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INDUSTRY HORIZON

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Krungsri Research



01 KEY ENVIRONMENTS INFLUENCING THE OUTLOOK

02 2022-24 INDUSTRY FORECAST

Thailand Industry Outlook 2022-2024

Global economy: Different steps towards normalization

- Over the next 3 years, the world economy is expected to expand moderately with multi speed of policy normalization. Tailwinds include vaccination progress, relaxed containment measures, reopening effect, and new investment cycle. However, risks and uncertainty persist, most notably from the possible emergence of new Covid-19 strains, supply chain bottlenecks, and side effect from major countries' policy normalization.

Thai economy: First steps on the path to recovery

- Thai economy is on the path to recovery despite an uneven course. Consumption is recovering unevenly with easing restrictions and stimulus measures. Exports would grow further following global economic recovery and regionalization. Improving economic activity, rising exports, and accelerating infrastructure projects, would lead to a new investment cycle. Tourism shows signs of nascent recovery but will take several years to return to pre-pandemic level. Risks and challenges included COVID-19 pandemic, crisis scars (such as fragile labor market and high debt), domestic political risks, US policy normalization, global supply-side constraints, and geopolitical risks.

Structural changes: Modern technology, servicification, shortening global value chains and infrastructure investment are dominant themes for Thailand's industry outlook

- Modern technology is a key driver transforming Thailand's industry towards growth sustainability amid competitive pressures from shortening global value chain and regional trade blocs. New technology and innovation will also add greater value to products in the form of servicification. With some structural problems eroding competitiveness of Thai industry, spending on government-backed megaprojects will provide opportunities for investment in downstream and related industries.

2022-24 Thai industry outlook: tipping towards a gradual recovery

- Following a period of COVID-19 impacts in 2020-21, Thailand's industries could be heading for a gradual recovery in 2022-24 but at varying degree.
- With a path of recovery, we select some industries that are expected to benefit from global gradual recovery, modern technology transformation, a strong position in global value chains & trade integration and national infrastructure development. They include **Automobile, HDD, IC, Private Hospitals, Digital services and software, Power generation, Industrial estate and Medical devices.**
- However, some businesses that could face major headwinds especially from COVID-19 variant impacts are mostly service sectors that rely heavily on consumer confidence including **Hotel and Housing (notably SME developers).**

Key environments influencing the outlook of Thailand's industry

Macro environments

- **Global economy:** gradual recovery on reopening of most countries
- **Structural changes:** impacts on industry
  - **The rise of service sector:** growing importance in supply chains
  - **Modern technology:** the wave of the digital revolution
  - **Shortening global value chains:** adding competitive pressures for industry
  - **Trade Integration**: tending to regional trade blocs
- **Thai economy:** export & infrastructure investment mainly driving domestic economic growth

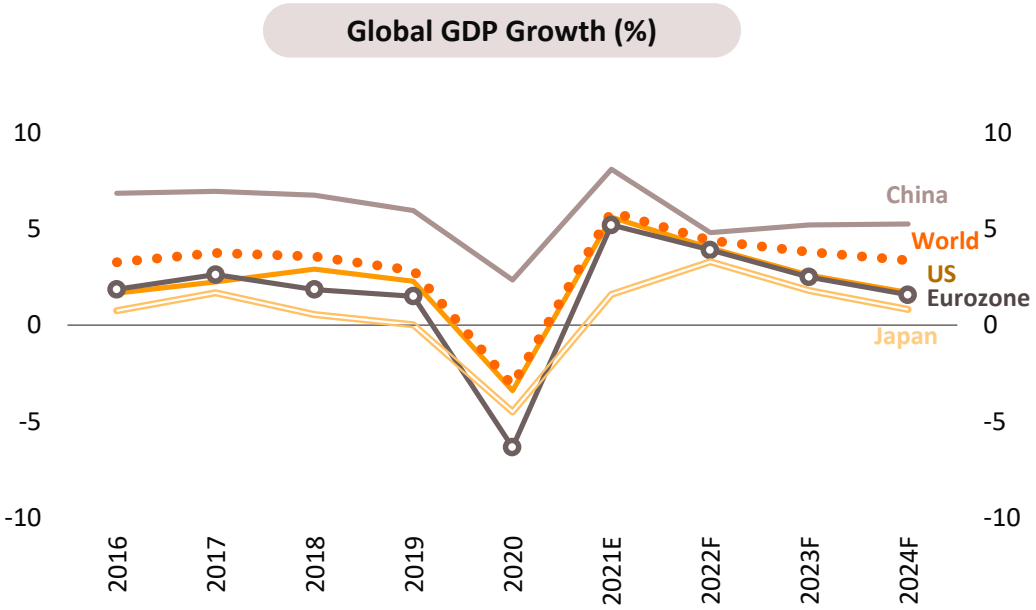
Industrial environments

- **Competitiveness:** limitation of innovation development
- **Regulatory changes:** many changes in government rules affecting Thai industries e.g. law amendment in real estate ownership, review rules on some sectors, plans for transition in energy sector, tourism promotion campaigns and financial stimulus measures

Industry Outlook



Global economic growth will stabilize on unwinding stimulus but rely more on real demand of private sector



Over the next 3 years, the world economy is expected to expand at an average rate of 3.9% per year, slowing to this more moderate rate having hit 5.9% in 2021 on the combined effects of large-scale stimulus spending and the reopening of the major economies.

- Tailwinds lifting the global economy in the coming period will stem from more vigorous activity in the private-sector, boosted by recovery in services and ongoing growth in manufacturing, which will itself be the beneficiary of the progress of vaccination programs, the relaxation of pandemic control measures, the gradual reopening of many countries, new investment cycle in major countries, and the effects of accommodative fiscal and monetary policy, although this is being scaled back as the pandemic recedes.
- However, risks and uncertainty persist, most notably from the possible emergence of new Covid-19 strains, worries over the efficacy of vaccines, and supply chain bottlenecks that may persist until 2022.
- In addition, the need to combat stronger inflationary pressures through policy normalization and the raising of central bank interest rates may result in higher operating costs for businesses in the period ahead.

Source: IMF World Economic Outlook (January 2022), Krungsri Research

Global economy shifting from manufacturing to being largely focused on services



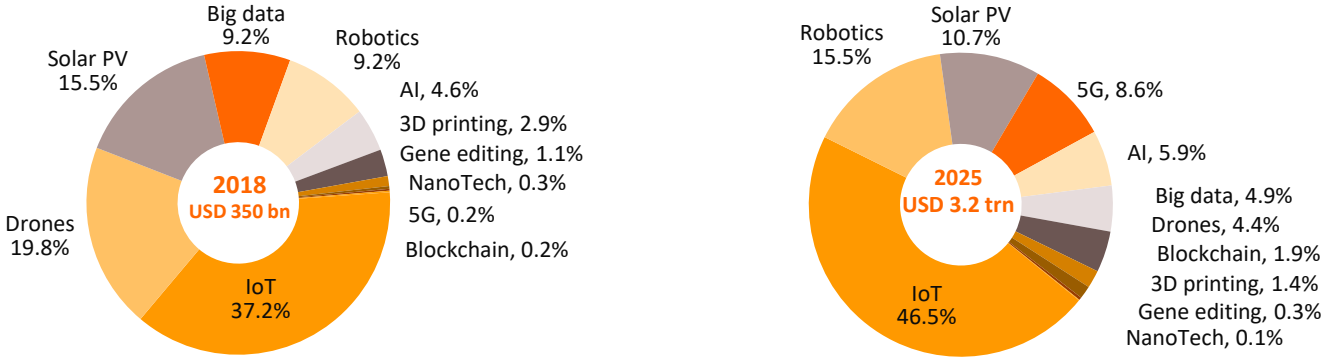
The share of global GDP generated by the service sector rose from 60.4% in 2008 to 64.3% in 2019. In developed economies, this share is generally much higher and around 75% of US and UK GDP comes from services, mostly from modern services such as IT/software and finance. In Thailand, services comprised 58.3% of the economy as of 2020, up from 50.4% in 2008.

In the coming period, there is an opportunity for the service sector to increase its contribution to Thai GDP thanks to the growing application of new technology and innovation within the sector, *for example through the development of online platforms that provide access to global tourist sites, and the development of robotic and remote surgical systems*. At the same time, the manufacturing sector is also turning to *"servicification"* to add greater value to their products and to widen product differentiation.

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

Modern technology transforming industry towards growth sustainability

Market Size Estimates of Modern Technology



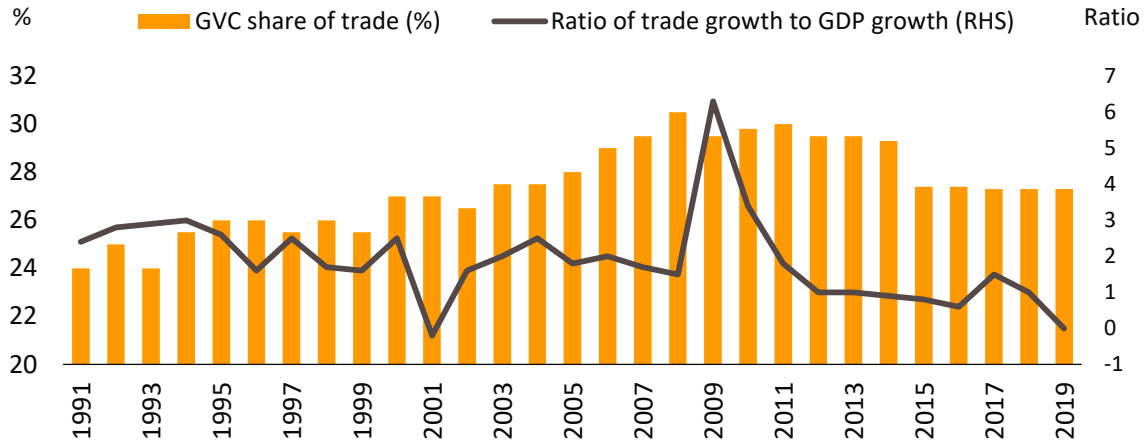
The wave of the digital revolution is now carrying the whole world along, is not just building added value across the economy, it is also helping to increase the sustainability of economic growth and adding to the security of supply chains.

- **The Internet of Things (IoT);** IoT will have a greater role to play in gathering data related to everyday activities from sensors placed in devices including medical equipment, electrical appliances, and auto equipment.
- **Robotics;** Robots are able to carry out precision work in manufacturing and increasing work safety, such as transporting dangerous loads in the electronics or construction industries, welcoming guests to hotels, planting crops, and feeding livestock.
- **Artificial Intelligence (AI);** AI is used for big data analytics or to develop "cobots" (work alongside humans) that are mostly deployed in auto and electronics industries and in healthcare for diagnosis and tracking Covid-19 infections.
- **5G;** This is used to develop networks that allow the work of different machines to be integrated efficiently, cutting labor costs, reducing work times, and slashing manufacturing waste.
- **Drones;** Drones are reducing companies' dependency on labor and cutting the time taken to survey land, especially in agricultural and construction site.

