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Unleashing strong, digital
and green growth in Viet
Nam

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UNLEASHING STRONG, DIGITAL AND GREEN GROWTH IN VIET NAM

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By Patrick Lenain, Ben Westmore, Quoc Huy Vu and Minh Cuong Nguyen

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ABSTRACT/RÉSUMÉ

Unleashing strong, digital and green growth in Viet Nam

Viet Nam has been quick to recover from the downturns caused by the COVID-19 pandemic, but it faces long-term economic challenges. Boosting labour productivity will be crucial to sustained high economic growth. Attracting further foreign investment and reaping the benefit of advanced technologies will require additional improvements to the business environment through simplifying administrative procedures. Levelling the playing field of competition between state-owned enterprises and private enterprises will also help to maintain Viet Nam's attraction for international investors. The country is already among the leaders of digitalisation in Southeast Asia, with strong adoption of e-commerce, telemedicine and telework. Further investment in digital skills will be key to maintain this momentum. The authorities have committed to net zero carbon emissions by 2050 and are expanding renewable energy generation capacity. A comprehensive decarbonisation plan would facilitate the transition to greener growth.

Key words: Viet Nam, productivity, foreign investment, business climate, digitalisation, digital skills, climate policy, net zero, carbon pricing, energy transition.

JEL: J24, K23, O14, Q52, H23, Q43, Q54

Une croissance forte, numérique et verte au Vietnam

Le Vietnam a rapidement rebondi après les difficultés causées par la pandémie de COVID-19, mais il fait face à des défis économiques à long terme. Accroître la productivité du travail sera crucial pour maintenir une croissance économique élevée. Attirer davantage d'investissements étrangers et tirer parti des technologies avancées nécessitera d'améliorer davantage l'environnement des affaires en simplifiant les procédures administratives. Équilibrer la concurrence entre les entreprises publiques et les entreprises privées contribuera également à maintenir l'attrait du Vietnam pour les investisseurs internationaux. Le pays figure déjà parmi les leaders de la numérisation en Asie du Sud-Est, avec une forte adoption du commerce électronique, de la télémédecine et du télétravail. Un investissement supplémentaire dans les compétences numériques sera essentiel pour maintenir cet élan. Les autorités se sont engagées à atteindre zéro émission nette de carbone d'ici 2050 et accroissent les capacités de production d'énergie renouvelable. Un plan complet de décarbonisation faciliterait cette transition vers une croissance verte.

Mot clés: Viet Nam, productivité, investissement étranger, climat des affaires, numérisation, compétences numériques, politique climatique, carboneutralité, tarification du carbone, transition énergétique.

JEL: J24, K23, O14, Q52, H23, Q43, Q54

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Unleashing strong, digital and green growth in Viet Nam

Patrick Lenain, Ben Westmore, Quoc Huy Vu and Minh Cuong Nguyen¹

Viet Nam has implemented extensive reforms since the late 1980s, becoming one of the most open markets in Southeast Asia. Still, sustaining high economic growth in the coming decade will require additional efforts to boost labour productivity. To advance reforms, the government will need to take bold action to reduce state involvement and secure a level playing field among all market participants, including state-owned enterprises. Viet Nam's recent rapid digitalisation driven by the private sector proves that competition is crucial to absorb and disseminate the latest technologies. The commitment to net zero emissions by 2050 creates challenges but also opportunities to stimulate innovation and pursue greener growth. Against this background, this paper discusses how Viet Nam can make further progress in terms of levelling the playing field for businesses, providing an enabling environment for the digital transformation and moving towards a low carbon economy.

Viet Nam's strong growth over the past three decades was largely based on factor accumulation as structural reforms implemented since *Doi Moi* in 1986 have encouraged large amounts of fixed investment – both by domestic and foreign investors (Figure 1). The country's abundant natural resources have also been used extensively to fuel the economic expansion. Such a growth pattern is typical in developing countries at their initial stage of development but it usually comes with diminishing returns. Future growth will need to be increasingly driven by the adoption of advanced technologies and improved economic efficiency, which will boost productivity growth and lower environmental pressures.

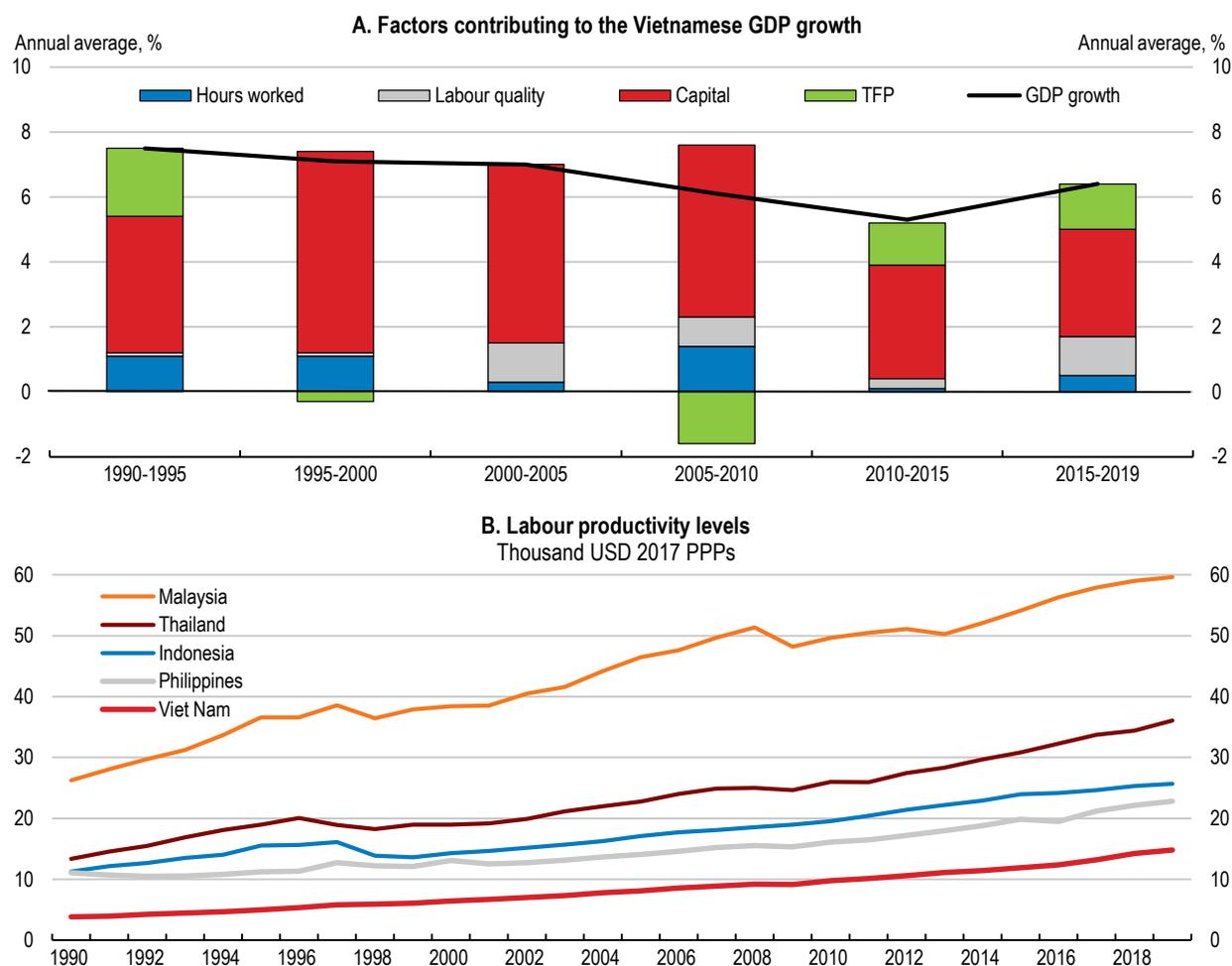
The recognition of this need to boost productivity has prompted renewed policy efforts to step up structural reforms. Signs are emerging that productivity has already benefitted from reforms introduced in the past decade. After slow economic growth in the early 2010s in the wake of the global financial and economic crisis, Viet Nam introduced new market reforms and accelerated its economic integration into global value chains, leading to a rebound of productivity growth. Accelerating structural reforms, including those that help facilitate the exit and entry of firms, could also help lower the costs of the green transition through allowing for smoother resource reallocation from diminishing sectors, such as coal mining which embraces

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a large number of workers in Viet Nam (ILO, 2022^[1]), to emerging sectors. This paper argues that such reforms should continue and even be accelerated. The key messages are:

- Despite improvements underway, Viet Nam's business climate remains difficult, which acts as a deterrent to private business activity and foreign investment. Increasing business dynamism will require further reductions in barriers to firm entry and exit and the introduction of greater competitive neutrality between the various sources of activity.
- Viet Nam is already among the leaders of digital technology in Southeast Asia and has the potential to further develop its take-up of digital tools. Enhancing the diffusion of such technology will require improved skills and less stringent regulation in some areas so as to facilitate experimentation. The government should lead by example and further improve its digital services and facilitate access to data. The private sector should play the key role in digital transformation. Restrictions on cross-border data flows should also be lowered.
- The rapid increase in greenhouse gas emissions is unsustainable. Although Viet Nam has actively promoted the roll-out of renewable energies, this has not prevented a rapid increase in coal-fired electricity production and transport emissions. More needs to be done to shift towards a sustainable energy mix and to improve energy efficiency. Agriculture is also a source of greenhouse gas emissions, especially methane from rice farming. Addressing this source of emissions will support the government's commitment to achieve net zero emissions by 2050.

Figure 1. Viet Nam's productivity has rebounded in the last decade



Note: Labour productivity is defined as GDP per worker.

Source: Asian Productivity Organisation, APO Productivity database 2021.

Improving the functioning of markets will be crucial for the post-pandemic recovery

Viet Nam has relied on a toolkit of policies to spur economic growth in the past decade to enhance business dynamism, improve the business climate, and upgrade its technological sophistication:

- Starting a new business has been made easier, which is essential to encourage a process of creative destruction, where resources can be reallocated to newly created high potential firms from less productive incumbents, and therefore boost overall business dynamism and productivity. New firms can bring innovative technologies and new managerial approaches, which is a source of greater efficiency and productivity.
- Restrictions impeding foreign direct investment have been eased, although not in all sectors. The acquisition of publicly listed firms by foreign investors, through mergers and acquisition, is still subject to an equity limit of 49% in many sectors. Foreign firms are therefore often not able to compete with domestic producers in restricted sectors, hence reducing the benefits in terms of overall business dynamism, innovation, and productivity.
- Incumbent state-owned enterprises have been partially reformed, although they continue to dominate their market with the help of privileged access to credit and land, which distorts competition. Furthermore, the regulatory authorities that supervise state-owned enterprises are not independent from government. This section provides an overview of recent reforms and discusses how to address remaining challenges.

More could be done to enhance product-market competition

Viet Nam has implemented many reforms since the late 1980s to improve the business environment and to enhance competition. Since 2014, the government has set yearly targets with respect to governance quality, competitiveness, innovation and e-government. It has also implemented steps to reduce administrative burdens in areas such as taxation, customs, social security, construction licenses, land registration, electrical access, corporate establishment and closure, and investment procedures. In addition, state-owned enterprise (SOE) reform and private sector development have been at the centre of government policy priorities and efforts to ensure fair competition among different players in the product market. Efforts have also been made to deal with different forms of abuse of market power even by non-state dominant players.

A one-stop shop procedure has also been in place since 2015, with instructions given to relevant ministries to improve the use of online portals and e-government websites. Significant improvements have been achieved in the implementation, including an inter-agency one-stop shop that deals with the various administrative procedures via Public Service Centres to handle business registration, export-import procedures, land use, production safety and tax payments. The online public service system has four levels, and allows making transactions online and beyond administrative boundaries (Decree 61/ND-CP issued in 2018). The electronic system reduces compliance costs and the time required for administrative procedures. It also potentially restricts collusive contacts between businesses and state management agencies, therefore reducing the risk of corruption.

To improve trade facilitation, Viet Nam joined the ASEAN Single Window system in 2015, with involvement of the customs administration and Ministry of Finance. This enables electronic transmission of standardised data and information on shipments, exchange of information between government agencies of various countries and expedited official decisions on clearance and release of cargo and conveyances. Surveys of businesses have shown that the single window system sharply reduces the time needed to clear customs and drastically lowers the cost of cross-border trade procedures. Most recently, two revised laws, the Law on Investment and the Law on Enterprises, which were approved by the National Assembly

in June 2020 and came into effect on 1 January 2021, aimed to improve the business environment, simplify administrative regulations and further facilitate investments.

