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INDUSTRY HORIZON

January 2021

Krungsri Research

Thailand Industry Outlook 2021-2023

- This *Industry Horizon* evaluates the attractiveness of selected Thai industries over the next 3 years. The report considers a range of factors that would influence each industry over this period. These include the broad competitive environment (e.g. trends in trade and the global economy, structural changes occurring at global level, and economic outlook for Thailand), as well as sector-specific variables (e.g. industry structure, Thai industrial competitiveness, and ongoing regulatory changes).

- We identified five industries that would benefit from a cyclical upswing in global manufacturing and trade, accelerating adoption of digital technologies, promoting national infrastructure development, rising online sales and expansion in the logistics sector, and rising healthcare spending. They are *Petrochemicals, Mobile Communication, Contractors, Industrial Estate, and Private Hospitals.*

- Five other industries that could face major headwinds are *Hotels, Housing, Office Building, Automakers, and Auto dealers.* Although these industries can look forward to a turnaround in line with the broader economy, the after-effects of the COVID-19 pandemic will disrupt the recovery. The after-effects include, for example, weaker consumer purchasing power because of job losses and weak income prospects, an increase in people working from home, and fewer foreign tourist arrivals due to excessive concerns about health and hygiene.

Exiting The Great Lockdown: One needle to rule them all?

Key elements shaping Thailand's industry outlook

Global perspective

- Different pandemic recovery and growth trajectories for major economies
- Ongoing transformation of global value chains
- World economy will be increasingly centered on services

Domestic environment

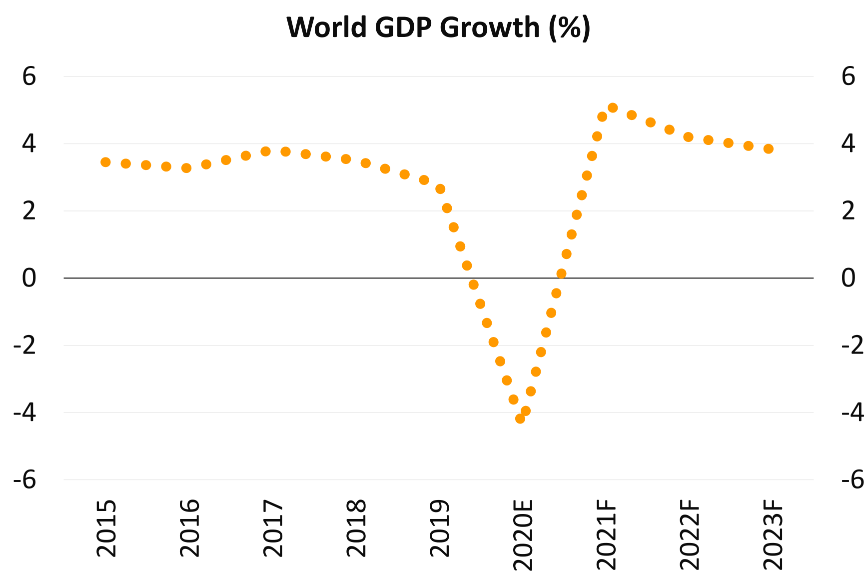
- Economic recovery will be buoyed by the export sector and government stimulus measures
- Pandemic has pushed Thailand to focus on 3 key themes: digital business, medical hub, and smart logistics
- Plans to accelerate investment in both traditional and new infrastructure

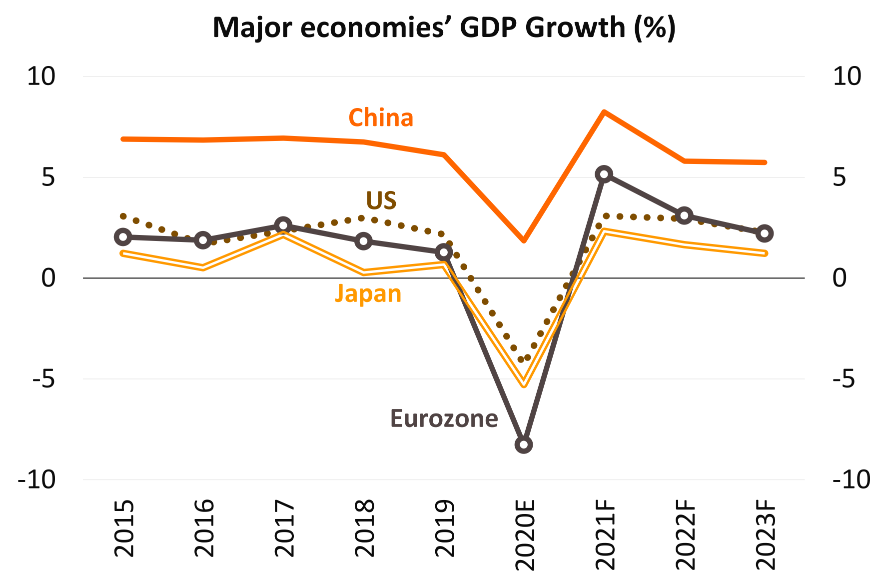
Industry outlook

- Cyclical plays
- Pandemic-induced growth
- Viral after-effects

Source: Krungsri Research

Global perspective: Different pandemic recovery and growth trajectories for major economies



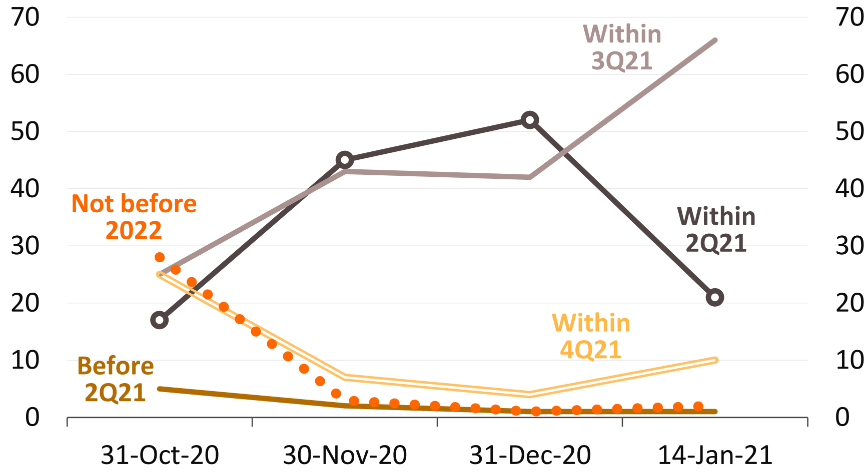


- **Over the next three years, the global economy is projected to grow by an annual average of 4.4%. It will recover from the recession in 2020, the worst setback to growth in several decades.** Economic activities would continue to rebound gradually, led by manufacturing and exports. With the rollout of vaccination programs this year, lockdowns would be relaxed in many countries possibly by 2Q21, and governments would continue to offer wide-ranging fiscal and monetary support for their respective economies. Growth will also be supported by the development of several COVID-19 vaccines, which are expected to enter mass production in the first half of 2021, followed by mass immunization programs that will accelerate in the latter half of the year. Meanwhile, the election of Mr. Biden as the next American president suggests the US is unlikely to introduce more trade barriers, and with this, at least one obstruction to a recovery in global trade has been removed, and the world economy should return to growth mode.

Source: IMF World Economic Outlook (October 2020), Krungsri Research

Mass distribution of COVID-19 vaccines, possibly by 3Q21, would bolster confidence worldwide

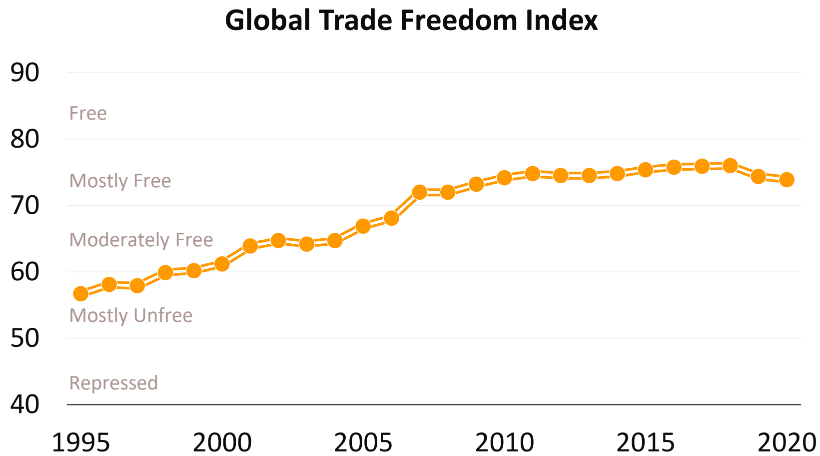
When will the U.S. receive sufficient FDA-approved COVID-19 vaccine(s) to inoculate 200 million residents?
(% probability)



- **In recent months, the several vaccine developers have reported efficacy rates of above 90%.** Although large-scale vaccine production has started, inoculating most of the world's population will be very challenging. More than half the professional forecasters enrolled in the *Good Judgement Project* expect enough doses to be available to vaccinate 200 million Americans (about 60% of the US population) by end-3Q21. Most countries will start by vaccinating healthcare workers and other at-risk groups. Assuming there are no reports of severe side-effects, the successful deployment of vaccines among healthcare professionals should bolster confidence within the general public.

Source: Good Judgment Inc., The Bank Credit Analyst, Krungsri Research

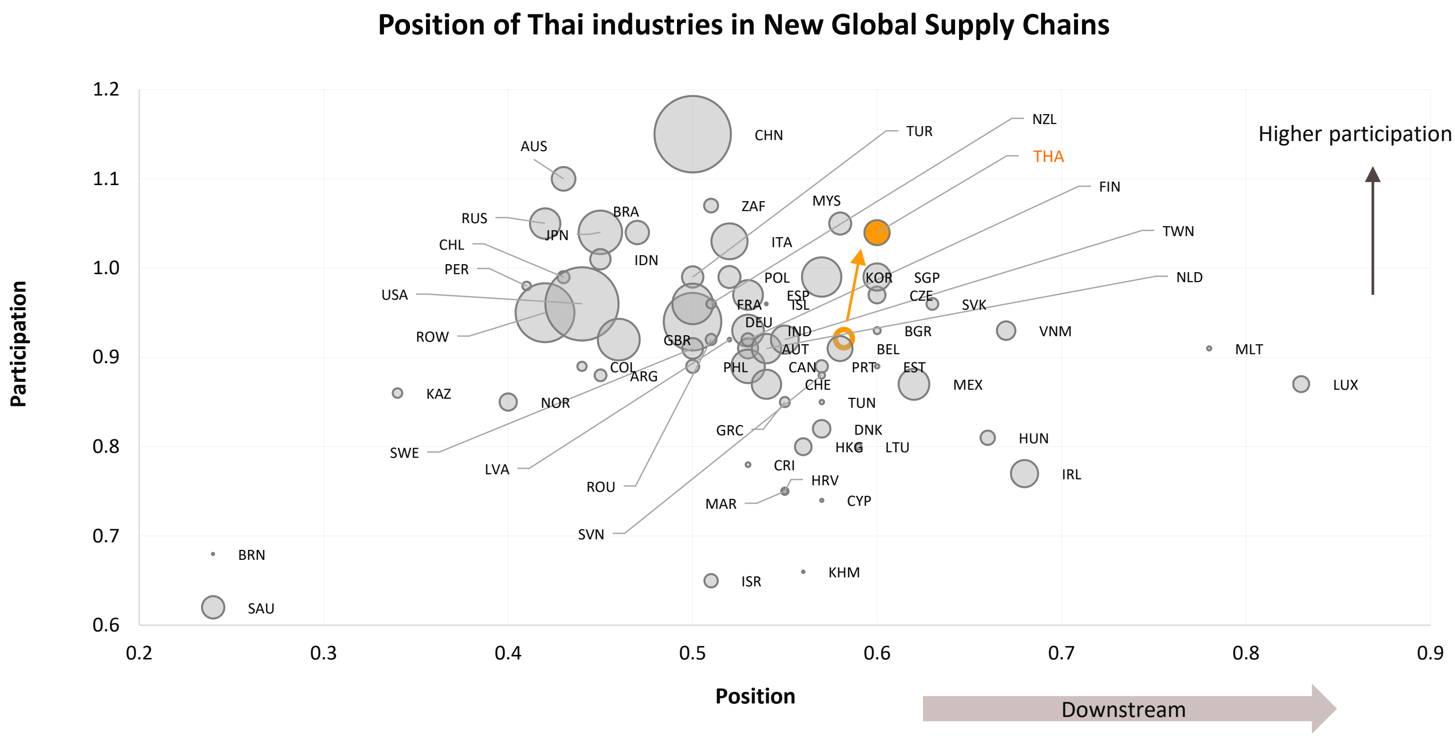
The global trading environment is more tense and trade barriers are becoming increasingly common



- **The World Trade Organization (WTO) reported that in just one year (October 2018-October 2019), WTO member states have employed 102 measures to control trade worth USD750bn.** This is the most barriers reported in 7 years and a 27% increase on the year before. To control imports, imposing import tariffs was the most common move followed by import bans, stricter import procedures, and imposing other fees. Exports were most often controlled by imposing export charges, specifying pre-conditions for export and requiring the issue of export licenses, and capping export volumes. The products most affected by these restrictions are minerals, fuel products, machinery, electrical equipment and parts, and precious metals.
- **The rising tendency to erect trade barriers is both a threat and an opportunity for Thailand, especially given escalating tensions between the US and China since 2018.** Both these countries are important export destinations for Thailand. The US-China trade war has exerted downward pressure on Thai exports, but at the same time, Thailand is presented with an opportunity to benefit from trade diversion to develop its own export sector by replacing exports in the bi-lateral US-China trade vacuum. Thus, in the first 10 months of 2020 (January-October), the value of Thai exports bound for the US rose to 14.8% of total exports from 12.7% in 2019, while exports to China climbed to 12.8% from 11.8%. In addition, Thailand may also benefit from investment diversion as US and Chinese investors seek to circumvent trade barriers by offshoring production facilities. In fact, in 2018 and 2019, applications for investment incentives to the Board of Investment from US and Chinese companies comprised 57% and 52% of total submissions (by value), respectively. However, this path is not without obstacles and Thailand needs to develop comparative advantages to become a more attractive investment destination than its neighbors, such as Malaysia, Indonesia and Vietnam which unlike Thailand, already have free-trade agreements with Europe as part of their strategies to attract more foreign direct investment.

Source: World Trade Organization (WTO), The Heritage Foundation, Krungsri Research

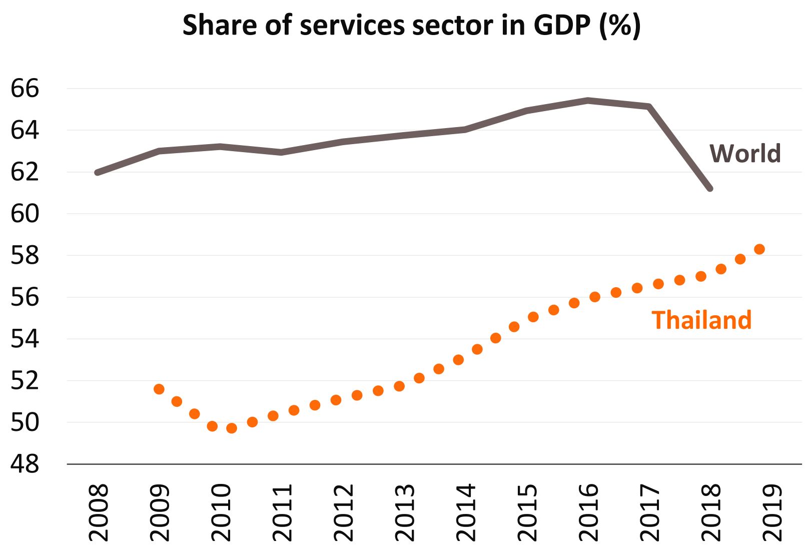
Global value chains are being transformed to address the COVID-19 impact



- **The pandemic had brought industrial supply chains almost to a halt in the first few months of 2020, but this has since incentivized corporations to identify complexities in their supply chains and reduce the distance that separates them from their suppliers.** This is being achieved by spreading production over several countries in the same region, and locate them near sources of supply. This process is leading to the creation of shorter, more diversified and more regionalized supply chains. In light of this, Krungsri Research projects that in five years, parts of Thai industry will be more deeply embedded in global value chains. Industries that will benefit from greater linkages to supply chains would be in downstream positions where Thailand has competitive advantages, including the production of food & beverage production, and computer & electronic products. However, upstream industries, especially agriculture and mineral extraction, risk seeing a weaker participation in global value chains.