Source: UNCTAD 2021, Krungsri Research

Shortening global value chains adding competitive pressures on industry

Stagnation of GVCs and Global Trade, post-2008



Major factors causing global value chains (GVCs) to shrink at an accelerating rate;

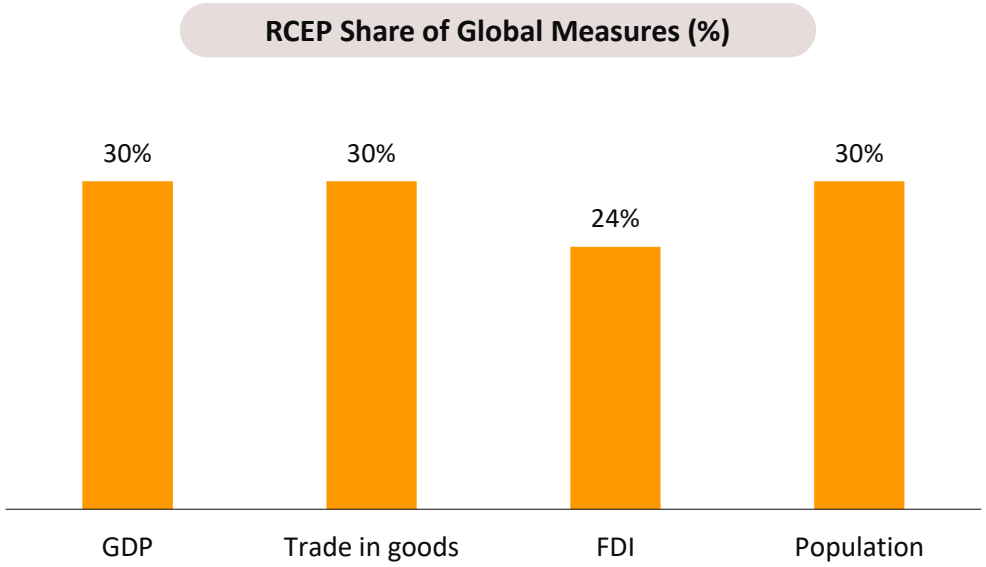
- Barriers to trade will continue to be tightened by the major economic powers.
- The major countries will increase their self-reliance to develop new technology in upstream industries.
- Corporations are increasingly turning to sources of inputs within their home region as a result of the Covid-19 crisis and the subsequent stalling of production lines, as seen in the production problems that many auto assemblers are facing due to the global chip shortage.

As trade channels narrow, competitive pressures are also rising. Players in the middle of the race that manufacture midstream products (such as electronics, computers and auto assembly) will have narrowing opportunities to add value on GVCs.

Analysis by Krungsri Research, players in auto assembly, computer manufacturing and petroleum refining should move upstream, whereas those in the production of electronics and machinery would do best by moving downstream to secure positions and value added on GVCs.

Note: GVC share of trade is proxied by the share of foreign value added in exports, based on the UNCTAD-Eora GVC database 2019
Source: World Bank, UNCTAD , WTO 2020, IMF working paper 2019, Krungsri Research.

Trade integration increasingly tending to take the form of regional trade blocs



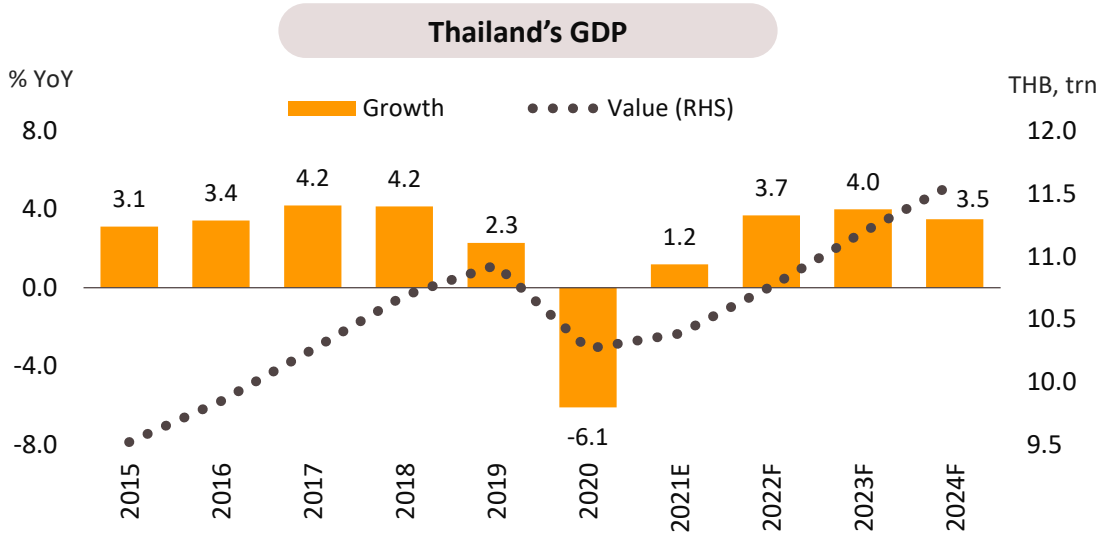
The Regional Comprehensive Economic Partnership (RCEP) has 10 ASEAN members and a further 5 countries (Australia, China, Japan, New Zealand, and South Korea). The agreement will come into effect on 1 January, 2022.

- KS Research's assessed that for Thailand, joining RCEP is forecast to benefit sales of agricultural products, tires, plastics, chemicals, electronics and computer parts.
- Over the long term, the agreement will increase security for supply chains, in particular, auto and auto parts manufacturing, petrochemicals, and plastics that Thailand has a strong production base.

The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) has 11 members, namely Japan, Canada, Mexico, Peru, Chile, Australia, New Zealand, Singapore, Malaysia, Brunei and Vietnam. At present, Thailand has no obvious intention to join the CPTPP, on worries about anti-monopoly rules that would affect in particular the agricultural and pharmaceutical industries.

Source: Bloomberg, Krungsri Research.

Thai economic outlook: An export driven recovery, helped by a cyclical rebound in investment



The Thai economy is expected to see average annual growth of 3.7% over the next 3 years. Omicron would hit domestic activity less than tourism sector as lower fatality rate suggests less stringent restrictions than previous waves. A gradual recovery will begin in the second quarter of 2022 and this will be supported by a number of factors.

- The progress of the vaccination program and the adoption of the 'new normal' are stimulating greater demand for goods and services. However, consumption would improve at an uneven pace by occupation, region and income level.
- The Thai tourism sector will gradually recover, although uncertainty over outbreaks will continue to weigh on the sector. It will not be until 2025 that arrivals will return to their pre-pandemic level.
- Exports are continuing to grow, supported by a global economic recovery and greater regionalization, including the RCEP. Exports will nevertheless come under pressure from supply problems and the periodic imposition of barriers to trade.
- Private-sector investment will tend to rise on cyclical economic recovery, greater digitalization, and infrastructure megaprojects.
- An additional lift to the economy will come from government stimulus that will include both regular and extra budgetary expenses.

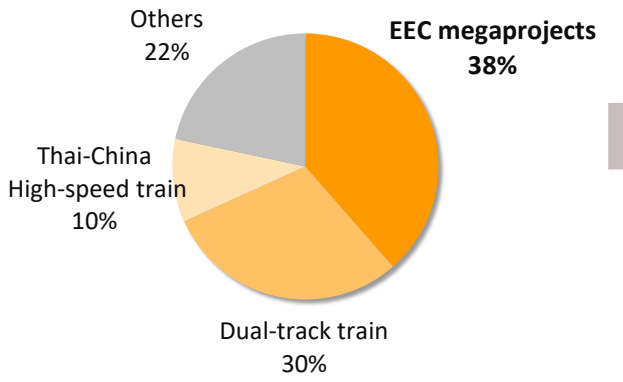
Risks & Challenges: COVID-19 pandemic, crisis scars (such as fragile labor market and high debts), domestic political risks, US policy normalization, global supply-side constraints, and geopolitical risks

Source: NESDC, forecast by Krungsri Research

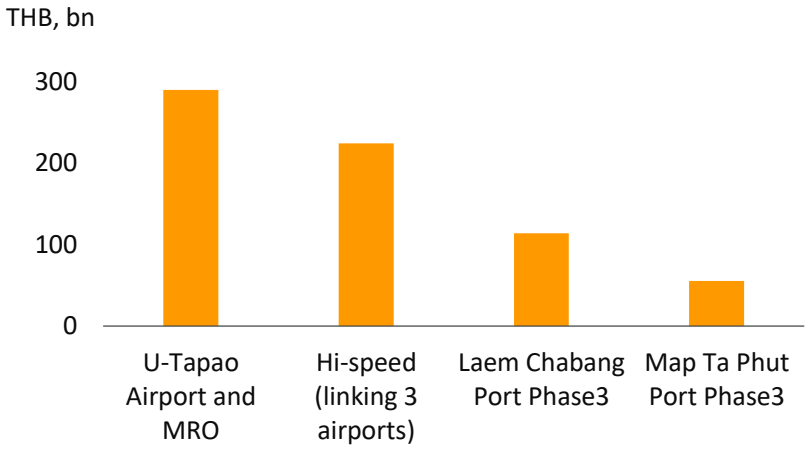
Infrastructure investment to be a major driver of domestic economic growth

Infrastructure investment Projects (2021-2025)

Share of Investment Value, by Project



Spending on Megaprojects in the EEC

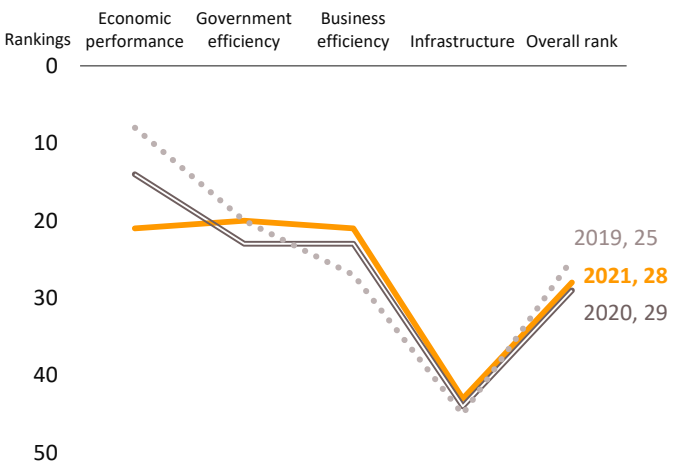


Over the next 2-3 years, if spending on government-backed megaprojects is provided as planned especially in EEC, this will help to open opportunities for investment in downstream and related industries across the region, in particular for EVs, smart electronics, digital technologies, modern agriculture, food processing and medical devices.