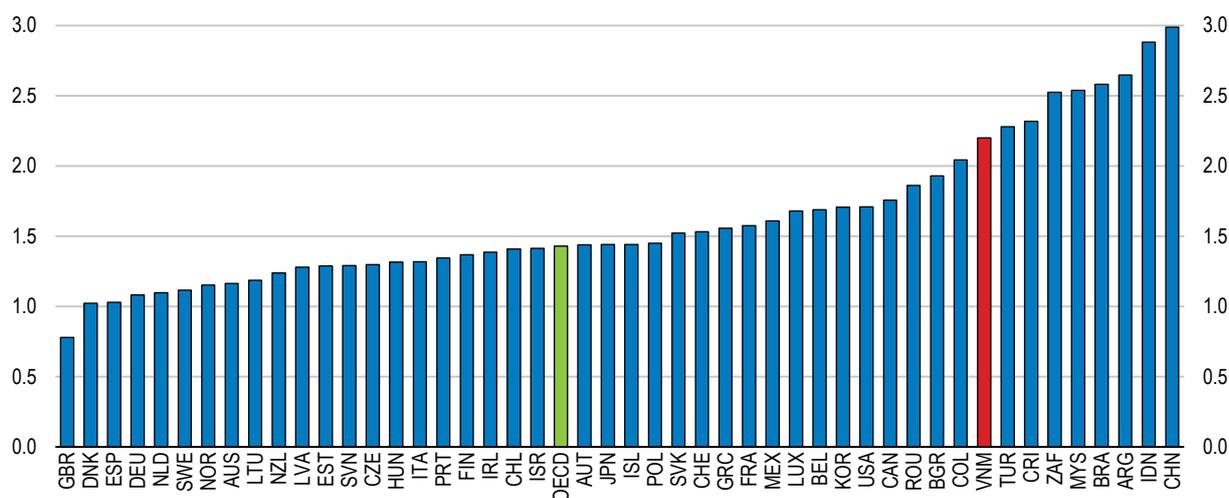
As a result of these reforms, Viet Nam has displayed an improved performance in international benchmarks of market conditions. According to the World Economic Forum report “Global Competitiveness Index 4.0” in 2019, on the “Enabling Environment Component”, Viet Nam ranked 66th (out of 141 economies), based on a score of 64.9. The country’s ranking was better than the Philippines (78th), Cambodia (93rd) and Laos (101st), but lower than for Malaysia (28th) and Thailand (55th) and Indonesia (56th). There have been significant improvements since 2017 when Viet Nam ranked 79th out of 132 countries. Viet Nam performed well in this report in terms of government long-term vision and ICT adoption but less well in settling disputes, competition, insolvency regulatory framework and transparency (Schwab and World Economic Forum, 2019^[2]).

Viet Nam also performs well compared to regional peers according to the OECD Product Market Regulation (PMR) indicators. PMR indicators assess the extent to which regulations support or restrict competition in key sectors of the economy, including the extent to which firms can enter markets and compete with incumbents (Box 1). According to the PMR indicators assessing the situation in early-2022, Viet Nam’s regulatory policies impose lighter restrictions than in the non-OECD emerging-market economies for which data are available (South Africa, Brazil and Argentina) and regional peers (Indonesia and People’s Republic of China (hereafter China) (Figure 2). Competitive forces are therefore allowed to play an important role in the country.

However, delving below the aggregate PMR score gives a more nuanced picture of the policy landscape. The PMR sub-indicator for “barriers to domestic and foreign entry” is low (1.63), suggesting that Viet Nam is widely open to foreign trade and foreign investment and enforces relatively light administrative burdens on businesses and start-ups. By contrast, the PMR sub-indicator for “distortions induced by state involvement” is relatively high (2.77). This reflects an economy where several sectors are dominated by state-owned enterprises (SOEs) and the government is directly involved in business operations, including through price controls. As such, reform efforts should be focused on sectors currently dominated by state involvement, with measures to liberalise market forces in these sectors and reform the governance of SOEs. While the government has already taken steps to equitise state-owned firms and partly float equity stakes in these firms on the stock market, more could be done to sell more shares of equity capital to private investors. More could also be done to improve the governance of state-owned enterprises and reduce the involvement of state ministries and provincial governments in their day-to-day operations.

Figure 2. Regulatory barriers to competition could be lower in Viet Nam

Overall Product Market Regulation Indicator, index scale of 0-6 from least to most restrictive, latest year available



Note: Information used to calculate the 2018 PMR indicators is based on laws and regulation in place on 1 January 2018 or a later year depending on when the information was provided by the relevant country (1 January 2020 for Viet Nam).

Source: OECD, Product Market Regulation database and OECD-WBG, Product Market Regulation database.

Box 1. OECD Product Market Regulation (PMR) Indicators

Competitive pressures in markets for goods and services can bring many economic benefits and ultimately result in faster output growth and higher living standards of citizens. Pro-competition regulation is necessary to ensure that markets function with competitive pressures, helping to reduce market failures. In contrast, improperly designed regulations can impede competition and therefore hinder business dynamism, firm entry and exit, and the ease of reallocation of capital and labour resources. Regulatory reform can help to restore the pressure of competition in markets of goods and services, and eventually boost innovation, productivity, and economic growth.

In emerging markets, the quality of institutions and regulations exerts a large influence on firm productivity, for example through incentives to invest in human capital, make productive investments, and adapt to new technologies. If markets are poorly regulated, such as with weak enforcement of competition laws, inefficient firms can drive competitors out of the market by abusing market power. State-owned enterprises with special privileges to access credit, land and technology have an unfair competitive advantage that can be used to erect barriers that constrain the entry and growth of some highly productive and innovative private firms. Hence, improvements in the business environment and conducive regulatory practices – fair competition, increased business freedom – support growth of multifactor and labour productivity.

To help policymakers design proper regulation, the economy-wide PMR indicators measure the regulatory barriers to firm entry and competition in a broad range of key policy areas, ranging from licensing and public procurement, to governance of SOEs, price controls, evaluation of new and existing regulations, and foreign trade. Since 1998, the PMR indicators have been compiled every five years for most OECD countries, and more recently they have been made available for a range of emerging markets. In emerging Asia, PMR indicators are available for China, Korea, Indonesia, Malaysia and Viet Nam. The indicators take values that range from 0 (least restrictive) to 6 (most restrictive). For most

countries, the latest observation refers to 2018, with more recent measurement for a few countries, including Viet Nam.

Hence, significant room remains available to further improve market forces and reduce government involvement as well as the abuse forms of market power. Building on past progress, market reforms should be pursued with renewed vigour, along with improving the ease of doing business, investment freedom and competitive neutrality. This will be particularly important as the country moves past the most acute phase of the COVID-19 pandemic and needs to cement a solid recovery path (APEC, 2021^[3]). The priority should be to level the playing field between private firms, SOEs and foreign entities. Also important would be to simplify and reduce the regulatory burden faced by SMEs, notably in terms of improving access to land and to financial resources, which could help increase profitability, investment, and growth.

The government has recently adopted a number of initiatives for further market reforms during the period 2022-25 under the Economic Restructuring Action Plan (Resolution 54/NQ-CP/2022). These include steps to reduce the number of procedures requiring time, costs and risks for businesses. The government also plans to reduce the list of investments subject to barriers and eliminate regulations that are overlapping, conflicting, and legally unclear. Land registration will be accelerated, and the renewal of land authorisation will be facilitated. The authorities also wish to promote the digital transformation of the public administration, promote decentralisation and local empowerment, and tailor regulatory policy so as to boost business development and activity. Nevertheless, a consistent implementation will be needed with respect to accelerating SOE reform, further improving SOE management, re-enforcing the implementation of the Competition Law, dealing with all kinds of market power abuse and collusion, avoiding all forms of state-business collusive behaviours harmful for competition.

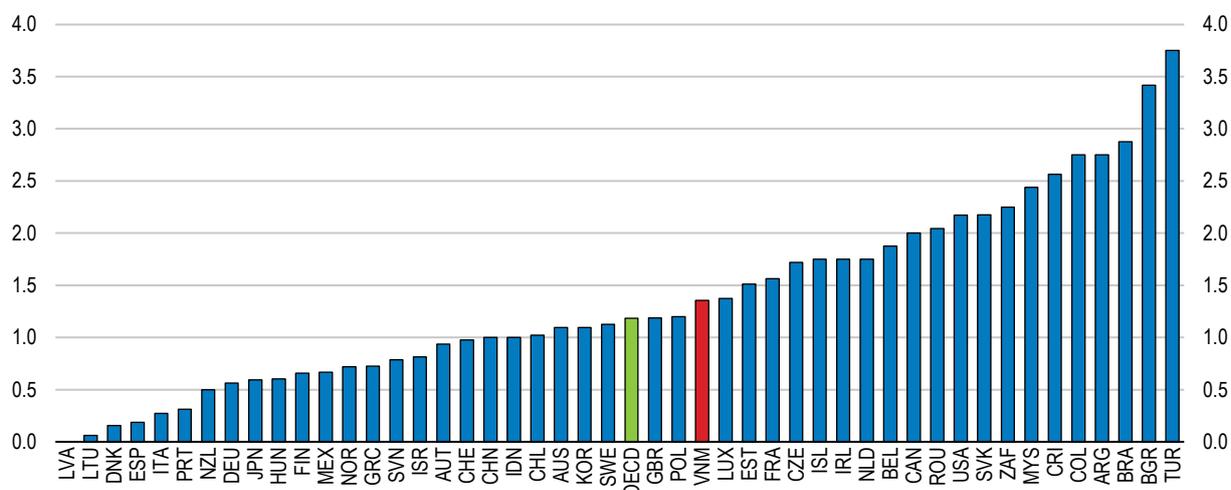
Further broad-based simplification of administrative burdens, cutting red-tape and reducing compliance costs for businesses and households need to be pursued. The Administrative Procedure Control Agency (APCA) inside the Office of the Government has been leading an effort to reduce administrative burdens for over a decade (OECD, 2011^[4]). The new Government Resolution 02/NQ-CP issued in 2022 has specific targets related to the business environment, national competitiveness, technological innovation and sustainable development indicators. The Administrative Procedures Compliance Cost Index (APCI) annual report serves as an important tool for monitoring and improving administrative procedure reform. This report objectively reflects the level of administrative reform, improvements to the business environment and enforcement of policies and laws through analysing costs faced by enterprises when undertaking administrative procedures.

Further enhancing SME development support

Viet Nam's SME and entrepreneurship support policies began in the early 2000s. In 2017, the National Assembly passed the Law on Support for Small and Medium Enterprises (SMEs), which is the first of its kind in Viet Nam and replaces all previous decrees on SMEs (OECD, 2021^[5]). The law provides several measures to support the development of SMEs, with facilitation steps regarding access to credit, credit guarantees, corporate income tax and land use for production. It also establishes new technological support in the form of incubators and start-up hubs, market expansion, information and legal support, and human resource development. In accordance with the SME law, support has been prioritised for women-led, individual and innovative SMEs. Thanks to this reform, the regulatory framework is in principle easy to navigate. Accordingly, the PMR sub-indicator assessing aspects important to SME development, such as the administrative burden on start-ups, obtains a better score than in many emerging-market economies and in some OECD countries (Figure 3).

Figure 3. Establishing start-ups is relatively easy in Viet Nam

Indicator of administrative burdens on start-ups, index scale of 0-6 from least to most restrictive, latest year available



Note: Information used to calculate the 2018 PMR indicators is based on laws and regulation in place on 1 January 2018 or a later year depending on when the information was provided by the relevant country (1 January 2020 for Viet Nam).

Source: OECD, Product Market Regulation database and OECD-WBG, Product Market Regulation database.

Viet Nam has been successful in attracting foreign direct investment (FDI) and entering global value chains (GVCs). The share of exports to GDP reached 93% in 2021 to be one of the highest in the world. Nevertheless, domestic linkages with global value chains remain relatively weak. A survey of Japanese firms operating in Vietnam by the Japan External Trade Organization in 2021 showed that the share of domestic purchase of parts and components in Viet Nam by Japanese firms at 37.4% is higher than Malaysia (35.5%) and the Philippines (30.7%) but much lower than Indonesia (45.5%), Thailand (56.4%) and China (69.5%). The share of domestic firms in these domestic purchases is even lower since most of these purchases are from foreign firms producing in Viet Nam. There are both supply-side constraints (access to key factors of production such as land, credit and technology) and demand-side constraints (market information, product quality, standards and certification) that prevent Vietnamese domestic firms, especially SMEs, from actively engaging in GVCs. Addressing these constraints to help SMEs improve their competitiveness and capacity in product innovation and management is essential to enhance productivity, value creation and value capture for the overall economy.

