AMRO Annual Consultation Report

Thailand - 2017

The ASEAN+3 Macroeconomic Research Office (AMRO)

December 2017

Acknowledgements

1. This Annual Consultation Report on Thailand has been prepared in accordance with the functions of AMRO to monitor, assess and report its members' macroeconomic status and financial soundness and to identify the relevant risks and vulnerabilities, and assist them in the timely formulation of policy recommendation to mitigate such risks (Article 3(a) and (b) of AMRO Agreement).

2. This Report is drafted on the basis of the Annual Consultation Visit of AMRO to Thailand from June 1-9, 2017 (Article 5 (b) of AMRO Agreement). The AMRO Mission team was headed by Dr Sumio Ishikawa, Group Head and Lead Economist. Members include Ms Wanwisa Vorranikulkij (Specialist and Country Economist for Thailand), Dr Joseph Kim (Senior Economist and Back-up Economist for Thailand), Dr Jinho Choi (Fiscal Sector Specialist) and Mr Edmond Choo Chiang Yong (Research Analyst). AMRO Chief Economist Dr Hoe Ee Khor also participated in key policy meetings with the authorities. This AMRO Annual Consultation Report on Thailand for 2017 was approved by Dr Hoe Ee Khor, AMRO Chief Economist.

3. The analysis in this Report is based on information available up to September 1, 2017.

4. By making any designation of or reference to a particular territory or geographical area, or by using the term "member" or "country" in this Report, AMRO does not intend to make any judgements as to the legal or other status of any territory or area.

5. No part of this material may be disclosed unless so approved under the AMRO Agreement.

6. On behalf of AMRO, the Mission team wishes to thank the Thai authorities for their comments on this Report, as well as their excellent meeting arrangements and hospitality during our visit.

Table of Contents

Executive Summary

Since the 2016 Annual Consultation Report, the Thai economic recovery continues to gain momentum, led mainly by public spending, tourist receipts and exports. Private consumption remains stable. Private investment had a positive growth in Q2 2017 for the first time after Q3 2016, in tandem with increasing capacity utilization. However, remaining excess manufacturing capacity and lingering political uncertainty have prolonged a recovery in private investment. As for consumer prices, headline inflation and core inflation remained subdued on account of declining food prices, and moderate private consumption. Given the economic recovery and low inflation, expansionary fiscal spending alongside accelerated investment in megaprojects should be pursued. An accommodative monetary policy stance should be maintained, while potential risks to financial stability warrant continued vigilance. Over the medium- to long-term, the authorities are encouraged to increase their efforts to raise potential growth in order to achieve their ambition of making Thailand into a high-income country by 2026.

1. **The economic recovery is expected to continue in 2017.** The economy gained traction with support from the continued recovery in private consumption and public investment, and a strong rebound in export of goods and services. Private investment expanded in Q2 2017, after its annual growth staying in the negative territory from Q3 2016 to Q1 2017. Going forward, the economy is projected to expand at 3.5 percent in 2017 and 3.6 percent in 2018 on the back of government spending, infrastructure investment, export upturn, and buoyant tourism. Private consumption is expected to improve slightly due to some easing of household debt and higher farm income. Private investment may also edge up in light of improving economic activities and some progress in the mega-infrastructure projects.

2. **Inflation is expected to remain low in 2017.** Headline inflation has declined since February 2017, as food prices declined on the back of improved food supply. Core inflation has remained low and stable at below 1.0 percent. Inflation expectations have risen somewhat, while consumer confidence has softened recently. Going forward, inflation pressure is expected to remain low owing to the gradual recovery in private demand. On average, headline inflation is forecast to be 0.7 percent in 2017 and to increase and stay above the lower bound of Bank of Thailand (BOT)'s inflation target in 2018.

3. **The external position strengthens further.** The current account surplus remains sizeable and is partially invested overseas in the form of direct investment by domestic corporate and portfolio outflows by residents. Reflecting the robust surpluses, international reserves have risen to more than three times the stock of short-term external debt and are equivalent to almost 10 months of imports. Going forward, the current account is projected to remain in large surplus in 2017 but the surplus will narrow as infrastructure investment gathers pace. Residents' outward investment will expand, spurred and facilitated by BOT's foreign exchange regulatory reform, portfolio diversification, and overseas business expansion by Thai companies.

4. **Downside risks to growth stem from uncertainty in global trade and from domestic structural challenges.** An intensification of trade protectionism, or an appreciation of the Thai baht may narrow the current account surplus. In addition, structural issues—particularly a shortage of skilled labor—may affect economic growth. Meanwhile, despite recovery in Q2 2017, private investment may weaken due to remaining excess capacity utilization, delay in implementation of mega infrastructure projects, and domestic political uncertainties. Some investors are adopting a wait-and-see attitude until the general election. Nevertheless, the start of construction of some infrastructure projects could

improve investment climate to some extent, while rising capacity utilization in some manufacturing sectors could gather broader recovery of private investment.

5. **Risks to financial stability remain contained despite worsening loan quality and high household debt.** The credit quality of commercial banks and specialized financial institutions (SFIs) continues to deteriorate in some business segments, reflecting the lagging effects of sluggish economic activity. Low profitability of SMEs has constrained their loan repayment capacity and has had repercussions on banks' asset quality. Although household debt has receded at the aggregate level, pockets of risks remain among low-income households, agriculture, SME households, and the young generation. Despite the increasing credit risk, financial institutions remain sound with strong buffers from capital and loan-loss provisions.

6. **An expansionary fiscal stance should be maintained and investment in public infrastructure should be stepped up to support economic recovery and to further crowd in private investment.** The fiscal deficit will widen to 3.7 percent of GDP in FY2017 from 2.8 percent of GDP in FY2016, while public debt will remain at a moderate level of around 40.0 percent of GDP. Expanding fiscal spending in FY2018 will help broaden and strengthen the recovery. Tax reforms and efforts in pushing forward non-debt financing for mega-infrastructure projects are commendable as they will help contain the fiscal deficit. In addition, the enactment of the Fiscal Responsibility Law will safeguard long-term fiscal sustainability. Investment in mega-infrastructure projects should be executed in a timely and well-coordinated manner to shore up subdued private investment and to enhance potential growth over the medium- and long-term.

7. **The current monetary policy stance is appropriate.** The monetary condition remains accommodative and supportive of the recovery. Despite the current negative output gap and low inflation, a reduction in the policy rate may not be fully effective due to low loan demand and ample liquidity in the financial system. In addition, potential risks to financial stability may arise from the growing search-for-yield behavior of investors and the high indebtedness of households in a low interest rate environment. On the external front, the exchange rate is under upward pressure because of the strong external position and should be managed flexibly to avoid exchange rate misalignments.

8. **Financial regulatory reforms and efforts to ease a high level of household debt are commendable.** The ongoing regulatory reform of SFIs would enhance their financial soundness and reduce fiscal burden. Considering the high level of household indebtedness, the regulatory reform relating to savings co-operatives and credit unions, as well as the adoption of new regulations on informal financing, will protect households from over indebtedness and usury rate of interest. The launch of the new loan restructuring program, Household Debt Clinic, will ease households' financial burden and enhance banks' credit quality. Continuing efforts to promote financial literacy and enhance households' financial discipline are desirable to promote prudent borrowing behavior going forward.

9. **Over the medium- and long-term, Thailand could step up efforts to increase potential growth in order to achieve its goal of becoming a high-income country by 2026.** First, considering the demographic challenges, more resources are required for human resource development. There needs to be a re-skilling of existing labor and greater use of foreign professionals; and the education system needs significant improvement. Second, comprehensive structural reforms, envisioned in the 20-year Strategic Plan, including the Thailand 4.0 scheme, the Digital Thailand initiative and the flagship Eastern

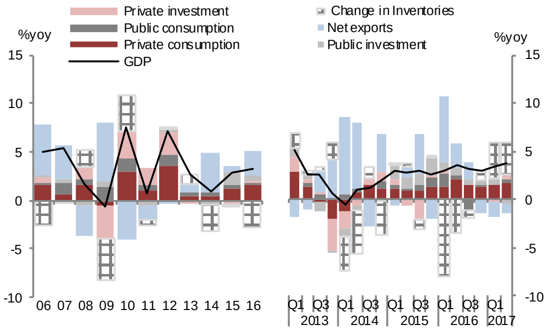
Economic Corridor project, can contribute to upgrading technology and capital investment and enhancing the allocative efficiency of the economy. In addition, in order to cope with the rapidly aging society, the social safety net should be enhanced further, while also considering long-term fiscal sustainability.

Recent Developments and Outlook

A.1 Macroeconomic Developments and Outlook

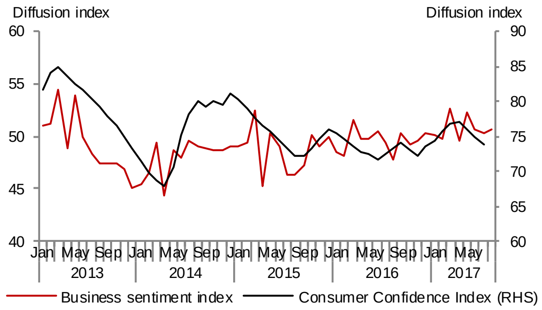
1. **The Thai economy continues its recovery, led by strong exports and private consumption (Figure 1).** Merchandise exports and tourist arrivals strongly rebounded in the first half of 2017, while imports also picked up. Private consumption continued to rise moderately from spending on the services sector, which is in line with the increase in number of tourists, while spending on durable goods especially on passenger cars continued to expand, partly owing to launches of new car models. Meanwhile, consumer confidence generally improved over the same period of 2016 (Figure 2). Despite recovery in Q2 2017, private investment generally remained soft in the first half of 2017 from excess manufacturing capacity and political prospect prior to the general election. However, a strong growth of a change in inventory and continual increase in capacity utilization[1] reflects improved demand conditions and revived production.

Figure 1. Real GDP Growth, Expenditure Side



Source: Office of the National Economic and Social Development Board, AMRO staff calculations

Figure 2. Consumer and Business Confidence Indices



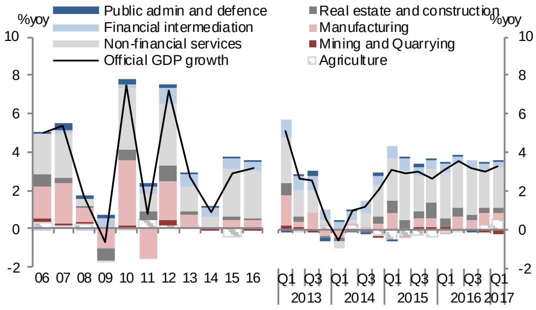
Note: 1/ Business Sentiment Index (BSI) = 50 indicates stable sentiment compared to the previous month; BSI >50 indicates improving sentiment from the previous month; and BSI <50 indicates worsening sentiment from the previous month. 2/ Consumer confidence index (CCI) = 100 indicates stable sentiment compared to the previous month; CCI >100 indicates improving sentiment from the previous month; and CCI <100 indicates worsening sentiment from the previous month.
Source: Bank of Thailand, University of the Thai Chamber of Commerce

2. **On the supply side, the economic expansion was led by the service sector and a recovery in agricultural production, while the rebound in manufacturing was uneven (Figure 3).** In the service sector, hotels and restaurants, and retail and wholesale trade performed well due to increasing tourists' demand and a pick-up in private consumption. A rebound of external trade also led to an expansion of the logistics sector. The construction and real estate sectors were mainly driven by demand from public sector investment, amid soft demand from the private sector. Meanwhile, agricultural production is making a strong recovery since last year's drought and the flood in the southern provinces in the first quarter this year. Farm incomes are rising, although the abundant harvest has put a downward pressure on agricultural prices. In the manufacturing sector, production was largely flat (Figure

[1] Capacity utilization reached 63.14 in August 2017 which was the highest level since September 2013.

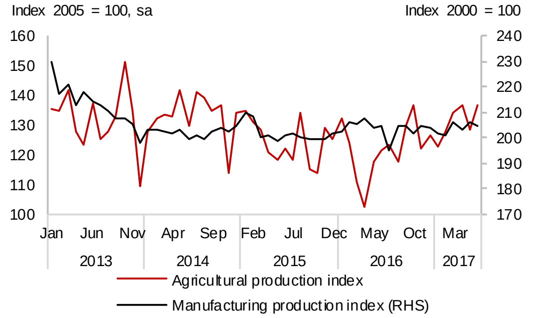
4), but increased in some export-oriented industries such as food, electronics and electrical machinery. Capacity utilization was relatively flat except for computer machinery, motor vehicles and electrical machinery, which are benefitting from strong external demand. Unemployment has inched up recently partly because local corporates have replaced labor-intensive production with mechanization.

Figure 3. Real GDP Growth, Supply Side



Source: Office of National Economic and Social Development Board, AMRO staff calculations

Figure 4. Agricultural and Manufacturing Production



Source: Office of Industrial Economics, Office of Agricultural Economics, AMRO staff calculations

3. **Going forward, the Thai economy is expected to continue its recovery in 2017, despite some headwinds from global uncertainties and domestic challenges.** The economy is projected to expand at 3.5 percent in 2017 and 3.6 percent in 2018 on the back of government spending, infrastructure investment, strong export prospects and buoyant tourism. Private consumption is expected to record an increase as farm income has shown improvement and some easing of household debt levels. Tourist receipts and merchandise exports are projected to grow further following firming global economic recovery, while imports are expected to rebound strongly due to accelerated investment in public infrastructure and growing exports. Capacity utilization in the manufacturing sector will gradually rise in light of the recent upturn in exports which can lead to a revival in private investment.

Authorities' Views

4. **The authorities expect the current recovery to continue.** In particular, the growth outlook is expected to improve further, driven by a stronger exports and public spending. Tourism is also expected to be buoyant. Public spending and infrastructure investment will be the main drivers of growth in 2017. Both private consumption component of GDP and consumer confidence trended upward; therefore, overall private consumption is expected to continue its growth. As for private investment, it might previously show a little slowdown, which may be due to growing overseas investment by Thai companies. However, in Q2 2017, private investment, excluding a change in inventory, grew at 3.2 percent mainly due to the improvement in both equipment and construction categories. Private investment will see solid and firm improvement after picking up in Q2 2017. The Fiscal Policy Office (FPO) expects

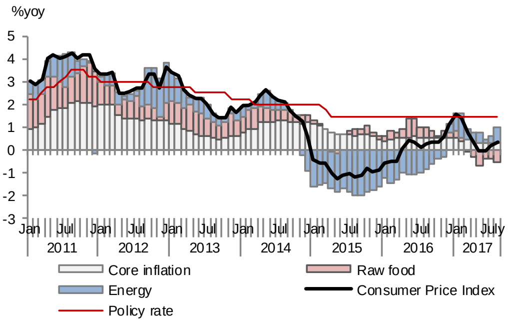
GDP to grow at around 3.6 percent in 2017, while the Bank of Thailand (BOT)'s growth forecast is for 3.8 percent in 2017 and into 2018.

A.2 Inflation

5. Inflation is expected to remain low in 2017 despite an increase in energy prices. Headline inflation has been subdued since February 2017, as food prices declined on the back of high base effects due to the drought in the last year and improved food supply in this year[2]. Core inflation has remained low and stable at below 1.0 percent. Although inflation expectations for the next 12 months have risen somewhat, consumer confidence declined. Going forward, inflation pressure is expected to remain low amid a slow recovery in private demand (See Selected Issue 1 for more analysis on Thailand's inflation dynamics). On average, headline inflation is forecast to be 0.7 percent in 2017 and 1.6 percent in 2018**.**

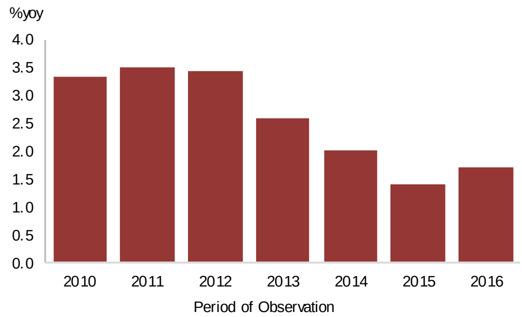
6. **With subdued inflation, monetary conditions have remained accommodative.** Monetary policy has supported economic growth, with the policy rate remaining at 1.5 percent since the last rate cut in April 2015. Private credit by other depository institutions grew, albeit moderately, at 4.1 percent in April 2017, while corporate bonds grew strongly by 13.3 percent yoy in Q1 2017. In the low interest rate environment, risks emanating from the growing search-for-yield behavior are increasing, but investments are limited to some short-term debt instruments.

Figure 5. Inflation



Note: The inflation target was changed from core inflation to headline inflation in January 2015. For 2017, Bank of Thailand's inflation target band is 2.5±1.5 percent.
Source: Ministry of Commerce, AMRO staff calculations

Figure 6. Inflation Expectations for the Next 12 Months



Note: Survey from market experts in December of aforementioned years
Source: Bloomberg

Authorities' Views

7. **In the authorities' view, headline inflation is projected to increase in the second half of 2017.** Low headline inflation was attributed primarily to supply-side factors, especially lower fresh food prices, and supported by weak domestic demand. However, headline inflation is projected to rise in the latter half of the year, supported by supply-side factors, especially from diminishing base effects of low food prices, and the recovery of domestic demand. The

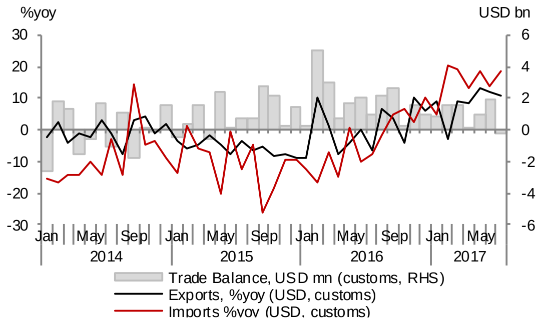
[2] The base effect is mainly due to the severe drought in 2016 starting from November 2015 to May 2016.

BOT projected that headline inflation and core inflation would be around 0.6 percent and 0.6 percent respectively in 2017.