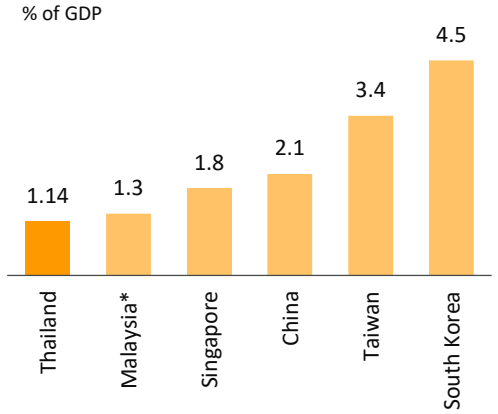
Source: The Office of Transport and Traffic Policy and Planning (OTP), PricewaterhouseCoopers (PwC) Feb 2021, Krungsri Research

Thailand's competitiveness dragged by limitation of innovation development

Changes in Thai Rankings, 2019-2021

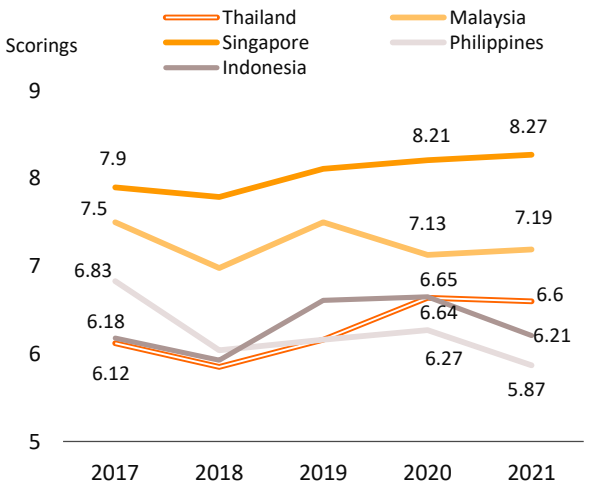


Expenditure on R&D



Thailand vs. ASEAN-5

(Score for Digital/Technological Skills)



In the 2021 IMD World Competitiveness Ranking, Thailand achieved a ranking of 28, almost unchanged from 2020's 29th placed position. Although the country was able to improve its position in the categories of government efficiency and business efficiency, Thailand has limitation of innovation development due mainly to:

- **Low spending on R&D;** Thailand allocates just 1.14% of GDP to R&D, the lowest rate among its competitors in Asia. This drags on the ability of Thai players to add value to goods and services through innovation to compete on global markets.
- **Insufficient technology and digital skills;** Thailand's labor force is short of skilled workers in these areas, which then limits the ability of companies to innovate and develop new intellectual property.

Source: The World Competitiveness Ranking 2021 edition, Institute for Management Development (IMD) IMD 2019, The Office of National Higher Education Science Research and Innovation Policy Council (NXPO), Krungsri Research

Regulatory changes affecting Thai industries

Real estate

Rules governing the real estate sector are under review to attract overseas buyers:

- **The land code:** allow non-Thais to buy no more than 1 rai of land, worth at least THB 40mn for residential use.
- **The condominium Act:** allow non-Thais to own > 49% of area for sale.

Manufacturing

- **Tax on sugar content on non-alcoholic drinks:** put pressure on production cost for new products with a lower sugar content. (effective 2022-30)
- **New regulations to raise safety standards:** affect a range of industries to upgrade production process e.g. electrical goods, electronics, processed food, construction. (effective 2022).

Energy & Environment

- **The plan for transition to low-carbon economy:** increase investment in renewable generation (The Power Development Plan: PDP2022),
- **Tighter regulations on vehicle exhausts:** put upward pressure on production cost for vehicle production (effective 2024-25)

Tourism

- **Suspension of annual registration fee paid by hotels (THB40/room):** reduce financial burden for hoteliers (1July, 2020 – 30June,2022)
- **Relaxation of COVID-19 control measures:** allow fully-jabbed tourists who meet certain requirements to enter the country quarantine-free to stoke tourism recovery (1 Jan,2022)

Finance

Major financial schemes provided by BoT:

- **Soft loans for SMEs:** provide THB250bn to assist SMEs who are financially troubled (began in Feb,2021)
- **Asset warehousing scheme:** allocate THB 100bn to support sound businesses affected by COVID-19 (effective 2021)

Others

- **The ban of second-hand motorcycles imports:** have negative impacts on importers, distributors and maintenance services (effective Feb,2022)
- **Removal of 3 plant products from lists of illegal narcotics (hemp, cannabis and kratom):** provide investment opportunities for downstream industries (effective 2021)

Source: Compiled by Krungsri Research

Hits and Misses



Automobile: Demand increasing on economic recovery both for domestic and export market
- Domestic market will see a strong demand for commercial vehicles.
- Exports will be boosted by the move of Japanese companies' production base to Thailand for export especially to ASEAN.



HDD: Growing exports driven by demand for data storages in cloud computing and data centers
- Demand for high-capacity HDDs for use in cloud computing will continue to increase.
- Sales of petabyte-sized HDDs are forecast to rise by an average of 31.0% per year over 2020-2025 (IDC).



IC: Exports strengthening on growth in IoT uptake and EVs; chip shortages expected to ease in 2H22
- Global sales of semiconductors and 5G services would increase by 10.1% and 21.6% in 2022 respectively (WSTS, Gartner).
- Sales of EVs are forecast to grow by 30% annually over 2020-2030 (IEA).



Hospital: Enjoy a steady growth from a return of foreign patients and healthcare concerns
- Strengthening demand will come from steadily aging society and foreign patients that need more complex treatments.
- Large players continue to expand branches and partnership for providing services to a wide range of patients.



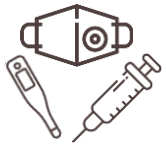
Digital: Benefit from rising trends of digital transformation and online transactions
- Income from services continues to rise on increasing use of digital platform with full 5G coverage by 2022.
- Software income will benefit from rising trends of digital transformation leading to more spending on software services.



Power generation: Government plan to increase purchases on renewable energy supporting investment especially for VSPPs
- Demand is expected to rise by 3.6% annually on gradual economic recovery.
- Investment will be encouraged by the PDP to expand installed capacity focusing more on renewable energy.



Industrial estate: Demand rising on improving investor confidence especially in the EEC
- Total sales and leases of land on industrial estates is forecast to jump by 35.0-37.0% annually.
- Players will increase investments in the development of 'smart parks' with modern technology to support future industries.



Medical devices: Demand for single-use devices remaining strong on health concerns
- Domestic and export markets are expected to at average annual rates of respectively 7.0% and 8.5%.
- Demand for single-use devices such as latex gloves and syringes will remain strong in export markets with global concerns on healthcare and wellbeing.

Source: Krungsri Research

Hits and Misses (Cont.)



Construction: Public construction growing further on a progress of megaprojects investment
- Megaprojects linking to the EEC including the high-speed rail-link (3 airports) and Laem Chabank Port gets under way from 2022.



Modern trade: Players focusing more on online sales
- Domestic purchasing power will recover while players will shift business focus towards online sales alongside offline operations.



Electrical Appliances: Demand increasing on improving consumer confidence with a release of new internet-enabled appliances
- Domestic demand will be boosted by improving economic recovery.
- A low households' ownership rate in Asia will support continuing growth in exports especially for air conditions.



Cassava: Demand rising from China mostly for use in alcohol, ethanol and animal feed production
- Demand from China will strengthen for cassava chip, native and modified starch.



Rice: Competition remaining stiff on still-high global stocks
- Domestic market will increase on rising demand from recovery of downstream industries while export will improve supported by lower price.



Housing (BMR) : Sales increasing slowly with emphasis on usable space of low-rise housing
- Demand will be supported by a progress of megaprojects and government stimulus policies but remaining strict new credit release will limit growth.



Hotel: Foreign arrivals expected to meet pre-COVID level in 2025
- Foreign arrivals are forecast to reach 7.5m in 2022, 21m in 2023, and 35m in 2024, before returning to their pre-COVID level of 39-40m in 2025.

Source: Krungsri Research

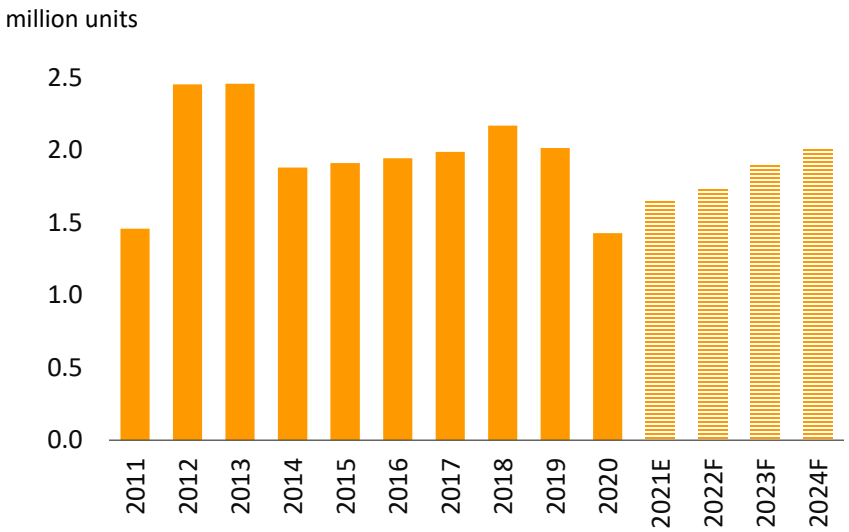


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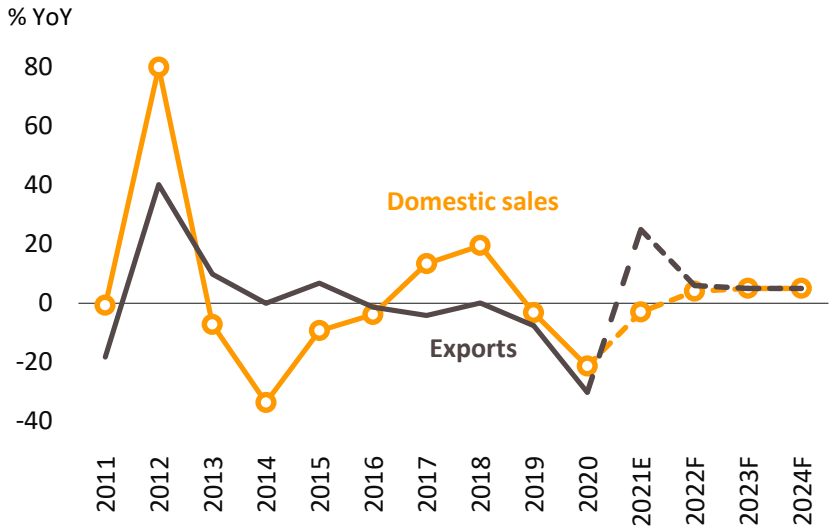
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Automobile: Demand increasing on economic recovery both for domestic and export market

Automobile Production



Growth in Automobile Sales



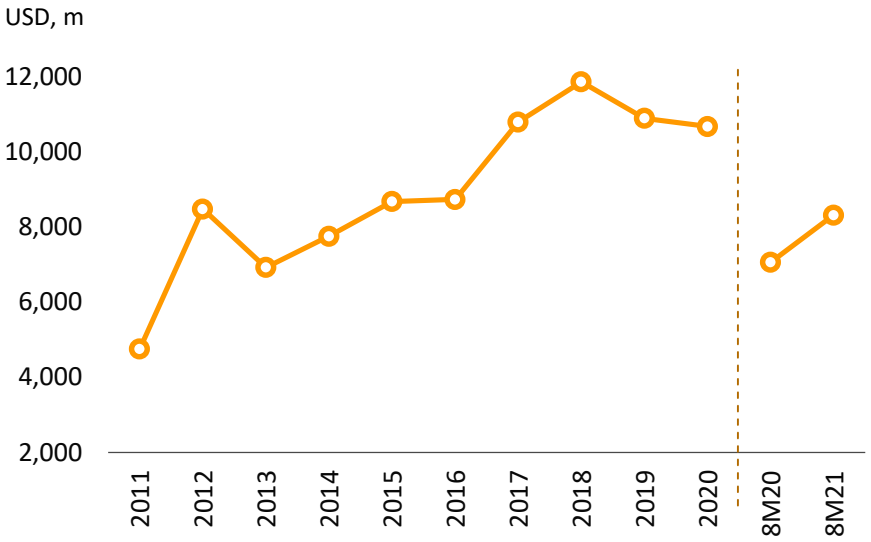
Output is expected to rise by 4.0-6.0% annually, helped by the abating of the Covid-19 pandemic, the easing of labor shortages, and, from 2H22, an improvement in semiconductor supply chains.