Source: Organisation for Economic Co-operation and Development (OCED), Krungsri Research

The world economy is transitioning to depend less on manufacturing and centering on services



● **The share of world GDP attributed to services was 61.2% in 2018.** In advanced economies such as the US, the UK and France, services generate about 75% of GDP, led by 'modern services' such as IT, software design and finance. In Thailand, the services sector's share of GDP has grown from 51.6% in 2009 to 58.6% in 2019. But in the Thai economy, traditional services such as tourism, trade, and hotels & restaurants dominate, and only 14% of national GDP comes from modern services which are largely confined to finance and telecommunications. However, in the next period, this will change. **Technological progress will raise importance of modern services within the economy because these will add value to goods and services.** For example, design and consultancy services to best utilize technology such as artificial intelligence and big data to boost sales and design new products that better meet consumer needs. Thus, if Thailand wishes to keep up with prevailing trends that are transforming businesses worldwide and secure sustainable, long-term development, it will be essential for the country to meet and overcome the challenges involved in transforming the economy into one that is based on the provision of these modern services.

Source: World Bank, Office of the National Economic and Social Development Council (NESDC), Krungsri Research

Modern technology is rapidly reconfiguring the industrial sector and has triggered a major structural transformation

The COVID-19 crisis has revealed weaknesses in prevailing business models, and companies are now rushing to strengthen supply chains and make them more resilient.

The major technologies that will determine how industry is transformed over the next 3 years will include the following.

5G Technology

5G broadband can offer over 100 times the bandwidth of 4G networks. 5G systems will support the revolution in manufacturing processes by controlling machinery-functional systems. They can collect and analyze big data resources to automatically adjust raw material and finished goods inventory.

Internet of Things (IOT)

IOT devices are already playing a greater role collecting data from sensors embedded in a wide variety of commonly-found devices. The use of these devices will change fundamental supply chains for manufacturers of parts and equipment in almost all industries, especially medical devices, electrical appliances, and auto assembly.

Drone

The development of drones (pilotless, remote-controlled flying vehicles) has been closely connected to the development of related technologies including sensors, satellite systems, the IoT and AI. This has allowed drones to be used as labor- or time-saving devices in applications.

Edge Computing

This involves creating real-time links between data on changing consumer demand with production lines or other business operations, allowing systems to respond to customer data without having to pass through a cloud-based data center.

Artificial Intelligence (AI)

Industrial applications for AI are increasing. And when used alongside other new technologies, including cloud computing and the IoT, it is increasingly facilitating big data analytics, and employed in manufacturing and services industries that are affected by labor shortage.

Blockchain

The use of distributed ledger technologies in place of centralized systems allows for the sharing of information among users on a network, but data-security is maintained. This would facilitate peer-to-peer business transactions, especially those involving digital currencies or assets, as well as the secure storage of large, sensitive datasets.

Quantum Computing

The development of computers that exploit the peculiarities of the quantum world, in place of the binary digital computers used currently, will increase both the speed and potential of AI. Quantum computing is now entering the stage where commercial applications are feasible.

3D Printing

The use of 3D printing allows for the rapid, low-cost design and production of goods controlled by digital technology. This will play an increasing role in transforming industrial supply chains and allowing for the reuse and recycling of materials through 'recycle bots' in industries including fashion, parts for use in auto assembly and aeronautics.

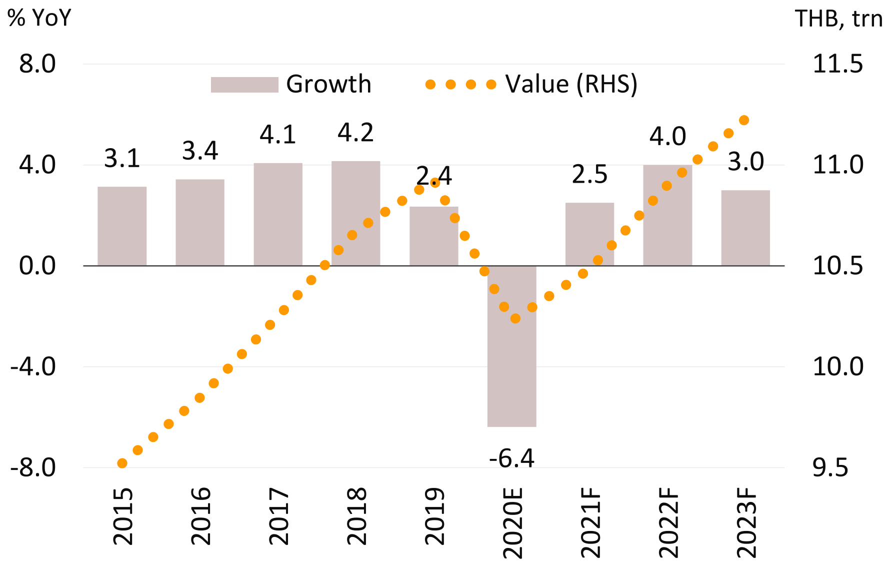
Cultured Meat

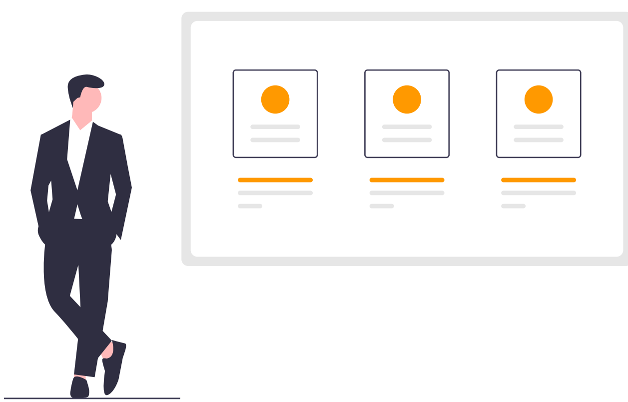
Meat-like products produced from plant-based ingredients are similar to meat in terms of taste and texture. These products have advantages over traditional meats (e.g. smaller environmental impact, absence of hormone and antibiotic residues, and a healthier nutrient profile), and is a sustainable food supply in the event of food shortages.

Source: PwC, hivelife.com, Krungsri Research

Domestic environment: Economic recovery will be buoyed by export sector and government stimulus measures

Thailand's Real GDP





Source: NESDC, Krungsri Research

- **The Thai economy is projected to expand by an average of 3.2% annually over the next 3 years.** Factors supporting economic growth in the coming period will include the following.
  - (i) The latest wave of COVID-19 cases in the country is expected to be contained by 2Q21 given quick measures, experience from handling the first wave, and the availability of vaccines. This means the government should be able to relax pandemic control measures then, allowing the economy to return to near-normal and boosting sentiment in private-sector businesses.
  - (ii) Business operations and consumer behavior have adapted rapidly to changing circumstances, with a surge in numbers working from home and online shopping.
  - (iii) The export sector will rebound premised on a cyclical recovery in the economy and improving global trade, helped by easing of lockdown measures and rollout of extensive stimulus packages in major economies that lean heavily on both fiscal and monetary levers.
  - (iv) Thailand is beginning to relax travel restrictions, and now permits entry for selected persons, including film crew, trade show participants, high-income earners, and those with 'Special Tourist Visas' (STVs). International travel should also pick-up gradually, possibly from the second half of 2021. The mass COVID-19 vaccination programs worldwide will encourage international tourism and tourist arrivals in Thailand should recover.
  - (v) Government efforts to kickstart the economy will help to sustain greater levels of spending. They include measures to stimulate consumption and reduce cost of living, accelerated disbursement of the annual budget, an emergency decree allowing the government to borrow THB1trn to counter the impacts of the coronavirus disease, and using state enterprise funds to invest in infrastructure projects. Other measures include offering soft loans and financial assistance to businesses affected by the pandemic, through the Bank of Thailand (BOT) and the Thai Credit Guarantee Corporation's Portfolio Guarantee Scheme.

Thailand strikes vaccine deal to receive 70m doses by mid-2021, sufficient to inoculate half the national population

Feb 21 — Sinovac

200,000 doses of vaccine:
- 20,000 for health workers, frontline workers in 28 high-risk provinces
- 180,000 doses for high priority group (elderly, those with pre-existing conditions e.g. diabetes, lung disease)

Mar 21 — Sinovac

800,000 doses of vaccine:
- 200,000 for the first group (second dose)
- 600,000 for high-risk provinces, healthcare personnel, western and southern border provinces, 60,000 for village healthcare volunteers, high-priority group (e.g. those with pre-existing conditions)

Apr 21 — Sinovac

1 million doses of vaccine:
- 600,000 for healthcare workers in the second group (second dose)
- 400,000 doses for other personnel and reserved for use emergency

May 21 — AstraZeneca

26 million doses of vaccine. This will be produced in Thailand by Siam Bioscience with Oxford University technology. They will produce 15 million doses per month. Offering 70 million doses at no charge (sufficient to cover half the Thai population)

	Type	Doses	Effectiveness	Storage	Cost per dose
Sinovac	Inactivated virus	2 doses	Unknown	Regular fridge temperature (2-8 ◦C)	USD 13.6-30.0
AstraZeneca	Viral vector	2 doses	62-90%	Regular fridge temperature (2-8 ◦C)	USD 4.0-8.1

- **Thai government is investing THB611bn to secure 70 million doses, sufficient to immunize half the national population against COVID-19.** Thailand-based Siam Bioscience has signed an agreement with UK-based major Astra Zeneca to locally produce and supply COVID-19 vaccine. They will be able to produce 200 million doses a year for export to ASEAN countries. The immunization program is a positive development for the healthcare sector.

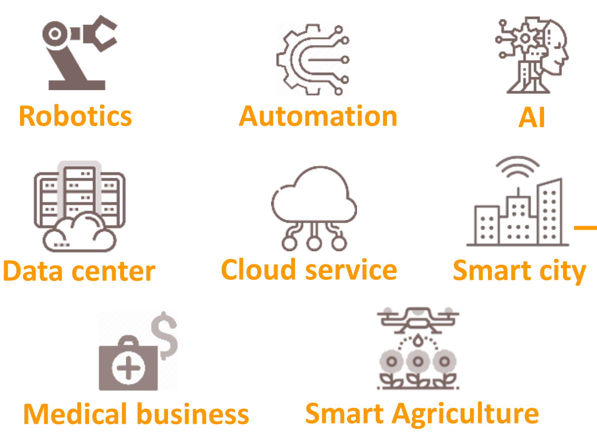
Source: Codeblue, BBC, Krungsri Research

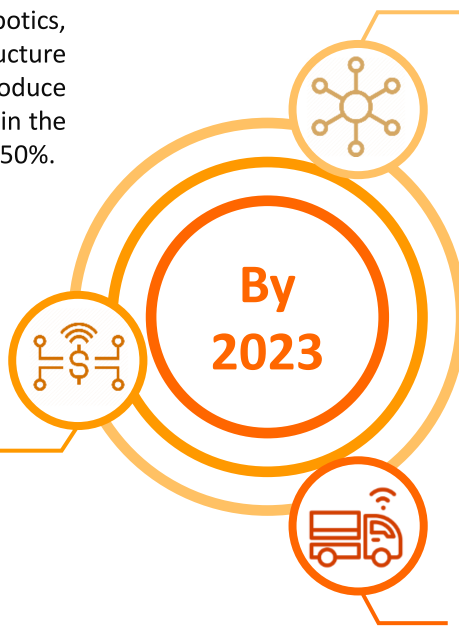
Pandemic has pushed Thailand to focus on 3 key themes: digital business, medical hub, and smart logistics

- **The Eastern Economic Corridor (EEC) Office is keeping its investment target for the EEC zone over the next three years at THB100bn,** despite the subdued economic outlook. The EEC issued promotion certificates for 387 projects in the first 11 months of 2020 valued at THB128bn, an increase of 62% YoY and about half of total national investments. This suggests investors still have confidence in Thailand. Of these, THB76bn are foreign investment mostly in the electronics, automobile, and petrochemical sectors. And, total investment in processed food, bio-industry and medical industry reached THB18bn with expectations for a 70% growth in investment by 2023.

Digital business

This includes the 8 sub-sectors below. The main objective is to advance the utilization of 5G (robotics, automation, AI), expedite installation of infrastructure for data management for big data analysis, and produce a digital workforce. In the next 3 years, investment in the digital sector is expected to surge by a cumulative 150%.





Medical hub

The COVID-19 pandemic has accelerated the need for Thailand to expand the medical instrument industry, to support government policy to turn Thailand into a medical service center and medical hub. This requires the extensive integration of bio-technology. A medical hub would attract greater investment in the smart farming, food and medical devices sectors. Large foreign investment projects include the *Genomics Thailand* initiative to identify genetic factors that influence susceptibility to some diseases and advance the genome-based testing and screening program.

Smart logistics

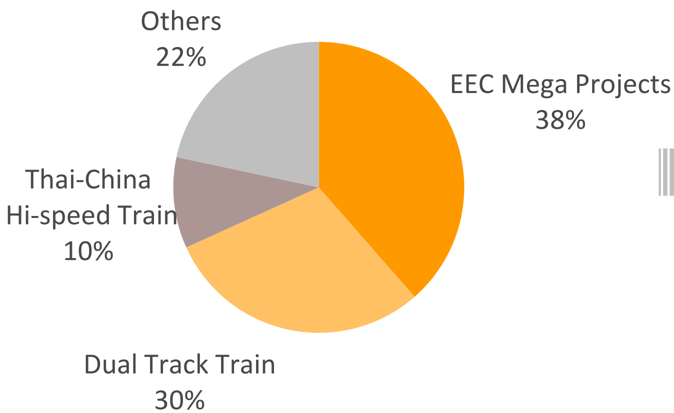
EEC is attracting foreign investors because of shortages in global supply chains. Thailand is currently pursuing five mega projects: high-speed train (THB257.5bn), Laem Chabang port (THB65.8bn) and Map Ta Phut port (THB204.3bn), U-Tapao International Airport (THB79.2bn), and Maintenance Repair & Overhaul (MRO; THB10.6bn). These five projects will push EEC to become the regional logistic hub, which would attract investment in logistics and warehouse services that employ a high degree of automation and AI, as well as express delivery services.

