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DIGITAL VIETNAM: *The Path to Tomorrow*



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DIGITAL VIETNAM: *The Path to Tomorrow*

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ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
CAR	capital adequacy ratio
CHIP	Connect, Harness, Innovate, and Protect
COVAX	COVID-19 Vaccines Global Access
COVID-19	coronavirus disease 2019
CPI	Consumer Price Index
EMDEs	emerging market and developing economies
EPEs	export processing enterprises
EPZs	export processing zones
EU	European Union
FDI	foreign direct investment
GDP	gross domestic product
GSO	General Statistics Office
H1	first half
ICT	information and communications technology
ID	identification
IMF	International Monetary Fund
IT	information technology
ITU	International Telecommunication Union
M&A	mergers and acquisitions
MOF	Ministry of Finance
MPI	Ministry of Planning and Investment
NGSP	National Government Service Platform
NPLs	nonperforming loans
PIPA	Personal Information Protection Act (Taiwan, China)
PMI	Purchasing Managers Index
Q2	second quarter
R&D	research and development
SBV	State Bank of Vietnam
SOEs	state-owned enterprises
TVET	technical and vocational training system
VDEM	Varieties of Democracy
VND	Vietnamese dong
WDI	World Development Indicators
WEF	World Economic Forum
WDR	World Development Report
y/y	year-over-year

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OVERVIEW

Seventeen months into the COVID-19 pandemic, the rollout of vaccines is providing hope that the pandemic will end, but the crisis has caused much uncertainty and suffering around the world.

Already, the pandemic has transformed the way we live, work, eat, and move. While some of these changes are likely to fade when the global health situation is brought under control, history has taught us that a new normal is likely to prevail in the years ahead. All big shocks—pandemics, climate catastrophes, wars—have been followed by a series of deep and structural transformations.

In Vietnam, as around the world, social distancing and limitations on mobility caused by COVID-19 have accelerated the rise of the digital economy.

This rise, which was already underway, has become much more broad-based in recent months. Up to 60 percent of local businesses in Vietnam have by now established or increased their online presence so they can provide services and sell goods to increasingly connected customers. The government has also digitized more than 2,000 public services and procedures. These are not just short-term responses that have helped the country cope with the difficulties of interacting physically during the pandemic, but they will likely engender deeper and longer-term consequences. This accelerated digital transformation has the potential to provide more information, speed, transparency, and ease of service delivery to the population, including to the most isolated groups. The diffusion of digital tools will reduce transaction costs for businesses, opening new opportunities for market development and diversification. To seize this opportunity, Vietnam will also need to mitigate

risks arising from digitalization, including loss of low-skilled jobs to digitalization, concerns on data privacy and security while facilitating data flow. To make the most of this transformation, Vietnam will need to adjust its labor market to respond to the new demand for more qualified workers, upgrade its innovation capacity to facilitate the emergence of productive firms, and improve access to data and information to enhance decision making.

This edition of Taking Stock has two parts. Part 1 reviews the recent developments in the Vietnamese economy and discusses the economy's short- to medium-term prospects, highlighting domestic and external risks. Part 2 examines what Vietnam needs to do to realize its objective of becoming one of the most advanced digital economies in the world while maximizing the benefits from this transformation.

Part 1: Robust economic growth but the COVID-19 crisis lingers

The Vietnamese economy expanded by a robust 5.6 percent during the first semester of 2021, but faces serious internal and external risks, including a domestic COVID-19 outbreak, which has spread to most of the provinces since late April. Growth was fueled by the recovery of the industrial sector, which was back to its pre-pandemic growth rate of about 8 percent thanks to expanding manufacturing production and, to some extent, the good performance of the agriculture sector due to favorable weather conditions and the end of the African swine fever outbreak. In contrast, the services sector did not recover to its pre-pandemic growth rate partly because of its high sensitivity

to restrictive mobility measures taken during the COVID-19 outbreaks. On the demand side, growth was driven by private consumption and to a lesser extent private investment, while the government resumed a less accommodating fiscal policy, and growth of imports outpaced growth of exports, turning the trade balance negative.

Despite its relative resilience, the Vietnamese economy has been affected by the progressively more restrictive measures to contain the April 2021 outbreak amid low vaccination rates. In July, retail sales fell by 19.8 percent (year-over-year [y/y]), the largest drop since April 2020, while growth of industrial production decelerated from 4.9 percent (y/y) in June to 2.2 percent (y/y) in July.¹ High-frequency indicators, such as the Purchasing Managers' Index, also fell to their lowest level in June 2021 since May 2020. The economy is expected to be further affected in August due the widening mobility restrictions, with the southern part of the country, Ho Chi Minh City, and then Hanoi placed under strict quarantine by late July to quell the rise of infections. Low vaccination rates will add to the economic pain in Vietnam, as the government cannot unwind restrictive measures rapidly to help economic recovery.

The pandemic has also deeply affected the daily life of workers, businesses, and households. These impacts are, however, not easy to measure as they vary over time depending on the magnitude of the pandemic and the stringency of mobility indicators. However, the common message is that many individuals have been under growing economic distress and the magnitude of this distress is rising due to the gradual deterioration of the economic situation in the country over the past few months. For instance, the labor market was relatively resilient during the first year of the pandemic, but recent trends in employment and labor income are starting to reflect the impact of the April outbreak. And lingering effects of the pandemic on households were also visible even before the April COVID-19 outbreak. As of March 2021, 30 percent of households were still earning less than in March

2020, down from about 50 percent in January 2021.

On the external front, Vietnam maintained a positive external position, with an increase in international reserves, but both merchandise trade and current account balances deteriorated during the first semester. The country accumulated US\$6.0 billion in international reserves between December 2020 and April 2021. Yet, growth of imports outpaced that of exports, while the services account continued to be negatively impacted by the closing of the country's borders to most international visitors. The external sector has lost some of its dynamism, since accumulated foreign direct investment inflows were 11 percent lower in the first seven months of 2021 than during the same period in 2020, while the merchandise trade balance turned into a deficit after reporting the highest-ever surplus in 2020. It appears that exporters are facing disruptions due to the resurgence of the pandemic, forcing them to close factories or delay production, and are increasingly confronted with competition from other countries that are witnessing a stronger rebound in their production activities.

The State Bank of Vietnam, the country's central bank, continued its accommodative monetary policies, while the government returned to a more neutral fiscal stance during the first semester. Credit expanded by about 15 percent in recent months, up from 10 to 12 percent in 2020, providing a welcome buffer to affected businesses. However, this policy can also lead to higher risks for the financial sector. The more neutral fiscal policy reflects a combination of higher revenue collection and lower capital expenditures, as only 28 percent of the annual target of the public investment program was disbursed at the end of the first semester.

Looking ahead, the Vietnamese economy could expand by around 4.8 percent in 2021 and converge toward the pre-pandemic GDP growth rate of 6.5 to 7 percent from 2022 onward. This projection remains positive but it is 2.0 percentage points lower than the one in the December 2020 Taking Stock edition because of the negative effects associated

¹ General Statistics Office website, July 2021. <https://www.gso.gov.vn/en/homepage/>

with the latest COVID-19 outbreak and is subject to further risks to the downside. This new projection assumes that the current outbreak will gradually be brought under control, allowing the economy to rebound in the fourth quarter. This rebound will also be supported by the acceleration of the vaccination program, which should cover at least 70 percent of the adult population by mid-2022, preventing severe new outbreaks. During the remainder of 2021, monetary policy will remain accommodative through the implementation of various monetary policy instruments and debt restructuring. The government plans a faster execution of the budgeted public investment program, which may face initial difficulties due to the current mobility restrictions associated with the April outbreak, but should be at full speed in the fourth quarter. The authorities should also extend their financial assistance through a combination of cash transfers and subsidies, as they started to do in early July, even if its proper execution depends on its scope and ability to reach the workers who have lost their jobs. On the external front, these projections assume that a sustained global recovery will ensure continued strong demand for Vietnamese products in its main export markets.

As the economy recovers, supportive policies will gradually wind down. From 2022 onward, the monetary authorities will resume their prudent approach to the balance between supporting economic growth and managing inflation, while closely monitoring the health of the financial sector. Fiscal consolidation will be resumed in the medium term to ensure debt sustainability. The authorities will need to improve their revenue performance and expenditure efficiency, especially the quality of public investment, to meet the expected increase in infrastructure and quality social services Vietnam will need in the next decade.

However, these projections should be made with caution as serious uncertainties remain around the magnitude and duration of the pandemic, including the rise of new variants and the pace of vaccination in Vietnam and in the rest of the world. If these risks materialize, Vietnam's economic

recovery will be delayed, and the GDP growth rate in 2021 will be lower than the projected 4.8 percent. The convergence to the historical growth trend and fiscal consolidation in the medium term will also be slower than anticipated.

While Vietnam's prospects remain positive, the authorities should address the heightened social, financial, and fiscal risks. They should:

- **Address the social consequences of the crisis.** The impact of the COVID-19 pandemic on the labor market and households has been exacerbated by the February and April outbreaks. Not only has the pandemic reduced workers' earnings, but it has also created deeper inequalities through its differentiated impact across income groups, sectors, genders, and locations. The authorities should consider strengthening the coverage, targeting, and benefit levels of the country's social protection programs to ensure that current and future victims of natural or economic shocks receive adequate support.
- **Watch for financial sector risks raised by the crisis.** While new or restructured bank credit offers a welcome buffer to affected businesses, it also contributes to transferring the risk from the real to the financial sector. The monetary authorities will need to be vigilant about the rising risks associated with nonperforming loans, especially in the banks that were already undercapitalized before the pandemic. It would be useful to adopt a resolution plan for nonperforming loans, and to develop a well-defined mechanism for dealing with weak and troubled banks, while continuing to recapitalize banks to meet Basel II requirements.
- **Watch for fiscal risks.** While the government still has sufficient fiscal space, with a debt-to-GDP ratio of around 55.3 percent of GDP as of end-2020, international experience has demonstrated that the fiscal situation could deteriorate relatively quickly if the current outbreak is not rapidly controlled or new outbreaks materialize in the coming months.

The government may be required to expand its fiscal assistance package, which has been modest so far, while revenue might be negatively affected by a weaker-than-expected economic rebound. At this stage, the fiscal risk appears under control but should continue to be closely monitored, especially as it relates to the financial health of state-owned enterprises, which could lead to contingent liabilities.

Part 2: Digital economy: the path to tomorrow

If one believes in the predictive power of financial markets, digitalization will be the future of the Vietnamese economy. Over the past year, the value of several local high-tech companies has surged by around 200 percent on the Ho Chi Minh City stock market, including Digiworld, a market expansion provider, and Vien Lien, a telecommunications equipment business, which were up by 252.1 percent and 189.4 percent, respectively. As the world emerges from the COVID-19 crisis, it has become clear that digital transformation will have an increasingly important role in the global economy. Countries are already competing globally for digital supremacy, and the Government of Vietnam has clearly indicated it wants to be in the race by making digital transformation one of the central objectives of its 2021–2030 National Development Strategy.

Vietnam is in a good but uneven position to become a digital powerhouse. A comparison with a selected sample of structural and aspirational peers highlights Vietnam's strengths and weaknesses. Today, the country is one of the most connected in the world, especially for its income level, with high mobile and internet penetration rates, and an increasing use of information technology (IT) tools and platforms by businesses. It also hosts several of the world's leading IT companies. However, Vietnam is lagging in several dimensions - skills, financing, conducive regulatory environment, including data access and security - that will prevent it from making the most of the rapid digital transformation.

To gain substantially from the digital transformation of its economy, the Government of Vietnam will need to take several actions. Beyond upgrading infrastructure, it must encourage technology adoption and attract investments to enable small business participation in the digital economy, and facilitate skills acquisition and upgrading, data privacy, and cybersecurity. If these challenges are not addressed with urgency by Vietnamese policymakers, there is a risk that the digital dividends will not be as large as expected and, above all, will be distributed unequally, leading to potential economic, social, and political tensions.

This report suggests a roadmap with three major actions.

First action: Enhance digital skills. Workers will need the right skills to take advantage of digitalization, and an uneven distribution of skills can increase inequality. The stock of qualified workers in Vietnam's labor force is low, and the number of students registering in relevant postsecondary programs is insufficient to fill the gap. At the current pace, it will take 25 years for Vietnam to catch up with Thailand. Many businesses report increasing difficulty finding and retaining good data analysts, programmers, and modelers. Given the rapid pace of change and uncertainty about what future jobs will require, collaboration between the government and private sector could help identify and anticipate what skills are most in demand. Five complementary options could be considered by Vietnam: (i) nurturing its young digital talents through a large-scale scholarship program to prepare students at various stages of their career for the digital age (as in Indonesia); (ii) developing programs that combine skill development for the digital economy, with financing and mentorship for digital entrepreneurs (as in Singapore); (iii) introducing technology from the early stages of education (as in the Netherlands); (iv) attracting talent from its diaspora engaged in digital sectors around the world (as in the Philippines and France); and (v) encouraging the development of workers' soft skills, such as critical thinking and problem solving, communication, teamwork, creativity, and

management (including by training teachers in these areas and revising curricula).

Second action: Nurture innovative capacity.

To remain competitive, continuous innovation is imperative. The short application cycle for information and communication technology (ICT) means it can be invented, tested, and applied much more quickly than other technologies, such as those in the medical field. For the same reason, ICT can quickly become obsolete. Today, most of the support provided by the government is directed at supporting research and development efforts rather than facilitating diffusion, adoption, and adaptation of new technologies by firms. To rebalance this policy, the government could (i) reduce barriers to entry, especially for companies with high-technology capacity, including through the implementation of recently adopted regional trade agreements, and following the steps of countries such as Australia, Denmark, Germany, Ireland, Japan, and Portugal; (ii) enhance competition policy and implementation (Australia, Germany, and the Republic of Korea); and

(iii) promote start-ups and small firms in the digital sector with targeted support to facilitate access to financing, information, and skill development.

Third action: Promote information access, quality, and security.

As the *World Development Report 2021* highlights, many of the benefits of a virtual economy will be defined by the accessibility and quality of the information that digital tools convey to users.² However, Vietnam performs poorly in terms of access to government information and the content of information provided by the government. Moreover, data portability and interoperability are limited, even after the launch of the government's internal data portal in mid-2020. As it finalizes a draft Decree on Personal Data Protection, the government needs to strike a balance among data management, privacy protection, and facilitation of digital data flows, and learn from other countries in the region that are gradually moving from reduced data protectionism to increased data privacy (as in other Association of Southeast Asian Nation economies, including Singapore).

2 World Bank 2021a.



PART 1

RECENT ECONOMIC DEVELOPMENTS AND PROSPECTS

INTRODUCTION

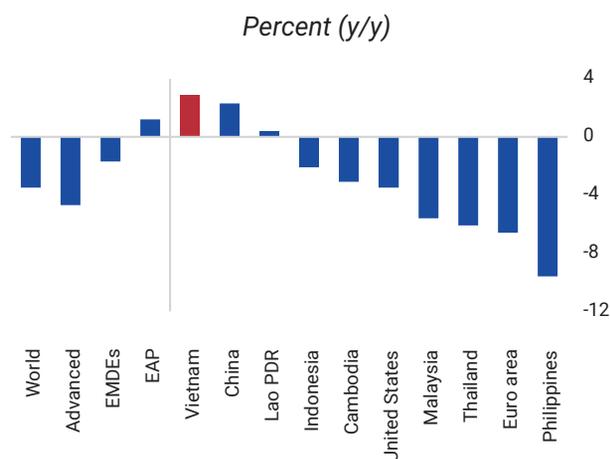
Seventeen months into the COVID-19 pandemic, the rollout of vaccines is providing hope that the pandemic will end, and an uneven global recovery is underway. Continued uncertainty about new variants and the pace of vaccination and vaccination take-up, however, have made predictions about the path to full recovery tentative. While part of the world is expected to rebound from the biggest economic recession of the past 80 years thanks to massive vaccination programs, the spread of new variants, such as the Delta variant, has cast doubts about the end of the pandemic. Most countries—including emerging market and developing economies (EMDEs) and low-income countries—are hamstrung by limited access to vaccines and financial resources to sustain accommodative fiscal and monetary policies to jump-start their recovery. According to the World Bank's latest projections, the United States, the Eurozone, and China are expected to bounce back by 5.4 percent, 6.8 percent, and 8.5 percent, respectively, in 2021. In contrast, EMDEs—excluding China—are expected to grow by 4.4 percent, while low-income countries are projected to expand by only an average 2.2 percent for the year.³

Against this uncertain global landscape, Vietnam's economy expanded during the first semester of 2021, but faces serious internal and external risks, including the COVID-19 outbreak that started in late April. After performing remarkably well in 2020 both in controlling the spread of COVID-19 and in achieving one of the highest gross domestic product (GDP) growth rates in the world, at 2.9 percent (figure 1.1), the economy grew by a solid 5.6 percent in the first semester of 2021 (figure 1.2). However, today Vietnam is facing its most severe COVID-19 outbreak since the beginning of the pandemic, partly due to the low vaccination rates (figure 1.3). Since early May, manufacturing and services activities have been increasingly hamstrung by targeted lockdowns to contain community transmission of the virus. In mid-July, mobility restrictions widened, with the southern part of the country, Ho Chi Minh City, and then Hanoi, placed under strict quarantine, affecting economic activities (figure 1.4). In the meantime, the economy also faces the risk of increased competition in its external markets as competitors who are ahead in vaccinations are restarting their production and could recapture some of the market shares they lost to Vietnam due to COVID-19-related production disruptions in 2020. Therefore, the economy could be at risk of losing both its domestic and external drivers of growth if the current outbreak is not rapidly contained. The government has reacted by continuing its accommodating monetary policy and by adopting in early July a new fiscal assistance package of approximately US\$1 billion. It has also accelerated the pace of the vaccination program.

Part 1 of this Taking Stock report reviews the recent developments in the Vietnamese economy and assesses its short- to medium-term prospects. The first section examines the country's growth performance, its external balance, and monetary and fiscal policy responses during the first semester of 2021. The second section discusses the outlook for the Vietnamese economy in the next two to three years, highlighting domestic and external risks. The third section discusses the role digital transformation could play in alleviating the short-term consequences of the COVID-19 pandemic and in supporting Vietnam's ambition to become a high-income economy by 2045.

3 World Bank Group 2021.

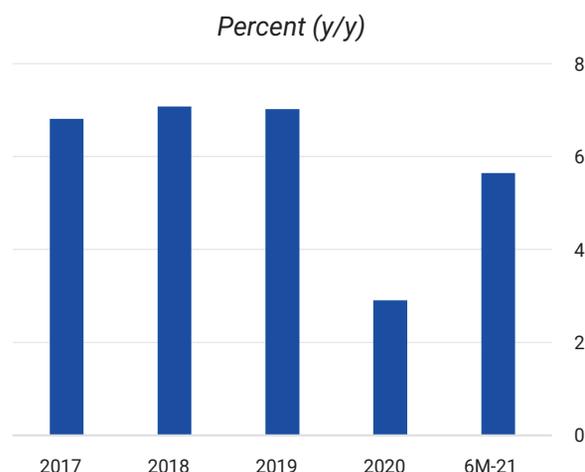
Figure 1.1. Global GDP growth in 2020



Source: World Bank Group 2021.

Note: EAP = East Asia and Pacific; EMDEs = emerging market and developing economies.

Figure 1.2. Vietnam GDP growth, 2017–21



Source: GSO.

1.1. RECENT DEVELOPMENTS

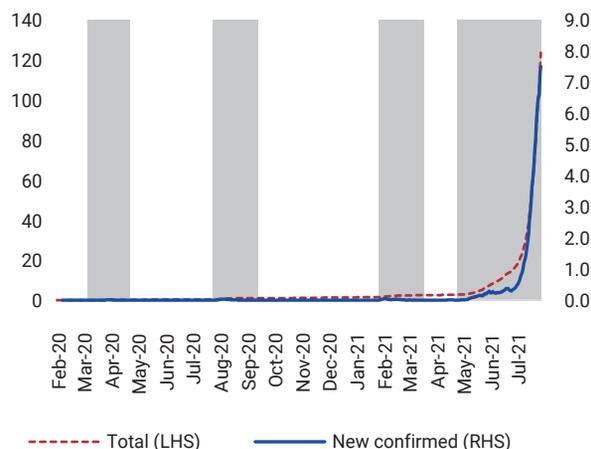
1.1.1. Robust economic growth in the first semester of 2021, but the COVID-19 April outbreak has created a health emergency and dimmed economic prospects

In the first semester of 2021, the Vietnamese economy expanded by a robust 5.6 percent despite the lingering COVID-19 crisis. Building on the remarkable performance achieved in the second half of 2020, the economy registered quarterly growth of 4.65 percent (year-over-year [y/y]) and 6.61 percent (y/y) in the first and second quarters of 2021 despite two COVID-19 outbreaks that forced the authorities to take restrictive measures to contain the pandemic. The first outbreak occurred in January–February but was controlled relatively rapidly as the numbers of infections and deaths were kept at a minimal level (figure 1.3). A second wave started at the end of April and has been by far the most severe in Vietnam, with confirmed cases rising sharply from less than 3000 at the end of April to over 150,000 by the end of July 2021.⁴ The adoption of stronger mobility restrictions led to a sharp decline in mobility indicators and an increase in the Stringency Index⁵ that were at the end of July almost back to the level observed during the national lockdown in April 2020 (figure 1.4). As a result, the number of daily cases appear to have reached a plateau of about 7500-8000 cases since mid-July but has not yet shown a significant decline.