In early-2021, the OECD published an in-depth review of Viet Nam's policies to sustain the performance of small and medium enterprises and entrepreneurship (OECD, 2021^[5]). The report assesses the quality of the business environment, and national policies in support of new and small businesses. Its main finding is that Viet Nam's business environment is conducive to business growth, although there are still areas for improvement. A key reform has been to lower the statutory corporate tax rate from 32% in the early 2000s to 20% today, which is below the OECD average of about 23%. Preferential tax rates of 15% and 17% have been discussed for SMEs, but not implemented so far. Instead, the government is providing financial help through its SME Development Fund (SMEDF), which supports sectors such as innovative companies, agriculture, forestry, aquaculture, water supply, water treatment and water management, as well as manufacturing firms. A credit guarantee fund (CGF) was also established to facilitate access to finance for SMEs. However, both programmes suffer from low take-up, in part because of the stringency of conditions that need to be met to become eligible. It is crucial that measures for improving the institutional capacity of the SME Development Fund (SMEDF) are undertaken. This will enhance the relevance and accessibility for SMEs, thereby increasing take-up. The local credit guarantee fund (CGF) network that is supposed to facilitate SME access to credit needs to be comprehensively reviewed given its current capacity in both financial and human resources which is very weak.

In addition, during the pandemic the government introduced several supporting measures for SMEs. The corporate income tax was cut by 30% for enterprises with revenues less than VND 200 billion in 2020 and 2021. The government is also supplying non-financial business development services (BDS) to help SMEs improve their managerial performance and improve their ability to compete, with advice in the form of consulting, training, mentoring, and incubating. Three assistance centres were open in key metropolitan areas to provide this advice in-house. The comprehensive Programme for Socio-Economic Recovery and Development (PSERD) adopted by the Government in January 2022 (Resolution 11/NQ-CP) provides an interest-subsidised loan to enterprises (mostly SMEs) and the authorities have committed to “continue to review and remove barriers on institutions, mechanisms, policies, and legal regulations that hinder production and business activities; reducing and simplifying administrative procedures, improving the business investment environment; strengthen the handling of administrative procedures on the online platform”.

In particular, administrative rules remain burdensome for SMEs and should be simplified further. The government should develop a more concrete programme to implement the administration and institutional reforms and business environment component of the PSERD. Many firms claim to have trouble with completing post-registration administrative procedures, obtaining qualification certificates, and certificates proving that they comply with existing technical standards and regulatory requirements. Therefore, companies often have to rely on informal and costly shortcuts to circumvent administrative obstacles. There is past evidence that interference in business activities can be more burdensome for large firms with sizeable profits, further discouraging investment and upgrading (OECD, 2018^[6]). This weak control of corruption is consistent with the results of the Viet Nam Provincial Governance and Public Administration Performance Index (PAPI) 2021 which found that informal factors, such as personal relationships, remain important to secure a place in public sector employment, to get a land use right certificate or to access better healthcare services (CECODES; VFF-CRT; RTA & UNDP, 2022^[7]). This explains to a large extent why the informal sector remains so pervasive and large, despite the simplification of business procedures.

Large differences in administrative burden across provinces

While the overall policy framework is the same for all local governments, there is room for flexibility and proactive initiatives in implementing policy. To make doing business easier, local officials can take different approaches to the administrative procedures required for business operations such as delivering license certificates, approving permits, providing supporting documents, minimising paperwork, conducting inspections and handling tax filing applications. The incidence of bribery and other means of corruption also vary across provinces, and not all provinces have been equally effective in implementing anti-corruption decisions made by the central government and the National Assembly. The Provincial Competitiveness Index, which is designed to assess the ease of doing business, quality of economic governance and the results of administrative reform efforts by local governments in Viet Nam’s 63 provinces and cities to promote private sector development, shows that large gaps prevail between provinces (Malesky, Pham and Truong, 2022^[8]). To facilitate and encourage local government officials to take proactive and innovative actions and to improve government officials’ accountability, a number of new measures have been outlined in the Government New Comprehensive Action Plan for Administration Reform 2021-2030 (Resolution N76/NQ-CP in July 2021). These measures include improving the civil service system, strengthening open and merit-based recruitment and performance evaluation and providing a favourable environment for innovative decision-making culture. It is important to effectively implement these policies. More autonomy in decision making should be further encouraged at all levels of government, with strong accountability systems in place.

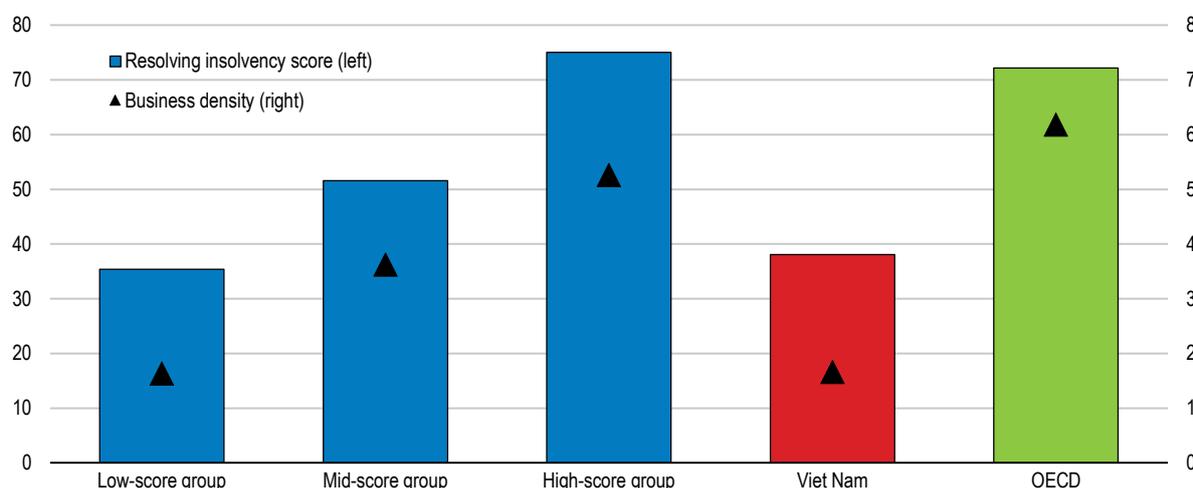
A weak insolvency framework hinders business dynamism

Unrestricted firm entry to markets is important for enhancing product-market competition and productivity. Similarly, unrestricted exit from markets is also crucial to allow unproductive firms to be quickly liquidated, therefore allowing a swift reallocation of labour and capital to other market participants. Empirical research based on firm-level data shows that reforms to insolvency regimes that lower barriers to corporate restructuring are associated with higher multifactor productivity growth of laggard firms (Adalet, Andrews and Millot, 2017^[9]). Hence, insolvency regimes should not unduly inhibit corporate restructuring, which will in turn incentivise experimentation and encourage the adoption of new technologies. Reforming insolvency regimes to reduce the cost and length of procedures can therefore enhance technological diffusion and contribute to faster productivity growth.

In Viet Nam, firm exit can occur through two different processes, notably firm liquidation/dissolution and firm bankruptcy. Final settlements for these two kinds of firm exit are different but both involve time and resources that often lead to a significant delay or protracted settlement that obviously hinders overall business dynamism. In 2021, only 35% of cases were completed (46% in 2022). The procedure for winding down a company seeks to ensure that all debts have been settled and relevant documents are in order. Dissolution regulation requires that all documents are properly prepared and filed with the competent licensing authority to commence the liquidation procedure. Final wind-down approval requires the approval of the tax authority, thus presenting the opportunity to collect any outstanding tax shortfall, relevant penalties and interest. This procedure can be time-consuming and costly: dissolving a company takes in principle four to six months, but in practice it often takes a much longer period if questions are raised by authorities about past regulatory and tax compliance. While the OECD has not compiled insolvency indicators for Viet Nam, indicators from the World Bank Doing Business survey show that there is clearly room to improve insolvency procedures in the country (Figure 4).

Figure 4. Improving insolvency regimes further could help stimulate business dynamism

2020 or latest year available, average of each group



Note: The score for resolving insolvency is the simple average of the scores for each of the component indicators: the recovery rate of insolvency proceedings involving domestic entities, as well as the strength of the legal framework applicable to judicial liquidation and reorganisation proceedings. Business density is defined as new registrations per 1 000 people aged 15-64. 144 countries, where data is available, are grouped by the score of resolving insolvency (44 countries for the low-score group, 44 for the middle, and 44 for the high). Viet Nam belongs to the low-score group.

Source: World Bank, World Development Indicators database and Doing Business 2020 database.

The current insolvency regime is rarely used because it entails significant resources and time and is therefore an impediment when seeking a formal bankruptcy procedure. Reform should take the form of reducing the length of the whole process and increasing the recovery rate for secured creditors (21%

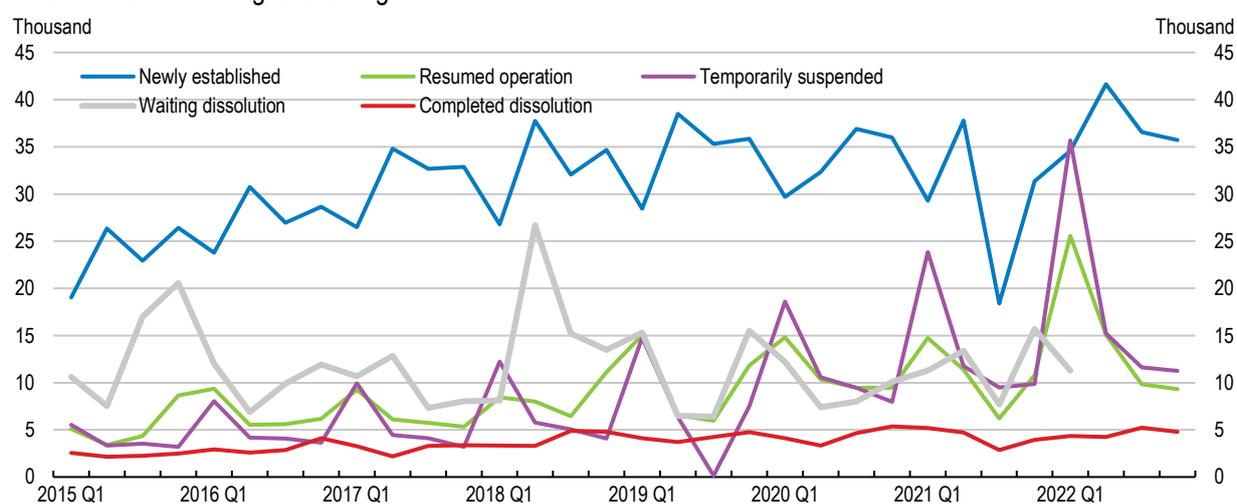
compared to the OECD average of 70%). This would help re-allocate productive resources more quickly and strengthen access to credit by re-assuring creditors of the ability to recover part of their credit if borrowers go bust. In practice, consideration could be given to introducing a specialised SME bankruptcy regime aimed at achieving fast reorganisation and liquidation. For example, in 2020, Malaysia integrated an out-of-court scheme for SMEs into one for individuals to simplify procedures, given that micro-sized firms owned by individual entrepreneurs are more susceptible to adverse economic shocks. In addition, out-of-court restructuring of firms should be encouraged to speed up the process and avoid congestion in courts. A set of indicators should be provided to entrepreneurs to give them information about the risk of bankruptcy, so that they can begin restructuring procedures before becoming insolvent. In addition, the bankruptcy procedure could be accelerated by simplifying some requirements on financial statements of firms and establishing a database of firms.

During the COVID-19 pandemic, government support was provided to avoid a wave of business bankruptcies, like in many other countries. Without such support policy, both viable and unviable businesses would have faced the risk of becoming insolvent and exiting the market, with long-lasting damage to human capital, skills, and economic growth. Successive support packages were approved by Viet Nam's National Assembly, such as combined monetary and fiscal measures in Resolution 43 in January 2022 with VND 40 trillion in funds for loans at a low rate of 2% through commercial banks for businesses in a variety of industries.

According to the General Statistics Office's data, the number of firms leaving the market increased by 17.7% in 2021 from the previous year, a relatively small increase considering the strictness of confinement measures throughout the year. Out of 119 800 enterprises leaving the market, about 55 000 were temporarily suspending operations, while 48 100 stopped operations while waiting for approval of their dissolutions (Figure 5).

Figure 5. Permanent firm exits did not surge during the pandemic

Number of firms entering and exiting



Source: CEIC.