Source: Eastern Economic Corridor Office of Thailand (EECO), Krungsri Research

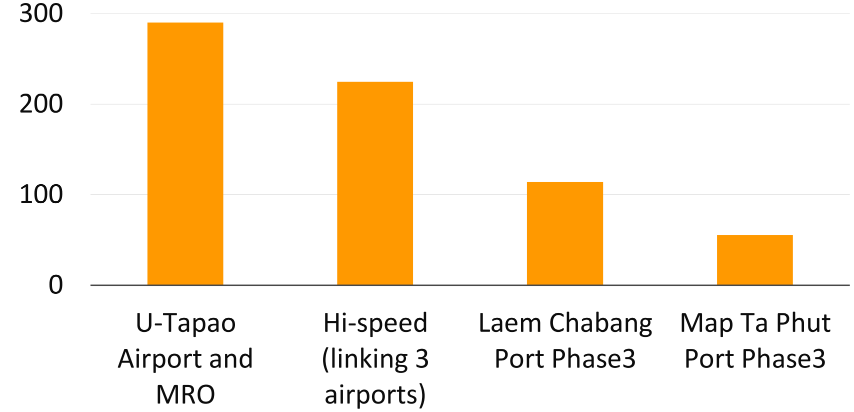
Accelerating public-sector investment in infrastructure will induce recovery in the overall industrial sector

Infrastructure Investment Projects

Share of Investment Value by Project



Investment Value of Mega Projects in EEC (THB, bn)

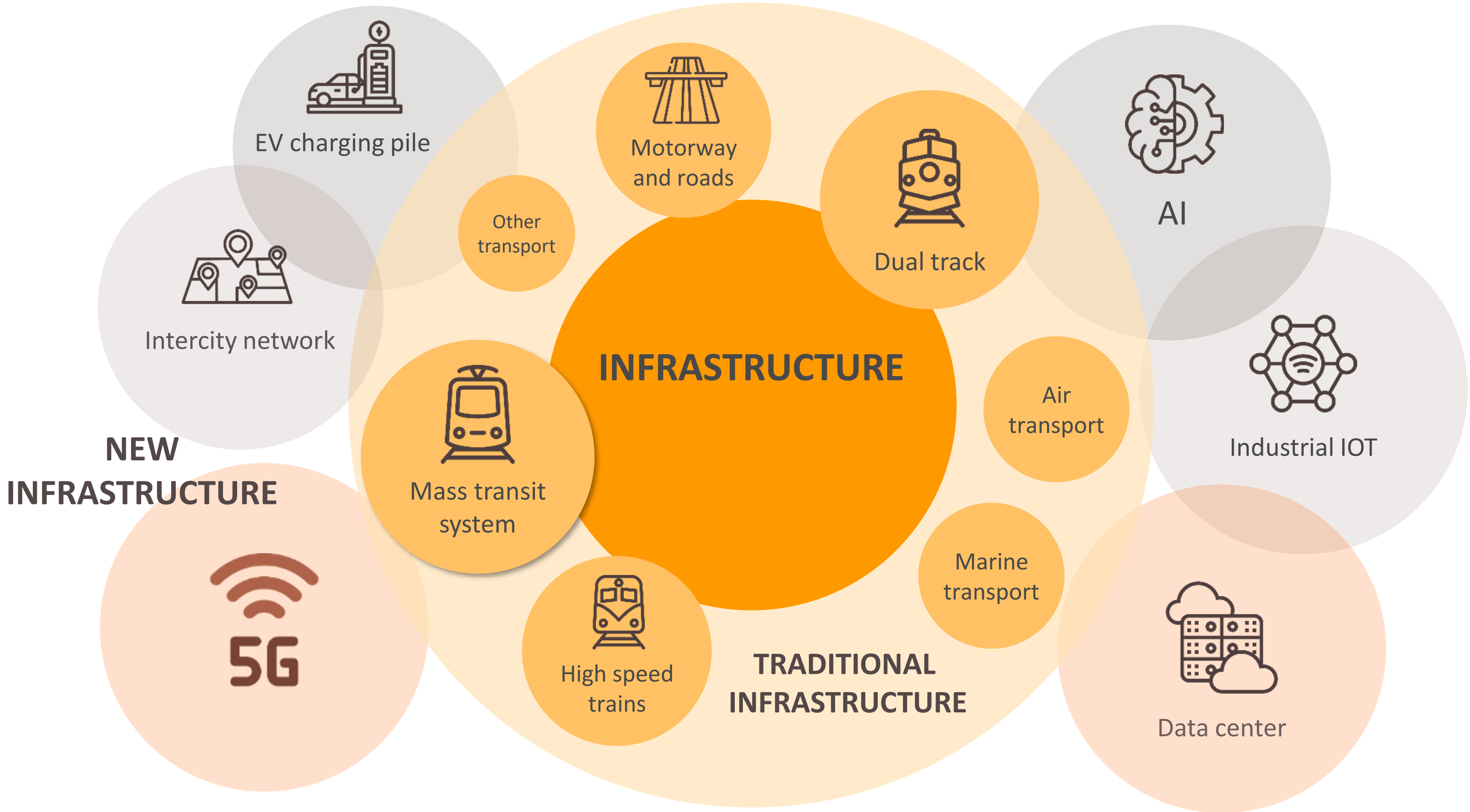


- **The latest Transportation and Communications Action Plan, published in 2018, forms part of the 20-year Strategic Plan for Communications and Transport (2017-2036) and calls for a total of THB1.77trn investment in infrastructure projects.** The planned development of rail networks will involve a large number of projects that will start in 2021. The most significant will be the Den Chai-Chiang Khong and Ban Phai-Nakhon Phanom dual-track railways, the Thai-China high-speed rail, and the MRT Orange Line extension. Linking different parts of the country to the wider region will make the transport network significantly more comprehensive. The Eastern Economic Corridor also plays a strategic role in attracting and supporting many other large-scale investment projects, and these are now beginning to move into the construction phase, including the Suvarnabhumi-U Taphao high-speed rail, phase 3 of the development of Map Tha Phut and Laem Chabang ports, and the upgrade of U Taphao Airport, which will have a combined value of over THB60bn in 2021 (from a total combined value throughout the projects of THB680bn). The government has also agreed to upgrade and extend other projects, including developing Laem Chabang Port to connect the EEC to the south of Thailand and the country's neighbors, thus helping to establish the country as an ASEAN transportation hub. This will lead to investment to develop and construct new transportation networks, for example, a dry port which should be completed by 2023-2024. Pushing through policies to accelerate the extension of this multimodal transport network, which will deepen regional communication and connections, will also help to pull in additional investment from manufacturing industries, especially those that are dependent on high-technology (e.g., auto parts and assembly, digital electronics, and healthcare), and from other parts of the economy such as real estate, retail and construction.

Source: Office of Transport and Traffic Policy and Planning (OTP), Ministry of Transport, Krungsri Research

Plans to accelerate investments in both traditional and new infrastructure

In the coming years, infrastructure development in Thailand will go beyond simply building roads and bridges. **It will encompass new technologies including artificial intelligence, 5G, industrial IOT, EV charging stations, etc.**



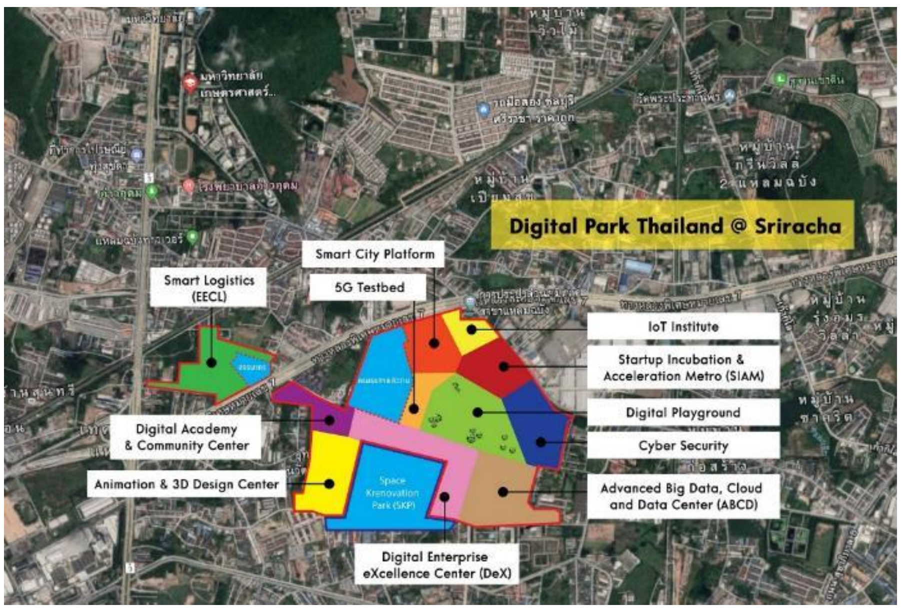
Note: "New Infrastructure" is defined by China's State-owned Assets Supervision and Administration Commission of the State Council

Source: State-owned Assets Supervision and Administration Commission of the State Council (SASAC), Krungsri Research

New infrastructure will collectively help Thai industries navigate through the uncertainties ahead

Digital Park Thailand is a new economic cluster that is strategically-located in the Eastern Economic Corridor (EEC). The aim is to be a prime destination for global digital players and digital biz innovators. **The park will offer (i) offer ultra high-speed broadband infrastructure, including an international submarine cable station, data center, and satellite earth station; and (ii) pioneer testbeds and adoption of state-of-the-art digital technologies, Internet Of Things (IoT), and Artificial Intelligence.**

Conceptual Layout of Digital Park Thailand



TRANSPORT	SUPPORTING INDUSTRIES
• INTERCITY NETWORK	• Machinery • Electrical Equipment
DIGITAL	**SUPPORTING INDUSTRIES**
• 5G • AI • DATA CENTER • INDUSTRIAL IOT	• Capital Goods • Technology Hardware & Equipment • Semiconductors & Equipment • Software & Services • Telecommunication Services • Media & Entertainment • Retailing • Consumer Durables & Apparel
ENERGY	**SUPPORTING INDUSTRIES**
• EV CHARGING PILE	• Capital Goods • Technology Hardware & Equipment

Source: Digital Park Thailand, Krungsri Research

Regulatory reforms and the impact on industry

Stability

Measures in the real estate market

- New loan-to-value (LTV) rules
- Land and Building Tax Act

Reform of financial regulations

- Increase consumer protection
- Reduce the COVID-19 impact
- Prepare for anticipated changes

Health

Address excessive sugar consumption

- Impose sugar tax on non-alcoholic drinks with rates calibrated to sugar content

Energy and Environment

Reform of energy sector regulation

- Liberalize the LNG market
- Trim crude reserve requirement
- Extended subsidies for E20 and E85 gasohol and B10 and B20 diesel

Introduce energy-efficient building regulations

- The Building Energy Code will cover the design and construction of new buildings in 9 categories

Trade

Changes to trade regulations

- The Regional Comprehensive Economic Partnership (RCEP)
- UK has reduced or suspended tariffs on imports
- US rescinded GSP status for imports of Thai ceramics in 473 product categories
- Revised the ASEAN Trade in Services Agreement (ATISA)

Other measures

Measures in various industries

- Suspend the annual THB40/room fee levied on hotels
- Include retread tires as controlled item; this will affect tires used in large vehicles
- Review or repeal duplicate/outdated laws and regulations ('guillotine' process).

Source: Krungsri Research

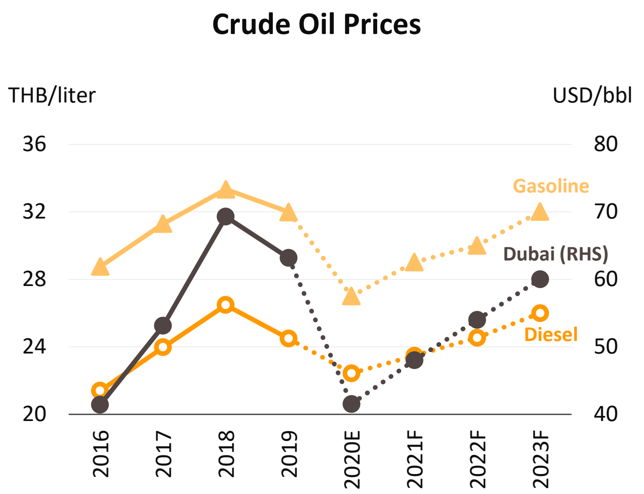
SECTOR IN FOCUS

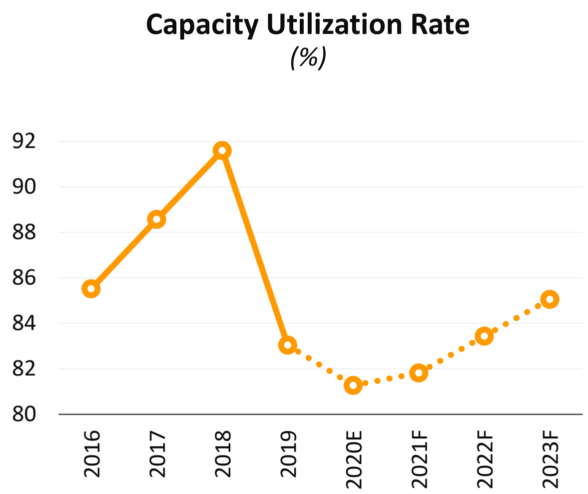
01 CYCLICAL PLAYS

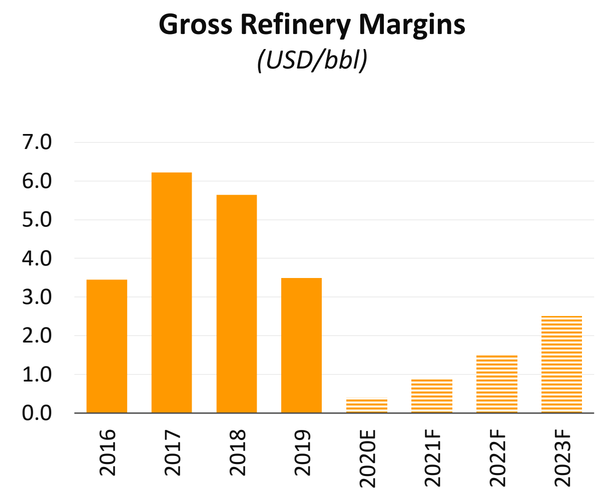
02 PANDEMIC-INDUCED GROWTH

03 VIRAL AFTER-EFFECTS

Refineries: Tight supply conditions and cyclical recovery in oil demand will support crude prices





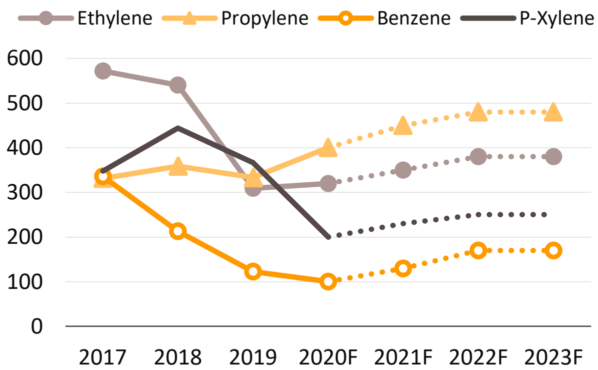


- **Dubai crude price will bounce back.** The world economy is projected to return to a growth trajectory next year, which would increase demand for oil. On the supply side, the coalition of oil-producing countries led by Saudi Arabia and Russia will continue to adjust supply to meet demand. Hence, global oil inventories will fall further, which will tighten the market. Based on these supply/demand dynamics, **Dubai crude oil prices are projected to rise to USD48 per barrel in 2021, USD54 in 2022, and USD60 in 2023.** The market will be buoyed by stronger demand for petroleum products (except aviation fuel because of ongoing travel restrictions), which will widen Singapore GRM to USD0.9-2.5/barrel.
- **Domestic pump prices will also rebound.** Over the next three years, gasoline price is projected to climb to an average of THB30.0, THB31.5 and THB33.0 per liter, and diesel to THB23.5, THB24.5 and THB26.0 per liter.
- **Thai refineries' earning will recover, led by stronger domestic demand and wider GRM.** Demand will be boosted by 3.0-4.0% average annual increase in the number of vehicles on the road. That would lift fuel demand by 2.8-3.3% annually. There are no new production facilities scheduled to come online over the next 3 years, so capacity utilization should continue to average 82-85%.

