innovation through high-value, long-term collaboration.

2. **Skills enhancement and business and education partnerships**

The skill level of the Thai workforce, though improved significantly since the late 1990s, trails the level of now high-income Asian countries when they were at Thailand’s current level of development. In 2014, 45% of the labor force had
Moving beyond the catch up industrialization requires substantial increases in R&D...

GDP = gross domestic product.
Note: Data for the Republic of Korea and middle-income countries are for 2011; data for the People’s Republic of China and Singapore are for 2012.

primary education, 28% secondary, and 20% higher education, a substantial improvement from 2001 when most of the labor force had reached only elementary education (62%). But a significant skills gap exists due to less-than-desirable business and education partnerships.

- Secondary-level math and science performance is considerably below that of high-income countries elsewhere. International test scores improved marginally or declined in the 2000s.
- Gross enrolment in secondary school has tripled in 2013 since the early 1990s, but about 14% of the age cohort still does not attend school. Enrolment is below levels in Eastern Europe, the most recent region to gain high-income status. Universal upper secondary education by 2015 remains a challenging target.
- Public investment in education improved in the 2000s over the previous decade, but remains below 5% of GDP and lags Malaysia and Viet Nam.
- Education strategy needs to be better linked to business needs. Social science and business programs remain favored subjects. Far fewer students enter the applied and natural sciences and the share of students in science-related disciplines lags behind high-income countries. Thailand needs more English skills as it expands as a logistics and transport hub and strengthens tourism.
... and investment in higher education with greater attention to the quality of education

PISA Scores, Selected Economies, 2012

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<td>OECD average</td>
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Note: Asian economies covered by PISA 2012 are the PRC (Shanghai; Macau, China; and Hong Kong, China); Indonesia; Israel; Japan; Jordan; Kazakhstan; Republic of Korea; Malaysia; Qatar; Singapore; Taipei, China; Thailand; Turkey; United Arab Emirates; and Viet Nam.


3. Competition in services and regulatory environment

Regulatory constraints inhibit effective competition and behind-the-door trade barriers remain significant, both notably in services. The services sector contributes nearly half of GDP and a large share of employment. But its share of total value added fell from 51% to 43% between 1990 and 2010, bucking the trend of high- and middle-income countries. Based on disaggregated data in 2010, communications, finance, and business services are particularly low, at 7.7% of total value added, compared to 16.1% in the Republic of Korea, 14.6% in Malaysia, and 29.6% in Singapore.

- Restrictions on foreign investment in the services sector have hampered competition, especially in telecommunications, tourism, media, and finance. The country lags behind on its commitments to open up its services sector under the ASEAN Economic Community.
- While a competition law has been in place since the late 1990s, its enforcement—and enforceability—have been questioned. The administrative and legal structures to support the law have been weak,
and few specific cases of anticompetitive behavior have been settled by the law.

- A few key players dominate telecommunications and it has taken some time to generate effective competition. Several public services (utilities) are also dominated by state-owned enterprise monopolies and oligopolies, including power, natural gas purchase and distribution, and water supply. Recent efforts have sought to open these areas to competition through private investment.

- Labor productivity in the services sector is considerably below that of industry. Services have created significant new employment, but many new jobs have been channeled into low-wage areas in repair and personal services.

4. **Quality of transport and logistics infrastructure**

Thailand is ranked 71st among 140 economies in the World Economic Forum’s Global Competitiveness Report (2015–2016) in quality of overall infrastructure, compared to Malaysia (16th), Taipei, China (21st), Republic of Korea (20th), and Singapore (4th). It is also ranked 32nd among 160 countries on overall logistics competitiveness in the World Bank’s 2014 Logistics Performance Index, well below Singapore and Malaysia. Particular concerns are telecommunications—critical for the high-tech economy—and a railway sector that is rapidly losing relevance. Economic opportunities from a more integrated region, especially the ASEAN Economic Community in 2015, depend on efficient cross-border transfers, which require transportation and logistics infrastructure connecting the value chain across the region.

- Infrastructure spending as a share of GDP has been falling since the Asian financial crisis and is now about 1% (or about 4% of total government expenditures). In particular, inadequate investment in transport infrastructure—particularly for trade, transit, and transport facilitation with neighboring countries—has constrained Thailand’s role as a regional hub. The government plan to upgrade the national railway system and increase infrastructure investment would help.

- The transport system could be better integrated as a seamless intermodal system, supported by soft infrastructure—for example, an efficient document processing and goods clearance system—and the effective use of information and communication technology.

- While Thailand has physically adequate land and sea transport systems, its export costs are higher by 13% and 29% compared to Malaysia and Singapore, respectively, due to higher inland transportation and
handling fees. While import costs are even higher by 25% compared to Malaysia, and by 73% with Singapore, due to high administrative costs in customs clearance and technical control. Thailand is also not as well connected to global shipping networks as Malaysia and Viet Nam.

- Rail transport has suffered from considerable underinvestment, leaving the sector’s share of the freight market at about 2.5% in 2013, down from 9.0% in 2000. Without support and restructuring, it could become irrelevant in 10 years.
- Urban roads remain a concern, causing costly delays for people and business, notably in Bangkok. The natural environment has also suffered from a dependence on fossil fuels.