A.3 External Sector and the Balance of Payments

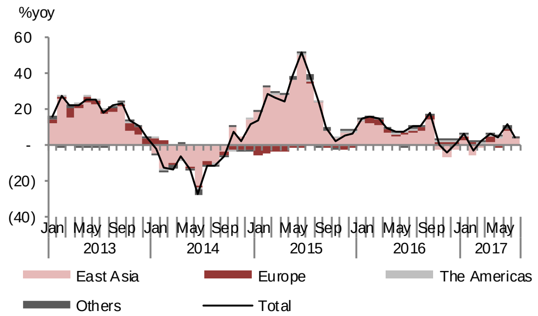
8. **The current account surplus remains sizable on the back of continued trade surplus and tourist receipts.** Imports have been recovering since September 2016 due to rising oil prices and growing imports of raw materials and intermediate goods. At the same time, a recovery in global demand together with the relocation of a production base of manufacturing MNCs to Thailand has boosted Thailand's exports, in particular electronics, petrochemical products and auto parts, since August 2016. In addition, China's demand for stock build-up of some agricultural and agro-manufacturing products, such as rubber and rubber products, also contributed to Thai exports growth, particularly in the first half of 2017 (Figure 7). The service account surplus was boosted by a rebound of the tourism industry after a temporary dip in Q4 2016 (Figure 8). Going forward, the current account is projected to remain in surplus, although the surplus is expected to narrow as infrastructure investment gathers pace and imports of goods increase further.

Figure 7. Trade Balance



Source: Customs Department, AMRO staff calculations

Figure 8. Tourist Arrivals



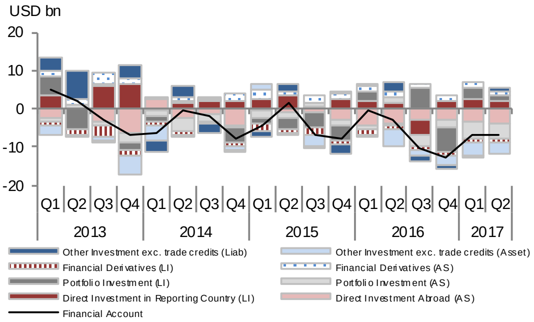
Source: Tourism Authority of Thailand, AMRO staff calculations

9. **The financial account balance is in deficit, reflecting mainly outward direct and portfolio investments by residents.** The deficit is partly driven by overseas direct investment of domestic corporates and by portfolio investment of residents (Figure 9). In terms of inward investment by non-residents, foreign direct investment (FDI), which had been subdued from 2014 to 2016, inched up in 2017, while bond and stock markets largely recorded net inflows from non-resident investors (Figure 10). Going forward, residents' outward investment will increase further, facilitated by BOT's foreign exchange regulatory reform, and spurred by portfolio diversification and the overseas expansion of Thai corporates.

10. **Thailand's external position remains very strong.** The strong external position is anchored by a large current account surplus as well as ample international reserves, which currently stand at more than three times short-term external debt and are almost 10 months

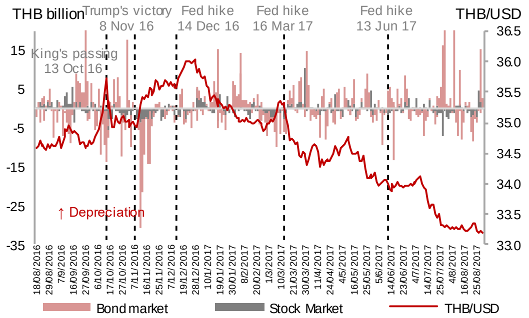
of import payments for goods and services. In addition, gross external debt is less than 35 percent of GDP with short-term debt at around 40 percent of the total. Meanwhile, non-residents' investment in the bond and stock markets accounted for 8.1 percent and 30.1 percent respectively, of the total assets in the markets in 2016.

Figure 9. Financial Account



Source: Bank of Thailand, AMRO staff calculations

Figure 10. Net Buy of Non-resident Investors into Stock and Bond Markets

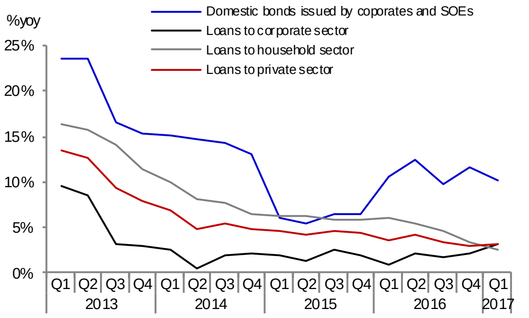


Source: Stock Exchange of Thailand, Thai Bond Market Association

A.4 Financial System

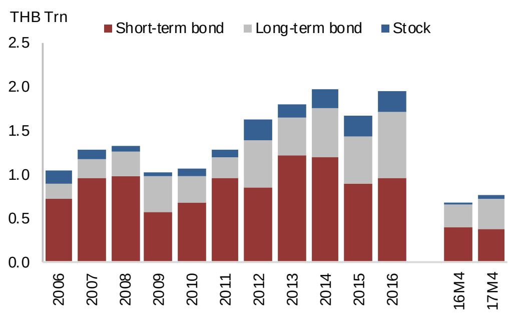
11. **Private sector financing edged up on the back of corporate loans in Q1 2017, while household debt continued to moderate.** A slight increase in loans to the corporate sector drove the growth of overall private credit (Figure 11). Following a recovery of some parts of manufacturing and the energy industry, bank loans to these sectors accelerated. Bank loans to large corporates accelerated, even while corporate bond issuance continued to grow at double digit rates (Figure 12). Bank loans to SMEs also inched up, although underwriting standards of SME loans remained stringent amid a gradual economic recovery and deteriorating loan quality in the banking system. The household debt eased slightly with the growth of household debt decelerating to 3.2 percent yoy in Q1, while the debt-to-GDP ratio declined slightly to 78.7 percent. Overall, the high household debt situation is expected to improve as car loans under the first car scheme will be completely repaid by the end of 2017, and as farm incomes have increased.

Figure 11. Loans Extended by Financial Corporations and Outstanding Corporate Bonds



Note: Loans include loans from other depository institutions and other financial corporations.
Source: Bank of Thailand, AMRO staff calculations

Figure 12. New Securities Issuance



Source: Bank of Thailand

12. **Financial institutions remains sound with strong capital buffers and high loan-loss provisions.** The protracted economic slowdown in 2013-2014 and the subsequent slow recovery has led to a deterioration in loan quality, particularly amongst SMEs and retail clients. However, a strong capital buffer and high loan-loss provisions will help shield commercial banks and state-owned SFIs from rising credit risks. Commercial banks' liquidity coverage ratio stood at 178.1 percent on an aggregate basis in Q1 2017, comfortably higher than the minimum requirement[3]. SFI regulatory reforms[4] including rehabilitation plans for two troubled SFIs—SME Bank and Islamic Bank—are ongoing and expected to enhance the financial soundness of SFIs, thereby mitigating the risk of their becoming a fiscal burden going forward. In addition, regulatory reforms targeting saving cooperatives and credit unions, which have total assets of THB 2.5 trillion in Q1 2017, have been ongoing.[5]

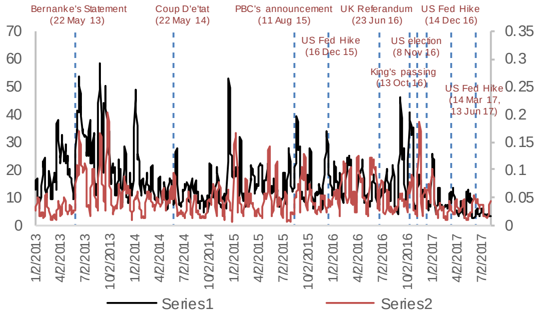
13. **While the global financial markets saw heightened volatility during recent global events, Thailand's financial markets remained relatively stable.** The recent volatility in the global financial markets stemmed from a change in monetary policy in advanced economies, elections in Europe as well as market expectations of the U.S.'s trade policies. However, the Thai financial markets weathered these event shocks well. The stock exchange index and 10-year government bond yields were both volatile at around the time of the increase in the Fed Funds rate in March 2017, but the volatility was lower than after the U.S. taper tantrum and the U.S. presidential election (Figure 13). As for the exchange rate, both the NEER and REER are appreciating in 2017 on the back of the large current account surplus (Figure 14). The appreciation of the baht against main trading partners' currencies including the U.S. dollar, the Australian dollar, the yen and the renminbi despite low inflation pressure in Thailand relative to trading partners, contributed to the appreciation of the REER.

[3] Although the LCR reflects ample liquidity conditions of overall banking sector, the maturity profile of the banking sector should be enhanced. From the point of view of assets that should be used to finance short-term liabilities, Thailand's ratio of liquid assets to short-term liabilities of 31.7 percent as of Q1 2017 is below regional peer's level of 76.3 percent in Singapore and 138.1 percent in Malaysia.

[4] Under the reforms, the SFI regulatory mandate was transferred from Ministry of Finance to Bank of Thailand in April 2015. Regulations on SFIs were upgraded in seven key areas consisting of governance, minimum capital requirements, liquidity risk, credit underwriting processes, single lending limits, accounting and information disclosure, and Islamic banking. In addition, two SFIs that were facing financial difficulty from the onset of the reforms were required to be placed in a rehabilitation plan.

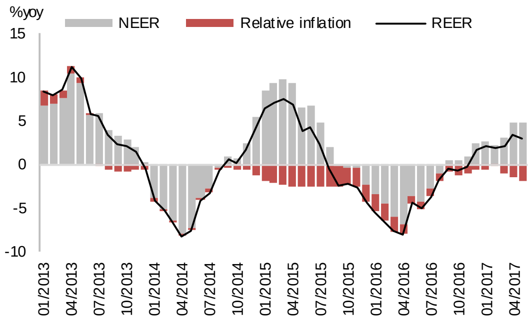
[5] Basel I regulatory standards will be adjusted and applied to large saving cooperatives with total assets of THB 5.0 billion. In addition, the current regulations on good governance, credit risk, liquidity risk and operational risk will be tightened, and the financial database and data collection will be substantially improved. The Supervisory Committee will be established separately and independently from the Cooperative Promotion Department, the overseeing authority.

Figure 13. Volatility of the Stock Exchange Index and Bond Yields



Source: Stock Exchange of Thailand, Thai Bond Market Association, AMRO staff calculation

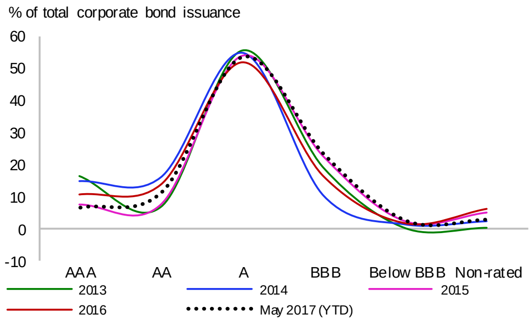
Figure 14. Contribution to the Change in the Real Effective Exchange Rate



Source: Bank of International Settlements and AMRO staff calculation

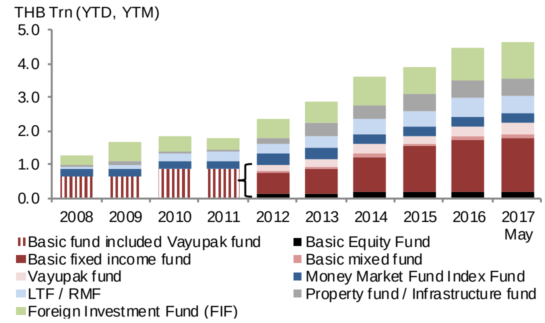
14. **Search-for-yield behavior appears in the non-rated bond and mutual fund markets since 2015.** Firms have continued to diversify from bank loans in the low interest environment. The issuance of long-term non-rated corporate bonds expanded approximately by 36.0 percent in 2016[6]; however, the share of these non-rated bonds remained small, accounting only for 3.0 percent of total outstanding long-term corporate bonds. After the sequential defaults of some non-rated Bills of Exchange (B/E) during late 2016 to early 2017, the issuance of non-rated bonds declined in the first quarter of 2017, compared with the same period in 2016, partly due to investors' lower demand for these securities (Figure 15).[7] Meanwhile, the issuance of rated bonds, in particular those rated BBB and below, increased. On the demand side, depositors continued to seek higher-yield investments. Household savings in credit cooperatives and credit unions, together with investment in fixed income funds and foreign investment funds, have expanded gradually in the past four years (Figure 16).

Figure 15. Long-term Corporate Bond Issuance



Source: Thai Bond Market Association

Figure 16. Structure of Mutual Fund Market (Net Asset Value)



Source: Association of Investment Management Companies

[6] In terms of tenors, the issuance of long-term and short-term non-rated corporate bonds expanded approximately by 94 and 20 percent in 2016, respectively.

[7] A non-rated bond is not allowed to make a public offering, but can be sold through private placement to a maximum of 10 investors and to institutional investors or high net-worth investors only.

A.5 Fiscal Position

15. **The fiscal stance has been generally expansionary to support the economic recovery.** The fiscal deficit is expected to be at around 3.7 percent[8] of GDP in FY2017, widening from 2.8 percent in FY2016. In the first half of FY2017, fiscal expenditure expanded by 2.2 percent (Figure 17). However, capital expenditure expanded dramatically by 17.0 percent, while current expenditure expanded by 1.1 percent. In addition to the government's capital expenditure, state-owned enterprises also expedited and increased capital investment. Besides the regular budget, a supplementary budget of THB190 billion was approved in January 2017 to stimulate the economy at the provincial level and to enhance SME competitiveness. The government also implemented additional quasi-fiscal measures as well as tax exemption to promote research and development (R&D) in ten targeted industries[9] as well as to support economic recovery especially vulnerable sectors including the agricultural sector and SMEs. In addition, implementation of mega infrastructure projects will gather pace this year (Selected Issue 2), while the five-year development plan of the Eastern Economic Corridor (EEC) (See Box), including upgrading manufacturing industries and improving logistics chains in the eastern industrial zone, has been launched with the aim of enhancing the country's potential growth. Owing to the projected increase in revenue collection and slight fall in expenditure, the size of the deficit in FY2018 is expected to be smaller at 2.8 percent of GDP as compared to 3.7 percent of GDP in FY2017 (Table 1).

16. **Government revenue exceeded its targeted in the first nine months of FY2017, albeit a slight decline over the same period of FY2016.** Revenue collection declined somewhat from the corresponding period in FY2016, on account of the base effect of the windfall revenue from the 4G license auction in FY2016 and falling import duties, reflecting tariff reduction under various Free Trade Agreements (Figure 18). To prepare for future increases in fiscal expenditure, tax reforms are underway. Many tax reforms, including restructuring of personal income tax, excise tax and customs duties; tax amnesty for SMEs; electronic tax payment; and the introduction of some asset-based taxes, have been implemented.

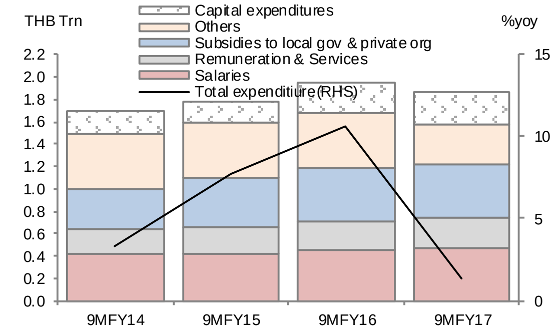
17. **Despite its widening fiscal deficit, Thailand's fiscal position has remained strong with a moderate level of public debt.** The fiscal deficit is expected to narrow to 2.8 percent in FY2018 (Figure 19). Meanwhile, the level of public debt in May 2017 stood at 42.6 percent of GDP. Because of the progress in infrastructure investment and the associated increase in

[8] Including the supplementary budget

[9] The Competitiveness Enhancement for Targeted Industries Act B.E. 2560 has been in effect to promote the ten-targeted industries including automotive; smart electronics; health and medical service; recreation and cultural service; food, agriculture and biotechnology; robotic and electronic machinery; digital and intelligence technology; biofuel and biochemical; and aviation and logistics.

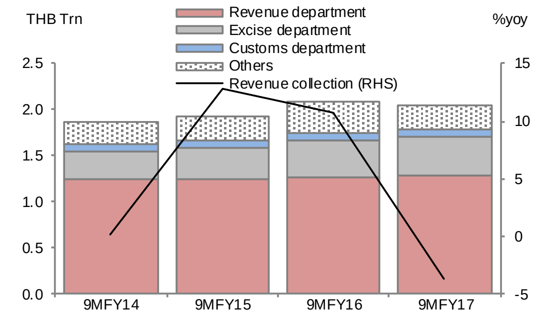
debt financing, public debt is expected to reach 47.3 percent of GDP in 2021, still well below the 60 percent ceiling set in the Fiscal Sustainability Framework (Figure 20). Of the total public debt, more than 90 percent is in the form of long-term domestic currency debt. In addition, the Fiscal Responsibility Bill is scheduled to be effective by the end of the 2017 calendar year. It will enshrine the fiscal and monetary discipline of the government, set in the Fiscal Sustainability Framework, into law and ensure medium-term fiscal sustainability.

