

# THAILAND ECONOMIC MONITOR

PRODUCTIVITY  
FOR PROSPERITY

January 2020



# PREFACE

The Thailand Economic Monitor (TEM) reports on key developments in Thailand's economy over the past six months, situates these changes in the context of global trends and Thailand's longer-term economic trajectory, and updates Thailand's economic and social welfare outlook. Each edition of the TEM also provides an in-depth examination of selected economic and policy issues and an analysis of Thailand's medium-term development challenges. The TEM is intended for a wide audience, including policymakers, business leaders, financial-market participants, and the community of analysts and professionals engaged in Thailand's evolving economy.

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# ABBREVIATIONS

<b>AFC</b>	Asian Financial Crisis
<b>ASEAN</b>	Association of Southeast Asian Nations
<b>BOI</b>	Board of Investment
<b>BOT</b>	Bank of Thailand
<b>CBFI</b>	Community-Based Financial Institutions
<b>CLMV</b>	Cambodia - Lao PDR - Myanmar - Viet Nam
<b>DFS</b>	Digital Financial Services
<b>EIA</b>	Environmental Impact Assessment
<b>EAP</b>	East Asia and Pacific
<b>EEC</b>	Eastern Economic Corridor
<b>EMDEs</b>	Emerging Markets and Developing Economies
<b>FDI</b>	Foreign Direct Investment
<b>FRA</b>	Fiscal Responsibility Act
<b>FSAP</b>	Financial Sector Assessment Program
<b>FTA</b>	Free Trade Agreement
<b>FX</b>	Foreign exchange
<b>FY</b>	Fiscal Year
<b>GDP</b>	Gross Domestic Product
<b>GFC</b>	Global Financial Crisis
<b>GMM</b>	Generalized Method of Moments
<b>GSB</b>	Government Savings Bank
<b>LTGM</b>	Long-Term Growth Model

<b>MOC</b>	Ministry of Commerce
<b>MOF</b>	Ministry of Finance
<b>MTFF</b>	Medium-Term Fiscal Framework
<b>NEER</b>	Nominal Effective Exchange Rate
<b>NESDC</b>	Office of the National Economic and Social Development Council
<b>NPL</b>	Non-Performing Loans
<b>OBEC</b>	Office of the Basic Education Commission
<b>OIC</b>	Office of Insurance Commission
<b>OLS</b>	Ordinary Least Squares
<b>PDMO</b>	Public Debt Management Office
<b>QR</b>	Quick Response
<b>REER</b>	Real Effective Exchange Rate
<b>SET</b>	The Stock Exchange of Thailand
<b>SEZ</b>	Special Economic Zone
<b>SFIs</b>	Specialized Financial Institutions (SFIs)
<b>SME</b>	Small and Medium Enterprises
<b>SOE</b>	State-Owned Enterprise
<b>TFP</b>	Total Factor Productivity
<b>UMIC</b>	Upper Middle-Income Country
<b>WDI</b>	World Development Indicators
<b>yoy</b>	year-on-year

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# EXECUTIVE SUMMARY

Thailand's economic growth slowed to 2.4 percent in Q3 2019, driven by cyclical factors, notably weak external demand and heightened global uncertainty. The downturn has also exposed structural constraints, which is reflected in the sluggish growth of public and private investments. The Government has responded swiftly to the growth slowdown, through accommodative monetary policies and countercyclical fiscal stimulus. Going forward, additional policies to enhance the effectiveness of the stimulus, with a focus on implementing major public investment projects and improving the efficiency of public investment management could maximize the growth impact. In the long term, structural reforms such as enhancing competition in the domestic economy, increasing openness, and promoting an eco-system for firm innovation in order can boost productivity.

## i. Growth has slowed driven by external and domestic factors

Following subdued growth in the first half of the year, growth remained weak in the third quarter of 2019, as continuously lower external demand weighed on domestic demand. GDP growth in Q3 2019 stood at 2.4 percent<sup>1</sup>, a modest pick-up from the previous quarter (2.3 percent). Subdued global demand conditions and heightened uncertainty, combined with a weakening of the domestic drivers of growth, continue to weigh on the economy so far in 2019. The contraction in exports continued in the third quarter (-1 percent), albeit at a slower pace than in the previous quarter (-7.9 percent). The persistence of weak export activities is now clearly weighing on private consumption which continued to slow (4.2 percent in Q3 against 4.6 percent in Q2) amid slowing employment and wage growth while private investment growth remained subdued. Private investment decelerated from 4.1 percent in Q1 2019 to 2.4 percent in Q3 2019 across almost all sub-categories of investment including imports of capital goods, permitted construction area and domestic machinery sales.

On the supply side, GDP growth was mainly supported by the services sector while manufacturing contracted due to lower export demand. The services sector grew by 3.8 percent in Q3, driven by accommodation and food service activities and, to a lesser extent, retail and wholesale trade and transportation. The expansion in tourism has been a key underlying driver for these activities, with the number of tourists picking up to 9.7 million in Q3 2019 (7.3 percent increase).<sup>2</sup> In the manufacturing sector, the slight contraction in Q2 2019 continued in Q3 (-1.5 percent) due to a sharp decline in the production of export-oriented industries (-7 percent year to date). The contraction was broad-based, including raw material industries but also capital and technology industries, particularly motor vehicle, computer and electronic parts. Agricultural output contracted in Q2 2019 by 1.3 percent, driven by the worst drought conditions in several decades afflicting the north and northeastern parts of the country from May through August.<sup>3</sup> The drought had a severe impact on the production of food-grains, particularly paddy production, which declined by 18 percent in Q2 2019. Higher yields saw agricultural output expanding by 1.5 percent in Q3 2019.

The growing weakness in domestic demand was reflected in a large contraction of import volumes, and an even larger current account surplus and further appreciation pressures on the Thai baht. Despite the decline in exports, the current account surplus grew larger in Q3 2019, due to a larger compression in imports (-6.8 percent in Q3 2019) as both consumption and investment weakened. In turn, the large current account surplus contributed to an increase in foreign exchange reserves (US\$ 213 billion, around 12 months of imports) and sustained exchange rate appreciation pressure since end-2018. At the end of November 2019, the exchange rate stood at 30.2 baht/US\$, compared to 32.9 baht/US\$ at end of November 2018, a 8.9 percent appreciation and the strongest the baht has been in six years. While the nominal effective exchange rate (NEER) rose by 8.8 percent between November 2018 and November 2019, the real effective exchange rate (REER) increased by 6.2 percent between October 2018 and October 2019 due to Thailand's low inflation (1 percent) compared to its main trading partners.<sup>4</sup>

**The central government fiscal deficit increased only slightly, as expenditure only rose marginally and revenue collection moderated.** The fiscal deficit is estimated at 2.3 percent of GDP for 2019<sup>5</sup>, compared to 2.0 percent of GDP in 2018. This is driven by a marginal decline in revenue collection as a share of GDP from 17.6 percent of GDP in 2018 to 17.2 percent of GDP in 2019, driven by decline in revenues from personal income tax and value added taxes due, in part, to a slowdown in economic activity and consumption. The revenue decline was counterbalanced by a marginal decline in expenditure as a share of GDP from 19.5 percent of GDP in 2018 to 19.4 percent of GDP in 2019 due to continued challenges in executing the capital budget. The increased central and general government fiscal deficit is projected to lead to a moderate pick up in public debt as a share of GDP over the medium term, continuing an upward trend from 2018 (41.6 percent debt to GDP) to 2019 (43 percent debt to GDP).<sup>6</sup> However, public debt will remain well below the statutory limit of 60 percent of GDP under the Fiscal Responsibility Act.

## **ii. The Government has responded swiftly to the slowdown but impact seems limited**

**The Government has responded swiftly to the growth slowdown through short-term countercyclical fiscal and monetary policies but the impact has been limited thus far.** The Ministry of Finance announced and implemented a 316 billion baht (US\$ 10.2 billion equivalent) economic stimulus package in August 2019 that targets farmers, small and medium-sized enterprises (SMEs), low-income households and the middle class, in the form of cash transfers, postponement of debt repayment and tax rebate on specific tourist activities<sup>7</sup>. Additional visa-on-arrival fee exemption measures were also extended for tourists from certain countries such as China and India. However, thus far, the impact has been limited as the fiscal deficit only ticked up marginally while SME lending has decelerated.

**Accommodative monetary policy continued to support growth.** On 6 November, the Bank of Thailand cut its key policy rate for a second time from 1.50 to 1.25 percent following the August rate cut to support the economy. However, room is limited as the policy rate has remained at 1.50 percent for much of 2015-2019. Going forward, the monetary policy committee has indicated that monetary and macroprudential policies will duly consider potential risks such as (i) search-for-yield behavior in the extended low interest rate environment (ii) high household and SME debt (iii) the growth in saving cooperatives' assets and (iv) high leverage by large corporations. The broader context is however a well-capitalized and sound financial sector, with the highest capital adequacy ratio in ASEAN (17.8 percent at the end of Q2 2019).

## **iii. Growth is projected to recover gradually over the near-term, but with balance of risks tilted to the downside**

**Thailand's GDP growth rate is projected to recover gradually over the near-term, underpinned by an expected slight improvement in external demand and recovery in private consumption as well as a stronger focus on public investment implementation.** Global growth is indeed projected to pick up moderately to 2.5 percent in 2020, as global trade and investment bottom out, with a modest pick-up in growth projected in Emerging Market and Developing Economies (World Bank 2019). In China, growth is expected to slow gradually, from an estimated 6.1 percent in 2019, to 5.9 percent in 2020, and to 5.7 percent by 2022. In the rest of the region, growth is expected to stabilize at 4.9 percent in 2020, and remain around 5 percent in 2021-22. Against this backdrop, the Thai economy is projected to grow moderately from an estimated 2.5 percent in 2019 to 2.7 percent in 2020 and 2.8 percent in 2021. This baseline projection reflects a bottoming out of export contraction, in line with global growth and trade, a recovery in private consumption as households consolidate their balance sheets and a focus on investment driven by a pickup in the implementation of large public infrastructure projects.

1 All percentage changes are reported on a year-on-year (yoy) basis unless stated otherwise.

2 The rise in tourist arrivals reflects the sharp increase in tourists arriving from China (17.3 percent increase in Q3) and from India (over 25 percent increase in Q3) offsetting a decline in tourist arrivals from Russia, Australia, Middle East and Europe.

3 <https://www.bangkokpost.com/thailand/general/1713664/dept-warns-of-worst-drought-in-decade>

4 Exports to most destinations have declined with the sharpest decline being in regional exports to CLMV (down 9 percent year to date) and ASEAN (down 11 percent year to date). The exception is exports to the United States which have picked up, potentially reflecting trade diversion impacts, but these gains have been insufficient to offset decline in exports to the rest of the world.

5 Thailand's fiscal year runs from October to September and all fiscal numbers are reported on a fiscal year basis.

6 These debt numbers are expressed as a share of calendar GDP, so they might differ from the Ministry of Finance's debt figures.

7 Fiscal Policy Office, Ministry of Finance. 2019 "Press release number 085/2562: Economic stimulus package 2562."

**Risks to Thailand's economic outlook stem from both external and domestic sources.** The external risks stem from a possible continuation of the US-China trade tension and a broadening of protectionist tendencies (e.g. between the US and the EU). If they materialize, policy uncertainty will remain high and external demand weak, hitting export-oriented economies like Thailand. On the upside, Thailand's exports could benefit if policy uncertainty related to trade tensions subside. The domestic short-term risks mainly concern policy uncertainty surrounding the delayed FY 2020 budget process and the cohesiveness of the coalition government which could impact investor confidence. The 19-party coalition government holds a slim majority in the lower house. If the coalition proves unstable, the approval of new large public investment projects not currently in the pipeline would be delayed, which would negatively impact public and private investment spending. A good sign is that the FY 2021 budget preparation is advancing according to the normal budget preparation plan.<sup>8</sup>

#### **iv. Policy considerations: maintaining continuity in implementing public investments while improving social protection to protect vulnerable households**

**Implementation of major public investments and PPP projects could further support growth and investor sentiment in the short and medium-term especially if accompanied by greater efficiency in public investment management (PIM).** After a 3-month long political transition from national elections to government formation, some key investment projects in the Eastern Economic Corridor are making progress toward implementation start. For example, the northern expansion plan of the overcrowded Suvarnabhumi airport awaits cabinet approval. The high-speed rail PPP linking Suvarnabhumi, Don Mueang and U-Tapao airports has passed environmental impact assessment and cabinet approval. As a result, the PPP agreement between the State Railway of Thailand and the winning consortium was signed in October 2019. It is important to think about comprehensive public investment strategies and improve efficiency of PIM to enhance the impact of any public investment-led stimulus.

8 As per the Cabinet resolution of January 7, 2020 approving the fiscal aggregates for FY 2021.

9 Box on Pushing Mega Projects Through Fiscal Bottlenecks, Thailand Economic Monitor June 2016; Thailand Public Finance Management Review Report, World Bank 2012.

Priority reforms for Thailand include: 1) developing a comprehensive multi-year pipeline of public investment projects, particularly projects that are identified as potential PPPs; 2) strengthening guidelines and expediting project appraisal by line ministries and SOEs; 3) addressing weaknesses in Environmental Impact Assessment (EIA) procedures (agencies take at least 18 months to secure approval on EIAs); 4) Furthermore, agencies do not get enough budget allocation for mitigation measures. As a result, affected communities do not trust mitigation measures and may be unwilling to move; 5), government-to-government procurement should also be more transparent (i.e. cost of borrowing and terms of repayment needs to be published); 6), an independent appraisal institution is important to validate project appraisals and increase transparency; and 7) pre-procurement should be allowed so that projects implementation can start immediately after budget approval.<sup>9</sup>

#### **As the government envisages further policy initiatives to protect vulnerable households, the introduction of better and more targeted social protection could be considered.**

A priority for Thailand is to build a social protection system that accurately identifies those that are most in need and be able to react swiftly to support affected households in times of economic downturns. These systems should meet the needs of the poor and the most vulnerable, while ensuring fiscal sustainability. Policies to support vulnerable households are critical, as poverty has recently increased. Official poverty estimates in 2018 were more than 2 percentage points higher than estimates from 2015, rising from 7.2 percent in 2015 to 9.9 percent in 2018. All regions in Thailand registered higher poverty rates in that period.

#### **v. In the long term, Thailand will need to boost productivity growth and investments to reach high-income status by 2037**

**Thailand has set a target under the 20-year national strategy to transition from upper-middle income to high-income status by 2037.** The World Bank's long-term growth modeling exercise highlights that, under a business-as-usual-baseline scenario, with no significant pick-up in investments or productivity growth, Thailand's long-run growth rate is projected to remain below 3 percent. As a result, Thailand will remain an Upper Middle-Income Country (UMIC) until past 2050 and fail to achieve the high-income target.

**Thailand will need structural reforms to significantly increase investment and productivity growth to achieve the growth needed to reach high-income status.** The long-term growth modeling exercise considered alternatives to enable Thailand to achieve high-income status by 2037. To achieve the target of becoming a high-income country by 2037, Thailand will need to sustain long-run growth rates above 5 percent beyond 2025. A key finding is that improving TFP growth and raising investments alone will be insufficient to sustain this growth rate. Thailand can only sustain this growth by nearly doubling the rate of public and private investments while maintaining the same historical TFP trajectory as South Korea when it was at Thailand's current GDP per capita level.<sup>10</sup>

**The recent growth slowdown in 2019 has highlighted Thailand's long-run structural constraints, with slowing investments and low productivity growth.** The contraction of Thailand's manufacturing exports, which is sharper than in the other large ASEAN countries, underscores the need to address the economy's structural problems. Thailand's economy grew at an average rate of 7.7 percent from 1980-96, supported largely by capital accumulation and a manufacturing export-oriented growth model. This period of growth corresponded with a shift of labor from agriculture towards manufacturing, higher rapid convergence with upper middle country comparators and gains in reducing extreme poverty. Progress was halted in 1997, when the economy was hit hard by the Asian Financial Crisis (AFC). From 1998-2008, the economy stabilized and slowly recovered, growing at an average rate of 4.8 percent. Post the Global Financial Crisis (GFC) in 2008, the economy has slowed further, growing at an average rate of 3.3 percent in the last decade. Investments in physical capital halved from close to 40 percent of GDP in 1996 to slightly less than 20 percent of GDP in 2018. Total Factor Productivity (TFP) growth has decelerated compared to the earlier periods – falling from an average of 3.0 percent growth between 1999-2008 to 1.4 percent between 2009-2017.

## **vi. Boosting productivity, particularly of manufacturing firms, is a critical part of the long-run structural reform agenda.**

**The second part of this edition of the TEM provides an in-depth analysis of recent developments in productivity growth and discusses policies to boost productivity in the manufacturing sector.**<sup>11</sup> Thailand will need to enable easier labor movement from the agricultural sector to higher-productivity industries, and allow for more dynamism in the industrial sector, with less efficient firms being replaced by more efficient firms.

### **Thailand's structural transformation remains incomplete.**

Thailand's economy-wide productivity gains from 1980-96 were driven mainly by structural transformation, with labor moving from low productivity agriculture to higher productivity manufacturing and services sectors. However, this process has stalled, with productivity growth since the AFC driven more by gains within sectors than from the movement of labor between sectors. One sign that structural transformation stalled is that Thailand's share of agricultural employment remains significantly higher than its structural peers at similar levels of GDP per capita. About 30.9% of Thailand's labor force is still in agriculture compared to 11.2% in Malaysia. Raising labor productivity and deepening capital in agriculture can facilitate structural transformation, with some potential measures including increasing efficiency and sustainability of irrigation investments, and more and better funding of agricultural research and extension programs.

**The analysis of drivers and constraints to productivity of manufacturing firms using firm-level data highlights some key empirical findings:** (i) manufacturing firm productivity growth has been higher for industries that export more (ii) firms that receive FDI are more productive; (iii) there are a number of small, productive firms that are not growing in size suggesting constraints to firm growth; and, finally, (v) firms that use more skilled labor and invest in R&D are more productive and innovative.

<sup>10</sup> South Korea has had the fastest TFP growth in East Asia and Pacific since 2014.

<sup>11</sup> This report is based on a joint research paper by the World Bank and the Bank of Thailand. The report benchmarks Thailand's economy-wide productivity against its structural peers, and then closely examines productivity of manufacturing firms using data from the Thailand's Manufacturing Industry Census covering nearly 50,000 firms and manufacturing plants with data from 2006, 2011 and 2016.



The results also highlight that productivity growth driven by exit of unproductive firms and entry of new, productive firms is low, particularly in Thailand's domestically oriented industries. Thailand's legislation such as the Foreign Business Act or the 1999 Competition Act discouraged new firms, especially foreign firms, from entering the domestic market or markets with state enterprises. Given that new firms tend to be more productive, this curbs productivity growth. In addition, enforcement of the competition law has been weak historically. No cases have been successfully prosecuted since the establishment of the Trade Competition Commission (TCC) under the 1999 Competition Act due to its lack of independence.<sup>12</sup> The new 2017 Competition Act replaces the 1999 act and is aimed at raising competitiveness through greater competition. The act touches on many important aspects such as governance of the competition agency, merger control thresholds, anticompetitive agreements, and exemptions. However, the most important challenge is strengthening implementation through, for example, legal clarification of treatment of state-owned enterprises and quasi-fiscal measures such as price control as well as incentivizing reporting of cartel behavior.

The findings point towards a productivity agenda that focuses on: (i) increasing openness; (ii) enhancing competition in the domestic economy; and (iii) promoting a stronger eco-system for firm innovation. Increasing competition requires enforcement of the recently passed competition law and strengthening the competition commission. Openness can be promoted by easing restrictions on FDI and skilled professionals, particularly in the services sector by implementing the ASEAN framework agreement on services.<sup>13</sup> Skills will be critical and, in the short-term, policy considerations include creating and looking to fill a skilled occupation shortages list to address skills needs for new, innovative industries. To support the R&D ecosystem, Thailand can look to strengthen intellectual property protection and the capacity of the Department of Intellectual Property.<sup>14</sup>

## PART 2: SUMMARY OF KEY FINDINGS AND POLICY OPTIONS

Findings	Policy recommendations
Competition and market churning are weak in domestically oriented industries.	Implement the new Competition Act with clear critical guidelines related to state-owned enterprises, price control and cartel behavior.
Firms that are integrated with the global economy are more productive.	Promote openness by relaxing FDI limits and services restrictions as envisioned in the ASEAN framework agreement on services.
Skilled labor complements R&D investments.	Introduce a human capital policy to support the innovation ecosystem. Consider creating a skilled occupation shortages list in the short term.

<sup>12</sup> See Box on Thailand's New Competition Act: Does it Deliver? World Bank Thailand Economic Monitor: Beyond the Innovation Paradox, April 2018.

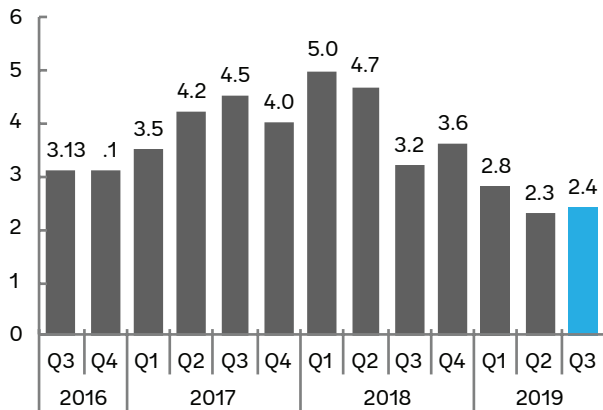
<sup>13</sup> See ASEAN Services Integration Report (2015). World Bank and ASEAN.

<sup>14</sup> See discussion on innovation eco-system in World Bank Thailand Economic Monitor: Beyond the Innovation Paradox, April 2018.

# RECENT DEVELOPMENTS IN CHARTS

**Figure ES 1: Thailand's GDP growth rate remained below 3 percent in Q3 2019...**

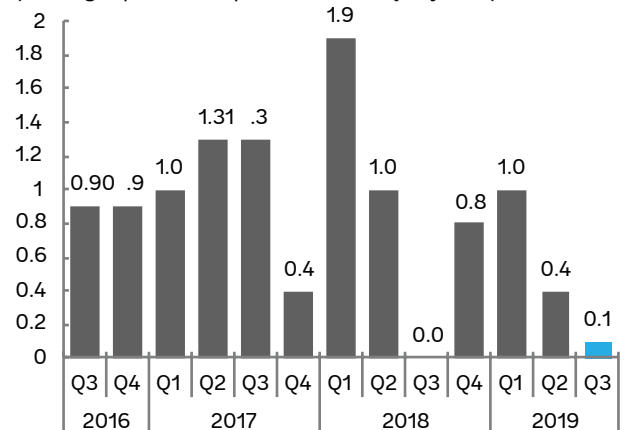
(% change, year-on-year)



Source: NESDC.