⁴ <https://ourworldindata.org/covid-vaccinations?country=VNM>.

⁵ The Stringency Index is part of the Oxford Covid-19 Government Response Tracker (OxCGRT), which was created by the University of Oxford to collect information on policy measures governments have taken to tackle COVID-19 that reflect the extent of government action. The Stringency Index “records the strictness of ‘lockdown style’ policies that primarily restrict people’s behaviour. It is calculated using all ordinal containment and closure policy indicators, plus an indicator recording public information campaigns” (<https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker>).

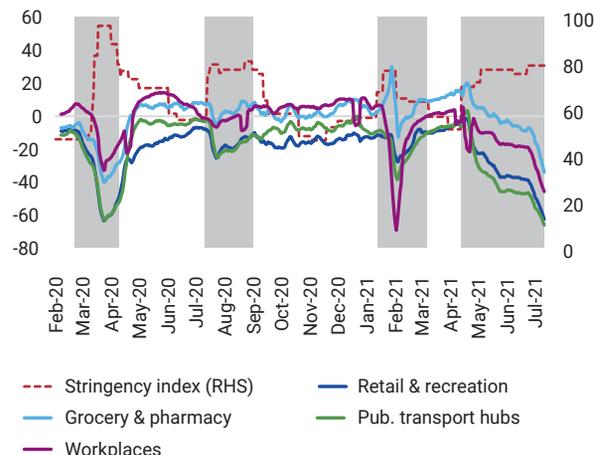
Figure 1.3. COVID-19 confirmed cases



Source: Our World in Data.

Note: Number of cases are in thousands, new confirmed cases are a seven-day moving average. LHS = left-hand scale; RHS = right-hand scale.

Figure 1.4. Mobility Trends and Stringency Index



Sources: Our World in Data and Google Community Mobility data.

Note: Mobility indicators are the percentage change compared to the baseline during January 3–February 6, 2020, expressed in a seven-day moving average. RHS = right-hand scale.

However, this solid aggregate growth in the first semester of 2021 masks uneven sectoral performance.

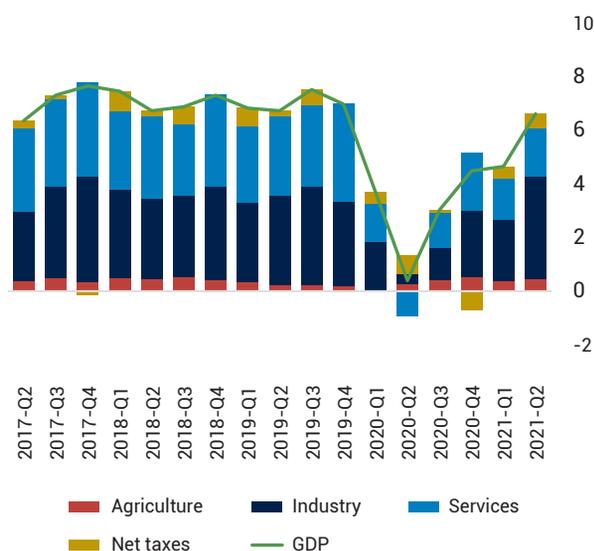
The main driver was the industrial sector (which contributed about 53.2 percent of GDP growth), followed by services (30.7 percent), and agriculture (7.6 percent) (figure 1.5). Industry growth was back to its pre-pandemic rate of about 8 percent thanks to expanding manufacturing production. Agriculture—relatively isolated from the pandemic—grew by about 3.85 percent, benefiting from favorable climate conditions and the end of the African swine fever outbreak. Services were still lagging, with a growth rate of only 4.0 percent, or about 60 percent of the rate recorded in the first semester of 2019. The slower recovery of services is partly explained by their sensitivity to the closing of schools and restrictive mobility measures that were taken during the COVID-19 outbreaks in January/February and in April. The retail, recreation and transportation sectors experienced the sharpest fall in activity (figure 1.4). The closing of borders to most foreign visitors (down by 97.6 percent) has also contributed to a deep recession in the tourism and transport sectors.

On the demand side, the key drivers of economic growth during the first semester of 2021 were mainly the recovering domestic consumption and to a lesser extent private investment which, respectively, contributed 53.4 percent and 18.3 percent to GDP growth (figure 1.6).⁶ The domestic private sector replaced the public and external sectors, which were the main contributors to the recovery in the second half of 2020. As explained below, the government returned to a less accommodative fiscal policy at the beginning of 2021, while the contribution of net exports to growth diminished as export growth was outpaced by the rapid increase in imports.

⁶ A large fraction of GDP growth is not explained by the national account, based on our estimates from GSO data, as statistical discrepancies account for 30 percent of GDP growth in the second quarter of 2021.

Figure 1.5. Sectoral contribution to economic growth

Percentage point (NSA)

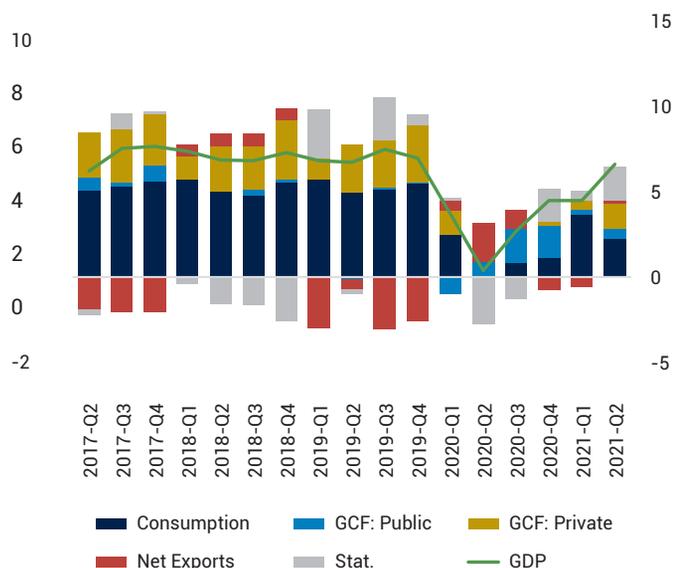


Sources: GSO and World Bank staff calculations.

Note: NSA = not seasonally adjusted.

Figure 1.6. Contribution to GDP growth by expenditure

Percentage point (NSA)



Sources: GSO and World Bank staff estimates.

Note: GCF = gross capital formation; GDP = gross domestic product; NSA = not seasonally adjusted; Stat. = Statistical Discrepancy.

While the Vietnamese economy was relatively resilient during the first semester of 2021, it has been affected by the increasingly more restrictive measures to contain the April 2021 outbreak and the low vaccination rates. The last COVID-19 outbreak started in the north of the country but, contrary to previous episodes, it has rapidly spread all over the country, including in the two major urban centers (Ho Chi Minh City and Hanoi) and several industrial parks, forcing the government to adopt stringent restrictive measures (see figure 1.4). As of end-July, most of the southern part of the country as well as Ho Chi Minh City and Hanoi were under lockdown. The fact that Vietnam lags in vaccination rates compared to many countries is also affecting its ability to quell the broad-based outbreak. As of end July, only 5.1 percent of the population had received a first shot of vaccine, and only 0.6 percent of the population was fully vaccinated. Most Asian comparator countries have surpassed Vietnam in their vaccination efforts.⁷

International experience has demonstrated that a country's economic growth is closely correlated with the intensity of mobility restrictive measures and the vaccination rate among the population. A recent International Monetary Fund analysis suggests that for every month of lockdown, industrial output is expected to be reduced by approximately 10 percent.⁸ Such a correlation was observed in Vietnam during the national lockdown in April 2020, when both industrial production and retail sales declined abruptly, and should be expected to happen again under the current circumstances (figures 1.7 and 1.8). The June 2021 Global Economic Prospects published by the World Bank found that countries in the top quartile by vaccination rates—measured as percent of people having received at least one dose at the end of the first

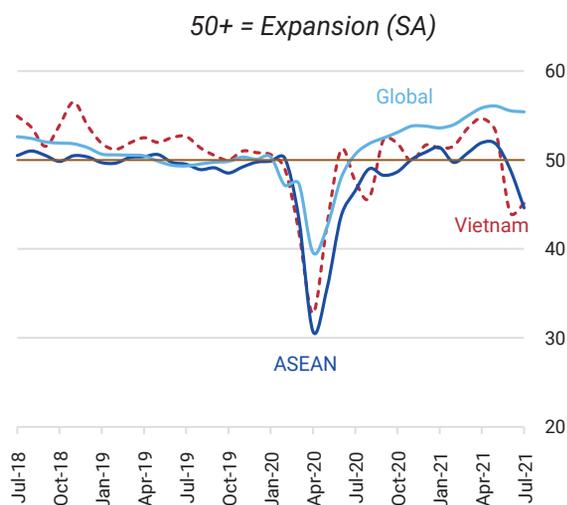
7 <https://ourworldindata.org/covid-vaccinations?country=VNM>. By comparison, the share of people who received at least one dose of COVID-19 vaccine was over 30 percent in the Republic of Korea, over 25 percent in Cambodia, about 24 percent in Malaysia.

8 Deb et al. 2020.

semester of 2021—are expected to grow by 4.8 percent in 2021, on average, while those in the bottom quartile are set to grow by only 2.5 percent, on average.⁹

The close correlation between mobility restrictions and economic activity has been evident during the ongoing COVID-19 episode in Vietnam. Since the end of April 2021, both industrial and services activities have fallen sharply due to more stringent social distancing measures, and mobility restrictions have shuttered services. In July 2021, retail sales fell by 19.8 percent (y/y), the largest drop since April 2020 (figure 1.8).¹⁰ Growth of industrial production decelerated from 4.9 percent (y/y) in June to 2.2 percent (y/y) in July. Manufacturing managed a slightly better growth of 2.9 percent (y/y), with apparel and leather growing 5.8 percent (y/y) and 8.9 percent (y/y), respectively. In contrast, electronics, computers, and optical products continued to contract by 4.7 percent (y/y) in July.¹¹ Resilient manufacturing growth appears to be partly rooted in some industrial parks in the southern regions being allowed to continue production and provide inputs into the supply chains. In addition, the epidemic in the northern provinces of Bac Ninh and Bac Giang appears to have been basically controlled, allowing the production activities in industrial zones to gradually recover. Yet, the Purchasing Managers Index (PMI), which is a leading indicator, fell to its lowest level in June 2021 since May 2020. Not only did the PMI decline abruptly in Vietnam, but it declined more than the Association of Southeast Asian Nations average, while this indicator was surging at the global level thanks to the recovery in many major countries (figure 1.7).

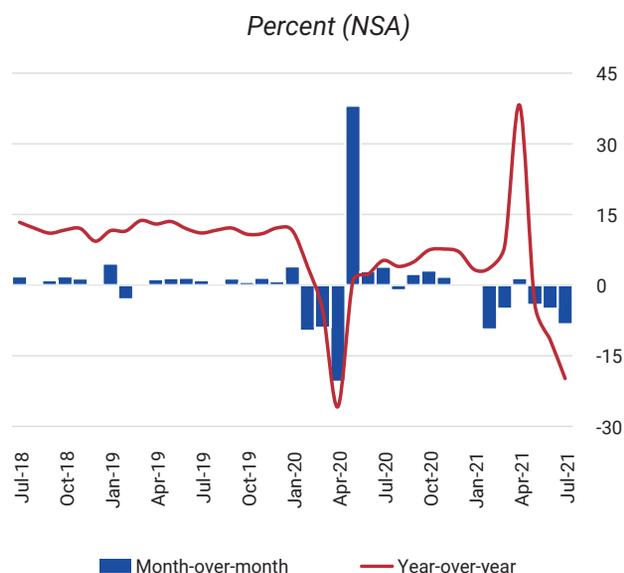
Figure 1.7. Purchasing Manager’s Index



Sources: IHS Markit/Haver Analytics.

Note: The ASEAN Manufacturing PMI consists of data from seven countries (Indonesia, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam). SA = seasonally adjusted.

Figure 1.8. Retail sales



Sources: GSO, Haver Analytics, and World Bank staff calculations.

Note: NSA = not seasonally adjusted.

9 World Bank Group 2021.

10 General Statistics Office website, July 2021. <https://www.gso.gov.vn/en/homepage/>

11 General Statistics Office website, July 2021. <https://www.gso.gov.vn/en/homepage/>

Low vaccination rates will exacerbate the economic pain in Vietnam, as the government cannot unwind restrictive measures rapidly to help economic recovery. Countries that have high vaccination rates and are lifting domestic restrictions are opening up their economies and some are allowing business travelers and tourists who are fully vaccinated to enter, helping the revival of economic activity, including a reprise of the export of goods that could be in direct competition with Vietnam's exports. These countries are not COVID-19-free, but vaccination provides a strong base for the management of the spread of the virus. For that reason, as explained in box 1.1, the authorities have adjusted their strategy to contain the pandemic by increasing their efforts to implement their vaccination program through a combination of purchases of different vaccines (including COVID-19 Vaccines Global Access [COVAX]) and the production of vaccines by negotiating agreements with international companies or other countries. Vietnam is also speeding up the development of its own vaccines.

Box 1.1. Government efforts to contain COVID-19 community spread in 2021

The Government of Vietnam has adjusted its approach to addressing the evolving COVID-19 health situation. The initial strategy of identifying, testing, and confining individuals worked well for about a year, with three localized outbreaks brought under control.

In the first semester of 2021, the government committed to securing 150 million doses of vaccine and to vaccinating 70 percent of its population. This is expected to cost VND 25.2 trillion (about US\$1.1 billion), and the government has set up a fund to facilitate the purchase of vaccines. By early June, about US\$181 million was collected. As of late July, Vietnam had negotiated for 105 million doses, including securing 60 million doses of the AstraZeneca vaccine. The government is actively pursuing other sources of vaccine and has signed a number of contracts and received various smaller deliveries of vaccine, including through the COVID-19 Vaccines Global Access (COVAX) Facility. As of mid-July, the country had received around 8 million doses, either through contracts, COVAX, or foreign aid.^a As of end July, only 5.1 percent of the population had received at least one coronavirus vaccine shot, and only 0.6 percent were fully vaccinated.

The government has improved its information gathering and delivery system to monitor data in a more useful way, and will centralize information from the government-run Blue Zone contact tracing and self-reporting app to provide more useful data insights. The government also took measures to more quickly acquire vaccines, approving use of the AstraZeneca vaccine and Russia's Sputnik V vaccine in the first quarter, and China's Sinopharm vaccine and the Pfizer/BioNTech and Moderna vaccines in June 2021. It is also attempting to develop its own vaccine.

As of early June, the government had spent VND 8 trillion (US\$347 million) since the beginning of the pandemic on prevention and policies, of which about VND 4.27 trillion (US\$184 million) was spent in 2021.

Note: a. <https://e.vnexpress.net/news/news/vietnam-to-receive-3-mln-moderna-doses-this-weekend-4328998.html>.

1.1.2. The economic impact of COVID-19 on businesses, workers, and households

Beyond the macroeconomic impacts, the pandemic has also deeply affected the daily life of workers, businesses, and households. These impacts are, however, not easy to measure, as they vary over time depending on the magnitude of the pandemic and the stringency of mobility indicators. Below is a brief description of recent trends, based on surveys conducted by the government, the World Bank, or both. The key common message is that, even if Vietnam has been relatively more economically resilient than most countries last year, many individuals have experienced economic distress and the magnitude of this distress is rising due to the deterioration of the economic situation in the country.

The labor market was relatively resilient during the first year of the pandemic, but recent trends are starting to reflect the impact of the April outbreak. Accordingly to the General Statistical Office (GSO),

in the second quarter of 2021, 12.8 million people aged 15 and were over negatively affected by the April outbreak, including those who lost their jobs, got furloughed, worked alternate shifts, reduced working hours, or experienced reduced income. Labor market participation contracted by 0.7 percent, while 1.6 percent more workers were underemployed or unemployed in the second quarter of 2021 compared to the second quarter of 2019. Unemployment and underemployment rates picked up, increasing, respectively, by 0.2 percentage points and 1.3 percentage points in Q2-2021, compared to Q2-2019. Real wages were still 1.3 percent lower than in Q2-2019 (figures 1.9 and 1.10). In Q2-2021 Informality reached 57.4 percent, its highest in three years.¹² While these figures might appear relatively small compared to many other countries, including in the region, they reveal a significant change for a labor force that has been used to full employment and to quasi-automatic higher real wages over the past decade.

Figure 1.9. Labor force participation rate
relative to the same quarter in 2019 (pps, NSA)

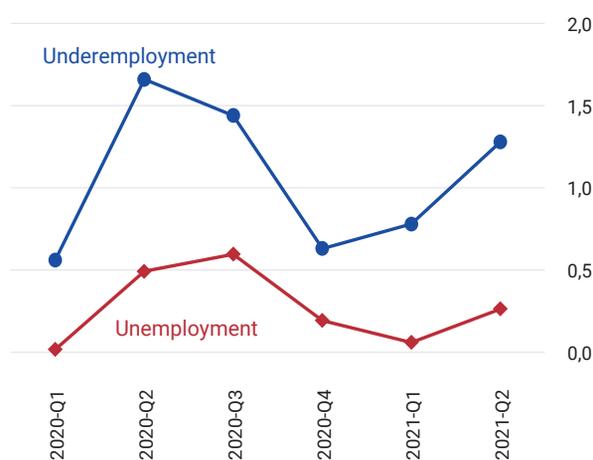


Sources: GSO and World Bank staff estimates.

Note: NSA = not seasonally adjusted; pps = percentage points.

Figure 1.10. Unemployment and underemployment rates
Relative to the same quarter in 2019 (pps, NSA)

Relative to the same quarter in 2019 (pps, NSA)



Source: GSO and World Bank staff estimates.

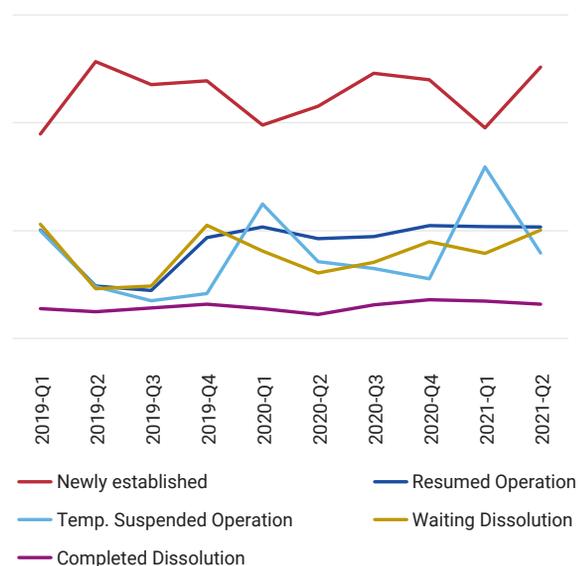
Note: NSA = not seasonally adjusted; pps = percentage points.

Available evidence paints a mixed picture of the impacts on businesses with signs of significant financial pressures but also resilience of the private sector. More new businesses were registered during the first semester of 2021 than closed (figure 1.11). This result should be interpreted with some caution as it only captures the formal sector, while informal firms might be more vulnerable. Furthermore, the results of the World Bank High-Frequency Phone Surveys conducted in 2020 emphasized the close correlation between an increase in the Stringency Index and the deterioration of the financial situation of the private sector. For example, during the national lockdown in April 2020, about 81 percent of businesses reported having been affected by the crisis, reducing their sales by 52 percent (y/y). By extrapolation, the financial situation of many businesses has certainly deteriorated since the beginning the last outbreak, as they have to close their doors, suffer from disruption in their supply chains, or are prevented from hosting their workers who have to stay home in quarantine.