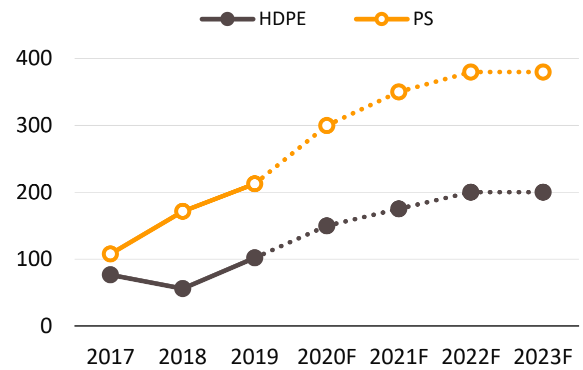
Source: Energy Policy and Planning Office (EPPO), Bloomberg, Krungsri Research

Petrochemicals: Riding on the global upswing in industry

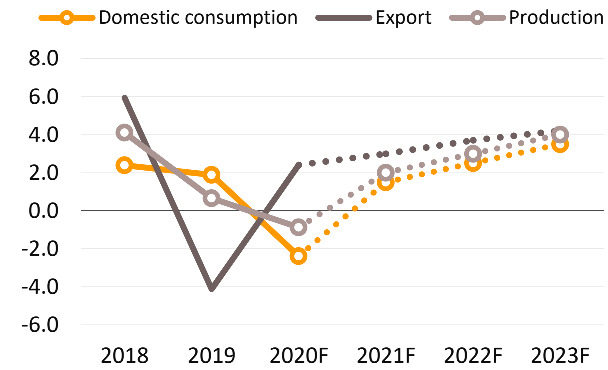
Global Upstream Petrochemical Spreads
(USD/ton)



Global Downstream Petrochemical Spreads
(USD/ton)



Thailand Petrochemical Market
(% growth)

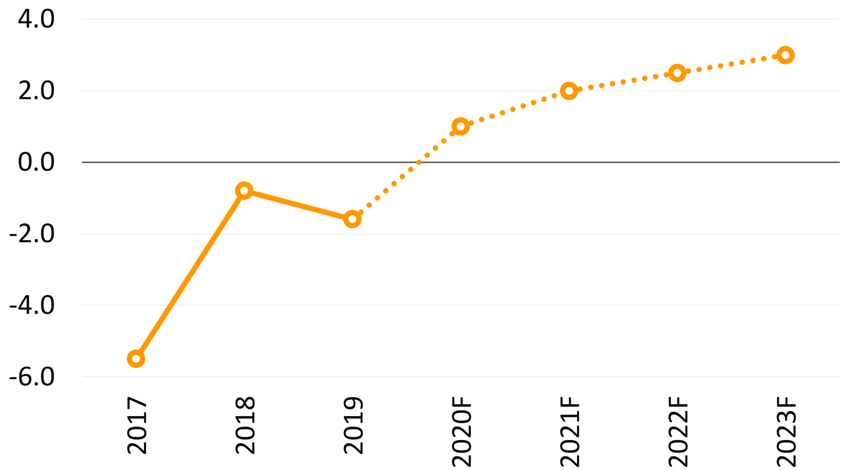


- **A recovery in the global economy will lift demand,** and in turn, prices and spreads.
  - Prices for naphtha will rise to USD 420-480/tonne driven by: (i) higher crude prices; and (ii) opening of new petrochemical facilities and a South Korean plant resuming production (that uses naphtha as input).
  - Ethylene spreads will widen to USD350-380/tonne, but new production capacity coming onstream in 2021 and high inventory levels in China will keep benzene spreads at USD130-170/tonne.
  - Spreads for polyethylene will widen but new capacities in China and Southeast Asia will cap these at USD175-200/tonne. Polystyrene spreads would rise to USD350-380/tonne.
- **Stronger spreads for main products will boost operators' earnings,** while higher demand for plastic resins by downstream industries, including auto parts & assembly, construction and medical supplies, is expected to raise domestic and export demand by 1.5-3.5% and 3.0-4.2% p.a., respectively.

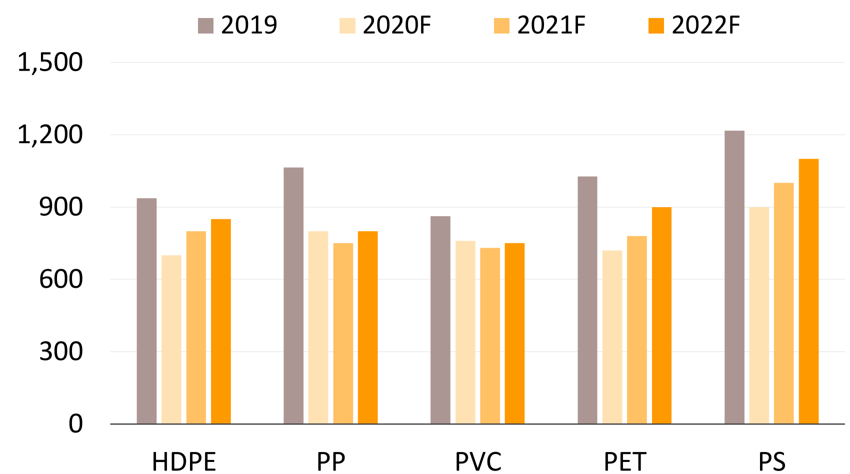
Source: Office of Industrial Economics (OIE), Bloomberg, Krungsri Research

Plastics: Gain from better conditions for downstream industries and government's investment promotion

Sales Growth of Thai Plastic Product
(% per annum)



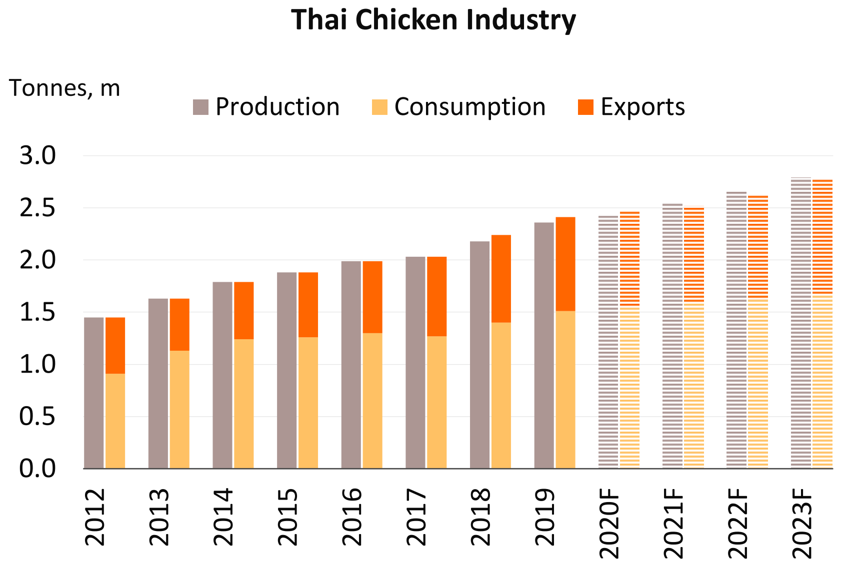
Selected Plastic Resin Prices
(USD/ton)

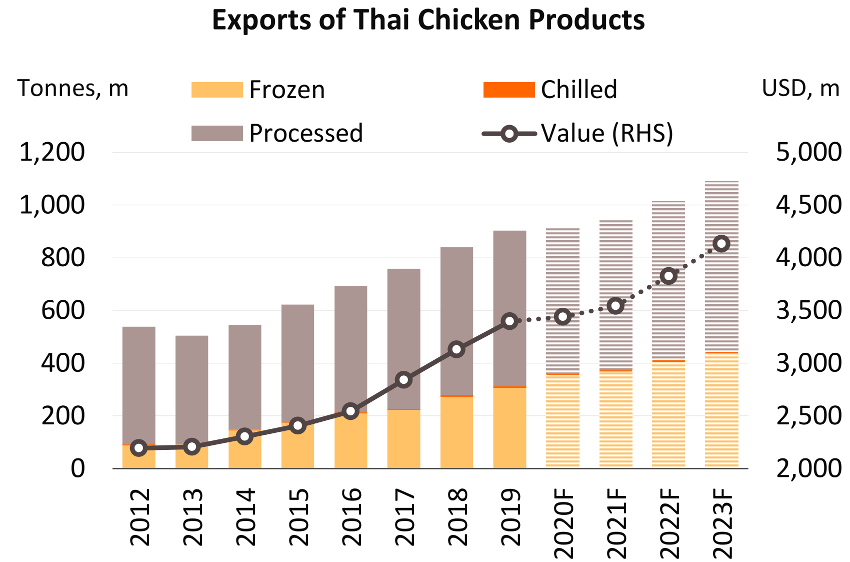


- **Over 3 years from 2021 to 2023, the plastics industry should see decent growth.** The industry will gain from better market conditions for downstream industries, most importantly packaging, electronics & electrical appliances, auto assembly and auto parts, construction, and medical supplies. These industries together account for 80% of the domestic market (by value) for plastic products. In addition, government measures to boost investment especially in the 'new S-curve' industries will also benefit plastics producers that are part of these supply chains. **Krungsri Research projects both the domestic and export markets for plastic goods would grow by 2.0-3.0% per year from through to 2023.** Meanwhile, prices of plastic resins are likely to remain low in line with trends for crude oil prices for the next few years. **Thus, operators in the industry should be able to maintain their earnings growth trajectories.**
- **Over the mid- to long-term, players will need to overhaul their business models if they wish to maintain their growth rates.** This will likely include overhauling production lines to emphasize the manufacture of high-value plastics that meet the needs of more specialist, niche markets, and the growth of Thailand's future industries – medical devices, electric vehicles, robotics, and aeronautics. In the face of growing global concerns over the environmental impact of plastics, players will also need to consider producing environmentally-friendly bio-plastics made from agricultural inputs such as cassava, palm and sugarcane. This would benefit from government efforts to attract investment, and which the government hopes to establish as one of Thailand's rising industrial stars.

Source: OIE, Bloomberg, Krungsri Research

Frozen and Processed Chicken: Fueled by recovering economy and supply disruption in overseas markets

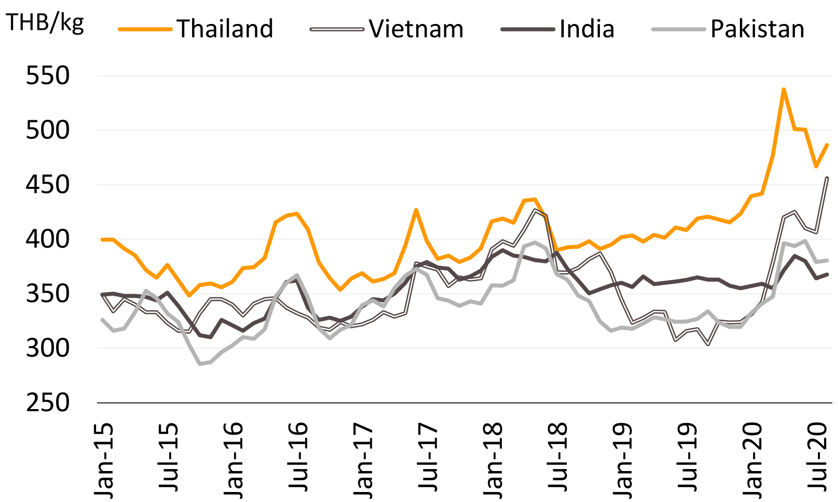


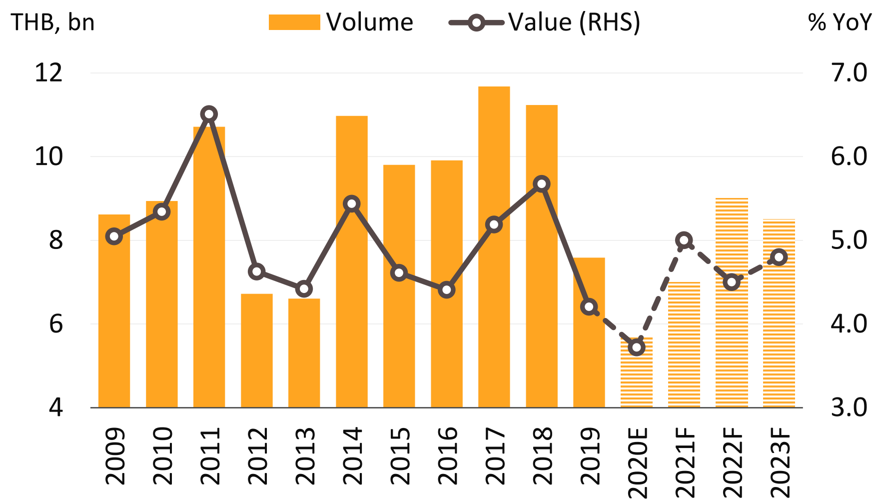


- **Business conditions will improve for the chicken processing industry, with output rising and demand, both domestic and export, strengthening in line with the economic recovery.**
  - **Domestic chicken production should rise by 4.0-5.0% per year** to 1.66-1.82bn broilers, or 2.54-2.79 mn tonnes of meat. Farmers will be incentivized by higher prices (possibly THB34.5-36.5/kg) backed by stronger domestic and export demand.
  - **Domestic demand will grow by 2.5-3.5% p.a.** as the economy rebounds and the Food & Beverage industry recovers.
  - **Exports of chicken products will rise by 5.0-7.0% p.a,** boosted by: (i) stronger global demand; (ii) supply disruption in major chicken-producing and exporting countries caused by outbreaks of bird flu and African Swine Fever; and (iii) the signing of FTAs between Thailand and its trade partners will give Thai exporters a comparative advantage.
- Nonetheless, chicken meat producers could face higher production costs due to higher prices for soy- and corn-based feed. This would pressure earnings but they will remain healthy.

Source: Ministry of Commerce (MOC), Krungsri Research

Rice: Brighter outlook buttressed by La Niña condition and improved international price competitiveness



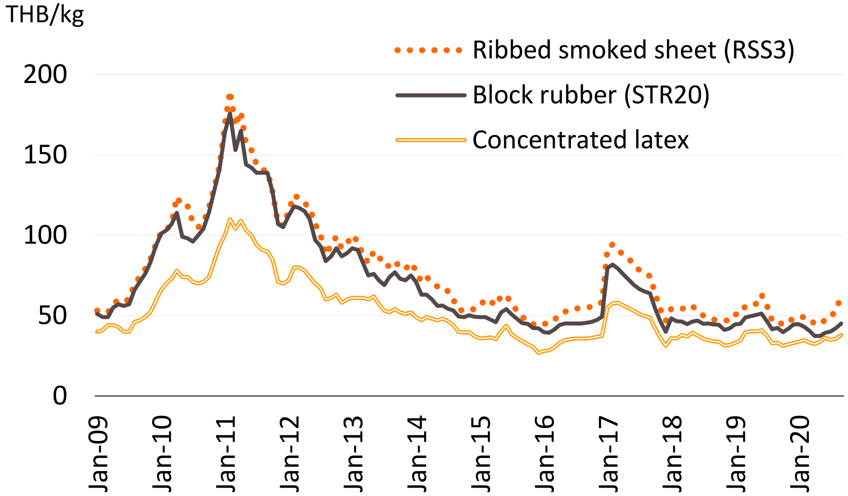


- **Annual output is expected to rise by 1.0-3.0% to 30-32 mn tonnes of paddy or 20-21 mn tonnes of milled rice.** This would be driven by more favorable weather, which will boost yields especially for in-season rice (in 2021-2022, La Niña condition should help farmers). Farmers will also likely expand planted area and/or increase number of plantings because (i) although prices are falling, they remain above production costs, and (ii) they are incentivized by government measures to expand operations, including income guarantee, crop insurance, help with planting schedules, and soft loans to slow the release of new harvest.
- **Players will continue to face challenges,** including domestic and international price competition and high cost of Thai rice, though the impact will vary across different segments of the industry.
    - **Exporters: Exports will return to growth** as competitiveness improves when domestic prices fall and current stock is sold off. But exporters will need to shoulder the costs of purchases made in 2019-2020 when Thai rice was more expensive.
    - **Millers: Businesses face higher risks** because they will have to contend with uncertain weather and large excess supply. Large/integrated operations which can control costs will have an advantage, while SMEs may face problems with liquidity or securing paddy supply.
    - **Silos: Revenue will remain depressed** due to large excess capacity. Operators will need to cut prices and seek alternative markets.