- **Domestic sales would grow 3.0-5.0% in 2022 and then by 4.0-6.0% in 2023-2024** on the better economic outlook leading to higher consumer confidence. Expansion in construction, online retail and logistics will support strong demand for commercial vehicles, while manufacturers will release a steady stream of new models.
- **Exports would rise 5.0-7.0% in 2022 and then by an average of 4.0-6.0% in 2023-2024,** boosted by (i) the move by Japanese companies to increase their use of Thailand as a base for producing vehicles for export (ii) trade partners' economic recovery and (iii) the existence of the ASEAN FTA and ASEAN MRAs* that recognize individual country's testing for autos standards to make import procedures much easier. In particular case of the Philippines (Thailand's 3rd largest export market), sales will be helped by the closure of local production lines.

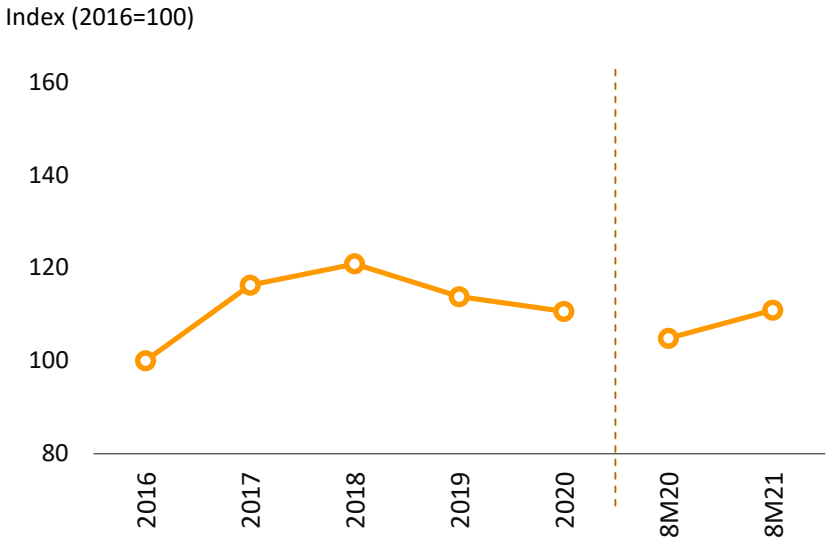
Note: *ASEAN Mutual Recognition Arrangements (MRAs) are framework arrangements between countries to mutually accept some or all aspects of one another's conformity assessment results.
Source: The Federation of Thai Industries (FTI), forecast by Krungsri Research

HDD: Growing exports driven by demand for data storages in cloud computing and data centers

HDD Exports



HDD Manufacturing Production Index (MPI)

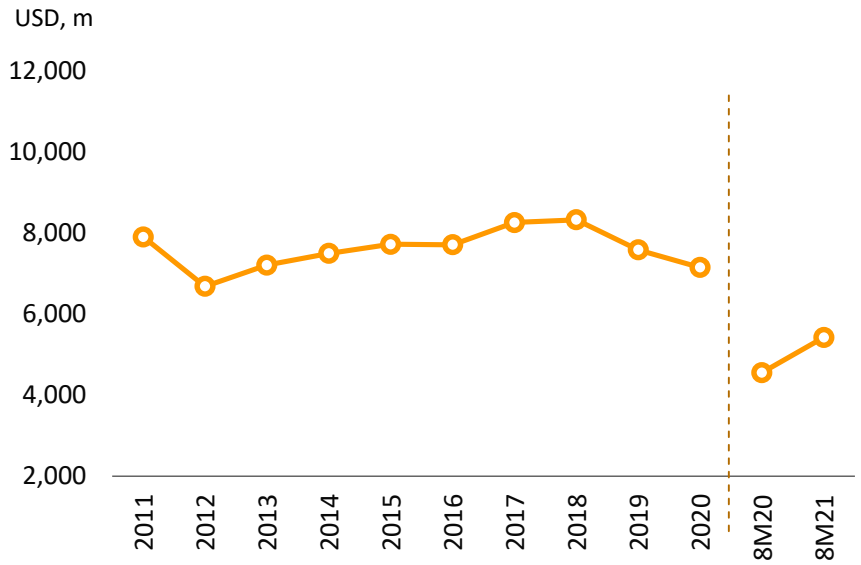


The exports value will grow by an average of 3.0-4.0% annually over the next 3 years, supported by demand for high-capacity HDDs for use in cloud computing and data center applications. Demand will also be stoked by growing interest in on-premises data centers* and for use in storing blockchain, cryptocurrency data and closed-circuit TV footage. IDC (August 2021) therefore estimates that sales of petabyte-sized HDDs will rise by an average of 31.0% per year over 2020-2025. However, growth in exports will be restrained by the increasing trend to replace HDDs with solid state drives (SSDs), especially in notebooks.

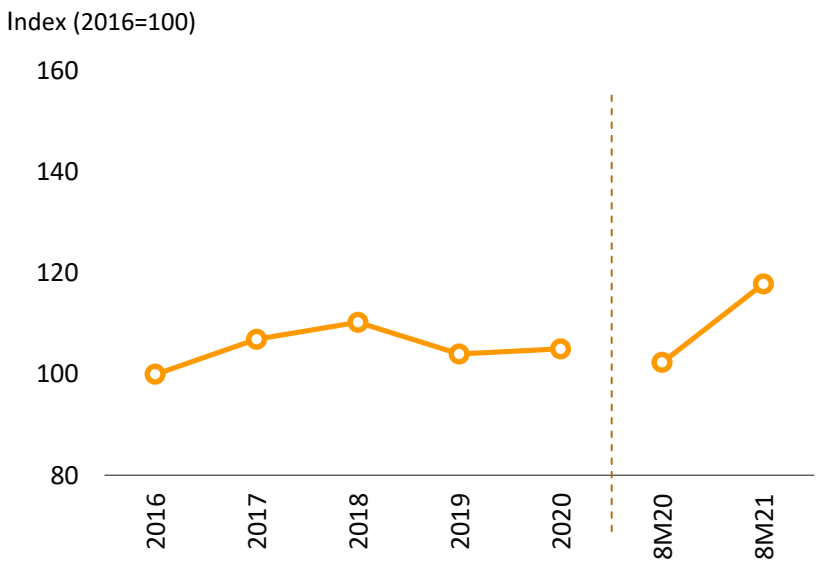
Note: *On-premises data centers are used to run data storage servers on a company's own premises.
Source: Ministry of Commerce (MOC), Office of Industrial Economics (OIE), Krungsri Research

IC: Exports strengthening on growth in IoT uptake and EVs; chip shortages expected to ease in 2H22

IC Exports



IC Manufacturing Production Index (MPI)



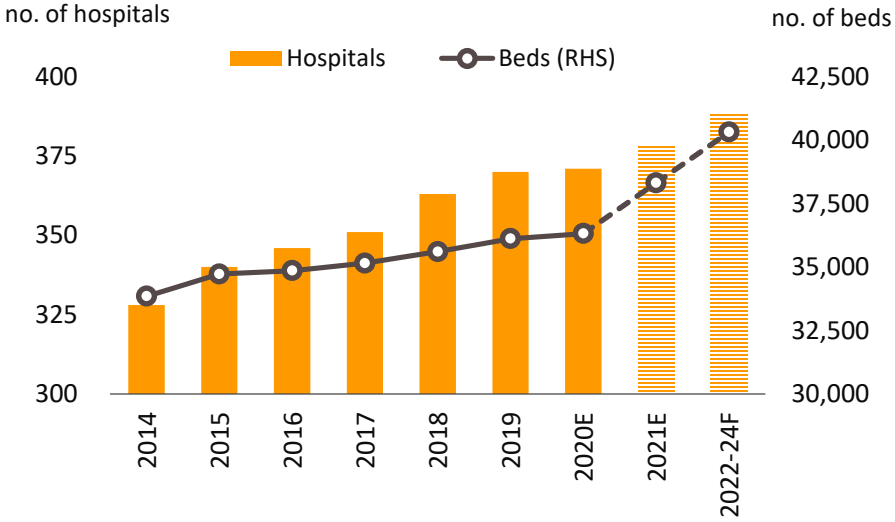
The exports value is forecast to strengthen by 6.0-7.0% annually over the next 3 years, boosted by a predicted 10.1% increase in sales of semiconductors in 2022 (WSTS, August 2021) and by a deepening of investment in 5G network infrastructure over 2021 and 2022 that will then accelerate the development of 5G communications technology. Global income for 5G service providers is thus expected to shoot up 38.9% in 2021 and then by another 21.6% in 2022 (Gartner, August 2021), that will support wider uptake of IoT. This, and sales of EVs that are forecast to grow by 30% annually over 2020-2030 (IEA, April 2021), will stoke stronger demand for ICs.

Problems with shortages of semiconductors (a key component of ICs) should begin to ease in 2H22, once the effects of investments and expansion in capacity by leading manufacturers in Taiwan, the US, China and Japan begin to be felt.

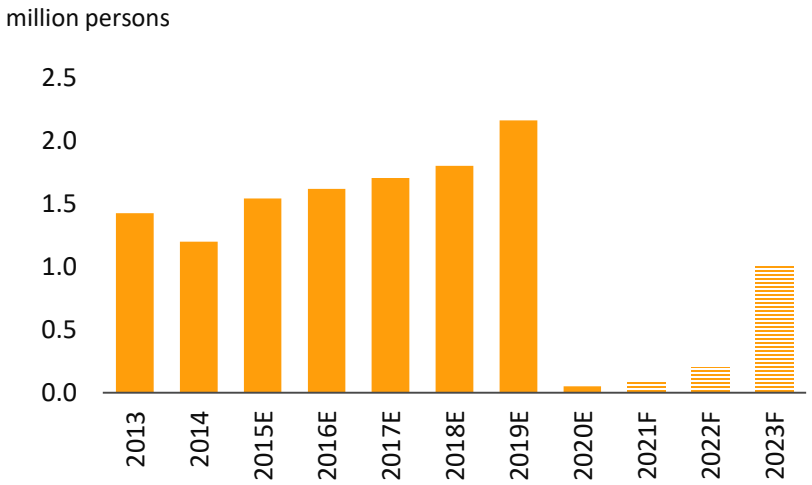
Source: Ministry of Commerce (MOC), Office of Industrial Economics (OIE), Krungsri Research

Private Hospitals: Enjoy a steady growth from a return of foreign patients and healthcare concerns

Numbers of Private Hospitals & Beds



Number of Foreign Patients in Thailand



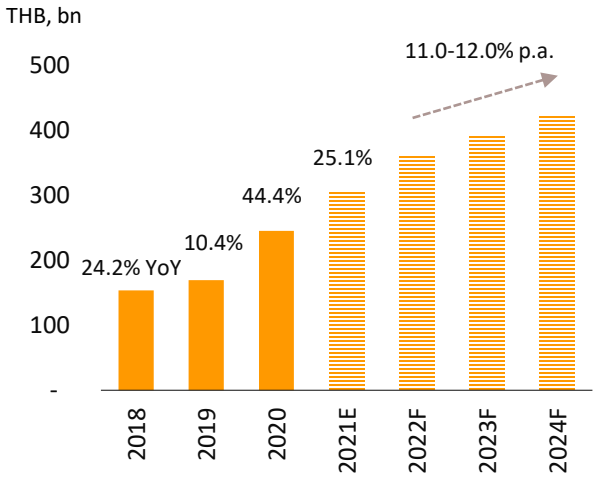
The outlook will improve steadily, with income growth expected to average 4.0-5.0% per year. Alongside this, at least 2,000 beds will be added to the current supply of around 36,000 beds in private hospitals (as of 2021). Demand would strengthen on (i) steadily aging society, driving greater demand for ongoing and complex treatments (ii) rising number of foreign patients seeking treatment in Thai hospitals due to gradual reopening of the country, (iii) a greater concern on personal health and wellbeing, and 4) the need for comprehensive healthcare.