Effective public consultations matter for the quality of regulation

Viet Nam has a strong system for public consultation on new regulations, but there is scope for the process to be further developed. The 2015 Law on Promulgation of Legal Documents (the 2015 Law on Laws) provided a solid legal framework for public consultation (social criticism) on new legal documents. The revised Law in 2020 reinforces further this foundation. It requires that feedback and comments obtained as a result of a public consultation on a draft legal document should be assessed by the sponsoring

agencies and attached to the draft legal document for approval (National Assembly, 2020). However, public consultation can often be a formal procedure without substantive discussions; time for inputs is limited and there is a serious lack of incentives and interest from various stakeholders to provide meaningful contributions to the legal document formulation and approval.

Formulating regulations in an open and transparent fashion, with appropriate and well publicised procedures such as consultation of all interested stakeholders, brings many benefits. In particular, it improves the quality of rules and programmes, and it also improves compliance and reduces enforcement costs for both governments and citizens subject to regulations. Most OECD and non-OECD countries have designed public consultation procedures to collect feedback on draft regulations and ensure that regulators can take into account the views of opposing interests in designing new rules, as well as bringing in expertise and new ideas on how best to design new policies. Countries have adopted procedures that must be put into place when designing new regulations such as:

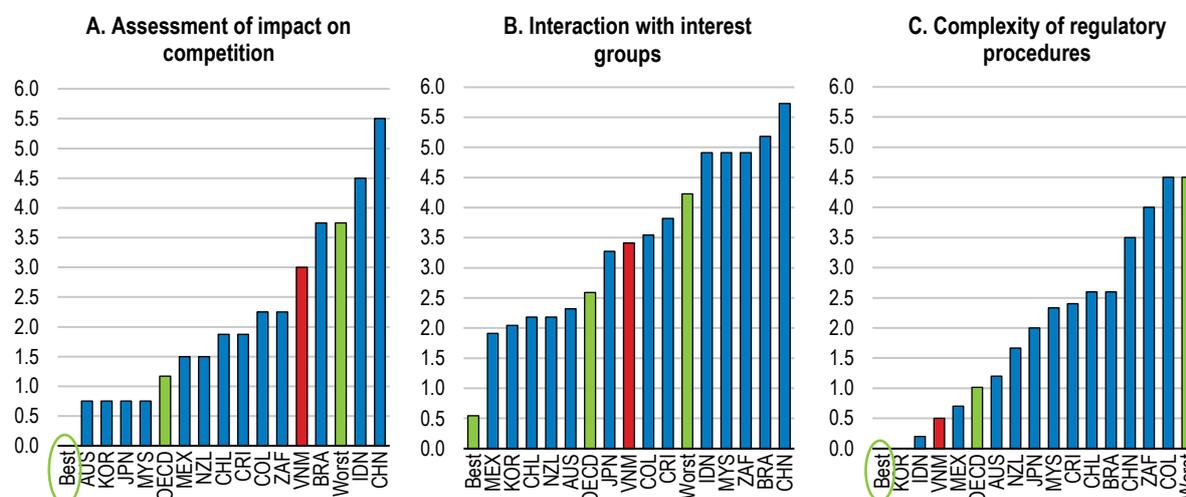
1. Notice-and-comment practices that involve a pre-publication of regulatory proposals and a public invitation to post comments on these proposals within a prescribed time period.
2. Public hearings where interested parties and groups are invited to comment in person on a regulatory proposal, in addition to other forms of public consultation.
3. Advisory bodies such as councils, committees, commissions and working parties with a defined task within the regulatory process and composed of either only government officials, or a combination of stakeholders.
4. Lobbying regulations to ensure transparency in the interaction between businesses and interest groups with policy makers and avoid unjustified influence over the regulatory process, which would result in less pro-competitive regulation, or regulation that protects incumbents or firms with stronger lobbying capacities. Requiring policy makers to make their agenda of meetings publicly available and require “cooling-off” periods, during which departing government officials cannot join private entities they had previously been regulating, are examples of such measures.

The PMR indicators take into account these various channels to compile a sub-indicator on “interaction with interest groups”. According to this sub-indicator, Viet Nam has a strong performance overall in this area (Figure 6). This reflects the considerable progress made in improving the quality of its regulation-making processes. Viet Nam has an established practice of extensive and generally effective consultation with affected stakeholders both within and outside government and, for principal legislation, multiple stages of quality checking from different perspectives at the policy formation, drafting and enactment stages (OECD, 2018^[6]).

According to the legal system, draft legislation must be posted on websites and mass media. Legislative proposals, including the assessment of their impact, must be placed on government websites for 20 days to solicit comments. The draft legislative agenda, once finalised and submitted to the National Assembly for consideration, is to be posted on the Internet. A draft Legal Normative Document (LND) is to be posted for comment online for at least 60 days and any changes to that draft, incorporated pursuant to its appraisal by the Ministry of Justice, are similarly to be posted. The lead agency should collect comments from the concerned agencies and those who would be directly affected by the legislation. For LNDs affecting business, the drafting agency must also send the draft to the Viet Nam Chamber of Commerce and Industry to collect comments. These comments are to be consolidated, analysed, and incorporated into the draft. A consolidation of the comments, and a report on their incorporation, then accompanies the draft to the Ministry of Justice for appraisal, as well as being posted on the relevant website.

Figure 6. Viet Nam can further improve its regulatory assessment

Indicators of the simplification and evaluation of regulations, index scale of 0-6 from least to most restrictive, latest year available



Note: Information used to calculate the 2018 PMR indicators is based on laws and regulation in place on 1 January 2018 or a later year depending on when the information was provided by the relevant country (1 January 2022 for Viet Nam). Best/worst represents the OECD best/worst performing country.

Source: OECD, Product Market Regulation database and OECD-WBG, Product Market Regulation database.

Social organisations have the right to comment on, and propose, amendments to drafts of laws, ordinances and regulations. Rule-makers are also required to collect opinions of citizens, especially those who are directly affected. The law imposes a duty on rule-makers to collect opinions of the concerned organisations and individuals on draft laws and ordinances, and to consider, summarise, review and write replies to the collected opinions (Le, 2016^[10]). Rules are also in place to reduce the risk of conflict of interest, notably cooling-off periods applying to government officials who wish to join the sector that they previously regulated. However, public consultation rules such as public hearings and consultation of advisory bodies are not embedded in the legal system, including at the level of local governments. Hence, public consultation should benefit from a more formal anchoring in the process of legislative and regulatory policy.

The governance of SOEs should be improved to ensure competitive neutrality

The goal of promoting competition is not only about consumer welfare and dynamism in existing markets, but also encouraging innovation and knowledge diffusion, and making sure that missing markets can be created (Aghion, Cherif and Hasanov, 2021^[11]), (Hasanov and Cherif, 2021^[12]). Antitrust authorities have therefore a crucial role to play in ensuring that incumbent firms do not abuse their market power and prevent entry by innovative firms. Experience in advanced and emerging economies shows that the predominance of state-owned enterprises (SOEs), and the preferential treatment that they get from governments, often result in distortions to competition, lower business dynamism, weak innovation, and subdued economic expansion. Empirical research using data from emerging Asia finds that the relatively low performance of SOEs poses several problems, including slowing down economic growth, which is especially pronounced in countries where these firms represent a large share of the economy (Taghizadeh-Hesary et al., 2019^[13]).

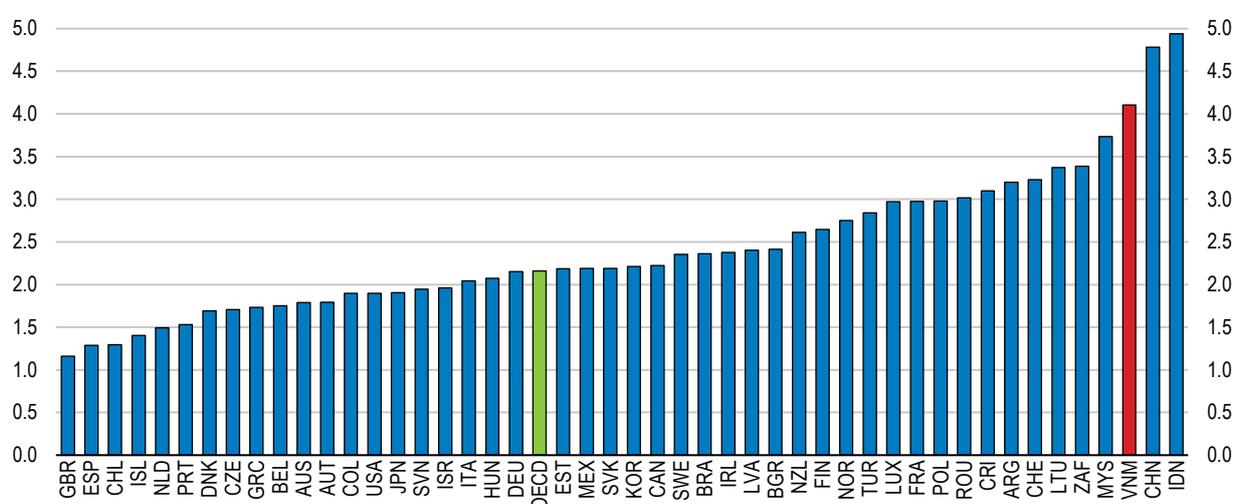
Concerns about the potentially negative impact from a large sector of SOEs have encouraged the adoption of corporate governance codes, which were initially formulated by the OECD (OECD, 2005^[14]) and built upon by the World Bank (World Bank Group, 2014^[15]). The OECD codes of governance provide concrete advice to countries on how to manage more effectively their responsibilities as owners, and thus help them to make SOEs more competitive, efficient and transparent. The World Bank adds emphasis on

performance monitoring and fiscal discipline, with research seeking to identify the most suitable performance indicators, as well as the most appropriate monitoring and evaluation systems. Some countries have been successful in reinvigorating their SOEs and making them contribute productively to strong and inclusive growth, while in other countries the performance of SOEs remains disappointing, with negative consequences for citizens. Avoiding bailing out lagging SOEs with state aid is therefore important to create space for new entrants that will bring innovation and dynamism.

Viet Nam has reduced the number of SOEs from 12 000 in the 1990s to around 2 000 in 2020 (enterprises with over 50% state-owned capital, including 100%) (General Statistics Office, 2022^[16]). According to the Agency for Enterprise Development, based on a different definition used in the 2020 Law on Enterprises, the number was smaller but still 673 in 2021. The government has also authorised the equitisation of SOEs since the 1990s, and further efforts have been ongoing to widen the floatation of equity on stock markets thanks to the government's extensive divestment programme. Nonetheless, the economic importance of state-owned enterprises remains very large by international standards (Figure 7 and Figure 8), with entire sectors still dominated by a few of these firms, such as in energy (electricity (87%) and petroleum products (84% of gasoline retail sale)) and telecommunications (90% of mobile phone subscribers). The government retains a significant share of ownership in SOEs, even when equitised, in part because foreign investors have not participated in the process. The equitisation of SOEs in 2016-2020 was rather slow: only 39 out of 128 targeted SOEs were equitised; 106 out of 348 targeted were divested with total value of divestment about VND 6 500 billion or 11% of the target (Ministry of Planning and Investment, 2022^[17]).

Figure 7. Public ownership of enterprises is widespread in Viet Nam

Indicator of public ownership, index scale of 0-6 from least to most restrictive, latest year available



Note: Information used to calculate the 2018 PMR indicators is based on laws and regulation in place on 1 January 2018 or a later year depending on when the information was provided by the relevant country (1 January 2022 for Viet Nam).
Source: OECD, Product Market Regulation database and OECD-WBG, Product Market Regulation database.