12 General Statistical office, July 2021. <https://www.gso.gov.vn/en/homepage/>

Figure 1.11. Firm entry and exit

Thousands of firms (NSA)

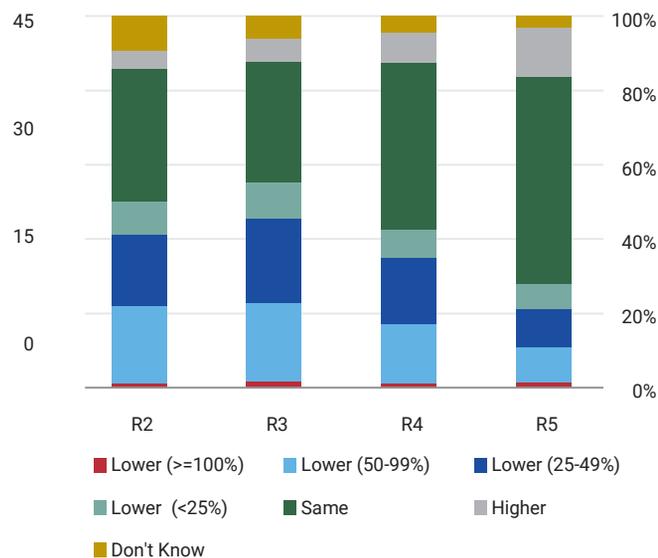


Sources: World Bank staff calculations based on GSO data.

Note: NSA = not seasonally adjusted

Figure 1.12. Impact of COVID-19 on households

Change in income relative to a year ago



Source: World Bank High-Frequency Phone Survey of Households.

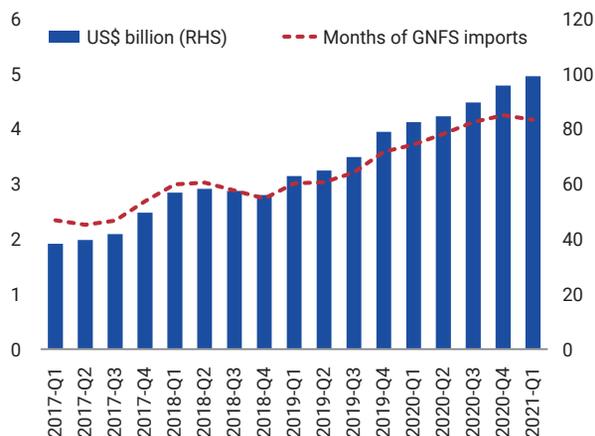
Note: R2 = July 2020; R3 = September 2020; R4 = January 2021; R5 = March 2021.

Lingering effects of the pandemic on households were visible even before the April COVID-19 outbreak and have likely intensified in recent month. As of March 2021, 30 percent of households were still earning less than in March 2020, down from about 50 percent in January 2021 (figure 1.12). Around 12 percent of these households were in financial distress as they reported to have lost at least 50 percent of their income. Women and households in the bottom 20 percent of the welfare distribution have experienced the slowest income recovery. Informality is associated with less income security, lower labor productivity, and limited access to finance. Informal workers or businesses also have less access to safety nets. In addition, as in many other countries, the crisis has been gender-biased in Vietnam, as women typically bear a disproportionate responsibility for childcare, and the COVID-19 pandemic further exacerbated the pressure on women's time, particularly when schools are closed, as in the past two months in Hanoi. The poorest groups have been more vulnerable because they have less savings and limited access to finance. There have also been regional differences in household income trends, with the northeast coast (the Da Nang area) and Ho Chi Minh City being more affected by the preventive health measures and international travel restrictions due to the large tourism and business component of their economies. Hanoi, in contrast, was less affected as it is the seat of the central government.

1.1.3. Positive balance of payments but the trade balance turned into a deficit

Vietnam maintained a strong external position during the first semester of 2021, but the merchandise trade balance turned into a deficit in the second quarter. The country accumulated US\$6.0 billion in international reserves between December 2020 and April 2021 as the result of both positive current and financial balances (figure 1.13). Concurrently, the real effective exchange rate (as measured by the World Bank's methodology for a basket of major trade partners) remained relatively stable in the first semester of 2021, after a depreciation of 7.3 percent between May 2020 and January 2021 (figure 1.14).

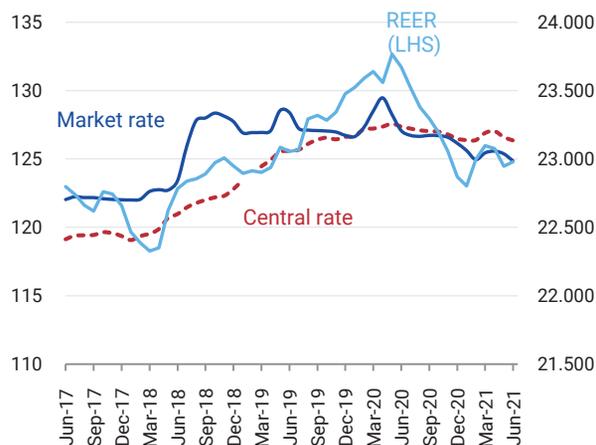
Figure 1.13. International reserve accumulation



Sources: SBV, IMF, and World Bank staff estimates.

Note: RHS = right-hand scale; GNFS = goods and nonfinancial services.

Figure 1.14. Exchange rate trend



Sources: SBV, Vietcombank, Haver Analytics, and World Bank.

Note: Central rate is SBV's central VND/US\$ rate. Market rate is the average of buying and selling spot VND/US\$ exchange rate posted by the Vietcombank. LHS = left-hand scale; REER = real effective exchange rate; lower REER means depreciation.

However, the current account balance is estimated to have gone into deficit in the second quarter of 2021.

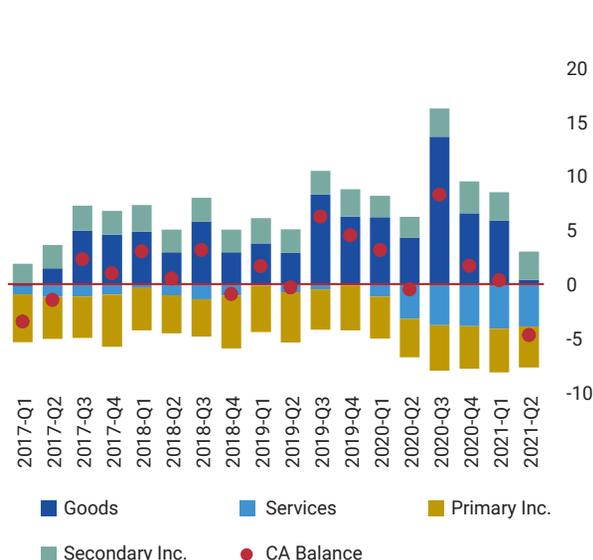
The current account shrank from US\$0.6 billion in the first quarter of 2021 to an estimated US\$4.6 billion deficit in the second quarter (figure 1.15). As explained below, this decline is mainly due to a sharp increase in merchandise imports. The services accounts continued to impact the current account negatively due to the closing of borders to most international visitors. In contrast, the financial account improved in the first quarter of 2021 thanks to resilient foreign direct investment (FDI) inflows and an increase in short-term capital inflows, but the second quarter results were not available at the time of publication of this report (figure 1.16).

After recording its highest ever merchandise trade surplus in 2020, Vietnam's trade balance turned into a deficit in the first semester of 2021, worsening in July.

The merchandise trade balance registered an estimated deficit of US\$1.0 billion during the first six months of 2021, deepening to US\$2.4 in July, compared to a US\$8.7 billion surplus achieved over the first seven months of 2020 (figure 1.13). During the first semester, this deterioration reflects the rapid increase in imports (up 36.3 percent [y/y]), which outpaced the expansion of exports (29.0 percent [y/y]). Imports of consumption goods increased by 28 percent (y/y), compared to a 7.2 percent (y/y) drop in the same period last year (figure 1.14). Imports of raw materials and machinery also rebounded strongly, largely driven by the high dependence of the export sector on imported inputs. The trade deficit is also associated with the decline in terms of trade, which fell by 1.0 percent (y/y) between January and June 2021.

Figure 1.15. Current account (CA) decomposition

US\$ billion (NSA)

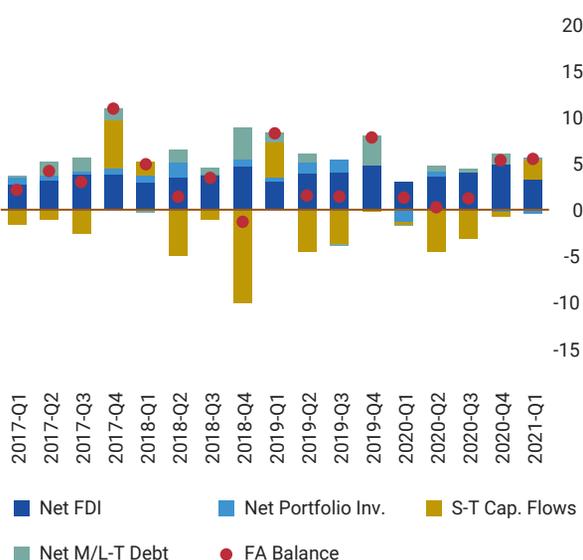


Sources: SBV, GSO, Haver Analytics, and World Bank staff estimates.

Note: NSA = not seasonally adjusted.

Figure 1.16. Financial account (FA) decomposition

US\$ billion (NSA)



Sources: SBV, Haver Analytics, and World Bank staff estimates.

Note: FDI = foreign direct investment; M/L-T Debt = medium/long-term debt; NSA = not seasonally adjusted; S-T Cap. Flows = short-term capital flows.

Vietnam's merchandise exports were 26.2 percent higher during the first seven months of 2021 compared to the same period in 2020. Yet, after a boom in the second half of 2020, the level of exports stagnated between January and July 2021 (figure 1.17). In fact, export growth decelerated from 20.4 percent (y/y) in June to only 12.5 percent (y/y) in July while imports continued to grow strongly by 33.3 percent (y/y) (figure 1.18). This flattening of Vietnam's exports growth is somewhat surprising when the country could have taken advantage of the resurgence in global demand thanks to its competitiveness on international markets. One explanation is that this flattening may reflect seasonal factors. Another explanation is that as other countries reenter the export market, they compete with Vietnamese products and regain some of their pre-COVID 19 market shares. The April outbreak also appears to have affected electronics exports, as health and mobility measures to combat community spread interrupted operations of factories in Bac Giang and Bac Ninh, which affected the supply chains of some electronic products. Exports of computers and electronics grew by only 5.4 percent (y/y) in June (much lower than its double-digit growth rates recorded in 2020 and early 2021) and dropped by 9.1 percent (y/y) in July 2021. On the other hand, while phone exports dropped by 9.6 percent (y/y) in June, they recovered in July, increasing by 10.3 percent (y/y).

Figure 1.17. Merchandise Trade Balance

US\$ billion (3 mma, NSA)

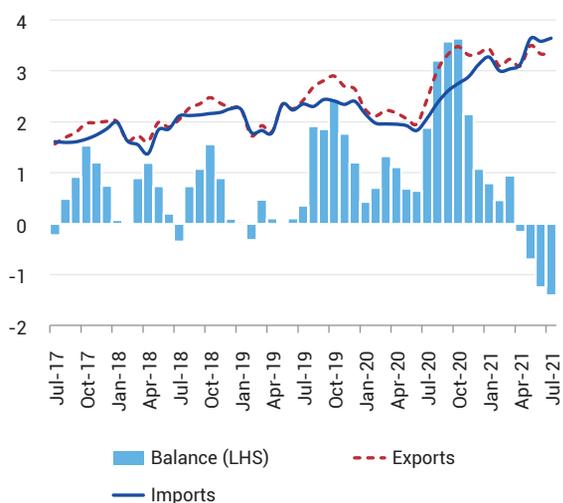
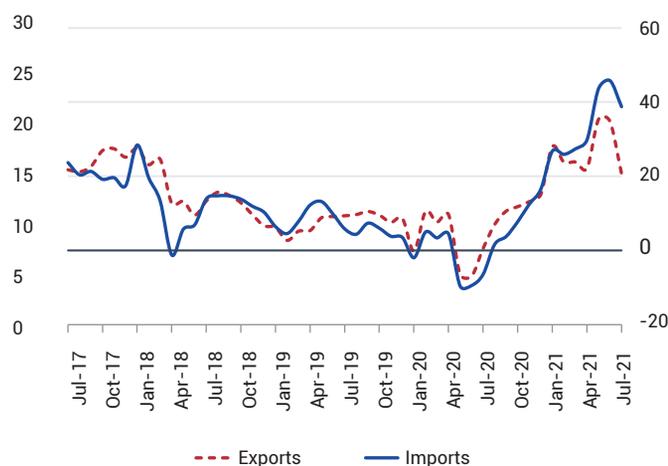


Figure 1.18. Merchandise exports and imports

Percent (y/y, 3 mma, NSA)



Sources: GSO, Haver Analytics, and World Bank staff estimates.

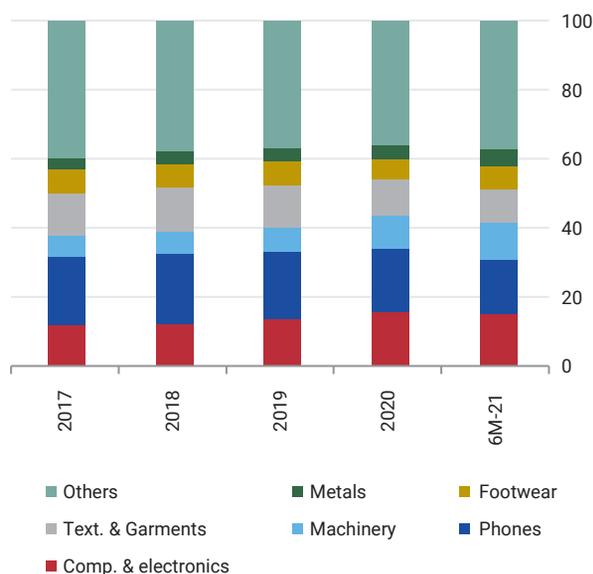
Note: 3 mma = 3-month moving average; LHS = left-hand scale; NSA = not seasonally adjusted.

Sources: GSO, Haver Analytics, and World Bank staff estimates.

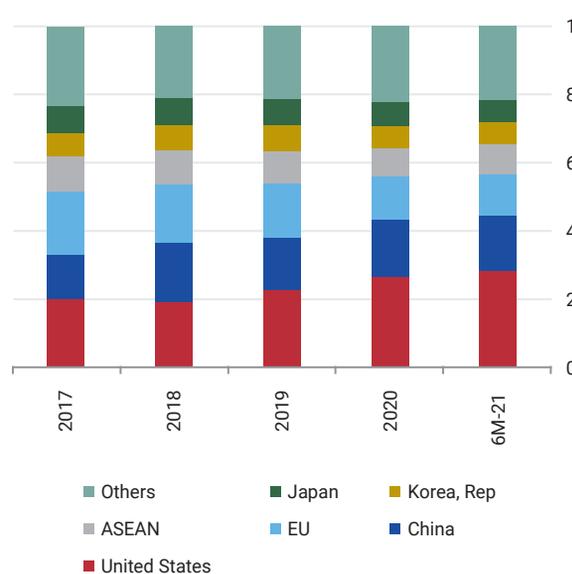
Note: 3 mma = 3-month moving average; NSA = not seasonally adjusted.

Vietnamese export composition has shifted since the beginning of the COVID-19 crisis and remained approximately the same during the first semester of 2021 compared to 2020. The pandemic has accelerated the shift of exports from primary and resource-based to high-tech products.¹³ Social distancing measures and work-from-home practices caused by the pandemic also contributed to shifting the demand for exports from traditional, low-technology products to those with more advanced technology. Demand was particularly strong for computers, electronics, phones, and machinery, whose exports to the United States grew by 57 percent in 2020 and 62 percent (y/y) in the first four months of 2021, accounting for over 40 percent of Vietnam’s total export to this market (figures 1.19 and 1.20). Foreign-owned firms, which dominate the export of high-tech products, have contributed to and benefited from this shift in the composition of exports. These firms’ exports grew by 10.7 percent in 2020 and 33 percent (y/y) in the first half of 2021. The United States, China, and the European Union continue to remain the main markets for Vietnamese exports, with the United States buying an increasing share of these exports (figure 1.20).

13 Pham 2019.

Figure 1.19. Recent patterns in exports, by product

Sources: GSO, Haver Analytics, and World Bank staff calculations.

Figure 1.20. Recent patterns in exports, by destination

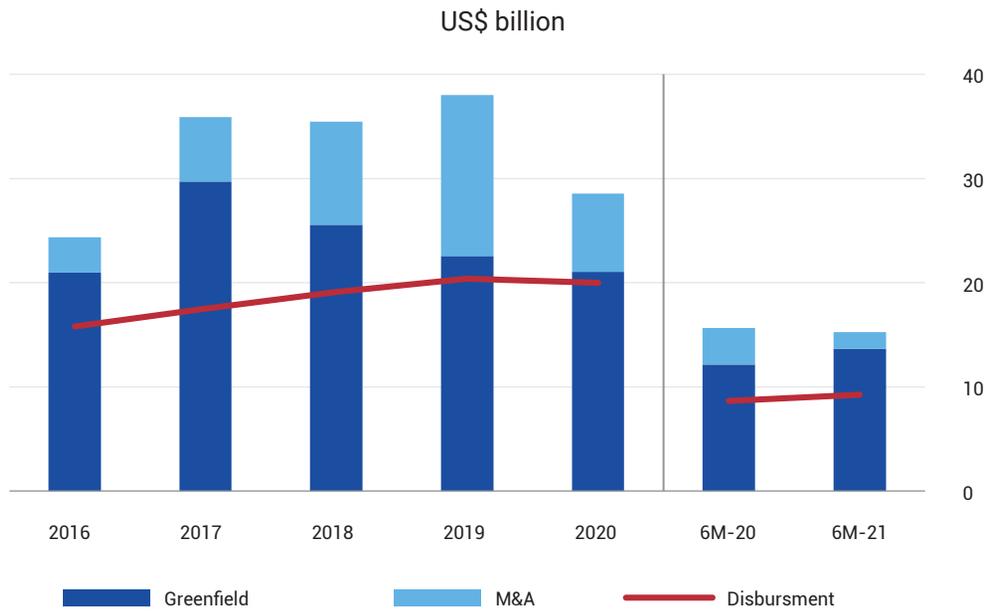
Sources: GSO, Haver Analytics, and World Bank staff calculations.

Trade in services has continued to be severely affected by the international travel restrictions, while remittance inflows proved resilient amid the COVID-19 pandemic. After dropping by 62.4 percent in 2020, services exports fell further by 68.5 percent (y/y) in the first two quarters of 2021 due to the closure of international borders to tourists. The number of international visitors to Vietnam dropped by 97.6 percent (y/y) in the first six months of 2021. At the same time, imports of services rebounded and grew by 6.4 percent (y/y), resulting in a service trade deficit of US\$ 7.7 billion. This increase was driven by surging transportation and insurance payments (up by 25 percent [y/y]) associated with soaring global freight shipping costs. In contrast, remittance inflows reached an estimated US\$17 billion in 2020, about 1.3 percent higher than in 2019¹⁴. The resilient remittance inflows contributed to partly offsetting the deteriorating service trade balance and maintaining Vietnam's strong external position in 2020.

While FDI inflows decreased because of the COVID-19 shock, they have proven resilient compared to the rest of the world, suggesting continued confidence in Vietnam's economic potential (figure 1.21). In the first half of 2021, total FDI commitments contracted by 2.6 percent (y/y), reaching US\$15.3 billion. Yet, the level of commitment declined by 45 percent between April and June, which may indicate further prudence by foreign investors amidst the recent COVID-19 outbreak (box 1.2.).

14 World Bank Group estimates

Figure 1.21. FDI commitments and disbursements



Sources: GSO, MPI, Haver Analytics, and World Bank staff estimates.

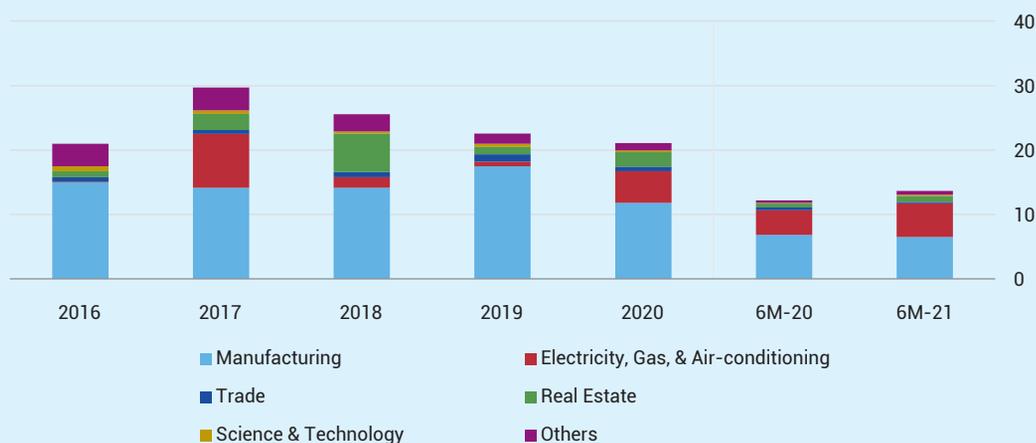
Note: M&A = mergers and acquisitions.