- **Large operators:** Income is expected to rise at a good rate on their ability to treat a wide range of patients and to provide specialist, highly skilled services. Players also operate large branch networks to expand their services by better targeting particular patient groups. Given this, large hospitals' income base will broaden in the coming period.
- **Small and mid-sized hospitals:** Turnover will trend upwards by partnering with the large players and providing services to patients covered by social security payments. Nevertheless, strong competition may cause independent hospitals operating outside wider commercial networks to lose market share.

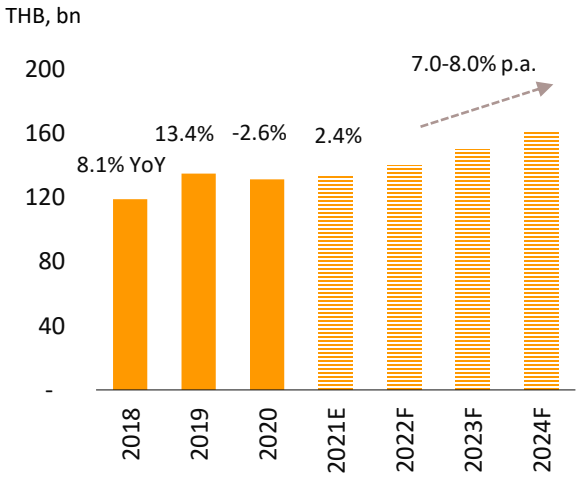
Source: NSO, MoPH, estimated and forecast by Krungsri Research

Digital: Benefit from rising trends of digital transformation and online transactions

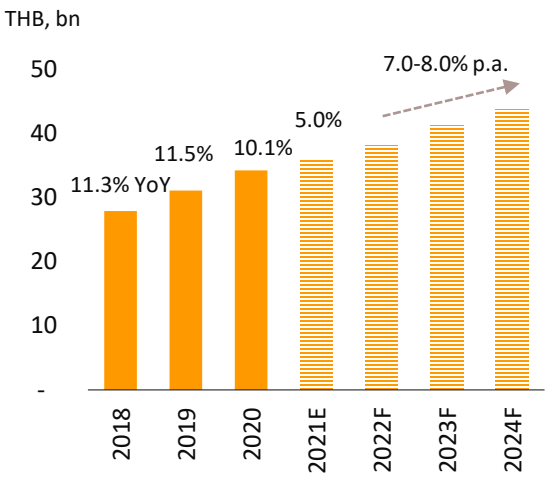
Revenue of Digital Services



Revenue of Software & Software Services



Revenue of Digital Contents



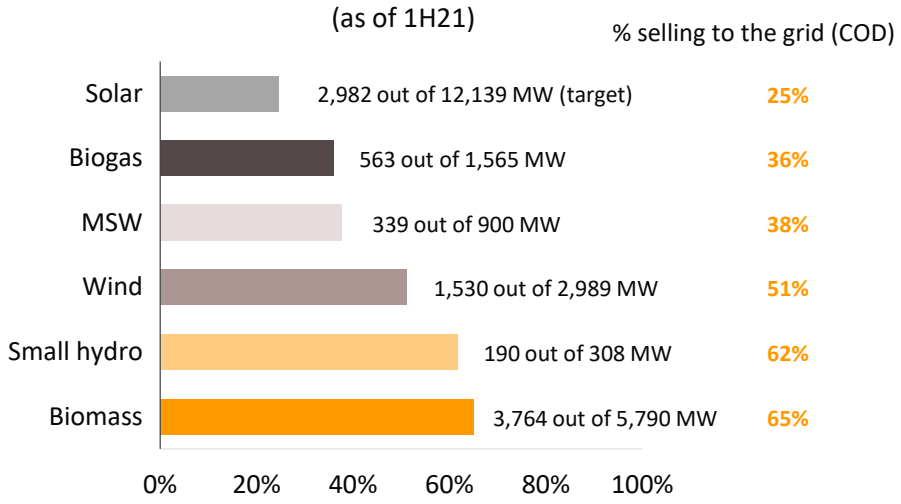
The industry should see strong rates of growth by 9.0-10.0% as businesses increasingly switch to digital transformation as a means of adding value.

- **Digital services:** Income should rise by 11.0-12.0%, helped by: (i) government plans to achieve full national 5G coverage by 2022; and (ii) changing patterns of work and consumption that increasingly rely on the use of digital platforms. The fintech sector will also grow with the increasing popularity of e-wallets, though stiff competition with the high number of players.
- **Software and software services:** Income should rise by 7.0-8.0%. (i) Private sector players will increase investment in software and cloud solutions as businesses recover and look to better meet individual consumer needs through online channels. The government also encourages the digital transformation of SMEs by offering tax rebates for spending on software (ii) Government agencies are reforming their internal operations by delivering a greater share of their services through online and applications.
- **Digital content:** Income would increase by 7.0-8.0% driven by growth in demand for games on smart technology devices, helped further by the rollout of 5G networks that attract new players. Income of animation and characters will improve, though not at an impressive rate since economic conditions in countries that buy in these services (esp. in Japan) would improve only gradually.

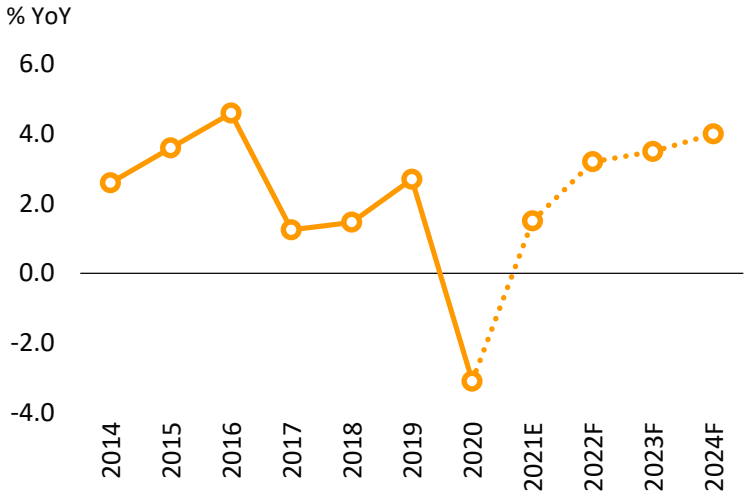
Source: Digital Economy Promotion Agency (Depa), forecast by Krungsri Research

Power Generation: Government plan to increase purchases on renewable energy supporting investment especially for VSPPs

Renewable Energy Generation Capacity and AEDP* Target



Trend of Electricity Demand



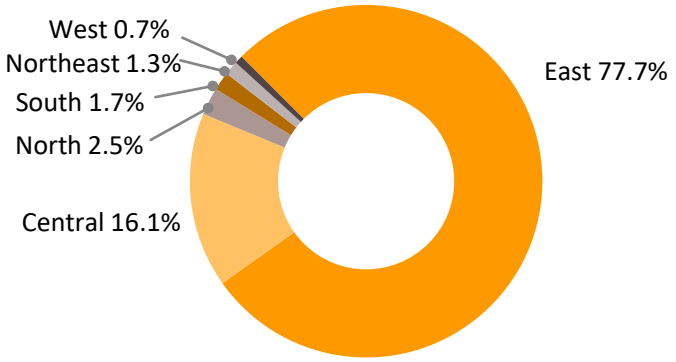
The sector would see continuing growth in the coming period, with demand expected to rise by 3.6% annually over the next 3 years on gradual economic recovery, and the PDP, which is encouraging investment and expand installed capacity.

- **IPPs: Competitive bidding is expected to be held in a number of locations,** with the authorities in particular planning to hold auctions for 700 MW of new supply per year in the west of the country over 2021 and 2022. This will replace 8,300 MW of natural gas-powered plants that will see their supply contracts expire over 2025-2027.
- **SPPs: Investment should be ongoing,** especially in natural gas cogeneration plants which contracts will expire in 2019-2025, and SPP hybrid renewables, which benefit from input costs that are significantly below retail electricity prices. Investment should also increase in the EEC to meet stronger future demand in the area.
- **VSPPs: Investment will accelerate in 2022,** and because the government has set targets for increased purchases over 2022-2024, this will particularly support rooftop solar installations, biomass, biogas, and waste-to-energy schemes. These segments also benefit from producers' cost competitiveness and access to raw materials.