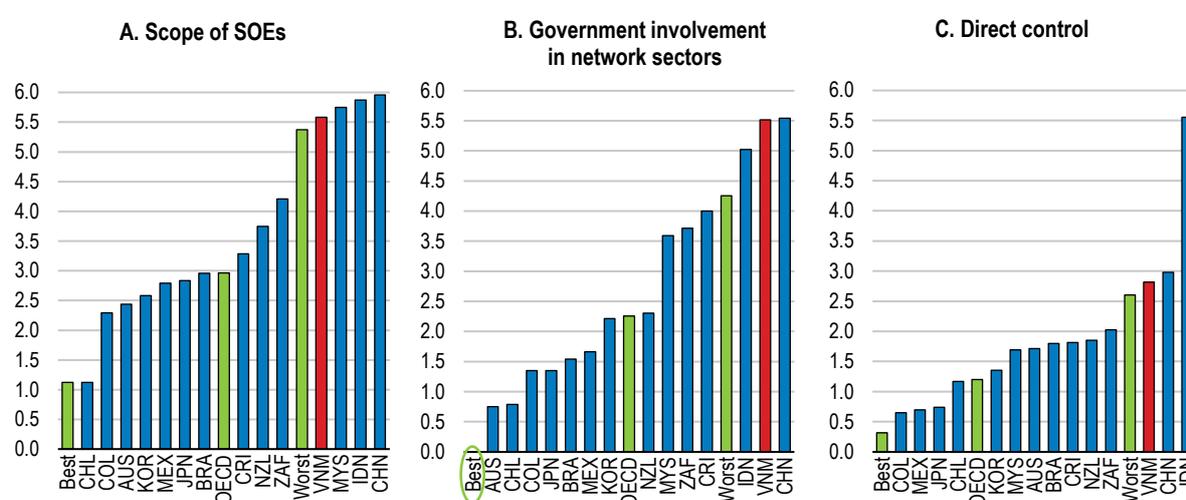
In many OECD countries where the state is the owner of enterprises, governments seek to achieve “competitive neutrality”, i.e. the equal treatment of private and state-owned firms. An important goal is to separate the role of the government as owner of enterprises and regulator of their activities, so as to avoid conflicts of interest. OECD corporate governance codes provide useful guidelines to achieve competitive neutrality, such as establishing independent regulators, which do not depend on a ministry and have an autonomous budget.

A new OECD review of Viet Nam's SOE governance (OECD, 2022^[18]) did not detect formal statutory discrimination between SOEs and private firms. However, it detected continued conflation of the exercise

of ownership rights, the government's explicit use of SOEs as a main vehicle for the implementation of the State's industrial or sectoral policies, and no clear separation between policy formulation and regulatory responsibilities, among others. In some measures, SOEs account for a large part of the economy. Concerning SOEs with 100% state-owned capital, although their number was 0.1% of all enterprises, they held 24% of the total fixed assets and their average asset size was 18 times larger than that of foreign-owned enterprises in 2020 (Socialist Republic of Viet Nam Government News, 2022^[19]). Continued policy efforts to ensure a level playing field between SOEs and private firms are crucial. In this regard, the new OECD PMR sub-indicator on public ownership control confirms that government involvement in SOEs is high in Viet Nam (Figure 8).

Figure 8. Vietnamese government involvement in SOEs is high

Indicators of public ownership control, index scale of 0-6 from least to most restrictive, latest year available



Note: Information used to calculate the 2018 PMR indicators is based on laws and regulation in place on 1 January 2018 or a later year depending on when the information was provided by the relevant country (1 January 2022 for Viet Nam). Best/worst represents the OECD best/worst performing country.

Source: OECD, Product Market Regulation database and OECD-WBG, Product Market Regulation database.

Viet Nam should pursue a clear separation between the functions of ownership and regulation, in order to ensure a level playing field with the private sector and to avoid competitive distortions. This requires clear laws and regulations that protect the independence of regulators, especially vis-à-vis ministries. Budget autonomy of regulators is also important to ensure that they remain immune to the influence of ministries. It is also important that regulators have the appropriate financial and human resources to function adequately and with the right level of operational independence. In this context, a Resolution issued by the Central Executive Committee of the Communist Party (12-NQ/TW in 2017) set a policy objective to separate and clearly define the functions of state ownership and regulation for state-owned enterprises, which is a welcome step.

The government should also clearly formulate its ownership policy and how it should behave as an owner. Clear and published ownership policies provide a framework for prioritising SOE objectives and are instrumental in limiting the dual pitfalls of passive ownership or excessive intervention in SOE management. In addition, the government should increase the independence of SOE corporate boards and improve the transparency of the nomination process. One of the most effective tools to protect minority shareholders is the election of independent directors. The public perception in Viet Nam is sometimes that independent directors are not independent-minded and there is a risk that the nomination process could be influenced by factors, which are not necessarily conducive to better SOE management, such as selection and removal of directors not based on professional criteria. Minority shareholders should be able

to exert influence on their election through the possibility of nominating candidates through e-voting. The board nomination process should include full disclosure about prospective board members, including their qualifications, with emphasis on the selection of qualified candidates.

In addition, Viet Nam should do more to assure that SOE boards of directors play a strong, autonomous, and professional role. This requires that the appointment of SOE board members follow a strong procedural framework, including selection and removal based on professional criteria, which is beneficial to efficient operations of SOEs (World Bank; Ministry of Planning and Investment, 2016^[20]). At present, CEOs and the top management of SOEs are often appointed by the Prime Minister or by sectoral ministers. In some cases, important corporate decisions are made directly by the government (OECD, 2022^[18]). Instead, these appointments should be made based on professional credentials, and through a transparent process, to ensure full accountability.

The government established the Commission for the Management of State Capital at Enterprises (CMSC) in February 2018. The Commission, which became operational in September 2018 under Decree No. 131/2018/ND-CP dated 29 September 2018, is an autonomous government body. It exercises full ownership rights in several enterprises in which the State owns 100% of the charter capital and acts as the representative of state capital in joint stock and limited liability companies with more than one shareholder. The CMSC is currently charged with exercising the state's ownership role in 19 of the country's state-owned entities – many of which are Corporate Groups or the even larger State Enterprise Groups. By one estimate from the Ministry of Finance of Viet Nam, its portfolio amounts to around 200 individual companies and the total value of state equity in these companies is over VND 1 000 trillion.

The CMSC has a co-ordination power over SOEs in its portfolio, but it is required to take important decisions in concert with other government bodies. An impediment to its effective influence is that it does not have a comprehensive data collection and reporting mechanism to formulate a comprehensive view over key financial and non-financial data of companies in its portfolio. Due to the lack of data and limited sectoral knowledge of the CMSC across its portfolio of SOEs, line ministries in practice continue to play an important role in the control of SOEs, which implies that regulatory functions and policy formulation are undertaken *de facto* by the same bodies (OECD, 2022^[18]).

The provision of state aid support to SOEs, either explicit or implicit, contravenes the spirit and the texts of international free trade agreements. Viet Nam has signed many trade agreements, which have benefitted the country by encouraging foreign investment and facilitating access to foreign markets, and should therefore make sure that the operations of SOEs do not contravene them. The recently signed Comprehensive and Progressive Agreement for Trans-Pacific Partnership and EU-Viet Nam Free Trade Agreement explicitly prohibit state aid, with transition periods to withdraw existing subsidies. As this happens, SOEs will have to become competitive and innovative in their own right. An important step in phasing out state aid will be to stop providing government guarantees on debt issued by SOEs, as such guarantees undermine competitive neutrality and provide an undue advantage to these public companies. The government has stopped providing such guarantees since 2018 and should continue to reduce the stock of existing guarantees.

Reflecting these concerns, the Ministry of Planning and Investment issued in early 2022 a draft project on “Developing large state-owned corporations, especially multi-ownership state economic groups, to promote the leading role and the role of paving the way for enterprises of other economic sectors”. The government will select a few large and strategic enterprises, using criteria of overall size, market share, profitability, use of technology and corporate governance. The selected SOEs will be encouraged to form linkages with value chains, promote innovation, and enter into participation agreements with firms in other economic sectors. Ministries will be encouraged to consider these large SOEs like private enterprises, with the management of these firms allowed to make decisions autonomously.

While SOE reform remains important for private sector developments, policy challenges are presently emerging from large private domestic corporations. Recent cases of stock and bond market manipulation

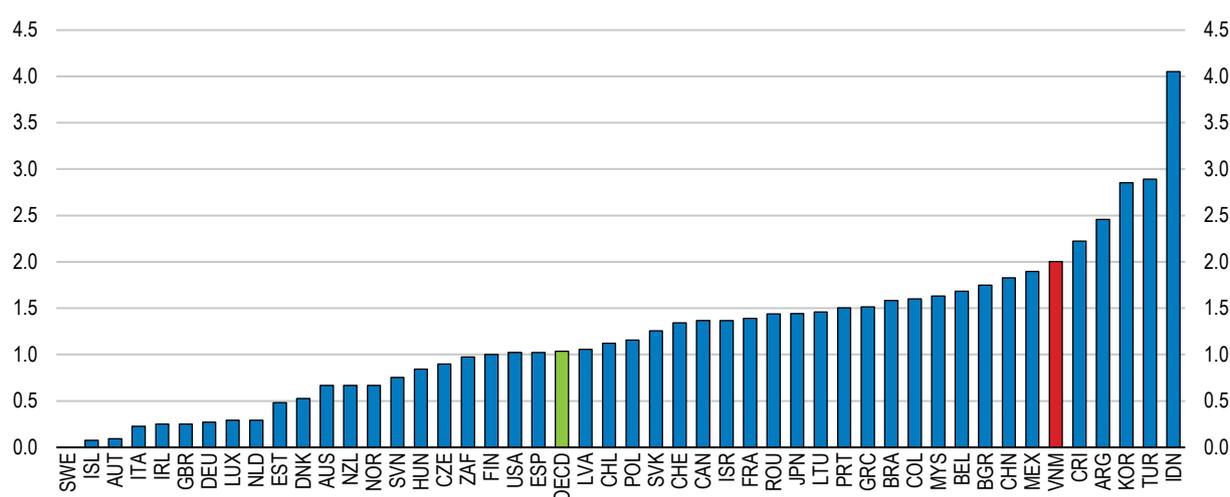
by some large private corporations have revealed that large private corporations can also cause serious sovereign risks due to their significant exposure to the banking and financial sectors and their increasing importance for job creation. Although few in number, they are therefore creating “market or monopoly power” problems. The new generation of Viet Nam’s reform to strengthen business dynamism should therefore also focus on improving the regulatory environment for all market players, regardless of ownership, to ensure a level playing field for all market participants, including small, medium, and large sized state and private enterprises.

Price controls hinder product-market competition

Controls of retail prices are used as a policy tool in a number of countries to some extent. However, they are more widely used in Viet Nam than in many other countries covered by the OECD PMR indicators, although they are less extensive than in some regional peers such as Indonesia (Figure 9). Price controls in Viet Nam are implemented through two main mechanisms: price stabilisation and price determination as stipulated in the 2012 Law on Price and its subsequent Decrees. Price stabilisation measures can be enacted only when prices of essential goods or services on a pre-determined list change irregularly or price changes of these products affect socio-economic stabilisation. Eleven categories of commodities are under the price stabilisation list, including gasoline and petrol products, electricity, liquefied petroleum gas, fertilisers and pesticide, sugar, salt, powdered milk for children aged under 6, rice, vaccine and some medicine. The government can use several policy tools, such as rationing, direct purchase or sales, tax measures and price fixing. Price stabilisation is rarely used. Price determination (price cap or band) is applied to a number of commodities and services such as air transport, power transformation, water, health care and education service. Additional measures of price control have been placed temporarily on some health services and equipment. In 2022, the government halved the environmental tax on fossil fuels to ease the abrupt hike of gasoline prices caused by the war in Ukraine. The government intends to gradually narrow the list of goods and services under prices controls along with the country’s economic development.

Figure 9. Viet Nam should further ease price controls

Indicator of retail price controls, index scale of 0-6 from least to most restrictive, latest year available



Note: Information used to calculate the 2018 PMR indicators is based on laws and regulation in place on 1 January 2018 or a later year depending on when the information was provided by the relevant country (1 January 2022 for Viet Nam).
Source: OECD, Product Market Regulation database and OECD-WBG, Product Market Regulation database.

Price controls are frequently motivated by social goals such as protecting the income of producers (with a price floor) or conversely protecting the living standards of consumers (with a price ceiling). However, there is considerable evidence across countries that price controls distort production and investment decisions,

delay market entry, misdirect consumer choices (leading often to over-consumption), and can favour the development of parallel black markets. Price controls hinder market forces and restrain competition because more productive and innovative suppliers are not able to gain market share by offering lower prices than their competitors. Price controls deter the market entry of new investors, which are likely to be disincentivised by the lack of scope to compete with other participants. As such, price controls act as a hindrance to business dynamism, innovation, and creative destruction. Relaxing retail price controls and eventually liberalising them have been a key policy priority in OECD countries. In addition, price controls entail significant fiscal risks when retail prices are set below production costs and can lead to an inefficient use of resources by distorting the signalling mechanism provided by prices. Finally, environmental damage can result from the under-pricing of commodities and their over-consumption. A better and more targeted approach than generalised price controls to protect low-income households is to provide means-tested cash transfers, which enable vulnerable families to purchase the goods and services needed for their daily subsistence (Guenette, 2020^[21]).