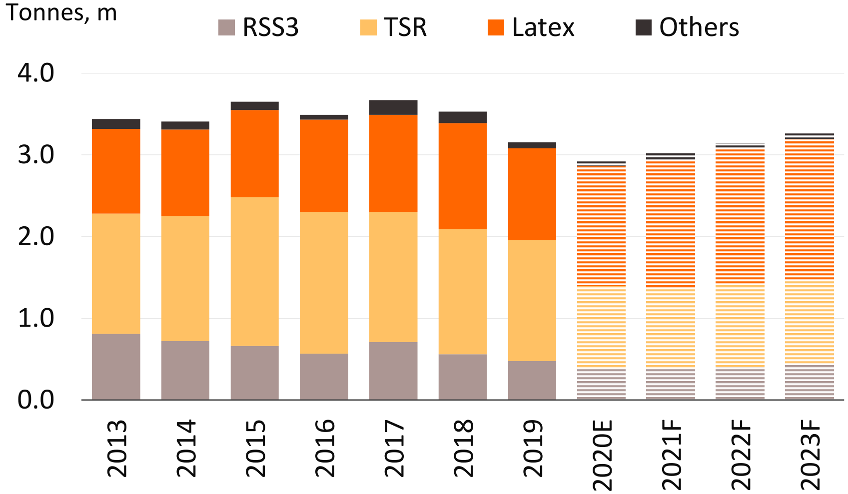
Source: Food and Agriculture Organization (FAO), MOC, Krungsri Research

Rubber: Robust demand from tire & surgical glove makers; benefit from smaller output in other exporting countries

Global Natural Rubber Prices



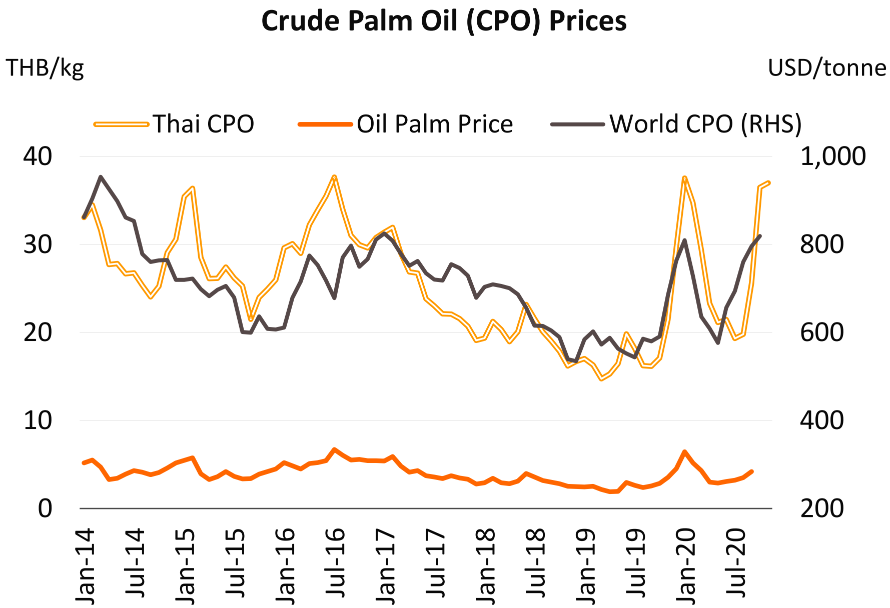
Thailand Rubber Exports

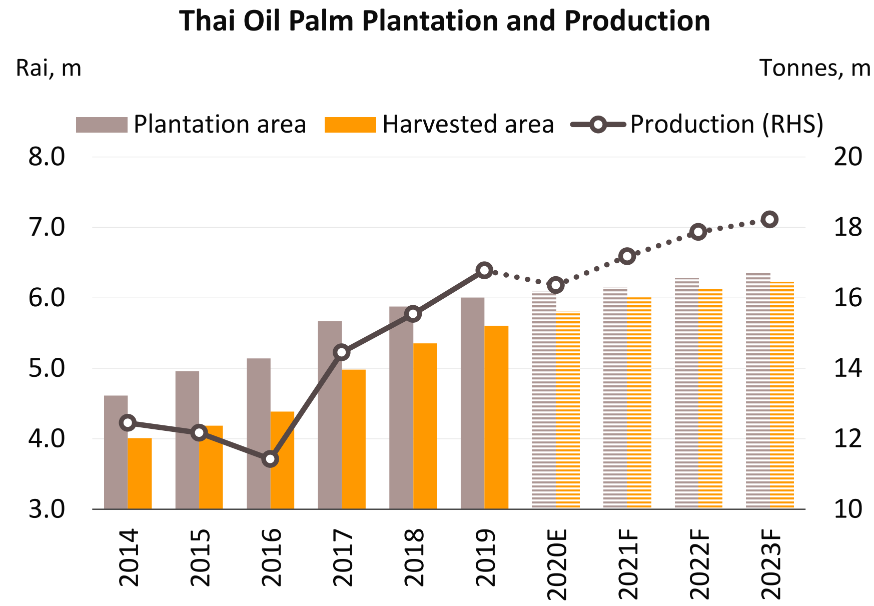


- **Output will rise by 3.0-4.0% annually,** led by: (i) earlier expansion in planted area; (ii) better climate; (iii) serious outbreak of leaf fall disease in other producing countries will benefit Thai rubber producers and raise prices; and (iv) incentives offered to farmers to expand plantations, such as income guarantee scheme.
- **Domestic demand will rise by 4.0-5.0% per year** premised on the economic recovery, progress in government infrastructure projects, growth of downstream industries, and government support for the industry. **Exports will also return to growth, rising by 3.0-4.0% annually** driven by stronger demand from downstream industries, again led by manufacturers of tires and surgical gloves. Thailand will also benefit from smaller output in other rubber-producing countries. In Indonesia and Malaysia, this will be due to outbreak of leaf fall disease and labor shortage, and in Vietnam it will be due to severe storms. However, the outlook will vary across product groups.
  - **RSS and TSR: Exports will rise by only 1.0-3.0% and 1.0-2.0%, respectively,** due to competition from traditional producers (Indonesia, Malaysia and Vietnam) and from new entrants to the market (Cambodia, Lao PDR and Myanmar).
  - **Latex: Exports will grow by 5.0-7.0% p.a.** on stronger demand from producers of latex gloves and other latex-based medical products, especially in Malaysia, the most important market.

Source: Office of the Rubber Replanting Aid Fund (ORRAF), MOC, Krungsri Research

Oil Palm: Propelled by government support to encourage higher consumption and stabilize price





- **Fresh fruit bunches (FFB) output should rise by 3.0-4.0% annually,** premised on (i) an expansion in cultivated area, (ii) age profile with trees now entering the most productive phase their lifecycle, (iii) better climate, and (iv) government income guarantee scheme and other incentives. **Domestic demand for CPO will rise by 2.0-3.0% per year,** thanks to government support to encourage higher consumption (biodiesel, pure refined palm oil, and input for downstream industries) and policies to stabilize prices. However, players will face conditions particular to their segment.
  - **Oil palm growers will have to manage price fluctuations.** Although profit margins would rise given farmers will try to keep prices above production costs of THB3.01/kilo, growers could see prices hovering at THB3.5-5.5/kilo.
  - **Crude palm oil millers will see weaker earnings,** especially independent mills that are not integrated in the broader supply chain. CPO demand will rise but this is dependent on short-term government intervention (e.g., use CPO for power generation, measures to promote palm oil exports, and international trade policies) to align demand with future supply in the market.

Source: Department of Internal Trade (DIT), Office of Agricultural Economics (OAE), Krungsri Research

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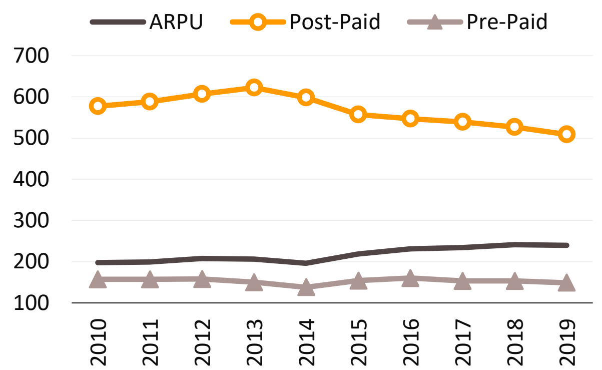
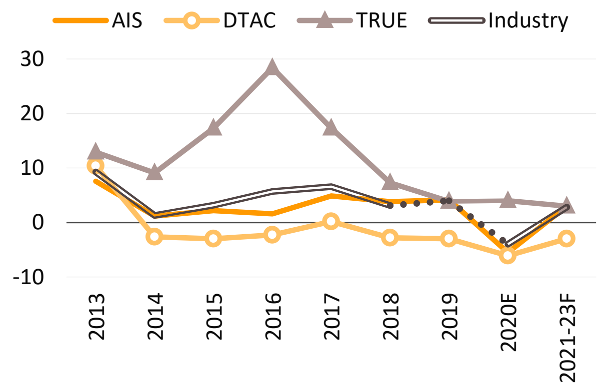
Mobile Communication: Greater uptake of mobile data services to access the internet and online content

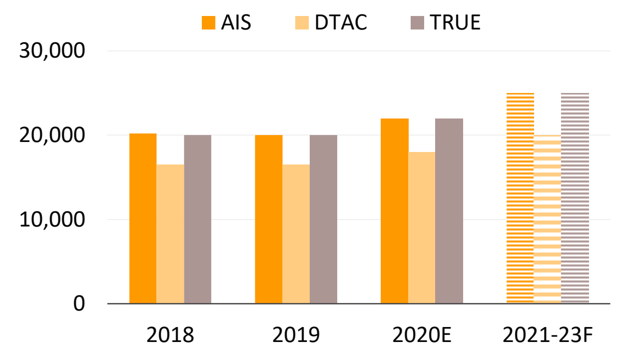
Average Revenue Per User: ARPU
(THB/month)



Growth of Mobile Service Revenue
(%)



Investment Budget
(THB, mn)



The industry is expected to return to growth mode, with services income rising by an average annual rate of 2.0-3.0%. This will be supported by the following:

- **Stronger demand for mobile phone services will come from:** (i) greater uptake of mobile data services to access the internet and online content, use social media, carrying out online financial transactions and online shopping. This presents an opportunity for companies to expand their customer base and revenues; (ii) government policy, for example, to promote the digital economy, the smart city program, and government-led auction for 5G spectrum, will lead to the build-out of new telecommunication infrastructure nationwide and create new sources of demand; and (iii) the digitalization of industry (especially sales & marketing and the implementation of 5G technology) will extend the Internet of Things application, and with this, the use of mobile telecommunication services. Operators will increase investment to expand networks to meet future growth and to provide additional services.
- To this end, operators could roll out strategies that include: increasing the quantity of digital content, expanding services to business customers, providing custom network services to other industries, and forming more partnerships with other content providers. All these would help to expand customer base and create new revenue sources in the long term.

Source: Office of the National Broadcasting and Telecommunications Commission (NBTC), Krungsri Research

Electronics and Electrical Appliances: Riding on the digitization wave

Electronics Exports

% YoY

	2017	2018	2019	2020E	2021F-2023F
HDD	23.6	9.9	-8.2	-2 to -1	2-3
IC	7.1	0.8	-8.9	-5 to -4	3-4

Electrical Appliances Sales and Exports

% YoY

	2018	2019	2020E	2021F-2023F
Domestic sales	-0.2	-2.2	-4 to -3	3-4
Exports	3.6	-0.4	-5 to -4	2-3

Electronics

- **HDD output will expand slightly over the next 3 years, and exports value would rise by 2.0-3.0% per year.** This would be mostly driven by rising demand for large-capacity HDDs for use in cloud computing and data centers. There has been surge in big data services because the COVID-19 crisis is driving demand for cloud-based services that allow users to work and/or study anywhere. However, the market will suffer from the uncertainty in US-China trade relations and long-term trend to replace HDDs with SSDs. The IDC (September 2020) sees the global PC market shrinking by 2.0-4.0% annually over 2021-2023.
- **ICs export value will move in step with production, with both rising by an average of 3.0-4.0% p.a.** Growth will be supported by an estimated 6.2% increase in the global supply of semiconductors in 2021 (WSTS, May 2020). And in developed economies, by the rapid rollout of 5G networks (Gartner, July 2020), for which investment is forecast to rise by 19% in 2021. This will create a launch pad for the growth of Internet of Things, which will increase demand for ICs.

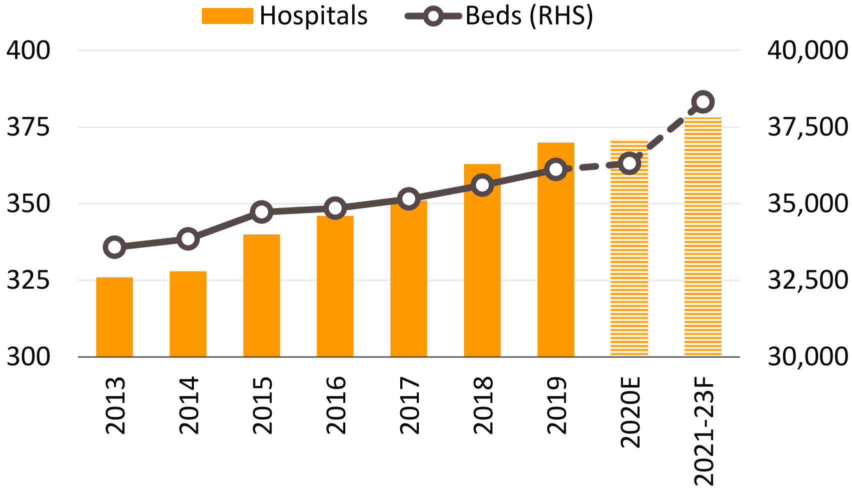
Electrical Appliances

- **Over the next 3 years, domestic sales volume of electrical appliances is forecast to rise by 3.0-4.0% per year, along with a recovery in the economy and real estate market.** Specifically, climate change and rising temperatures will increase demand for air conditioners. The market will also be boosted by the release of new devices that employ Internet of Things (IoT), regular sales promotions by distributors, and rising online sales platforms which gives users wider access to product information to make purchase decisions.
- **Exports will also grow in the coming period, but a slightly slower rate of 2.0-3.0% per year.** Generally low ownership of electrical appliances in much of Asia suggests there is ample room for sales to grow across the region. The extended US-China trade war wis an an opportunity for Thai manufacturers to increase shipments to the US to replace goods from China. They could include air conditioners, refrigerators, cookers and microwaves.