Figure 17. Fiscal Expenditure



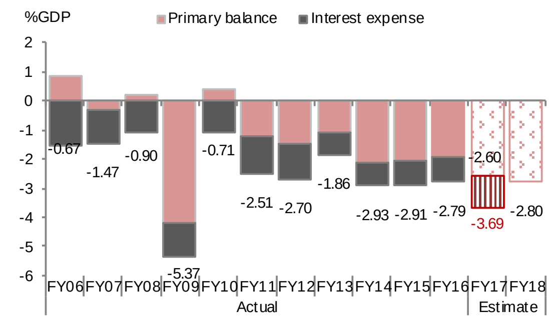
Source: Ministry of Finance, AMRO staff calculations

Figure 18. Fiscal Revenue



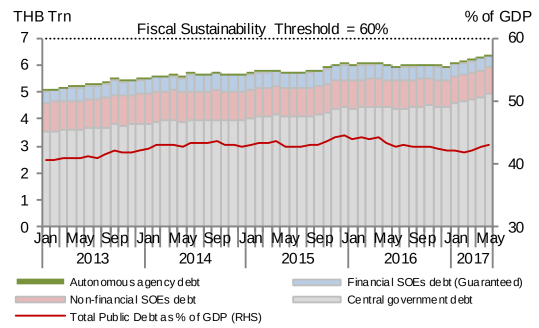
Source: Fiscal Policy Office

Figure 19: Fiscal Deficit



Source: Office of National Economic and Social Development Bureau, Public Debt Management Office, AMRO staff calculations

Figure 20: Public Debt



Source: Public Debt Management Office, AMRO staff calculations

Table 1. Budget Structure

	FY2016 (1 Oct. 2015 – 31 Sep. 2016)		FY2017 (1 Oct. 2016 – 31 Sep. 2017)		FY2018 (1 Oct. 2017 – 31 Sep. 2018)	
	THB billion	%yoy1/	THB billion	%yoy1/	THB billion	%yoy
Expenditure	2,776.0	7.8	2,923.0	5.3	2,900.0	-0.8
• Current Expenditure	2,127.8	4.9	2,155.7	1.3	2,153.1	-0.1
• Capital Expenditure	564.4	25.6	659.0	16.8	659.9	0.1
• Principal Repayment	62.0	11.3	81.2	31.0	86.9	7.1
Revenue	2,386.0	2.6	2,370.1	-0.7	2,450.0	3.4
• Auction of 4G License	56.0					
Budget Deficit	390.0		552.9	41.8	450.0	-18.6
% to GDP	2.8		3.7		2.8	

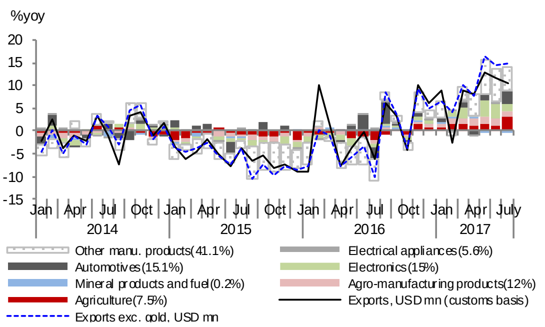
Note: 1/ Expenditures include the supplementary budget
Source: Bureau of the Budget and Fiscal Policy Office

Risks and Vulnerabilities

B.1 External Headwinds

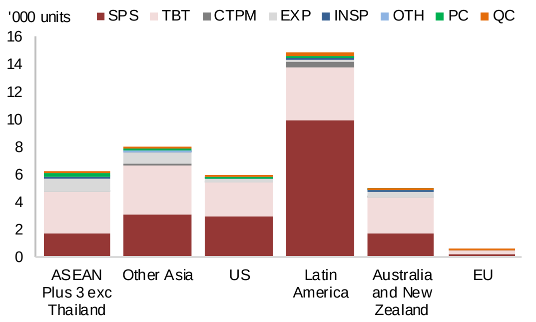
18. **Risks to export prospects can emanate from potential trade protectionism and the uncertain economic outlook in some key trading partners.** Thailand's exports have expanded substantially since the last quarter of 2016, following a rebound of global trade (Figure 21). However, downside risks to a revival in Thai exports, similar to other export-oriented economies, remain, due to the rise in trade protectionism in some major trading partners. Based on the World Trade Organization's database, although the number of bilateral and multilateral trade and investment agreements has been rising over time, non-tariff measures remain high and will pose a downside risk to Thai exports (Figure 22). Besides direct impacts, geopolitical risk and trade protectionism would also have a second-round adverse impact on Thai exports through the regional supply chain, in particular trade linkages between Thailand and China (See Selected Issue 3). Separately, the uncertain economic outlook in the Middle East could pose a downside risk to the export prospects of Thailand's automobile industry as the auto industry accounts for 12.2 percent of total merchandise exports of Thailand in 2016. Moreover, the industry also has extensive supply chain linkages with other related industries and service sectors in Thailand.

Figure 21: Structure of Thai Exports



Source: Customs Department, Bank of Thailand, AMRO staff calculations

Figure 22: Non-tariff Measures



Note: Sanitary and Phytosanitary [SPS], Technical Barriers to Trade [TBT], Pre-shipment inspection [INSP], Contingent trade protective measures [CTPM], Quantity control measures [QC], Price control measures [PC], Other measures [OTH], and Export-related measures [EXP]. The number of measures are not comparable in terms of the degree of each measure.
Source: WTO, UNCTAD

19. **The risk of capital outflows is expected to remain contained.** A faster-than-expected pace of monetary policy normalization in the U.S. could heighten volatility in global financial markets and in capital flows in emerging markets. As with other regional emerging economies, Thailand's financial markets could see temporary outflows, and heightened volatility in financial markets, including in the foreign exchange market. However, Thailand's ample international reserves, at about 10 months of imports, provides the economy with a strong cushion against the adverse impact of outflows.

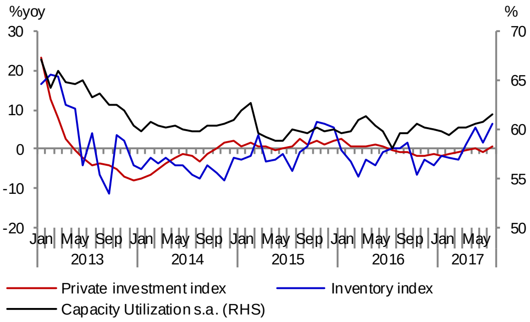
Authorities' Views

20. **Merchandise exports in the second half are likely to have a better outlook than in the first half.** Although exports of electronics, petrochemical products, and auto part are likely to continue its momentum, 2M/Q3 export growth is 11.9 percent compared to 4.9 and 10.9 percent in Q1 and Q2 respectively. In agricultural and agro-manufacturing sector, its 2M/Q3 growth remains high at 33 and 3.5 percent compared to 18.1 and -0.1 percent in Q2 respectively .Moreover, the number of rubber and its products export to China reach the lowest point in July and tend to pick up afterward.

B.2 Risks to the Macroeconomic Outlook

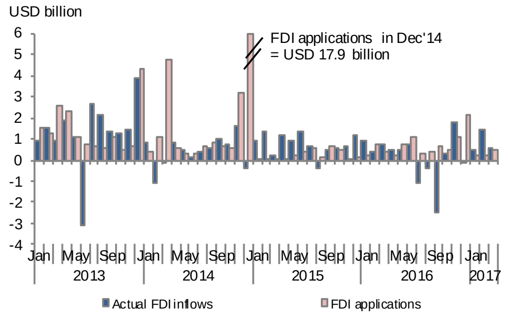
21. **Private investment has been stagnant partly due to excess capacity in the manufacturing sector, weak business sentiments towards the Thai economy, and lingering political uncertainty.** In line with expansion of exports, average capacity utilization was on the rise and reached 63.14 percent, the highest level since September 2013, in August 2017. However, excess capacity persists in some parts of the manufacturing sector, could prolong a recovery in private investment (Figure 23). FDI applications for the Board of Investment's promotion scheme declined slightly in Q1 2017 compared with Q1 2016, but FDI realization improved over the same period (Figure 24). Although a new constitution has paved the way for an election, some private investors delay investment until the general election takes place. Meanwhile, outward direct investment by Thai corporates has trended upward (Figure 25). This trend is likely to persist as a growing number of Thai companies intends to invest more in the CLMV countries to access cheap labor, plentiful natural resources, and growing middle-income class, and due to the special treatment for their exports under the E.U.'s Generalized Scheme of Preferences.

Figure 23: Private Production and Investment Indices



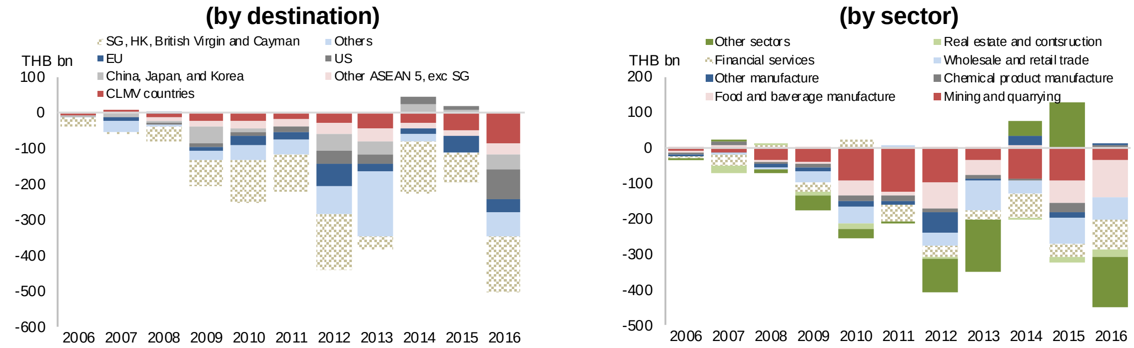
Source: Office of Industrial Economics, Bank of Thailand, AMRO staff calculations

Figure 24: FDI Application and Realization



Note: The value of FDI applications was converted from Thai baht term to USD by using a monthly average rate of the Thai baht against the USD.
Source: Board of Investment, Bank of Thailand, AMRO staff calculations

Figure 25: Net Flows of Residents' Outward Investment



Source: Bank of Thailand

Source: Bank of Thailand

Authorities' views

22. **Private investment is picking up in Q2 2017, growing at 3.2 percent, largely contributed by investments in equipment and construction.** Private investment showed signs of a strong recovery in some exports-related sectors, in particular electronics. Many big infrastructure projects have been started construction e.g. double-track railway from Jira Road to Khonkaen, three routes of motorways in the western, central and eastern regions, Suvarnabhumi International Airport phase II, and the orange line of the Mass Rapid Transit network in Bangkok. Some other large infrastructure investment may need longer preparation time in order to be comprehensive and transparent. However, the Eastern Economic Corridor Development Plan would bolster private investment. On outward investment of Thai companies, its upward trend reflects the expansion into regional markets to take advantage of the economy of scale. In the long term, this would enhance Thailand's competitiveness and productivity.

B.3 Risks to Financial Stability

23. **Risks to financial stability remain contained, although the loan quality of the banking system continues to deteriorate.** The credit quality of commercial banks and specialized financial institutions continued to deteriorate in Q1 2017, reflecting the lagged impact of sluggish economic activity (Figure 26). Although credit risk in the banking system warrants continued vigilance, commercial banks remain sound with a strong buffer from capital and loan-loss provisions. Meanwhile, a default of some B/E securities in early 2017 did not trigger contagion runs on other B/E securities. The default was due to idiosyncratic risk of individual issuers, including poor liquidity management, and internal conflicts among the management.

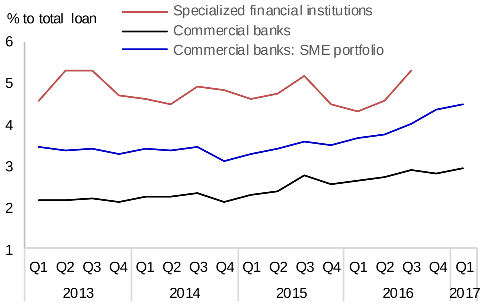
24. **Despite the gradual economic recovery, SMEs remain in a fragile position.** Relatively low profitability has constrained the loan repayment capacity of SMEs, and that has

had negative repercussion on banks' asset quality, as reflected in rising non-performing loans in their SME portfolios[10]. The poor performance of SMEs could also lead to a worsening in the quality of existing household debt held by SME owners. Furthermore, inadequate collaterals constrain the SMEs' and micro-enterprises' access to bank credit. According to a recent study by TMB Analytics, on average, fixed assets of local SMEs that can qualify as bank collateral accounts for only 20 percent of their total assets, while the same for large enterprises account for 30 percent.[11, 12]

25. Although household indebtedness has receded gradually, pockets of risks remain in some market segments. Thailand's household debt-to-GDP ratio remains high relative to other economies in the region (Figure 27), although it declined marginally from its peak of about 81.2 percent in Q4 2015 to 78.7 percent in Q1 2017.[13] There are pockets of risk among low-income households, those engaged in agriculture and SME-reliant households, and the youth. According to BOT's Financial Stability Report in 2016, indebted households tended to accumulate more debt from 2013 to 2015. Low-income households and households working in the agricultural sector or owning SMEs are more vulnerable than other groups of borrowers as they have higher debt burdens, reflected in the debt service ratio and debt-to-financial asset ratio.[14] In addition, Chantarat et al. (2017) found that an increasing number of the working young—aged between 30 and 40 years—are highly indebted and tend to carry a huge debt burden until their retirement.[15] To ease the high household debt problem, the BOT, together with commercial banks and Sukhumvit Asset Management Company, set up the Household Debt Clinic in early June 2017 to facilitate the debt restructuring of distressed households owing uncollateralized personal loans with many financial institutions.

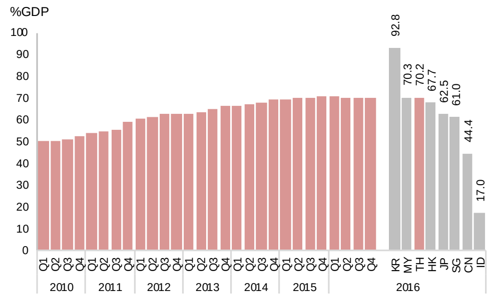
[10] SME loan portfolio accounted for 33.5 percent of total banking loans.
[11] Sathapholdeja, N. (2017, June 26). Big Data Analysis on Thai SMEs (Thai version only). Retrieved June 29, 2017, from http://thaipublica.org/2017/06/naris-tmb-analytics-big-data-smes/
[12] Regarding this matter, the Thai government introduced the new Business Collateral Act B.E. 2558, which became effective as of July 2, 2016. This new legislation expands the class of collaterals businesses can use to pledge upon the submission of their loan applications and hence can help alleviate the restrictions on SMEs financing.
[13] Source: Bank of Thailand and AMRO staff calculations. Please note that the Bank of Thailand's household debt data has greater coverage than Bank of International Settlements' data.
[14] Bank of Thailand. (2017). Financial Stability Report 2016, pp 14-16. Retrieved from https://www.bot.or.th/English/FinancialInstitutions/Publications/FSR_Doc/FSR2016e.pdf.
[15] Chantarat, S., Lamsam, A., Samphantharak, K., & Tangsawasdirat, B. (2017). A Paper Series on Thailand's Household Debt through the Lens of Credit Bureau Data: Microscopic View of Debt and Delinquency. Retrieved June 23, 2017, from https://www.pier.or.th/wp-content/uploads/2017/06/Seminar2017_SommaratAtchana.pdf.

Figure 26. Non-performing Loans (NPL)



Source: Fiscal Policy Office, Bank of Thailand

Figure 27. Household Debt- to GDP Ratio



Note: Credit-to-GDP ratio shown in this graph is different from Bank of Thailand's data shown in Paragraph 24 due to different coverages between datasets. For international comparison purpose, the graph refers to standardized data across countries. Source: Bank of International Settlements

Authorities' views

26. **Financial stability remains sound overall.** In the prolonged period of low interest rates, the search-for-yield behavior may lead to the underpricing of risks by some investors. The risk that warranted monitoring would be the impact of a yield snapback which can increase volatilities in financial markets and lead to capital outflows which, in turn, could affect asset prices and investor confidence. In a view of the credit risk, the debt of the corporate and household sectors should be closely monitored, especially for low-income households, agricultural households and SMEs, should the global and Thai economies recover more slowly than expected.

B4. Structural Challenges

27. **Growth can be affected by demographic transition and a shortage of skilled labor and experts.** Thailand aims to become a high-income country by 2026, as envisioned in its 20-year national development strategy. However, structural issues in the labor force may pose a challenge in achieving the target, which requires the economy to expand by 5 percent a year[16] on an average. Due to the relatively low fertility rate since 1970, Thailand is currently facing aging population faster than other regional economies. Based on United Nations' population projection, the Thai population will start falling from 2020 onward. The share of the working-age population has been declining since 2010 at a faster pace than the regional average, while the share of the elderly in the population has also increased considerably (Figure 28). Over the medium- to long-term, this demographic change may have implications on Thailand's potential growth by reducing the labor force, leading to an expected decline in domestic savings and investment,[17] and increasing fiscal spending on healthcare and social safety nets. Besides a potential shrinking of the labor force, firms in Thailand also face difficulty in hiring skilled labor,

[7] An average annual growth of 5.0 percent was estimated by the Office of National Economic and Social Development Board.
[17] Bosworth, B. P., Bryant, R. C., & Burtless, G. (2016). The Impact of Aging on Financial Markets and the Economy: A Survey (Doctoral dissertation, The Brookings Institution). Washington, DC. Retrieved July 5, 2017, from https://www.brookings.edu/wp-content/uploads/2016/06/20040722survey.pdf

in particular engineers in both IT and non-IT fields, managers and salespersons with technical skills.[18] As for the education system (Figure 29), there is room for improvement, in particular math and science, so that the country could become a high-income country.