**Figure ES 2: ...continuing to lose momentum as q-o-q growth rate falls close to zero**

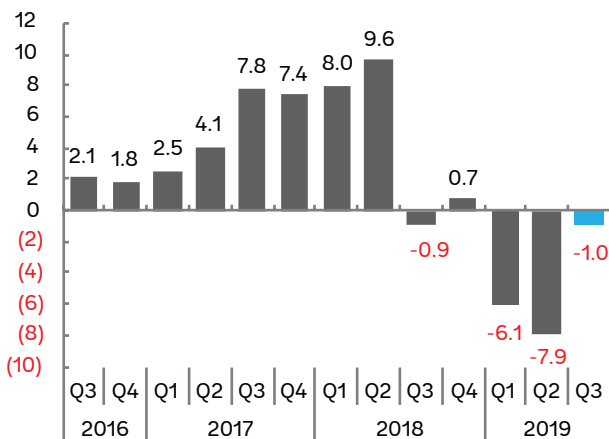
(% change, quarter-on-quarter, seasonally adjusted)



Source: NESDC.

**Figure ES 3: Exports continued to shrink amid weak external demand...**

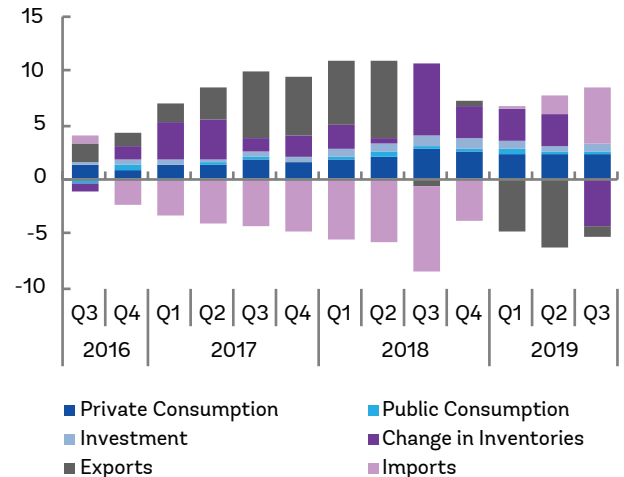
(Percentage-point contribution to real GDP growth, yoy)



Source: NESDC.

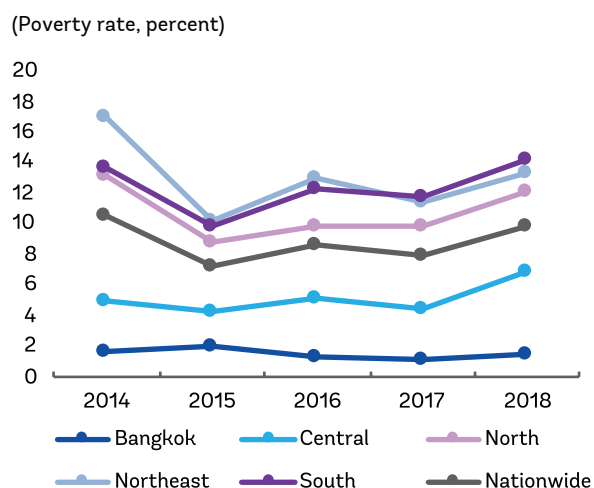
**Figure ES 4: ...and domestic demand contributed less to GDP growth in recent quarters.**

(Percentage-point contribution to real GDP growth, yoy)



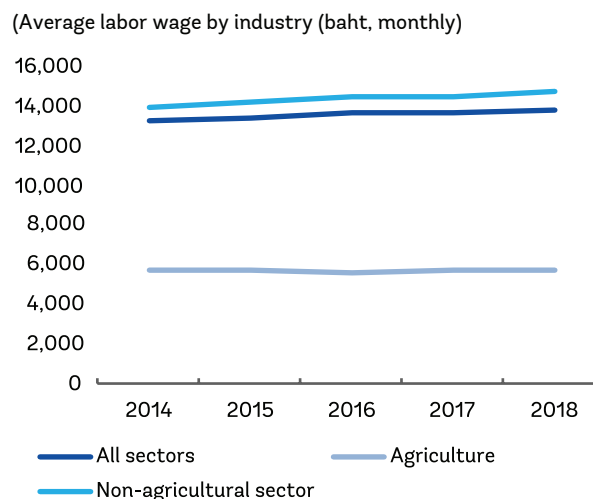
Source: NESDC.

**Figure ES 5: Poverty rates have increased across Thailand...**



Source: NESDC.

**Figure ES 6: ...underpinned by stagnant agricultural income**



Source: NESDC.

**Table ES 1: Macroeconomic Indicators**

	2017	2018	2019	2020	2021
Real GDP Growth Rate (at constant market prices)	3.9	4.1	2.5	2.7	2.8
Private Consumption	3.2	4.8	4.2	4.4	4.5
Government Consumption	0.5	5.2	1.7	1.2	1.0
Gross Fixed Capital Investment	0.9	4.8	8.4	2.7	2.6
Exports of Goods and Services	5.5	5.9	-5.3	0.2	1.1
Imports of Goods and Services	6.8	7.2	-2.5	1.7	2.5
Real GDP Growth Rate (at constant factor prices)	4.2	4.2	2.5	2.7	2.9
Agriculture	3.7	5.0	2.0	2.2	2.2
Industry	1.8	2.7	2.6	2.7	3.0
Services	5.8	5.1	2.5	2.7	3.0
Inflation (Consumer Price Index)	0.7	1.1	1.1	1.1	1.1
Current Account Balance (% of GDP)	11.0	8.1	5.4	3.9	2.7
Net Foreign Direct Investment (% of GDP)	-2.7	-3.0	-0.1	-0.1	-0.2
General Government Fiscal Balance (% of GDP)	-0.3	0.3	-0.8	-1.2	-1.3
Public Debt (% of GDP)	41.2	41.6	41.41	43.5	43.9
General Government Primary Balance (% of GDP)	0.6	1.3	0.2	-0.2	-0.4
Nominal GDP growth rate at Market Prices (US\$)	10.6	8.3	7.8	2.6	1.9

Source: Office of the National Economic and Social Development Council (NESDC); World Bank staff calculations.

# PART 1: RECENT ECONOMIC DEVELOPMENTS AND OUTLOOK: REVIVING SHORT-TERM GROWTH



## 1. Recent Economic Developments: A Cyclical Slowdown

### i. Regional and global growth are weakening amid trade tensions

**Global growth is projected to weaken to 2.4 percent in 2019 and to recover slightly to 2.5 percent in 2020.**

**Risks are tilted to the downside on global growth, particularly for international trade.**

Global growth slowed to 2.4 percent in 2019 – the slowest pace since the Global Financial Crisis (GFC) in 2009 – amid weakening global trade and investment (Figure 1).<sup>15</sup> A broad range of countries have been experiencing stagnant growth, with close to 90 percent of advanced economies and 60 percent of emerging market and developing economies (EMDEs) decelerating last year. Global trade growth fell to 1.4 percent in 2019 from 4.0 percent in 2018 – by far the weakest since the GFC – on the back of rising trade tensions. Growth is projected to pick up moderately to 2.5 percent in 2020, but the pick-up is not expected to be broad-based with about a third of Emerging Market and Developing Economies (EMDEs) expected to decelerate and growth largely predicated on a rebound in a small number of large EMDEs.

The global growth projections are subject to considerable downside risks. The baseline scenario of a modest growth pick-up in 2020 assumes no further rise in trade tensions among advanced economies and this could be impacted if trade conflicts intensify. Other significant sources of risk include continued policy uncertainty in advanced economies impacting investment, China growing more slowly than expected and potential financial stress in large EMDEs. Reflecting a preponderance of downside risks, the probability that global growth in 2020 will be at least one percentage point below baseline projections—that is, 1.5 percent or less, instead of the baseline forecast of 2.5 percent—is almost 20 percent, well above historical averages.

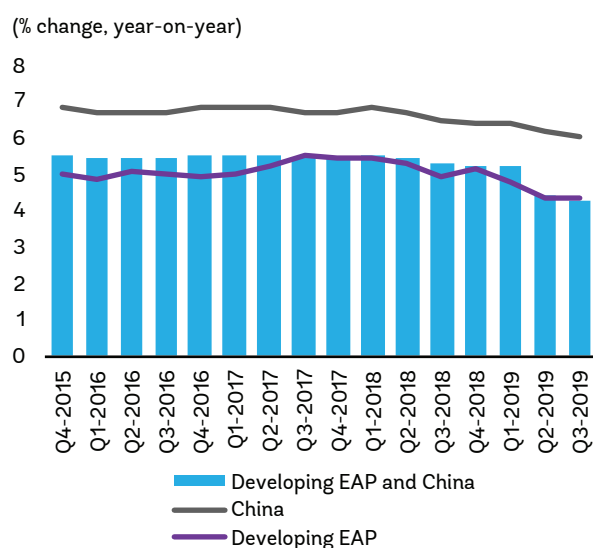
<sup>15</sup> The default measure of growth is on a year-on-year basis, unless otherwise stated.



**East Asia regional growth is also expected to weaken in line with global conditions.**

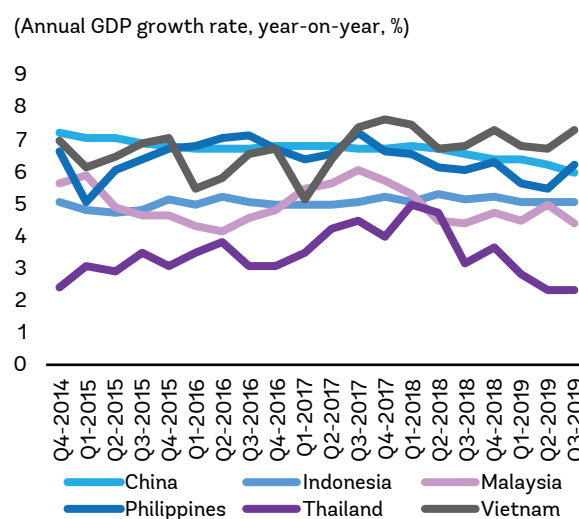
Growth in the East Asia and Pacific region is projected to slow from an estimated 5.8 percent in 2019 to 5.7 percent in 2020, and moderate further to 5.6 percent in 2021-22. Easier financing conditions and fiscal policy support will partly mitigate the negative impact of ongoing trade tensions and associated policy uncertainty. In China, growth is expected to slow gradually, from an estimated 6.1 percent in 2019, to 5.9 percent in 2020, and to 5.7 percent by 2022. In the rest of the region, growth is expected to slightly recover to 4.9 percent in 2020 and firm further to 5 percent in 2021-22. Downside risks to regional growth have intensified. They include a contraction in global trade due to a further escalation of trade tensions; a sharper-than-expected slowdown in major economies; and a sudden reversal of capital flows due to an abrupt deterioration in financing conditions, investor sentiment, or geopolitical relations.

**Figure 1: Growth is slowing across the region amid ongoing trade tensions**



Source: Haver Analytics.

**Figure 2: Thailand's economic growth continues to lag those of its regional peers**



Source: Haver Analytics.

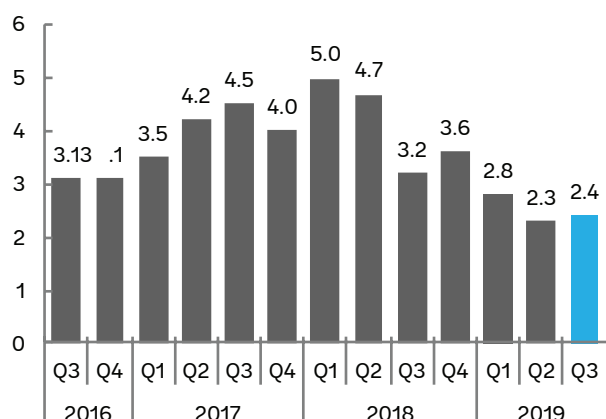
## ii. A sharp decline in exports has started to impact domestic demand and is driving a broad-based deceleration

**Thailand's growth has remained below 3 percent for the third consecutive quarter.**

In recent years, Thailand's economy has expanded at a slower pace than those of its regional comparators (Figure 2). In 2019, an unfavorable regional and global environment has severely impacted Thailand's exports. In the last two quarters, the export slowdown has started to impact domestic private consumption and investment. As a result, GDP growth remained sluggish at 2.4 percent in Q3 2019 (Figure 3). Economic momentum is not favorable in Thailand, with quarterly growth declining to close to zero in Q3 2019, on a seasonally adjusted basis (Figure 4).

**Figure 3: Thailand's GDP growth rate has remained below 3 percent for three consecutive quarters**

(% change, year-on-year)



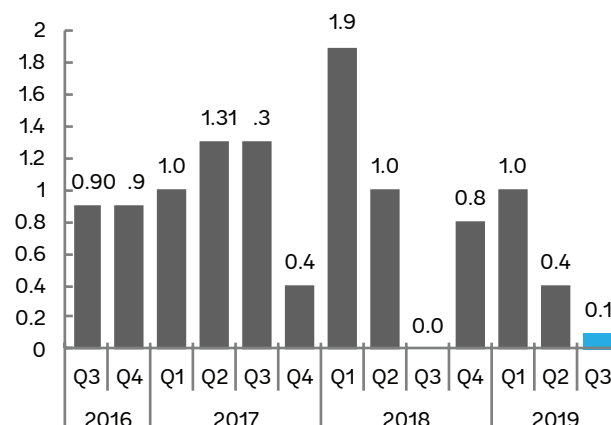
Source: NESDC.

**Declining exports were the key driver of the deceleration in growth.**

**Domestic drivers of growth are also weakening, including private investment.**

**Figure 4: ...particularly in the last two quarters**

(% change, quarter-on-quarter, Seasonally Adjusted)

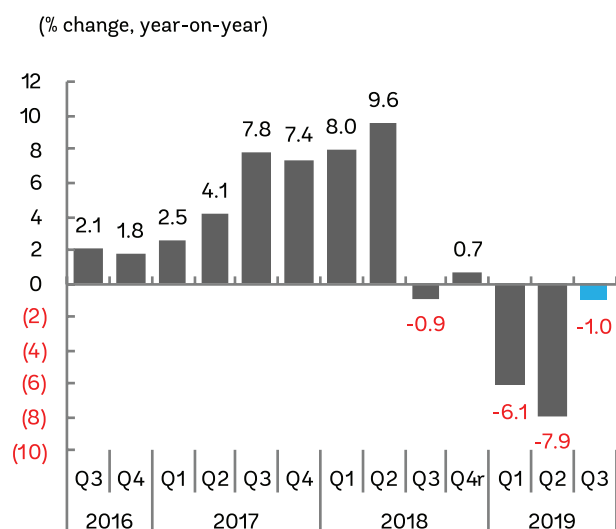


Source: NESDC.

Deteriorating external and global conditions have severely impacted Thailand's exports. Exports contracted by 7.9 percent in Q2 2019 and 1 percent in Q3 2019, in a sharp reversal of trends in the past 3 years (Figure 5). The decline was broad-based, with export value declining for close to two-thirds of Thai exporting industries in the first three quarters of 2019. The decline has been particularly sharp for agricultural commodity exports, which declined by 7 percent in the first three quarters of 2019, led by sharp declines in export volumes for major products such as rice and rubber. Manufacturing exports declined by 6 percent in the same period with electronics exports hardest hit, declining by 10.5 percent in the first three quarters, and by over 16 percent in Q3 2019. Slowing exports have contributed negatively and dragged down overall GDP growth in the last three quarters (Figure 6). Exports to most destinations have declined (Table 1) with the sharpest decline being in regional exports to CLMV (down 9 percent year to date) and ASEAN (down 11 percent year to date). The exception is exports to the United States which have picked up, potentially reflecting trade diversion impacts, but these gains have been insufficient to offset the decline in exports to the rest of the world.

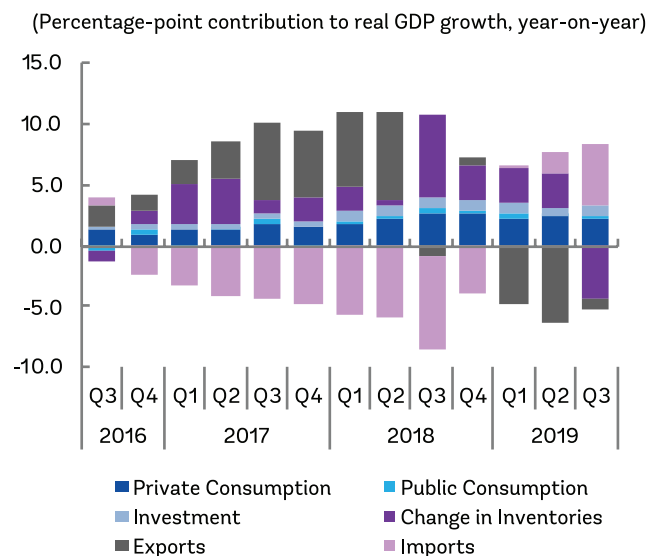
Private investment decelerated from 4.1 percent in Q1 2019 to 2.4 percent in Q3 2019, consistent with firms using up less of their existing capacity (Figure 7) in the last two quarters. Fast-moving indicators of investment, as measured through the Bank of Thailand's Private Investment Index, also declined (Figure 8 and Table 2). The decline was broad-based across almost all sub-categories of investment, particularly in Q3 2019 (Table 2) including construction activity as measured through permitted construction area (10.1 percent decline year to date), domestic machinery sales (4.3 percent decline year to date) and imports of capital goods (0.2 percent decline year to date).

**Figure 5: Exports of goods and services have contracted in recent quarters**



Source: NESDC.

**Figure 6: ...dragging down overall GDP growth**



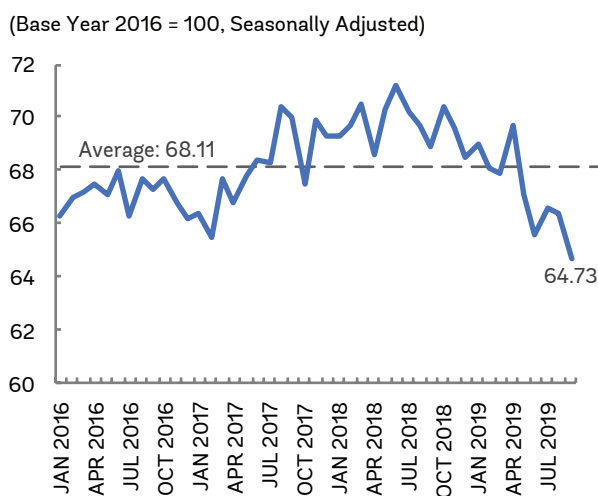
Source: World Bank Staff calculations.

**Table 1: Exports to Most Destinations Have Declined, Except for the United States**

Countries / Economic Territories	Share of Exports	Percentage Change 2019 Year to Date
CLMV	10.8%	-8.4%
ASEAN ex CLMV	14.3%	-11.5%
China	11.4%	-7.6%
United States	12.7%	11.7%
EU	9.6%	-7.7%
Japan	9.9%	-2.5%
Others	31.2%	-2.5%

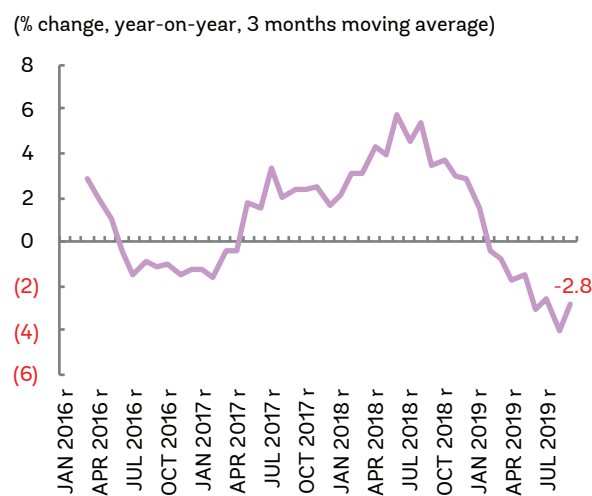
Source: Customs Department, World Bank staff calculations.

**Figure 7: Capacity utilization is declining...**



Source: Office of Industrial Economics.

**Figure 8: ...and the private investment index is also decelerating**



Source: Bank of Thailand.

**Table 2: Private Investment Index growth turns negative across all sub-categories in Q3 2019**

%yoy	2018												2019								
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
<b>Private Investment Index</b>	<b>4.0</b>	<b>4.2</b>	<b>1.0</b>	<b>7.8</b>	<b>3.0</b>	<b>6.4</b>	<b>4.3</b>	<b>5.5</b>	<b>0.4</b>	<b>5.2</b>	<b>3.2</b>	<b>0.0</b>	<b>1.3</b>	<b>-2.4</b>	<b>-1.1</b>	<b>-1.5</b>	<b>-1.8</b>	<b>-6.0</b>	<b>0.2</b>	<b>-6.3</b>	<b>-2.5</b>
Construction Area Permitted	0.9	1.1	2.0	1.2	1.6	-2.7	-3.0	-3.8	-6.2	-7.6	-9.0	-14.3	-12.9	-12.2	-14.1	-12.5	-12.2	-9.0	-8.9	-7.2	-4.1
Construction Material Sales Index	-0.5	3.5	1.0	-0.9	2.5	2.2	9.5	10.1	4.0	15.6	6.5	1.0	4.3	0.2	-1.3	3.1	2.0	2.6	-1.6	-8.2	-1.4
Import of Capital Goods	13.9	7.1	-5.7	11.5	-1.3	7.8	-3.1	2.4	0.4	7.6	6.8	-0.9	3.8	-4.9	8.6	6.5	-0.9	-12.0	8.1	-8.4	-2.3
Domestic Machinery Sales	1.3	4.7	4.2	11.8	7.3	11.3	12.5	10.7	2.6	5.7	3.8	-1.2	0.3	-2.0	-4.5	-7.1	-2.4	-6.5	-4.7	-7.8	-4.2
Number of Newly Registered Motor Vehicles for Investment Purpose	4.1	5.7	-0.2	13.2	3.8	6.2	13.9	17.9	-10.9	8.1	1.8	11.7	21.7	3.4	-4.1	4.6	-2.5	-6.4	5.5	-8.8	-3.5

Remarks: Green indicates positive growth. Darker Green indicates very positive growth. Red indicates negative growth. Darker Red indicates very negative growth.

Note: Construction material sales index includes sales of cement (portland, mixed, and various types), clinkers, ready-mixed concrete, concrete piles, concrete floor planks, bricks, cement pipes, sanitary fixtures, wall/floor tiles, asbestos cement roman roofing tile, and roofing tile. Total import of capital goods excludes rental and leasing transportation items and includes computer and information services (imports of services).