Source: MOC, Krungsri Research

Private Hospitals: Structural changes underpin stronger demand as operators increasingly focus on partnerships

Number of Private Hospitals & Beds



Aging Population

(% of population 65+ to total population)

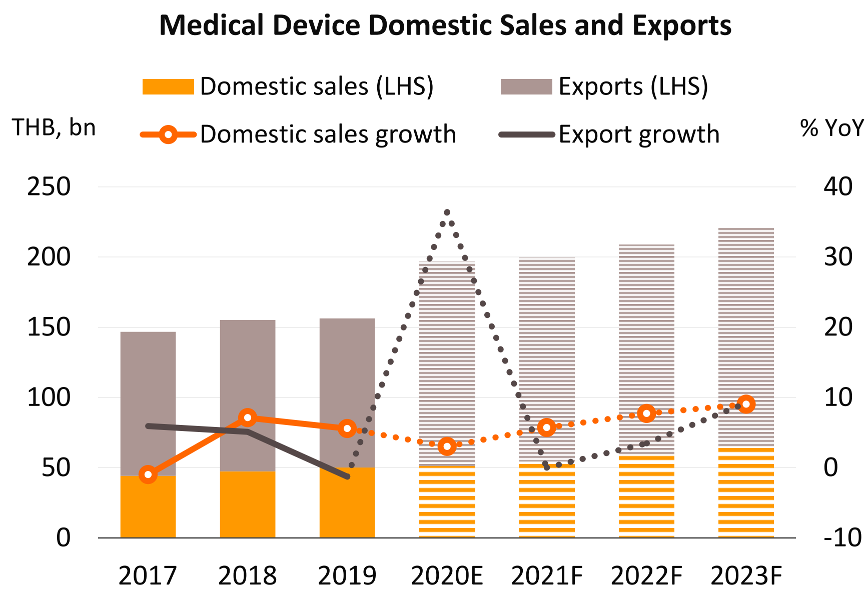
		2020	2040
Hyper-aged (20%)	Japan	29	34
Aged (14%)	South Korea	16	31
Aging (&%)	Singapore	15	30
	Thailand	**13**	**26**
	Vietnam	8	17

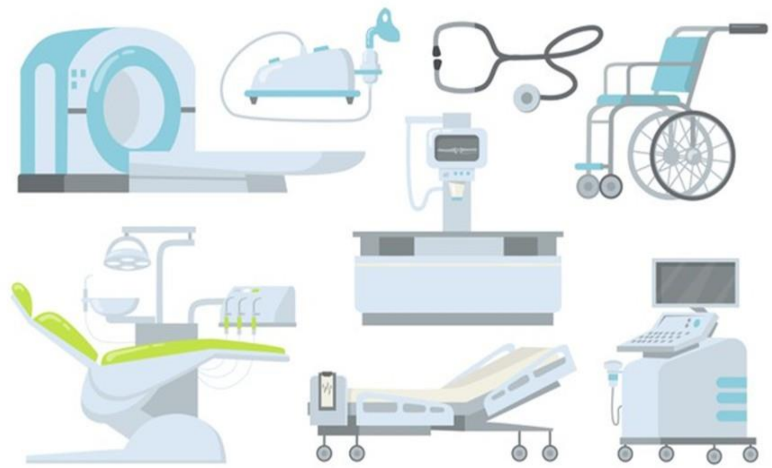
The outlook will improve over the next 3 years and revenues will rise by 4.0-5.0% per year. The number of private-sector hospital beds is forecast to rise by at least 2,000 from 36,000 currently. This outlook would be supported by the following:

- **Demand will rise because of several factors:**
  - **Structural changes underpinning stronger demand** will include: (i) an aging society – the NESDC estimates in 2021, there will be greater demand for complex treatments; (ii) a growing middle-class population (and concurrent increase in spending power)[1/] from 41% of the population currently; and (iii) increasing urbanization – the UN estimates this will rise from 50.4% of the population in 2015 to 60.4% by 2025.
  - **Other factors boosting demand** will include: (i) infections of notifiable, existing and newly emerging diseases will increase, as will NCDs; (ii) hospitals are extending their customer base and by increasing and broadening investments at home and abroad, as they develop their strengths and build more comprehensive supply chains, e.g. by partnering with organizations to extend their networks and connect to more customers; and (iii) government policies to encourage the development of Thailand as an international medical hub, including designating this one of the 'new S-curve' industries.

Source: National Statistical Office (NSO), United Nations, NESDC, Krungsri Research

Medical Devices: Increased awareness of personal well-being triggered by pandemic will stoke greater demand

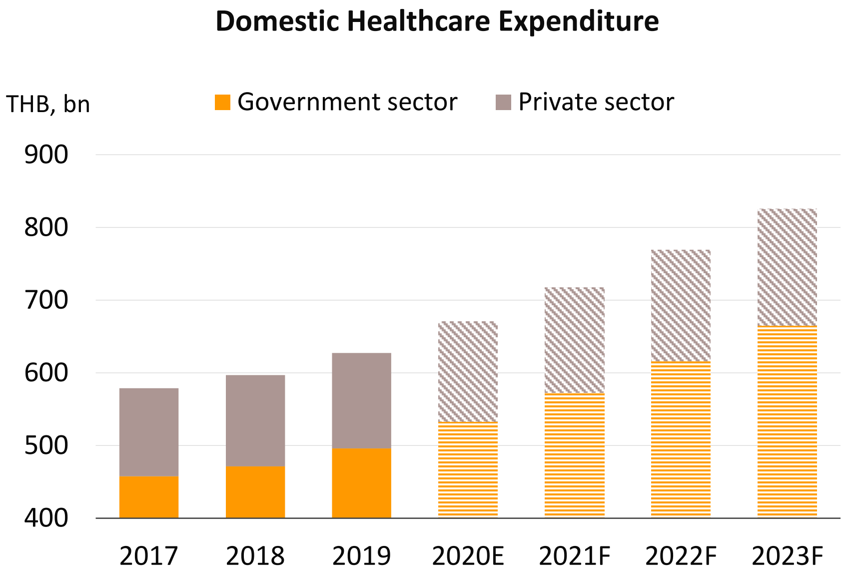


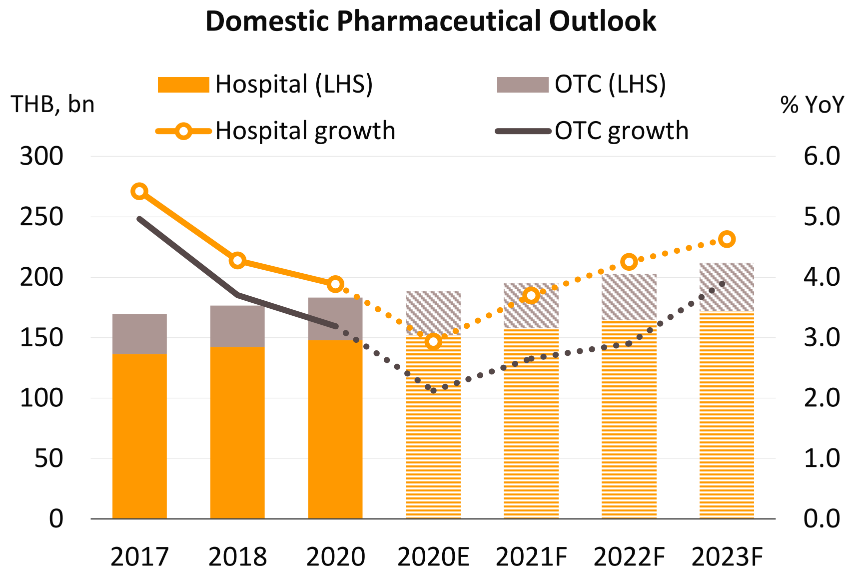


- **The market for medical devices will see steady growth, and the value of domestic sales and exports is forecast to grow by respectively 7.5% and 4.2% per year.** This outlook is supported by: (i) the COVID-19 pandemic has increased awareness of personal well-being in Thailand, which would boost demand for medical equipment related to personal and public health; (ii) growing rates of ill-health, especially of heart disease, stroke, cancer, and diabetes, and the aging of society, which will increase demand for modern diagnostic equipment and more advanced technology; (iii) investment by private-sector hospitals in the expansion of existing sites and the opening of new branches, which will then lead to stronger purchases of medical equipment; and (iv) the incentives available to companies investing in the manufacture of medical equipment.
- **Investments will continue to flow into the industry from overseas players** thanks to BOI investment promotion schemes and the waiving of customs duties on imports of parts and materials used in R&D. In addition to feeding continuing growth for the industry, the rising investment will also stoke more intense competition, especially for SMEs, which comprise the majority of players in the sector.

Source: FitchSolutions, Krungsri Research

Pharmaceuticals: Surging demand due to more incidence of ill-health and rising concerns over personal health



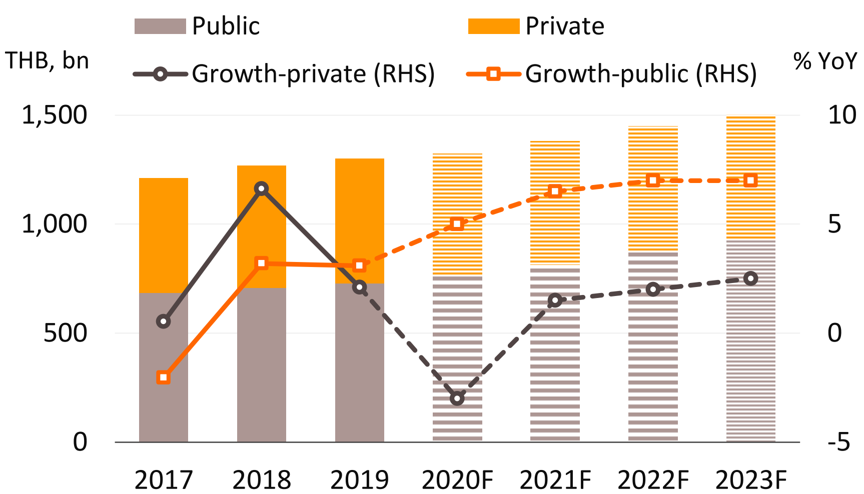


- **The value of the domestic market is forecast to grow by 3.5-4.5% annually.** This would be led by stronger demand, resulting from: (i) more incidence of ill-health, especially chronic non-communicable conditions (NCDs) that need to be treated with expensive imported medicines, and an aging Thai society; (ii) extension of the government health insurance scheme across the population, which has led to rising expenditure on medicines; (iii) after a sharp drop in 2020, foreign patients will start to return to Thai hospitals; and (iv) following the COVID-19 pandemic, there are rising concerns over personal health. **Exports will also strengthen, especially to ASEAN region** where there is more confidence in Thai-made pharmaceuticals following Thailand's admission to the GMP PIC/S scheme.
- **But competition could also intensify on:** (i) greater imports of low-cost Chinese and Indian medicines; (ii) entry of new (especially overseas) players to the domestic market, e.g., Japanese corporations which will produce in Thailand for export back to their home country to penetrate the CLMV market; and (iii) Thai businesses in other economic sector expanding into pharmaceuticals. Production costs will also rise due to: (i) the need to upgrade facilities to meet GMP-PIC/S standards; and (ii) higher prices for imported medicines and active ingredients because of the inflationary effect of COVID-19 on chemical inputs.

Source: FitchSolutions, Krungsri Research

Contractors: Driven by government megaprojects, which should pull in greater private-sector investment

Construction Investment Trends



Current Strategies of Contractors to deal with the crisis

Large Contractors

- Offer lower construction cost amid price competition
- Use strong bargaining power to reduce raw material cost from suppliers
- Focus more on the revenue from system management e.g. mass transit operations
- Seek backlog from CLMV infrastructure projects esp. water energy projects in Laos.
- Leverage machine utilization and use prefabricated building materials to compensate for labor shortage

SME

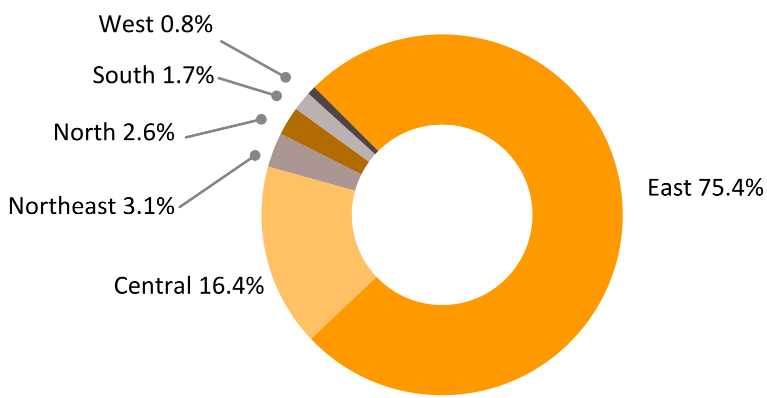
- Subcontract with large contractors for government projects
- Extend construction periods for possibly delayed projects
- Find order of construction for building renovation

- **Total construction investment value is expected to grow by 4.5-5.0% in 2021 and then by 5.0-5.5% in 2022-2023,** driven principally by government spending on megaprojects especially those connected to the development of the EEC, which should then pull in greater private-sector investment.
- **Public construction investment should rise by 6.0-6.5% in 2021 and then by 6.5-7.0% in 2022-2023** on work on megaprojects in the EEC, these beginning in 2021 and including: (i) the first phase (Suvarnabhumi-U Taphao) of the highspeed rail-link connecting the area’s three airports (Don Muang-Suvarnabhumi-U Taphao); (ii) Phase 3 of the Map Ta Phut and Laem Chabang Port development, scheduled for construction once land reclamation work is complete; and (iii) the construction of a new passenger terminal at U Taphao. Projects in other areas will include the Bangkok-Nakhon Ratchasima highspeed rail line, the BTS western Orange Line (Bang Khun Non-Cultural Center) and the southern Purple Line (Tao Poon-Rat Buruna) and other ongoing projects, e.g. extensions to the twin-track railway and the Bangkok metro.
- **Private construction investment will return to growth of 1.0-1.5% in 2021, 1.5-2.0% in 2022 and 2.0-2.5% in 2023,** supported by: (i) strong public-sector spending on construction that will crowd-in greater private-sector investment; (ii) additional demand for factories and industrial space in the EEC, with the Rojana Nong Yai estate in Chonburi and the EGCO estate in Rayong slated for construction in 2021; and (iii) an up-tick in construction of residential accommodation, especially of low-rise properties in the Bangkok suburbs.