Liberalising prices subject to controls can be challenging, as shown by episodes of social unrest following sharp price increases in food and energy products. Nevertheless, the policy objectives of keeping costs of living at a manageable level for vulnerable households can be more efficiently achieved through alternative measures such as direct cash-transfers to vulnerable households. Prior conditions need to be established, including a well-designed social safety net to help vulnerable households hit by price increases. The successful experience of natural gas price liberalisation in Ukraine in 2015-16 and Egypt in 2012 suggests that relaxing price controls can be achieved without undue social impact if means-tested subsidies are made available and take-up encouraged by large communication campaigns and with the help of social workers (Guenette, 2020^[21]). Some other policy settings that support competitive markets are also a pre-condition to successful price liberalisation. Strong competition and consumer protection authorities together with antitrust laws are essential components to support market forces and dealing with government influence on competition, including state monopolies. The new 2018 Competition Law provides a better legal and regulatory framework to support competitive markets, including a special clause prohibiting government agencies to obstruct competition law enforcement. Effective implementation of this Law will constitute a more effective response to many of the problems that price controls attempt to address (see below).

Accelerating digitalisation after the pandemic

The diffusion of digital technologies has significant potential to boost productivity. Digital technologies help to access new knowledge and facilitate the diffusion of innovation. They can also contribute to better-functioning markets by enhancing competition. For instance, the wide use of online platforms has lowered transaction costs by putting sellers and buyers in touch directly, including across borders, and by reducing information asymmetries. In the services sector (hotels, taxis, restaurants and retail trade), platforms boost the productivity of incumbent service firms and stimulate labour reallocation towards more productive firms in these industries (Bailin Rivares et al., 2019^[22]), (Costa et al., 2021^[23]). In Viet Nam, examples of rapid business development triggered by digitalisation include the emergence of ride-hailing platforms, such as Uber followed by Grab, Gojek and Be, which have displaced incumbent taxi services.

Like in other countries, the outbreak of COVID-19 has accelerated the digitalisation of Viet Nam as businesses adopted teleworking arrangements and shoppers used e-commerce services more actively. In addition, schools switched to online education following confinement orders by health authorities and government services were increasingly provided via official online platforms. Together with Indonesia, Viet Nam saw the highest growth rate in the daily average hours spent online for personal use in ASEAN-6 countries (Asian Development Bank, 2021^[24]). This section discusses how the country could continue to take advantage of digital opportunities as it emerges from the health crisis.

For emerging markets, embracing digital technologies provides an opportunity to leapfrog various steps in technological development; for instance, China went directly to master technologies linked to artificial intelligence, big data, image recognition, blockchain and digital currencies. In 2022, Viet Nam also decided to accelerate its digital transformation with a new “National Strategy to Develop Digital Economy and Digital Society by 2025, with orientation to 2030”. The government aims to improve the digital infrastructure, accessibility to 5G services and e-government portals, with the objective for the digital economy to account for 30% of Viet Nam’s GDP by 2030, compared to estimates of 6-8% of GDP at present. This would imply further digitalisation, which is likely to require strong policy support. To facilitate the digital transformation of the business sector, the government currently provides various support, including technical advice. In addition, the government should deepen trade integration. In particular, attracting foreign investment in the broad digital economy, including services sectors, will help promote the digital transformation of the domestic economy.

With the fast growth of digital activities around the world, the question of how to measure statistically the size of the digital economy has gained importance, together with the analysis of its economic, financial and social impact. Work under the auspices of G20 countries have made progress to identify the main issues and discuss measurement options. It has been proposed to agree that “The digital economy incorporates all economic activity reliant on, or significantly enhanced by the use of digital inputs, including digital technologies, digital infrastructure, digital services and data. It refers to all producers and consumers, including government, that are utilising these digital inputs in their economic activities” (OECD, 2020^[25]). However, measuring the digital economy remains fraught with difficulty due to the lack of a universally accepted definition and reliable statistics on its key components, especially in developing countries. Depending on the definition used, the size of the digital economy is estimated at 4.5 to 15.5% of global GDP. A “narrow definition” of the digital economy includes the ICT sector, ICT-producing sectors and digital and platform-enabled products/services (“sharing economy”), but does not include ICT-using sectors such as tourism and transportation.

Using this narrow definition, a previous study suggests that Viet Nam’s digital economy is estimated to have grown strongly since the late 2010s (Google, TEMASEK and BAIN&COMPANY, 2021^[26]). Besides manufacturing of products such as smartphones and micro-processors by FDI firms, Viet Nam’s digital economy encompasses financial technology, blockchain, gaming, education technology, healthcare and e-commerce. Viet Nam has three digital unicorns (VNG, VNPay and MoMo) and eleven startups valued at over USD 100 million such as Tiki and Topica Edtech. It has increasingly attracted large amounts of financing, both domestic venture capital and international investment. While this is a good start, the country has the potential to expand its digital activities at an even faster pace.

Digital transformation and innovation

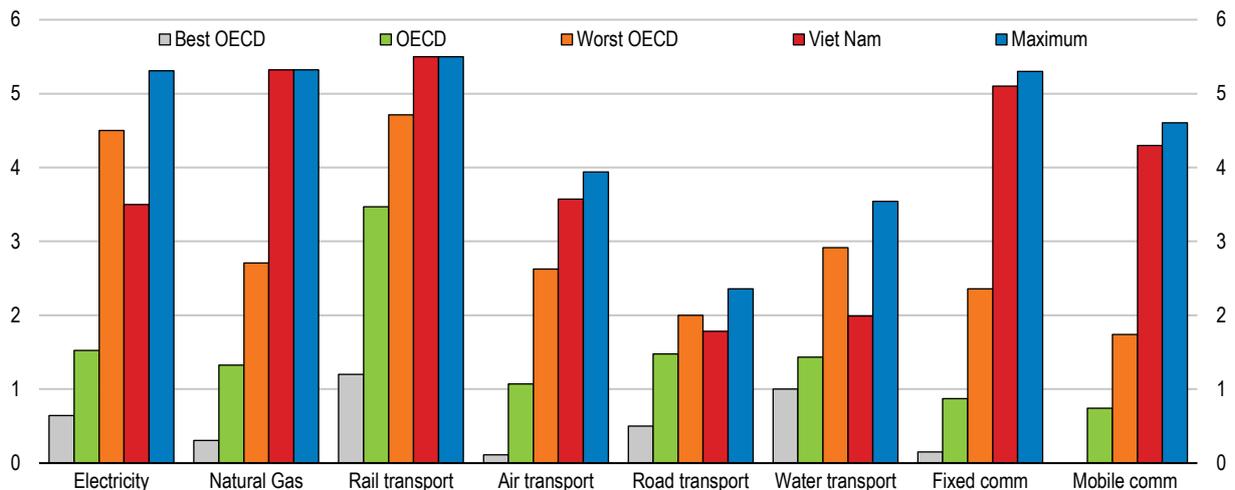
Digital innovations are transformative because they can be applied and diffused much more quickly than other technologies. The time required to innovate, test and apply digital technologies is much shorter than in manufacturing, energy, or medicine. For example, it took only a few years for artificial intelligence to provide accurate voice and image recognition and to make it available on multiple devices. In both advanced and emerging countries, most people now have access to e-commerce, services platforms, telemedicine, video streaming and e-government portals. Firms that apply these technologies to new products and services can challenge incumbent companies and trigger a fast reallocation of labour and capital, which boosts productivity and economic dynamism.

Both existing big firms and new small start-ups can be part of this transformation – as seen in Viet Nam where large state-owned enterprises were quick to roll out modern mobile telephone networks, while new start-ups were entering the business of ride-hailing and cashless payments. Big companies have the financial power and economies of scale to undertake large digital projects, while small start-ups are agile and flexible and can challenge incumbents. However, market failures resulting from network externalities,

advantages for incumbents deriving from user data and economies of scale due to high fixed costs and low variable costs can result in dominant market positions that are hard for new entrants to challenge. Governments should therefore make sure that markets dominated by one large company remain contestable and open to firm entry so as to retain the beneficial dynamism arising from digitalisation and technological innovation. However, in Viet Nam the evidence presented in this paper is that high barriers to entry, weak implementation of competition policy, including banning anti-trust behaviour, has made it difficult to challenge firms with established market power in some sectors (Figure 10).

Figure 10. Several network sectors are strictly regulated in Viet Nam

Index scale of 0-6 from least to most restrictive, latest year available



Note: Information used to calculate the 2018 PMR indicators is based on laws and regulation in place on 1 January 2018 or a later year depending on when the information was provided by the relevant country (1 January 2022 for Viet Nam). Best OECD/worst OECD represents the OECD best/worst performing country, while maximum corresponds to the most restrictive country among those in the PMR database. For mobile communications, the OECD best scores is zero.

Source: OECD, Product Market Regulation database and OECD-WBG, Product Market Regulation database.

In this regard, a significant improvement in providing a sound legal framework to tackle the abuse of market dominance and monopoly positions has been made in the New Competition Law 2018. However, effective implementation of this Law requires speeding up the process of establishing a new National Competition Commission (NCC) which has a broader and stronger mandate and enhanced capacity to deal with uncompetitive behaviour and to ensure a sound business environment for fair competition. The amalgamation of the two previous agencies to deal with competition issues under the previous 2004 Law, namely the Vietnam Competition and Consumer Agency and Vietnam Competition Council, into the single National Competition Commission (NCC) will help streamline institutional arrangements. However, this may also cause some difficulties in operation due to putting different tasks that require different mandates and institutional support under one authority. Under the 2018 Law, the National Competition Commission will conduct all legal proceedings from detection, investigation to handling of violations of the Competition Law and complaints against settlement decisions on handling of competition cases. In particular, the power of dealing with complaints against its settlement decisions has the potential for conflicts of interest to arise. Therefore, the NCC should ensure high levels of transparency and accountability in its policy implementation to attain trust in competition policy.

On the other hand, many SMEs are faced with numerous obstacles and challenges in realising the digital transformation. In particular, high investment costs, limited knowledge and a lack of human resources make adoption of digital technologies and changes of their business processes difficult. Against this background, the government has been providing a range of supporting programmes for SMEs. For

example, the Supporting Enterprises' Digital Transformation Programme 2021-2025 includes awareness-raising campaigns, training and consulting for SMEs. The 2017 Law on Supporting Small and Medium Enterprises explicitly stipulates that the government needs to formulate policies to support SMEs, such as financial support, including in the area of digitalisation.

The successful digital transformation of Viet Nam will also require investing in digital skills. At present, many firms are unable to use advanced digital technologies due to the lack of workers with the relevant skills. More investment in education, training, and reskilling will be needed so that Vietnamese firms can make a more widespread use of cloud computing, big data and artificial intelligence, while protecting users from cybercrime and consumers from using their private data.