Box 1.2. The composition of FDI

While greenfield investments^a have fallen because of the COVID-19 crisis, they remained the dominant share of total FDI to Vietnam. Committed greenfield FDI fell by 6.6 percent in 2020 but registered 12.4 percent (y/y) growth in the first half of 2021. The pandemic's impact on greenfield FDI appeared less severe because of a rise in investment in electricity generation, with two large-scale liquefied natural gas electricity plants worth a total of US\$7.1 billion in 2020–21. Nevertheless, as observed in other developing countries, greenfield FDI commitment in manufacturing sectors dropped by 32.6 percent in 2020, and 4.7 percent (y/y) in the first two quarters of 2021, after a buoyant 2019 (figure 1.22).

Figure 1.22. Greenfield FDI commitment, by sector

US\$ billion



Sources: GSO, MPI, Haver Analytics, and World Bank staff estimates.

Merger and acquisition (M&A) investment slowed due to investor caution due to slow domestic demand recovery and the state-owned enterprise (SOE) privatization plan. After tripling between 2016 and 2019, M&A—or foreign capital contribution and equity purchases of local companies—dropped by 50 percent in 2020, and then by another 50 percent (y/y) in the first semester of 2021. Since the increase in M&A inflows before the pandemic stemmed from foreign investors' stronger interest in domestic consumers, its decline could reflect their growing prudence because of the slow recovery of private domestic consumption from the pandemic. It might also be related to the recent slowing progress in the government's SOE privatization program, which has attracted attention from foreign investors over the last few years.

Note: a. A greenfield investment is a type of FDI "in which a parent company creates a subsidiary in a different country, building its operations from the ground up" (<https://www.investopedia.com/terms/g/greenfield.asp>).

1.1.4. Rapid monetary and credit expansion, but inflation remained under control

The State Bank of Vietnam (SBV) maintained an accommodative monetary policy during the first semester of 2021 to provide a buffer to the real sector. The SBV retained the refinancing interest rates at 4 percent, and encouraged commercial banks to provide new, cheaper loans or to restructure existing loans, provided exemption and reduction of interest and fees, and retention of debt category to assist businesses affected by COVID-19 pandemic (box 1.3)¹⁵.

Box 1.3. Monetary policy to support businesses in 2020

Three times in 2020, Vietnam's central bank, the State Bank of Vietnam (SBV), reduced the refinancing rates (2 percentage points in total) the interest rates for deposits with maturities less than six months (from 0.6 to 1.0 percentage point per annum) and reduced the cap on lending rates for priority sectors by 1.5 percentage points. The purpose was to maintain a low interest rate environment to support businesses in the COVID-19 context. By the end of 2020, credit institutions had restructured loans totaling VND 335 trillion (US\$ 14.5 billion) to 270,000 borrowers. In addition, credit institutions had waived or reduced interest rates on approximately VND 1,630 trillion (US\$ 70.3 billion) in loans to more than 600,000 borrowers and granted more than VND 2,300 trillion (US\$ 99.2 billion) in preferential loans to more than 400,000 borrowers.

Overall banking sector profitability remained healthy, at least on paper, before the SBV's April 2021 measure took effect. For the first quarter of 2021, the average net interest margin stood at 3.35 percent, at par with that in the previous years (full year 2019 and 2020). Average returns on assets were at 1.55 percent in the first three months of 2021, higher than in 2019 (1.07 percent) and 2020 (1.10 percent). However, vigilance remains important because the impact of COVID-19 has not been fully reflected in the banking book, that is, the assets on bank's balance sheets that are expected to be held to maturity (usually consisting of customer loans to and deposits from retail and corporate customers) due to forbearance policies, and the average numbers can mask problems that may be faced by individual banks.

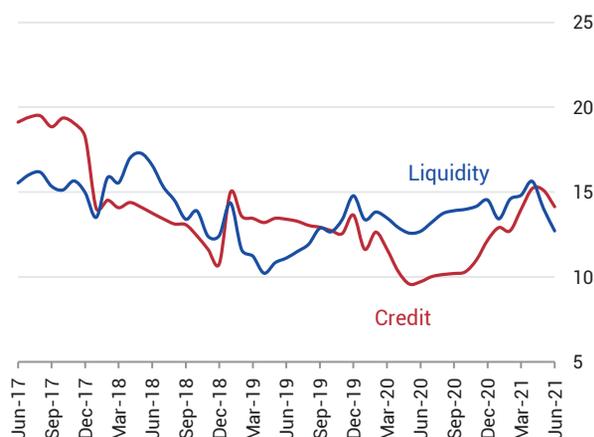
The SBV continued to provide forbearance on loan terms that were issued in the wake of the COVID-19 pandemic in 2020. The revised guidelines provided a clear timeline for this policy until December 2021 so that banks would have sufficient time to prepare for the likely rise in bad debts after the termination of the policy. It also extended the scope of loans eligible for debt rescheduling and classification and required banks to gradually set additional provisions for restructured loans within three years (until December 2023), the latter to prevent banks from experiencing an adverse shock to their profitability when forbearance policies are terminated.

Monetary and credit growth has systematically exceeded nominal GDP growth since the beginning of the COVID-19 crisis. Credit growth accelerated significantly in the first semester from about 10 to 12 percent (y/y) in December 2020 to over 15 percent (y/y) at the end of July 2021 (figure 1.23). Concurrently, liquidity remained abundant in the financial system since deposits reached 16.4 percent (y/y) in April 2021, up from 14.0 percent (y/y) in December 2020 (figure 1.24). However, the increase in total deposits has declined since May due to the rising uncertainty associated with the pandemic, while credit expansion has continued at around 15 percent.

¹⁵ In parallel, a financial support package approved by the National Assembly provided assistance to the Vietnam Airlines, a national-level enterprise. Three Vietnamese banks have pledged to lend VND 4 trillion (US\$173.8 million) to the airline to help the troubled flag carrier. The airline, which is 86 percent owned by the government, reported a net loss of VND 4.97 trillion (US\$214.4 million) in the first quarter of this year.

Figure 1.23. Credit and liquidity

Percent (y/y, EOP, NSA)

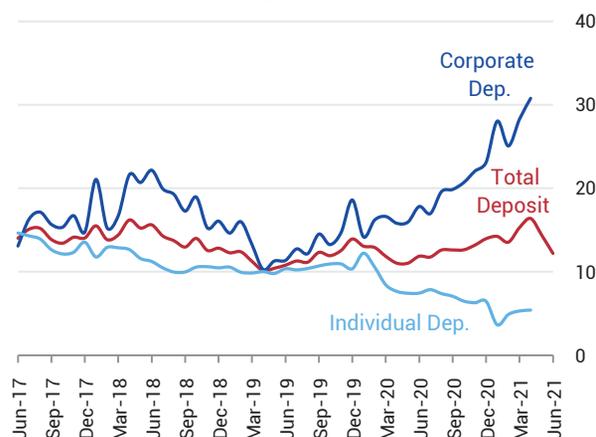


Sources: SBV, Haver Analytics, and World Bank.

Note: EOP = end of period; NSA = not seasonally adjusted.

Figure 1.24. Deposits at credit institutions

Percent (y/y, EOP, NSA)



Source: SBV, Haver Analytics, and World Bank.

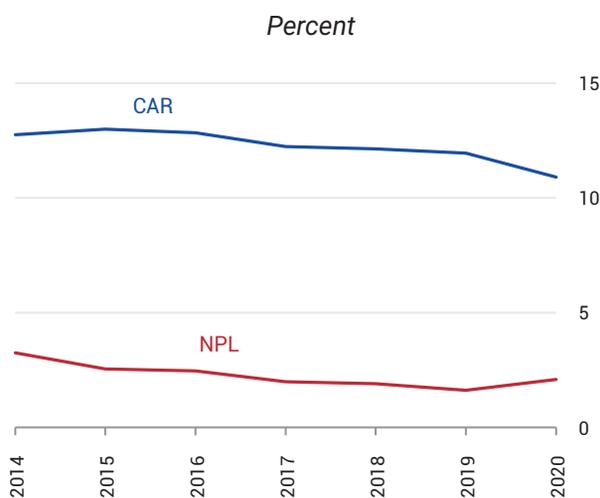
Note: EOP = end of period; NSA = not seasonally adjusted.

This rapid monetary and credit expansion has offered a welcome buffer to some businesses and households in financial distress since the beginning of the pandemic but carries potential risks. For instance, the effectiveness of this approach might be questioned when real interest rates are already very low and when a large proportion of businesses and households do not have direct relationships with commercial banks; only one-third of Vietnamese households owned a bank account in 2017.¹⁶ Also, international experience suggests that targeted lending often suffers from a lack of transparency about the economic rationale for granting such loans, their size and allocation, including those provided to SOEs and to big national champions that might be in financial difficulty. Ultimately, the risk of non-payment of these loans might be transferred from the real to the financial sector, which could become more vulnerable over time.

While broad financial stability has been maintained as of the end of June 2021, loan quality has started to show signs of deterioration in some banks. Credit to GDP was 136 percent in 2019, rising sharply to 146 percent by the end of 2020, making banks more exposed by their links to affected real sectors, including tourism, aviation and, possibly, real estate. Given the fact that the last two COVID-19 outbreaks, particularly the May outbreak, have affected retail and some manufacturing subsectors, firms and individuals might find it increasingly difficult to meet their debt service obligations. The share of reported nonperforming loans (NPLs) in bank portfolios grew minimally, from 1.63 percent in December 2019 to 2.14 percent in September 2020, but the fact that the SBV has not published recent data is a source of concern (figure 1.25). Furthermore, the level of NPLs has been low because of the SBV's temporary measure allowing forbearance toward clients in difficulty. In addition, the risks of increased default could increase financial sector stress over time. Concurrently, the overall bank capital adequacy ratio declined from 11.95 percent at the end of 2019 to 11.13 percent in December 2020, and 11.1 percent as of the end of June 2021. These overall figures may mask the vulnerability of some individual commercial banks, including those that are undercapitalized, as reflected by their inability to meet the Basel II requirements.

16 Data from FINDEX.

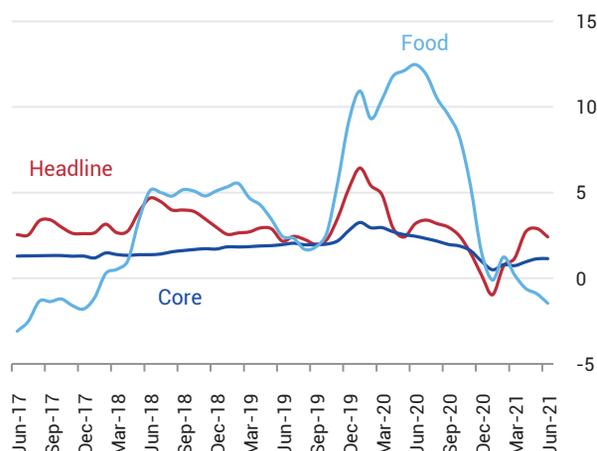
Figure 1.25. Nonperforming loans (NPLs) reported by credit institutions and average capital adequacy ratio (CAR)



Sources: World Bank staff calculations using data from SBV and GSO 2021.

Figure 1.26. Consumer Price Index

Percent (y/y, NSA)



Sources: GSO, Haver Analytics, and World Bank staff calculations.

Note: NSA = not seasonally adjusted.

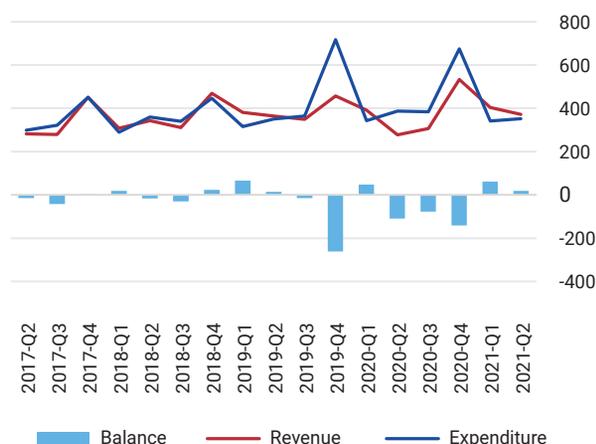
Despite rapid monetary growth, inflation increased only slightly in the first semester of 2021. The Consumer Price Index (CPI) increased from 0.2 percent (y/y) in December 2020 to 2.4 percent (y/y) in June 2021, remaining well below the target policy rate of 4 percent for the year (figure 1.26). This increase was partly driven by the government's upward adjustment of domestic fuel prices, following world fuel price rallies. Soaring global metal prices also raised costs of housing materials, adding inflationary pressure on the domestic economy. Food prices softened as the African swine fever, which significantly affected the pork supply a year ago, was successfully conquered. Core CPI inflation, which excluded raw food, energy, and items whose prices are administered by the government, only rose from 1.0 percent (y/y) in December 2020 to 1.1 percent (y/y) in June 2021.

1.1.5. Fiscal policy reverted to a neutral stance

After following an accommodative fiscal policy in the second half of 2020 to stimulate the economic recovery, the authorities returned to a neutral fiscal stance in the first semester of 2021. The government budget reported a surplus of VND 81 trillion (US\$3.5 billion) against a deficit of VND 65 trillion (US\$2.8 billion) in 2020 thanks to a combination of higher revenue and lower spending, especially lower capital expenditures (figure 1.27). In the meantime, the government borrowed VND 141.5 trillion (2.2 percent of GDP) on the domestic market during the first semester, which was 62.6 percent higher than during the same period last year. Such an increase reflects the government's plan to rely more on the domestic market as the main financing source, and opportunistic behavior to take advantage of ample liquidity and relatively low borrowing costs. The 10-year Treasury bond yields were equal to 2.20 percent for 10-year government bonds as of the end of June 2021. The authorities also issued bonds mostly with maturities of 10 years and 15 years to lengthen the maturity of their debt portfolio.

Figure 1.27. Government budget

Billion VND (NSA)

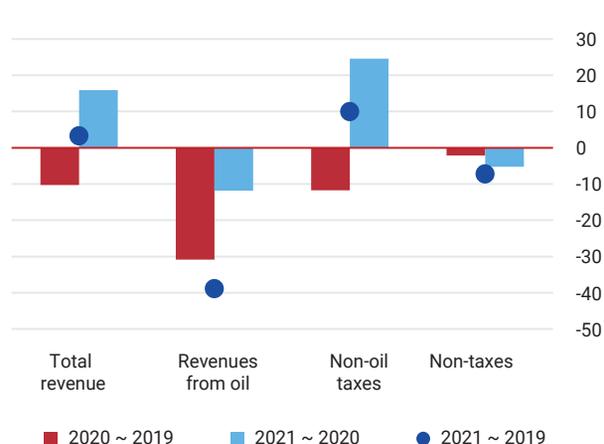


Sources: MOF, MPI, and World Bank staff estimates.

Note: NSA = not seasonally adjusted.

Figure 1.28. Budget revenues in H1-2021

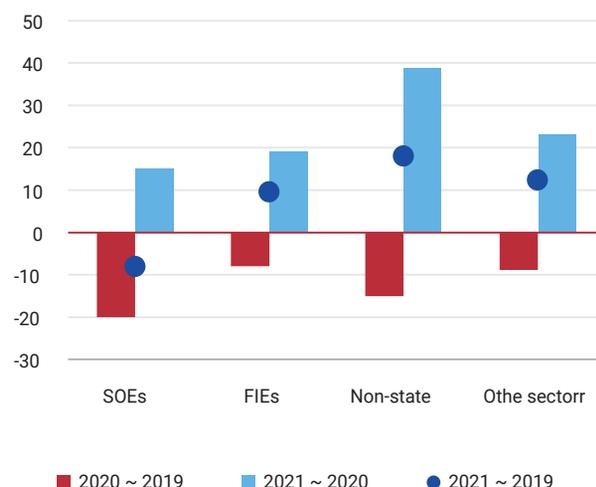
% change



Sources: MOF and World Bank staff estimates.

Figure 1.29. Non-oil tax revenues in H1-2021

% change

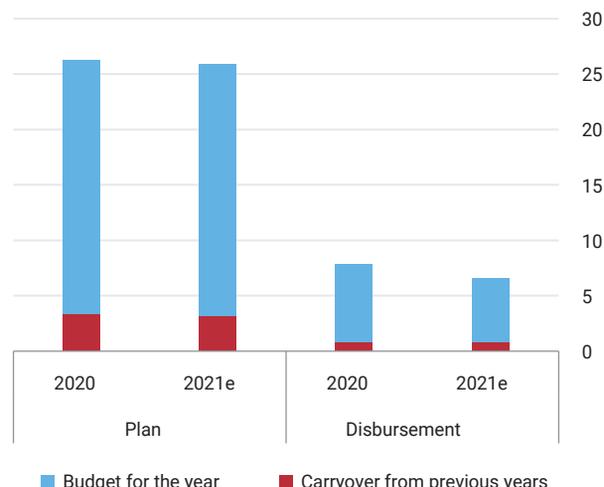


Sources: MOF and World Bank staff estimates.

Note: FIEs = foreign-invested enterprises; SOEs = state-owned enterprises.

Figure 1.30. Public investment plan and disbursement in 2020-21

US\$ billion



Sources: MOF and World Bank staff estimates.

Note: Data for 2020 were as of July 30, 2020; data for 2021 were estimates as of June 15, 2021.

The authorities increased their tax collection effort, with revenues collected reaching 57.7 percent of the annual target (figure 1.28). Revenues increased by 15.7 percent in the first six months of the year compared to the same period last year. This strong revenue collection was partly a base effect but was also due to higher revenue from non-oil taxation and from taxes collected from domestic enterprises (figure 1.29). The expiration of the tax and fee reductions granted as part of the April 2020 package (0.46 percent of GDP) to support affected businesses and people may have also contributed to this increase.

In contrast, the pace of expenditures was slow during the first semester. If current expenditures were close to initial targets, disbursement of the investment budget was only US\$5.8 billion or US\$1.3 billion lower than during the first semester of 2020 (figure 1.30). While seasonality may explain the variations in the disbursement rate, as most of the budgetary resources transferred from the Ministry of Planning and Investment reached sectoral ministries and provinces in the second quarter of the year, only 28 percent of the annual target was attained by midyear.

In view of the deterioration of the economic situation due to the resurgence of the pandemic, the authorities intervened in a targeted and staggered approach to support the economy. On the revenue side, the authorities announced in April 2021 a more focused tax relief package to support businesses. It resumes the successful tax deferral feature of the 2020 support package, which delayed payment of the corporate income tax, personal income tax, value-added tax, and land rent to the end of the calendar year, giving businesses working capital during the crisis. This package is estimated to be 1.9 percent of GDP, half the size of the 2020 support package. This measure had been welcomed by the business community, which benefited from a total of VND 87,232 billion (US\$3.8 billion) in tax deferrals during 2020. It also does not excessively penalize the government's budget, as tax deferrals are only a temporary measure and are ultimately collected at the end of year. However, all exemptions and taxes and fees and charges reductions offered in the 2020 package have so far been eliminated in 2021.

In early July, the government indicated its willingness to accelerate the disbursement of its investment program during the second half of the year. Such a policy was used with success in 2020 when it helped support an economic recovery through its positive impact on aggregate demand. However, it is not certain that this measure will be equally effective the second time, as long as many of the mobility restrictions remain in place, as is now expected in the next few months. Starting and implementing new investment projects will be harder when workers are not authorized to move or when the availability of material might be limited by closures and reduced activity. The timing of such a policy should therefore be associated with the improvement of the health situation and the opening of the economy.

Meanwhile, in July, the government approved a second social support package for affected workers and businesses. This modest social protection package is estimated to cost VND 26,000 billion (US\$1.1 billion) compared to the VND 62,000 billion (US\$2.6 billion) budgeted for the first support package adopted in April 2020. The package has also been adjusted based on the lessons learned from the first round of support to include the following features:

- (i) It will offer more financial support from the central budget to shoulder the costs of providing assistance, especially in less developed and deficit provinces, compared to the first package.
- (ii) It will provide higher direct support to employees who lost their job or ceased employment, while stopping additional COVID-19-related support to existing groups like the poor, near-poor, social assistance beneficiaries, and national devotees.
- (iii) Benefits amount for the same maximum number of months (3 months) but available over a longer period (from the initial 3 months to 12 months), depending on circumstances.
- (iv) Provincial governments are granted authority to decide on the criteria for the eligibility of informal sector workers for benefits, as well as the level and length of support.

This new package is welcome in view of the rising financial and social costs associated with the current COVID-19 outbreak. Yet, the package remains small, especially if the pandemic is not rapidly brought under control. If the rollout of this new package is successful, and further support is deemed necessary, the

authorities should consider increasing this envelope. There is a balance to reach where sufficient support is provided to ensure affected people are not unduly harmed by the crisis, while still ensuring that recipients will have the incentive to return to work when adequate opportunities arise.