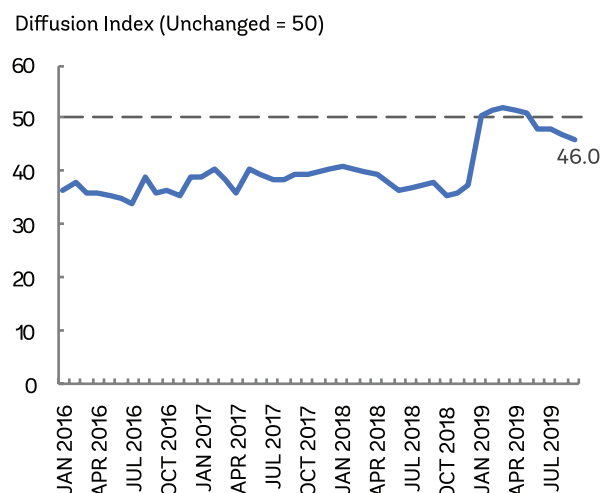
Total number of newly registered motor vehicles excludes motorcycles and passenger cars (seven-or-less seaters)

**Private consumption is also showing signs of weakening resilience.**

Private consumption growth decelerated from 4.9 percent in Q1 2019 to 4.2 percent in Q3 2019. The drivers of consumption have begun to show signs of weakness. The farm income index declined marginally in Q3 2019 amid flat agricultural prices and slowing agricultural production, driven by severe drought conditions (Figure 14). Consumer confidence, as measured through indicators released by the Ministry of Commerce has dropped below 50 since July 2019, indicating a deterioration in confidence (Figure 9). This is also reflected in the Bank of Thailand's index of private consumption, which has decelerated in 2019 (Figure 10) driven particularly by sales of durables (passenger cars, motorcycles and commercial cars), which slowed from 8.2 percent growth in 2018 to 1.0 percent growth in 2019 year to date. Looking at monthly trends (Table 3), durables index growth became negative and even growth of non-durables consumption slowed in Q3 2019. As highlighted in Box 1 on economic cycles in Thailand, this is a coincident indicator of a potential downturn.

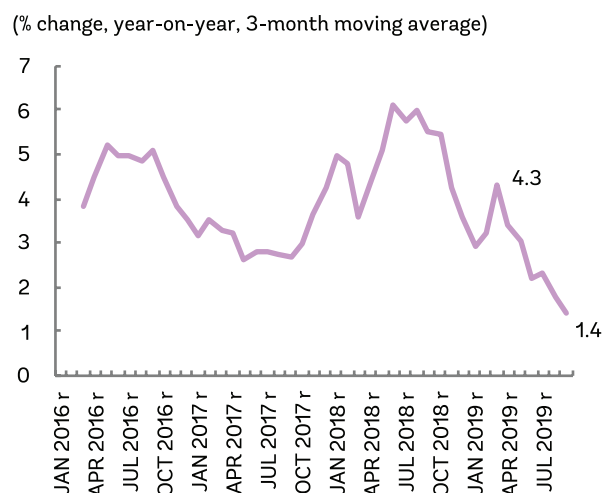


**Figure 9: Consumer confidence is declining...**



Source: Ministry of Commerce.

**Figure 10 ...and the growth of the private consumption index has begun to slow**



Source: Bank of Thailand.

**Table 3: Private Consumption Index Growth Declined for All Sub-Categories in Q3 2019**

%yoy	2018												2019								
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Private Consumption Index	5.1	3.8	2.0	7.6	5.7	5.1	6.4	6.4	3.6	6.2	2.9	1.5	4.3	3.8	4.8	1.5	2.8	2.3	1.8	1.3	1.2
Non-durables Index	1.3	2.3	2.0	1.6	1.3	1.3	1.4	0.9	-1.2	2.6	2.7	3.2	3.2	2.6	1.9	2.7	4.5	2.3	2.4	2.0	1.1
Semi-durables Index	3.7	3.0	1.1	2.6	2.4	2.8	2.3	2.0	3.4	5.0	3.4	1.5	2.3	0.5	2.4	1.2	1.0	0.9	1.4	0.3	0.3
Durables Index	8.5	4.0	5.9	8.8	9.7	11.8	9.7	14.1	7.3	9.1	7.0	2.5	6.3	5.3	6.2	3.2	0.1	-2.4	-0.6	-3.0	-6.5
Services Index	8.0	7.8	6.2	7.5	6.6	6.1	6.8	5.5	3.6	5.5	3.0	-1.6	4.0	3.2	3.1	3.0	1.8	1.9	1.8	2.9	3.8
Non-residents expenditure Index	5.6	14.2	18.9	-10.8	-2.7	0.4	-5.8	-9.5	-7.7	-5.0	4.9	-4.7	0.1	-2.9	-8.6	12.1	1.3	-2.1	2.0	6.4	6.2

Remark: Green indicates positive growth. Darker Green indicates very positive growth. Red indicates negative growth. Darker Red indicates very negative growth.

Notes:

- Non-durables Index consists of Nielsen's fast-moving consumer goods index, Household electricity consumption, Sales of fuel consumption, and Sales of Alcohol and Tobacco.
- Semi-durables Index consists of Retail sales of textile and apparel at constant price, and Import of textile and clothing at constant price
- Durables Index consists of Sales of Passenger cars, Motorcycles and Commercial cars.
- Services Index consists of VAT of hotel and restaurant at constant price, Sales of passenger transportations at constant price.
- The actual net tourist expenditure for personal travel. This index is used to subtract total expenditure to obtain Thai private consumption.

### Public investment picked up marginally in the last two quarters.

Public investment growth has gradually picked up, increasing from -0.1 percent in Q1 2019 to 1.4 percent in Q2 2019 and to 3.7 percent in Q3 2019. This reflects a recent pick-up in public construction activity, which grew by 5.1 percent in Q3 2019, due to acceleration in mega-projects activity including on Phase II expansion of Suvarnabhumi Airport, Bangkok water supply improvement projects and water pipeline construction projects. Despite the acceleration in activity, the increase in public construction still lags public disbursement plans, as several mega-projects missed their key disbursement milestones.

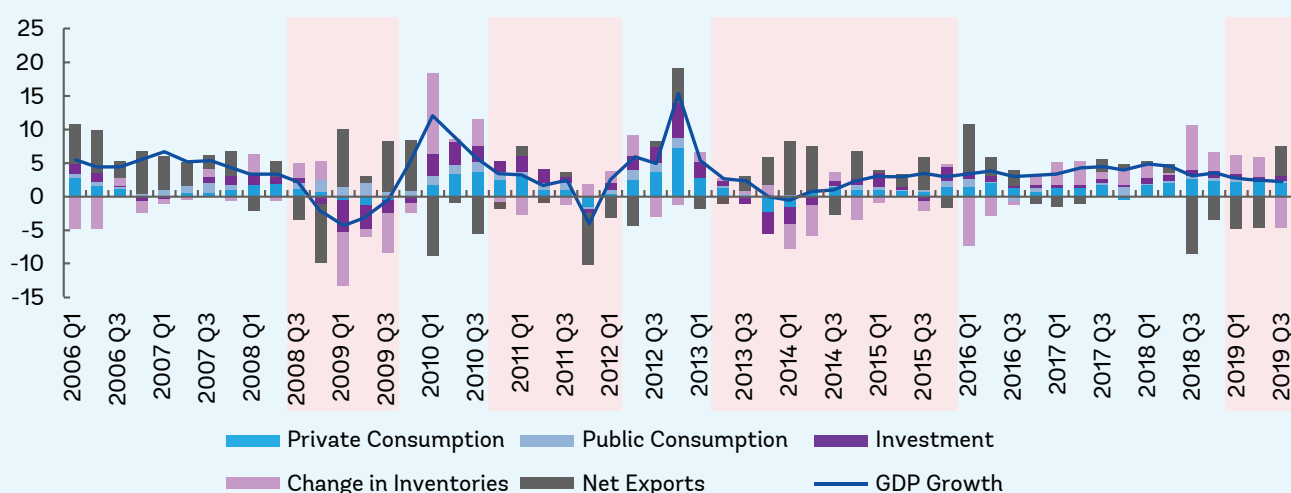
## Box 1: Economic cycles: has Thailand entered a downturn?

**The size and composition of domestic demand plays a key role in driving economic cycles in Thailand.** Private consumption has proven to be the largest contributor to output growth, accounting for roughly 40 percent of output growth over 2006-2019. In an upturn, private consumption leads output growth, contributing the largest share at one-third of output growth while in a downturn it helps support aggregate demand, contributing to more than half. Investment expansion plays a more asymmetric role, contributing to less than one-third of output growth during a typical upturn but less than 1 percent during a typical down-cycle. In a downturn, both inventory and investment tend to weigh down output growth with inventory contribution turning negative. The contribution of private investment last turned negative during the Asian financial crisis (1997-1999).

**Recent growth numbers show that the Thai economy clearly entered a downturn in Q1 2019.** The contribution of net exports turned negative as early as Q3 2018 amid global trade tensions. Starting in Q1 2019, the overall growth momentum slowed as quarterly GDP growth dipped below 3.0 percent amid weakened domestic demand—the contribution of consumption and private investment growth declined while the contribution of inventory growth turned negative in Q3 2019. Throughout this period, private consumption has remained consistently supportive. However, given the considerable household debt burden and risk of deleveraging, there is a possibility that private consumption may not be able to play as supportive a role as in past downturns.

**Figure B1.1: Contributions of components to real GDP growth (2006–2019)**

(Percentage-point contribution, year-on-year)

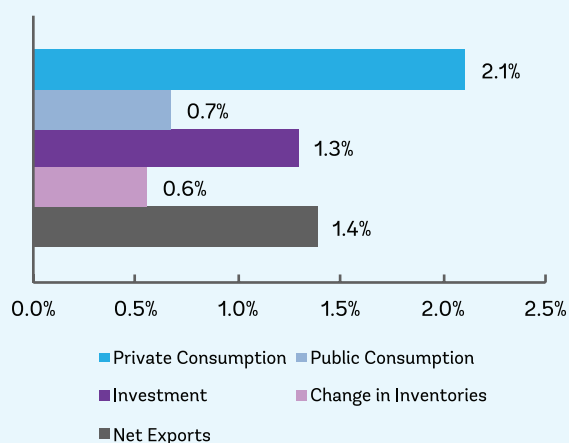


Source: NESDC; World Bank staff calculation.

Note: Shaded background indicate down-cycles defined as periods of GDP growth below average growth of 3.5 percent over 2006-2019 and coincides with the Global Financial Crisis of 2008, the Great Flood of 2011 and political unrest of 2013.

**Figure B1.2: Contributions to growth during economic upturns**

(Percentage-point contribution to real GDP growth)

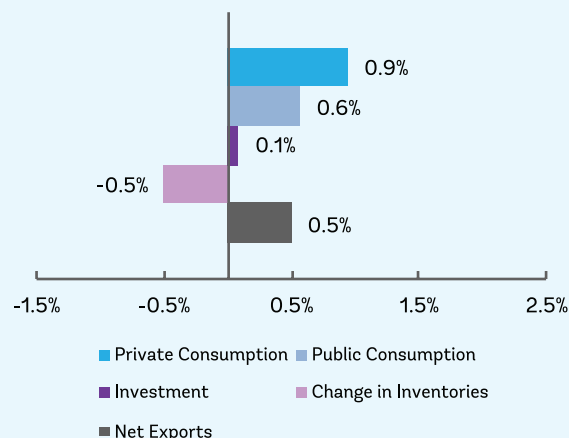


Source: NESDC; World Bank staff calculations.

Note: Upturns are defined as periods of GDP growth greater than 3.5 percent (average over 2006-2019).

**Figure B1.3: Contributions to growth during economic downturns**

(Percentage-point contribution to real GDP growth)



Source: NESDC; World Bank staff calculations.

Note: Downturns are defined as periods of GDP growth less than 3.5 percent (average over 2006-2019).

**Imports contracted in the last two quarters, driven by export and investment weakness.**

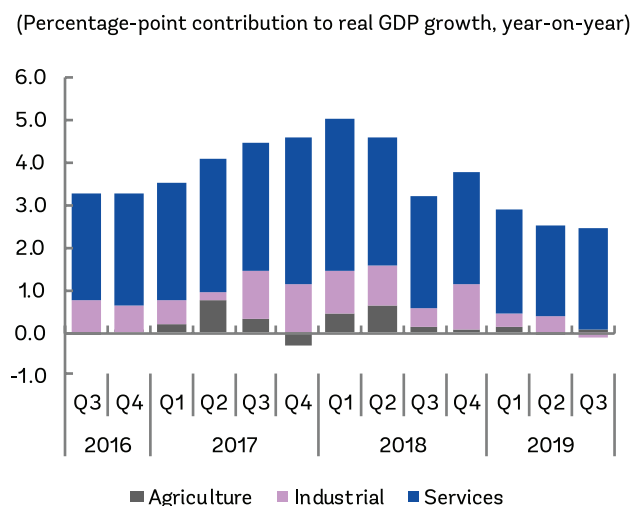
Imports contracted by 2.6 percent in Q2 2019 and 6.8 percent in Q3 2019. This reflects weaker demand for raw materials and intermediate inputs, particularly integrated circuits and computer parts, on account of the slowdown in manufacturing related exports. Imports of crude oil and capital goods in machinery and equipment contracted in Q2 2019 and Q3 2019, reflecting broader deceleration in private investment activity.

### iii. Export weakness has hurt the manufacturing sector, while agricultural output has been impacted by drought-like conditions

**On the supply side, services sector has been supporting growth amid industry and agriculture weakness.**

The services sector continued to perform strongly, growing at 3.5 percent in Q2 2019 and 3.8 percent in Q3 2019, as compared to 4.0 percent in Q1 2019, and continued to support overall GDP growth (Figure 11). Accommodation and food service activities and to a lesser extent, retail and wholesale trade and transportation, drove services sector growth. This was, in turn, supported by continued expansion in tourism, with the number of tourists picking up to 9.7 million in Q3 2019 (7.3 percent increase). The rise in tourist arrivals reflects the sharp increase in tourists arriving from China (17.3 percent increase in Q3) and from India (over 25 percent increase in Q3) offsetting a decline in tourist arrivals from Russia, Australia, Middle East and Europe (Figure 12). While the number of tourists increased, the spending per tourist declined marginally. So far this year, receipt per tourist declined by 0.3 percent, compared to last year.

**Figure 11: Services sector is supporting growth, amid industry and agriculture weakness**



Source: World Bank staff calculations.

**Faced with an unfavorable external environment, the manufacturing sector contracted in the last two quarters.**

The manufacturing sector contracted by 0.2 percent in Q2 2019 and 1.5 percent in Q3 2019. This reflects particularly the slowdown in exports, with the manufacturing production index for export-oriented industries contracting by 7 percent year to date, while the index for domestic industries fell by 1 percent in the same period (Figure 13). The contraction was marked for raw material industries, particularly rubber, refined petroleum products, paper and basic metals; and for capital and technology industries, particularly motor vehicle production and production of computer and electronic parts.

**Agricultural production was hit by drought, driving down farm incomes.**

Agricultural output contracted in Q2 2019 by 1.3 percent, driven by the worst drought conditions in several decades afflicting the north and northeastern parts of the country from May through August.<sup>16</sup> The drought had a severe impact on the production of food-grains, particularly paddy production, which declined by 18 percent in Q2 2019. Due to base effects, the sector picked up in Q3 2019, growing at 1.5 percent, led by a greater yield for vegetables, rubber and oil palm, amid continued challenges in food-grains production. Agricultural prices remained stable during the last two quarters (Figure 14), but overall production declines led to a moderate decline in the farm income index.

<sup>16</sup> <https://www.bangkokpost.com/thailand/general/1713664/dept-warns-of-worst-drought-in-decade>

**Figure 12: ...with a recent pick-up in the number of tourist arrivals**

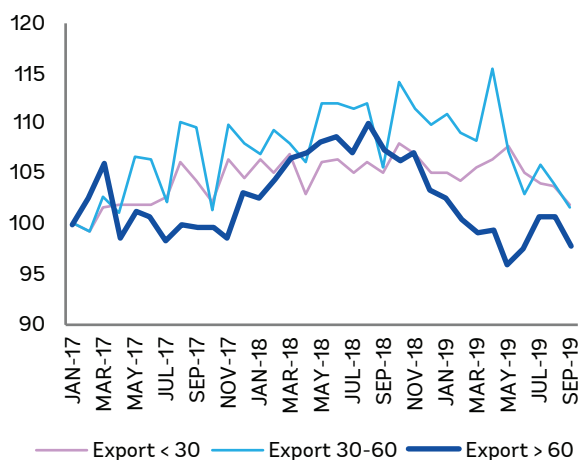


Source: Bank of Thailand.



**Figure 13: Export-oriented manufacturing has contracted in the last two quarters**

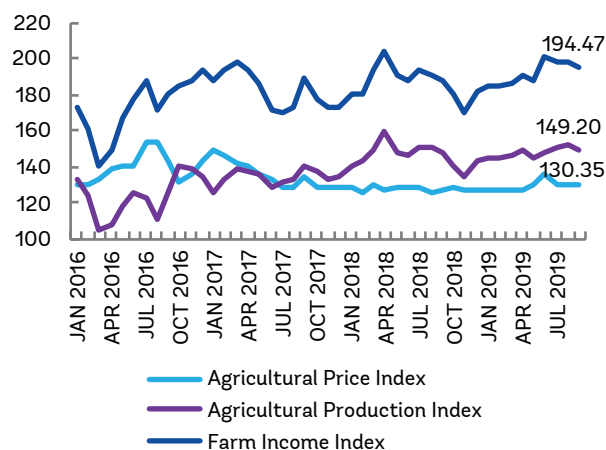
(Manufacturing Production Index classified by export share, seasonally adjusted, Base Year 2017 = 100, Seasonally Adjusted)



Source: Bank of Thailand.

**Figure 14: Agriculture production declined, while prices remained stable, driving down farm incomes**

(Base Year 2005 = 100, Seasonally Adjusted)



Source: Office of Agricultural Economics, Ministry of Agriculture and Cooperatives.

#### iv. Inflation remains near the lower bound of the central bank's target range.

**Inflation remained relatively constant around 1 percent over the previous three quarters.**

Headline inflation was estimated at 1.01 percent in all three previous quarters. Energy prices fell by 5 percent due to lower global energy prices, causing transportation and communication prices to fall. Food prices, on the other hand, rose by almost 5 percent driven by increases in the price of rice, flour and cereal (6.7 percent) and the price of meats, poultry and fish (4 percent). The house rental price has remained marginally constant so far this year.

#### v. Despite a weaker external environment, the current account surplus widened, contributing to a balance of payment surplus

**The current account widened in Q3 2019, compared to the previous quarter due to a larger surplus in services and goods trade.**<sup>17</sup>

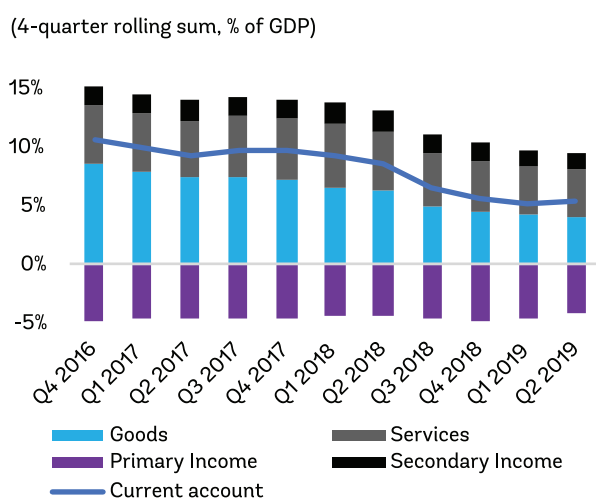
The current account rose to 6.6 percent (of GDP) in Q3 2019 from 5.7 percent (of GDP) in Q2 2018. An increase in services and goods surplus and a smaller deficit in primary income led to the widening of the current account (see footnote). The smaller deficit of 4.1 percent of GDP in the primary income account in Q3 2019 (compared to a deficit of 4.2 percent of GDP in Q2 2019) was mainly due to an increase in investment income from abroad. Services recorded a larger surplus in Q3 2019 (4.5 percent; Q2 2019: 4.4 percent), driven by an uptick in tourist receipts. In the third quarter, the trade balance surplus widened to 4.7 percent, from 4 percent in Q2 2019, due to a faster contraction in merchandise imports compared to exports.

<sup>17</sup> The current and financial accounts are measured as a 4-quarter rolling average, expressed as a share of GDP.

**The financial account recorded a smaller net capital outflow in Q3 2019 mainly due to FDI inflows.**

The net capital outflow stood at 2 percent (of GDP) in Q3 2019, smaller than the 2.3 percent (of GDP) net outflow recorded in Q2 2019. The smaller deficit was driven by an uptick in inward FDI, which rose to 2.2 percent of GDP in Q3 2019 (Q2 2019: 1.9 percent). Outbound FDI was 0.4 percent (of GDP) smaller in Q3 2019 (3.1 percent), compared to Q2 2019 (3.5 percent). Inward portfolio flows went from a surplus of 0.9 percent of GDP to a deficit of 0.4 percent of GDP, and all other investments recorded a smaller deficit in Q3 2019 (0.2 percent of GDP; Q2 2019: 1 percent of GDP).

**Figure 15: The current account surplus continues to narrow, driven by softening external demand and the continued growth of the domestic consumer market**

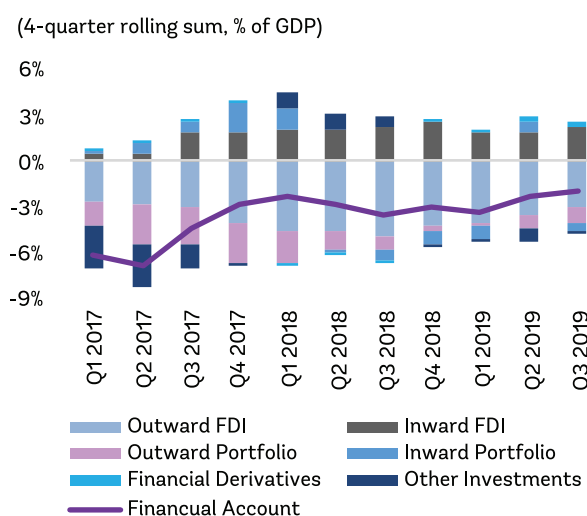


Source: Bank of Thailand; World Bank staff calculations.

**The overall balance of payment remained in surplus, causing foreign exchange reserves to increase.**

In Q3 2019, Thailand's overall balance of payment was estimated at 6.9 percent of GDP mostly driven by a larger current account surplus. The overall balance of payment was 2.6 percent of GDP in Q2 2019. The positive balance of payment in the third quarter was reflected in an increase in foreign exchange reserves, which stood at US\$220.5 billion at the end of September 2019. The accumulated reserves are enough to cover 3.5 times the country's short-term external debt.

**Figure 16: FDI inflows have increased steadily since 2016, but the financial account presents mixed signals**



Source: Bank of Thailand; World Bank staff calculations.

**The Thai baht has continued to appreciate.**

At the end of November 2019, the exchange rate stood at 30.1 baht/US\$, compared to 32.9 baht/US\$ at end of November 2018, a 8.9 percent appreciation and the strongest the baht has been in 6 years. This has prompted the monetary policy committee to express concerns about the continued appreciation of the currency. The strong currency impacts international tourism and merchandise exports, which are already struggling from the US-China trade dispute. Most currencies in the region have depreciated against the US\$ in recent months (Indonesia, Malaysia, China). The nominal effective exchange rate (NEER) rose by 8.8 percent between November 2018 and November 2019 and the real effective exchange rate (REER) increased by 6.2 percent between October 2018 and October 2019.