5. **MSME access to finance and technology**

Thailand suffers a “missing middle” in enterprise size, with a few large firms dominating output, and small firms numerous. Over 99% of firms are small and medium enterprises (SMEs), accounting for about 36% of GDP and three-quarters of enterprise-based employment. These firms—important for the Central region and outlying provinces—need to be productive and innovative.

- Finance is a key constraint on growth and expansion of small enterprises into medium-sized firms. Thailand ranks relatively low on access to credit—partly because it lacks a public assets registry to help provide collateral for bank lending—and on ease of starting a business.
- Finance to assist firms of all sizes needs to develop further, including commercial banks, business agents, venture capital, and the Market for Alternative Investments, a small-cap stock market. The government’s SME Bank and the Thailand Credit Guarantee Corporation are also designed to fill gaps in private sector financial institutions. But it is unclear how adequate this is for innovative, high-growth firms.
- MSMEs also lack technological capacity due to insufficient R&D spending and limited access to technology. While the Industrial Technology Assistance Program is designed to support technology development and the capacity of SMEs in the manufacturing sector, its scope and funding size remain limited.
Policy suggestions

1. **Strengthen R&D and support technology absorption**

   - Increase R&D spending through the government research network and catalyze private R&D.
   - Support science and technology research at universities and research institutes and encourage commercialization of such research by linking it to industry needs.
   - Strategically position and aggressively promote Thailand as a high-tech center and research base for global production firms.
   - Develop a network of government agencies and domestic firms that keeps abreast of quality, technology, and delivery standards of parts and components in key subsectors dominated by foreign firms, such as automobiles and electronics.
   - Streamline patent approval and improve the enforcement of intellectual property rights.
   - Assess and expand the model of science and technology parks initiated through the Thailand Science Park and Software Park Thailand.

2. **Upgrade workers’ skill levels**

   - Review the current education budget. Raise education expenditure above a minimum of 5% of GDP, while ensuring that increased funding improves learning outcomes.
   - Strengthen higher education systems and promote natural and applied sciences in tertiary education.
   - Improve teaching in math, science, and other subjects at secondary schools to strengthen the foundations for TVET and higher education. Improve teacher training, create incentives for good teaching, and improve accountability.
   - Strengthen the link between education and jobs while using the recent Commission for Higher Education initiatives to link tertiary education with industry. Encourage industry involvement with training institutions through advisory panels, sector skills councils, and related arrangements. Engage industry in setting national skills competency standards.
   - Increase availability and access to highly specialized vocational education and training and ensure that content is systematically aligned with industry needs.
3. **Reduce structural impediments to competition**

- Allow greater competition in services, by increasing foreign participation. Raise foreign ownership thresholds in services to the target set for the ASEAN Economic Community.
- Level the playing field between private and state-owned enterprises. Ensure greater private sector entry into the power, natural gas, and water sectors.
- Monitor ownership concentration in key service sectors to ensure adequate competition. Anticompetitive behavior tends to be high in sectors dominated by Thai conglomerates.

4. **Expand investment in integrated and efficient infrastructure**

- Plan and increase infrastructure investment to improve intermodal connectivity.
- Facilitate public–private partnerships in transport (and other areas) to meet funding needs.
- Restructure the railway sector, improve its management, and increase investment. Ensure connection to emerging rail systems in the Greater Mekong Subregion.
- Improve cross-border transport and logistic systems for easy and low-cost movement of goods and people.

5. **Support better finance to SMEs**

- Support innovative start-ups and SMEs, especially in high-tech sectors, through policy incentives and assistance in attracting venture capital and equity finance.
- Create a public assets registry to help SMEs secure bank finance. Expand coverage of the public credit bureau.
- Better allocate support to SMEs outside of Central Thailand through the SME Bank, the Thailand Credit Guarantee Corporation, and other SME support programs.
- Improve SME access to technology and support links among medium and larger manufacturing firms for technological upgrading.
Thailand: Industrialization and Economic Catch-Up

**Highlights**

Thailand’s economic and social transformation of the last 50 years has placed it in the ranks of upper-middle-income countries and made it an integral part of global value chains. It has also established itself as a regional hub for key transport and logistics, with a world-class airport. Yet, growth has concentrated on greater Bangkok. As wages rise, productivity needs to keep pace for the economy to stay competitive. While it has diversified its economic base into tourism, health care, and other services, the bulk of the workforce remains in low-productivity activities—with the agriculture sector still employing almost 40% of workers. To continue its rise, therefore, Thailand needs to move into the higher-value segments of economic activity and create high-quality jobs that are regionally broader based. This report identifies the major constraints to accomplishing these goals and analyzes the main challenges. Among them, the country must (i) enhance research and development and international technology transfers; (ii) elevate worker skills and their industrial relevance; (iii) address structural impediments to competition, notably in services; (iv) provide advanced transport and logistics infrastructure; and (v) improve access to finance and technology for micro, small, and medium-sized enterprises.

**About the Asian Development Bank**

ADB’s vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region’s many successes, it remains home to the majority of the world’s poor. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration. Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

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