Figure 28: Demographic Transition

Figure 28.A: Population Growth

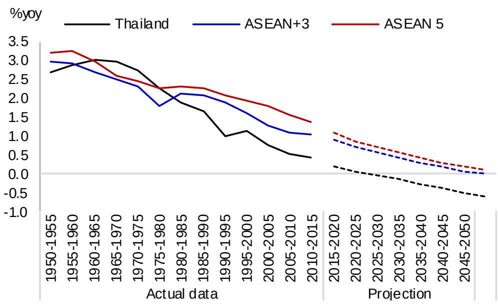


Figure 28.B: Fertility Rate

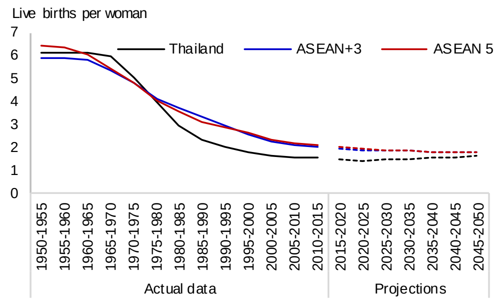
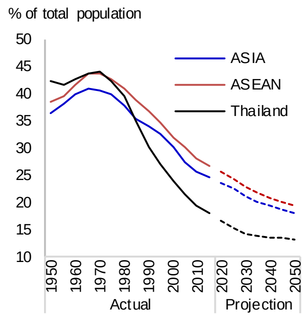
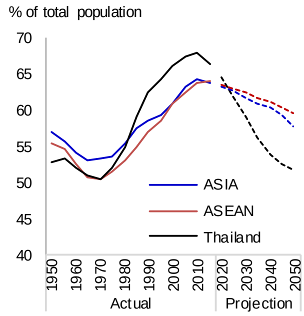


Figure 28.C: Share of Total Population by Age

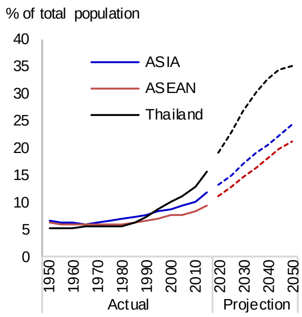
Child (0-14 years old)



Working Age (15-59 years old)



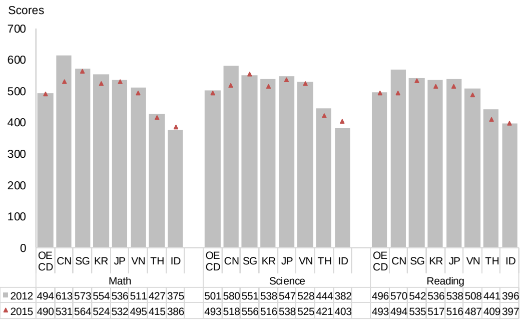
Old Age (60+ years old)



Source: United Nations

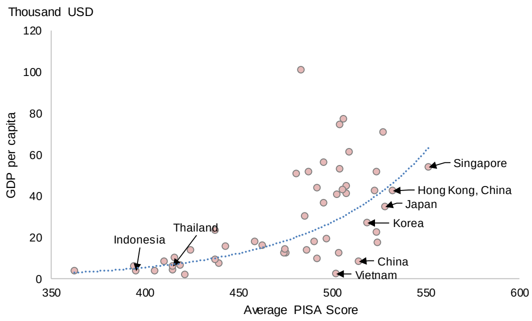
Figure 29: Mean Score of The OECD Program for International Student Assessment

PISA Scores in 2012 and in 2015 1/



	Math								Science								Reading							
	OECD	CN	SG	KR	JP	VN	TH	ID	OECD	CN	SG	KR	JP	VN	TH	ID	OECD	CN	SG	KR	JP	VN	TH	ID
2012	494	613	573	554	536	511	427	375	501	580	551	538	547	528	444	382	496	570	542	536	538	508	441	396
2015	490	531	564	524	532	495	415	386	493	518	556	516	538	525	421	403	493	494	535	517	516	487	409	397

PISA Score and GDP per Capita in 2015 2/



Note: 1/ The coverage of China's examination was expanded. The examination was held in Shanghai only in 2012 and in Beijing, Shanghai, Jiangsu, and Guangdong in 2015. 2/ Average PISA Score is an average of scores from math, science and reading tests.
Source: OECD, CEIC, AMRO staff calculation

[18] Source: AMRO staff's discussion with local entrepreneurs, and A Survey on Business Sentiment of Japanese Corporations in Thailand for The Second Half of 2016 (Rep.). (2017, February 20). Retrieved July 04, 2017, from Japanese Chamber of Commerce, Bangkok website: http://www.jcc.or.th/fdl/download/id/108

Authorities' views

28. **The authorities acknowledge challenges from the aging population.** Although the aging population would be a key challenge to the Thai potential growth in the medium term, the impact would be limited to certain sectors. This is because the private sector in agriculture and manufacturing has been preparing for the potential shrinkage of labor force by using more automation in the production process. As for shortage of skilled labors, the authorities together with the private sector are in the process to provide training to currently employed, unemployed or laid off workers, and the young graduates, so that they can acquire the knowledge and skills that are currently needed by the industries.

Policy Recommendations

C.1 Fiscal Role in Boosting Recovery and Restoring Private Investment

29. **An expansionary fiscal stance should be maintained to support economic recovery and to further crowd in private investment.** The supplementary budget of THB 190 billion will potentially enlarge the fiscal deficit by about one percent of GDP in FY2017. However, fiscal space remains adequate with the public debt at a moderate level of 40.0 percent of GDP, and the additional fiscal spending will help broaden and strengthen the recovery. The tax reform will contribute towards income equality and enhance corporate competitiveness. The Fiscal Responsibility Law, which will be enforced by the end of this year, will help safeguard Thailand's long-term fiscal sustainability.

30. Investment in public infrastructure should be stepped up to boost private investment. While growth continues to gain traction, infrastructure investment and fiscal stimulus could support a recovery of private investment and the economy. The government should accelerate the construction of transport infrastructure projects—upgrading logistics infrastructure will pave the way for more private investment and lower logistics costs in the country. The efforts in pushing forward non-debt financing, including Public Private Partnerships and the Thailand Future Fund for mega infrastructure projects, are commendable, since they will help contain fiscal deficit and growing public debt. However, investment in mega-infrastructure projects should be executed in a timely and well-coordinated manner to shore up subdued private investment and enhance the growth potential over the medium and long term. In order to maximize the boost from infrastructure investment, the government should also formulate an urban development plan that incorporates detailed local area development and the building of residential and commercial properties along transport links.

Authorities' Views

31. In the authorities' view, public spending has continued to support economic recovery and boost private investment. Public expenditure, in particular capital expenditure, the supplementary budget of THB 190 billion and additional investment in public infrastructure projects, will be the main driver of economic growth. In addition, the steady progress of the mega projects will support a revival of private investment which is expected to expand moderately in 2017.

C.2 Accommodative Monetary Environment

32. **The current accommodative monetary policy stance is appropriate.** Despite the current negative output gap and low inflation, a reduction in policy rate is unlikely to be effective due to ample liquidity in the financial system. In addition, Thailand's inflation has been less influenced by the domestic output gap, and more by commodities' prices and global demand since the Global Financial Crisis (See Section D.1 for more detail). Potential risks to financial stability that may arise from the growing search-for-yield behavior of investors and a build-up of household indebtedness warrant continued vigilance.

33. In view of the strong external position, the exchange rate is under upward pressure and should be managed to avoid exchange rate misalignments due to rapid appreciation. A sizable current account surplus and continuing capital inflows led to the appreciation of the Thai baht in both NEER and REER terms in 2017. Export recovery continued to gain traction, but needed to be more broad-based and more persistent in order to boost manufacturing production. In addition, downside risks to global trade recovery and structural constraints in the Thai export sectors remain. The Thai baht should be appropriately managed to avoid misalignments as those may affect business adjustments and hamper economic recovery.

Authorities' Views

34. **Thailand's monetary policy has remained accommodative and conducive to economic growth.** There continues to be ample liquidity in the financial system, with low bond yields and real interest rates. Meanwhile, business financing through both credit and capital markets has continued to expand. In the low interest rate environment, the search-for-yield behavior continues to warrant monitoring. The Thai baht has moved in line with other regional currencies in the second quarter of 2017.

C.3 Safeguarding Financial Stability

35. Regulatory reforms—in particular those related to household debt—are a welcome development. The ongoing SFI-related regulatory reform will enhance their financial soundness; and the reforms relating to savings co-operatives and credit unions, as well as the adoption of new regulations on informal financing, will protect households from over indebtedness and usury rates of interest. Considering the high household indebtedness level, the launch of the new loan restructuring program, the Household Debt Clinic, and the tightened regulation on credit cards and personal loans[19] are welcome as it will ease households' financial burden and enhance credit quality. The program should be expanded to include SFIs and savings cooperatives that are also creditors to many households. In addition, continuing efforts to enhance financial discipline and financial literacy of households—in particular low-income households and the youth—are desirable in order to promote prudent borrowing behavior.

Authorities' Views

36. Financial stability remains sound. Financial institutions have maintained sufficient cushion to safeguard against economic and financial volatilities. However, there are pockets of risks, such as a deterioration in debt servicing of SMEs as well as the search-for-yield behavior, which may lead to underpricing risks by investors in a low interest rate environment, that warrants close monitoring. Household indebtedness has been gradually improving, as reflected in the declining share of GDP. The authorities acknowledge that household indebtedness will have negative repercussions on the economy and lead to social problems; and therefore, many measures and initiatives have been put in place to curb the growth of household debt in the future.

[19] A change in regulations on credit card and personal loans under regulation are as follows.

	Regulations are effective until 31 August 2017.	**Regulations will be effective from 1 September 2017.**
Credit card – Monthly credit limit – Interest rate	– The minimum monthly salary for a credit card borrower is set at THB 15,000. – The credit limit should not exceed five times of the monthly income.	– The minimum monthly salary for a credit card borrower is set at THB 15,000. – The credit limit is based on a borrower's monthly income. For a borrower with a monthly income lower than THB 30,000, the credit limit is set at 1.5 times of the monthly income. For a borrower with a monthly income from THB 30,000 to 50,000, the credit limit is set at three times of the monthly income. For a borrower with a monthly income exceeding THB 50,000, the credit limit is set at five times of the monthly income. – The interest rate of credit card loans is reduced from 20.0 percent to 18.0 percent.
Personal loan – Monthly credit limit	– The credit limit should not exceed five times of the monthly income.	– The credit limit is based on a borrower's monthly income. For a borrower with a monthly income lower than THB 30,000, the credit limit is set at 1.5 times of the monthly income. The borrower is allowed to borrow from no more than three personal loan companies. For a borrower with a monthly income from THB 30,000 onward, the credit limit is set at five times of the monthly income without any limit on a number of a creditor.

C.4 Structural Reforms to Enhance Growth Potential

37. **Over the medium and long term, Thailand should step up efforts to increase potential growth in order to achieve its ambition of becoming a high-income country by 2026.** First, considering the demographic challenges of a rapidly aging population and the current shortage of skilled labor, labor productivity needs to be improved and more resources need be devoted to human resource development. Re-skilling of existing labor and greater use of foreign professionals are encouraged to meet the immediate needs of industries, while the education system should be reformed and improved to meet the changing needs of the economy, as a longer-term solution. Second, comprehensive structural reforms can contribute to the upgrading of capital investment and enhance the allocative efficiency of the economy. The 20-year Strategic Plan, including the Thailand 4.0 scheme and the flagship Eastern Economic Corridor project is a welcome initiative. Third, in order to cope with the rapid pace of an aging society, the social safety net should be expanded further, while taking into account long-term fiscal sustainability. Lastly, the authorities' emphasis on streamlining regulatory procedures related to business operations and customs administration will not only help reduce the private sector's cost of doing business, but will also enhance the country's competitiveness.[20]

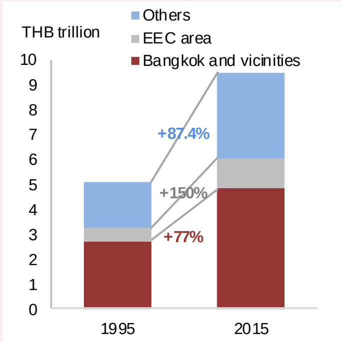
Authorities' Views

38. The authorities recognize the urgency of structural reforms and the need to improve the education system. Although there is little evidence to suggest that there is a shortage of human capital in the fields of science and vocational education, several education-related policies have been implemented that take into consideration the economic transition and structural changes in private demand for skilled labor. In terms of capital investment, besides investment promotion schemes, the government has expedited public infrastructure investment, upgraded the existing factory base and logistics network in the Eastern Economic Corridor area, and streamlined administrative procedures and unnecessary regulatory requirements in order to attract more foreign as well as domestic investment. In light of the aging society, the government has set up additional social safety nets including the National Savings Fund[21] and National Pension Fund[22]. In addition, personal income tax allowances related to childcare and pregnancy expenses were increased to address the low fertility rate.

[20] Thailand's rank according to the World Bank's Ease of Doing Business survey improved to 46th in 2017 from the 49th in 2016, thanks mainly to improving procedures relating to availing of credit and starting a new business.
[21] The National Savings Fund was set up to promote saving behavior to labor force in the informal sector such as street hawkers, the youth, and households in the agricultural sector who cannot access to existing pension systems including the Government Pension Fund and private provident funds.
[22] Ministry of Finance is now proposing to set up the National Pension Fund (NPF). The NPF members will consist of employees in the private sector, temporary employees of the government agencies, and employees of state-owned enterprises. With the NPF, post-retirement income of aforementioned potential NPF members is expected to be around 20 – 50 percent of their pre-retirement income.

Box: The Thailand 4.0 Policy and The Eastern Economic Corridor Development Plan

Figure 30. GDP by Region

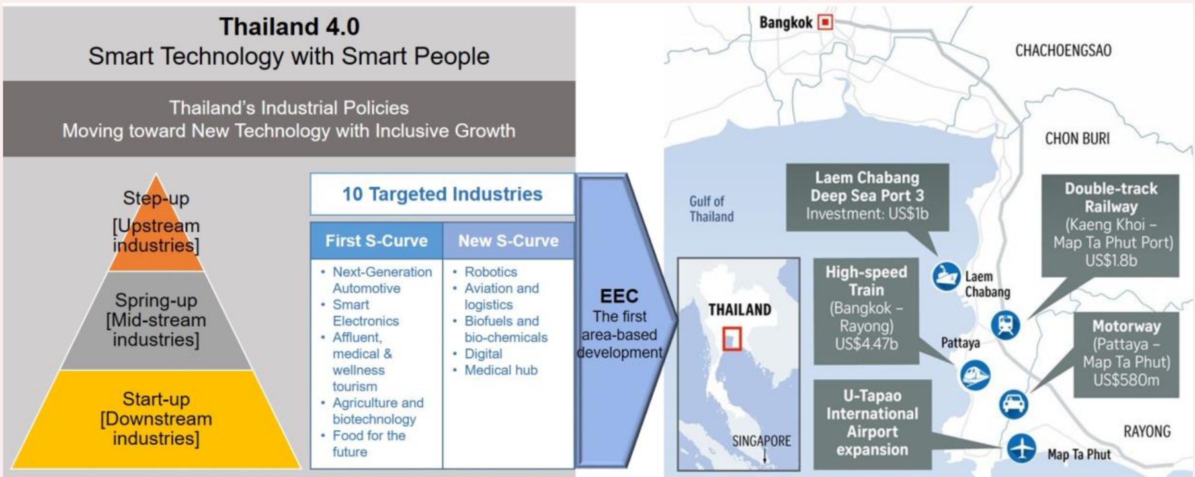


Source: NESDB, AMRO staff calculations

1. The Thailand 4.0 policy aims at pushing the country out of the middle income trap and lift the country to the higher global value chain. The country would be transformed to a value-based and innovation-driven economy by promoting the use of advance technology, innovation and creativity in the production process. The policy focuses on ten targeted industries—automotive, smart electronics, medical and wellness tourism, agriculture and biotechnology, food, robotics, aviation and logistics, biofuels and biochemical, digital, and medical.

2. The EEC development plan is aimed at upgrading the current Eastern Seaboard to make it a leading economic zone in ASEAN, connecting the Dawei deep-sea port in Myanmar, the Sihanoukville Port in Cambodia, and the Vung Tau Port in Vietnam, given Thailand's strategic location at the center of northern ASEAN. The Eastern Seaboard is currently a major production base for the petrochemical, energy and automotive industries. The plan is to make the area an industrial hub of ten advanced-technology industries encompassed in the Thailand 4.0 policy. In terms of infrastructure development, the current deep-sea ports and the international airport, located in the area, will be expanded, while highways and high-speed rails will be extended and built to link the area with the rest of the country and other countries. The plan will be completed by 2021 with total investment by the public and private sectors expected to be around THB 1.5 trillion or equivalent to 10.4 percent of GDP[1].

Figure 31. Eastern Economic Corridor Development Project and Thailand 4.0 Initiatives



Source: Board of Investment, Ministry of Transport, Languepin, O. (2017, May 11)

Note: 1/ Based on Nominal GDP in 2016.

Table: The Infrastructure Development Plan of the Eastern Economic Corridor

Expected year to embark	Action plan
2016 - 2017	**Industrial zone** • Prepare land plots of 15,000 Rai[1/] for an industrial park • Initiate a new land development plan for all provinces in the EEC area • Set up the research and development hub of robotic, aripolis and biopolis research **Logistics infrastructure** • Expand the highway linked to Leamchabang Port • Expand the capacity of U-Tapao International Airport terminals in order to accommodate three million passengers per day • Construct a double-track railway to connect Chachoengsao and Kaeng Khoi • Renovate the ferry terminal to Larn island **Public utilities** • Improve conditions and expand capacities of electricity and water supply
2018 – 2020	**Industrial zone** • Construct an industrial park for the new S-curve industries **Logistics infrastructure** • Extend the Pattaya – Mabtaphut motorway • Increase the capacity of the Single Rail Transfer Operator (SRTO) of the Leamchabang Port to accommodate up to two million TEU per year. • Expand Pier A of the Leamchabang Port to accommodate up to 300,000 TEU per year • Expand the capacity of U-Tapao International Airport by constructing a high-speed taxiway and the second runway • Expand the capacity of Sattahip Sea Port to accommodate freighters and big ferries **Public utilities** • Increase the capacity of water reservoir and water supply
2021 onwards	**Logistics infrastructure** • Construct the Chonburi – Nakhornratchasima motorway • Construct the Bangkok – Rayong high-speed train • Expand the Leamchabang Port Phase 3 to accommodate 18 million TEU per year • Construct the tram system in Pattaya • Operate ferry routes in the Gulf of Thailand • Set up a new maintenance, repair and overhaul facility and a new training center for aviation services, and operate air cargo services at the U-Tapao International Airport • Set-up a free trade zone **Public utilities** • Increase the capacity of electricity

Note: 1/ Rai is a Thai system of land measurement. One rai is equivalent to 1,600 square meters.
Source: Kasikornbank, Office of National Economic and Social Development Board, as of February 2017

Reference:
Ministry of Transportation, Board of Investment, Office of National Economic and Social Development Board
Languepin, O. (2017, May 11). What's in for Thailand in the Eastern Economic Corridor Project? - Business, Economics, Featured. Retrieved July 25, 2017, from https://www.thailand-business-news.com/business/57135-thailand-eastern-economic-corridor.html