**Table 4: The Current Account, Financial Account, and Foreign-Exchange Reserves**

(Percent of GDP, unless otherwise indicated)

Countries / Economic Territories	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019
Current account	3.3	3.1	4.9	9.5	5.1	6.8
Exports of goods	50.5	51.6	48.3	44.9	46.2	46.8
Imports of goods	-45.3	-48.4	-44.7	-40.0	-41.8	-40.9
Tourism receipts	13.7	14.9	15.4	17.1	14.4	4.6
Financial account	-6.4	-0.9	-1.9	-3.8	-2.5	0.1
Outbound FDI	-4.7	-4.7	-3.5	-3.3	-2.7	-2.7
Inbound FDI	1.6	2.6	3.1	0.5	1.5	3.8
Outbound portfolio investment	1.2	-1.0	-0.1	-1.0	-1.1	-2.1
Inbound portfolio investment	-4.5	2.1	0.0	-1.0	2.0	-2.3
Reserves, excluding net forward position (US\$ billions)	206.8	204.5	205.6	212.2	215.8	220.5
Reserves relative to short-term external debt	3.1	3.1	3.2	3.4	3.5	

Source: Bank of Thailand; World Bank staff calculations.

**vi. Fiscal deficit ticked up marginally as revenues declined on account of weaker economic activity**

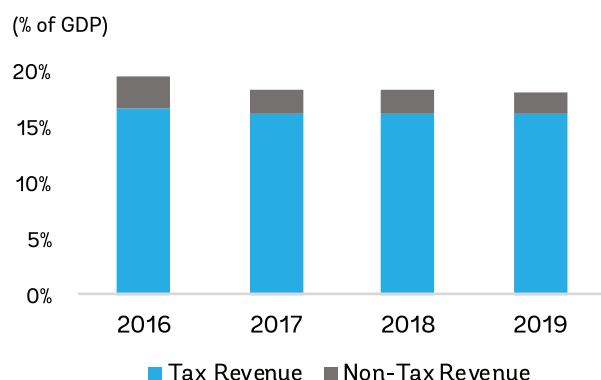
**Central government revenue fell marginally as a share of GDP in 2019 compared to 2018.**

Consistent with a downward trend since 2016, revenue as a share of GDP continued to decline in 2019, falling from 17.6 percent of GDP in 2018 to 17.2 percent of GDP in 2019 (Table 5 and Figure 17).<sup>18</sup> Tax revenue declined from 14.8 percent of GDP in 2018 to 14.4 percent of GDP in 2019. This was driven by a decline in Value Added Tax collections and weaknesses in Corporate Income Tax (CIT) and Personal Income Tax (PIT) collections, which reflect the impact of a slowdown in broader economic activity and consumption. This was offset partly by increased collections from petroleum income taxes (Figure 18), which enabled revenue collected to exceed target by 4.6 percent.<sup>19</sup>

<sup>18</sup> The fiscal year in Thailand runs from October to September. The fiscal numbers reported in this section are divided by calendar-year GDP. As a result, these numbers are marginally different from Ministry of Finance data on public debt divided interpolated GDP for the fiscal year

<sup>19</sup> Government revenue for FY2019 was budgeted at 2,450 billion baht but the amount collected was estimated at 2,563 billion baht in part due a higher tax revenue from petroleum income. These numbers are drawn from the budget in brief available at <http://www.bb.go.th/en/topic-detail.php?id=7262&mid=456&catID=0>.

**Figure 17: In recent years, central government revenue has fallen as a share of GDP...**



Source: Ministry of Finance.

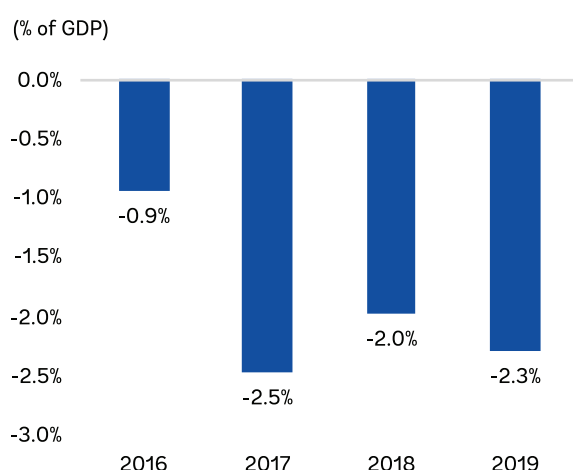
**Central government expenditures remained flat as a share of GDP between 2018 and 2019 and were lower than budgeted.**

Central government expenditures were estimated at 19.4 percent of GDP in 2019 compared to 19.5 percent in 2018 (Table 5). Both capital expenditures (consumption of fixed capital and spending on fixed assets) and current expenditures remained flat as a share of GDP between 2018 and 2019. A marginal decline in wages and salaries from 5.0 percent of GDP in 2018 to 4.8 percent in 2019 was offset by a slight pick-up in spending on grants (Table 5). Actual expenditures were 7.1 percent lower than the budget for 2019 resulting in a disbursement rate of 93 percent. Capital budgets remain the major source of budget under-execution, with the capital budget disbursement rate continuing to lag at 70 percent compared to a 102 percent execution rate for current budget.<sup>20</sup>

**The central government fiscal deficit increased marginally.**

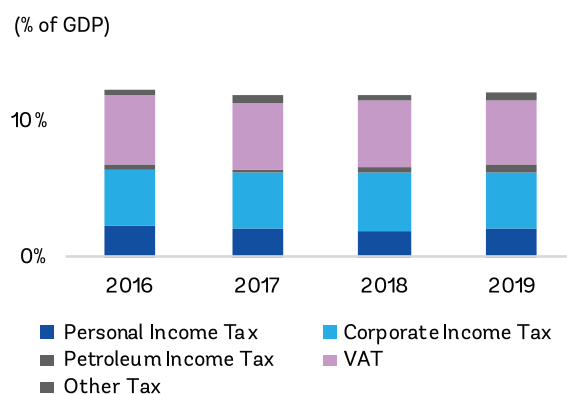
The central government fiscal deficit picked up marginally from 2.0 percent in 2018 to 2.3 percent of GDP for 2019. The deficit was largely financed through borrowing from the domestic market and a net reduction in financial assets (Table 5).

**Figure 19: The central government budget deficit has remained broadly stable...**



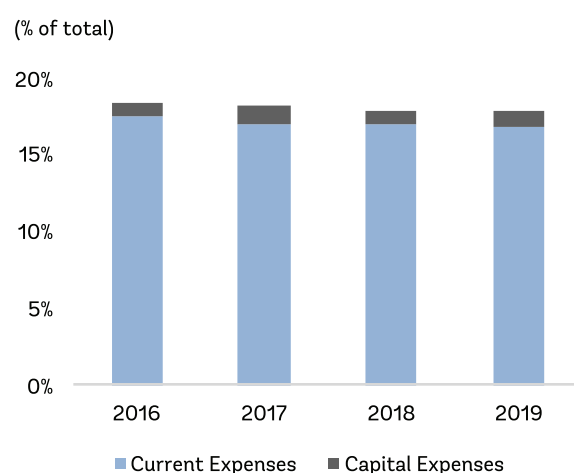
Source: Ministry of Finance.

**Figure 18: ...with decline in tax collections driven by reduction in personal income tax and value added tax**



Source: Ministry of Finance.

**Figure 20: ...as aggregate expenditure (% of GDP) declined along with revenues**



Source: Ministry of Finance.

<sup>20</sup> On the expenditure side, the budget was set at 3,000 billion baht (current expenditure: 2,350.9 billion baht and capital expenditure: 649.1 billion baht), and the realized expenditures were estimated at 2,788.3 baht (current expenditure: 2,401.1 billion baht and capital expenditure: 387.2 billion baht). The FY 2019 budget execution data was provided by the fiscal policy office.

**Table 5: Fiscal Operations at the Central and General Government Levels**

(Percent of calendar year GDP) (a)

Central Government	2016	2017	2018	2019
<b>Revenue</b>	<b>18.0%</b>	<b>17.3%</b>	<b>17.6%</b>	<b>17.2%</b>
Taxes	15.3%	14.7%	14.8%	14.4%
Social contributions	0.0%	0.0%	0.0%	0.0%
Grants	0.1%	0.1%	0.0%	0.0%
Other revenue	2.7%	2.5%	2.7%	2.7%
<b>Total Expenditure</b>	<b>19.0%</b>	<b>19.8%</b>	<b>19.5%</b>	<b>19.4%</b>
<b>Current Expense</b>	<b>18.4%</b>	<b>18.3%</b>	<b>18.0%</b>	<b>18.0%</b>
Compensation of employees	5.5%	5.2%	5.0%	4.8%
Use of goods and services	3.7%	3.4%	3.6%	3.6%
Consumption of fixed capital	0.9%	1.2%	1.0%	1.1%
Interest	0.8%	0.9%	1.0%	1.0%
Subsidies	0.8%	0.7%	0.6%	0.7%
Grants	4.0%	4.2%	4.2%	4.4%
Social benefits	1.9%	2.0%	2.0%	2.1%
Other expense	0.8%	0.7%	0.5%	0.3%
<b>Capital Expenditure</b>	<b>0.6%</b>	<b>1.5%</b>	<b>1.6%</b>	<b>1.5%</b>
<b>Primary Balance</b>	<b>-0.1%</b>	<b>-1.5%</b>	<b>-1.0%</b>	<b>-1.3%</b>
<b>Fiscal Balance</b>	<b>-0.9%</b>	<b>-2.5%</b>	<b>-2.0%</b>	<b>-2.3%</b>
Net acquisition of financial assets	1.6%	0.7%	0.9%	-1.0%
Net incurrence of liabilities	1.9%	2.6%	2.8%	1.3%
Domestic creditors	1.6%	1.9%	2.3%	0.9%
External creditors	0.3%	0.7%	0.5%	0.4%
<b>Memo: General government</b>				
Revenue	21.8%	21.2%	21.7%	21.1%
Total expenditure	19.1%	19.0%	19.0%	19.5%
Fiscal balance	0.4%	-0.3%	0.3%	-0.8%
Government debt	30.7%	32.1%	33.4%	33.8%
Public sector debt	41.1%	41.2%	41.6%	41.1%

**Notes:**

(a) These are fiscal numbers (October to September) divided by calendar-year GDP. These numbers are marginally different from Ministry of Finance data on public debt divided interpolated GDP for the fiscal year.

(b) FY2016-18 are based on actual numbers and FY 2019 numbers were constructed from monthly fiscal data from the Fiscal Policy Office.

(c) The fiscal balance and net financing due not add up to zero due to a statistical discrepancy, reported by Ministry of Finance.

Source: Fiscal Policy Office, Public Debt Management Office, Ministry of Finance; World Bank staff calculations.

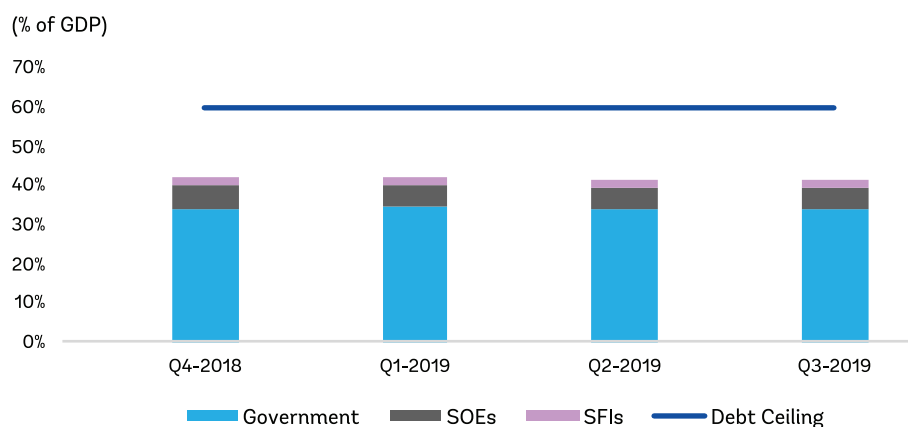
**The FY2020 budget is steadily advancing through the approval process.**

The budget for FY2020 is currently being discussed in parliament and is expected to be passed and adopted into law at the end of January. The budget is typically passed in August before the fiscal year commences in October, but post-election delays in government formation have delayed the process. The FY2020 budget under consideration stands at 3.2 trillion baht, an increase of 6.7 percent over FY2019 budget. Current expenditures are budgeted to be 5.3 percent over the FY2019 current spending. On the revenue side, the FY2020 budget projects a collection of 2.73 trillion baht, a 7.1 percent rise over FY2019 revenue collection. The deficit for FY2020 is projected to be 469 billion baht or 2.6 percent of GDP.

**Public debt remained stable as a share of GDP and is well below statutory thresholds.**

As of September, Thailand's public debt stood at 6.9 trillion baht or 41.1 percent of GDP.<sup>21</sup> Over 96 percent of the public debt is baht-denominated. Debt service to budget expenditure ratio stood at 8.7 percent in FY2019, where interest payment accounted for 6 percent of the budget and debt settlement (principal repayment) 2.7 percent of the budget. Thailand's public debt indicators are consistent with all the fiscal rules established in the 2018 Fiscal Responsibility Act. Government debt accounted for over 82 percent of total public debt (33.8 of GDP), while SOE debt accounted for about 13 percent of public debt (5.3 percent of GDP), and debts accrued by specialized financial institutions (SFIs) accounted for 5 percent (2 percent of GDP) (Figure 21).

**Figure 21: The public debt stock remains well below the statutory threshold of 60 percent of GDP**



Note: debt by fiscal year divided by calendar-year GDP.

Source: Public Debt Management Office; World Bank staff calculations.

## vii. Bank lending growth returned to its 2014 growth rate, and the financial sector is generally sound

**With low inflation and a slowing economy, the Bank of Thailand lowered its policy rate twice.**

On 6 November, the Bank of Thailand cut its key policy rate for a second time from 1.50 to 1.25 percent following the August rate cut to support the economy.<sup>22</sup> The cut contrasts with the rate hike in December 2018 to 1.75 percent from 1.5 percent (Figure 22) to mitigate growing financial risks and to create policy space in case of a slowdown. Even though there are still some pockets of risks in the financial sector (see below), the monetary policy committee deemed it necessary to lower the policy rate given that the economy has slowed down considerably.

<sup>21</sup> This calculation uses rolling 4 quarter for annual GDP.

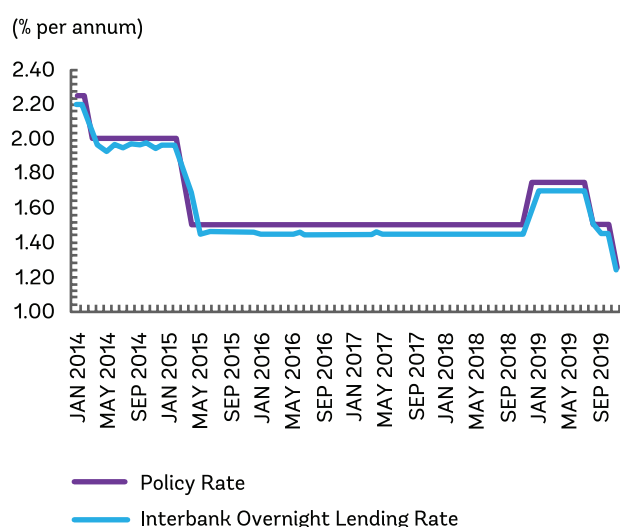
<sup>22</sup> Monetary Policy Decision: <https://www.bot.or.th/English/PressandSpeeches/Press/2019/Pages/n4362.aspx>



**Notwithstanding these pockets of risks, the Thai financial sector remained stable.**

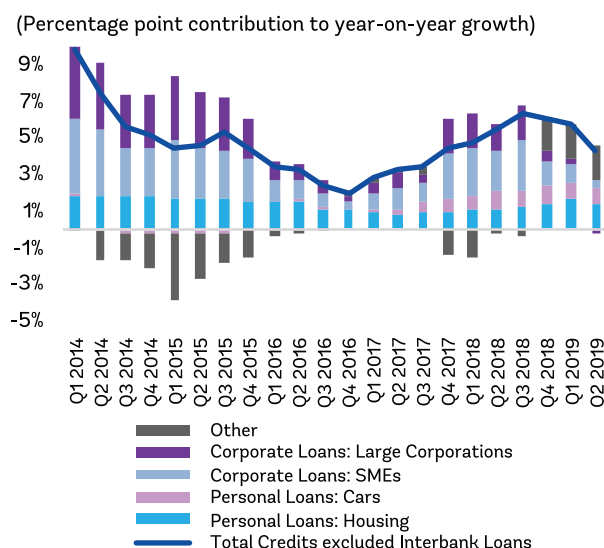
There are growing concerns about underpricing of risk in the financial sector stemming from low interest rates, but the monetary policy committee indicated that the macroprudential policy enacted have helped to limit the expansion of existing risks. Some of the risks identified by the committee include (i) search-for-yield behavior in the extended low interest rate environment (ii) high households and SME debt (iii) the growth in saving cooperatives' assets and (iv) high leverage by large corporations. However, Thailand's financial sector is well capitalized with a capital adequacy ratio at 17.8 percent at the end of Q2 2019. The Financial Sector Assessment Program (FSAP), published in October 2019 by the International Monetary Fund (IMF), determined that the Thai banking system is very resilient. It indicated that the large banks in the sector are able to resist a negative shock as severe as the Asian Financial Crisis (AFC). The report also notes an improvement in the Thai legal framework and supervisory process, which led to higher compliance, since the last Basel Core Principles review.<sup>23</sup>

**Figure 22: The Bank of Thailand lowered its policy rate twice in August and November 2019**



Source: Bank of Thailand.

**Figure 23: After increasing steadily for several years, the growth of commercial bank lending slowed in Q1 2019 as SME lending decelerated**



Source: Bank of Thailand; World Bank staff calculations.

**A slowdown in both personal and corporate loans dampened credit growth.**

Private credit slowed for the third consecutive quarter (based on Q2 2019). Personal housing loans contributed the most to credit expansion in the second quarter of 2019, while loans to large corporation and to SMEs shrank sharply, thus negatively contributed to credit growth. Personal loans accounted for 25 percent of all private loans while corporate loans accounted for 70 percent (Of which SMEs accounted for almost 40 percent of all corporate loans). The share of non-performing loans (NPLs) remained low constant, accounting for only 3 percent of all outstanding commercial banks loans. Loans to deposits ratio stood at 109.4 percent at the end of Q2 2019, indicating an increased reliance on interbank market by banks to fund loans.

<sup>23</sup> Financial Sector Assessment Program: <https://www.imf.org/en/Publications/CR/Issues/2019/10/24/Thailand-Financial-Sector-Assessment-Program-Technical-Note-Risk-Assessment-48748>

**Household debt has remained high, but relatively stable.**

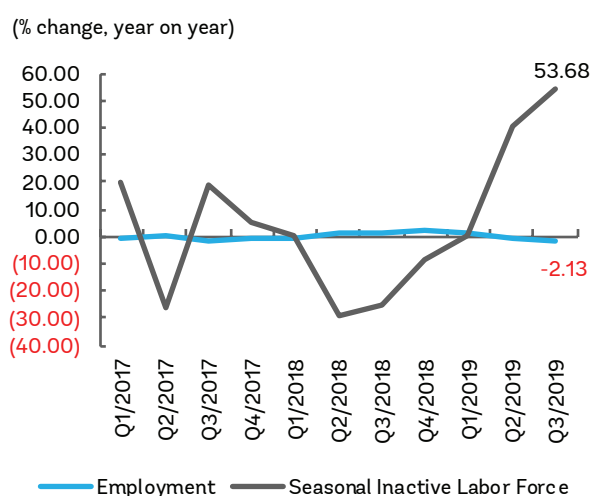
At the end of the third quarter household debt stood at 78.8 percent of GDP, a moderate increase compared to the same period last year (77.9 percent of GDP) and constant compared to the previous quarter (Q1 2019). Loans from commercial banks continue to be the largest source of household debt, accounting for 33.7 percent of household debt and a moderate increase from Q2 2018 (33 percent of household debt). Compared to Q2 2018, aggregate household debt rose by 5.8 percent, with loans from commercial banks contributing the most to this increase (2.8 percent). Other loans types that contributed to the uptake in household debt include credit card loans and leasing (1.1 percent) and loans from SFIs (1 percent).

### viii. In line with decelerating economic activity, the rate of employment growth and wages decreased

**Recent quarters have seen a decrease in the rate of employment growth and in wages, reflecting weaker economic activity.**

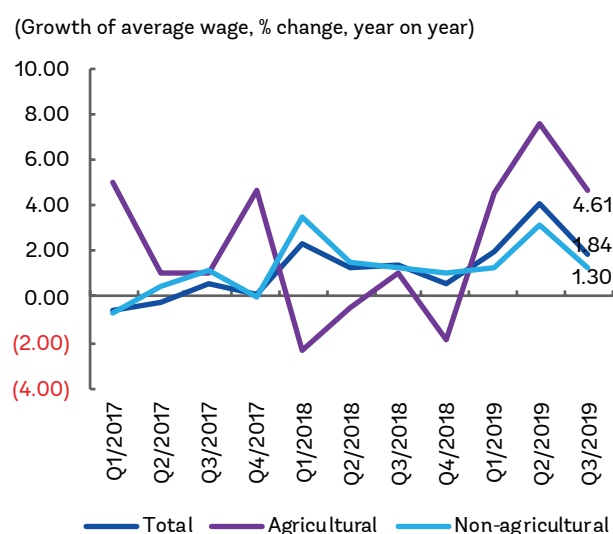
The general deceleration of economic activity is reflected in the labor market, with a decrease in the rate of employment growth, from 0.6 percent in Q1 2019 to -2 percent in Q3 2019 (Figure 24). The decline is marked for the agricultural sector, with a decrease in employment growth by 4 percent in Q2 2019 and 1.8 percent in Q3 2019. There has been a corresponding sharp pick in the rate of seasonally inactive labor force, which increased by close to 50 percent in Q3 2019 compared to the same period last year. The weaker labor force outcomes are also reflected in the number of overtime hours by workers (9.2 percent decline in Q3), in the number of hours of temporary employment (21.9 percent decline in Q3)<sup>24</sup> and a moderation in the rate of growth of wages (Figure 25). The negative impact, particularly on the temporary workforce underscores the need for a new approach to social protection discussed in Box 3.

**Figure 24: The rate of employment growth has slowed, and seasonally inactive labor force has risen...**



Source: Bank of Thailand.

**Figure 25: ...while wage growth has moderated.**



Source: Bank of Thailand.

### ix. Thailand's progress in poverty reduction has largely stalled since 2015, and deep disparities persist across regions

**Poverty has increased twice in a relatively short period, in 2016 and in 2018.**

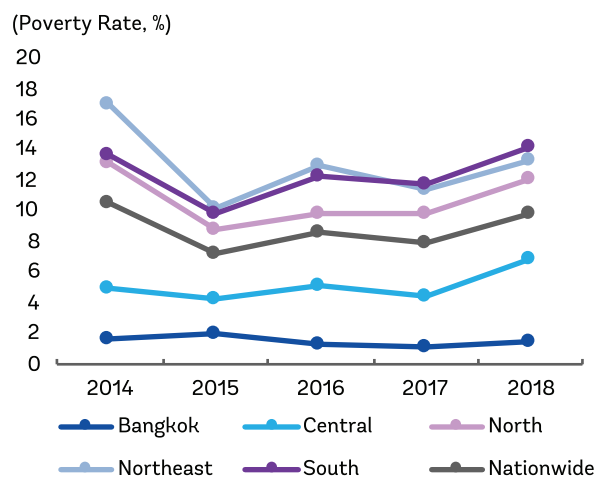
Official estimates of poverty were 9.9 in 2018 compared to 7.9 in 2017. In 2018, the increase in poverty was widespread and occurred in all regions (Figure 26). Poverty rates in the Central and South regions were higher in 2018 than in 2014. The South region has the highest poverty rate for the first time since 1988. Declines in tourism and rubber exports may have negatively impacted household well-being in the South.