The partial transfer of responsibilities to provinces will allow them to better identify potential beneficiaries from the informal sector and to adjust the level of support depending on local circumstances. In recent weeks, local authorities in Ho Chi Minh City and Hanoi already provided additional benefits to some informal workers penalized by the lockdown. However, such an approach (even decentralized) will require development of a reliable social database at both the national and provincial levels to facilitate implementation and avoid weak targeting. International experience (for example, the Philippines and Indonesia) has demonstrated that an online registration platform is an effective tool to identify informal workers and ensure faster local verification and decision making. Such an approach is currently piloted in a few provinces but should be extended to create a nationwide system.

1.2. SHORT- TO MEDIUM-TERM PROSPECTS (2021–23)

The Vietnamese economy is expected to expand by around 4.8 percent in 2021 and converge toward the pre-pandemic GDP growth rate of 6.5 to 7 percent from 2022 onward (table 1.1). This forecast is a downward revision of the projected 6.8 percent for 2021 in the previous Taking Stock report released in December 2020 and is subject to further risks to the downside. It is also lower than the official projection of a GDP growth rate of 6 percent in 2021.

Table 1.1. Selected economic indicators, Vietnam, 2019–23

Indicator	2019	2020e	2021f	2022f	2023f
GDP growth (%)	7.0	2.9	4.8	6.5	6.5
Consumer Price Index (average, %)	2.8	3.2	3.2	3.6	4.0
Current account balance (% of GDP)	5.0	4.6	0.5	1.0	1.0
Fiscal balance (% of GDP)	-0.5	-4.9	-6.0	-5.9	-5.4
Public debt (% GDP) ^a	55.0	55.3	58.3	59.0	58.8

Sources: GSO, IMF, MOF, SBV, and World Bank.

Note: a. Excluding cross-debt among government entities. f = forecast. 2020 est. from MOF

This downward revision of the GDP growth rate in 2021 takes account of the latest outbreak that is expected to negatively affect the economy. It assumes, however, that the current outbreak will be gradually brought under control, allowing the economy to rebound in the fourth quarter. This rebound will also be supported by an acceleration of the vaccination program that should cover at 70 of the adult population by the end of the year, preventing new severe outbreaks. Any modification in these assumptions will of course affect the predictions.

Fiscal and monetary policies will remain supportive through the recovery in 2021. As the economy emerges from the fourth outbreak, fiscal policy will support aggregate domestic demand through selective

measures and by accelerating public investment disbursements. The fiscal balance and debt-to-GDP ratio are expected to deteriorate slightly in 2021. The second business and household support package is modest but, if implemented, will cost about 0.4 percent of GDP. Acceleration of investment disbursement is expected to remain within budget, however. Monetary policy will remain accommodative to support the business community. Inflation will remain subdued.

As the growth dynamics firm up, monetary policy will revert to a neutral stance starting in 2022. As the domestic economy recovers, monetary policy will unwind its accommodative policies, focusing more on the objective of stabilizing inflation. Inflation is expected to remain below the 4 percent policy rate set by the SBV. Increases in administrative prices and natural shocks to the food supply could lead to short-term price increases in food and specific services or utilities, but those are not expected to fundamentally change the dynamics of price expectations in the next few years. The authorities will need to carefully monitor the rise of nonperforming loans to ensure financial sector health and push for the adoption of Basle II capital rules for all operating banks.

The government will resume fiscal consolidation in the coming years. The fiscal deficit should decrease gradually from 6.0 percent of GDP in 2021 to 5.9 percent in 2022 and 5.4 percent in 2023, paving the way for a sustainable debt trajectory in the medium to longer term. To ensure that fiscal consolidation does not affect growth potential in the medium term, domestic revenues should be improved through administrative reforms that enhance efficiency of collection and be used to finance infrastructure and quality social services that will help the economy become more sustainable and digitally transformed and productive.

The current account is expected to remain in surplus, even though it will decline from 4.6 percent of GDP in 2020 to about 0.5 percent of GDP in 2021. As explained earlier, the merchandise trade balance turned into a deficit in the first semester, while (net) exports in services will remain low because of the ban on international visitors that will limit earnings from tourism. Going forward, Vietnam's exports should continue to expand due to the country's solid competitiveness in international markets and the decision to continue the diversification of trading partners, and therefore economic opportunities, as recently signaled by the signing of the massive Regional Comprehensive Economic Partnership. It is also expected that the country will be able to reopen gradually to international visitors in 2022–23. With respect to the financial account, FDI inflows are expected to recover to pre-COVID levels, boosted by the revamping of global value chains and the demand by many governments and multinationals to diversify their sources of production.

Managing external and domestic risks

The short- to medium-term outlook is subject to several downside risks. Vietnam's short- to medium-term economic prospects will depend on several factors: (i) the pace of national vaccinations; (ii) the evolution of the pandemic, and thus resumption of economic activities in countries that compete with Vietnam in export markets; and (iii) weaker-than-expected growth especially in Vietnam's key export markets could weigh on the recovery. The recovery in the United States, the European Union, and China is underway but fragile. If one or more of these risks were to materialize, exports and domestic demand would not rebound as expected. The economy could still grow by 3.2 percent in 2021 and 5.5 percent in 2022 (low case scenario). Inflation will remain subdued, but the country's fiscal and external balances will not improve as projected in the baseline scenario from 2021 onward.

The lingering crisis has highlighted more structural domestic challenges and needed government responses, such as the ones that follow.

Address social consequences of the crisis. The impact of COVID-19 on the labor market and households has continued into 2021, exacerbated by the February and April outbreaks. Labor participation has not fully recovered to the pre-COVID-19 period, and household incomes have been affected, with variations across sector, gender, and geography. These effects are especially relevant to women, who have been more penalized by the recent adjustments in the labor markets. Also, those in the informal sectors and regions where the economy is dependent on international tourism and business have been more affected. Such disparate effects can lead to lasting increases in inequality. Lower household income would in turn affect consumption and investment decisions, and by extension, economic recovery. Lower income may also impact investment in children's education and health, which would have long-term effects on the country's human capital formation. The authorities should consider strengthening the coverage, targeting, and benefits levels of the country's social protection programs to ensure that current and future victims of natural or economic shocks receive adequate support.

Watch for financial sector risks raised by the crisis. Given that recent new outbreaks, and especially the broad-based outbreak that started in May, have led to the precautionary closing of many businesses in major cities and some production zones, the monetary authorities will need to be vigilant about the rising risks associated with nonperforming loans. They should continue to closely monitor the stability of the banking sector, which still has undercapitalized banks. A robust early warning system should be developed to identify potential threats to individual banks and the overall system. The authorities should establish a clear exit strategy for loan forbearance measures. The implementation of the forbearance measures, which could mask the full extent of vulnerability of the borrowers and the banks, must be closely monitored.¹⁷ It would be useful to adopt early on a resolution plan for nonperforming loans, thus not allowing the burden of bad loans to linger in the banking system as it could stifle the sector's role in supporting inclusive growth. Further, there should be a well-defined mechanism for dealing with weak and troubled banks, while recapitalization of banks to meet Basel II requirements should continue.

Watch for fiscal risks. In the baseline scenario, the fiscal deficit is expected to increase from 4.9 percent of GDP in 2020 to 6 percent of GDP in 2021, leading to an increase in public debt of 3.0 percent of GDP. While the government still has sufficient fiscal space, with a debt-to-GDP ratio of around 55.3 percent of GDP as of the end of 2020, international experience has demonstrated that the fiscal situation could deteriorate relatively quickly if the current outbreak is not controlled rapidly or/and new outbreaks materialize in the coming months. Indeed, fiscal policy might be the only main instrument in the hands of the authorities to cope with the pandemic. The government might be required to expand its fiscal assistance package, which has so far been modest, to support people and businesses, and so avoid possible social tensions. Some industries in financial distress, such as the tourism sector and the aviation industry, have so far been mainly supported by the accommodative monetary policy but might need direct intervention from the state if their situation does not improve. The further acceleration of the implementation of the public investment program could also contribute to increasing public spending. Tax collection could also be negatively affected by the slowdown in economic activity. At this stage, the fiscal risk appears relatively under control but should continue to be closely monitored.

17 IMF-World Bank 2020.

1.3. THE SEARCH FOR MORE EFFICIENCY IN LONG-TERM ECONOMIC GROWTH THROUGH DIGITAL TRANSFORMATION

The new Socio-Economic Development Strategy for 2021–30 was adopted in February 2021. It establishes Vietnam's ambition to join the group of high-income economies by 2045, which means that the economy will have to continue to grow by at least 5 percent per capita over the next 24 years. This goal is attainable but challenging; only a few countries have successfully graduated from low- to middle-income status over the past 50 years, and even fewer have moved from middle- to high-income status. Only 18 countries defined as middle-income countries in 1965 reached the status of a high-income country by 2013, including five East Asian economies (Hong Kong SAR, China; Korea; Japan; Singapore; and Taiwan, China).¹⁸ The aspiration and challenge for Vietnam is to become one of these graduates.

The Socio-Economic Development Strategy recognizes that Vietnam needs to modify its development model. The traditional drivers of growth—accumulation of physical capital, demographic dividend, and manufacturing expansion, mostly in labor-intensive sectors—are gradually running out of steam. The model also needs to consider the rapidly expanding middle class (defined as people living on more than US\$15 a day), which is expected to grow from 18.5 percent of the population in 2018 to 50 percent in 2035.

As a result, the government has endorsed the idea that Vietnam should shift its growth model toward more efficiency. Vietnam could follow the successful structural change in countries such as Korea between the 1980s and 1990s. This international experience has demonstrated that the road from low- to middle-income status occurs mainly through the accumulation of physical and human capital and the use of natural resources, but the transition from middle- to high-income status is driven by the efficient use of new and existing assets and resources, including human resources. Further efficiency will help generate the necessary productivity gains in outputs and will lead to improvements in quality that are expected by a more sophisticated middle-class population. The new model should also give greater emphasis to the more efficient use of natural capital and to strengthening market-based institutions.¹⁹

As part of this vision, the digital transformation of the economy is expected to contribute substantially to this quest for efficiency. Such a transformation has already been accelerated by the COVID-19 shock, perhaps one of the few silver linings of the crisis; trade and services have become increasingly digitized in response to social distancing policies. A good illustration of this trend is the boom in online commerce; in 2020, Vietnam was the fastest-growing market in East Asia. In addition, between February 2020 and April 2021, the number of government digital services increased tenfold, albeit from a low base. Because all these changes have obvious economic and financial consequences on how people will live, trade, communicate, work, and learn, Part 2 of this Taking Stock report elaborates on how the digital transformation will contribute to Vietnam's future economic development.

18 Vandenberg, Poot, and Miyamoto 2015.

19 As in most low-income countries, Vietnam has relied heavily on its demographic dividend (a young and abundant labor force) and natural resources, using its extensive stock of agricultural and mineral resources to enhance its economic development over the past two decades. There is nothing wrong with Vietnam using its natural advantages to enhance rapid and inclusive growth during its first phase of development. After all, the country is blessed with abundant agricultural land, water resources, and mineral reserves. However, such a model produces diminishing returns and has gradually become unsustainable over time.



PART 2

DIGITAL VIETNAM –
THE PATH TO TOMORROW

As countries seize the opportunity to reap the dividends of digital transformation, the Government of Vietnam has clearly indicated it wants to be in the race. The Prime Minister has set ambitious goals: he expects Vietnam to join the 50 leading countries in information technology (IT) development as soon as 2025. He has also indicated that the digital economy should reach one-third of the country's gross domestic product (GDP) by the end of the decade, from 5 percent, today. These goals will be difficult to attain for a country that reports a per capita income of less than US\$3,000 and where only 30 percent of its youth continue their studies beyond the secondary level. Its competitors are both richer and have a more educated workforce.

Vietnam can gain substantially through digital transformation of its economy. The country has a head start in access to mobile phones, and an increasing share of the population is connecting to the internet. The country also hosts several of the world's leading IT companies. But becoming a digital powerhouse will require more than good connections and foreign investors. To ensure a successful digital transformation, policymakers need to increase trade competitiveness in manufacturing by embracing digitalization, encourage technology adoption, and attract investment to enable small business participation in the digital economy, all while achieving skills acquisition and upgrading, data privacy, and cybersecurity.

Part 2 of this Taking Stock report examines the digital challenge Vietnam needs to overcome. First, it will discuss the advantages digitalization can bring to the country in its quest to become a high-income economy. Second, it will assess where Vietnam is in the global digital race today by documenting the country's recent progress and comparing it to global and regional comparators. Third, it highlights the risks that uncontrolled and unregulated digital development could create for Vietnamese citizens, workers, and businesses. Finally, it draws on international best practices to offer inputs to the policy debate and to the implementation of actions and reforms that can help Vietnam realize its objective of becoming one of the most advanced digital economies in the world.

2.1. WHY IS DIGITALIZATION IMPORTANT FOR VIETNAM?

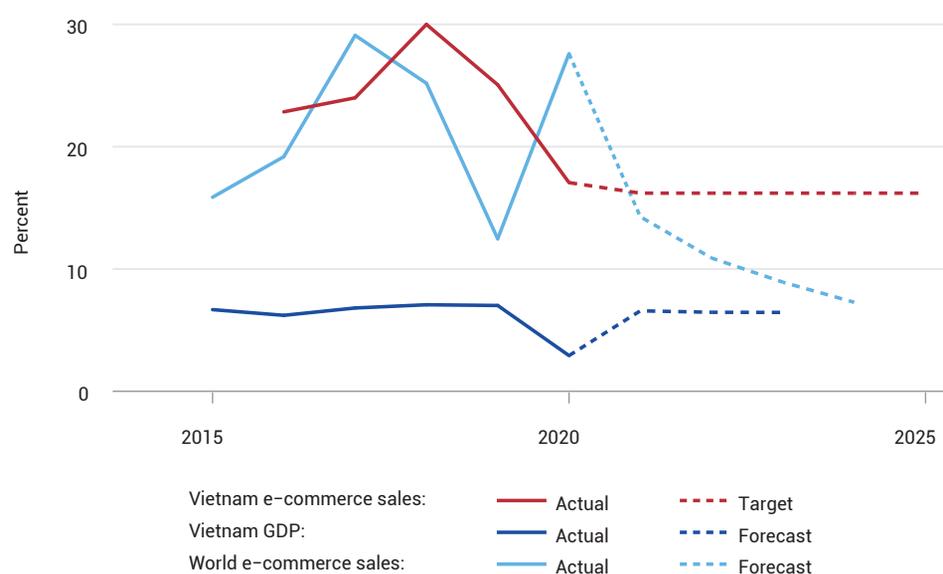
Before examining what it would take for Vietnam to succeed in its digital ambitions, we need to understand why it should be ambitious in digitalization. The economic literature and empirical evidence have generally attributed four main advantages to the digital economy:

- *More information, more choices, more sales, and more consumer satisfaction.* The increased availability of data can help inform businesses about what is happening in the economy and what new trends in consumption are developing and help them reach new buyers. At the same time, the internet has enabled consumers to have greater information and choice. This increased flow of information allows firms to respond more quickly to changes in consumer tastes. It also allows them to personalize their offers to individual customers, including through three-dimensional (3D) printing and other technologies.
- *Saves time.* In many countries, millions of products can be ordered over the internet and shipped the same day, allowing customers to skip a visit to the store. This helps business be more prompt in service and product delivery and saves consumers time they can dedicate to other pursuits.
- *Reduced costs, increased competition, and new products and services.* A digital economy enables firms to reduce the "brick and mortar" costs of retail outlets by shipping goods directly from the factory or

warehouse. This lowers overhead and labor costs and by extension prices. The digital economy also enables work from home and flexibility in working hours, which can benefit employees with childcare costs or other responsibilities. In some markets, aspects of the digital economy make it easier for new firms to enter. If an entrepreneur has an innovative idea or product, they can pursue crowd funding or market directly to consumers, overcoming many traditional barriers to entry.

- *More data also help the government better understand what is happening in the economy and what services it can or needs to deliver to various subgroups of citizens.* The explosion of e-government services helps reduce bureaucratic delays, improve quality of services to clients (both firms and individuals), and reduce corruption.

Figure 2.1. E-commerce is expanding more rapidly in Vietnam than across the world
Growth in world and Vietnam e-commerce sales (%) and growth in Vietnam's GDP (%)



Sources: World Bank staff calculations using data from the World Bank and Statista 2021.

The combination of these advantages has already had a major impact in Vietnam. Digitalization has changed the way people work, communicate, trade, move, and entertain. Service delivery is now available on a computer or a smartphone through business platforms. Farmers in the Mekong Delta can use their smartphones to get the latest price of rice on the commodities exchange, while foreign carmakers can control the quality of production from the headquarters in their home country. The COVID-19 pandemic accelerated this transformation. Increasingly, children interact with their teachers on their screen and patients get their doctors' prescription by text message.

Vietnam is one of the fastest-growing internet economies in the region, although arguably from a low base. E-commerce sales have been growing at a similar pace as world e-commerce sales and faster than GDP. In 2020, Vietnam's e-commerce market value reached almost US\$12 billion—2.5 percent of GDP (figure 2.1). It is estimated that 53 percent of the population has shopped online using social networking platforms, such as Facebook and Zalo, or e-commerce platforms, such as Lazada, Shopee, and Tiki. And the use of digital platforms is associated with 4.3 percent higher sales after controlling for firm size, location, and sector. According to an e-commerce development plan approved by the Government of Vietnam last year, the

sector’s revenues are targeted to reach US\$35 billion by 2025.²⁰ To achieve that target, e-commerce sales will have to grow by roughly 16.2 percent per year, lower than the historical average.

2.2. WHERE IS VIETNAM IN THE GLOBAL DIGITAL RACE TODAY?

To assess where Vietnam is today in the digital race, this report uses the **Connect, Harness, Innovate, and Protect (CHIP) framework proposed by the World Bank**. This framework provides a broad, interconnected perspective on the digital economy around four pillars (figure 2.2). The first pillar captures the development of a modern digital infrastructure and a payment network that are necessary to ensure a reliable and fast connection across users, while the second pillar emphasizes the necessity that these connections be harnessed by the development of appropriate labor force skills and by the capacity of the government to regulate this new economy. The third pillar is about the digital dividends that will depend on the capacity of businesses, households, and the government to apply, adapt, and innovate new digital technologies. The fourth pillar emphasizes the necessity of providing a level of protection against security breaches and abuses.

Figure 2.2. The CHIP framework: An integrated approach to digital transformation



Source: World Bank 2021b.

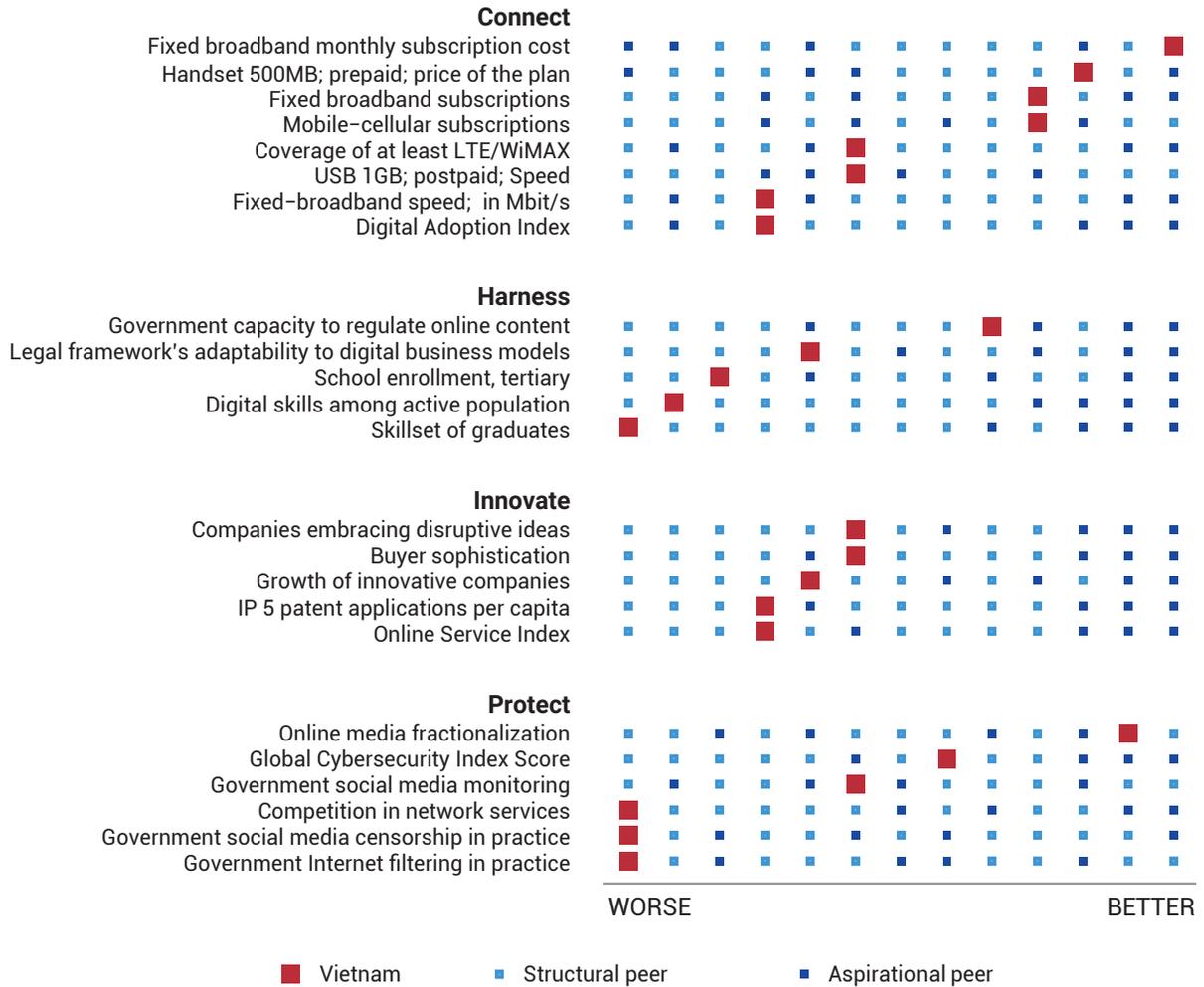
Using the CHIP framework, Vietnam’s performance can be measured against that of two groups of countries. The first group comprises eight peer countries that, like Vietnam, report middle-income status and have put digital transformation at the center of their development strategy: Colombia, Côte d’Ivoire, Indonesia, Mexico, Morocco, South Africa, Thailand, and Tunisia. The second group are four aspirational countries that are more advanced economically and in their digital transformation: the Republic of Korea, Malaysia, the Philippines, and Singapore.