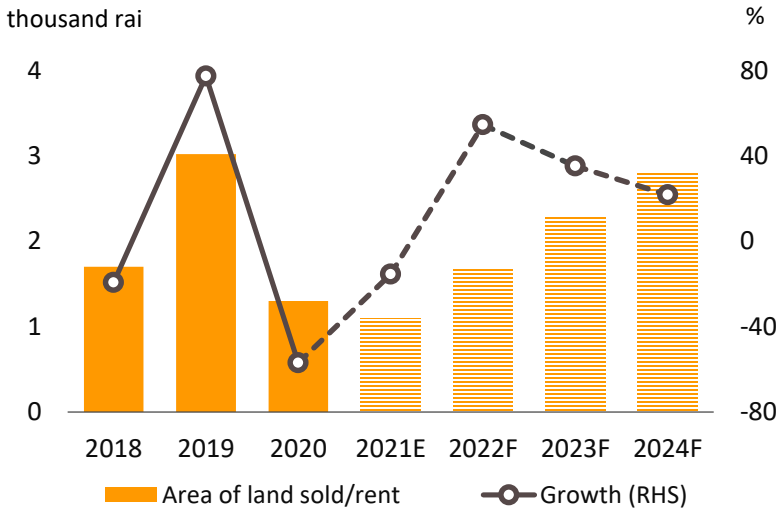
Note: Including off grid power generation, * Alternative Energy Development Plan 2018
Source: Department of Alternative Energy Development and Efficiency (DEDE), EPPO, forecast by Krungsri Research

Industrial Estate: Demand rising on improving investor confidence especially in the EEC

Cumulative Area by Region (1H21)



Sold/Rent Area Forecast



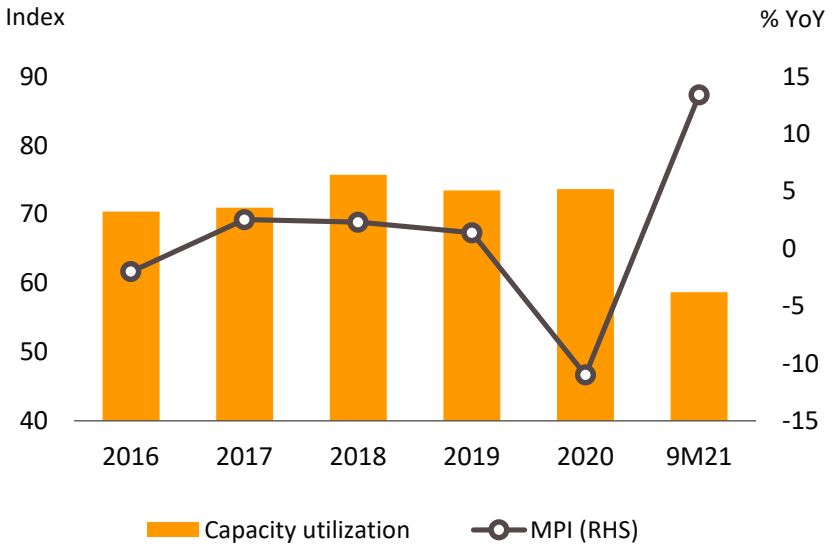
Total sales and leases of land is forecast to jump by 35.0-37.0%, supported by: (i) recovery in the global economy that will increase confidence among overseas investors; and (ii) greater progress of new infrastructure, in particular in the EEC. Players will increase investments in the development of 'smart parks' with modern technology to support future industries.

- **Eastern:** Demand for space would grow at a healthy pace, helped by government spending on the infrastructure required to support the EEC. Given this, income growth in the East will significantly outpace that of other regions. Nevertheless, rising prices and the difficulty in finding land suitable for development will restrict the ability of players to expand operations somewhat.
- **Central:** Demand will continue to grow at a good rate thanks to the area's transport links. Operators will thus enjoy solid rates of income growth, especially from rents and the supply of services and utilities.
- **Other regions:** Demand will remain depressed for land on industrial estates elsewhere in the country as long as government action to stimulate greater interest from private-sector investors (especially spending on infrastructure in and near SEZs) is lacking. Players will thus see a slow-income growth.

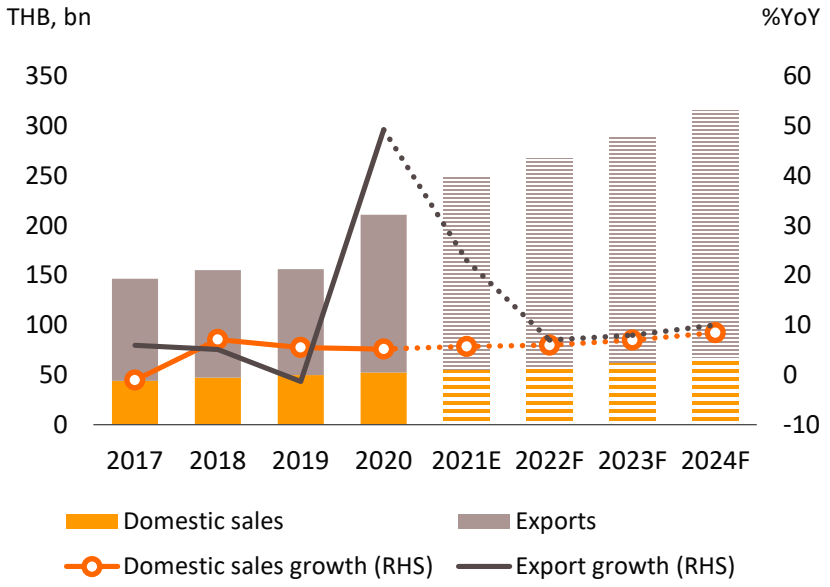
Sources: REIC, forecast by Krungsri Research

Medical Devices: Demand for single-use devices remaining strong on health concerns

Capacity Utilization and MPI



Domestic Sales and Exports



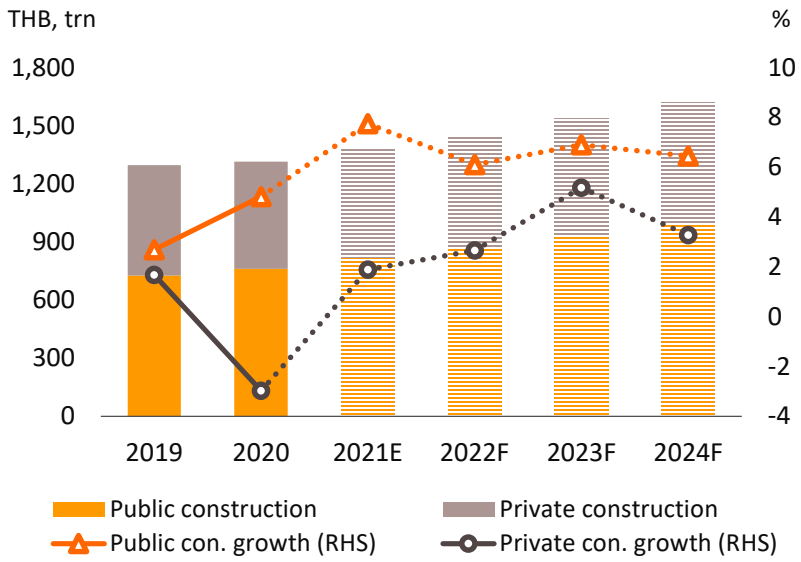
Domestic and export markets are expected to at average annual rates of respectively 7.0% and 8.5%. Sales will be boosted by (i) The aging of society will increase the number of people suffering from chronic NCDs. (ii) Demand from the main export markets will remain strong, especially for single-use devices such as latex gloves and syringes. (iii) The number of foreign patients coming to Thailand for treatment will bounce back to growth over 2022-2024. (iv) Globally, concerns with health and wellbeing are rising. (v) Government policy to promote Thailand as an international medical hub.

However, **challenges will remain, including stiffening competition** that will be caused by Thai operators' limited abilities to develop advanced technology. This then forces the country to rely on imports or on overseas players setting up production facilities in Thailand.

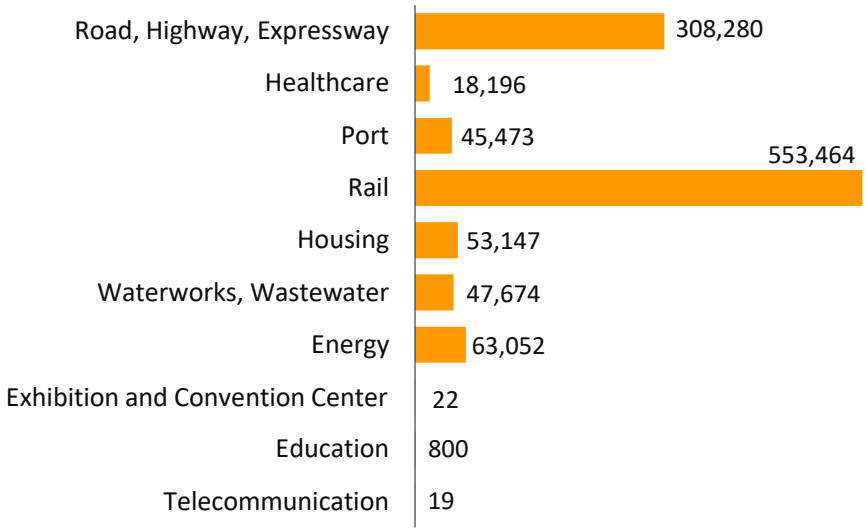
Source: Office of Industrial Economics (OIE)), FitchSolutions, forecast by Krungsri Research

Construction: Public construction growing further on a progress of megaprojects investment

Construction Investment Trends



Public-Private Partnership Project Delivery Plan 2020 – 2027



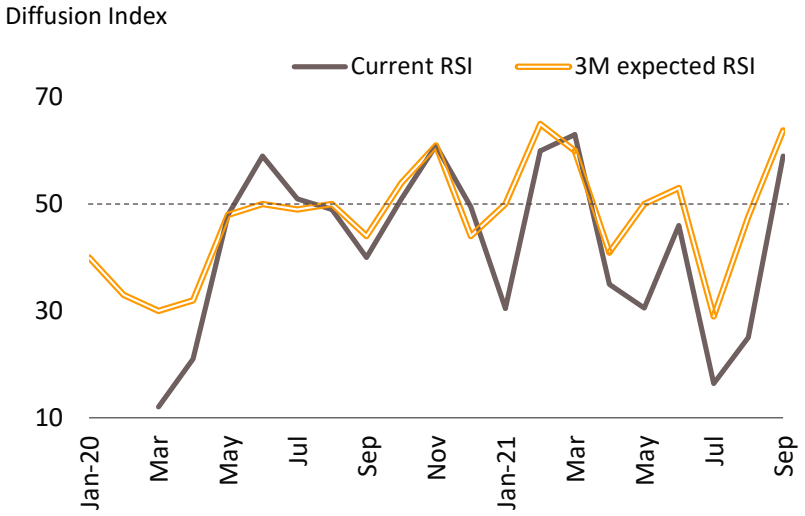
Construction investment is forecast to rise 4.5-6.5% annually, driven principally by government spending on megaprojects, in particular those connected to the development of the Eastern Economic Corridor (EEC).

- **Public construction** is likely to increase by 6.0-7.0% as work on megaprojects linking to the EEC gets under way from 2022. These projects will include: (i) the high-speed rail-link connecting the 3 airports of Don Muang, Suvarnabhumi and U Tapao,; and (ii) phase 3 of the development of Laem Chabang Port. Other Important projects include Terminal 2 at Suvarnabhumi Airport, the Khon Kaen-Nong Khai dual-track railway, and the southern extension to the MRT Purple Line (Tao Poon-Rat Burana).
- **Private construction** will see a slow growth in 2022, but should improve in 2023 and 2024. Supporting factors will include: (i) an acceleration in infrastructure projects that will crowd in greater private-sector investment; (ii) progress with the EEC development, leading to spending on the construction of factories and industrial estates; and (iii) government measures to help stimulate demand for condominiums and houses.