<sup>24</sup> Krungsri Economic Outlook, November 2019.

**Declining farm incomes has significant implications for the welfare of the population.**

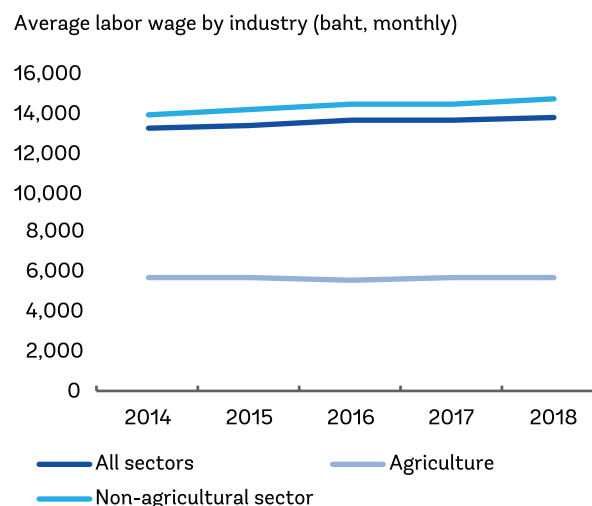
Continued challenges in the agricultural sector will likely negatively impact the poor. Performance in the agricultural sector is linked to trends in poverty. Slowing farm incomes have contributed to a modest increase in overall poverty in 2016 (Box 2 on poverty). Agricultural price indices had decelerated in 2018, the sector where most of the poor are employed. In 2018, average wages in the agricultural sector was lower than it was in 2014 (Figure 27).

**Figure 26: Official estimates showed an increase in poverty in 2016, and an even larger increase in 2018**



Source: NESDC.

**Figure 27: Average wages have stagnated particularly for agriculture**



Source: Department of Employment, Ministry of Labor; Bank of Thailand.

## Box 2: Understanding the Sources of Recent Changes in Poverty Reduction

**Between 2015-17, poverty, based on the Upper-Middle income class poverty line (\$5.5/day 2011PPP), increased.** The increase was small but pointed to a slow down and reversal in poverty reduction in the Kingdom of Thailand. The poverty-increase in 2016 was only the fourth time poverty increased since 1988, and previous increases occurred in periods of financial crises. What was the source of this recent change in poverty and has it changed from the past?

**Previous work examined factors contributing to changes in poverty and inequality from 1988-2013** (Badiani-Magnusson et al, 2015; Sondergaard et al, 2016). Findings showed two distinct periods before and after 2000, where poverty reduction was characterized by different sources. Before 2000, the main contribution to poverty reduction was growth. Increases in labor income drove most of the poverty reduction as numerous off-farm jobs were being created, and the number of jobs being created requiring low education was declining. From 2007-13, the drivers of poverty reduction expanded and was also driven by farm income, an increasing number of adult workers, wages, and public assistance income<sup>25</sup>. The large role of farm income was partly due to increased production, commercialization, and integration into the global value chain.

<sup>25</sup> However, many of the benefits of rice price support went to richer farmers and may have negatively affected net buyers of rice (Sondergaard et al, 2016).

**Table B2.1: Comparison of Sources of Poverty Reduction, 2007-13 and 2015-17**

The contribution to the change in poverty, by source	2007-13	2015-17
Share of Adults	-2.91	-0.25
Share of Employed	-0.06	0.08
Wages per employed adult	-2.41	-0.12
Business per employed adult	0.11	0.53
Farm per employed adult	-2.81	0.82
Pension per employed adult	-0.26	-0.05
Remittance per employed adult	-1.53	0.10
Public Assistance per employed adult	-2.02	-0.51
Financial, and In-Kind per employed adult	-1.62	-0.07
<b>Total change in poverty (p.p.)</b>	<b>-13.50</b>	<b>0.51</b>

Source: Badiani-Magnusson et al, 2015 and Yang 2019.

Notes: A survey break between 2013-2014 prevents comparisons spanning the break. Poverty rates based on the Upper-Middle income class poverty line (\$5.5/day 2011PPP). Welfare aggregate is household income per capita.

### **From 2015 onwards, poverty reduction slowed down as household income and consumption growth stagnated.**

Labor market indicators during this period also showed weaknesses in agriculture employment as well as low wage growth. From 2015-17, poverty in Thailand increased, as measured by both national and international poverty lines. Specifically, poverty increased in 2016 and then slightly declined, though poverty in 2017 was still higher than in 2015. Bangkok was the only region to see consistent poverty reduction from 2015-17. Poverty increased in some population groups more than others. By population groups, households where the head is working in the agriculture sector or have low-education were hardest hit.

**Analysis finds that a decline in net farm incomes had the largest contribution to an increase in poverty from 2015-17.** Table B2.1 illustrates the sources of changes in poverty from 2007-13 and 2015-17. Negative contributions indicate that an income or labor market indicator contributed to a decline in poverty, and vice versa. Declines in business and wages also contributed to a poverty increase. Overall, this is concerning since all sources of market incomes contributed to increases in poverty. In contrast, globally, labor income is typically the main channel of poverty reduction (Inchauste et al, 2014). Public assistance income played a role in buffering households from worse outcomes.

### **Reference**

Badiani-Magnusson, Reena, Dilaka Lathapipat, and Cecilia Poggi. 2015. "What explains the decline in poverty and evolution of inequality in Thailand?". Working Paper.

Inchauste Comboni, Maria Gabriela; João Pedro Agevedo, B. Essama-Nssah, Sergio Olivieri, Trang Van Nguyen, Jaime Saavedra-Chanduvi and Hernan Winkler. 2014. Understanding changes in poverty. Washington, DC: World Bank Group.

Sondergaard, Lars M.; Luo, Xubei; Jithitikulchai, Theepakorn; Poggi, Cecilia; Lathapipat, Dilaka; Kuriakose, Smita; Sanchez Martin, Miguel Eduardo; Reungsri, Thanapat; Mohib, Shabih Ali; Chavapricha, Roma; Peamsilpakulchorn, Pajnapa; Arin, Tijen. 2016. Thailand - Systematic country diagnostic: getting back on track - reviving growth and securing prosperity for all (English). Washington, D.C.: World Bank Group.

Yang, Judy. 2019. "Recent changes in income and sources of poverty reduction". World Bank Poverty & Equity mimeo

### Box 3: Social Protection in a Transforming and Aging Thailand

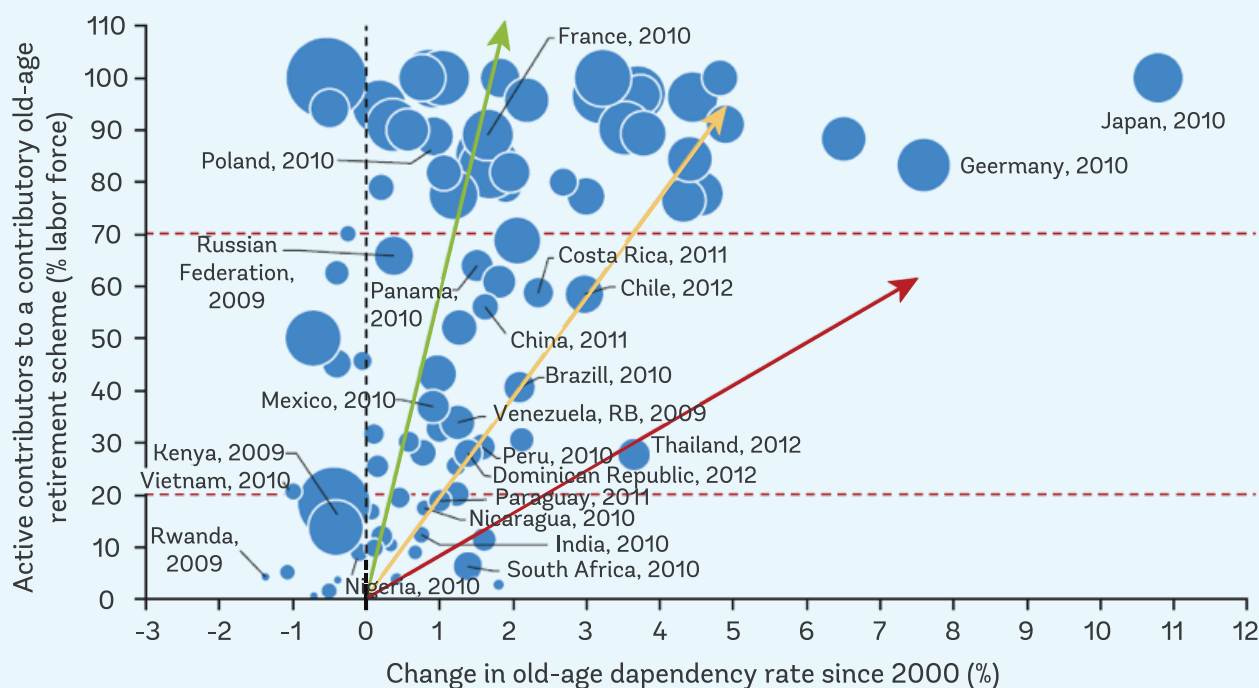
**The world of work is changing.** Throughout the world, employment is shifting to greater reliance on part-time work, self-employment, and the gig economy. This shift is readily apparent in developed countries but is also being felt in Thailand. For instance, the Economic Intelligence Center at Siam Commerce Bank estimates that nearly a third of the country's workforce are gig workers (EIC 2017).

**At the same time, labor market informality remains a key characteristic of the labor force in Thailand.** In developed economies, these changes in the world of work are occurring in the context of formal workforces that have access to social protection schemes from unemployment insurance to old-age pensions. In Thailand, in contrast, these changes are happening even as rates of informality remain very high. Indeed, about half of the employed population works in jobs associated with the informal economy like self-employment and unpaid family labor (World Bank 2016).

**These changes are also occurring in the context of a rapidly aging population.** In 2016, approximately 11 percent of the population was 65 years or older, an increase from 5 percent in 1995 (World Bank 2016b). By 2040, more than a quarter of the population will be 65 years or older. This pace of aging is among the fastest ever seen.

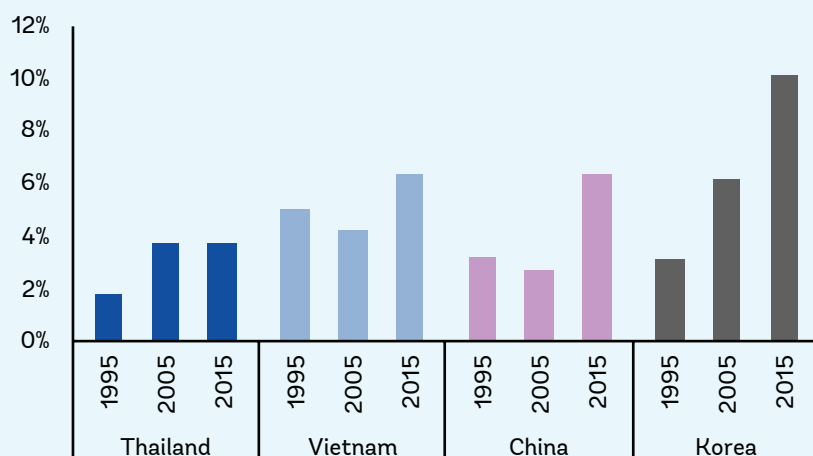
**In fact, Thailand is aging more quickly than the pace of labor market formalization.** Figure B3.1 shows the participation of the economically active population of various countries around the world in contributory social insurance programs on the y-axis and changes in the country's old-age dependency ratio since 2000 on the x-axis with each bubble representing a country's level of economic development. Arrows from the origin indicate the stylized "path" of today's high- and upper-middle-income countries that formalized and grew wealthy before their populations aged (green); that of most countries, mainly middle-income, where the pace of formalization has slowed and aging is rising (yellow); and where aging is moving much faster than formalization and development (red). Thailand is one of several worrying cases in which the economy is growing older but has not yet formalized.

**Figure B3.1: The path of aging and formalization around the world**



Source: World Bank (2019).

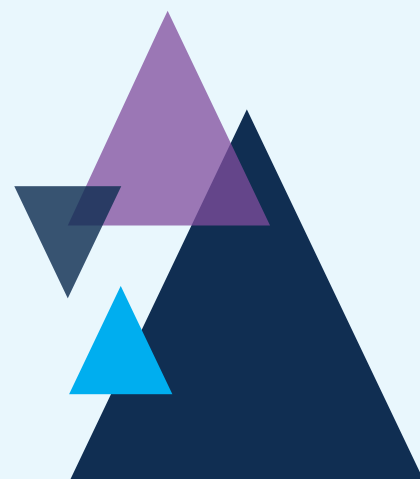
**Figure B3.2: Social protection spending as a percentage of GDP**



Source: ILO (2017).

**These changes require a new approach to social protection.** A recent World Bank White Paper provides guidance on how to adapt social protection in the context of the changing world of work in order to improve equity but also to improve efficiency, as one of social protection's key purposes is to encourage economic actors to take risks but to limit the negative effects if their risk taking fails (World Bank 2019). The White Paper proposes moving away from the employment-based model of social protection that is increasingly less relevant in developed economies due to changes in the nature of work and that remains less relevant in economies like Thailand where the informal economy is large. The paper puts forward instead a package with guaranteed minimum support for the prevention of impoverishment at its core, which is then overlaid with additional support mechanisms to help people manage different types of risks. Importantly, financing sources include both public sources for the guaranteed minimum support and financing by households and individuals for losses that are common and have few consequences for society at large.

**Several features of Thailand's social protection system are in line with emerging needs.** Coverage of the tax-financed old-age pension scheme is nearly universal, meaning that a key component of support is already in place to help confront an aging population. The similarly tax-financed Universal Health Coverage Scheme has helped reduce out-of-pocket payments, catastrophic health spending, and poverty resulting from medical spending (Tangcharoensathien et al. 2018). Both schemes allow people outside of the formal sector to access social protection. The Child Support Grant that was introduced in 2015 was expanded in 2019 to provide 600 baht per month targeted to families with children under the age of 6 with annual incomes of less than 100,000 baht.





**However, Thailand's social protection system also has several weaknesses in the face of these emerging needs.**

Thailand's spending on social protection lags regional comparators: in 2015, Thailand spent an estimated 3.7 percent of GDP on social protection compared to 6.3 percent in Vietnam and China and 10.1 percent in high-income Korea (Figure 32). Unlike structural peers like China, Malaysia, and Mexico and other upper-middle-income countries, Thailand lacks a generalized safety net program for the poor, though the welfare card scheme for the poor represents a step in this direction. This is reflected in social assistance spending that is 0.5 percent of GDP, which is about one third of the global average and less than half the regional average (World Bank 2018). Despite impressive coverage, the social pension has moderate benefit levels that are not likely to impact old-age poverty (World Bank 2016b).

**The traditional employment-based foundations of social protection policy will need to be rethought for Thailand to recognize the persistence of informality and the reality of population aging.**

A key priority for Thailand is to build a fit-for-purpose social protection system. Such a system should suit the changing nature of work and an economy with high rates of informality. It should meet the needs of the poor and the most vulnerable, while ensuring fiscal sustainability. Several considerations are important for Thailand to keep in mind to achieve a social protection system in the context of a changing labor market and an aging population.

- First, adapting social protection will likely require additional resources. Ensuring a minimum package of benefits for the most vulnerable and complementing household and individual efforts at risk sharing with government ones will require additional resources, particularly in Thailand where social protection spending is already low relative to peer countries. Identifying the appropriate mechanisms to finance this additional spending is crucial. Fiscal sustainability will likely require a combination of tax-financed schemes for the poor, as in the case of Thailand's child grant and old-age pension, as well as efforts to encourage individual risk-sharing along the lines of the Matching Defined Contribution and the National Savings Fund approaches.
- Second, adapting social protection will require more focus on how social protection programs are administered and delivered. Thailand currently lacks a mechanism to effectively target the poor. Population aging will make the tradeoffs between the adequacy and coverage of social protection benefits more challenging, as Thailand's old-age pension makes clear. This will likely require additional attention to be paid to whom receives social protection benefits. The absence of an effective targeting mechanism was apparent in the challenges faced in identifying the poor for the welfare card scheme. Different targeting mechanisms work better in different contexts, and implementation is perhaps the key determinant of effectiveness (Coady, Grosh and Hoddinott 2004; Devereux et al. 2017). Ultimately, policymakers are faced with a difficult tradeoff between targeting that minimizes the ability of ineligible individuals to access benefits and that maximizes the ability of eligible individuals to access benefits.
- Third, adapting social protection will require a focus on labor market policies. The changing nature of work and population aging both demand attention to how human capital is developed and deployed. Training programs will need to be reformed to reflect labor market demands that are shifting to require more socioemotional skills and higher-order cognitive and technical skills. These programs must also be adjusted to meet the needs of older, lifelong learners. Finally, a shrinking labor force means that labor market policies will need to be put in place that facilitate the participation of women, older people, and perhaps migrants in the workforce.

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## 2. OUTLOOK, RISKS, AND POLICY RECOMMENDATIONS



### i. Growth is projected to slow in 2019 as the economy faces a cyclical downturn amid an unfavorable external environment and weakening domestic demand

**After reaching 4.1 percent in 2018, the Thai economy is projected to fall to 2.5 percent in 2019 amid a cyclical downturn.**

The Thai economy is projected to grow moderately from an estimated 2.5 percent in 2019 to 2.7 percent in 2020 and 2.8 percent in 2021 (Table ES1) amid external and internal headwinds. Slowing growth in 2019 reflects a weakening external environment marked by softening external demand for both goods and tourism services. Export growth is projected to shrink by 5.3 percent in 2019 (Table ES1), compared to a growth rate of 4.2 percent in 2018. In addition, weakening domestic demand is projected to weigh on overall growth as the effects of the external slowdown percolate across households and along the supply chain in the domestic sector. Indebted households are expected to delay consumption due to greater income uncertainty. Private investment and capacity utilization, particularly in export-related industries, are expected to slow due to uncertainty around trade policy. Positive trade-diversion impacts, as seen in a pick-up in new investment applications in industries targeted by US tariffs as reported by Thailand's Board of Investment, are not expected to offset the overall slowdown.

**Private consumption is expected to slow amid a cyclical downturn.**

Private consumption is expected to grow at a slower rate as consumer confidence declines amid global uncertainty and slow wage growth. Durable goods, especially automobiles financed with personal loans, are projected to slow as households deleverage in view of income uncertainty while financial and non-financial institutions tighten lending standards.

**Fiscal and monetary buffers remain adequate to support economic stimulus and structural measures.**

Unlike regional peers, Thailand boasts fundamentals internally and externally: a large current account, low inflation, and limited exposure to external debt. Public debt remains within the fiscal sustainability limit enshrined in the new Fiscal Responsibility Act. Thailand's foreign reserves stand at US\$ 213 billion while the policy rate stands at 1.25 percent. Inflation is projected to remain around 1 percent at the lower end of the inflation target range.

**The government has also enacted short-term fiscal stimulus measures to boost economic growth.**

The Ministry of Finance announced an economic stimulus package in August 2019 that targets farmers, small and medium-sized enterprises (SMEs), low-income households and the middle class, in the form of cash transfers, postponement of debt repayment and tax rebate on specific tourist activities. Additional visa-on-arrival fee exemption measures were also extended for citizens of certain countries such as China and India. Authorities are considering another round of stimulus measure.

**The current account surplus is expected to narrow further.**

While exports are projected to gradually expand in 2020 and 2021 from a low base, increased consumption and investment-related imports driven by increased government investment and EEC-related projects, will lead to a narrowing trade surplus. The current account surplus is projected to narrow from 7.0 percent of GDP in 2018 to 5.4 percent of GDP in 2019 and 3.8 in 2020.

**General government fiscal balance is projected to become negative.**

Government revenue as a share of GDP is projected to decline in 2020 and 2021, with recently announced tax stimulus policies expected to contribute to the revenue decline. Government expenditures are projected to gradually rise as government enacts more expansionary fiscal measures to spur economic growth. This will lead to a projected deterioration of the central and general government fiscal balances.

**Public debt is projected to slowly rise.**

The increased fiscal deficit is projected to lead to a moderate pick in public debt as a share of GDP over the medium term, continuing an upward trend from 2018 (41.6 percent debt to GDP) to 2019 (43 percent debt to GDP).<sup>26</sup> However, public debt will remain well below the statutory limit of 60 percent of GDP under the Fiscal Responsibility Act.

## **ii. Risks remained tilted to the downside**

**An unfavorable external environment continues to pose a major risk to the Thai economy.**

Policy uncertainty in the region remains high, primarily due to the continued trade disputes. A renewed spike in trade policy uncertainty, including intensifying trade tensions between major economies, could cause a further deterioration in confidence, investment, and trade. A sharper-than-baseline deceleration of activity in large economies—the Euro Area, China, or the United States—could have adverse repercussions across the East Asia region, through weaker demand for exports and the disruption of global value chains, as well as through financial, investment, commodity, and confidence channels could further weaken the global economy and adversely impact Thailand's exports. In addition, domestic private investment and FDI inflows, particularly in export-oriented industries, could slow further as both domestic and foreign investors adopt a wait-and-see approach regarding global uncertainty. On the upside, Thailand's exports could benefit if policy uncertainty related to trade tensions subside.

**Policy uncertainty is a risk to investor and consumer confidence.**

Further delays in the budget approval for FY20, could undermine investor sentiment—though the immediate impact on budget execution may not be significant, as agencies are allowed to carry over the previous year's budget. The 19-party coalition government holds a slim majority in the lower house. If the coalition proves unstable, the approval of new large public investment projects not currently in the pipeline would be delayed, which would negatively impact public investment spending within two to three years.

**consumer confidence.**

party coalition government holds a slim majority in the lower house. If the coalition proves unstable, the approval of new large public investment projects not currently in the pipeline would be delayed, which would negatively impact public investment spending within two to three years. A good sign is that the FY 2021 budget preparation is advancing according to the normal budget preparation plan.<sup>27</sup>

<sup>26</sup> These debt numbers are expressed as a share of calendar GDP, so might differ from Ministry of Finance's debt figures.

<sup>27</sup> As per the Cabinet resolution of January 7, 2020 approving the fiscal aggregates for FY 2021.

### iii. The new coalition government's policy framework has the potential to lift the growth trajectory, but implementation may pose a challenge

**Thailand's new coalition government has emphasized both short and long-term measures to lift growth.**

Thailand's first general election since the military coup of 2014 was held on March 24, 2019. However, the prime minister was not sworn in until June due to a delayed vote count and protracted negotiations to establish a 19-party coalition government. The new coalition government quickly announced a policy framework consisting of fiscal stimulus policies to boost short-term growth as well as structural reforms to address long-term growth. The framework consists of 12 policy areas ranging from national competitiveness, Thailand's role on the global stage, spatial development and urgent measures such as improving the welfare system, social assistance for farmers and drought mitigation. While the government's policy framework remains broadly similar to the 20-Year National Strategy, a long-term roadmap to take Thailand to high-income status was approved by the previous government, but also includes an enhanced focus on rural and spatial development that goes beyond special economic zones. Legalization of medical marijuana is also a new priority.