As captured in figure 2.3, Vietnam performs well compared to its peers and even to the aspirational countries, in some areas, but exhibits significant weaknesses in other areas. The country appears to have done well in terms of connectivity (Pillar 1), as it is highly ranked in terms of mobile phone and internet

²⁰ Source: National Master Plan on E-commerce Development (2021-2025). <http://news.chinhphu.vn/Home/Master-plan-on-national-e-commerce-development-through-2025-approved/20205/40160.vgp>. Accessed on August 5, 2021.

penetration, even though the speed of connections is lagging that in more advanced countries. Vietnam is also making progress in the use of new digital tools by businesses and government, even if those are mainly used for basic functions (Pillar 3). Vietnam’s performance is relatively weak in harnessing and protecting users and ranks toward the bottom of Pillars 2 and 4. The varied performance across the four pillars is further analyzed below.

Figure 2.3. Ranking of Vietnam’s performance compared to 12 countries



Sources: World Bank staff calculations using data from WDI 2021; WEF 2021; and VDEM 2021.

Note: The definition of all indicators, the sources, and the latest data available are reported in the Annex. “Better” indicates a higher value for all indicators except those related to costs.

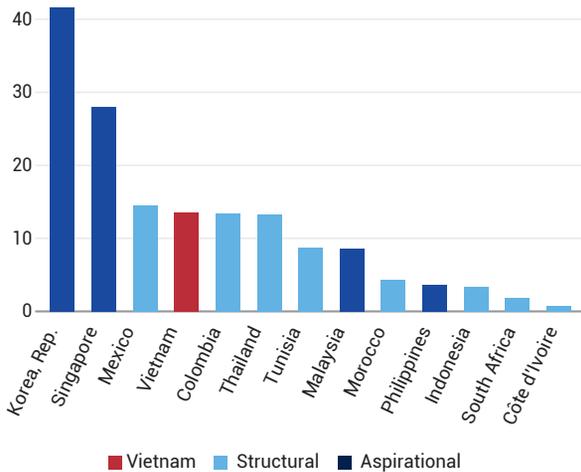
Pillar 1. Connect: Broad-based and cheap, but slow and lagging in digital payments

The ability of people, businesses, and governments to connect to an affordable, high-speed internet is the backbone of any digital economy. Vietnam has made great strides in expanding internet connectivity from virtually zero percent of the population in the late 1990s to 64 percent today. Fixed broadband connectivity has expanded more slowly and more recently, but only three countries among Vietnam’s 12 peers have more subscriptions per population today (figure 2.4). Meanwhile, mobile connectivity has exploded, and there are now significantly more mobile phone subscriptions than people in Vietnam (figure 2.5). Vietnam

also appears extremely competitive in terms of cost, as access to the internet is cheaper than in most of its peers (figures 2.6 and 2.7).

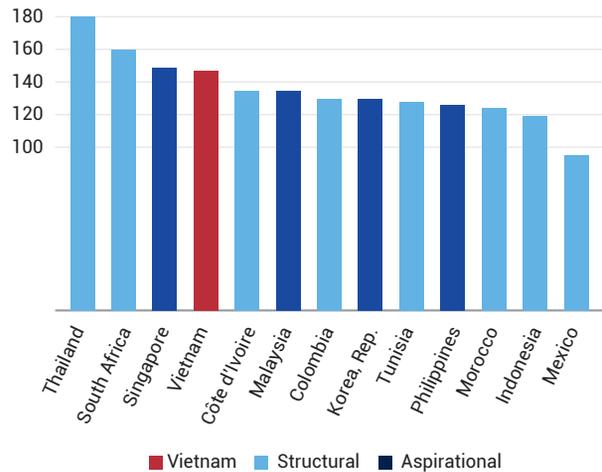
Almost every Vietnamese household, regardless of income or geographic location, owns a mobile phone, but access to more expensive technologies is less equitable. The internet is relatively popular among households, including about half of the poorest two quintiles. However, quality of access is not uniform, as poor households in mountainous areas have limited 3G/4G²¹ signals, which restricts the benefits of digital services and mobile money. Far fewer rural households own a computer compared to their urban counterparts, and even fewer poor households own a computer, because of the high cost (table 2.1).

Figure 2.4. Fixed broadband subscriptions per 100 inhabitants



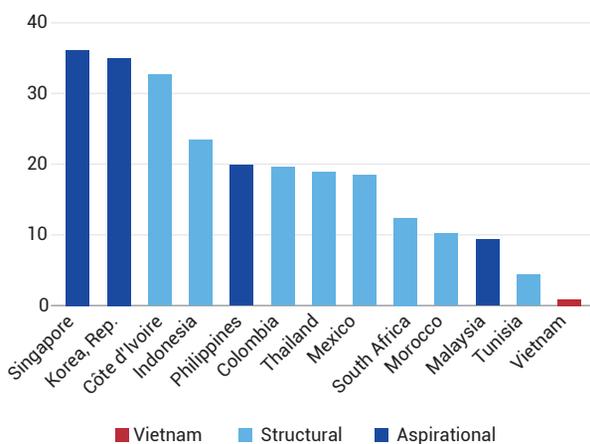
Source: Staff calculations using data from International Telecommunication Union (ITU) 2021

Figure 2.5. Mobile cellular subscriptions per 100 inhabitants



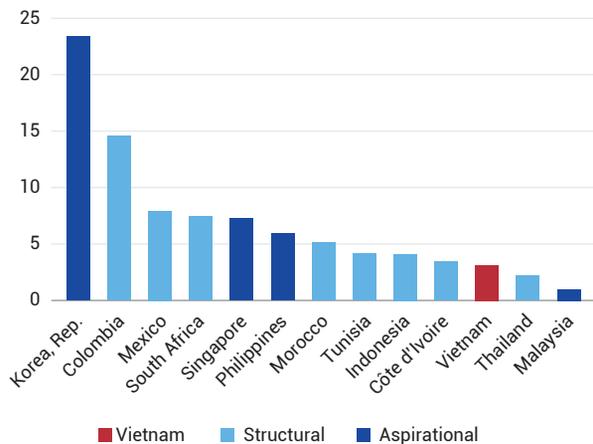
Source: Staff calculations using data from International Telecommunication Union (ITU) 2021

Figure 2.6. Fixed broadband monthly subscription cost (US\$)



Source: Staff calculations using data from International Telecommunication Union (ITU) 2021

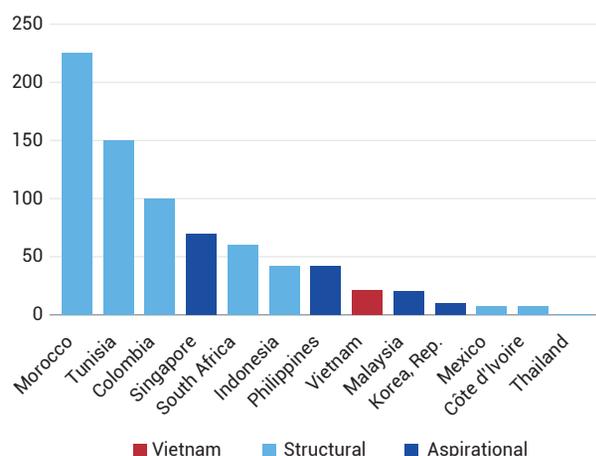
Figure 2.7. Handset 500MB; prepaid; price of the plan (US\$)



Source: Staff calculations using data from International Telecommunication Union (ITU) 2021

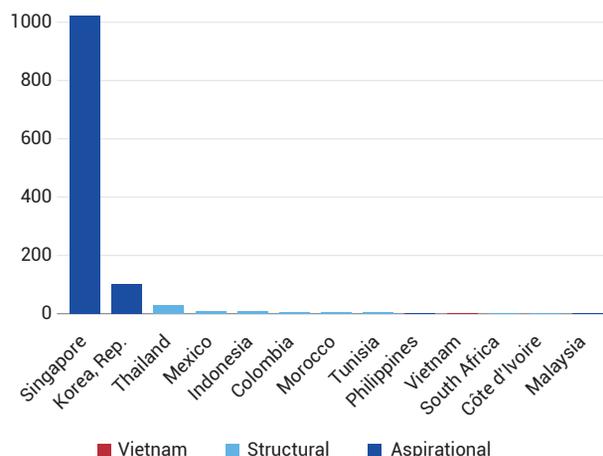
Note: MB= Megabytes

21 3G/4G = third/fourth generation of wireless mobile telecommunications technology.

Figure 2.8. USB 1GB; postpaid; speed
(Mbit/s)

Source: Staff calculations using data from International Telecommunication Union (ITU) 2021

Note: GB = gigabytes; Mbit/s = megabit per second; USB = universal serial bus.

Figure 2.9. Fixed-broadband speed
(Mbit/s)

Source: Staff calculations using data from International Telecommunication Union (ITU) 2021

Note: Mbit/s = megabit per second.

Table 2.1. Use of digital tools per income group and location

Share of households, urban				
Quintile	Have a cell phone	Own a computer	Use the internet	Expenditure on internet (annual, '000 VND)
1 = poorest	100.00%	5.20%	44.85%	129
2	100.00%	12.85%	70.30%	571
3	99.55%	23.90%	79.70%	1,024
4	99.50%	40.90%	88.85%	1,362
5 = wealthiest	99.45%	55.90%	86.80%	1,725
Share of households, rural				
1 = poorest	100.00%	1.30%	37.80%	86
2	99.90%	7.15%	60.50%	347
3	100.00%	13.80%	67.05%	589
4	99.90%	24.70%	74.45%	819
5 = wealthiest	99.50%	31.40%	75.95%	1,048

Source: 2018 Household Survey.

To succeed in the digital economy, Vietnam needs to improve the quality and speed of its internet infrastructure. Internet speeds are slow compared to many of its peers. To be competitive, Vietnam needs universal access to at least a 4G network, and—in the near future—major investments to expand 5G mobile networks and broadband fiberoptic networks, particularly for businesses, schools, and large institutions (figures 2.8 and 2.9).

Vietnam also needs to establish a clear, modernized, and harmonized digital identification regime, which is a necessary foundation for a well-connected digital system. After years of discussion and negotiation, authorizing legislation was approved in 2016. In 2021, authorities accelerated the single digital identification (ID) initiative, with the goal of issuing 50 million digital ID cards by mid-2021. While such a system will improve security, it is also critical for citizen authentication—essential elements for improving digital government and online service delivery. It will also facilitate implementation of targeted social safety net programs and tax collection.

A digital economy also requires a secure and efficient e-payment system. Most transactions in Vietnam are still cash-based, and financial inclusion is low. Only 22 percent of Vietnamese made or received digital payments in 2017,²² and only 41 percent of adults had a bank account in 2019.²³ Access and financial inclusion are particularly limited in rural areas. However, the availability of mobile phones and cheap internet provides significant scope for growth in digital banking if Vietnam can close the financial inclusion gap. In recent years, the financial services industry has started several new initiatives that have enabled growth in digital payments, new delivery channels of financial services, expansion of credit reporting data and lending models, government-to-person payment (G2P) solutions, and e-commerce. Currently, there are approximately 32 private service providers that offer intermediary digital payment services through bank accounts, including electronic payment services, cash collection, e-money, and e-wallet. The government's mobile money pilot scheme, launched by Decision 316 in March 2021, should help consolidate this trend by targeting Vietnam's large population of unbanked customers.

Pillar 2. Harness: Weak digital skills of Vietnam's workforce, while government's capacity to regulate is reasonable but diffused in an overly complex institutional framework

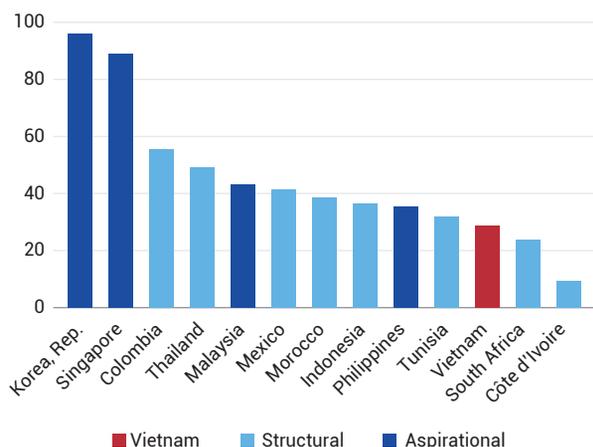
Vietnam's workforce lacks the necessary skills to fully harness the digital economy. Compared to its peers, enrollment in tertiary education and digital skills among active populations are low in Vietnam (figures 2.10 and 2.11). Only 40 percent of businesses report adequate information and communications technology (ICT) skills to maintain and fully use their digital systems, and the skill shortage is projected to reach 1 million ICT workers by 2023. This talent shortage has been exacerbated by the brain drain of many local skilled workers to overseas markets.

The government's regulatory capacity appears somewhat better equipped to harness the digital economy. Vietnam receives average scores in both the government's capacity to regulate online content (figure 2.12) and the legal framework's adaptability to digital business models (figure 2.13). But recent efforts to improve the regulatory framework are not yet fully reflected in these scores. Resolution 17 of March 2019 laid out important regulatory tasks for digital government development during 2020–25. In April 2020, the government issued Decree 45, which stipulates the delivery of government services by digital means, and Decree 47, on digital data sharing between government agencies and the private sector. A draft decree on privacy protection and a decree on digital identity and authentication are being posted for public comment. These two decrees, expected to be issued in 2021, will constitute further building blocks for the digitalization of Vietnam.

22 World Bank, Financial Inclusion Survey 2018.

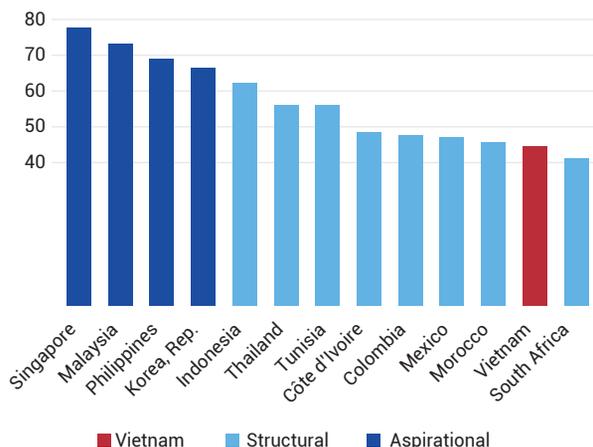
23 According to the 2017 Global Findex survey, ownership of debit cards in Vietnam was below the regional average: about 24 percent of adults in Vietnam had a debit card in 2017, compared with 43 percent in East Asia and Pacific countries overall. The disparity between ownership of debit cards and use of these cards was also substantial. As of 2017, only 5 percent of adults who had a debit card had used it to make payments within the previous year.

Figure 2.10. School enrollment, tertiary (% gross)



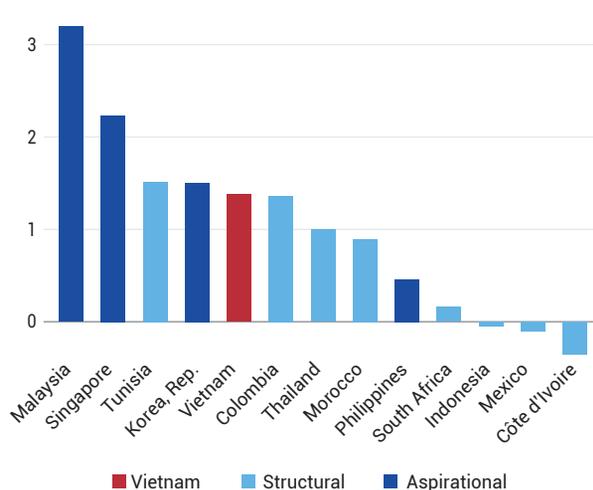
Source: Staff calculations using data from World Development Indicators (WDI) 2021.

Figure 2.11. Digital skills among active population



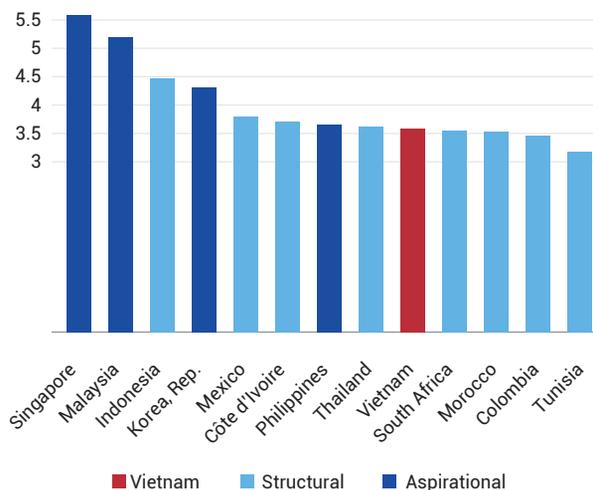
Source: Staff calculations using data from World Economic Forum (WEF) 2021

Figure 2.12. Government capacity to regulate online content



Source: Staff calculations using data from Varieties of Democracy (VDEM) 2021.

Figure 2.13. Legal framework's adaptability to digital business models



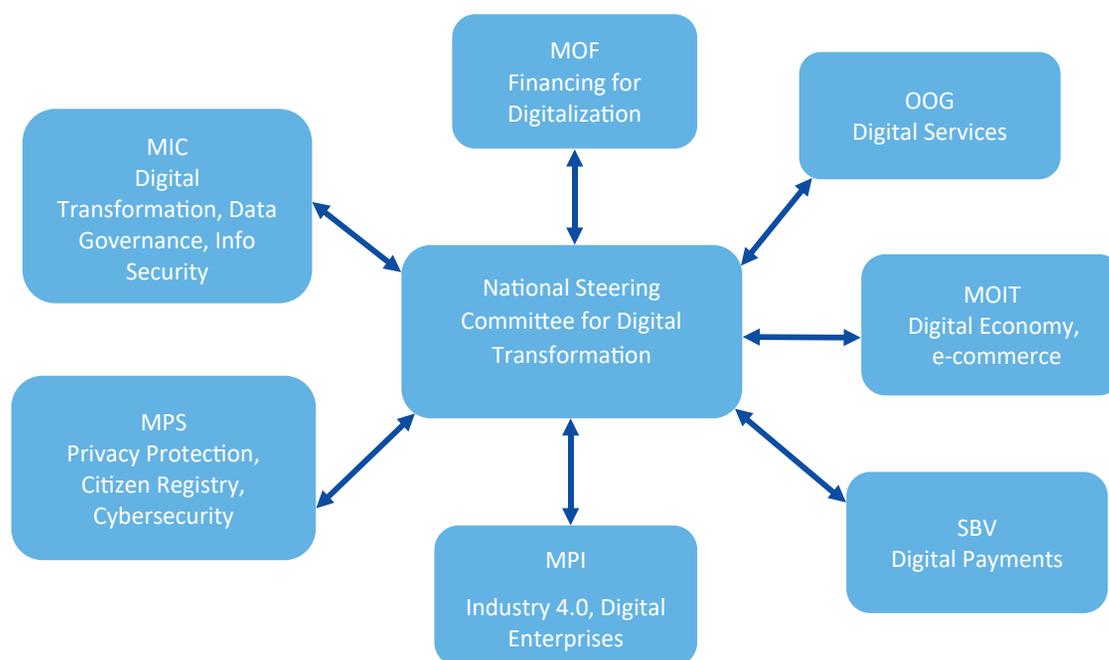
Source: Staff calculations using data from World Economic Forum (WEF) 2021

Despite these efforts, two major policy and implementation gaps limit Vietnam's regulatory effectiveness.