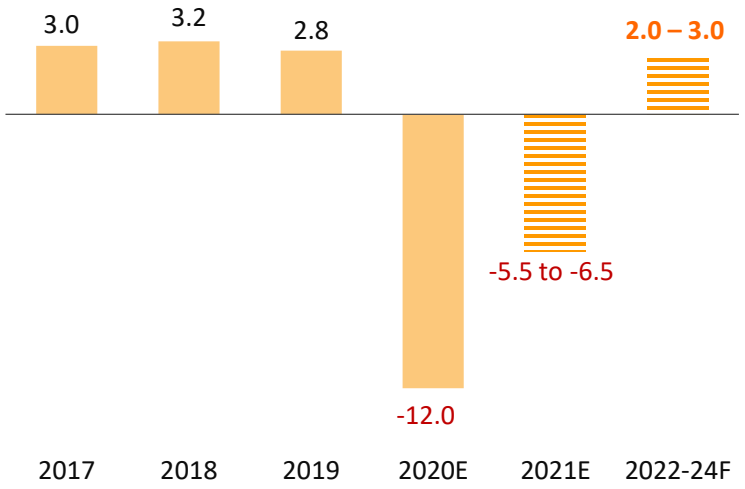
Source: Office of the National Economic and Social Development Council (NESDC), State Enterprise Policy Office (SEPO), Price Waterhouse Cooper (PwC), forecast by Krungsri Research

Modern Trade: Players focusing more on online sales

Retailer Sentiment Index (RSI)



Retail Business Growth (% YoY)



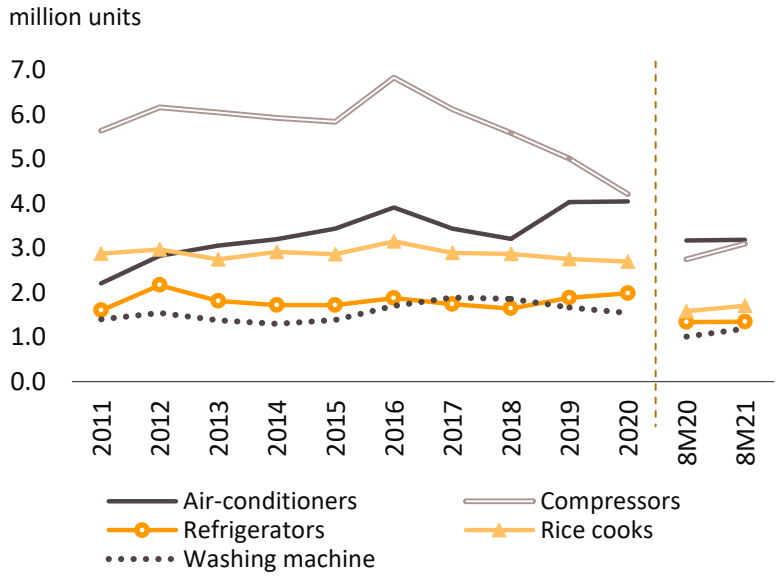
Income should return to growth of around 2.0-3.0% per year, This outlook is supported by the following considerations.

- **Domestic purchasing power is forecast to improve** helped by: (i) government stimulus measures; (ii) a rebound in the tourism sector, with foreign tourist arrivals forecast to reach 7.5m in 2022, 21m in 2023 and 35m in 2024; and (iii) economic growth in the CLMV region that will help the business in border areas.
- **Players will shift their business strategies by expanding their customer base and building new income streams.** Future developments will thus include: (i) increasing online sales alongside offline operations; (ii) forming business partnerships with operators in other industries, e.g., in logistics; and (iii) expanding branch networks, especially in Bangkok, tourist areas, and second-tier provinces, as well as in the EEC and border regions. In addition, major players will tend to increase investments in neighboring countries, where markets show significant potential.

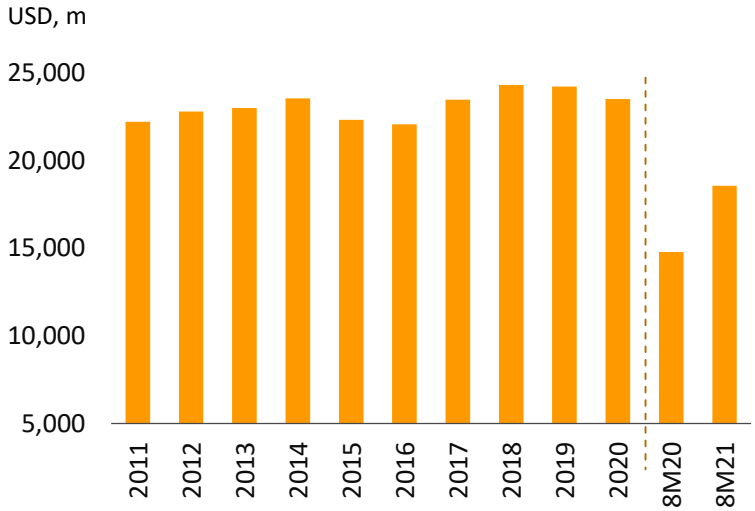
Source: Thai Retailers Association (TRA), Bank of Thailand of Thailand (BOT), forecast by Krungsri Research

Electrical Appliances: Demand increasing on improving consumer confidence with a release of new internet-enabled appliances

Domestic Sales* (Selected Products)



Electrical Appliance Exports

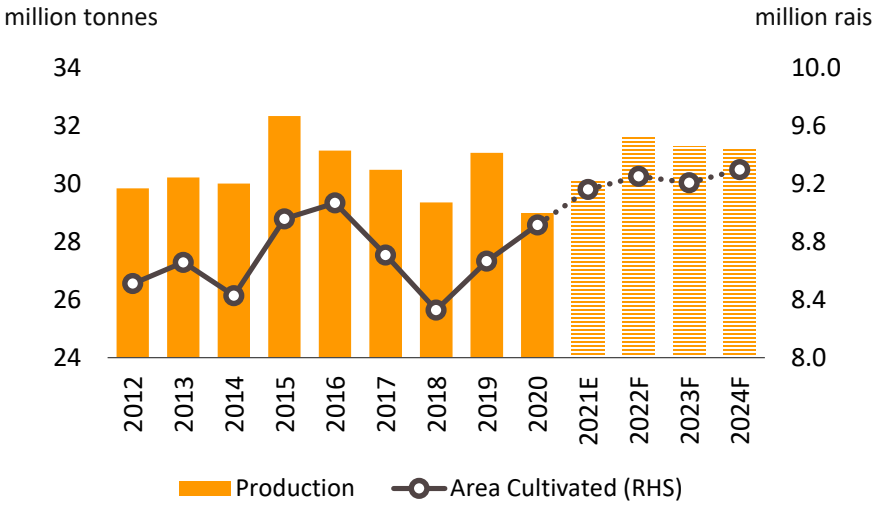


- **Domestic demand is expected to rise 3.0-4.0% in 2022 and then by 2.0-3.0% in 2023 and 2024,** lifted by: (i) recovery in the housing market, boosted by economic recovery; (ii) the release of new appliances that provide additional health benefits to users and that are internet-enabled; (iii) the impact of rising temperatures that will tend to lift sales of air conditioners; and (iv) increasing use of online distribution channels, which will provide customers with more convenient purchases.
- **Exports value would increase by 3.0-4.0% in 2022 and edge up another 2.0-3.0% in each of 2023 and 2024,** boosted by continuing recovery in sales of washing machines to the US following the 2021 ending of anti-dumping measures targeted at Thai manufacturers. In addition, low levels of ownership of electrical appliances across Asia (esp. air conditioners, for which households' ownership rates are less than 20%) will support continuing growth in exports.

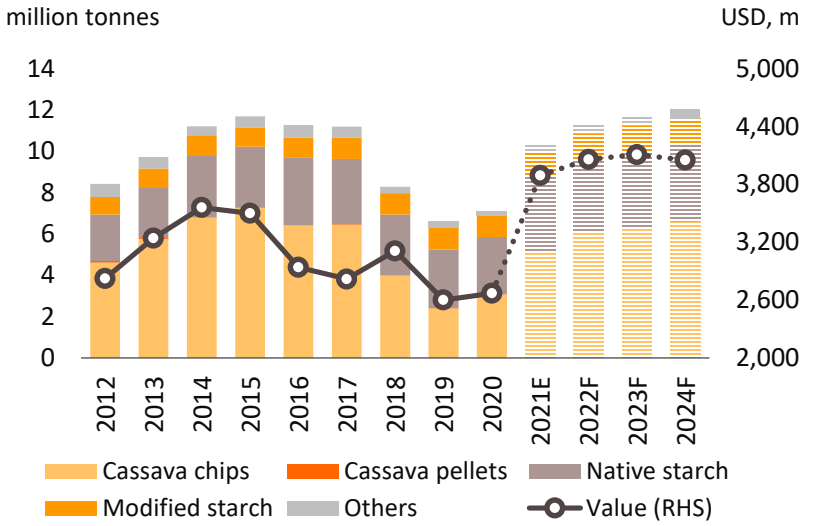
Note: * The OIE's survey: only electrical appliances which are produced in Thailand.
Source: Office of Industrial Economics (OIE)), Euromonitor, Ministry of Commerce (MOC), Krungsri Research

Cassava: Demand rising from China mostly for use in alcohol, ethanol and animal feed production

Thailand Cassava Root Production Forecast



Thailand Cassava Product Exports Forecast



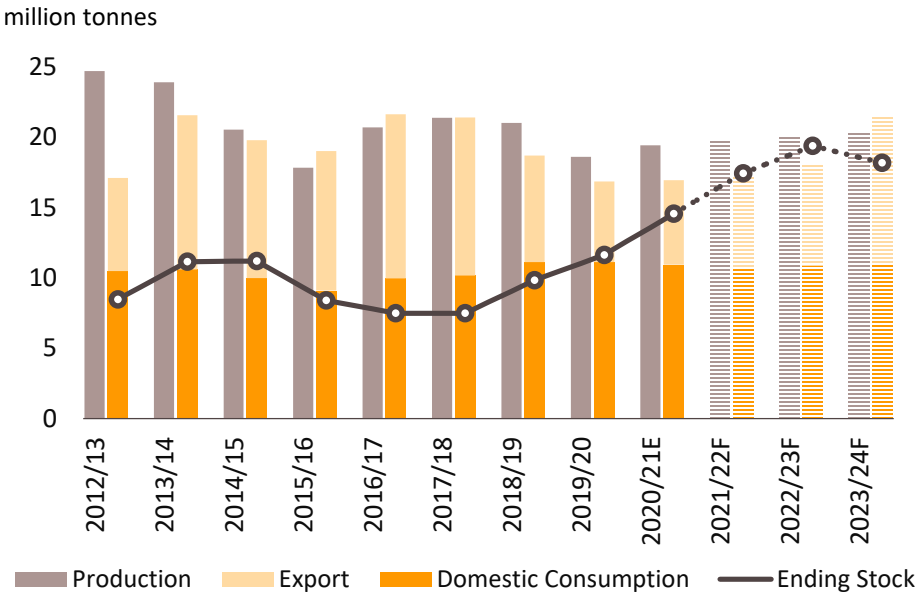
Outputs of fresh cassava are predicted to expand by 2.0-3.0% annually thanks to cultivation area expansion, better control of outbreaks of cassava mosaic disease and government support for farmers. **Domestic market would grow by 2.5-3.5% p.a.,** on: (i) anticipated recovery in the food industry following the easing of the COVID-19 crisis; (ii) rising demand for use in ethanol production; and (iii) strong demand from alcohol production with greater concern over public hygiene. **Exports of cassava products would expand by 5.0-6.0% annually.**

- **Cassava chip:** Exports will rise by 6.0-7.0% per year to a total of 6.1-6.7m tonnes. Demand from China will be strong for use in the production of disinfecting alcohol, ethanol, and animal feed.
- **Cassava pellets:** Exports will remain low at around 10-15 thousand tonnes, with demand mostly from biofuel and animal feed.
- **Native starch:** Exports will edge up by 2.0-3.0% annually to 3.5-3.7m tonnes. Demand will strengthen from China's food processing, chemicals and beverage production.
- **Modified starch:** Exports are forecast to strengthen to 1.2-1.3m tonnes per year (up 1.5-2.5%) on rising demand from China and Japan, in particular from players in food, cosmetics and medicines industries.