**In the short term, Thailand can use fiscal space to implement an investment and transfers focused stimulus...**

Thailand has the short to medium-term policy space to implement a fiscal stimulus (Box 4), although it needs to take account rising age-related fiscal expenditure beyond the medium term. Based on experience, Thailand would do well to focus on investing in growth-sustaining assets and efficient transfers, rather than on debt-financed consumption.

**...in addition to implementing investments and PPP projects, accompanied by greater efficiency in public investment management (PIM).**

The implementation of public investments envisioned under the national strategy, such as large infrastructure projects in the Eastern Economic Corridor, could boost private-sector sentiment and encourage complementary private investment including through PPPs, bolstering growth over the short-to-medium term.<sup>28</sup> After a 3-month long political transition from national elections to government formation, some key investment projects are making progress. For example, the northern expansion plan of the overcrowded Suvarnabhumi airport awaits cabinet approval. The high-speed rail PPP linking Suvarnabhumi, Don Mueang and U-Tapao airports has passed environmental impact assessment and cabinet approval. As a result, the PPP agreement between the State Railway of Thailand and the winning consortium was signed in October 2019. It is important to improve efficiency of PIM to enhance the impact of a public investment-led stimulus. Priority reforms for Thailand to improve PIM are highlighted in Box 4 and include developing a multi-year pipeline, strengthening appraisal and expediting procurement and tendering.

**Another medium-term priority is building a fit-for-purpose social protection system.**

A key priority for Thailand is to build a social protection system that recognizes the persistence of informality and the reality of population aging. It should meet the needs of the poor and the most vulnerable, while ensuring fiscal sustainability. Key considerations include fiscal sustainability by ensuring availability of resources, efficiency of administration, targeted delivery and labor market policies for the elderly, migrants, and life-long learners.

**In the medium to long term, Thailand needs to focus on reforms to boost productivity.**

Implementation of a broader productivity agenda can boost efficiency returns from both public and private investments (see Part 2). However, cohesion across the 19-party coalition and key stakeholders will be essential to ensure implementation continuity, as legal reforms related to productivity and major infrastructure projects will require approval by the National Assembly and the Cabinet, respectively.

<sup>28</sup> This is highlighted further in previous editions of the Thailand Economic Monitor, such as in June 2016. <http://documents.worldbank.org/curated/en/26605601>

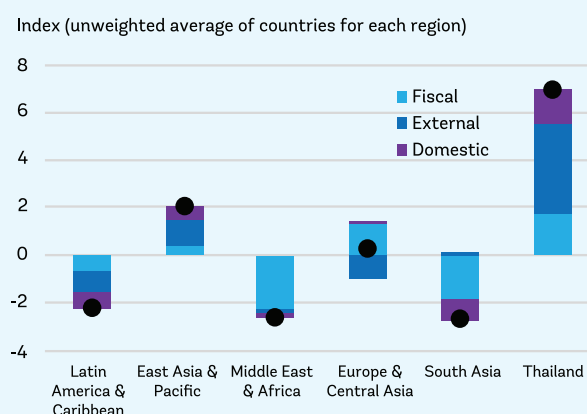


## Box 4: Affording and Implementing an Effective Fiscal Stimulus

**Thailand has the fiscal space for a stimulus.** Its public debt is sustainable in the medium term. An IMF simulation of a significant public investment stimulus over the next five years suggests that it could increase short-term growth by 1 percentage point each while increasing public debt by 2.5 to 3 percent of GDP over the period. This implies that public debt is maintained at close to 45 percent of GDP, well below the statutory limit of 60 percent of GDP.<sup>29</sup> However, beyond the medium term, as Thailand is rapidly aging, the country needs to increase revenue and reallocate expenditure as more aging-related fiscal expenditure will appear on the budget, including health, pensions and long-term care expenditure.

**Thailand's macroeconomic policy space is also favorable for a stimulus.** More generally, Thailand macroeconomic policy space<sup>30</sup> is favorable compared to a sample of 20 other middle-income countries, thanks to low inflation, low credit growth (domestic index), low fiscal deficit and relatively low public debt (fiscal index), a current account surplus, high FX reserves relative to short-term external debt and low external debt (external index), which means a fiscal or monetary stimulus would not jeopardize domestic, external or fiscal stability. Compared to other countries, Thailand has the highest macroeconomic space supported by all three indices, particularly external space thanks to its current account surplus and large reserves. Other East Asian countries also tend to have favorable macroeconomic space, while European countries tend to show more mixed results, and countries in the Middle East and Africa, South Asia and Latin America have low space, due to high fiscal deficits and high public debt.<sup>31</sup> (Figure B4.1)

**Figure B4.1: Thailand has relatively high macroeconomic space for a stimulus**



Source: WDI, IMF WEO, country reports, staff estimations.

29 International Monetary Funds, "Thailand: 2019 Article IV consultation", <https://www.imf.org/en/Publications/CR/Issues/2019/10/07/Thailand-2019-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-by-the-48724>

30 Macroeconomic policy space is defined as the sum of three indices: a domestic index (CPI inflation and credit growth), a fiscal index (fiscal balance and public debt) and an external index (current account balance, FX reserves relative to short-term external debt on remaining maturity basis and total external debt). A country with a high macroeconomic index has a more space for a fiscal or monetary stimulus without risking domestic, external or fiscal imbalances. Van Doorn, Suri and Gooptu (2010), "Do Middle-Income Countries Continue to Have the Ability to Deal with the Global Financial Crisis?", World Bank Policy Research Working Paper No. 5381. <http://documents.worldbank.org/curated/en/725691468150881913/pdf/WPS5381.pdf>

31 Latin America & Caribbean: Argentina, Brazil, Chile, Colombia, Mexico; East Asia & Pacific: China, Indonesia, Malaysia, Philippines, Vietnam; Middle East & Africa: Egypt, South Africa; Europe & Central Asia: Hungary, Poland, Turkey, Russian Federation, Ukraine; South Asia: India, Pakistan.



## What kind of stimulus does Thailand need?

**A fiscal stimulus needs to be timely, temporary, transparent and targeted.**<sup>32</sup> A recent World Bank report<sup>33</sup> finds that emerging markets that implemented a fiscal stimulus during the 2008/09 Global Financial Crisis still see still growth rates and fiscal balances below their pre-crisis levels, suggesting that it is also important to be able to unwind the stimulus.

**Thailand's stimulus packages in the recent past, such as in 2011-12 could have been better targeted.** Muthitacharoen et al (2017)<sup>34</sup> found that the 2011-12 first-car-buyer tax rebate program produced significant negative effects on participants' financial health with significantly higher delinquency on both first-car loans and other unsecured loans possibly due to premature vehicle purchases. The negative effects were concentrated on buyers of passenger cars and no significant negative effects were seen for buyers of trucks, which were likely to be used for productive purposes. This suggests that the stimulus could have been targeted better. The rice paddy pledging program led to a labor flow from manufacturing into low-productivity agriculture, tended to favor the richer farmers and was fiscally costly (Box 5), making it not well targeted and again with persistent negative effects.

**Global models and empirical evidence suggest that government investment and corporate taxes may be the most effective near-term stimulus.** Macroeconomic models for the US and EU suggest that government investment has the largest short-term fiscal multiplier among expenditure (while untargeted transfers have the lowest impact), and corporate taxes have the largest fiscal multiplier among revenue (compared to labor and consumption taxes), although Thailand's corporate income tax rate is in line with peers.<sup>35</sup> Structural and cyclical considerations play a role in effectiveness of the stimulus. Thailand is an open economy, so some of the stimulus might lead to increased imports, rather than increased output; and the resulting exchange rate appreciation could offset some of the stimulus effect. On the other hand, a relatively low public debt level and Thailand's less developed automatic fiscal stabilizers means investment would be associated with a more effective stimulus.<sup>36</sup>

## Implementing an investment-led stimulus

**It is important to improve efficiency of public investment management (PIM) to enhancing the impact of a public investment led stimulus.** While the list of reforms is longer, the following reforms could help speed up the existing pipeline of public investment and boost the impact of a public investment led stimulus: 1) developing a comprehensive multi-year pipeline of public investment projects, particularly projects that are identified as potential PPPs; 2) strengthening guidelines and expediting project appraisal by line ministries and SOEs; 3) addressing weaknesses in Environmental Impact Assessment (EIA) procedures (agencies take at least 18 months to secure approval on EIAs); 4) Furthermore, agencies do not get enough budget allocation for mitigation measures. As a result, affected communities do not trust mitigation measures and may be unwilling to move; 5), government-to-government procurement should also be more transparent (i.e. cost of borrowing and terms of repayment needs to be published); 6), an independent appraisal institution (e.g. Korea Development Institute in South Korea publishes assessment and multi-criteria methodology) is important to validate project appraisals and increase transparency; and 7) pre-procurement should be allowed so that projects implementation can start immediately after the budget approval.<sup>37</sup>

32 Elmendorf, Furman (2008), "Three Keys to Effective Fiscal Stimulus", <https://www.brookings.edu/opinions/three-keys-to-effective-fiscal-stimulus/>.

International Monetary Fund (2008), "Fiscal Policy for the Crisis", <https://www.imf.org/external/pubs/ft/spn/2008/spn0801.pdf>

33 Ayhan Kose and Franziska Ohnsorge, editors (2019), "A Decade after Global Recession", World Bank, <https://www.worldbank.org/recession>

34 Athiphat Muthitacharoen, Krislert Samphantharak and Sommarat Chantararat (2017) Fiscal stimulus and household debt : evidence from Thailand's first-car buyer tax rebate. Puey Ungphakorn Institute for Economic Research working paper.

35 PwC global corporate income tax headline rates: [http://taxsummaries.pwc.com/ID/Corporate-income-tax-\(CIT\)-rates](http://taxsummaries.pwc.com/ID/Corporate-income-tax-(CIT)-rates)

36 IMF (2014), "Fiscal multipliers: Size, Determinants, and Use in Macroeconomic Projections"

37 Box on Pushing Mega Projects Through Fiscal Bottlenecks, Thailand Economic Monitor June 2016; Thailand Public Finance Management Review Report, World Bank 2012.

## PART 2. BOOSTING PRODUCTIVITY



**Boosting productivity is critical to achieving Thailand's goal of reaching high-income status by 2037.**

**This note focuses on constraints to productivity growth in the manufacturing sector and provides policy recommendations to boost firm productivity.**

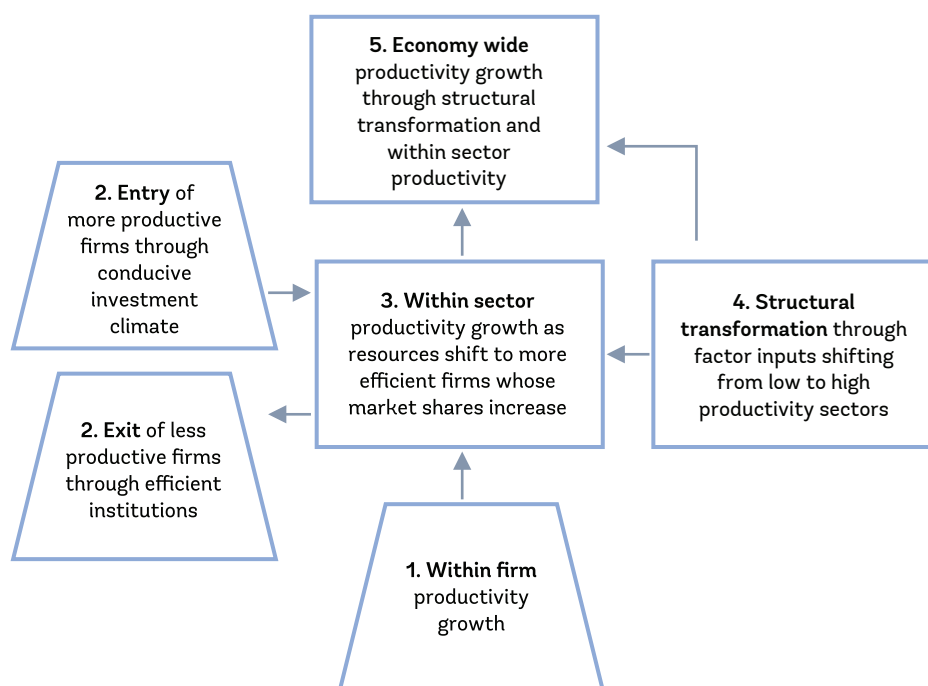
Thailand is a long-run development success, with strong growth from the late 1960s to mid-1990s propelling the country from low-income to upper middle-income status. Post the Asian Financial Crisis in 1997, trend economic growth has slowed, structural transformation has stalled, and productivity growth remains weak. As Thailand seeks to transition to high-income status by 2037, it is critical to learn from the experiences other upper-middle income countries that have succeeded in the transition<sup>38</sup> and from others that have tried and fallen behind. A common feature for successfully transitioning countries has been a focus on finding new drivers of growth, particularly by boosting productivity.

This chapter builds on a framework that emphasizes the microeconomic and macroeconomic linkages of the sources of productivity growth (highlighted in Figure 28). The key linkages are: (i) Firm-level productivity gains can come from strengthening skills, technical capacity and innovation within firms. (ii) Firm-level productivity gains and removal of barriers to entry and exit could lead to less efficient firms exiting the market, and the exit of less productive firms could release resources for more productive new entrants. This process of “creative destruction” – as coined by economist Joseph Schumpeter – that reallocates resources to more efficient firms can fuel productivity gains within a sector and enable that industry to grow. (iii) At a macro level, this can support a process of structural transformation as factor inputs (e.g., labor, capital, land) shift to more productive and rapidly growing sectors. In line with this framework, the note starts with an overview of macroeconomic productivity dynamics in Thailand, focusing on the drivers of decelerating growth.<sup>39</sup> It then moves to a closer analysis of within-sector and within-firm level productivity constraints in the manufacturing sector. The chapter ends with policy recommendations to boost productivity of firms in the manufacturing sector. It should be noted that analysis of constraints in the services and agriculture sector, although not the focus of this analysis, are also needed to create a comprehensive productivity enhancing policy agenda.

38 Only 12 middle-income countries—Antigua and Barbuda, Chile, Hungary, the Republic of Korea, Malta, Oman, Poland, Portugal, the Seychelles, St. Kitts and Nevis, Trinidad and Tobago, and Uruguay—transitioned to upper-income countries during 1987–2015.

39 In the analysis of macroeconomic productivity dynamics, the analysis is guided by the key constraints identified in the Thailand Systematic Country Diagnostic (World Bank, 2017) which highlights the importance of reversing stalled structural transformation, reviving investments, the role of competition and skills and R&D.

**Figure 28: Sources of Productivity Gains and their micro-macro links**



Source: Inspired from Maloney et al (2017).

## 1. Boosting productivity is critical to achieving high-income status by 2037, along with increased investments

### i. Thailand's trend economic growth has slowed since the Asian Financial Crisis...

**Thailand's economy grew strongly in the 1980s.**

Fundamental economic reforms and trade openness put the Thai economy on a high-growth trajectory in the 1980s. The economy grew around 9 percent annually during 1986–95 (Figure 29) and this period of growth corresponded with a structural shift in the Thai economy, with a shift in labor from agriculture particularly towards the more productive manufacturing sector. Thailand's per capita income converged rapidly with upper middle country comparators and the country also made impressive gains in reducing extreme poverty. It should be noted that a part of the growth was fueled by high levels of debt-driven capital investments during the 1980–96 boom years, which led to inflated property and equity markets (IMF 1998).

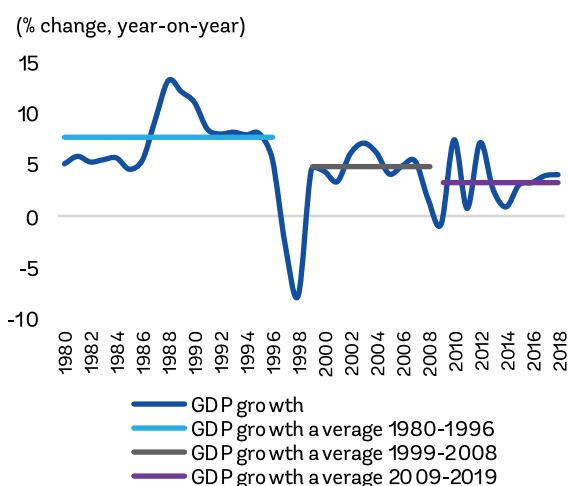
**Growth has stalled since the Asian Financial Crisis in 1997 and productivity growth has slowed since the Global Financial Crisis.**

**This in line with a general global and regional slowdown in TFP growth, which began before the GFC in advanced countries and spread to EMDEs post GFC.**

The economy was hit hard by the AFC in 1997 with a severe foreign exchange and banking crisis leading to a sharp economic contraction. The decade since the AFC saw recovery and stabilization, but with a trend decline in economic growth. This has been marked by a sharp fall in physical capital accumulation with gross fixed capital formation remaining well below pre-1997 levels (Figure 30) reflecting in part a correction from the pre-crisis boom years (Figure 36). Capital accumulation has thus not contributed significantly to growth in the last two decades, in comparison to Thailand's structural peers (Figure 31)<sup>40</sup>. This was compensated until the GFC by productivity growth, but in the last decade, productivity growth has fallen to 1.3 percent over 2010-2016 from 3.6 percent over 1999-2007.

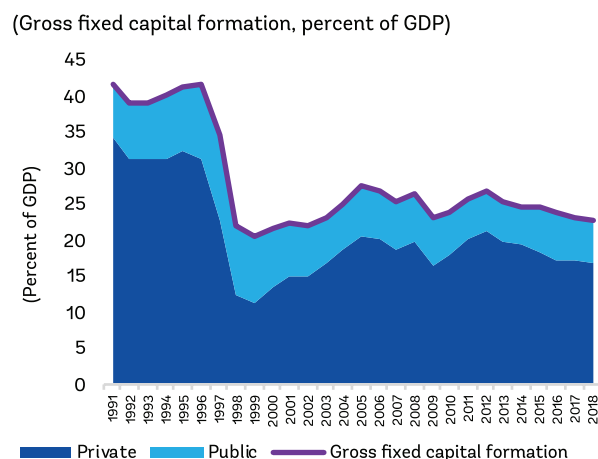
The source of this global productivity slowdown has been attributed to several factors. Some authors have suggested that the slowdown is a statistical artifact, driven by a mis-measurement of TFP (Aghion et al, 2017; Bils et al, 2017). At the macroeconomic level, slower investment growth, population aging and increasing regulations have played a role<sup>41</sup>. At the firm level, the slowdown has been linked to the loss of dynamism associated with rising frictions, creative destruction and lack of reallocation of resources (Decker et al, 2017a; Decker et al, 2017b; Gopinath et al, 2017) and the lack of ideas (Gordon, 2016; Bloom et al, 2017).

**Figure 29: Trend growth has slowed in Thailand...**



Source: World Development Indicators (WDI).

**Figure 30: ...marked particularly by declining investment...**

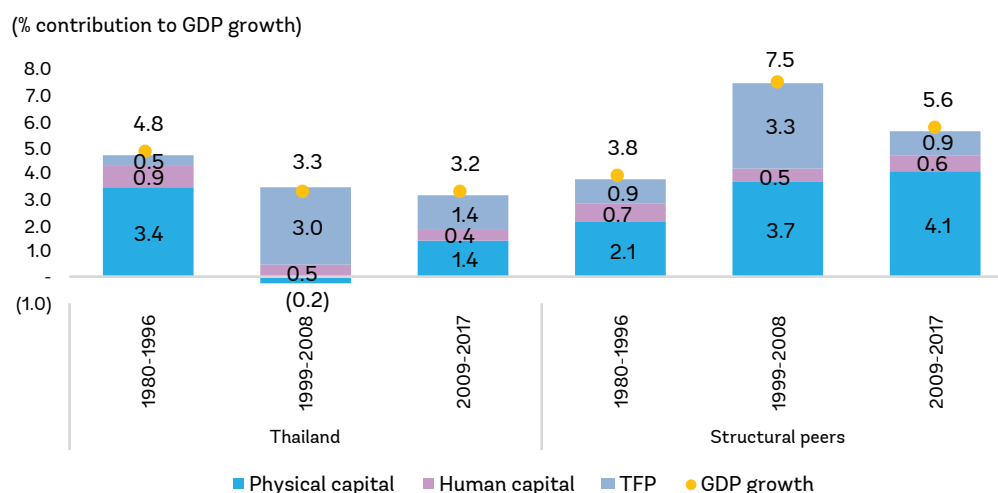


Source: WDI.

<sup>40</sup> The peer selection follows the Thailand Systematic Country Diagnostic prepared in 2016, and includes countries that adhere to three criteria: (i) Upper middle-income countries; (ii) Countries with a strong track record in macro-economic management (identified as scoring at or above the 70th percentile in WEO's Global Competitiveness Index third pillar (macro environment); and (iii) Economies not driven by exports of natural resources (identified by excluding economies in the 20th percentile of the indicator "natural resource as a share of GDP 2006-12"). The structural peers that fulfill these three criteria and thus selected are: Bulgaria, China, Colombia, Malaysia and Mexico.

<sup>41</sup> World Bank Global Economic Prospects, January 2018.

**Figure 31: ...which has led to diminished contribution of capital accumulation to growth**



Source: World Penn Table (pwt 9.1); WDI, World Bank staff estimates.

## ii. ...and Thailand will not achieve its target of reaching high-income status by 2037 unless the country boosts productivity and revives the investment cycle

**If current growth trends continue, Thailand will fail to achieve high-income status by 2037.**

The Long-Term Growth Model (LTGM) developed by the WBG's research group is used to project Thailand's long-term growth.<sup>42</sup> The model is a standard Solow-Swan growth model where the key building blocks include saving, investment and productivity.<sup>43</sup> The model uses long-run demographic data, and incorporates the assumption that Thailand's labor force is projected to shrink beginning in 2018 as the country rapidly ages<sup>44</sup>. Under the baseline scenario, the key assumptions are that Thailand TFP growth rate is constant and equal to TFP growth rate between 2010 and 2014 and that labor share in production and investment to GDP ratio are also equal to their historical averages. Under the baseline, Thailand's long-run growth rate is projected to remain below 3 percent. As a result, Thailand is projected, in the baseline, to remain an Upper Middle-Income Country (UMIC) passed 2050, the last year projected in the model.

<sup>42</sup> Kim, Young Eun; Loayza, Norman V. 2019. Productivity Growth: Patterns and Determinants across the World (English). Policy Research working paper; no. WPS 8852. Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/130281557504440729/Productivity-Growth-Patterns-and-Determinants-across-the-World>

<sup>43</sup> The LTGM with various extensions can be found here: <https://www.worldbank.org/en/research/brief/LTGM>

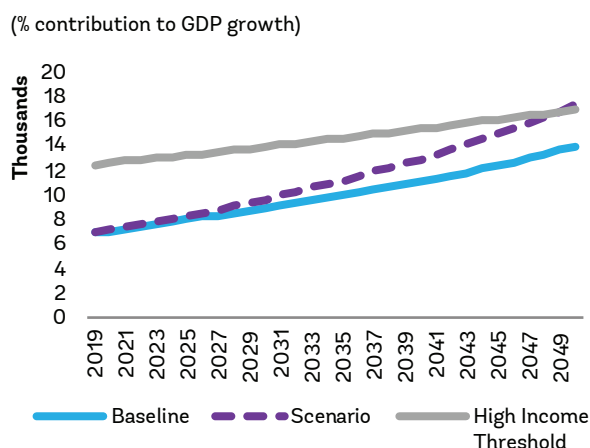
<sup>44</sup> By 2040, elderly people will account for more than one-quarter of Thailand's total population, the highest share of elderly of any developing country in East Asia and the Pacific.