Appendices

Appendix 1. Selected Key Economic Indicators

Appendix 1A. Selected Economic Indicators and Projections, 2012 – 2018

	2012	2013	2014	2015	2016	2017	2018
						Projections	
Real sector and prices	(In percent change unless specified)						
Real GDP	7.3	2.7	0.9	2.9	3.2	3.5	3.6
Final consumption (in percent of GDP)	69.3	68.6	69.6	68.7	67.8	67.9	67.7
- Private sector	53.0	52.2	52.6	51.4	50.7	50.8	50.7
- General government	16.4	16.4	17.0	17.3	17.1	17.1	17.1
Capital formation (in percent of GDP)	28.0	27.4	24.0	22.2	22.0	24.4	25.0
- Private sector	21.1	19.7	19.5	18.3	17.8	18.0	18.1
- General government	5.9	5.7	5.2	6.3	6.5	7.0	7.1
- Change in inventories	1.0	2.1	-0.7	-2.4	-2.3	-0.7	-0.2
Savings (in percent of GDP)	27.9	26.7	28.0	30.7	33.3	33.4	32.4
GDP deflator	1.8	1.8	1.3	0.6	1.7	0.2	2.0
Consumer price inflation (period average)	3.0	2.2	1.9	-0.9	0.2	0.7	1.6
Consumer price inflation (end of period)	3.6	1.7	0.6	-0.9	1.1	1.0	2.0
External sector	(in billions of U.S. dollars unless specified)						
Current account balance	-1.7	-4.9	15.2	32.1	47.7	40.0	34.6
(In percent of GDP)	-0.4	-1.2	3.7	8.0	11.7	9.0	7.3
Trade balance	0.0	0.0	17.2	26.8	36.5	27.0	20.9
Exports, f.o.b.	227.7	227.5	226.6	214.0	214.3	239.5	263.3
Imports, f.o.b.	227.6	227.4	209.4	187.2	177.7	212.5	242.4
Services, net	4.1	11.4	10.3	19.2	24.2	25.9	26.5
Receipts	49.7	58.8	55.5	61.8	66.4	71.3	76.6
Payments	45.7	47.4	45.2	42.5	42.2	45.4	50.1
Primary income, net	-18.2	-26.9	-21.0	-20.6	-19.9	-19.7	-19.7
Secondary income, net	12.5	10.6	8.7	6.7	6.8	6.8	6.8
Financial account balance	12.8	-2.5	-16.0	-17.1	-26.5	-22.7	-23.9
Direct investment	-1.4	3.8	-0.8	4.0	-12.6	-12.5	-12.0
Portfolio investment, net	3.4	-4.8	-12.0	-16.5	-2.8	-3.8	-5.0
Other investment, net	10.2	-1.2	-4.1	-5.5	-11.4	-6.9	-7.4
Overall balance	5.3	-5.0	-1.2	5.9	4.9	1.0	2.6
Gross official reserves	181.6	167.3	157.1	156.5	171.9	172.9	175.5
(In months of imports of goods & services)	8.0	7.3	7.4	8.2	9.4	9.7	9.1
Short-term in percent of total external debt	44.5	43.6	40.2	37.6	40.3	40.2	40.2
General government /1	(In billion baht)						
Revenue	1,977.7	2,163.5	2,075.7	2,207.0	2,411.8	2,370.0	2,450.0
(In percent of FY GDP)	16.8	16.8	15.8	16.3	17.0	16.1	15.8
Expenditure	2,295.3	2,402.5	2,460.0	2,601.4	2,807.4	2,923.0	2,900.0
(In percent of FY GDP)	19.5	18.7	18.7	19.2	19.8	19.8	18.7
Budget balance	-317.7	-239.0	-384.3	-394.4	-395.6	-553.0	-450.0
(In percent of FY GDP)	-2.7	-1.9	-2.9	-2.9	-2.8	-3.7	-2.9
Public debt (In percent of FY GDP)	42.0	42.3	43.6	43.1	42.8	…	…
Monetary sector	(In percent change)						
Domestic credit	15.2	7.9	5.6	4.6	3.6	4.4	5.0
Broad money	10.4	7.3	4.7	4.4	4.2	4.2	4.3
Memorandum items:	(In percent change unless specified)						
Debt service in percent of exports of goods and services	4.2	4.0	4.9	4.4	4.3	3.9	3.6
Total external debt in percent of GDP	32.9	33.8	34.9	35.0	32.3	29.9	28.9
Exchange rate (THB per US$, average)	31.1	30.7	32.5	34.3	35.3	33.5	33.5
Exchange rate (THB per US$, end of period)	30.6	32.9	32.9	36.0	35.8	33.2	33.2
GDP in billions of baht	12,357	12,921	13,204	13,673	14,367	14,899	15,746
GDP in billions of U.S. dollars	397.5	420.4	406.5	399.2	407.0	445.4	470.7

Note: 1/ Fiscal year is October-September. FY2017 is the budget proposal
Sources: National authorities, AMRO staff estimates

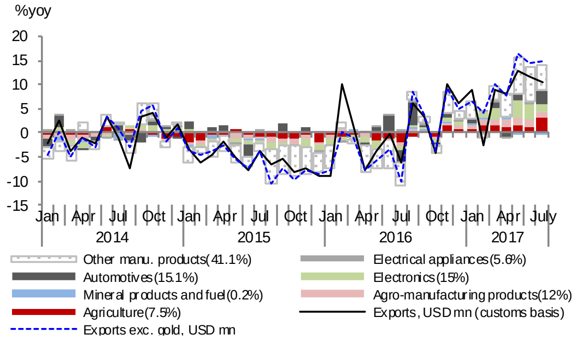
Appendix 1B. Government Accounts [1/]

Unit: THB billion	FY2014			FY2015			FY2016			FY2017			
	Budget	Actual outturn	%yoy	Budget	Actual outturn	%yoy	Budget[12/]	Actual outturn	%yoy	Budget incl supplementary budget	Actual outturn (9 months)	%yoy	Disbursement rate
Fiscal revenue (accrual basis)													
Gross revenue[2/]	**2,718.3**	**2,494.0**	-3.0	**2,765.5**	**2,619.9**	**5.0**	**2,835.4**	**2,813.0**	**7.4**	**2,800.0**	**2,044.8**	**2,087.0**	**-2.0**
- Tax revenue	2,547.6	2,289.8	-4.9	2,582.2	2,364.2	2.4	2,655.6	2,387.2	1.0	2,601.1	1,788.1	1,741.3	2.7
· **Revenue Dept.**	1,890.3	1,729.5	-2.0	1,964.9	1,729.2	0.0	1,894.7	1,757.9	1.7	1,866.6	1,289.9	1,264.2	2.0
· **Excise Dept.**	463.6	382.4	-11.6	421.1	439.1	14.7	496.0	517.7	17.9	549.5	420.4	392.1	7.2
· **Customs Dept.**	129.8	106.0	-4.4	110.8	115.5	6.0	118.5	111.5	-3.4	118.2	77.9	85.0	-8.4
· **Others[3/]**	62.9	71.9	-27.3	85.5	80.4	11.8	146.4	n.a.	n.a.	66.8	n.a.		n.a.
- Other revenue[4/]	174.2	204.2	24.0	183.3	336.1	27.1	179.8	425.9	26.7	198.9	256.7	345.7	-25.7
Net revenue[5/]	**2,275.0**	**2,075.0**	**-4.0**	**2,325.0**	**2,310.2**	**6.7**	**2,386.0**	**2,497.4**	**8.1**	**2,343.0**	**1,792.9**	**1,846.8**	**-2.9**
(% of GDP)		*15.9*		*17.2*	*16.5*		*16.6*			*15.8*			
Fiscal cash balance (cash basis)													
Revenue collected by Government[6/]	2,275.0	2,075.7	-4.1	2,325.0	2,207.0	6.3	2,330.0	2,411.8	9.3	2,370.1	1,740.3	1,808.6	-3.8
Expenditure[7/]	2,525.0	2,459.9	2.4	2,575.0	2,601.4	5.8	**2,776.0**	2,807.4	7.9	**2,923.0**	**2,257.5**	**2,248.7**	**0.4**
(% of GDP)		*18.8*		*19.1*	*19.4*		*19.7*						
- Current expenditure	2,014.6	1,962.3	3.6	2,027.9	2,106.6	7.4	2,127.8	2,214.1	5.1	2,156.5	1,803.5	1,785.8	1.0
- Capital expenditure	441.1	284.1	2.7	449.5	271.6	-4.4	564.4	364.9	34.4	659.0	274.5	264.7	3.7
Budget balance	-250.0	-384.3		-250.0	-394.4		-390.0	-395.6		-552.9	-517.2	-466.4	
- Budget balance (% of GDP)	-1.9	-2.9		-1.8	-2.9		-2.8	-2.8		-3.7			
Non budgetary balance[9/]		25.0			74.9			20.7			-68.5		
Cash balance: before financing		-359.3			-319.6			-374.9			-585.7		
Borrowing to Finance the Deficit		250.0			250.0			390.0		-552.9	429.7		
Fiscal cash balance		-109.3			-69.6			15.1			-156.0		
Treasury Reserve Account[10/]		495.7	-18.1		426.2	-14.0		441.3	14.3		688.1		
Public Debt (% of GDP)[11/]		**43.6**			**43.1**			**42.6**			**41.5**		

Note: 1/ FY2016 is October 2015-September 2016.
2/ Revenue is recorded by accrual, thus the figures are slightly different from the revenues in Table 1, which are recorded on a cash basis.
3/ Referred to Thailand's budget in brief, other tax revenue include revenue collected by the Department of Mineral Fuels, the National Police Office, The Office of the National Broadcasting and Telecommunications Commission and other government agencies.
4/ Other revenue includes revenue from SOEs and other government agencies.
5/ Net revenue is the gross revenue excluding the tax rebate of the Revenue Department, the VAT allocation to provincial and local administrative organizations and export duty compensation.
6/ The revenues are recorded on a cash basis, thus the figures are slightly different from the revenues in the Table 2, which are recorded on an accrual basis.
7/ Expenditure includes current-year expenditure and carry over.
8/ Actual deficit refers to the budget balance.
9/ The non-budgetary balance cover the operation of autonomous organizations that are established under specific laws, such as the National Health Security Office and Social Security Office. Therefore, their budget proposals do not need to be scrutinized by the government.
10/ The treasury reserve account is in terms of the end-of-period outstanding number.
11/ The numbers for FY2013-FY2015 are as of the end of the fiscal year (September), while the number for 2016 is as of August 2016.
12/ The budget structure of FY2016 is according to Thailand's budget in brief FY2017, excluding the supplementary budget.
Source: Bureau of The Budget, The Comptroller General's Department, Fiscal Policy Office, Public Debt Management Office, AMRO staff calculations

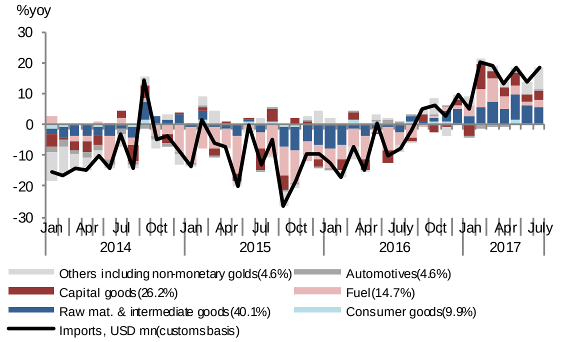
Appendix 2. Selected Charts: Breakdown Data of Select Economic and Financial Indicators

Exports have expanded in almost all sectors since Q4 2016.



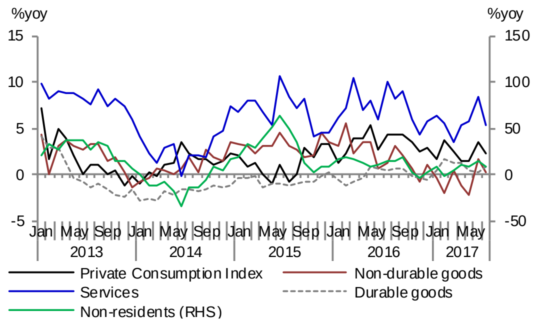
Source: Customs Department, Bank of Thailand, AMRO staff calculations

Imports grew on the back of rising oil prices combined with a rebound of capital goods, raw materials and capital goods imports.

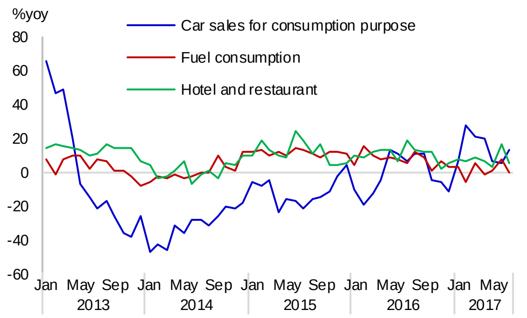


Source: Customs Department, Bank of Thailand, AMRO staff calculations

The expansion of private consumption in 2017 was mainly driven by service consumption and car purchases.

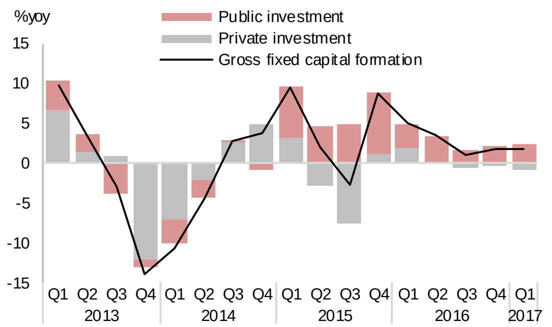


Source: Bank of Thailand, AMRO staff calculations

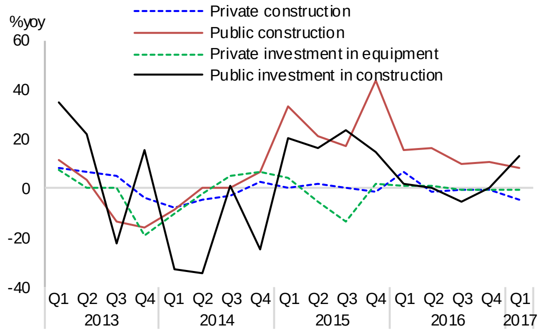


Source: Bank of Thailand, AMRO staff calculations

Public investment was the main driver of overall investment, while private investment remained soft.



Source: Office of National Economic and Social Development Board, AMRO staff calculations



Source: Office of National Economic and Social Development Board, AMRO staff calculations

Production in the electronics and electrical machinery sectors grew substantially, while that in other sectors declined.

Product	2014	2015	2016	2016 Q2	2016 Q3	2016 Q4	2017 Q1	2017 Q2
Chemicals and Chemical Products	107.5	110.9	110.6	111.1	113.7	107.8	110.3	109.3
%yoy	3.2	3.1	-0.2	0.3	0.1	-1.0	0.5	-1.7
Electrical Machinery and Apparatus	104.1	115.3	115.3	114.1	114.5	117.2	127.0	122.6
%yoy	-9.0	10.7	0.0	-1.5	-0.9	5.7	10.2	7.5
Electronics	111.5	100.2	106.3	102.2	108.7	112.1	116.9	112.6
%yoy	11.7	-10.2	6.1	4.3	7.2	12.1	14.5	10.1
Food Products and Beverages	110.0	110.0	112.3	109.6	104.9	112.0	124.8	111.7
%yoy	3.0	0.0	2.0	0.7	2.4	2.1	1.7	1.9
Machinery and Equipment	114.2	110.4	126.9	144.2	120.3	104.8	134.5	134.3
%yoy	0.9	-3.4	14.9	19.9	24.8	6.3	-2.8	-6.8
Motor vehicles and transport equipment	114.0	116.4	117.1	114.8	111.8	114.3	120.8	114.0
%yoy	-21.3	2.0	0.7	13.4	-3.7	-3.3	-5.3	-0.7
Paper and Paper Products	106.8	107.9	113.5	113.4	113.9	110.6	114.9	115.3
%yoy	3.9	1.1	5.2	6.9	5.9	-0.6	-1.2	1.7
Petroleum	129.6	152.6	156.3	153.2	161.2	165.5	145.1	164.8
%yoy	-5.9	17.8	2.4	0.6	3.7	6.1	-0.2	7.5
Rubber and Plastics	96.4	96.2	96.7	91.6	92.6	95.9	104.2	93.7
%yoy	-4.2	-0.2	0.6	3.8	-3.8	-2.8	-2.4	2.4
Textiles, apparel and footware	94.3	91.1	84.1	80.8	82.2	85.7	84.7	80.2
%yoy	0.4	-3.3	-7.7	-9.5	-7.3	-5.2	-3.5	-0.7
Tobacco Products	96.6	94.3	85.7	85.1	78.8	85.1	89.0	77.3
%yoy	-3.2	-2.4	-9.2	15.6	-13.9	-9.5	-5.0	-9.1
Others	112.4	109.2	110.7	110.4	112.8	110.9	111.5	100.9
%yoy	3.8	-2.9	1.4	-0.2	1.9	6.8	2.4	-8.5

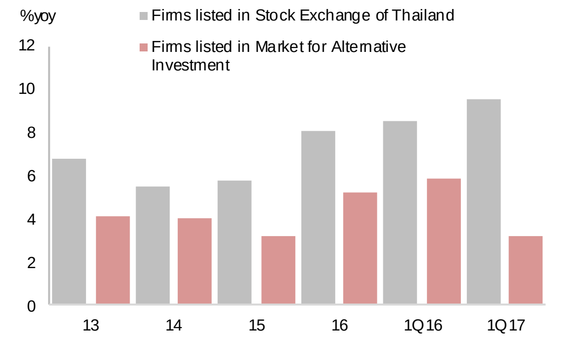
Source: Office of Industrial Economics, AMRO staff calculations

However, capacity utilization improved in IT industry, electrical machinery, and petroleum and petrochemical industry.

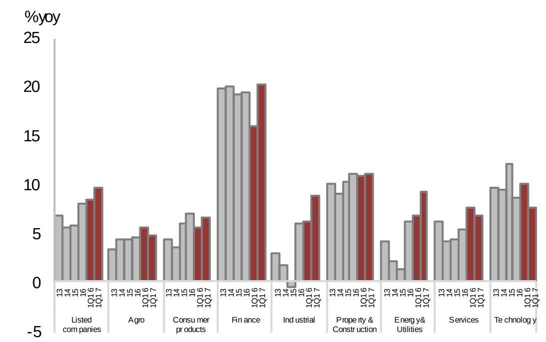
Product	2014	2015	2016	2016 Q2	2016 Q3	2016 Q4	2017 Q1	2017 Q2
Chemicals and Chemical Products	69.3	70.1	70.4	71.0	71.9	68.8	70.5	70.5
Electrical Machinery and Apparatus	58.7	64.1	63.7	63.3	63.2	64.5	71.5	68.0
Electronics	62.5	56.7	58.9	56.9	60.4	62.3	63.5	63.3
Food Products and Beverages	48.9	49.0	50.0	48.1	46.5	50.3	55.9	49.3
Machinery and Equipment	84.4	86.2	86.6	64.7	58.8	52.3	64.4	61.5
Motor vehicles and transport equipment	54.7	58.4	53.6	74.4	72.4	74.4	80.6	73.8
Paper and Paper Products	67.2	67.5	69.3	69.2	69.6	68.0	70.9	70.9
Petroleum	76.3	85.4	81.4	77.4	77.6	86.5	74.8	80.2
Rubber and Plastics	56.5	55.4	55.2	53.2	53.0	53.9	60.0	52.5
Textiles, apparel and footware	55.3	54.5	50.0	48.6	48.4	50.8	51.4	47.9
Tobacco Products	46.8	45.6	41.4	41.2	38.1	41.2	44.2	37.4
Others	55.0	52.6	52.6	52.5	53.6	51.6	53.8	49.5

Source: Office of Industrial Economics, AMRO staff calculations

Net profits of large listed companies in many sectors improved, while net profits of medium-sized companies, listed in the Market for Alternative Investment, declined in 2017.