First, the lack of a consolidated framework legislation dealing with the digital technologies has led to piecemeal rulemaking, including the proliferation of about a dozen circulars issued by the Ministry of Finance stipulating fees for accessing various datasets such as land data, environment, remote sensing, or mapping data. In a digital era when data including digital maps and satellite imagery are considered the new production factor, the treatment of this new production factor as secret is unnecessarily restrictive and will inhibit seamless digital data flows among government agencies. This will affect the ability of governments at all levels to make informed and timely decisions, especially in areas of urbanization and environmental pollution. Second, robust policy implementation is needed. As an example, Prime Minister Decision 1660/QD-TTg dated October 2020 on classified documents of the natural resources and environment sector has been followed by only limited progress on the ground.

Moreover, the institutional framework for digital transformation in Vietnam is overly complex. The government strengthened its National Steering Committee for digital government and the digital economy in late 2019, with the prime minister chairing the committee. This is mirrored at the provincial level, where the chairperson of the provincial People’s Committee heads the steering committee. However, at the operational level major tasks on the digital transformation agenda are dispersed across at least seven ministries, making coordination and implementation of policies and programs challenging (figure 2.14). For instance, this has led to key national registries—including land, citizens, enterprises, and civil—being collected and managed by different agencies.

Figure 2.14. Ministerial responsibilities for the digital transformation agenda



Note: MIC = Ministry of Information and Communications; MOF = Ministry of Finance; MOIT = Ministry of Industry and Trade; MPI = Ministry of Planning and Investment; MPS = Ministry of Public Security; OOG = Office of the Government; SBV = State Bank of Vietnam.

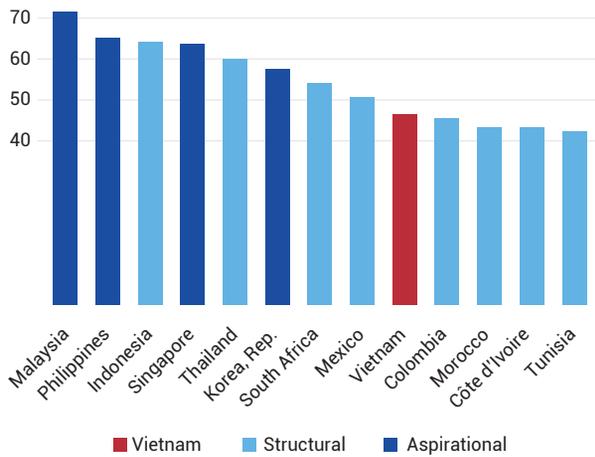
Pillar 3. Innovate: On the rise but still little sophistication

Before the COVID-19 crisis, Vietnam’s ability to innovate was roughly average, lagging many peers in the use of digital technology. The country ranked slightly below average in growth of innovative firms, patent registration, and buyer sophistication, while trailing in patent applications (figures 2.15–2.18).

The COVID-19 pandemic in 2020 and its lingering effects in 2021 have been a game changer for the private sector. Vietnam’s firms embraced ICT to enable remote work and to reach their customers during social distancing and mobility restrictions. Recent phone surveys by the World Bank show a sharp increase in the use of digital platforms, e-commerce websites, online social media, and specialized apps in response to the COVID-19 outbreak, rising from 48 percent of firms in June 2020 to 73 percent in January 2021.²⁴ Over the same period, the number of firms investing in digital solutions—such as installing new equipment and software in their business operations—more than quadrupled from 5 percent to 21 percent.

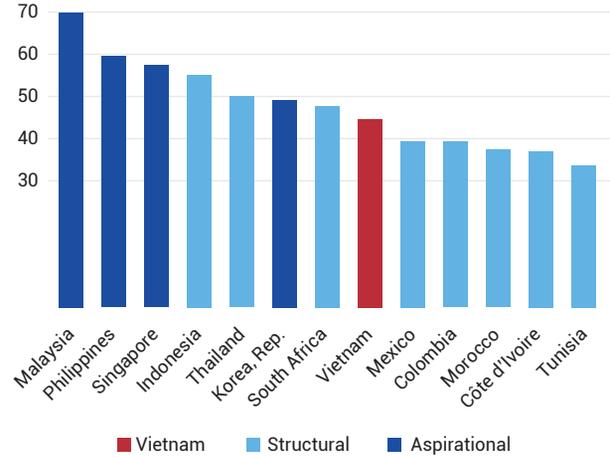
²⁴ Tan et al. 2021. Based on the three waves of the Business Pulse Surveys run in June and September–October 2020 and January 2021 covering a panel of 500 firms. Results are calculated using sampling weights.

Figure 2.15. Growth of innovative companies



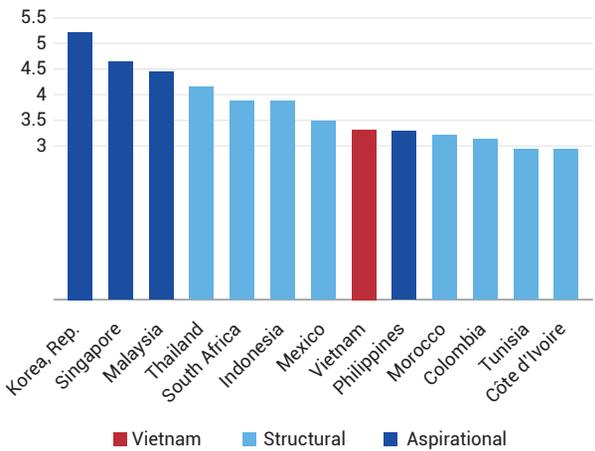
Source: World Bank staff calculations using WEF 2021 data

Figure 2.16. Companies embracing disruptive ideas



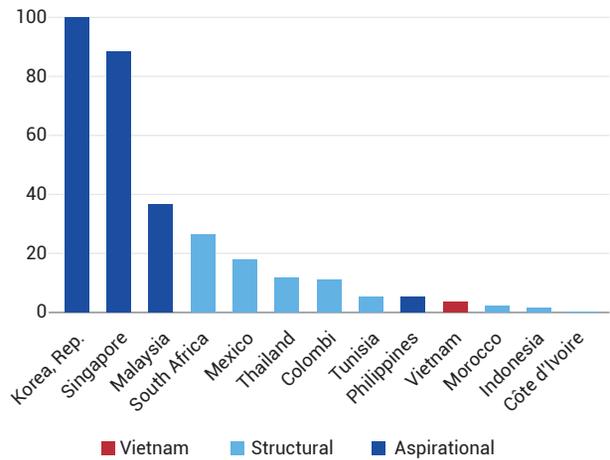
Source: World Bank staff calculations using WEF 2021 data

Figure 2.17. Buyer sophistication



Source: World Bank staff calculations using WEF 2021 data

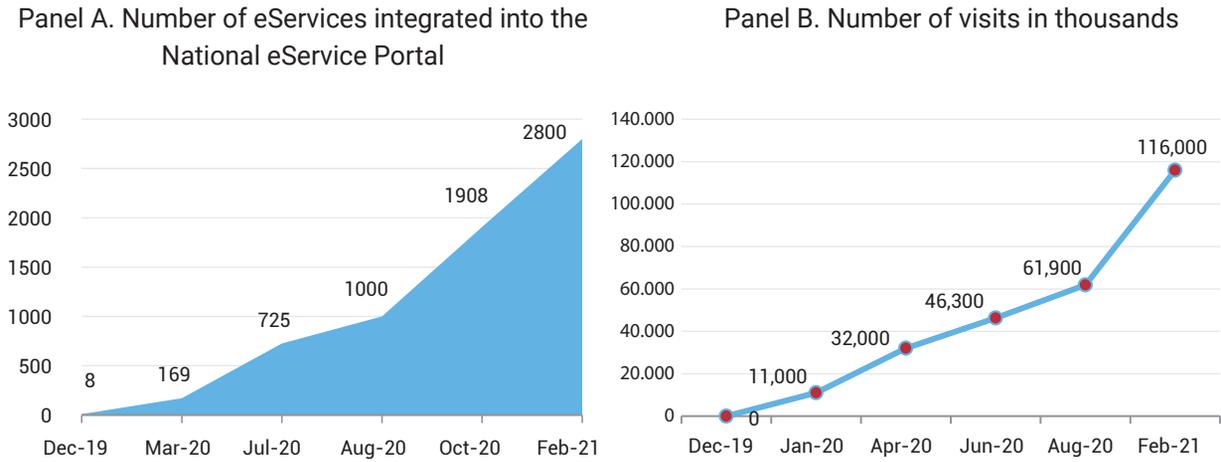
Figure 2.18. Patent applications (per million pop.)



Source: World Bank staff calculations using WEF 2021 data

The government has also stepped up efforts to streamline procedures and provide public services to citizens via digital means. The number of digital services grew from 169 in March 2020 to over 1,900 by October 2020 (figure 2.19, panel A). As of February 2021, over 2,000 services had been standardized and integrated into the National Public Portal, ranging from drivers’ licenses to tax and enterprise registrations, leading to a tenfold surge in the number of visits and transactions between the January 2020 and February 2021 (figure 2.19, panel B). Concurrently, the government has started to improve data collection and sharing practices through the National Government Service Platform (NGSP), which launched in August 2020. The first phase covers three ministries and the enterprise registry, civil registry, and social insurance database. The NGSP is expected to be expanded to other ministries and provinces, and to additional databases, through 2022.

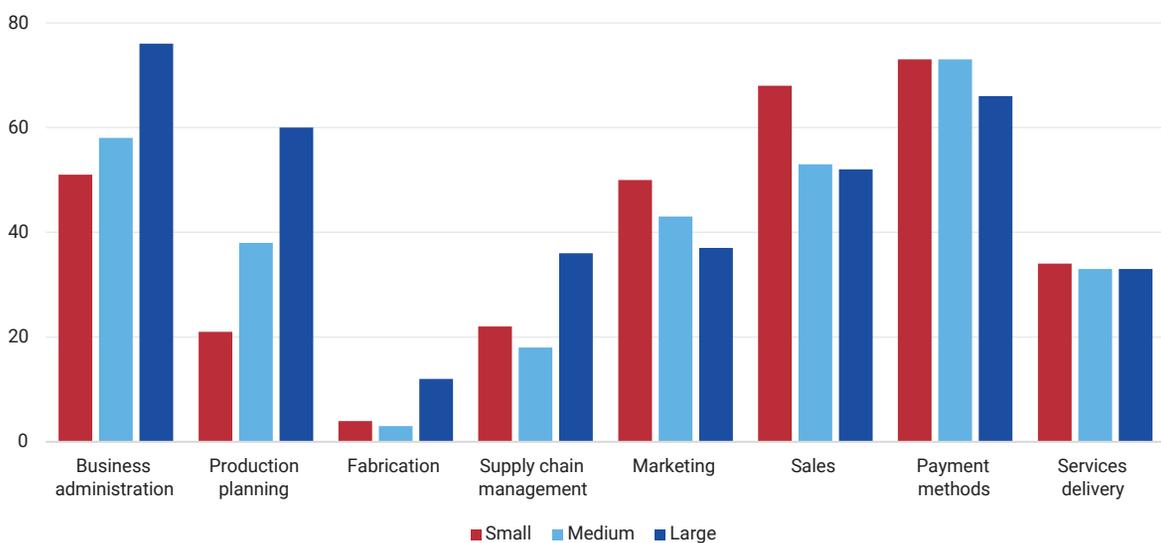
Figure 2.19. E-government response to the COVID-19 outbreak



Source: National Public Portal 2020.

While the new trend of digital adoption in response to COVID-19 is encouraging, the degree of sophistication of the users remains relatively limited. Digital platforms are mainly used to streamline simple business functions such as business administration, sales, and payment methods (figure 2.20). Only large firms with sufficient financial and human resources have demonstrated the ability to use digital tools for production planning, supply chain management, and fabrication. The World Bank’s firm-level technology adoption survey conducted in 2020 revealed that the adoption of new technologies was still at a nascent stage in Vietnam. Only 6 percent of Vietnamese firms used cloud computing for business tasks and just under 2 percent of firms used big data or artificial intelligence for marketing purposes. More generally, only about 6 percent of manufacturing firms used additive manufacturing or advanced manufacturing techniques, and less than 2 percent used robots.²⁵

Figure 2.20. Uptake of digital platforms is still mainly focused on simpler business functions



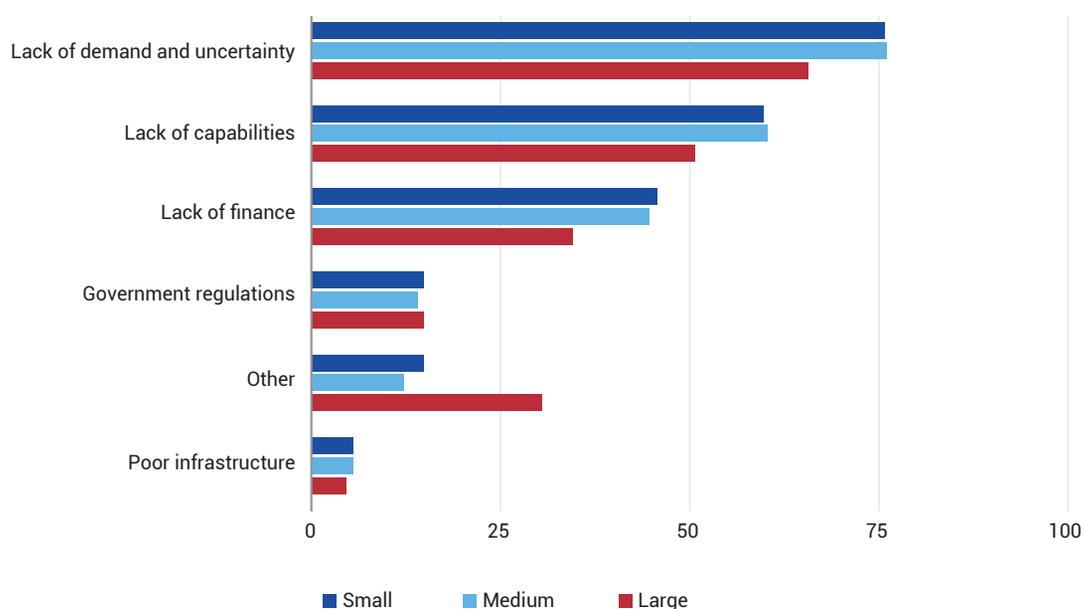
Sources: Tan et al. (2021) using data from World Bank, Business Pulse Survey: Round 3, January 2021.

25 For more detail, see Cirera et al. (2021).

Low digital innovation in the private sector is explained by limited firm demand, insufficient support from the government, and underdeveloped “digital” businesses.

- *Limited firm demand* is due to uncertainty about the returns to technology investment, weak internal capacity to use these technologies, poor finance, and regulatory constraints (figure 2.21). Over 75 percent of small- and medium-sized firms and about 63 percent of large firms are uncertain about the returns to their technology investments and whether their demand justifies such an investment. Just under 60 percent of small- and medium-sized firms report that they lack either the information about what technologies are available or the skills to use the technology. In addition, Vietnamese firms report insufficient access to external financing.
- *Insufficient government support* to digital businesses or to businesses that want to invest in digital tools. Public support has focused on research and development (R&D) rather than on upgrading technology and commercialization of technologies for business, including adoption and diffusion of existing technologies.^{26,27}
- *Underdeveloped digital businesses* that act as catalysts for the digitalization of the private sector. Digital businesses are platform-based and data-driven firms that offer digital services or content, digital payments, or digital solutions to other businesses, notably start-ups and small firms that do not have the internal resources to develop these capacities on their own. Homegrown digital platform-based marketplaces, like Sendo and Tiki, compete with regional players like Lazada and Shopee. But Vietnam has fewer digital businesses (around 250) than other East Asia and Pacific (EAP) countries, including Malaysia (450) or Indonesia (530). Vietnam’s digital businesses are also operating in a smaller number of digital subsectors than other EAP countries.

Figure 2.21. Main barriers to technology adoption



Source: Cirera et al. 2021.

26 World Bank 2021a.

27 There are some programs that contain features that promote technology application and dissemination, such as some programs under Ministry of Science and Technology (MOST), but these activities are not the focus of those programs. There are other programs promoting technology upgrading among small and medium-sized enterprises, such as the National Technology Innovation Programme, but these programs are at the inception phase or have little funding.

Pillar 4. Protect: Relatively secure, but little privacy and protection against market concentration and censorship

Vietnam's government exhibits mixed performance in its efforts to protect its citizens, providing relatively good cybersecurity but falling short of its peers on measures of privacy. Rapid technological development has given people more ways to access and share information on the internet, but it has also created conditions for more sophisticated attacks on security and privacy. The challenge for the government is to find the right balance between access to information and protection for users of digital instruments.

According to the Global Cybersecurity Index, Vietnam provides decent protection, ranking 25th of 194 countries and territories, including fourth among 11 Association of Southeast Asian Nation (ASEAN) countries and seventh in the Asia-Pacific region. It scores seventh out of the 13 countries included in our sample (figure 2.22). Vietnam enacted a cybersecurity law that took effect on January 1, 2019. The law requires businesses to cooperate and comply with the law when they do business in Vietnam. Also, under the law, IT companies are compelled to store data about Vietnamese users on servers in-country, which is a costly feature for businesses and could potentially make the Vietnamese market a less attractive investment destination.

The government appears less capable of protecting firms and consumers against market concentration and potential abuse by dominant players. Given the high barriers to entry but low cost of expanding digital platforms, Vietnam's digital sector—like that of other countries—is at risk of being dominated by a few players. In practice, the country performs poorly compared to its peers, ranking last in terms of competition in network services, as it is currently dominated by three SOEs (figure 2.23). Yet, this reflects more anticompetitive practices on fixed broadband markets than on the mobile broadband market, which benefits from continuous quality upgrades and decreasing prices. To encourage more competition on the fixed broadband market, Vietnam needs to facilitate infrastructure sharing within and across sectors. Government-induced distortions are also evident in the consumer electronics market. Despite being a leading exporter of electronic consumer products—including half of Samsung's high-end smartphones and more than 80 percent of Intel's personal computer central processing units—these products are scarce in local markets because of restrictions imposed on these foreign-owned enterprises.²⁸ As a result, these products are generally (re)imported from other countries and local consumers pay a higher price, while the profits are accumulated by wholesalers and retailers.

Vietnam falls short in protecting privacy; it ranks at the bottom of structural and aspirational peer countries in terms of government interference on the internet and social media (figures 2.24 and 2.25). The country still has no consolidated legislation on the protection of personal data, although the Ministry of Public Security recently shared the long-awaited draft Decree on Personal Data Protection for public consultation. While the draft decree proposes for the first time the regulation of specific rights of data subjects, cross-border transfer of data, processing of sensitive personal data, and other related subjects in a digital environment, it remains unclear whether it will be aligned on international practices (see more details in the next section). Another related challenge lies in the limited access to (quality) government data by the public. According to the World Justice Project,²⁹ Vietnam ranks only 10th out of the 12 comparators used

28 Export processing enterprises (EPEs) set up in export processing zones (EPZs) are allowed to sell goods to the local market; however, import duties will be payable by the recipient. Conversely, EPEs set up in industrial zones other than EPZs are prohibited from selling to domestic enterprises in the Vietnamese market.

29 "The World Justice Project is an international civil society organization with the stated mission of 'working to advance the rule of law around the world'" (https://en.wikipedia.org/wiki/World_Justice_Project).

in this study, not so much because of heavy procedures but because of the limited quantity of information shared by many institutions or only with protracted delays.³⁰

Figure 2.22. Global Cybersecurity Index Score

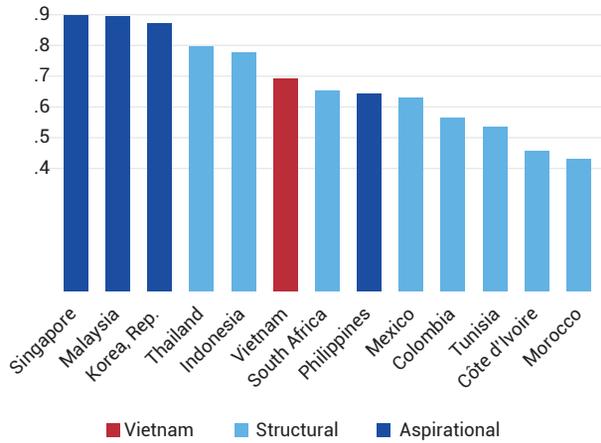
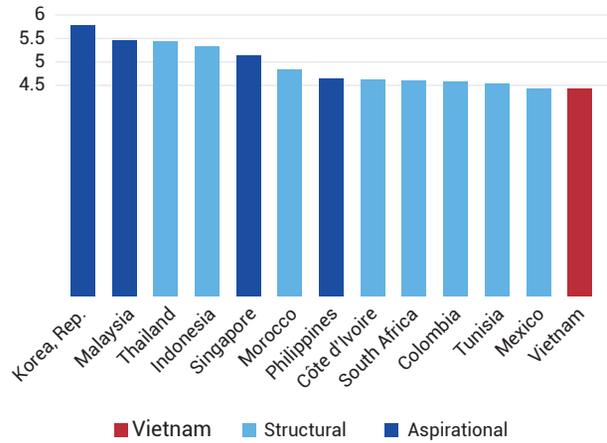


Figure 2.23. Competition in network services



Source: Staff calculations using data from ITU 2021.