**Thailand needs to significantly boost productivity and revive the investment cycle to achieve its high-income target.**

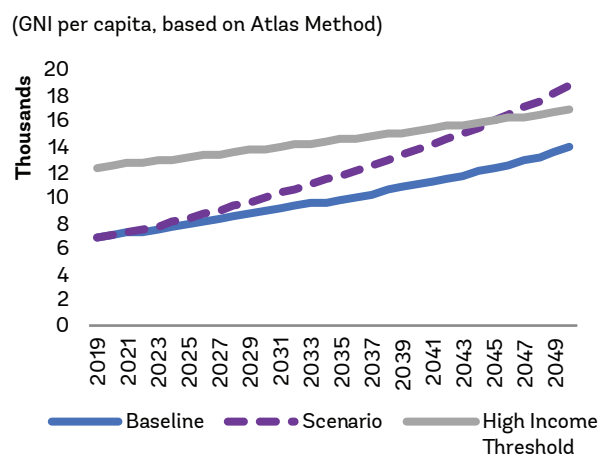
The long-term growth modeling exercise considered alternatives to enable Thailand to achieve high-income status by 2037. To achieve the target of becoming a high-income country by 2037, Thailand will need to sustain long-run growth rates of above 5 percent, which would require matching the TFP growth rate of the Republic of Korea when it had a similar GDP per capita as Thailand and increasing investment to 40 percent of GDP (Figures 32-34). A key finding is that improving TFP growth and raising investments alone will be insufficient to sustain this growth rate. Thailand can only sustain this growth by nearly doubling the rate of public and private investments, and if TFP growth follows the trajectory of Korea Rep. since they were at the same level of Thailand's GDP per capita<sup>45</sup>.

**Figure 32: Thailand will become high income only by 2050 if TFP grows at the same rate as that of Korea in the last three decades**



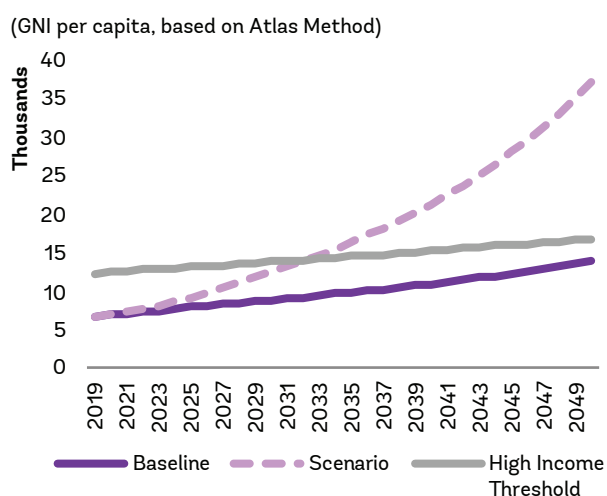
Source: World Bank staff calculations.

**Figure 33: ..but if TFP growth is coupled with a rise in investment then Thailand could achieve high income status by 2045**



Source: World Bank staff calculations.

**Figure 34: For Thailand to cross the high-income threshold by 2037, TFP growth of 3 percent needs to be accompanied by an investment increase to 40 percent of GDP**



Source: World Bank staff calculations.

<sup>45</sup> Korea and Malaysia have had the fastest TFP growth in East Asia and Pacific since 2014.



### iii. At the economy wide level, boosting growth requires reviving investment,...

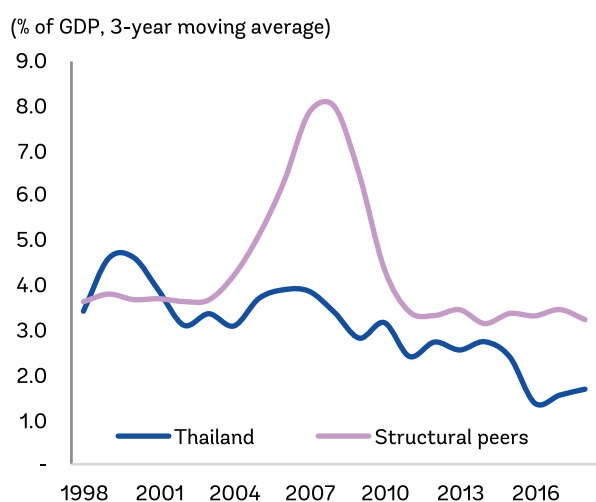
**Public and private investments have declined sharply over the last two decades.**

Private investment in Thailand has halved from close to 30 percent of GDP in 1997 to 15 percent in 2018 and public investment has declined from 10 percent of GDP in 1997 to 6 percent of GDP in 2018. Foreign direct investment (FDI) inflows have been comparable to structural peers, but FDI inflows to Thailand are more volatile, and inflows have been slowing since 2014 (Figure 35). Declining investments reflect several factors. Firstly, it reflects a correction following high levels of capital investments during the 1980-96 boom years which have manifested in a higher incremental capital to output ratio, which reflects lower growth returns to investment (Figure 36) and a sharp drop in capacity utilization, which remain well below the pre-AFC level of about 68 percent. Secondly, the decline reflects political and policy uncertainty since the Global Financial Crisis (GFC), which has also taken a toll on investor sentiment<sup>46</sup>. Thirdly, the decline reflects slow progress on the delivery of ambitious investment plans, including large-scale investments planned under the flagship Eastern Economic Corridor (EEC).

**Reviving investments requires a focus on implementing public investment mega-projects and enhancing efficiency of PIM**

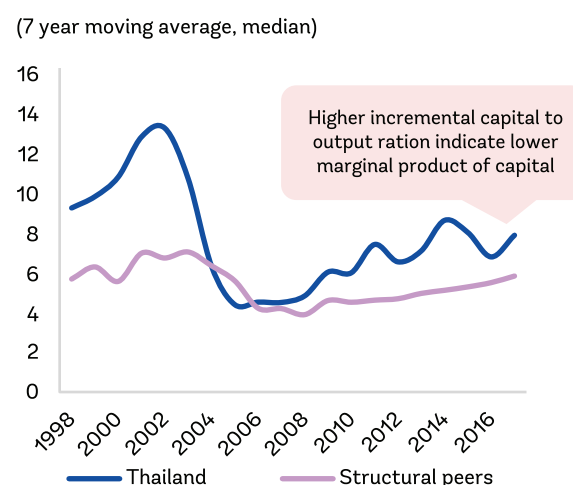
As noted in Part 1, the implementation of public investments under the EEC could boost private-sector sentiment and encourage complementary private investment including through PPPs. However, policy uncertainty and long-standing public investment management (PIM) weaknesses, including fragmented institutions, limited multi-year budgeting and constrained ability to plan, appraise and execute large infrastructure projects, have contributed to slow public investment progress (Box 4).<sup>47</sup> Reviving the investment cycle thus requires a focus on implementation as well as reforms in PIM.

**Figure 35: FDI inflows in Thailand are below its structural peers<sup>48</sup>**



Source: World Bank staff calculations.

**Figure 36: Returns on investment are lower in Thailand than peers, reflected in higher incremental capital to output ratios (i.e. low marginal product of capital).**



Source: World Bank staff calculations.

<sup>46</sup> The sluggishness in private investment reflecting heightened uncertainty is highlighted in several editions of the Thailand Economic Monitor, the World Bank's bi-annual publication of Thailand's economy, since 2011.

<sup>47</sup> "Thailand Systematic Country Diagnostic", World Bank (2017).

<sup>48</sup> As noted in Figure 31, the structural peers selected for this chapter are Bulgaria, China, Colombia, Malaysia and Mexico.

#### iv. ...and boosting productivity by reversing the stall in structural transformation and improving productivity of the manufacturing sector

**Boosting productivity requires reviving the engine of structural transformation.**

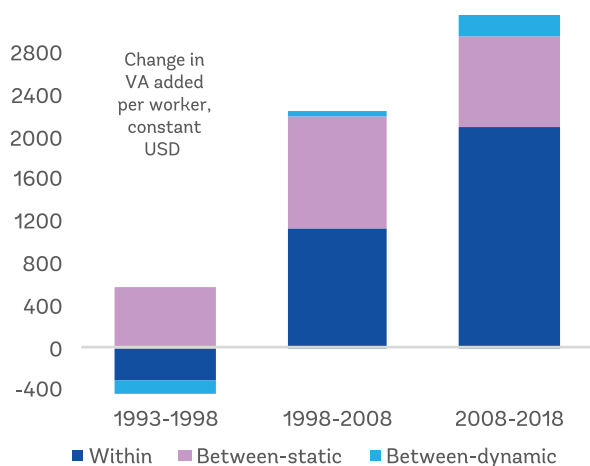
Economy-wide productivity can increase through (i) productivity gains within a sector and (ii) a reallocation of resources, notably labor, between sectors, from low to high productivity sectors. The latter is also referred to as structural change or structural transformation. Thailand's productivity gains from 1980-96 were driven mainly by structural transformation. In this period, Thailand experienced a large-scale shift of labor away from low-productivity agriculture towards high productivity activities in the industry and services sector, causing the employment share of agriculture to fall and those for manufacturing and services to rise. Since the AFC, structural change has continued but at a much slower pace, and productivity growth has tended to come more from gains within sectors than from the movement of labor between sectors (Figure 37). An indication of slow structural transformation is the continued high-share of agricultural employment in Thailand compared to its structural peers (Figure 38). For an example of how domestic policies may slow structural transformation, see Box 5.

**Productivity growth will also require boosting sector and firm productivity in the industrial manufacturing sector.**

Thailand's industrial manufacturing sector productivity growth has halved from an average annual growth rate of 2.1 percent in 1998-2008 to 1.1 percent in 2009-18 following the Global Financial Crisis (GFC). The next section highlights the drivers and constraints to improving manufacturing sector productivity, based on analysis of firm level data from the Thailand's Manufacturing Industry Census. The census covers nearly 50,000 firms and manufacturing plants with data from 2006, 2011 and 2016.

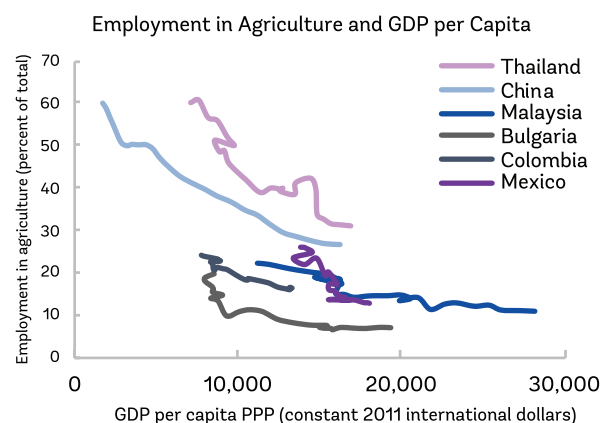
**Figure 37: Productivity gains are increasingly coming from within sectors than movement of labor between sectors...**

(Change in value added per worker, constant 2010 US\$)



Source: WDI, World Bank staff estimates.

**Figure 38: ...even as the share of workers in agriculture in Thailand remains well-above its peers**



Source: WDI, World Bank staff estimates.

Source: WDI, World Bank staff estimates.

## Box 5: Paddy Pledging, Farmers and Structural Transformation

**Agriculture accounts for 30 percent of the total labor force but only 10 percent of GDP, with structural transformation slowing.** Agricultural sector generated the lowest value added per worker compared to manufacturing and services. Despite the lower value added, movement away from agriculture to other higher value-added sectors has stalled since the mid-2000s (Figure 43).

**Subsidies to rice production slowed the needed transformation of the Thai agriculture sector and overall structural transformation towards higher value-added manufacturing and services sectors.** The Thai government implemented the controversial Paddy Rice Pledging Program (2011-2013) to support farmers facing low global rice prices by purchasing rice at above world prices. The Pledging Program for 2011/2012 had 1.3 million rice farming household participating out of a total of 3.6 million rice farming households in the country. Of the households that participated in the program, most are small to medium-size farming households. Market mechanisms as the relationship between farmgate and export prices for rice weakened (Attavanich, W. et al., 2019). Labor flowed from manufacturing to agriculture during the Paddy Pledging Program. As a result of the excessive land use, Thailand's rice productivity was one of the lowest among major rice producers in the world then. (World Bank, April 2016).

**The agricultural price support schemes—perhaps among the most direct interventions aimed at helping poor farmers—may not be as pro-poor as planned and are fiscally costly.** The sustained increase in agricultural prices was among the major contributors to poverty reduction (World Bank, November 2016), but a closer look at the price-support schemes reveals several inefficiencies which have reduced their effectiveness. Research suggests that the rice pledging scheme, although well-intentioned, was biased in favor of richer farmers (net rice sellers) and created hardship for the poor (net rice purchasers). The take-up has been found to favor large farms (Duangbootsee and Myers, 2014) and to not induce greater investments in farm modernization (Attavanich, 2016). According to the Thailand Development Research Institute (TDRI), 63 percent of the funds spent on the pledging program went to merchants and millers, with the rest going to farmers. Only 5 percent of funds spent went to poor farmers (TDRI 2015). The program had unclear, but potentially large, fiscal cost as the Government bore the cost of pledging, storage, milling, operation costs, and interest, and revenues from the sale of milled rice fell short of the costs, given that the global rice prices were lower than those under the Pledging Program (World Bank, December 2012).

**Raising labor productivity and deepening capital in agriculture can facilitate structural transformation.** Labor productivity can benefit from improvements in agricultural policy, including: (i) the development of a better-functioning land rental market, (ii) increased efficiency and sustainability of irrigation investments, and (iii) more and better funding of agricultural research and extension programs, along with moving away from commodity support programs toward broad-based agricultural and food policy. As a result, labor will be freed up to move to other sectors.

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## 2. Drivers and constraints to productivity of manufacturing firms<sup>49</sup>

**The analysis highlights a decline in firm level TFP growth in Thailand from 2006 to 2011...**

Manufacturing firms became less productive in Thailand between 2006 and 2011, with firm-level TFP falling by an average of 10 percent (Figure 44). This coincided with a period of the post-GFC stabilization and recovery and of elevated political uncertainty in Thailand. Average firm productivity declined sharply for domestically oriented industries<sup>50</sup> including transport equipment, leather, furniture and machinery and equipment. Some key export-oriented industries<sup>51</sup>, such as textiles and apparel and motor vehicles also registered a marginal decline in firm productivity (Figure 40a). Firms in key export-oriented industries such as computer parts, rubber and plastics, and electrical equipment became marginally more productive on average.

**...followed by a pick-up in productivity from 2011 to 2016, led by export-oriented industries.**

Despite the worst flooding in several decades that affected several manufacturing areas in Thailand in 2011 (see regression analysis in Annex 2), manufacturing firms became more productive in Thailand between 2011 and 2016, with firm TFP increasing by an average of 20 percent (Figure 44). Average firm productivity increased for key export-oriented industries including refined petroleum, apparel, computer parts and motor vehicles. Average productivity declines were concentrated in domestically oriented industries such as tobacco, wood, recycling and other transport equipment (Figure 45).

**There are three key drivers of firm productivity: within firm improvements, entry of productive firms and exit of unproductive firms in industries.**

As highlighted in Figure 33, firm level productivity gains can come from strengthening technical capacity and innovation and can be constrained by access to inputs such as capital, skilled labor and finance. The process of “creative destruction” – as coined by economist Joseph Schumpeter – can also productivity gains within an industry and enable that industry to grow. Creative destruction involves the flow of resources to more productive firms, entry of more productive firms, and exit of less productive firms within an industry.<sup>52</sup>

49 This paper uses a revenue-based indicator of firm productivity. Annex 1 for the difference between revenue and quantity-based productivity measures, and the relative merits of each approach. The note follows De Loecker (2013) to estimate firm productivity using the following steps: first, by calculating nominal value added by firms; second, by deflating nominal value added by 2-digit sectoral deflators to measure real-value added by firms; and third, by specifying a firm production function and calculating TFP as the residual of that function. The approach is outlined in detail in Annex 1.

50 This is defined as industries that have an average export share of less than 30 percent of sales.

51 This is defined as industries that have an average export share of greater than 60 percent of sales.

52 Due to data limitations, the analysis in this chapter of creative destruction focuses on entry of productive firms and exit of less productive firms.

The reallocation of resources of more productive firms, although important, could not be studied in depth.

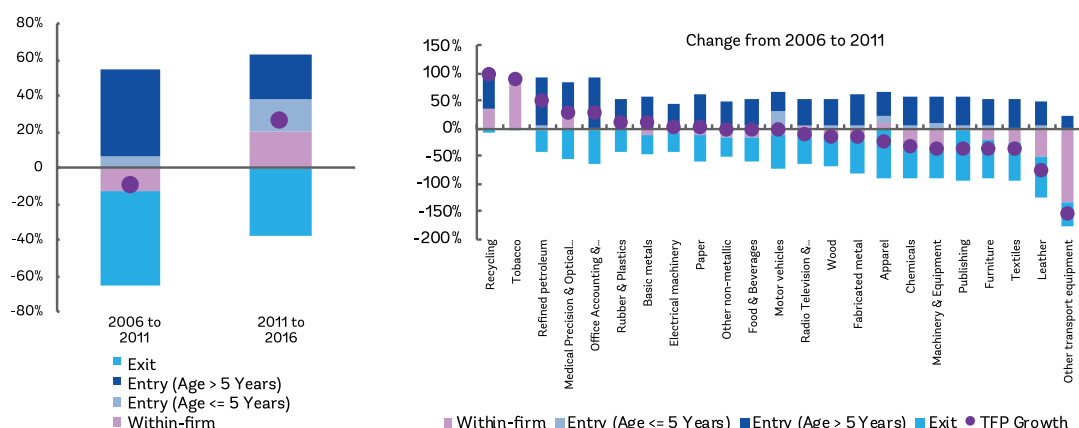


## i. Creative destruction is not significantly contributing to productivity growth, particularly in domestically oriented industries...

**Creative destruction is weak in Thailand, especially for domestically oriented industries.**

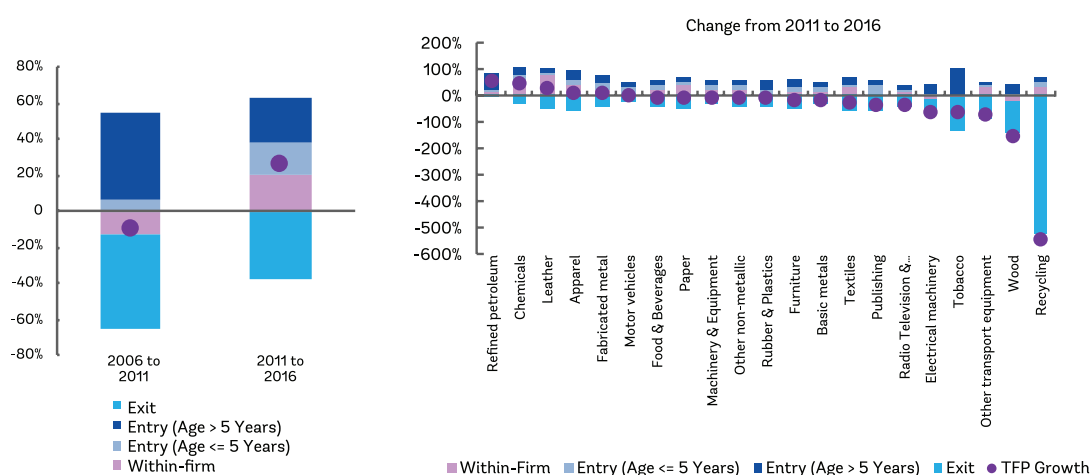
As highlighted in Figures 39 and 40, firm productivity increases for manufacturing firms are driven by increase in productivity of long-standing incumbents (“stay” productivity) and firms older than 5 years of age. This is consistent with global research (Aghion et al, 2001) that the threat of entry of firms may raise incumbents’ efforts to boost productivity to escape from competition. Creative destruction, in the form of entry and exit dynamics, contributes negatively to overall economy and manufacturing industries’ productivity. In particular, the negative exit related dynamics are particularly pronounced for domestically oriented industries such as tobacco, wood, recycling, other transport equipment, furniture and basic metals. This could be driven by either the “wrong” (more productive) firms leaving an industry or an insufficient number of unproductive firms leaving an industry.<sup>53</sup> This is consistent with previous studies in Thailand, such as Amarase, Apaitan and Ariyapruchya (2013), that find that creative destruction in Thailand is concentrated in narrowly defined export-oriented industries.

**Figure 39: From 2006 to 2011, manufacturing firms became less productive, and productivity declined sharply for domestically oriented industries, such as transport equipment, leather, furniture and publishing...**



Source: World Bank, Bank of Thailand estimates from manufacturing firm census.

**Figure 40: ... but productivity of manufacturing firms picked up from 2011 to 2016**



Source: World Bank, Bank of Thailand estimates from manufacturing firm census.

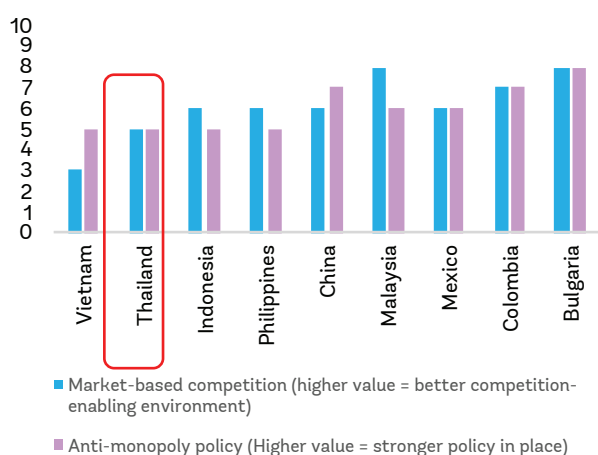
<sup>53</sup> Data on firms leaving the sample was not available, and, as a result, it could not be conclusively established if the wrong firms exited or insufficient number of unproductive firms exited an industry.

## ii. ..pointing to issues related to weak market-based competition.

**This points to barriers to entry and exit, and issues related to competition.**

The fundamentals of market-based competition – i.e. regulatory interventions that enables competition – are perceived to be less developed in Thailand compared to its structural peers, with the competition law appearing to be weak and lacking effective enforcement historically (Figure 41). Market dominance by relatively few players is perceived to be more prevalent in Thai markets (Figure 42).<sup>54</sup> Thailand ranks 96<sup>th</sup> out of 140 countries in terms of the extent of market dominance according to the Global Competitiveness Report 2018. Thailand has several product market regulations at the economy-wide and industry levels that seem to impede or discourage entry, particularly of foreign firms. Under the Foreign Business Operations Act, B.E. 2542 (1999), some business activities are forbidden for foreigners<sup>55</sup>, some are prohibited unless exemptions are granted by designated government agencies<sup>56</sup>, while other activities are protected from foreign competition<sup>57</sup>. Thailand has a more restrictive professional services market on average compared to peers such as Malaysia and Philippines and scores below its structural peers on competition in professional services.<sup>58</sup>

**Figure 41: Organization of the market and competition**



Source: Authors' elaboration based on data from the Bertelsmann Stiftung's Transformation Index BTI, 2018 (the responses reflect the situation in the country at the end of January 2017).  
 Note: The BTI is a perception indicator based on in-depth assessments of countries and is managed by the Bertelsmann Stiftung.