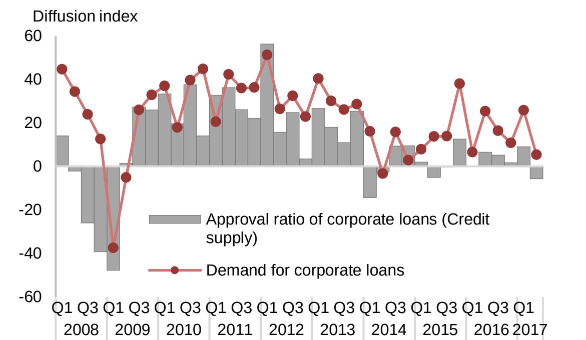


Source: Stock Exchange of Thailand

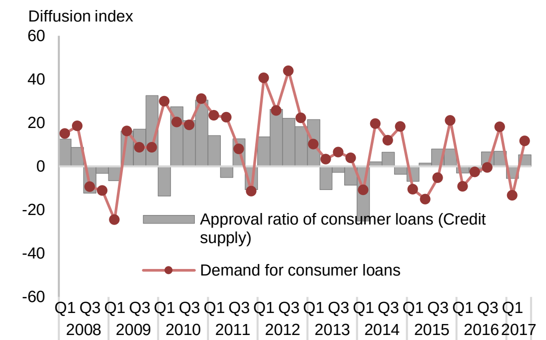


Source: Stock Exchange of Thailand

Commercial banks remained cautious in approving credit applications. Meanwhile, the demand for corporate loans trended upward, while demand for consumer loans was volatile.

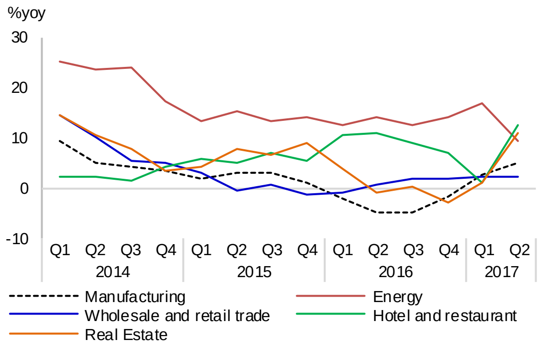


Note: The demand for corporate loans is estimated by financial institutions' senior loan officers in BOT's quarterly credit condition survey. A diffusion index above 0 indicates increasing loan demand in the last quarter. An index equal to 0 reflects unchanged loan demand in the last quarter, while one below 0 implies declining loan demand.
Source: Bank of Thailand



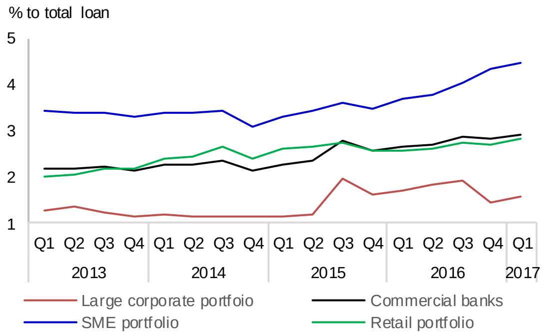
Note: The demand for consumer loans is estimated by financial institutions' senior loan officers in BOT's quarterly credit condition survey. A diffusion index above 0 indicates increasing loan demand in the last quarter. An index equal to 0 reflects unchanged loan demand in the last quarter, while one below 0 implies declining loan demand.
Source: Bank of Thailand

Commercial banks' loans to the manufacturing sector edged up in Q1.



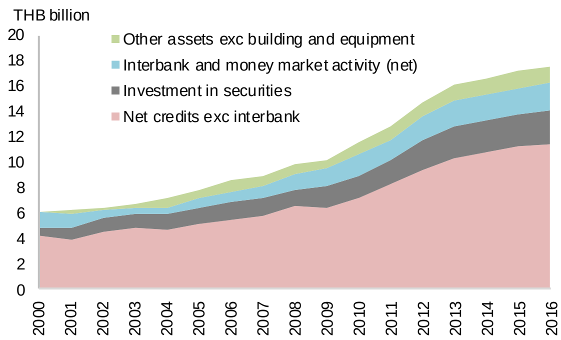
Source: Bank of Thailand, AMRO staff calculations

Commercial banks' non-performing loans gradually rise.



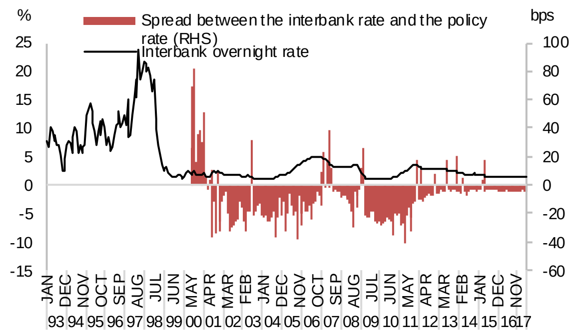
Source: Bank of Thailand, AMRO staff calculations

In the commercial banks' asset structure, a share of interbank assets, money market assets and investments in securities gradually expanded.



Source: Bank of Thailand, AMRO staff calculations

The interbank market continues to see ample liquidity.



Note: Inflation targeting, and thus, the policy rate, was adopted in May 2000.
Source: Stock Exchange of Thailand

Appendix 3. Data Adequacy for Surveillance Purposes: A Preliminary Assessment

Surveillance Areas	Data Availability[i]	Reporting Frequency/Timeliness[ii]	Data Quality[iii]	Consistency[iv]	Others, if Any[v]
National Account	Available	Quarterly, six weeks after the end of the reference quarter, based on an advance release calendar.	-	-	-
Balance of Payments (BOP) and External Position	Available	BOP data are reported monthly with a two-month lag (one-month lag for trade data), released on last business day of the month. Official reserve assets reported weekly with a one-week lag. External debt reported quarterly with a one quarter lag. Exchange rates reported daily with at 06.00 pm (BKK-GMT+07:00) on that working day.	-	-	-
State Budget and Government/ External Debt	Available	Planned budget announced before the beginning of the fiscal year in October (annual). Budget implementation (expenditure and revenue) reported monthly with a one-month lag. Government/external debt reported monthly with a one-month lag.	-	-	-
Money Supply and Credit Growth	Available	Monetary aggregates and monetary survey reported monthly with a one-month lag. Credit and deposit data reported monthly with a six-week lag.	-	-	-
Financial Sector Soundness Indicators	Available	"Performance of the Thai Banking System", as well as related data, reported quarterly by the BOT with a quarter lag.	-	-	-
State-Owned-Enterprises' Statistics	Available	(1) State Enterprise Key Indicators (quarterly, in Thai) by the State Enterprise Policy Office (SEPO) under the MOF. (2) State Enterprise Review published annually by SEPO for individual SOEs as well. (3) Monthly and (4) Quarterly report on data and performance review (respectively) of Specialized Financial Institutions (no fixed calendar of release) Listed companies must follow stock exchange disclosure requirements.	-	-	-

Notes:
(i) Data availability refers to whether the official data are available for public access by any means.
(ii) Reporting frequency refers to the periodicity of data publication. Timeliness refers to how up-to-date the published data are relative to the publication date.
(iii) Data quality refers to the accuracy and reliability of the available data given the data methodologies are taken into account.
(iv) Consistency refers to both internal consistency within the data series itself and its horizontal consistency with other data series of either same or different categories.
(v) Other criteria might also apply, if relevant. Examples include but are not limited to potential areas of improvement for data adequacy.

Source: AMRO staff compilations. This preliminary assessment will form the "Supplementary Data Adequacy Assessment" in the EPRD Matrix.

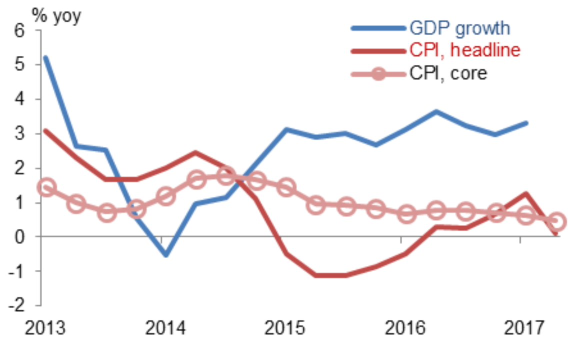
Appendix 4. Selected Issue 1: How have Inflation Dynamics Changed in Thailand?

Relationship between inflation and real activities

1. **Traditionally, inflation indicators have been used to help judge real economic conditions, but recently the linkages between inflation and labor market condition and growth appear have weakened.** In 2008-09, the advanced economies had witnessed low and stable inflation despite the emergence of large and persistent output gaps—also referred to as the "missing disinflation puzzle". In recent years, however, some economies such as Eurozone and Japan, have been showing a modest recovery in growth, while consumer inflation still remains low ("missing inflation puzzle").

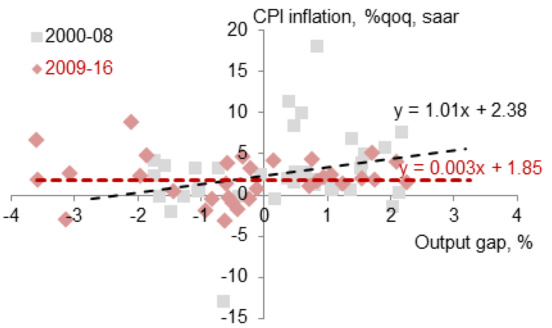
2. **In recent years, Thai inflation has likely become less sensitive to the underlying economic slack.** Since 2014, real GDP growth in Thailand has been expanding at a modest pace. Headline inflation turned negative in 2015, mainly driven by falling global oil prices, and while turning positive in 2016, remained soft even though economic slack has been narrowing. At the same time, core inflation, excluding raw food and energy, has been declining gradually (Figure 4.1). Scatter plots of the CPI inflation and the Hodrick-Prescott-filtered output gap hint at a potential flattening of the Phillip's curve implying that Thai inflation is likely to respond less to real economic activities now as compared to the pre-GFC period although a more rigorous assessment would require controlling other variables such as inflation expectations and supply-side factors (Figure 4.2).

Figure 4.1. GDP Growth and Consumer Inflation



Source: Office of the National Economic and Social Development Board, Ministry of Commerce, AMRO staff calculations

Figure 4.2. CPI Inflation and Output Gap



Note: Output gaps are calculated using the Hodrick-Prescott filter. The dotted lines indicate regression lines in two sub-samples.
Source: Ministry of Commerce, AMRO staff estimates

What has driven CPI inflation in Thailand?

3. **To investigate inflation dynamics in Thailand, we estimated a model of the dynamic effects on CPI inflation of its key determinants over the past three decades.** To assess the key drivers of Thailand's inflation dynamics, we construct a structural vector autoregressive (SVAR) model[23], consisting of five key factors: global demand (proxied by global output gap[24]), global supply (global oil prices), domestic demand (domestic output gap), domestic supply (producer prices,

[23] The methodology of this analysis was motivated by Osorio and Unsal (2011), "Inflation Dynamics in Asia: Causes, Changes, and Spillovers from China" IMF WP11/257.

[24] Following the relevant literature, we construct the global output gap variables by aggregating 17 advanced and emerging economies' output gaps, either using IMF-published or HP-filtered estimates. For the country weights, trade value-weights and PPP-based GDP, U.S. dollar-based GDP weights are employed. As the selection of weighting schemes does not affect our analysis qualitatively, we report the estimate results here based on the trade value-weighted global gap measure.

exchange rate[25]) and monetary policy (discount rate[26]). For shock identification, Cholesky decomposition is exploited.[27] With a view to examining potential changes in inflation dynamics, we compare the key drivers' evolution across three sub-periods: 1985Q1-1997Q2 (pre-Asian Financial Crisis (AFC)); 1999Q1-2008Q2 (the first decade after the AFC); 2009Q1-2016Q4 (post-Global Financial Crisis (GFC)).

4. **Following the AFC, global supply factors began to significantly influence Thailand's CPI inflation in line with its increased integration into the global economy.** Key observations from our SVAR variance decomposition results (Figure 4.3) are summarized as follows: First, real shocks were the dominant drivers of CPI inflation after the AFC, in line with Thailand's heightened integration into the global economy, with supply shocks (mainly commodity and producer prices) explaining about 60.7 percent of total variation in the post-GFC period and demand shocks accounting for 13.8 percent in the same period. Second, the contribution of external factors to CPI inflation became more pronounced after the AFC both on the supply and demand sides. This might be due to elevated volatilities in global commodity prices as well as large swings in external demand after the GFC[28]. Third, in the post-GFC period, the autoregressive component of CPI inflation became more significant which implies that CPI inflation became more persistent and difficult to change from its recent trend.

5. **More specifically, commodity prices and production costs were key determinants of CPI inflation while global demand played a greater role than domestic demand in the post-GFC period[29].** Among supply shocks, commodity prices accounted for 33.7 percent of Thai inflation fluctuations in the post-GFC period while production costs accounted for 25.2 percent. Among demand shocks, the contribution of global output gap substantially exceeded that of domestic output gap (Figure 4.4). This lends some support to the so-called "globalization hypothesis", according to which the role of domestic output gap in driving inflation may be replaced by global economic slack as globalization increases.[30]

[25] In this analysis, exchange rate was classified as a supply factor, focusing its impact on import prices of materials in local currency.
[26] Due to lack of data availability before 2000Q2, the discount rate data is used as proxy of the monetary policy stance. We observe that since 2000 the discount rate and BOT policy rate comove with a high correlation of about 0.90.
[27] Endogenous variables are placed in the order of global output gap, global oil prices (average spot crude price), exchange rate (THB/USD), producer price (PPI), domestic output gap, consumer price (CPI), and interest rate. Changing this order does not affect our findings qualitatively. For estimation, we allow one lag for VAR model and use seasonally adjusted and quarterly differenced data except for global and domestic output gaps.
[28] See Auer, Borio and Filardo (2017), "The globalization of inflation: The growing importance of global value chains" BIS WP
[29] For increasing dependence of Thai inflation on the global output gap, see Pym Manopimoke and Wanicha Direkudomsak (2015) "Thai Inflation Dynamics in a Globalized Economy", https://www.bot.or.th/Thai/MonetaryPolicy/ArticleAndResearch/SymposiumDocument/symposium2015_paper3.pdf
30 However, in the relevant academic literature, empirical validity of the globalization hypothesis remains inconclusive mainly due to its sensitivity to model specifications as well as measurements of global economic slack.

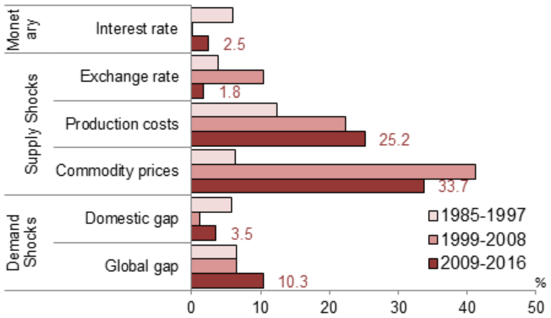
Figure 4.3. Contribution of Aggregated Shocks to Inflation Variation

(in percent)

	Inflation Trend	Real Shocks				Monetary Shocks
		Demand		Supply		
		Global	Domestic	Global	Domestic	
1985-97	59.2	6.5	5.8	6.4	16.3	5.9
1999-08	18.4	6.5	1.1	41.2	32.6	0.1
2009-16	23.1	10.3	3.5	33.7	27.0	2.5

Note: Based on forecast error variance decomposition for endogenous changes in CPI inflation over 10 quarters.
Source: AMRO staff estimates

Figure 4.4. Contribution of Individual Shocks to Inflation Variation



Note: Based on forecast error variance decomposition for endogenous changes in CPI inflation over 10 quarters.
Source: AMRO staff estimates

Policy implications and discussion

6. **Our SVAR analysis suggests that the low and negative CPI inflation in recent years can be explained by weak global commodity prices, low production costs, and global economic slack.** Our estimation shows that about two-thirds of CPI inflation fluctuation can be explained by changes in commodity prices, production costs, and global demand. Moreover, inflation has become more persistent which makes it more difficult for low inflation trend to be reversed in a short period of time. The rising contribution of global components to CPI inflation may be associated with Thailand's greater participation in global trade, more specifically global value chain networks since the mid-1980s. Having said that, a recent moderation in Thailand's trade openness may mean that the influence of global demand on domestic inflation has diminished somewhat going forward (Figure 4.5).

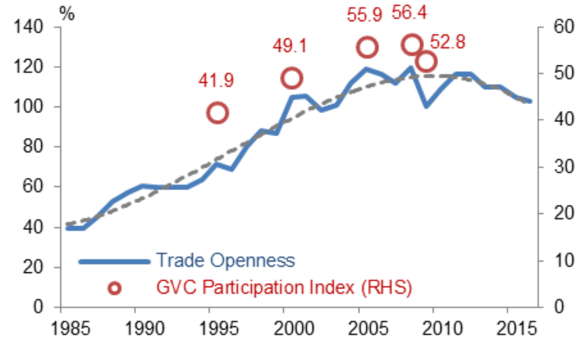
7. **In the baseline scenario, considering a mild recovery in commodity prices and global demand, Thailand's CPI inflation is projected to remain subdued in the near term.** Having said that, one cannot rule out an upside risk scenario, albeit with a low probability that Thai inflation may rise very rapidly along with an unexpectedly rapid recovery of oil prices and global demand.

8. **Further investigation is needed to assess the possibility of structurally low consumer inflation.** Our SVAR analysis suggests that the connection between the domestic output gap and CPI inflation may have weakened compared to the pre-AFC period.[31] To assess whether weakening of these linkages is temporary or permanent, some structural aspects of the recent low consumer inflation trends need to be taken into account. These include wage compressions which are highly correlated with core inflation (Figure 4.6), retailers' margin squeezes that emerge from greater competition—especially from online shopping, and a change in consumers' saving and spending behaviour due to the aging society. Moreover, some analysts have attributed the low and stable inflation to well-

[31] Further investigation may need to identify if lower contribution of domestic gap shocks in the post-AFC period attributed to looser connection between domestic gap and inflation, or lower variance of domestic gap shocks. In this regard, analyzing with time-varying VAR models allowing structural shocks with heteroskedasticity may be considered for future research direction.