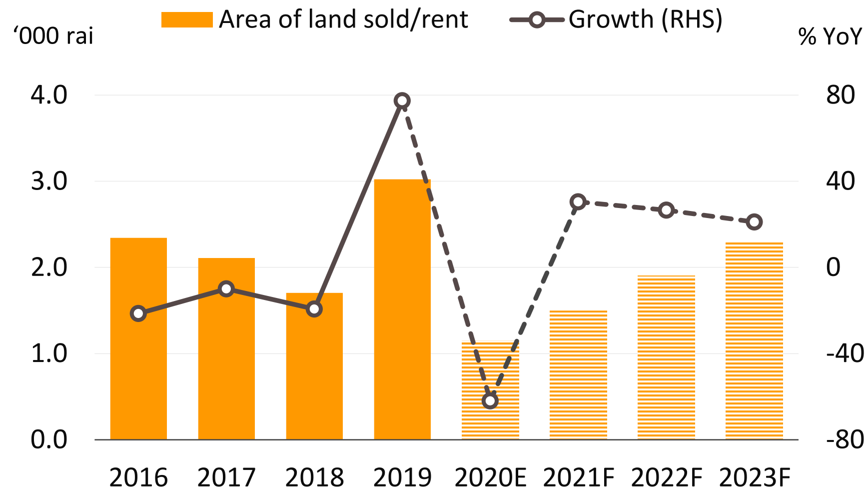
Source: Office of the National Economic and Social Development Council (NESDC), Krungsri Research

Industrial Estate: Looking forward to a turnaround

Industrial Estate Area, by region
(as of 1H20)



Sold/Rent Industrial Estate Area

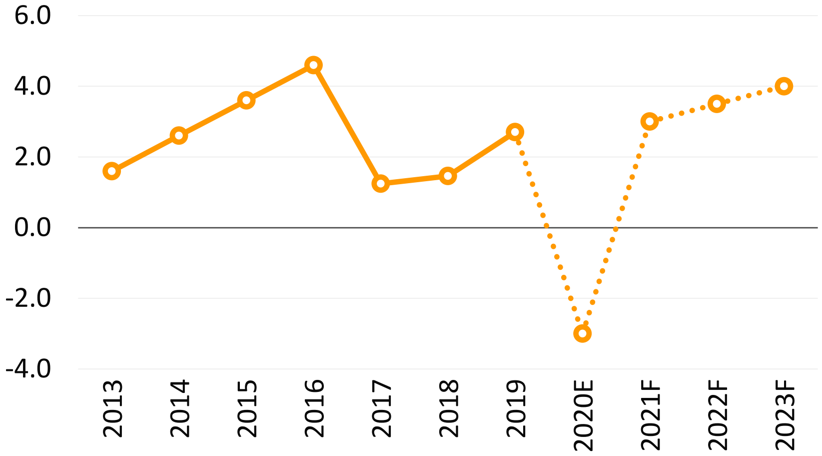


- **Following poor performance in 2020, the industry should bounce back to average annual growth of 25% over the next 3 years. Total land sales and rental should notch 2,000 rai per year again.** This turnaround will be supported by: (i) improving investor confidence along with a more optimistic economic outlook, and more businesses (especially those involved in agriculture, food processing, and the production of medical devices) relocating to Thailand to circumvent the US-China trade conflict; and (ii) progress in public infrastructure projects, especially in the EEC, where crowding-in effect should stimulate greater private-sector investment.
  - **Eastern region:** Demand for land in industrial estates should surge in this region as extensive investment in infrastructure would support the development of the EEC in 3 provinces - Chonburi, Rayong and Chachoengsao. This will attract greater interest from Thai and international investors, especially from those active in the targeted industries for which the government is offering investment support. However, rising land prices may cap supply.
  - **Central region:** Rising demand for industrial land in the central region will be supported by the region's geographical location and easy connections to national transport links.
  - **Other regions:** Demand will remain flat and the outlook will not improve until the government introduces more measures to stimulate private-sector investment.

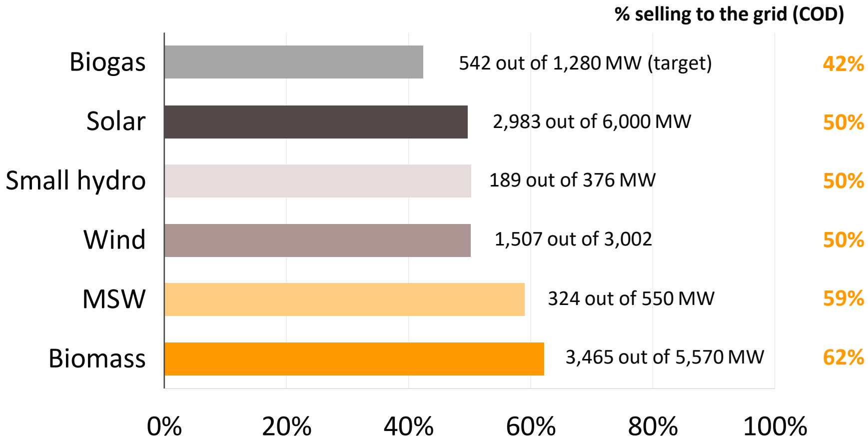
Source: Real Estate Information Center (REIC), Krungsri Research

Power Generation: Attractive investment incentives will support greater investment and larger capacity

Growth of Electricity Demand
(% per annum)



Renewable Energy Generation Capacity & AEDP* Target
(as of 1H20)



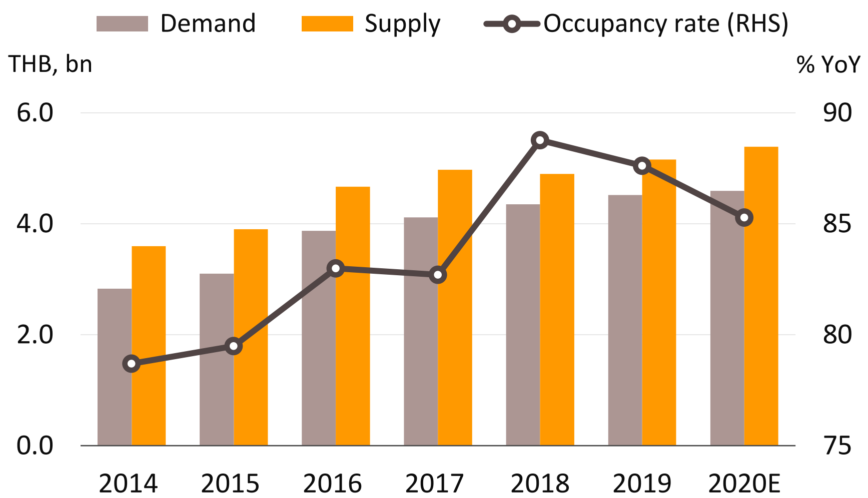
* Alternative Energy Development Plan

- **Domestic demand is forecast to rise by 3.0-4.0% annually, in line with the economic recovery.** Attractive investment incentives for the industry under the Power Development Plan (PDP) will support greater investment and larger capacity in the three categories below:
  - **IPPs will see competitive bidding for new supply contracts in the next 3-5 years.** In 2021-2022, players will start to bid for 700 MW of new generation capacity annually. This will replace 8,300 MW of natural gas-powered capacity in the western region which contracts will expire soon and the plants would be offline over 2025-2027. Some IPP's are also investing in power plants overseas, such as Indonesia, the Philippines, Lao PDR, China and Myanmar.
  - **SPPs are likely to expand installed capacity and build new power plants,** especially natural gas cogeneration plants which contracts will expire soon. In addition, SPP hybrid firms (i.e., plants that run on a mix of renewables) will benefit from higher government feed-in tariff of THB3.69/unit (vs THB3.66/unit in 2019). This support will be maintained over the next 20 years.
  - **For VSPPs, investment should pick up from 2021,** especially in rooftop solar capacity and biomass, biogas and waste-to-energy generation capacity. Supply from these remain below target, so they offer an investment opportunity. And, such plants are also competitive on costs and inputs. The government will buy more wind-generated power in 2022-2024 when EGAT complete the installation of high-voltage lines to wind farms in the northeast and south of the country to the national grid.

Source: Electricity Generating Authority of Thailand (EGAT), EPPO, Department of Alternative Energy Development and Efficiency (DEDE), Krungsri Research

Warehouse Space: Encouraged by recovering economic activity and rising prevalence of online shopping

Supply and Demand for Warehouse Space



- **Demand is projected to grow by 3.1% per annum, driven by**: (i) recovering manufacturing and trade along with a rebound in the economy; (ii) increasing government spending on infrastructure megaprojects, which will boost demand for collection and distribution centers in new locations; and (iii) the emergence of a 'new normal', with greater prevalence of online shopping and with this, stronger demand for warehouse space.
- **Operators will be cautious with adding supply,** due to: (i) the fragile economic recovery and ongoing risks to international trade and investment; (ii) post-COVID, there is excess supply of space, especially in traditional warehousing; and (iii) stiff competition in the industry on rents and the provision of additional services. To reduce competitive pressure in the market for traditional warehousing, **some operators will invest in modern warehousing that is 'built-to-suit', for which supply is still limited.** This will help to secure stable revenues, with long-term leases, 3-yearly increases in rents, and revenues from additional services. **Warehousing space is projected to rise by 160,000 sq.m./year (up 2.9% p.a.) and occupancy rates will average 85.6%.**
- **Operators with the greatest potential will be in the BMR, the EEC, regional centers or border regions** with convenient transportation connections to urban centers, or in industrial estates, parks or regions, or duty-free zones across the country.

Source: WHA Premium Growth Real Estate Investment Trust (WHART), Krungsri Research

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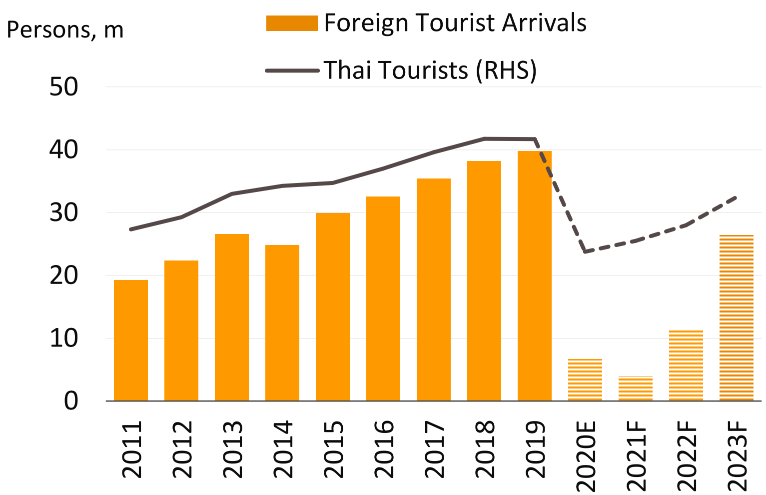
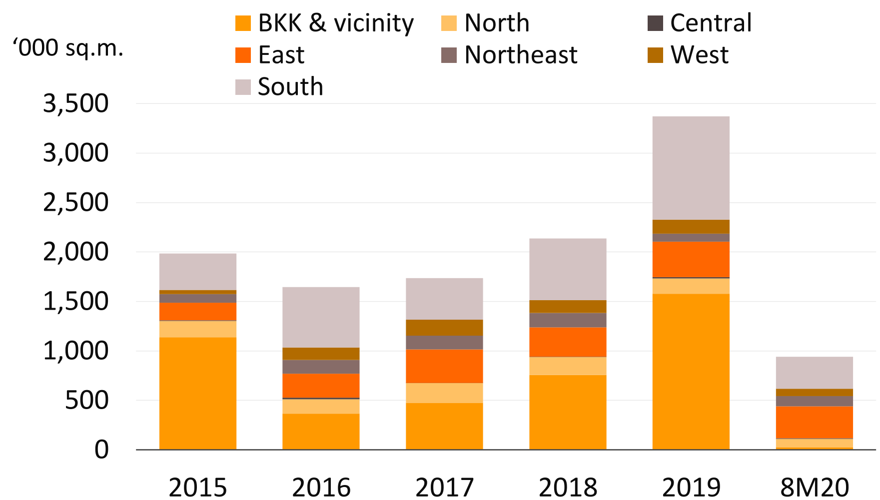
Hotels: Still depressed and will take at least 4 years to return to pre-COVID level

The number of tourist in Thailand



Construction permits for new hotels

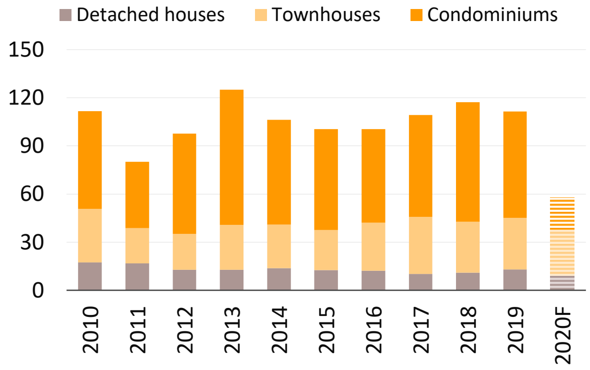


- **Depressed conditions will continue into 2021 before recovering in 2022-2023,** and it will take at least 4 years to return to the pre-COVID-19 level of 38-40 mn annual arrivals. In 1H21, arrivals should slowly rise thanks to Special Tourist Visas (STVs) and perhaps the creation of travel bubbles, while by 2H21, vaccinations should be widespread, boosting international tourism. However, domestic tourism will rebound quicker, partly thanks to ongoing government stimulus measures.
  - **Hotels in Bangkok, Pattaya and Phuket: Revenue will recover with the tourism sector generally,** and occupancy rates will average 50-55%. However, investment will slow now that the market is oversupplied after the COVID-19 crisis.
  - **Hotels in regional centers and key tourist areas:** Revenue will improve on recovery in domestic tourism, benefitting from government stimulus measures.
  - **Hotels in other areas: Income will stay flat at 2020 levels.** Government measures will help lift domestic tourism but occupancy rates will remain low as most visitors are traveling to other provinces.
  - **Hoteliers everywhere will see rising competition from a supply glut (of hotels and other types of accommodation)** which, with only slowly recovering demand, will limit increases in room rates, especially in areas that rely heavily on foreign tourists.

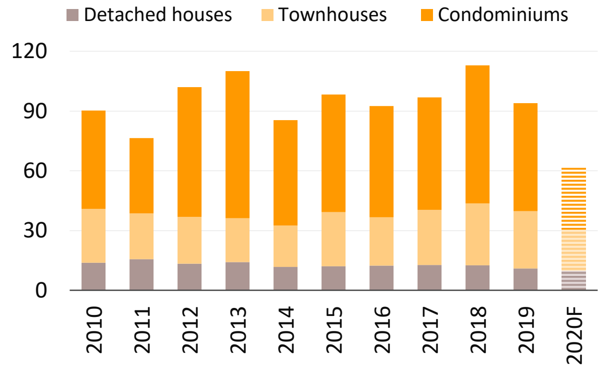
Source: Ministry of Tourism and Sports (MOTS), Krungsri Research

Housing in BMR: A bumpy recovery

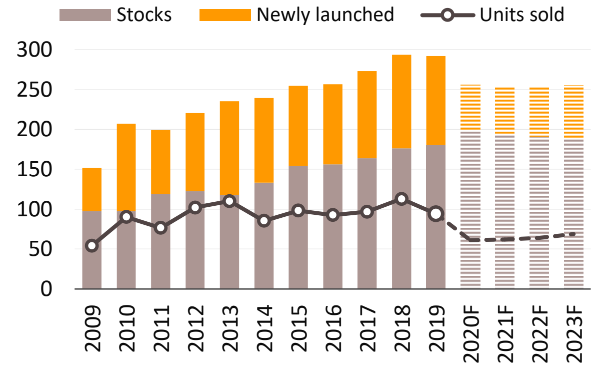
New Properties
(Units, thousand)



Units Sold
(Units, thousand)



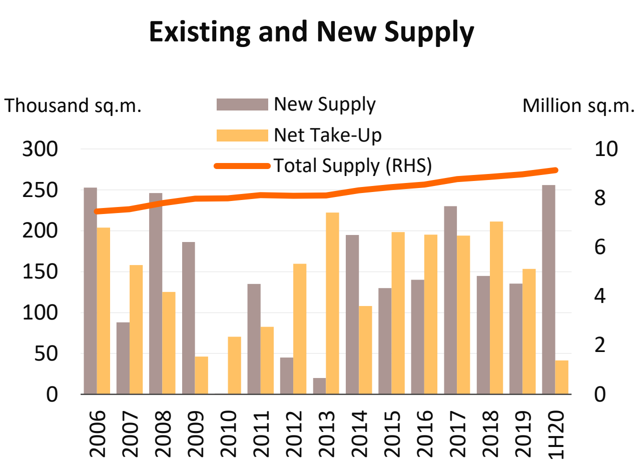
Total Supply
(Units, thousand)