Digital infrastructures have expanded rapidly

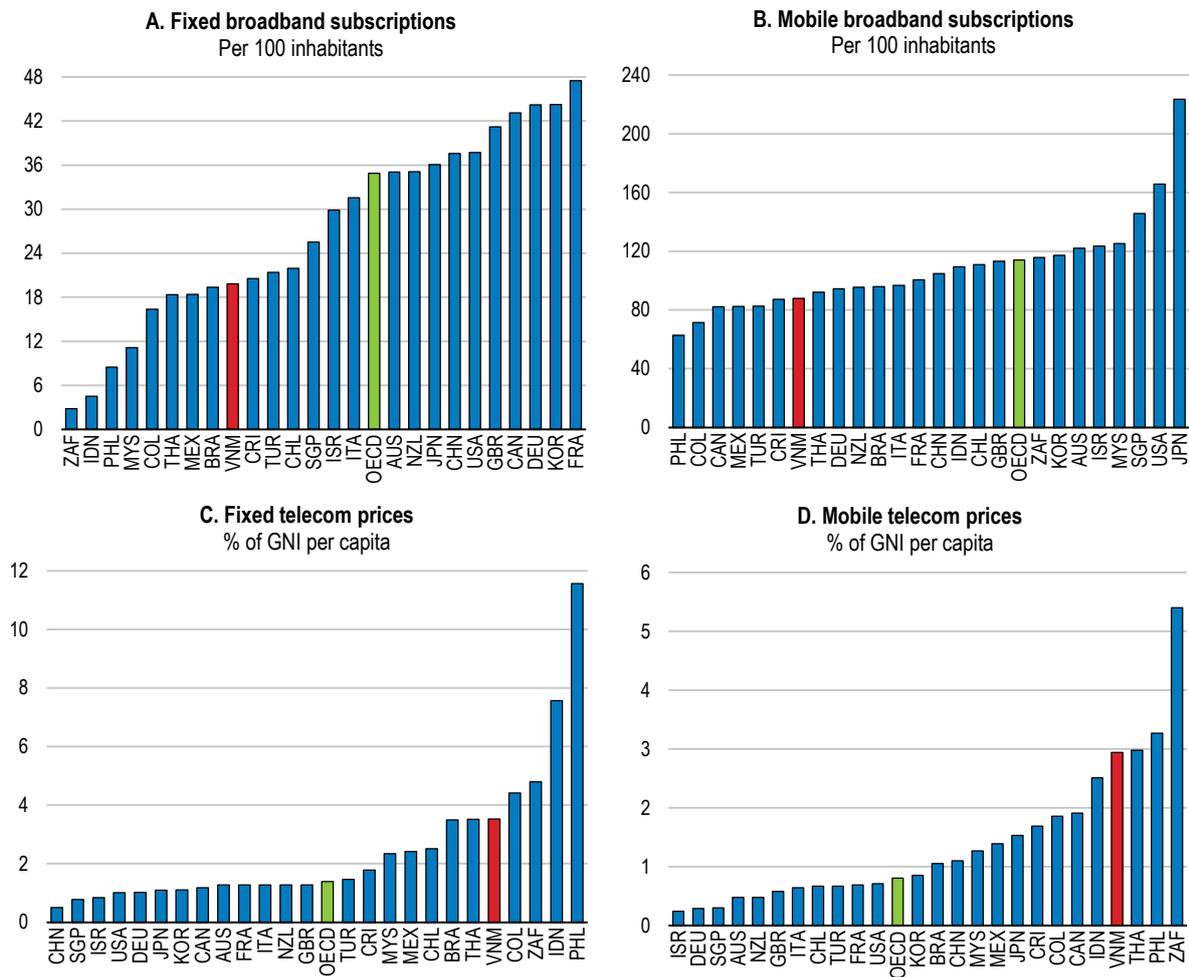
Widespread and affordable access to high-quality mobile telephone and internet connections are essential to the diffusion of digital technologies. Starting from little connectivity in the 1990s, Viet Nam has proceeded fast with the expansion of mobile internet and fixed broadband, including fibre optic. Mobile telephony subscriptions have grown by nearly 3 million per year over the last decade and are now widespread, with more mobile phone subscription than people in the country. Almost 88% of the population has a mobile broadband data connection, allowing them to access internet services and e-government websites (Figure 11), though with varying quality. High-speed 4G connection is not always available in rural and mountainous areas, and the speed of internet connection is slow compared to peers (World Bank, 2021^[27]). Viet Nam plans to issue licenses for 5G wireless service in 2022 following pandemic delays, with coverage to start in Hanoi, Ho Chi Minh City and other urban areas, which will allow access to high-speed internet and may avoid installing costly fibre infrastructure. However, building a fibre optic network will remain essential for businesses, schools, universities, and government agencies – and will require large investments.

Like in other parts of the Vietnamese economy, state-owned enterprises (SOEs) dominate the telecommunication sector. Viet Nam Posts and Telecommunications Group (VNPT) is the incumbent operator owned by the Commission for the Management of State Capital at Enterprises (CMSC), a financial holding entity of the government. Following the creation of a separate regulatory entity, market segments were opened to competition, starting with mobile services in 1995. However, SOEs are still dominating the telecommunication market. Vinaphone, one of the largest mobile operators, is a subsidiary of VNPT and other big players, MobiFone and Viettel are owned by the CMSC and Ministry for Defence respectively. Although the competition among these state-owned telecommunication corporations has resulted in lower prices of telecommunication services, it has hindered the entry of domestic private firms to the telecommunication market, which will be important for Viet Nam in the long term to improve efficiency and transparency in the market. The ownership of these companies has been transferred to the CMSC but, as noted in the previous section, sectoral ministries are perceived as still exerting considerable influence on the management of these companies, including through the appointment of board members, senior executives, and with favourable access to land and credit.

While there is a telecommunication regulator (Authority of Telecommunications), it is a ministerial unit inside the Ministry of Information and Communications, rather than a regulator that is independent of the ministry. If regulators are independent, they can operate impartially without favouritism or conflicts of interest. For instance, major operators, often SOEs, could request favourable treatment, or regulators could behave in the ministry's interest. Such arrangements can discourage other operators from entering a market in the first place, and thus distort competition. Against this background, a number of countries have enhanced the independence of the regulatory bodies in the telecommunications sector with respect to the institutional set-up of regulators, the structure and sources of their budget and the scope of their functions (OECD, 2016^[28]). In Viet Nam, the line ministry oversees the regulator of the sector. Further strengthening regulatory independence would promote competition in the market.

Figure 11. Stronger competition could reduce telecom prices further

2021 data



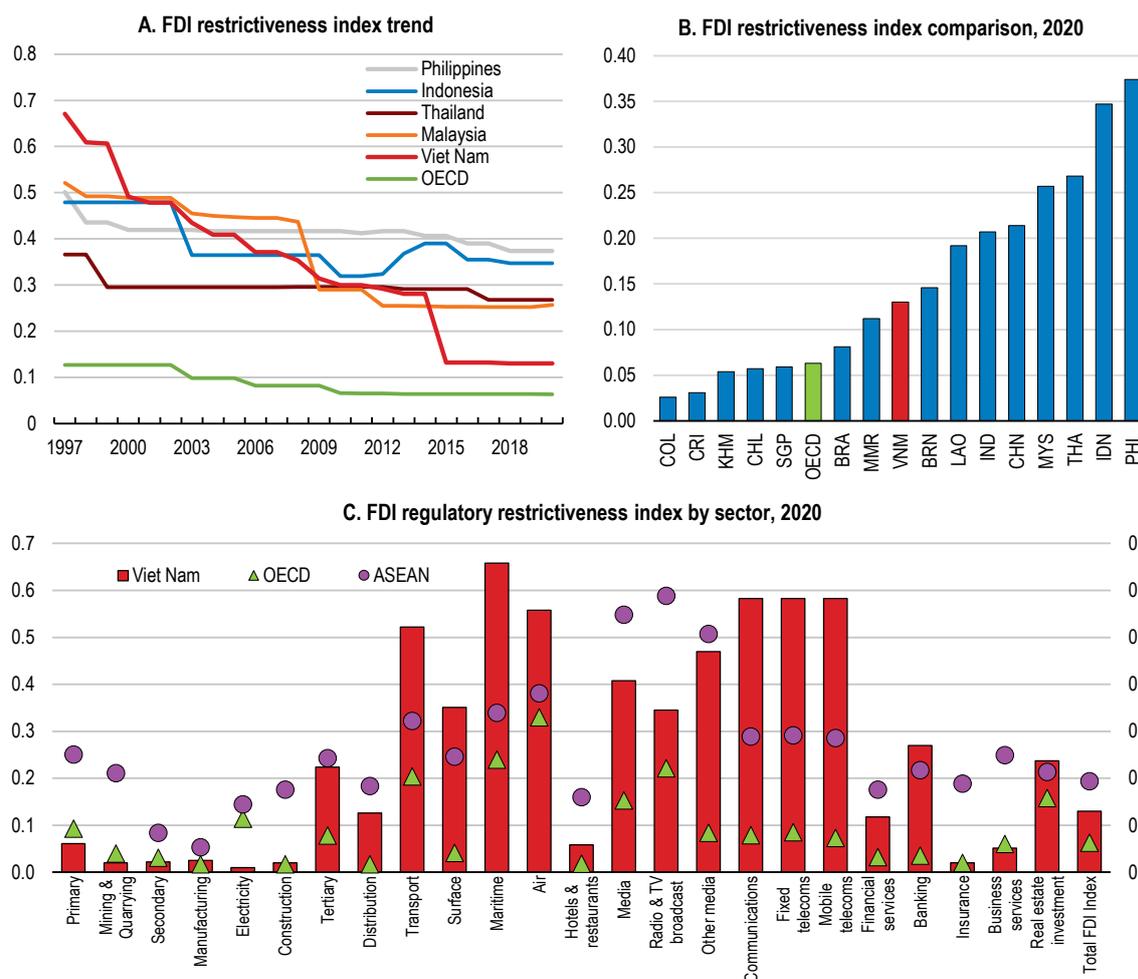
Note: The fixed telecom price refers to a fixed-BB basket with 5 GB and the mobile telecom price refers to a high usage voice and data allowing up to 140 minutes of phone calls, 70 SMS and 2 GB data.
 Source: International Telecommunication Union.

In the telecommunications sector, foreign investors still face some restrictions. Research finds that foreign investment has positive spillover effects on domestic industries, including cross-border dissemination of technologies (Pham, 2009^[29]), (Arnold, Javorcik and Mattoo, 2011^[30]), (Arnold et al., 2016^[31]). Moreover, foreign investment in the digital sectors, especially digital infrastructure, is crucial to help facilitate the digital transformation of the domestic economy (Satyanand, 2021^[32]). Indeed, MobiFone was initially established as a joint-venture with a Swedish telecom company. The OECD FDI Regulatory Restrictiveness Index shows that Viet Nam maintains tighter entry restrictions in the sectors of communications, mobile telecoms and fixed telecoms (Figure 12). Greater liberalisation of entry conditions would therefore boost Viet Nam’s business dynamism, with likely tangible benefits for total factor productivity (OECD, 2018^[33]). Foreign investors are currently subject to a range of restrictions. Services must be offered through commercial arrangements with an entity established in Viet Nam and licensed to provide international telecommunication services. While foreign ownership is allowed up to 65% in non-facilities-based services (i.e. non-infrastructure services providers), majority ownership in facilities-based telecommunications activities is prohibited, thus greatly reducing investors’ interest. Moreover, the Prime Minister’s approval is required for investment in telecommunications services with network infrastructure. In this regard, trade integration gives Viet Nam strong reform momentum. The government has made firm commitments to widen market access to foreign investors in the context of the Regional Comprehensive Economic

Partnership and the ASEAN Framework Agreement on Services (ASEAN-Japan Centre, 2022^[34]). A new Law on Telecommunications is envisaged to remove the restriction on commercial arrangements, among others. Nevertheless, the government intends to maintain the foreign ownership restrictions. In particular, the restriction on majority ownership in facilities-based telecommunications activities could be further relaxed.

Figure 12. Viet Nam's FDI restrictions have been eased except in the transport and communications sectors

OECD FDI Regulatory Restrictiveness Index, scaled from 0 (open) to 1 (closed)



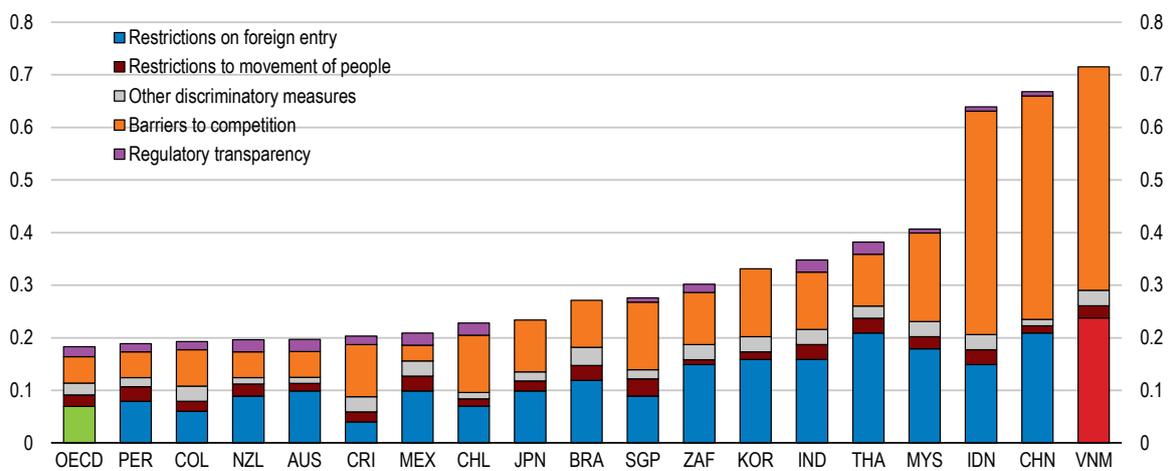
Note: The OECD FDI Regulatory Restrictiveness Index covers only statutory measures discriminating against foreign investors (e.g. foreign equity limits, screening & approval procedures, restriction on key foreign personnel, and other operational measures). Other important aspects of an investment climate (e.g. the implementation of regulations and state monopolies, preferential treatment for export-oriented investors and special economic zones regimes among other) are not considered. See Kalinova et al. (2010) for further information on the methodology. Source: OECD FDI Regulatory Restrictiveness Index database, <http://www.oecd.org/investment/fdiindex.htm>; see also the ASEAN FDI Regulatory Restrictions Database for information on the underlying measures captured in the Index, https://qdd.oecd.org/subject.aspx?Subject=ASEAN_INDEX.