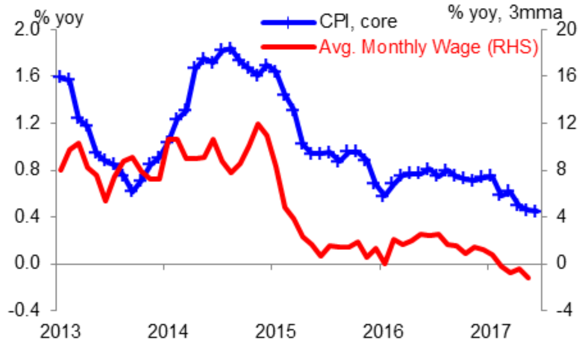
anchored inflation expectations formed by a successful implementation of monetary policy. All these hypotheses require further empirical investigation in the context of the Thai economy.

Figure 4.5. Trade Openness and GVC Participation



Note: The dotted line indicates a polynomial trend of trade openness, proxied by the sum of exports and imports in percentage of GDP.
Source: IMF, OECD, AMRO staff calculations

Figure 4.6. Wage Growth and Core Inflation



Note: Average monthly wage data is based on all industries, which include both agriculture and non-agriculture sectors.
Source: Bank of Thailand, Ministry of Commerce, AMRO staff calculations

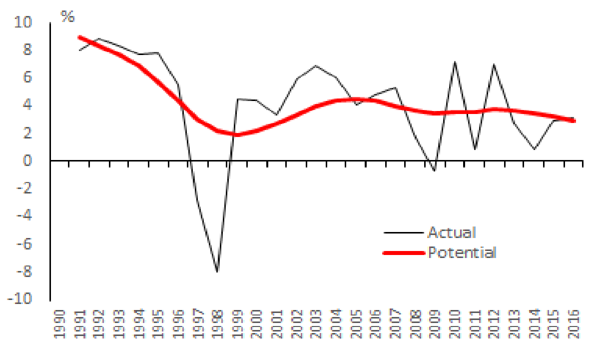
Appendix 5. Selected Issue2: Potential GDP Growth Rate of Thailand: Challenges Ahead

1. **Concerns have heightened that potential GDP growth rate has declined in Thailand after a series of supply-side shocks and political turmoil.** Supply-chain disruptions caused by earthquakes in Japan and massive floods in 2011 followed by political turbulence significantly affected foreign direct investment as well as overall output. Key issues would be whether the decline in output and growth in recent years is cyclical or structural. The latter would imply a further decline in potential growth rate of Thailand, which had fallen significantly after the Asian Financial Crisis (AFC).[32] At this juncture, it should be useful to analyze the trend and determinants of potential GDP growth rate and its future path, in order to come up with appropriate policy response.

2. **Our estimation[33] results indicate that potential GDP growth rate has declined to around 3.5 percent** (Figure 4.1). According to the estimation results for 1990-2016, the potential growth rate declined significantly to 2 percent during the Asian Financial Crisis (AFC) from 8 percent level in early 1990s. After the crisis, the potential growth rate gradually increased to around 4 percent on average before the 2008 Global Financial Crisis (GFC). It is notable that since 2011, the estimated potential growth rate has trended down to 3.2 percent in 2016, although the Thai economy remained resilient from several shocks during 2011-2014.

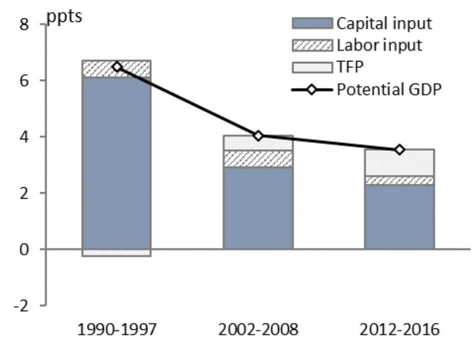
3. **Contributions by both capital and labor inputs to GDP growth have gradually decreased since the AFC, while total factor productivity (TFP) has increased** (Figure 5.2). In particular, the contribution by capital dropped significantly from 6.0 to 2.9 percentage points after the AFC and continued to decline to 2.3 percentage points in recent years (2012-2016). In addition, the contribution by labor has declined significantly since 2012, after showing a relatively small but stable contribution of around 0.5 percentage point to the overall potential growth.[34]

Figure 5.1. Estimated Potential GDP Growth Rate



Source: Office of the National Economic and Social Development Board, AMRO staff estimates based on data from various sources such as Thai national authorities, International Labor Organizations, and World Bank.

Figure 5.2. Break-down of Potential GDP Growth



Note: Please see a footnote for the estimation methodology.
Source: AMRO staff estimates based on various sources such as Thai national authorities, International Labor Organizations, World Bank.

[32] With this issues in mind, Thai government has planned and implemented to upgrade "Thailand 4.0" growth platform, digital economy promotion, and 20-year strategy as an attempt to move up the ladder of economic model to value-based economy.
[33] Production function approach, based on the Cobb-Douglas production function, is adopted for estimating the potential GDP growth rate. In the model, total labor input is calculated by a product of population over 14 years old, labor force participation, employment rate, and average working hours. Total capital input is obtained by a product of net capital stock (net of depreciation from gross capital stock) and capacity utilization. Capacity utilization for non-manufacturing sector are estimated with a multiple linear regression.
[34] Meanwhile, the result indicates that total factor productivity (TFP) contributed positively (about 0.5 percentage points) during 2012-2016 period. Albeit unknown, the positive contribution maybe came from higher use of informal labor, product automation, or technology innovation such as a wider use of smart-phones and internet. Further research is required for examining the unknown factor.

4. **Ageing population has gradually lowered the labor force participation rates for both male and female** (the first panel of Table 1). First, growth of adult population with 15 years or older, has declined from 1.9 percent in 1990-1997 to 0.8 percent in 2012-2016. During this period, labor force participation rate also declined by about 4.0-5.0 percentage points for both male and female populations. Furthermore, it is notable that the average working hours has trended down since 2011.[35]

5. **Recent data shows a decline in capital stock growth and lower utilization of the capital, particularly in manufacturing** (the second panel of Table 1). The growth of capital stock on a net basis, which deducts depreciation from gross stock, almost halved to 6.7 percent after the AFC period and further declined to 3.9 percent on average during 2012-2016. The decline was sharper in manufacturing, whose growth rate was high at 17.5 percent on average before the AFC. The average capacity utilization rate during 2012-2016 declined compared with the average rates during 1990-1997 and 2002-2008, while the average rate in non-manufacturing sector has been stable since 2002.

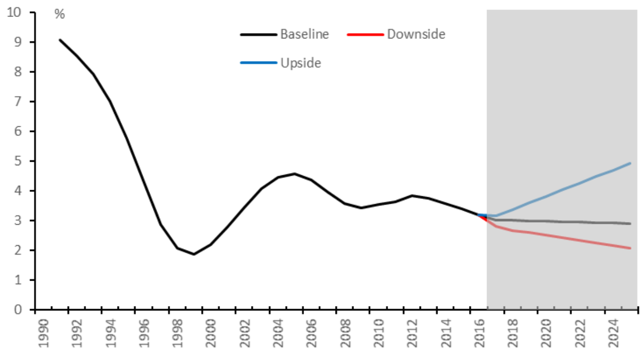
6. **The model projects the potential growth rate can be raised to 5.0 percent level under the upside scenario, while it could further fall to around 2.0 percent in the downside scenario** (Figure 5.3). The baseline scenario assumes the current speed of population ageing and the growth of capital stock at 3 percent. Upside scenario assumes maintaining constant the labor force participation rate and increasing the capital stock growth and capacity utilization rate to their benchmark average for 2012-2008 period. Downside scenario assumes the recent decline in working hours, capacity utilization rate, and capital stock growth, continues going forward (Figure 5.4).

Table 1. Labor and Capital Inputs

	1991-97	2002-08	2012-16
a. Labor Input			
Population over 15 (% growth)/1	1.9	1.3	0.8
Labor force participation (%)/1	76.5	73.4	71.8
(Male)/1	84.2	81.5	80.4
(Female)/1	69.0	65.6	63.5
Employment rate (%)/1	98.5	98.6	99.3
Weekly working hours/2	n/a	45.6	43.6
b. Capital Input			
Net captial stock (% growth)/3	14.3	6.7	2.4
(Manufacturing)/3	17.5	6.7	2.4
(Non-manufacturing)/3	13.7	6.7	2.2
Capacity utilization (%)/4	72.1	61.2	60.7
(Manufacturing)/5	72.2	65.7	61.6
(Non-manufacturing)/4	72.2	60.2	60.5

Note: Some periods after AFC (i.e., 1998-2001) and GFC (2009-2011) are excluded for calculating each statistic. Capacity utilization for manufacturing (2016) and for non-manufacturing (the entire period) are estimated by AMRO staffs.
Sources: 1/ World Bank with ILO estimates; 2/ National Statistical Office of Thailand; 3/ Office of National Economic and Social Development Board; 4/ AMRO staff estimations; 5/ Office of Industrial Economics of Thailand

Figure 5.3. Potential Growth Projections



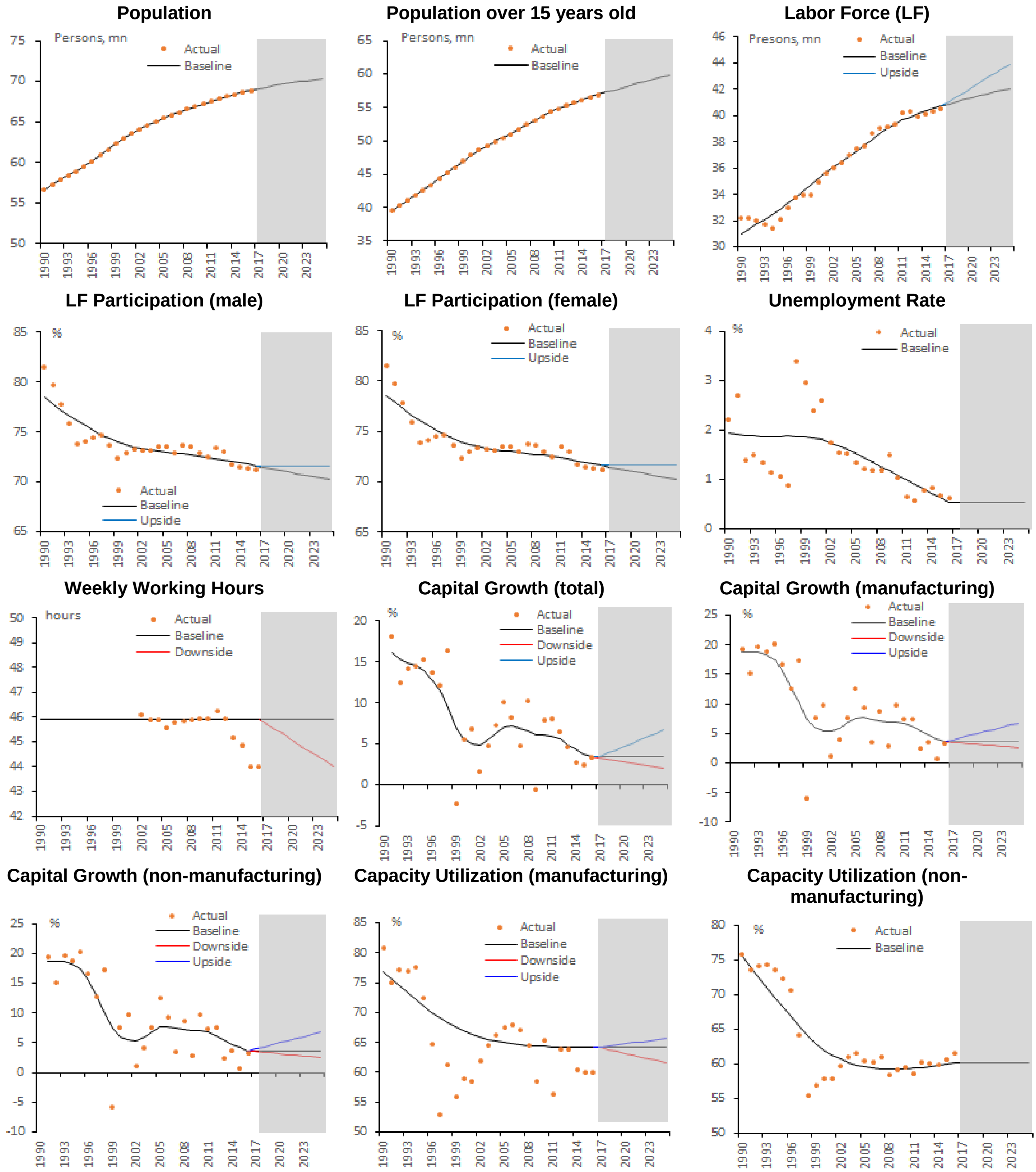
Note: For detailed assumptions, please see Figure 37.
Source: Thai national authorities, International Labor Organization, World Bank, AMRO staff estimates

7. **Recommended policy measures are for more capital investment and structural reforms to increase productivity.** Contribution of labor input has not been a critical factor to the potential growth path compared to capital accumulation. As capital accumulation has been driven largely by foreign direct investment, pro-investment reforms for FDI would be crucial to return to the higher potential growth rate. In addition, low contribution by labor suggests the adoption of policies to attract

[35] Average working hours are estimated by AMRO staffs using data released by National Statistical Office of Thai government.

foreign workers and increase the labor force participation rate to weather the continuing slowdown in labor force growth. Lastly, relatively low TFP, albeit improving, also indicates the need for a broad range of structural reforms to upgrade the human capital, technology, and industry through innovation and R&D investment, should be continued in a bold but targeted manner, going forward.

Figure 5.4. Scenarios for Future Paths of Potential GDP Growth Rate



Note: Baseline for actual data (1990-2016) is obtained by applying Kalman-Filter.
Source: National authorities, International Labor Organization, World Bank, AMRO staff estimations

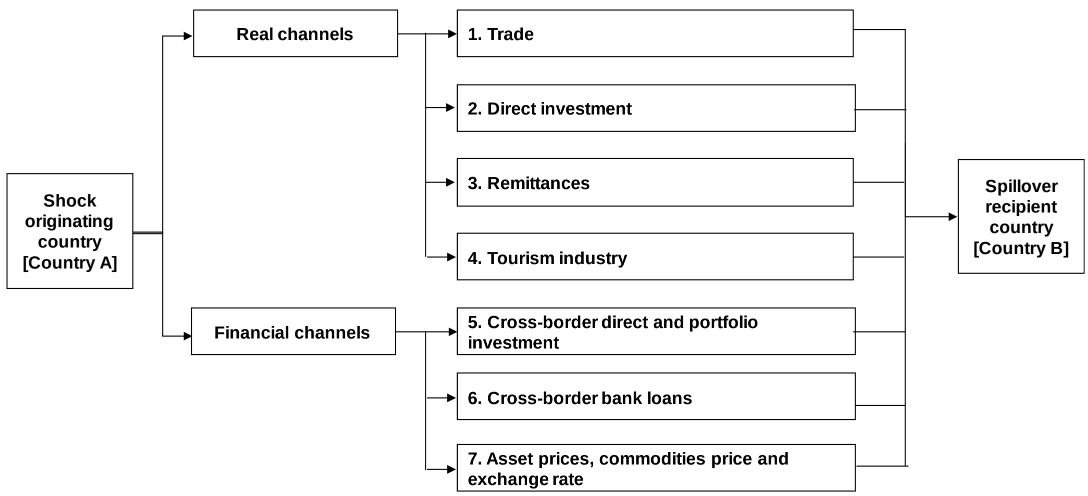
Appendix 6. Selected Issue 3: Economic and Financial Linkages between Thailand And The Rest of The World

Introduction

1. Thailand has increasingly integrated with the global economy. With a higher degree of linkages between Thailand and the rest of the world, any shock or policy action originated in any of its economic partners could transmit to the Thai economy (*inward spillovers*). On the other hand, any shock or policy action that originates in Thailand could also have effects on other economies (*outward spillovers*). The degree of Thailand's inward and outward spillovers is commensurate with the relative size of real and financial links. The objective of this box is to review recent developments in trade and financial linkages between Thailand and its major economic partners, as part of a study on the spillover effects to and from the Thai economy.

2. Shocks or policy actions of one country can impact other countries through several channels including real and financial channels (Figure 6.1). The real impact is through activities such as trade, direct investment, remittance and tourism. Meanwhile, the financial impact is through activities such as portfolio flows and international banking claims. In addition, changes in commodities prices, asset prices, and exchange rate in one country can influence similar prices in other countries ('*pass through*').

Figure 6.1: Potential Spillover Channel



Recent Development

Channels of Inward Spillovers

3. **Output channels**. Thailand's economy is more integrated into the ASEAN+3 region than any other region. In terms of merchandise exports, the share of exports to the ASEAN+3 economies, particularly CLMV economies, has expanded gradually from 36.3 percent in 1998 to 47.9 percent in 2016 (Figure 6.2). The recent growth in tourism revenue has also been driven mainly by tourists from East and Southeast Asian countries which accounted for 66.5 percent of total tourist arrivals in 2016

(Figure 6.3). In terms of FDI, Japanese companies are the biggest investors in Thailand – 36.7 percent of total FDI stocks, and the share of the ASEAN+3 region rose from 52.1 percent in 2006 to 56.6 percent in 2016[36] (Figure 6.4). However, FDI flows do not change suddenly as the decisions relating to FDI are generally made from a long-term perspective. Moreover, Thailand continues to be an attractive destination for Japanese investors given the already established the industrial cluster. On the other hand, a shock in other countries could affect the Thai economy via Thai companies' overseas direct investment that has been expanding substantially since the Global Financial Crisis - from 6.5 percent of GDP in 2009 to 22.6 percent in 2016 (Figure 6.5).

4. **Cross-border portfolio flows and bank claims**. In terms of financial exposure, Thailand's links with ASEAN+3 region are deeper than with other regions. In terms of the international banks' claims on Thailand, Japanese banks are the major creditors, which is partly driven by the large Japanese investment in Thailand (Figure 6.6). On the other hand, Thai commercial banks have greater exposure in other ASEAN economies—the CLMV countries in particular—than elsewhere, due to growing cross-border investment of Thai companies in these economies. In terms of resident portfolio investment, approximately 36.4 percent of Thai overseas portfolio investment is allocated to East Asian economies, while the rest is mainly allocated to global financial hubs such as the U.S., the U.K. and Luxembourg (Figure 6.7). However, non-residents' portfolio investment into Thailand is mainly from the U.S. and the U.K. which are the global financial centers (Figure 6.8).[37]

5. **Asset price contagion.** The development of Thailand's equity and bond markets has been influenced by global and regional events. The yield of Thai government bonds jumped in line with other regional sovereign bonds after the unexpected result of the U.S. presidential election in November 2016 (Figure 6.9). The high correlation—more than 0.7—between the Thai government bond yield and Japanese, the U.S. and Korean ones is evident. Similarly, Thailand's stock exchange index (SET index) has largely fluctuated in line with some regional indices, namely, Indonesia' IDX, Korea's KOSPI, Malaysia's FBMKLCI and Philippines' PSEI (Figure 6.10).[38] Meanwhile, in the forex market, the Thai baht is highly correlated with Indonesia rupiah, Malaysian ringgit, Philippines peso, and the Singapore dollar against the U.S. dollar[39] (Figure 6.11).