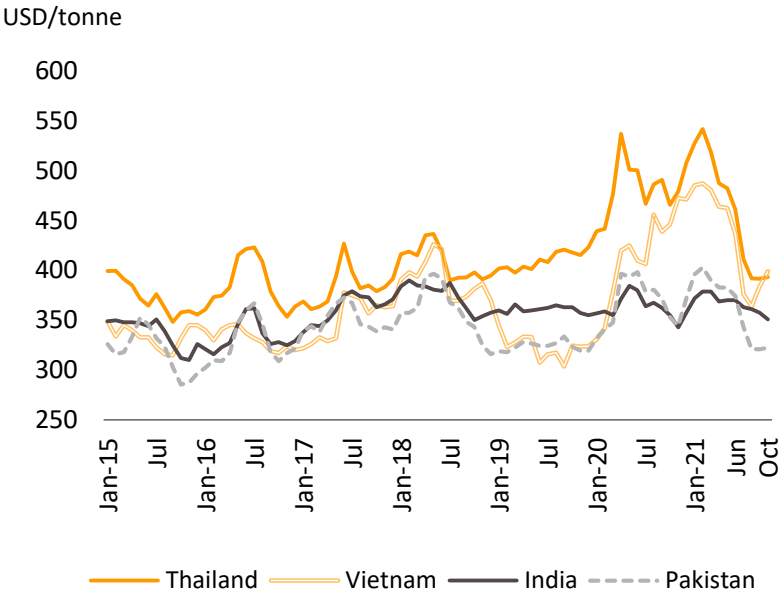
Source: Office of Agricultural Economics (OAE), Ministry of Commerce (MOC), forecast by Krungsri Research

Rice: Competition remaining stiff on still-high global stocks

Thailand Rice Production, Consumption and Export (Milled Rice)



World White Rice 25% Prices (F.O.B)



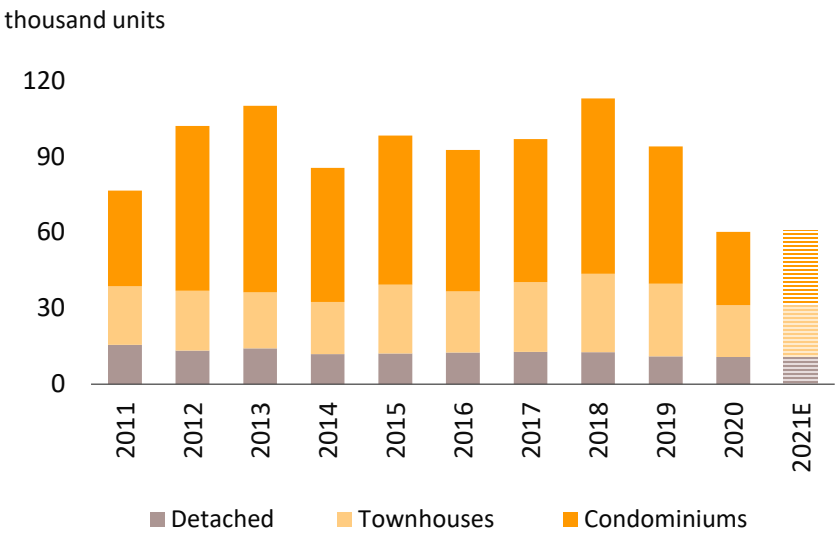
Annual outputs of paddy is forecast to increase 1.5-2.5% to 30.3-31.3m tonnes, yielding 19.7-20.3m tonnes of milled rice, on likely favorable rainfall (La Niña conditions, during 2022-2023) and government measures (income guarantee schemes, crop insurance) that incentivize farmers to expand plantation.

- **Domestic demand for milled rice will grow to 10.7-11.1m tonnes per year**, helped by the easing of the COVID-19 crisis and the reopening of the country to tourism, which will then support stronger demand from food processors, restaurants, hotels and other downstream industries.
- **Exports will average 7-8m tonnes annually**, with demand especially strong from South Africa, the US, China, Benin, and Japan. Export prices will tend to remain close to the low level seen in 2021, held down by anticipated strong outputs in Thailand and high stocks of rice worldwide.

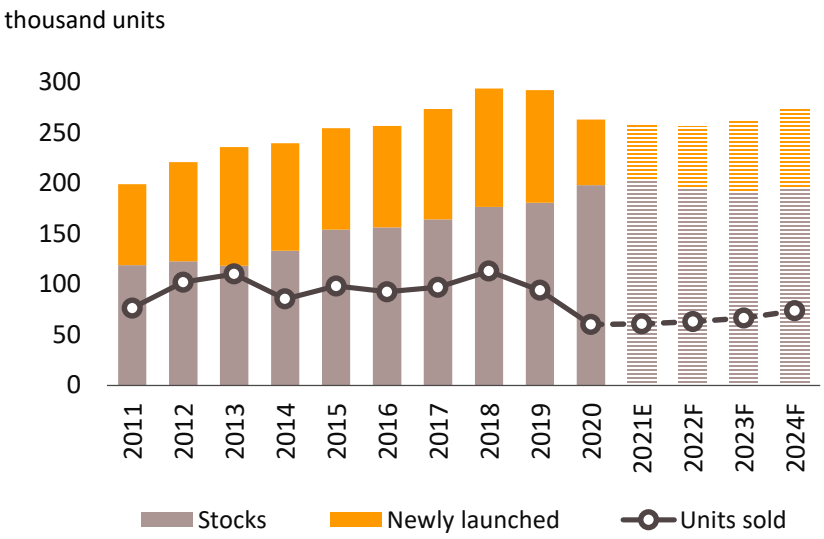
Source: Food and Agriculture Organization of the United Nations (FAO), Office of Agricultural Economics (OAE), Ministry of Commerce (MOC), forecast by Krungsri Research

Housing (BMR): Sales increasing slowly with emphasis on usable space of low-rise housing

Units Sold



Total Supply



The housing market in the BMR will revive with steady economic growth, an acceleration in work on megaprojects, the implementation of policies to stimulate the real estate market, and increasing demand from expatriates working in Thailand. However, **sales will increase only slowly,** rising to 74,000 units by 2024 (compared to an average of 99,000 units over 2014-2019) due to limited recovery in the lower to middle income market and remaining strict new credit release.

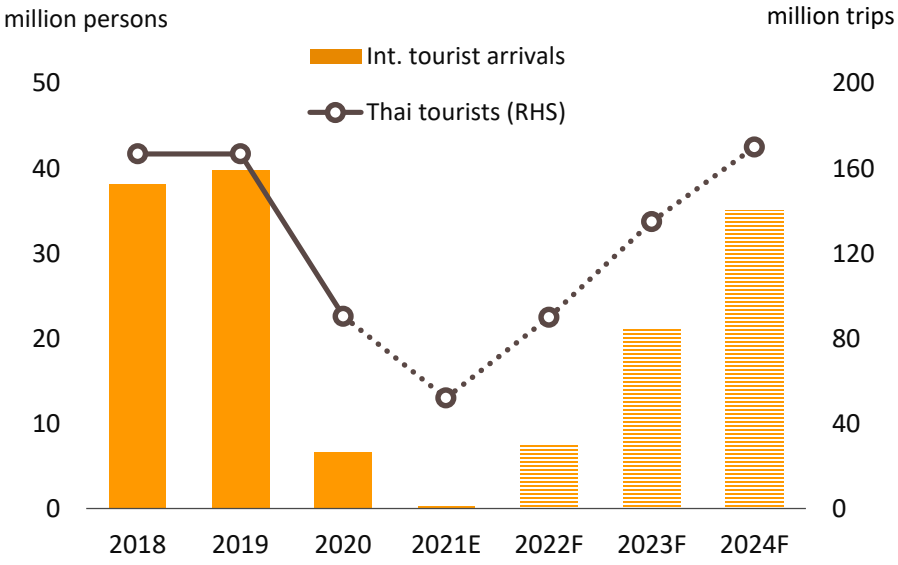
New housing supply is expected to rise by 14-15% annually, though developers will increase the share of new low-rise properties to meet real demand. Nevertheless, despite this strong growth, only around 80,000 new units are expected to come up for sale in 2024, still significantly lower than the average of around 100,000 new units annually over 2014-2019.

- **Low-rise housing:** Home buyers will place a greater emphasis on usable space to support WFH, and so low-rise developments in more suburban areas are gaining in popularity.
- **Condominiums:** The market will improve in particular parts of the BMR, esp. in downtown areas and near some metro lines.

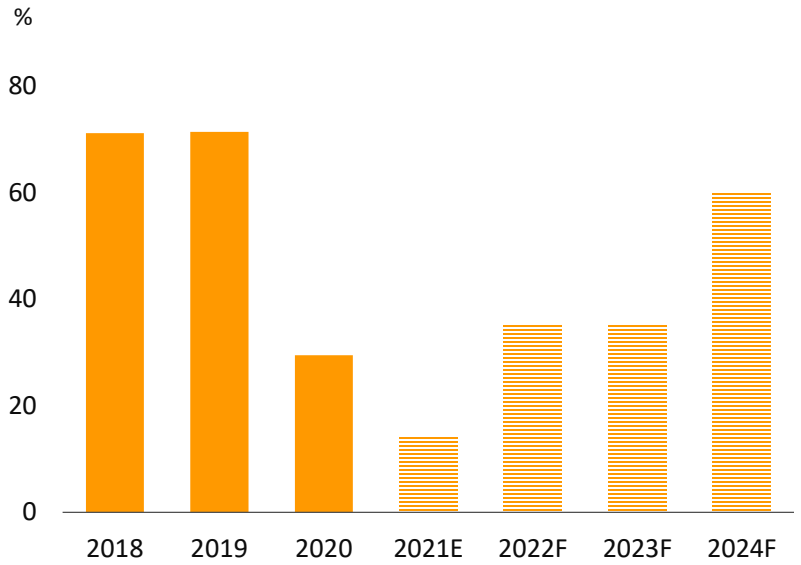
Source: AREA, forecast by Krungsri Research

Hotel: Foreign arrivals expected to meet pre-COVID level in 2025

Tourist Numbers in Thailand



Occupancy Rate



The business will recover with the easing of the COVID-19 crisis, and in particular with the success of vaccination programs and the increase in domestic and international tourism that this will bring. *Foreign arrivals are thus forecast to reach 7.5m in 2022, 21m in 2023, and 35m in 2024, before returning to their pre-COVID level of 39-40m in 2025.* Helped partly by government support for the industry, domestic tourism will recover ahead of this, and the domestic segment is expected to hit its pre-COVID level of 170m trips in 2024. Alongside this steady recovery, hotel occupancy rates will improve, rising to 35% in 2022, 45% in 2023, and 60% in 2024.

- **Major tourist destinations (Bangkok, Pattaya, and Phuket):** Incomes would begin to recover in 2022.
- **Tourist destinations and regional centers:** Incomes could turn to recovery during 2023-2024.
- **Other provinces:** Incomes is expected to recover at a slower rate than others.

Source: MOTS, BOT, forecast by Krungsri Research

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