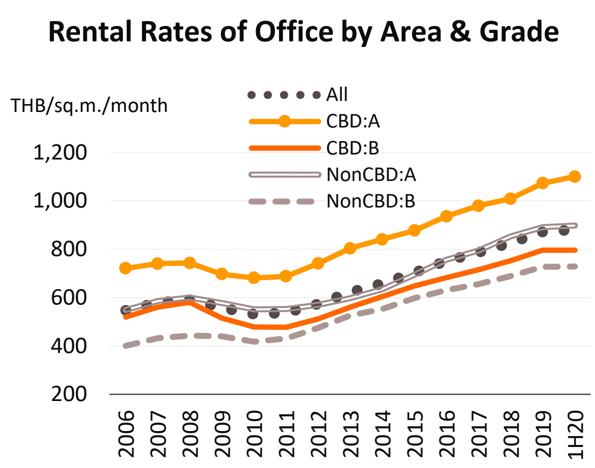


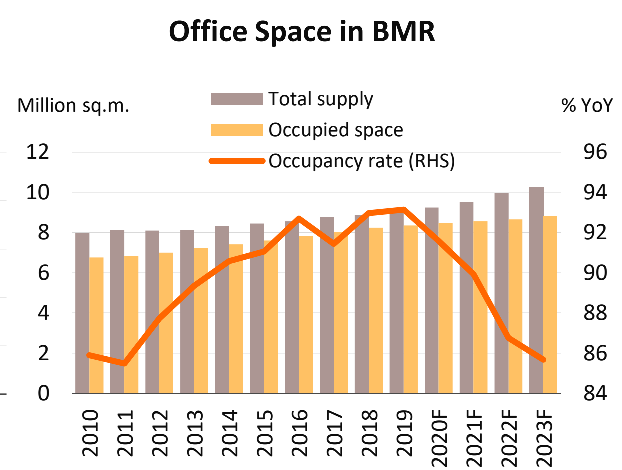
- Over the next 3 years, the housing market in the BMR will rebound along with a recovering economy, acceleration of government-funded megaprojects, and greater demand from expatriates investing or working in Thailand. However, the severe supply glut will continue to dampen the market and cap growth.
- **New housing supply coming to market should rise by 5.0% per year, compared to 10.0% p.a. average growth over the last 10 years.** Developers will also continue to adjust development portfolios, shifting towards low-rise housing to preserve profit margins and meet real demand. For large developers, revenues should continue to grow, but for SMEs competition will intensify in both sales and access to development land, which prices will rise as supply dwindles.
  - **Low-rise housing (detached housing and townhouses):** The COVID-19 impact and the 'new normal' have forced many individuals to spend more time working from home. This has raised demand for low-rise housing. In addition, with the expansion of the mass transit and road networks and investment in new shopping centers and mixed-use projects, suburban living is becoming more desirable. Low-rise projects are also more attractive to investors because they can be built and sold in phases, land for suburban low-rise developments is cheaper than land in central Bangkok, and the condominium sales continue to be hurt by the supply glut more than low-rise housing.
  - **Condominiums:** Demand should improve in some parts of the BMR, especially in the CBD and along some mass transit lines. Also, most condominiums are developed by large, well-established operators that are skilled in project management, marketing and securing working capital. However, despite a drop in new supply in 2020, the market in some locations continue to be affected by excess supply of properties, including more remote, less desirable areas near the MRT Purple Line (Bang Sue-Bang Yai) and MRT Blue Line (Hua Lamphong-Bang Khae).

Source: Agency for Real Estate Affairs (AREA), Krungsri Research

Office Buildings: Look for more normal conditions as pandemic winds down



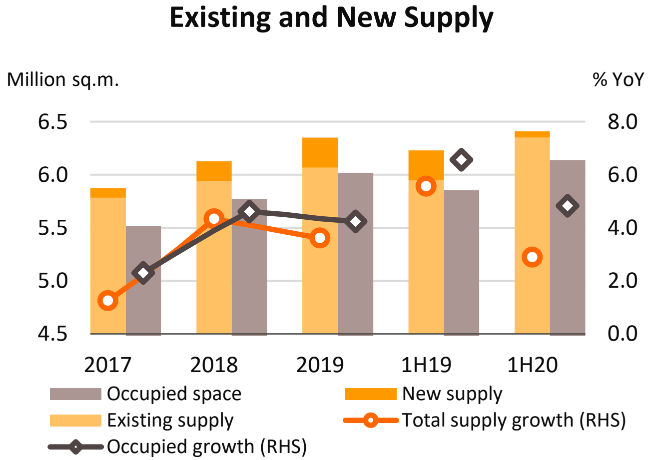


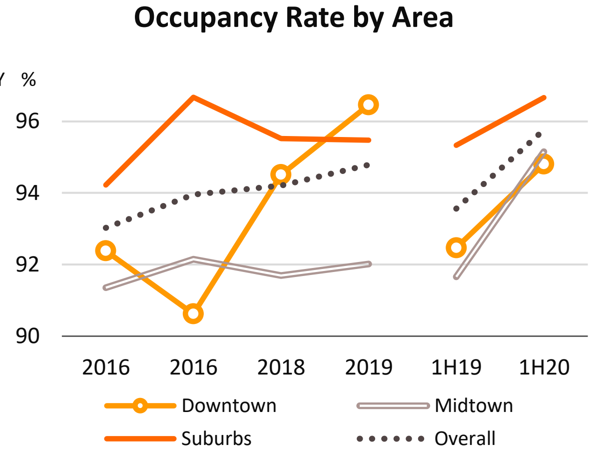


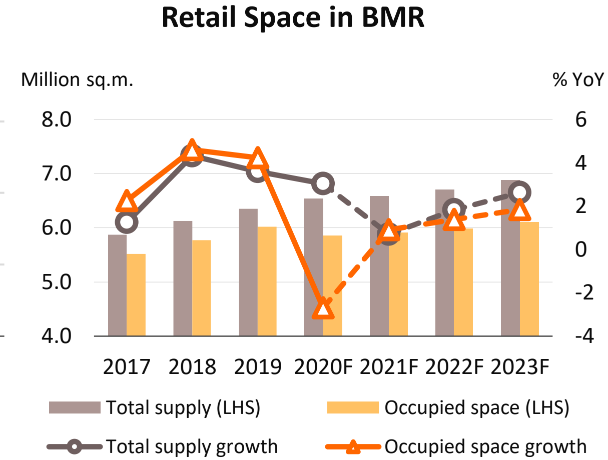
- **Over the next 3 years, business conditions should improve along with the economy.** As the COVID-19 impact abates and conditions return to normal, demand for rental office space will rise. This will also be helped by crowding-in effects of government spending on infrastructure projects. In addition, Thailand enjoys several advantages over other ASEAN countries, including: (i) its geographical location – being in the center of the region makes it a natural hub for connecting trade and investment; (ii) attractive rental rates; (iii) tax benefits for companies setting up regional operating headquarters (ROHs) in the country; and (iv) tax incentives offered to businesses in target industries. However, a total of 1 million sq.m. of new space will come into the market over the next 3 years, which will push down occupancy rate to 86-90%. This would give tenants more bargaining power and slow down rental growth.
- **Owners of rental office properties in the CBD will continue to see healthy rental income, especially for grade-A properties** where there is limited supply, and so rents and occupancy rates would be relatively higher. On the other hand, owners of properties outside the CBD and in more suburban parts of the BMR will see slower or no increase in rental revenues. Developers in these segments, including *small office buildings* built for their own use with some area rented out and *small- to mid-size commercial buildings*, will see stiffer competition because of low barriers to entry given the lower investment value.

Source: CBRE, Krungsri Research

Retail Space: Embracing modernization programs to respond to changing consumer lifestyles



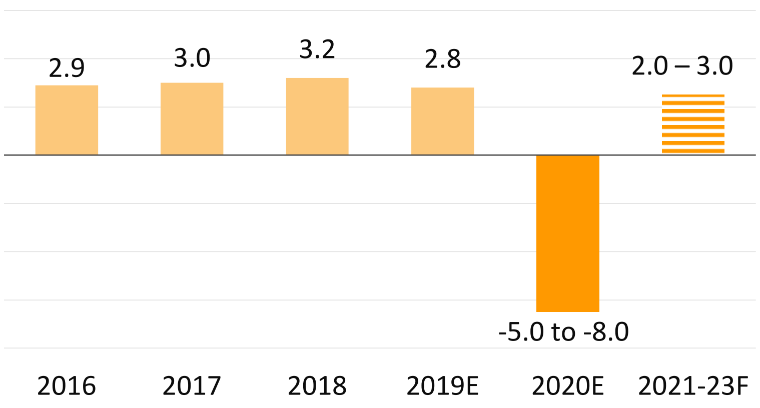




- **Owners of rental retail space will see improving income along with a recovery in private-sector consumption and progress the build-out of new infrastructure.** The latter would help to stimulate greater investment in the retail sector. **Over the next 3 years, demand is forecast to rise by 1.0-2.0% per year, while new supply should total 300,000 sq.m.** This would bring down occupancy rate to 89-90%, but despite this, average rental rates should rise especially for downtown commercial units.
  - **Enclosed malls:** Rental revenues should rise. Although supply will grow steadily to meet future demand, there is limited room for expansion in central areas. Therefore, players are likely to respond to changing consumer lifestyles by investing in modernization programs, which will lead to slightly higher rents.
  - **Community malls:** Revenues would remain flat. With supply and demand remaining unchanged, occupancy rates will not move significantly.
  - **Supporting malls:** Revenues will remain close to 2020 levels, but occupancy rates will edge down with an increase in new supply.
- **Competition would intensify with a rising number of mixed-use developments[2/] being completed in the near future.** By 2025, these would be a footprint of over 1 million sq.m., which will increase the supply of retail space. At the same time, growth in e-commerce will eat into demand, so operators could see weaker occupancy rates and rents, which would reduce profit margins.

Source: CBRE, Krungsri Research

Modern Trade: Prime beneficiaries of recovering economy and unusually-large government stimulus packages



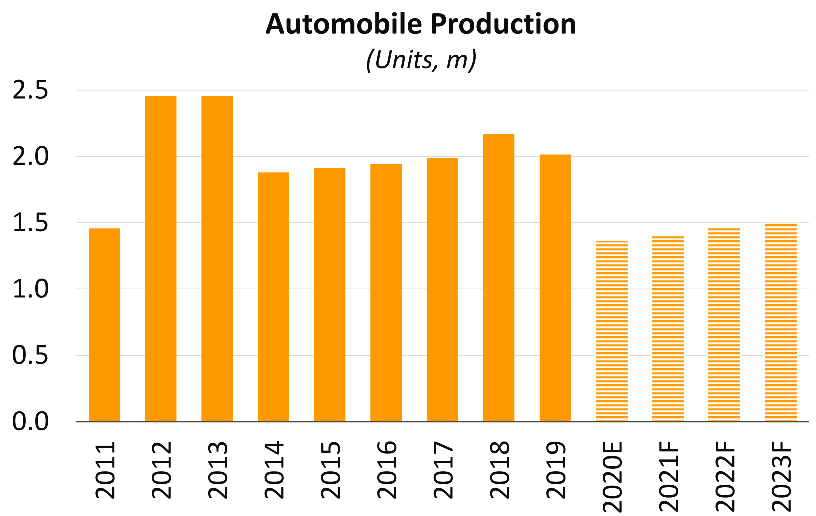
Department stores	Following a drop of 8.5% in 2020, **stronger spending power will lift sales by 2.5-4.0% p.a. over the next 3 years.** Operators will invest in high-growth provinces and across the broader region.
Discount stores	Following a fall of 6.5% in 2020, **sales will bounce back by 2.0-3.0% in 2021-2023.** This segment target low- and middle-income earners who purchase daily necessities. However, there is strong price competition and players need to vie with other types of retailers, including convenience stores.
Supermarkets	After shrinking by 6.5% in 2020, **sales should grow by 4.0-6.0% per year in 2021-2023,** supported by rising spending power of middle- and high-income consumers.
Convenience stores	Following a decline of 6.9% in 2020, **sales is projected to grow by 2.0-3.2% p.a. over 2021-2023,** led by the expansion and almost complete nationwide coverage of branch networks.

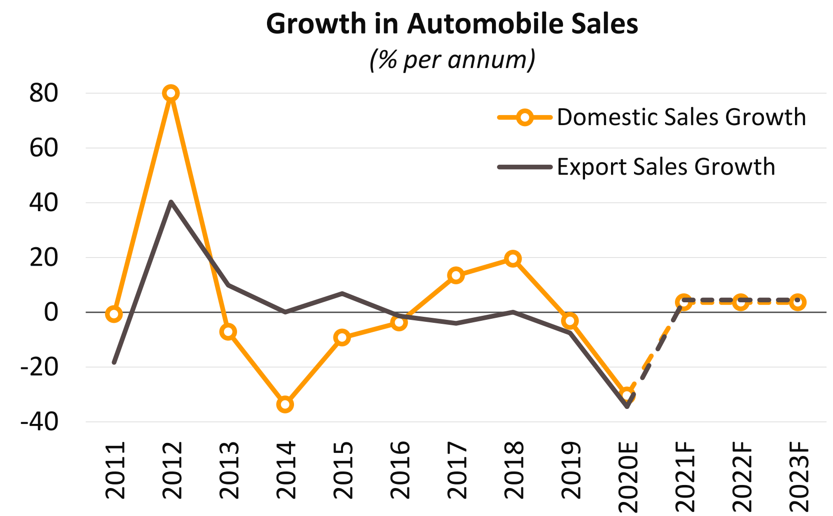
Forecast 2.0-3.0% average annual growth over the next 3 years.

- **Demand: Consumer spending power will recover as the economy improves.** The industry will also benefit from: (i) extra government measures to stimulate spending; (ii) general improvement in investment following the cyclical recovery in manufacturing and exports, while progress in new infrastructure projects upcountry will lead to the expansion of adjacent communities and greater spending; and (iii) growth of CLMV economies, which will encourage more retail outlets in border regions.
- **Supply: Operators will try to increase competitiveness and expand revenue streams and consumer base by:** (i) blending on- and off-line shopping; (ii) partnering with players in other industries, e.g. logistics; and (iii) opening new branches, e.g., along BMR metro lines, in tourist centers, near SEZs, in the EEC, and in regional centers or border regions. Some operators will also increase investment in neighboring countries to meet rising demand.
- Challenges facing the industry include stronger competition from players in e-commerce and high household debt levels.

Source: Thai Retailers Association, Krungsri Research

Automobiles: Brace for recovery, but high household debt and still-tight lending environment might cap growth





- **Industry output is forecast to rise by 3.0-4.0% annually over the next 3 years.** This would be supported by the following:
  - **Domestic sales will rise by an average of 3.0-4.0% per year, premised on a brighter economic outlook.** There would be strong demand for commercial vehicles with accelerating construction activity, online sales, and expansion in the logistics sector. Manufacturers also plan to stimulate the market with a steady stream of new models and offering both internal combustion engines (ICE) and electric vehicles (EVs). However, sales (demand) would be capped by a slow economic recovery which would limit growth in consumer spending, high levels of household debt, and a still-tight lending environment.
  - **Exports should recover at a faster rate of 4.0-5.0% per year as economies in overseas markets rebound.** Exports to ASEAN will also be helped by the Free Trade Area and Mutual Recognition Agreement that cover safety tests for autos & parts; it removes the need to test goods moving between signatory countries. However, there is lingering uncertainty over US-China trade relations and the Philippines (a major export market for Thai auto makers) might hike duties on vehicles imported from Thailand in retaliation for Thailand taking a case to WTO against the Philippines for allegedly under-declaring the value of cigarette exports. The rising popularity of EVs worldwide could also have an impact on Thai auto exports, most of which are ICE vehicles.

Source: Federation of Thai Industries (FTI), Toyota, Krungsri Research

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