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[36] A fraction of FDI stocks from ASEAN countries comprises of foreign companies' affiliates located in Singapore.

[37] However, the actual magnitude of exposure between Thailand and these two economies may not be accurately reflected as a part of the portfolio investment is from other countries through financial institutions and hedge funds located in these financial centers.

[38] Correlations between Stock Exchange of Thailand's Index and other regional stock indices:

	CN: SSEC	HK: HIS	ID : IDX	JP: NIKKEI	KR: KOSPI	MY: FBMKLCI	PH : PSEI	SG: STI	VN : HOSE
SET	0.11	0.69	0.98	0.75	0.82	0.94	0.97	0.74	0.64

[39] Correlations between the baht against the U.S. dollar and other regional economies against the U.S. dollar from January 2009 to July 2017.

	CNY/USD	HKD/USD	IDR/USD	JPY/USD	KRW/USD	MYR/USD	PHP/USD	SGD/USD	VND/USD
THB/USD	0.44	-0.25	0.79	0.69	0.50	0.89	0.86	0.82	0.18

Channels for Outward spillovers from Thailand to other regional economies

6. **Real channels.** Any shock and/ or policy action in Thailand is more likely to affect the neighboring economies such as Cambodia, Lao PDR and Myanmar (CLM countries) the most. The degree of Thailand's outward spillover effects on these economies are commensurate with the relative share of the bilateral trade in goods and services and direct investment linkages (Table 1).

6.1 **Merchandise trade channel.** Thailand is a major trading partner of Lao PDR and Myanmar. Lao PDR-Thailand bilateral trade accounts for 51.4 percent of Laos' total external trade. Meanwhile, the bilateral trade of Myanmar and Cambodia against Thailand stands at 24.6 percent and 7.4 percent of their total trade respectively. In terms of exports, about 35.0 percent of Laos' and Myanmar's total exports are bound for Thailand, reflecting Thailand's importance as an export destination for these two economies. In particular, Thailand is the main purchaser of electricity from Laos and absorbs around 90-95 percent of Laos' total electricity exports.[40] The revenue generated from electricity exports to Thailand was equivalent to around 0.6 percent of Laos' GDP in FY2015/2016. Meanwhile, in terms of imports, CLM countries also rely heavily on consumer products imported from Thailand. Production shocks in Thailand, especially in the manufacturing sector, could affect the supply of consumer products in the CLM economies.

6.2 **Service Trade Channel.** Economic shocks from Thailand could also be transmitted through Thai tourism, which would lead to a drop in revenue of the service sectors for Lao PDR and Myanmar. Thai tourists accounted for 55 percent of total tourist arrivals in Lao PDR between 2011 and 2015, and 21.2 percent of total tourist arrivals in Myanmar over the same period. Thailand is clearly an important source of tourists for its neighbors and the transmission of shocks through this channel will adversely affect the services sector, especially in Lao PDR and Myanmar.

6.3 **Remittances channel.** The number of migrant labor from CLM countries who work in Thailand and remit their earnings back to their home countries is substantial. Based on anecdotal evidence, proximity with Thailand has enabled over three million workers from Myanmar to work across the border, although only about one million of them are documented by Thailand's Ministry of Labor. According to Thailand's Ministry of Labor, there were approximately 0.21 million Cambodians and 0.07 million Laotians[41] working in Thailand in 2015, while anecdotal evidence suggests that there are more than one million workers from both countries in Thailand. Therefore, the CLM countries are vulnerable to retrenchment of their workers in Thailand, should the Thai economy head for a downturn.

6.4 **Direct investment channel.** A pullback of Thai corporates from the region would impact the CLM economies to some extent. Direct investment flows from Thailand accounted for 5.8

[40] Electricity exports from Lao PDR to neighboring countries account for more than 20.0 percent of its total exports from 2010 to 2016.
[41] The figures do not include minority groups.

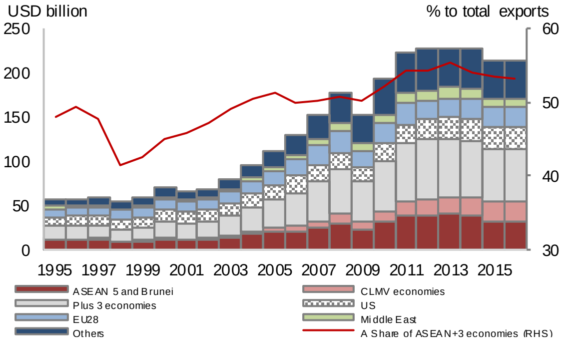
percent of total FDI inflows into Lao PDR between 2011 and 2015 and around 4.0-5.0 percent of total FDI inflows to Myanmar and Cambodia over the same period.

7. **Financial channels.** Spillovers via the financial system appear to be larger in the case of Lao PDR as compared to other countries. This is in view of the fact that mega-hydropower projects in Lao PDR are mostly financed by cross-border loans from Thai commercial banks and by bond issuance in Thailand. In addition, the Lao government has been issuing Thai baht-denominated sovereign bonds in the Thai market since 2013. In 2015, the Laos government issued USD-denominated bonds in the Thai market as well. The outstanding amount of these bonds as of end 2015 accounted for 12.8 percent of Laos' total external public debt. Going forward, plans to issue longer-term bonds in the Thai market are already in the pipeline. Should an economic crisis in Thailand dampen financial sentiment, the Laos government may face difficulties in rolling over bonds that have medium-term maturities. Moreover, once the yield curve for Laos government bonds issued in the Thai market comes on stream, liquidity conditions in the Thai market could substantially affect the movement of Laos' sovereign yield curves.[42]

8. Besides its neighboring countries, any shocks to the Thai economy may also be transmitted to Japan through supply chain disruptions and financial linkages. Although Japan's investment exposure to Thailand is low (at 4.1 percent) relative to its other outward direct investment in 2015 (Figure 6.12, 6.13), Thailand remains a key manufacturing hub for many Japanese companies. The 2011 flood in Thailand and the disruption in the supply chain that ensued is evidence of the potential threat of an economic shock in Thailand to Japanese car and electronic goods' makers there.

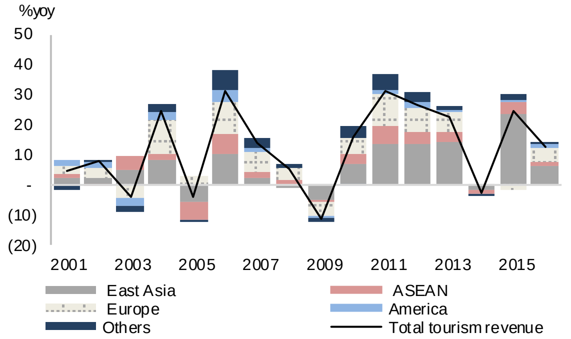
[42] Khor, H., Poonpatpibul, C., Hong, S., Hernando, P., Huang, X., Hout, P., & Nguyen, T. (2017). Bond Market Developments in CLMV. ASEAN 3 Macroeconomic Research Office - Policy Issue Note.

Figure 6.2. Thailand's Exports by Destination



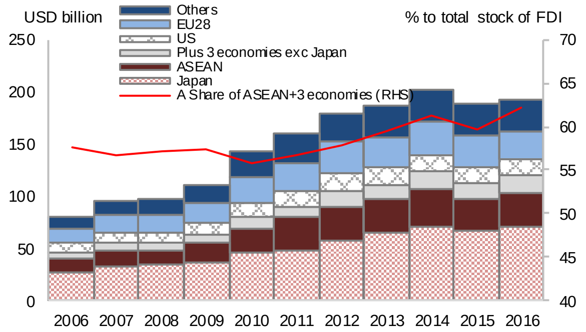
Source: Customs Department, Office of National Economic and Social Development Board, AMRO staff calculations

Figure 6.3. Tourism Revenue by Tourist's National



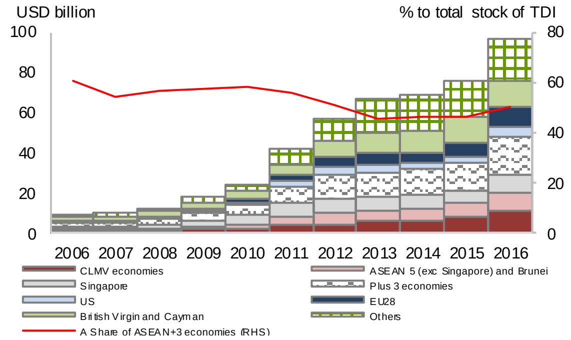
Source: Department of Tourism, AMRO staff calculations

Figure 6.4. Foreign Direct Investment Position



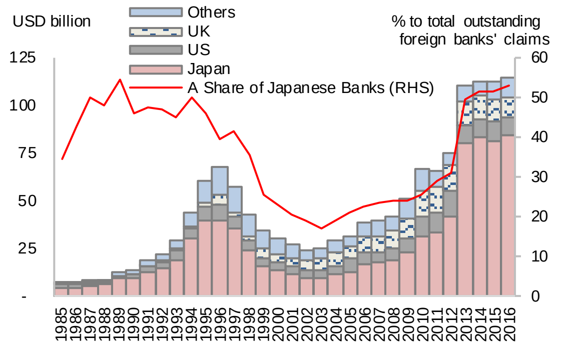
Source: Bank of Thailand, Office of National Economic and Social Development Board, AMRO staff calculations

Figure 6.5. Outward Investment Position of Thai Companies



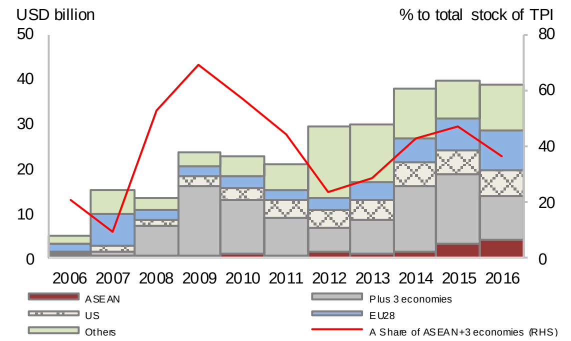
Note: TDI stands of Thai Direct Investment Overseas.
Source: Bank of Thailand, Office of National Economic and Social Development Board, AMRO staff calculations

Figure 6.6. International Banks' Claims on Thailand by Bank Nationality



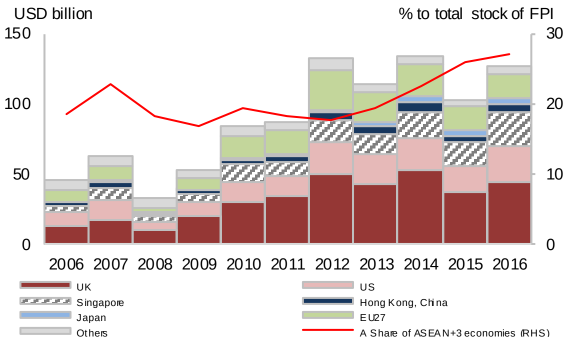
Source: Bank of International Settlements, *Foreign claims by immediate counterpart basis*; Bank of Thailand; AMRO staff calculations

Figure 6.7. Thai Residents' Overseas Portfolio Investment Position



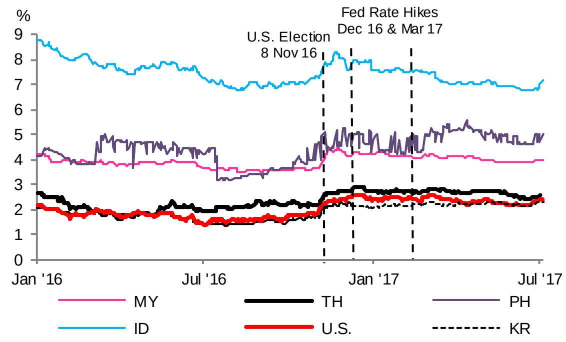
Note: TPI stands for Thai residents' portfolio investment aboard.
Source: Bank of Thailand, Office of National Economic and Social Development Board, AMRO staff calculations

Figure 6.8. Non-residents' Portfolio Investment Position in Thailand



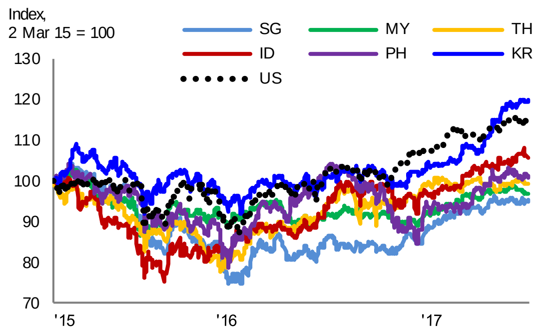
Source: Bank of Thailand, Office of National Economic and Social Development Board, AMRO staff calculations

Figure 6.9. Ten-year Sovereign Bond Yields



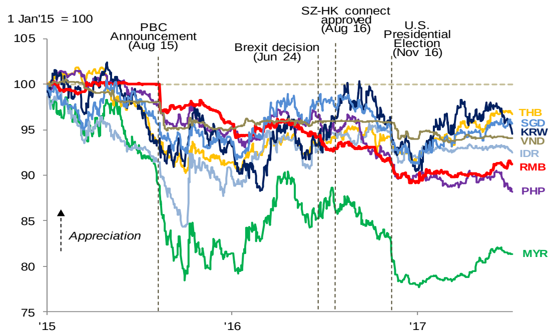
Source: Bloomberg

Figure 6.10. Equity Indices



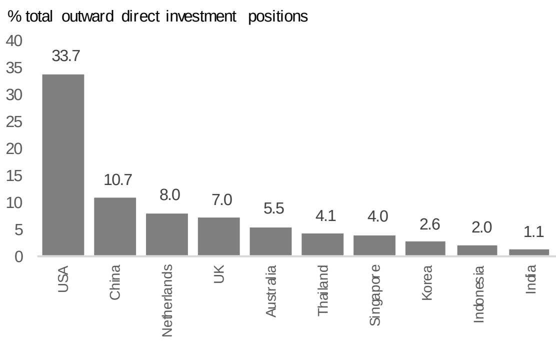
Source: Bloomberg, AMRO staff calculations

Figure 6.11. Exchange Rate Indices (LCY/USD)



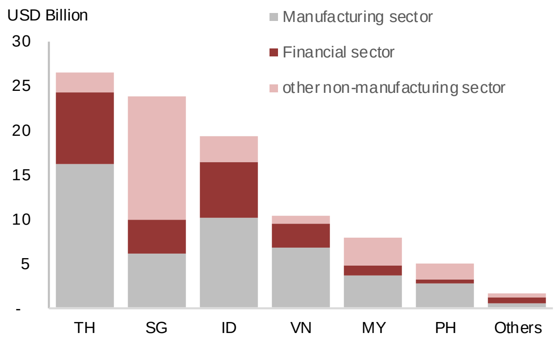
Source: Bloomberg, AMRO staff calculations

Figure 6.12. Top 10 Destinations for Overseas Direct Investment by Japanese Companies (end-2015)



Source: International Monetary Fund, AMRO staff calculations

Figure 6.13. Five-Year Accumulated FDI Inflows from Japan to ASEAN, Break-down by Industry



Source: The Japan External Trade Organization - Bangkok office

Table 1. Exposure to the Thai economy and financial system

Transmission Channels	2011	2012	2013	2014	2015	Average 2011-2015
1. Merchandise trade						
Bilateral trade with Thailand (% of total external trade)						
Cambodia	7.1	6.7	7.2	6.4	9.6	**7.4**
Lao PDR	54.9	54.2	49.1	46.1	52.5	**51.4**
Myanmar 1/	29.2	28.0	26.0	18.5	21.1	**24.6**
Exports to Thailand (% of total exports)						
Cambodia	2.8	1.3	2.5	0.7	4.0	**2.3**
Lao PDR	38.0	38.7	35.8	30.4	36.2	**35.8**
Myanmar	40.2	41.9	39.3	24.2	32.0	**35.5**
Imports from Thailand (% of total imports)						
Cambodia	11.8	12.8	11.9	10.2	13.9	**12.1**
Lao PDR	65.6	61.9	55.8	55.1	61.1	**59.9**
Myanmar	11.0	9.5	9.3	8.9	8.7	**9.5**
2. Service trade						
Thai tourist arrivals (% of total tourist arrivals)						
Cambodia	4.1	5.6	5.3	6.2	7.3	**5.7**
Lao PDR	58.0	58.2	54.5	49.1	n.a.	**55.0**
Myanmar	22.8	18.1	18.6	21.2	25.4	**21.2**
3. Remittances						
The number of migrant workers in Thailand (in thousands) 2/						
Cambodia	n.a.	202.1	185.5	194.9	210.4	
Lao PDR	n.a.	81.1	61.0	54.1	68.1	
Myanmar	n.a.	715.8	780.3	934.0	996.6	
4. Foreign direct investment						
Thailand's outward direct investment (% of total foreign investment) 3/						
Cambodia	5.4	4.6	4.2	4.0	4.1	**4.5**
Lao PDR	5.1	2.1	4.3	11.3	6.3	**5.8**
Myanmar	n.a.	12.9	2.1	2.5	1.8	**4.8**
5. Financial						
Lao PDR's Sovereign Bond Issuances in Thai Markets						
Volume (THB million)			4,500	5,090	18,531	
Volume (USD million equivalent)			143	156	538	

Note: 1/ Myanmar data is on a fiscal year basis
2/ Figures do not include minority groups
3/ Cambodian data is an outstanding stock of FDI. Myanmar data refers to FDI commitments.

Source: Lao Statistics Bureau, Lao PDR's Ministry of Planning and Investment, Cambodia's Ministry of Tourism, Myanmar's Ministry of National Planning and Economic Development, Thailand's Workers Administration Office, International Monetary Fund, World Bank, AMRO staff estimates

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