**Figure 42: Extent of market dominance), 1-7 (best)**



Source: Authors' elaboration based on data from the Global Competitiveness Report (GCR), World Economic Forum, 2017-2018.

54 The indicators of the Bertelsmann Stiftung's Transformation Index (BTI) answer the following questions based on expert judgment: (i) to what level have the fundamentals of market-based competition developed (including the low importance of administered pricing, currency convertibility, no significant entry and exit barriers in product and factor markets, freedom to launch and withdraw investments, and no discrimination based on ownership (state/private, foreign/local) and size, (ii) to what extent do safeguards exist to prevent the development of economic monopolies and cartels, and to what extent are they enforced (including the existence of antitrust or competition law and enforcement)?; and (iii) to what extent has foreign trade been liberalized (including conditions, tariff and non-tariff measures for market access, import licensing and customs valuation, export subsidies and "countervailing duties" on allegedly subsidized imports, import quotas and export limitations, contingency trade barriers (anti-dumping procedures, "safeguards" – restrictions of imports to protect a specific domestic industry from serious injury), replacement of non-tariff with tariff measures, and information on the country's participation in the WTO)?.

55 This includes land trading, newspaper, radio broadcasting, television, rice and livestock farming, fisheries, forestry and timber processing from a natural forest, and extraction of Thai medicine herbs

56 This includes mining, firearms, trading in antiques, wood carvings, production of wood furniture and utensils, sugar from sugar cane, rock salt, salt farming, manufacturing of gold-ware, silverware, niellaware, bronzeware, or lacquerware, accounting, legal, architecture, and engineering services, and some construction activities

57 This includes provision of accounting services, legal services, architecture, and engineering services, advertising activities, trading activities, and other kinds of services

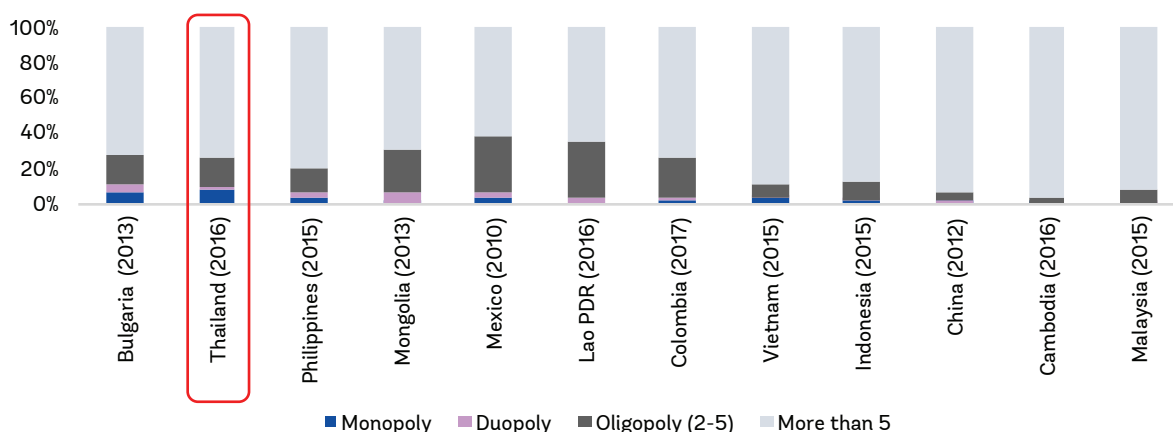
58 ASEAN Services Integration Report (2015), a joint report by the ASEAN Secretariat and the World Bank.



**Lack of effective competition appears to have made Thai markets more concentrated than in peer countries...**

The perceived business risks related to weak competition appear to hinder market dynamics in Thailand. The proportion of Thai manufacturing firms that consider that they operate in monopoly or duopoly markets appear to be relatively high ( $\approx 10\%$ ) when compared to regional and structural peers (Figure 43). Although concentrated market structures may be the consequence of natural barriers, small market size, or firms being more efficient because of scale economies, government regulations and interventions that disrupt the marketplace by limiting entry, facilitating dominance, or un-leveling the playing field may also cause market structures to be relatively more concentrated.

**Figure 43: Manufacturing sector market structures**



Source: Authors' elaboration based on data from the World Bank's Enterprise Survey data for most recent years.

Note: The shares reflect the percentage of responding establishments that answered "None", "One", "2-5" or "More than 5" to the question

"For fiscal year [indicated in parenthesis], for the main market in which this establishment sold its main product, how many competitors did this establishment's main product/product line face?", respectively. E.g. "None" was coded as "Monopoly" and "One" as "Duopoly". Establishments with no answers to the question and establishments whose main market for its main product line is international are excluded.

**..and firm mark-ups are rising in key domestically oriented sectors.**

Firm mark-ups measure the extent to which prices are above marginal costs. This is often seen as a measure of market power, which, in turn, may reflect reduced competition or could also be driven by firms being more innovative and capturing the market. This measure has been rising across advanced countries since the GFC. The picture is more nuanced for Thailand's manufacturing sector. Firm mark-ups on average have declined since 2006-16, but this masks considerable variation across industries. Industries with high dominance of state-owned enterprises, such as tobacco and petroleum industries have seen in an up-tick in mark-ups but not a commensurate increase in average TFP, which is suggestive of increased market power. These industries have also experienced an increase in overall profits. On the other hand, motor vehicles have also seen an increase in mark-ups but higher aggregate TFP, which is suggestive of more innovative firms in this industry.

### iii. At the firm level, the analysis highlights that firms that open to foreign investment, invest in skills and in R&D are more productive

**Within firm productivity dynamics highlights, firstly, that openness matters for firm productivity.**

Regression analysis of firm TFP growth with firm characteristics (Annex 2) allows for a closer study of within-firm drivers of productivity. The most significant factor driving firm productivity improvements are factors associated with economic openness. This includes whether firms are recipients of FDI; the extent to which the firm is exporting and importing; foreign ownership share interacted with FDI; and whether the firm is a recipient of Board of Investment permits. These factors point to the benefits for firms of exposure to global competition and knowledge spillovers.

**Secondly, the relationship between firm size and productivity is more complex, with a significant sample of small, productive firms not growing.**

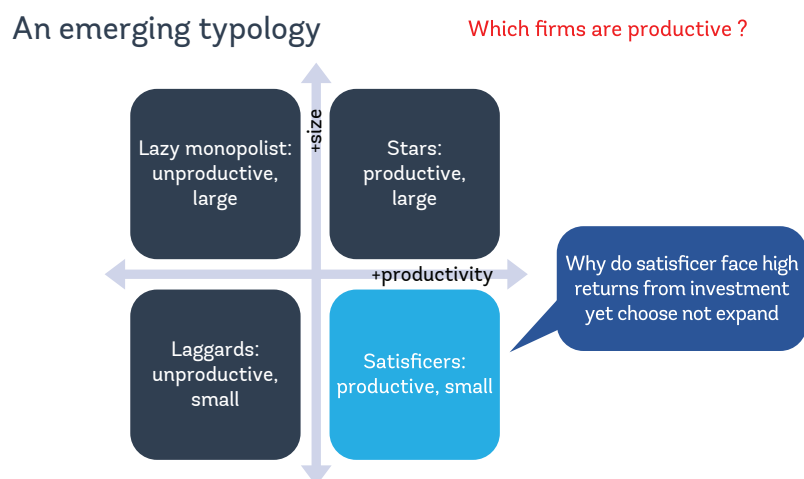
Another key finding is related to firm size and productivity. The regression analysis highlights that firm size is not directly correlated with firm productivity growth. However, closer analysis of firm productivity highlights a potential typology of firms in Thailand (Figure 44). This includes: (i) Superstar firms that are large in size (above 200 employees) export oriented, integrated in global value chains and show rapid growth in firm productivity. This includes large businesses active in food processing, airbag industry and in construction. (ii) Large monopolists are large, largely domestically oriented and do not show a pick-up in firm productivity. These include firms active in transportation, pharmaceuticals, and energy sectors. (iii) Satisficers are defined as SMEs that hire less than 200 employees, exhibit high productivity and positive returns to investment yet choose not to or are unable to expand. These firms tend to be formally registered and are found across a wide swathe of industries. Interestingly, these firms exhibit bunching at around 50 and 100 in terms of number employees possibly due to size-related regulations such as labor and safety regulations as well as competition-related issues. (iv) Laggards are SMEs that exhibit low productivity and low returns to investment. As part of healthy market churning, these firms will be forced to eventually exit if they do not upgrade productivity.

**Finally, firms benefit from a combination of skilled labor with research and development spending, while each factor in isolation does not appear to have an impact.**

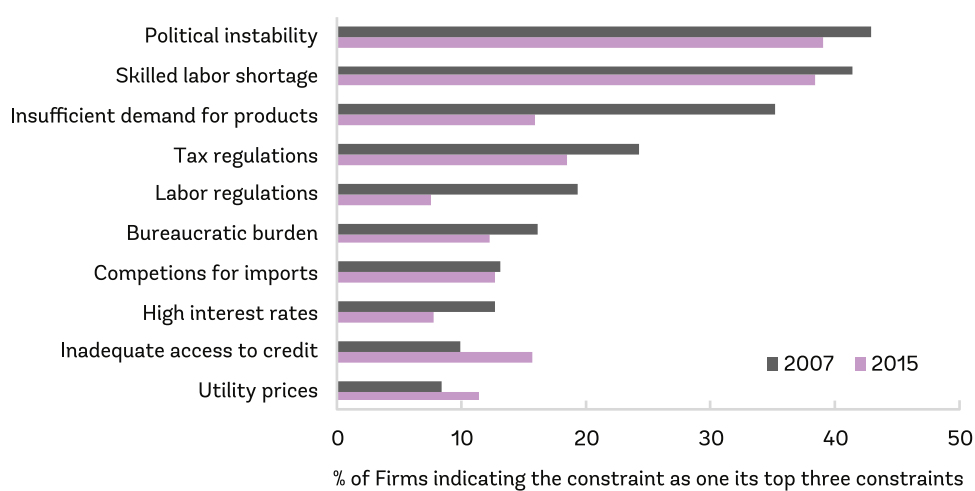
Firms consistently cite access to skilled labor as a key constraint to operations in Thailand, second only to political instability (Figure 45). The 2015 Productivity and Investment Climate Survey (PICS) found that between 2007 and 2015, the time it took to fill a vacancy for a skilled worker increased from 5.2 weeks to about 8 weeks. This makes it surprising that the results indicate that firms with an increased share of skilled labor payments in their operating budget do not have significantly higher productivity (Annex 2 for regressions). This paradox is, however, resolved when considering skilled labor together with increased R&D spending by firms. Firms that spend more of their operating budget on R&D payments and have higher share of skilled labor payments show a significantly higher TFP growth than other firms. This suggests that innovative technologies are not useful for firms unless the workers have the requisite skills.<sup>59</sup>

<sup>59</sup> This is consistent with the findings in Maloney et al (2018) and the Thailand Economic Monitor: Beyond the Innovation Paradox (2017).

**Figure 44: Typology of firms in Thailand's manufacturing sector**



**Figure 45: Firms cite access to skilled labor as one of the main constraints to operations**



Source: Thailand Productivity and Investment Climate Study (PICS) 2015, Ministry of Industry and Thailand Productivity Institute.

### 3. Policy agenda to boost productivity of firms

The focus should be on improving competition, more openness to FDI and building the ecosystem for innovation.

The analysis of drivers and constraints to productivity of manufacturing firms highlights some key empirical findings: (i) manufacturing firm productivity growth has been higher for firms that export more; (ii) competition in domestically oriented industries is weak, contributing to lower entry of productive firms and less exit of unproductive firms, driving down overall productivity; (iii) firms that receive FDI are more productive; (iv) there are number of small, productive firms that are not growing in size; and (v) skills and R&D together matter for firm productivity. These findings point towards a productivity agenda that focuses on enhancing competition in the domestic economy, increasing openness to FDI and promoting an ecosystem for firm innovation (see Table 6).

Table 6: Summary of Key Findings and Related Policies

Findings	Policy recommendations
Competition and market churning is weak in domestically oriented industries	Implement the new Competition Act with clear critical guidelines related to state-owned enterprises, price control and cartel behavior.
Firms that are integrated with the global economy are more productive	Promote openness by relaxing FDI limits and services restrictions as envisioned in the ASEAN framework agreement on services.
Skilled labor complements R&D investments	Introduce a human capital policy to support the innovation ecosystem. Consider creating a skilled occupation shortages list in the short term.

Enforcing the new competition act will be critical for domestic competition.

Thailand’s 2017 Competition Act is aimed at raising competitiveness through greater competition. The act touches on many important aspects such as governance of the competition agency, merger control thresholds, anticompetitive agreements, and exemptions. However, the most important aspect is implementation. The previous Competition Act was created in 1999 to replace the ineffective 1979 Anti-monopoly Act by strengthening enforcement. Although 100 complaints were filed, the 1999 act resulted in only one successful prosecution. The 2017 Act is an improvement, but it remains to be seen how the commission will develop critical guidelines called for in the new act that will determine the effectiveness of the new regulatory framework. For example, implementation can be further strengthened by legal clarification of treatment of state-owned enterprises and quasi-fiscal measures such as price control as well as incentivizing reporting of cartel behavior.

Thailand should consider reducing FDI restrictions in non-strategic industries to encourage openness...

Foreign direct investment (FDI) is often linked to transfer of knowledge and productivity increases and is especially important for services, which requires the movement of capital, labor and know-how and is a crucial input in manufacturing. However, Thailand has been losing market share of FDI within ASEAN for at least two decades. FDI in Thailand is primarily regulated by the Foreign Business Act 1999 (FBA) which remains restrictive particularly for services. Thailand can consider lifting restrictions on FDI in non-strategic industries. In addition, the framework by which the coverage of industries and services, including precising definitions, are reviewed can be clarified and made more transparent.

...in addition to opening up the services sector.

**Thailand should consider workforce development policies to shape a human capital pool to meet the needs of an innovative knowledge-based economy.**

Integration in services can be deepened considerably by implementing the commitments laid with the AEC framework on services. In telecommunications, for example, foreign-owned companies may only provide services on a re-sale basis. Education and health facilities must be held by nationals. Thailand could consider progressively lifting the restrictions of foreigners to perform professional services. Other measures could include lifting the minimum capital requirement of 100 million baht for foreign subsidiaries to operate in the retail sector, lifting the limits on foreign ownership in a “local bank”, and introducing clear and objective criteria for the granting of licenses to foreigners in automobile and life insurance.

Workforce development policies could include the following areas, each one with a specific set of objectives: (a) education—creates the next generation of workers; (b) training—targets skills development for current labor market needs; (c) upskilling—helps current workers adapt to the changing labor market; and (d) migration and talent attraction—can fill skills gaps in the short term. Coordination among these policies will be crucial to build the skills and human capital needed for the shift to the knowledge-based economic model envisioned as part of the Thailand’s high-income aspiration.

In this regard, skills monitoring systems are especially important. These systems can be designed to address skill shortages are often applied to training, education, and migration policy. In the United Kingdom and Australia, occupations and skills imbalances monitoring procedures, and the structures for formulating regularly published “skilled occupation shortages lists” have been established and are continuously maintained. These procedures combine “top- down” analysis of key labor market data with “bottom-up” input from and validation by industry. In both countries skills imbalance monitoring is used to inform and prioritize a broad range of human capital policies, from the curriculums standards that have to be met by academic and technical-vocational education providers to scholarships, apprenticeships, public employment programs, and fiscal and immigration incentives used to tap the international supply of skills. Recently, Malaysia has also introduced a similar tool—the Critical Occupations List—to inform both immigration and human resource development policies.

**...and strengthening  
intellectual property  
protections.**

Thailand ranked 69 in number of patent applications filed under the Patent Cooperation Treaty (PCT) per million population in 2016, and Thai nationals file fewer patents than in structural peers. This reflects a lower number of firms with R&D capacity and a decreased institutional capacity to submit patent applications accompanied by solid claims of originality. Moreover, the low rate of granted patents in Thailand shows that the Department of Intellectual Property (DIP) may have a low rate of efficiency in processing such claims, which seems to be masked by the significant backlog in patents pending.

A comprehensive intellectual property reform program could include the following actions:

- Amendment of the existing intellectual property (IP) regulatory framework to ensure compliance with a Trans Pacific Partnership (TPP) like regime.
- Further streamline and automate procedures and processes at the DIP, the Food and Drug Administration (FDA), and other institutions mandated to support innovation.
- Provide the DIP with enhanced financial autonomy, enabling it to retain stronger competencies to implement its mandate.
- Enhance the institutional capacity of all IP-related agencies, including all relevant enforcement agents, ranging from judges and personnel of the Intellectual Property and International Trade Court, to police and custom officials, and private and public sector lawyers.
- Improve IP teaching and training in the country.
- Launch a comprehensive awareness-raising program aimed at improving the public understanding of the link between IP and National Strategy.





## Box 6: Technical Note on Firm Productivity Estimation

The estimation of total factor productivity (TFP) from estimating the residual of the production function via the Ordinary Least Square (OLS) method faces a problem of endogeneity. To avoid this problem, this study, exploits the richness of firm-level data along with the dynamic characteristics to use the Generalized Method of Moments (GMM) along with various sets of instrumental variables.

The first step is to estimate the first-stage estimation of the following panel-data model with OLS method for each industry  $j$  of 2-digit ISIC (International Standard Industrial Classification):

$$y_{it} = \beta_j^1 + \beta_j^l l_{it} + \beta_j^k k_{it} + \beta_j^m m_{it} + Export_{it} + Year_t + \varepsilon_{it},$$

where  $y_{it}$ ,  $l_{it}$ ,  $k_{it}$  and  $m_{it}$  is logarithm of firm  $i$  in period  $t$ 's value added, wage bills, capital and intermediate inputs, respectively. All nominal variables are deflated by Consumer Price Index.  $\varepsilon_{it}$  captures a standard i.i.d. error term. As the Thai manufacturing sector is intensive in exports, whether firm exports is correlated with firm value added and productivity. Therefore, the export dummy variable ( $Export_{it}$ ) and year dummy variable ( $Year_t$ ) of firm  $i$  in period  $t$  are included as a control variable following De Loecker (2013).

Then, the second-stage estimation is to estimate TFP:  $\omega_{it} = \hat{y}_{it} - \hat{\beta}_j^l l_{it} - \hat{\beta}_j^k k_{it}$  with four specifications of instrumental variables including the polynomial terms of TFP lag, export dummy lag, and investment ( $inv_{it}$ ) lag as conducted in De Loecker (2013):

1.  $\omega_{it-1}$ ,  $\omega_{it-1}^2$  and  $\omega_{it-1}^3$ ,
2.  $\omega_{it-1}$ ,  $\omega_{it-1}^2$ ,  $\omega_{it-1}^3$ ,  $\omega_{it-1} Export_{it-1}$ ,  $\omega_{it-1}^2 Export_{it-1}^2$ ,  $\omega_{it-1}^3 Export_{it-1}^3$ , and  $Export_{it-1}$ ,
3.  $\omega_{it-1}$ ,  $\omega_{it-1}^2$ ,  $\omega_{it-1}^3$ ,  $\omega_{it-1} Export_{it-1}$ ,  $\omega_{it-1} inv_{it-1}$ ,  $\omega_{it-1} Export_{it-1} inv_{it-1}$ ,  $Export_{it-1}$ ,  $inv_{it-1}$  and  $Export_{it-1} inv_{it-1}$ ,
4.  $\omega_{it-1}$  and  $Export_{it-1}$ .

The results across four different specifications are not much different. The study's baseline model is the first specification, which is more generally used in literature.

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## Annex 1: Estimating Firm Productivity<sup>60</sup>

**Data source and coverage:** The firm-level dataset used in this report is the Thailand's Manufacturing Industry Census covering 2006, 2011 and 2016 data with more than 50,000 observations.

**Productivity measure:** A revenue-based measure (TFPR) is used to estimate firm productivity, as the firm's nominal output is deflator by an industry wide price deflator. This is necessary as Thailand lacks economy-wide information on firm-level input and output prices. See Box 1 for technical discussion on the estimation approach used.

**Challenges with revenue-based TFP (TFPR) measures:** Deflating a firm's nominal output or value added with an industry wide deflator poses several difficulties. Firms within an industry might produce similar goods but may charge different prices for that good depending on a firm's market power or product quality. Industry wide deflators cannot control for these differences. For firms producing near identical products in a highly competitive market, this is less of an issue. But in other cases, the extent and quality of design, craftsmanship, raw materials, and other inputs might differ, making the final product quite different. TFPR then overestimates the productivity of firms producing high price (quality) products and underestimates the productivity of firms producing low price (quality) product as revenues of two types of firms are deflated by using the same deflator at the industry level.

**An alternative quantity-based TFP (TFPQ) measure:** The availability of product-level price data can help address shortcomings of TFPR measures of productivity. Firm-level input and output prices can help disaggregate firm performance by its physical efficiency, market power, and product quality. The residual in the production function (namely TFPQ) therefore gives a more precise estimate of firm productivity relative to market power and product quality.

**TFPR vs. TFPQ:** Haltiwanger (2016) argues that researchers should not inherently prefer TFPQ measures over TFPR as the latter "have the virtue that they will reflect idiosyncratic profitability factors beyond TFPQ". In other words, TFPQ is a good measure of technical efficiency. However, if one would like to compare firms in terms of their capacity to earn profits or create value either through producing high quality products or exerting market influence, TFPR seems as a better measure.

<sup>60</sup> Discussion and methodology inspired from World Bank's Country Economic Memorandum for Turkey, published in 2019.

## Annex 2: Firm Regression

A pooled cross-section ordinary least squares regression of firm TFPR on key variables of interest such as proxies for global integration and openness (dummies for export and import, export and import shares), skilled labor, R&D, state enterprises (government ownership), formality (firm registration) while controlling for industry (2 digit ISIC) and the great flood of 2011. The firm-level dataset used in this report is the Thailand's Manufacturing Industry Census covering 2006, 2011 and 2016 data with 162,804 observations.

	Coefficient	Standard Error	t-statistic	p-value
Age	0.00822**	0.00611	13.55	0.000
Age2	-0.00009**	0.00001	-8.89	0.000
Government dummy	-0.16217*	0.07647	-2.12	0.034
BOI permit dummy	0.08633	0.01218	1.06	0.287
Export dummy	0.06804**	0.01324	5.14	0.000
Import dummy	0.08708**	0.01170	7.44	0.000
R&D dummy	-0.01868	0.01889	-0.99	0.323
Registered	0.374**	0.00641	58.34	0.000
Export share	-0.0001	0.0001	-0.90	0.370
Import share	0.0009**	0.0002	4.14	0.000
R&D*Skilled labor	0.00185**	0.0003	6.31	0.000
Skilled labor	-0.0021**	0.0007	-30.57	0.000
Great flood 2011	-0.2489	0.0091	-27.30	0.000



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