Source: Staff calculations using data from WEF 2021.

Figure 2.24. Government internet filtering in practice

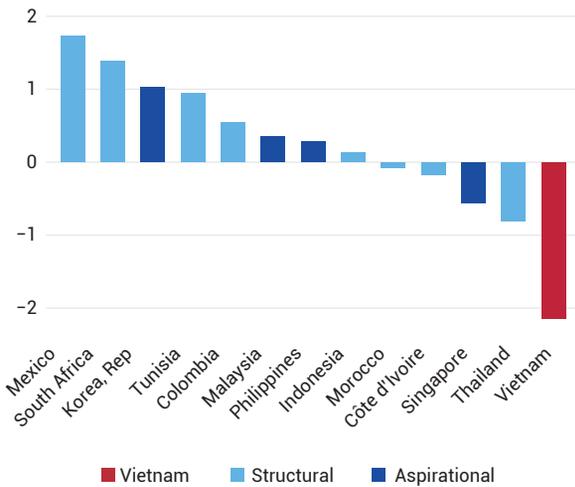
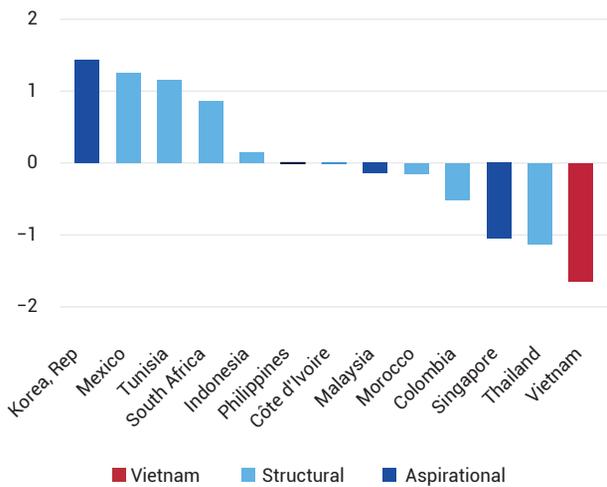


Figure 2.25. Government social media censorship in practice



Source: Staff calculations using data from VDEM 2021.

Source: Staff calculations using data from VDEM 2021.

30 Source: World Justice Project, <https://worldjusticeproject.org/our-work/research-and-data/wjp-rule-law-index-2020/current-historical-data>.

2.3. WHAT WILL IT TAKE FOR VIETNAM TO ACHIEVE ITS DIGITAL AMBITIONS?

Overall, Vietnam is in a relatively good position to achieve its digital ambitions but needs to capitalize on its strengths and close the gap in its weaknesses to digitally transform its economy. The country fares well in terms of connectivity, but speeds are slow and Vietnam needs to invest an estimated US\$6 billion to modernize and maintain its infrastructure to reach universal access in the coming years.³¹ To its credit, the government has proven to be an efficient builder of infrastructure, notably through partnerships between SOEs and private companies operating in the ICT sector. If carried out, these investments will encourage and complement the adoption of other digital technologies and services, including e-commerce, e-payment, and targeted public service delivery.

However, the productivity benefits of new technologies and methods may not accrue without efforts by firms and policymakers to speed up their adoption, enable highly productive firms to grow, and foster productivity diffusion. Policy conditions that favor experimentation and reallocation, as well as the availability of a high-quality talent pool for managers and workers, are critical conditions for Vietnam to win this race. It is also essential to anticipate and accommodate challenges **common to all economies at this juncture, including** market concentration, privacy protections, and potential inequalities that may arise among users and workers (box 2.1).

Box 2.1. Common challenges to developing a digital economy

1. *Monopoly power.* A digital economy is vulnerable to market concentration because of large, fixed costs and network agglomeration effects. This can lead to high barriers to entry, regulatory capture, and increased costs of data and digital services.
2. *Privacy issues.* Protection of industrial and economic data is essential to ensuring fair competition for firms, while protection of personal data is critical to avoid identity theft, cybercrimes, and unauthorized use of consumers' identity.
3. *Addictive nature of technology.* The increased efficiency of digital technologies may be outweighed by time spent checking social media and searching the internet. Moreover, the sheer volume of information can overwhelm users and lead to decision paralysis.
4. *Environmental costs.* Data centers use massive amounts of electricity, and most firms do not offset the resulting carbon dioxide emissions. Moreover, the planned obsolescence of consumer electronics encourages greater use of raw materials and more harmful waste.
5. *The "productivity puzzle."* It has been difficult to establish an unambiguous relationship between digital development and economic growth across countries and over time. This "productivity puzzle" has received a great deal of attention but has not been settled.^a
6. *Inequality.* Access and use vary by income, location, and skill level. If digital platforms provide additional advantages to those who already have an edge, they can exacerbate existing inequalities, such as better educational outcomes for skilled students with internet access.
7. *Structural change in the labor market.* Firms will substitute digital capital (robots) for labor, and digitally capital-intensive sectors will grow faster than others.

Note: a. Gordon 2013.

31 Source: <https://xalamanalytics.com/>

The broad-based, productive use of digital technologies also requires strengthening regulations, upskilling the labor force, and increasing the accountability of public institutions. Vietnam's authorities are therefore encouraged to address existing weaknesses through:

- (i) Enhancing digital skills to unlock the digital dividends for all
- (ii) Nurturing innovative capacity by addressing market and government failures
- (iii) Improving information access and quality as well as privacy rights.

The solutions to doing so are detailed below.

Solution 1: Enhancing digital skills

Why it matters. Workers will need the right skills to take advantage of digitalization, and an uneven distribution of skills can increase inequality. Users need skills and capabilities to maximize the time saved and manage the information collected through digital platforms. Without digital skills, there is a big risk that the jobs of the future will not be filled by Vietnamese job seekers. Digitalization is also expected to eliminate some lower- and middle-skilled jobs. In Vietnam, it is estimated that 20 to 30 percent of existing jobs are at risk of transformation or disappearance in the next few years, making training the labor force for new jobs critical.³²

Vietnam's shortcomings. The stock of qualified workers in the labor force is low, and the number of students registering in relevant postsecondary programs is insufficient to fill the gap. At the current pace, it will take 25 years for Vietnam to catch up with Thailand. Many businesses report difficulty finding and retaining good data analysts, programmers, and modelers.

Upgrading digital skills by strengthening IT education and training at all levels, especially through the technical and vocational training system (TVET), has become urgent for Vietnam. It will require undertaking foundational reforms of the TVET system, including business models (for example, performance-based funding, public-private partnerships), curriculum design (for example, data science and analytics), and efficient linkages to secondary and higher education. Reforming the TVET system is also critical for the green growth strategy going forward.

Vietnam also needs to improve workers' soft skills, which reinforce their adaptability in an environment where both the nature of work and specific jobs are changing rapidly. Many traditional occupational skills are becoming obsolete. At the same time, opportunities are emerging through new business models and activities, including the expanding number of opportunities for ICT-enabled collaborative work on social networks, branded products on e-commerce platforms, and analysis using data gathered from the web. Soft skills—like critical thinking and problem solving, communication, teamwork, creativity, and management—will be important for success (box 2.2). As such, these socio-behavioral skills need more emphasis in both primary and secondary education.

32 Cameron et al. 2019; World Bank 2021a.

Box 2.2. Better managers use more sophisticated technology

Management quality is an important factor in explaining the difference in technology adoption. Firms with better management quality have better performance and are more productive. Better management quality can manifest as better monitoring (such as performance tracking), targeting (performance clarity, balancing targets), and incentives (rewarding high performance, promotion).

In Vietnam, there is a clear and statistically significant relationship between technology sophistication and managers' education. Large firms, particularly, are more likely to have a manager who studied abroad, which can explain the use of more sophisticated technology among these firms. In contrast, there is no significant relationship between technology sophistication and worker skills. In addition, firms with formal incentives and those that use more performance indicators are shown to use more sophisticated technologies.

Sources: Bloom and van Reenan 2010; Cirera et al. 2021.

The government can promote initiatives that build core skills that citizens need to acquire, so that they can build on, extend, and adapt them to meet the demands of technological change. Given the rapid pace of change and uncertainty about what future jobs will require, collaboration between the government and private sector can help identify and anticipate what is most in demand. In the coming years, four complementary options could be considered:

1. **The government could nurture young digital talents through a large-scale scholarship program to prepare students at various stages of their career for the digital age.** Indonesia provides a model wherein the government invested US\$7.7 million in a digital talent scholarship program to provide certifications to 20,000 young digital talents.
2. **The government and private sector partners should develop a program that combines skill development for the digital economy with financing and mentorship for digital entrepreneurs.** In Singapore, SkillsFuture is a public/private initiative that provides a range of courses for eligible Singaporeans 25 years old and above with the opportunity to develop their fullest potential throughout their lives. The initiative includes many activities and support programs, some of which include training for employees at various stages of their careers and support for employers, including supporting technology adoption and skills upgrading in small and medium-sized enterprises.³³
3. **The government should introduce technology from the early stages of the education cycle.** Mastering the digital economy requires a change in mindset and behavior from an early age, because digital skills encompass more than technical and scientific capacities. In the Netherlands, the Digital Technology Pact aims to provide technology instruction to students and workers at all levels, from primary through professional development.
4. **The government should adopt a series of initiatives aimed at attracting talent from its diaspora engaged in digital sectors around the world.** The Philippines and France have a start-up visa program and multiyear "talent passport" residence permits. Korea and China implemented a similar approach to fill temporary gaps in local skills by promoting the return of their most promising nationals living abroad. While these programs can lead to an unbalanced allocation of resources, they also create significant

33 "The Digital Transformation & Innovation™ Programme aims to train key personnel in businesses to become 'Digital Transformers' to leverage digital technologies to accelerate business model changes and achieve meaningful digital transformation. The programme is offered by the Singapore Institute of Manufacturing Technology (SIMTech), a research institute of the Agency for Science, Technology and Research (A*STAR), and it is part of the training portfolio offered under the Manufacturing Control Tower™ (MCTTM) Programme" (<https://www.skillsfuture.gov.sg/AboutSkillsFuture>).

externalities as entrepreneurs and experts from the diaspora can create jobs and help train the local workforce.

Solution 2: Nurturing innovative capacity

Why it matters. To remain competitive, continuous innovation is imperative. The short application cycle for ICTs means they can be invented, tested, and applied much more quickly than other technologies, such as those in the medical field. For the same reason, they can become obsolete quickly.

Vietnam's shortcomings. The current digital strategy of the authorities does not match the country's development stage. The initial stage of innovation should focus on the adoption of new technologies and technological processes, while investing in the capacity to become innovators of new technology should be a target over the medium to long term. This is not currently the strategy followed by the government. Most of the support provided by the central government is directed at supporting R&D efforts rather than supporting diffusion, adoption, and adaptation of new technologies by firms. This strategy is suboptimal for a country at Vietnam's level of development since any novel innovations from the R&D programs may not be able to be implemented because of the general lack of skills or technology adoption.

Also, to promote innovation, economic theory and empirical evidence show that countries need to find a balance between champions and small, dynamic firms. Champions are large, advanced firms that can address economies of scale, asymmetric information, network externalities, and diversification risks that are generally associated with innovation. Small firms are flexible and more capable of taking risks, posing a challenge to champions and keeping them at their technological best through competition or acquisition. The system works well if big companies are well-regulated and emerging start-ups and small innovators are supported by effective government programs so they can challenge the incumbents. Unfortunately, these two conditions are not met in Vietnam today.

Big companies in Vietnam are protected rather than encouraged to innovate in a competitive environment. The communications subsector is dominated by three large domestic champions; social media is dominated by Facebook; and other digital subsectors, including e-commerce, fintech, digital financing, and data management, are starting to consolidate. The barriers to entry for new operators remain high in many service sectors, while competition policy remains underdeveloped as the pace of innovation is outstripping the pace of regulation. Furthermore, regulators are weak or overly restrictive and fragmented because the digital economy crosses traditional administrative boundaries, including the Ministry of Information and Telecommunication, Ministry of Public Security, Office of the Government, Ministry of Planning and Investment, Ministry of Finance, State Bank of Vietnam, Ministry of Industry and Trade, Ministry of Education and Training, Ministry of Science and Technology, and others.

In January 2018, the *Law on Supporting Small and Medium-Sized Enterprises* came into effect, with detailed provisions for support to start-ups in areas such as technology transfer, training, trade promotion, investments, preferential loans, and incentives for venture capital funds. But in practice, support programs remain small and fragmented and are mainly implemented at the municipal level in Ho Chi Minh City and Hanoi.³⁴

³⁴ Subnational programs include the SpeedUP initiative, started by Ho Chi Minh City's Department of Science and Technology, Startupcity.vn, and the Vietnam-Finland Innovation Partnership Program. Startupcity.vn is an online platform launched by Hanoi's People's Committee that has details about start-ups and investors and aims to connect investors with entrepreneurs.

The government can play a key role in nurturing innovative capacity in the digital sector. In the coming years, three complementary options could be considered:

1. **The government should help reduce barriers to entry, especially for companies with high-technology capacity.** Vietnam successfully encouraged competition in the merchandise sector by opening its economy to foreign companies. It is now starting to apply the same principles to the service sector, as in the recently approved EU–Vietnam Free Trade Agreement, which has opened up the domestic market for European Union services providers in select subsectors, including health and logistics. The Comprehensive and Progressive Agreement for Pacific Partnership (CPTPP) also includes an e-commerce chapter, in which the member countries agreed to a set of rules that will facilitate economic growth and trade opportunities fostered by electronic commerce. Looking abroad, Australia, Denmark, Germany, Ireland, Japan, and Portugal all provide successful models for reducing barriers to entry to foreign direct investment in the ICT sector.
2. **The government can also improve competition policy and implementation.** This can be done through legislation, bureaucratic coordination, or procurement policy. In Germany, the *Competition Act* introduced new provisions related to the digital economy, covering aspects that are critical for the market power of platforms and networks. Australia promoted coordination across regulators by establishing a new commission, and Ireland did so by joining the authorities of existing bodies. Korea leverages the competitive procurement of public contracts to promote competition within and across sectors.
3. **The government and private sector can promote start-ups and small firms in the digital sector.** The *Startup Europe Partnership* is a joint effort between the private and public sectors addressing three market failures: financing, information, and skill development. It aims to promote synergies between large and small firms by linking European start-ups with large and medium-sized corporations that are committing capital, seniority, and procurement channels.

Solution 3: Promoting information access, quality, and security

Why it matters. As the *World Development Report (WDR) 2021* highlights, many of the benefits of a virtual economy will be defined by the accessibility and quality of the information that the digital tools convey to users.³⁵ Such information is not only one of the key ingredients of artificial intelligence but also a crucial input to many online services, production processes, and logistics. The evolution of technology has made it possible for companies to collect, store, and use large amounts of data, thereby challenging the state's monopoly.

As emphasized in the *WDR 2021*, this new development will require greater attention to at least three main challenges:

1. **Multiply by sharing.** Data portability and interoperability are essential elements to ensure that the benefits of greater access to information can multiply across users at the lowest cost possible. Data collected for one purpose have the potential to generate economic and social value in applications far beyond those originally anticipated. These two elements are also essential to protect against the risk that the information remains in the hands of one service provider and therefore vulnerable to abuses.

³⁵ World Bank 2021b.

2. **Access versus security.** Greater access should not compromise security. Breaches by a third party or cyberattacks cost around US\$6 trillion worldwide in 2020. According to the Ministry of Information and Communications, there were over 2,000 attacks in Vietnam during the first half of 2020. In the UK, the Ponemon Institute³⁶ found that organizations spend US\$3.7 million per incident.³⁷ Beyond the financial costs, cyberattacks can have disastrous consequences on citizens' privacy and on a country's defense system.
3. **Protection.** The power to control the flow of information has become power over the way our economies and societies work. There has been increasing attention to abuse by large service providers. For example, in recent months, Google was fined almost US\$5 billion by the European Union and Alibaba US\$3 billion by China. The government can also abuse its citizenry through censorship or filtering.

Vietnam's shortcomings. Vietnam faces major shortcomings in the scope and quality of available data. It performs poorly in terms of access to government information and the content of information provided by the government. Moreover, data portability and interoperability are limited even after the launch of the government's internal data portal in mid-2020. Today, it is only piloted by three ministries and covers four databases, even if the objective is to have this system operational in all ministries and agencies at all levels of government by 2023.

As it finalizes the draft Decree on Personal Data Protection, the government needs to strike a balance among data management, privacy protection, and facilitation of digital data flows. This is especially relevant to requirements on cross-border data flows and data localization. The provisions requiring businesses to store data inside the country and get approval from the Ministry of Public Security to transfer personal data abroad will lead to significant additional costs to domestic and foreign firms, reducing dividends Vietnam would be able to harness.

To achieve this balance, Vietnam could learn from other countries in the region that are gradually moving from reduced data protectionism to increased data privacy. This means paying less attention to who is controlling data and more to protecting the use of that data. In the coming years, two complementary options should be considered:

1. **The government should adopt legislation that protects data privacy.** The General Data Protection Regulation, adopted by the European Union in 2016, is the international gold standard. Examples of more gradual steps can be found closer to home. In Korea, SecureGov employs security layers that harness public key infrastructure,³⁸ as well as technology for access control and forgery prevention, to ensure the security of documents and data. In Singapore, the SingPass Mobile app improves the efficiency and security of logins for digital government transactions through fingerprint and facial recognition or a passcode in addition to two-factor authentication. In Thailand, the *Personal Data Protection Act* has extraterritorial reach, impacting data controllers/processors outside of Thailand if dealing with Thai residents' personal data. And ASEAN is discussing a regional policy framework for data protection, recently proposed a Data Management Framework, and suggests model contractual clauses for cross-border flows.

36 The Ponemon Institute, founded in 2002 by Dr. Larry Ponemon and Susan Jayson, "is dedicated to independent research and education that advances the responsible use of information and privacy management practices within business and government" (<https://www.ponemon.org/about/why-we-are-unique.html>).

37 <https://www.itgovernance.co.uk/blog/the-cost-of-a-cyber-attack>.

38 Public key infrastructure is "a set of roles, policies, hardware, software and procedures needed to create, manage, distribute, use, store and revoke digital certificates and manage public-key encryption" (https://en.wikipedia.org/wiki/Public_key_infrastructure).

- 2. The government and private sector should develop a cyber insurance market to help businesses recover financially when a cyber incident happens.** Risks cannot be limited entirely but pooling it can encourage innovation and data sharing. This is a new area for insurance markets, and its products may require some time for development and maturation. In Taiwan, China, the cyber insurance market demand was driven by its *Personal Information Protection Act (PIPA)*, which was passed in April 2010 and implemented in October 2012. Yet, operationalizing such a market will require (i) defining mandatory breach reporting and information sharing with different stakeholders, (ii) creating platforms for sharing information on cyber threats and breaches; (iii) promoting the standardization of cyber insurance policies; and (iv) supporting programs to develop relevant technical skills.

Annex: The CHIP Framework

The Connect, Harness, Innovate, Protect (CHIP) framework provides a broad, interconnected perspective on the digital economy, encompassing internet-enabled technologies that create and sustain digital marketplaces; regulations, skills, and institutions necessary to leverage those technologies to enhance access, productivity, and equity; policies, culture, and behaviors that encourage innovation; and policies, programs, and other mechanisms to protect privacy, encourage competition, and prevent abuses (table A.1). The CHIP framework is quantified using 24 indicators from 6 sources: the International Telecommunication Union (ITU), the United Nations Department of Economic and Social Affairs (UNDESA), Varieties of Democracy (VDEM), the World Bank Group (WBG), the World Development Indicators (WDI), and the World Economic Forum (WEF). The year of the latest observation in ranges from 2017 to 2020, depending on the indicator.

Table A.1. The CHIP framework, by pillar

Pillar	Components
Connect	Build digital foundations and enablers (digital ID, digital payments, data analytics, etc.) and ensure system compatibility and interoperability
Harness	Invest in analog complements: regulations, skills/literacy, leadership, and institutions
Innovate	Create and expand new economy services, business models, digital entrepreneurs, and e-government
Protect	Mitigate risks: cybersecurity and privacy, misinformation, inequality of opportunities, automation, and digital monopoly

Source: World Bank 2021.

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