Ensuring a more conducive environment to cross-border data flows is crucial to promote digital innovation. The cross-border flows of telecommunication and digital services are strictly regulated by the government. The OECD Services Trade Restrictiveness Index (STRI) compares the degree of restrictions in services trade across a sample of OECD and non-OECD countries. Among these countries, Viet Nam has the strictest score for telecommunication services (Figure 13). This reflects restrictions regarding foreign investment in these sectors, foreign participation in executive boards and obligations to have presence of

executives in the country. In addition, Viet Nam's regulations prescribe that certain types of data (such as accounting data and some user-generated data) must be stored in the country, rather than on cloud servers in foreign countries. The Law on Electronic Transactions and the Law on Cybersecurity both contain legal provisions to store certain data in the country for certain enterprises. Both domestic and foreign companies providing telecommunications, internet, and value-added services must store related personal data in the country. Viet Nam, China and Russia are among the very few countries that apply strict limitations on cross-border data flows. While restrictions of the localisation of data can enhance data privacy and consumer trust, helping to fight cyber-criminality (Figure 14), they also involve unnecessary compliance costs and restrictions on the free flow of data, creating trade barriers. Such barriers can reduce the benefits of being integrated in global digital networks.

Figure 13. Viet Nam's cross-border regulations on telecommunications are very strict

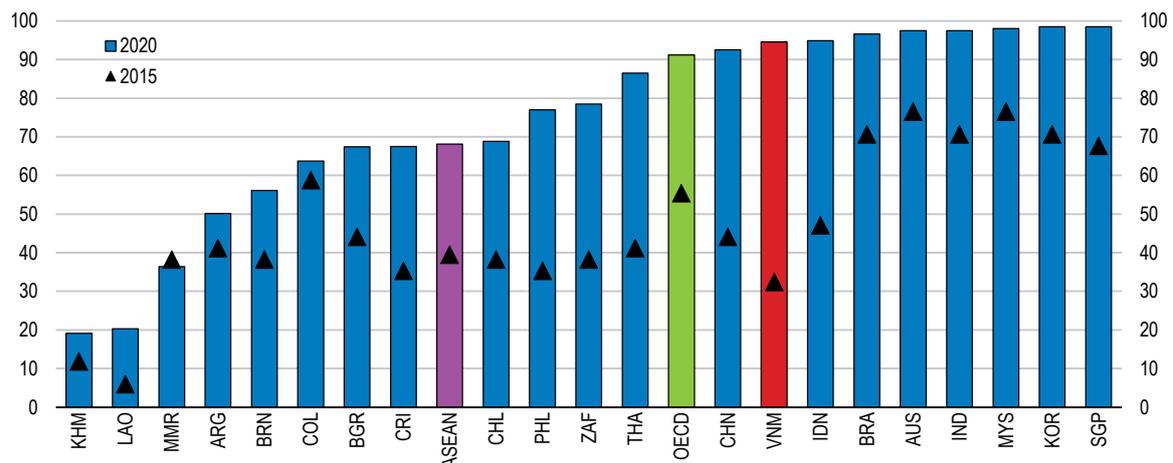
Services Trade Restrictiveness Index ranging from 0 (open) to 1 (closed), 2021



Source: OECD, Services Trade Restrictiveness Index database.

Figure 14. Viet Nam has strengthened its cybersecurity measures

Global Cybersecurity Index, score from 0 to 100 (best)



Note: The Global Cybersecurity Index is a composite index of indicators that monitors the level of cybersecurity commitment in five pillars (legal, technical, organisational, capacity development and cooperative measures). For more details, see Source.
Source: ITU, Global Cybersecurity Index 2020 and Global Cybersecurity Index & Cyberwellness Profiles 2015.

Strengthening the acquisition of digital skills

Strengthening digital skills among the labour force is crucial to accelerate the digital transformation. Acquiring digital skills can also help Vietnamese workers reap the benefits from the digital economy, notably through seizing opportunities for better jobs and utilising digital technologies that enhance well-being. The outbreak of COVID-19 has also encouraged the take-up of digital skills because physical distancing has required the shift to on-line education, teleworking, tele-medicine and e-government. However, successful acquisition of digital skills requires tremendous motivation and efforts by individual workers and businesses and government support concerning education and training. Designing and implementing a digital skills development programme need to be tailored to the needs of different groups of people and different levels of education in a comprehensive and cohesive framework.

Government policy should focus not only on enhancing the supply of high-skilled workers but also on nurturing basic skills for all workers. In the digital world of work, three different types of skillsets become important (OECD, 2019^[35]). First, workers need to be equipped with general cognitive skills, such as literacy and numeracy, and basic digital skills. For example, business communication using email and searching information on the internet requires these general skills as the foundation of conducting daily business tasks. Second, soft skills become more important. These skills include analytical skills and a range of complementary skills such as problem solving, creative and critical thinking, communication skills and a strong capacity for continuous learning. While digital technologies reduce demand for routine jobs, workers also need to deal with more complex job tasks, resulting in an increasing demand for these types of skills. Moreover, working in occupations more directly related to new technologies, such as programmers, requires advanced digital skills.

Enhancing basic digital skills of all workers should be a priority. Viet Nam has invested in basic education and achieved both high enrolment rates and high-quality outcomes. The results of the OECD's Programme for International Student Assessment (PISA), based on tests administered in 2015 on 15-year-old students, show that students in Viet Nam were on par with the OECD average in mathematics and reading, while they scored above the OECD average in science (Viet Nam participated in PISA 2018, but the international comparability of the results could not be fully ensured). However, compared with the advancement of basic education, levels of basic digital skills among workers are not sufficient to meet the growing demand. Business people consider that workers with basic digital skills have been lacking in Viet Nam, with evidence suggesting that people are less equipped with basic digital skills than in peer countries (Figure 15). In this regard, experience of other Southeast Asian countries would be useful. Malaysia, where basic digital skills of workers are considered to be among the highest in the region, has strong training programmes for basic digital skills (OECD, 2021^[36]). The eRezeki programme provides people in the bottom 40% income group with opportunities to develop basic digital skills for jobs, such as programming and translation. The eUsahawan programme trains entrepreneurs who lack digital knowledge. Entrepreneurs can attend courses at community centres, public education institutions and on online learning platforms. In Viet Nam, the government has introduced a knowledge dissemination initiative at the community level. A group of experts (digital technology group) is formed to enlighten citizens on basic digital skills, such as the usage of digital apps, while the government prepares guidelines for the pilot programme. By end-August 2022, 51 provinces have participated in the pilot programme and 45 895 digital technology groups were established at the community level. This initiative could be further enhanced by strengthening financial support by the government and collaboration with education institutions.

Nurturing basic digital skills is also helpful for people to improve their broad skills. Building on e-learning platforms mostly for digital skills of public sector workers, including local government workers, the government has promoted mass open online courses for all adults. Mass open online courses can potentially provide training opportunities for a range of skills, including non-digital skills, for a large population group with low costs. However, lower digital skills of people can be a significant obstacle to their active participation, in addition to other constraints, such as limited access to computer and internet

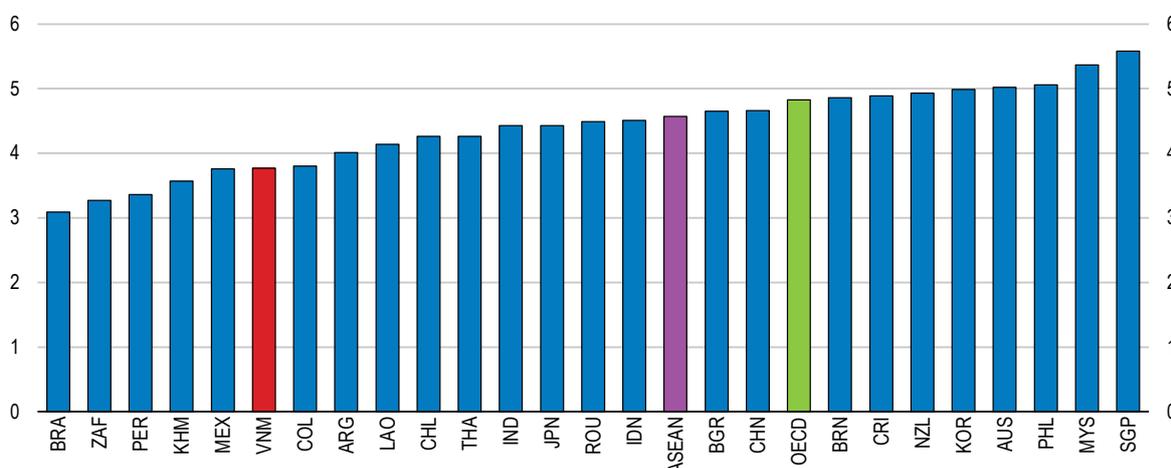
facilities (OECD, 2020_[37]). Therefore, to strengthen the usefulness of the increasing online learning opportunities, it is crucial to invest more to improve basic digital skills.

The supply of workers equipped with advanced digital skills also needs to be enhanced. For example, such skills are often in the areas of software programming, big data analysis, managing digital hardware and networks, cybersecurity and machine learning. The lack of advanced digital skills is likely to hinder the digitalisation of Vietnamese businesses compared with other countries, especially for tasks requiring knowledge of advanced technological tools. Only 7% of Vietnamese firms used cloud computing for business tasks and just under 2% of firms used big data or artificial intelligence for marketing purposes (Cirera et al., 2021_[38]). More generally, only about 6% of manufacturing firms used additive manufacturing or advanced manufacturing techniques, and less than 2% used robots. In the European Union, more than 40% of businesses used cloud computing in 2021 (Eurostat, 2021_[39]).

Viet Nam should strengthen the quality of vocational training and higher education in terms of digital skills. The acquisition of advanced digital skills typically takes place in OECD countries at the level of vocational training and higher education and continues during the adult life with on-the-job training and lifelong learning. While Viet Nam has achieved high levels of education enrolments in primary and secondary education, enrolment in tertiary education still lags behind, with gross tertiary enrolment of only 28.6% in 2019, less than in peer countries such as Malaysia (43.1%), Indonesia (36.3%) and far behind the OECD average. Furthermore, student enrolment in tertiary programmes in tracks relevant for digital skills, namely “natural sciences, mathematics and statistics” and “information and communication technologies”, has been very low at 0.6% and 1.0%, which is five to ten times lower than the OECD average and enrolment in the region (OECD, 2020_[40]). Previous studies highlight that Viet Nam’s rapid technological advancement could bring a large skills gap in areas such as agro-processing and logistics sectors, meaning that the gap will have to be addressed by technical and vocational education and training (TVET) institutions which provide up-skilling and re-skilling opportunities (Asian Development Bank, 2021_[41]).

Figure 15. Viet Nam needs to improve its population's digital skills

Digital skills among population, score from 1 to 7 (best), 2019



Note: Based on response to the Executive Opinion Survey question “In your country, to what extent does the active population possess sufficient digital skills (e.g. computer skills, basic coding, digital reading)?” [1 = not all; 7 = to a great extent].

Source: World Economic Forum, Global Competitiveness Index 2019.

In response to growing digital skill needs, the Vietnamese government has introduced policies to develop the acquisition of digital skills in all levels of education and vocational training. Digitalisation of education is conducive to nurturing broader digital skills. For example, Hungary has a higher share of ICT graduates than the EU average (4.3% and 3.6% of total graduates), but has put strong emphasis on the digitalisation of higher education, adopting the Digital Education Strategy and the Shifting of Gears in Higher Education Mid-Term Policy Strategy (2016-2030) (OECD, 2021_[42]). In Viet Nam, the government issued a Decision

131/QD-TTg in January 2022 which aims at “enhancing the application of information technology and digital transformation to create breakthroughs in educational and training innovation; renovating state management in the field of education and training; positively and comprehensively transform the mode of operation, improve quality, efficiency and equity in education”. Further action is needed to establish new platforms for online and distance learning, notably national open sources for education at all levels and forms of education. Targets included in the government plan are: by 2025, 50% of students and teachers will have adequate facilities (internet connections, software and hardware) for online and distance learning; 5% of courses at primary schools and 10% at secondary schools will be provided online. Education management should also be digitalised and the government plan is that 100% of education establishments will be managed by digital platforms and databases.

The government has also adopted a 5-year programme aimed at strengthening the use of digital technology in vocational training. The reform requires that all trainers and managers receive supplementary training to improve their capacity to conduct vocational training activities in the digital environment by 2030. All lecturers and trainers will be required to create digital learning documents. The programme also aims to create a national digital platform for vocational training with shared digital resources for training and learning activities, to digitise all training processes, results, and degrees. Training curricula will be changed to meet digital transformation requirements, and the digital infrastructure of vocational education institutions will be strengthened.

For post-education workers, digital skills can be obtained through lifelong learning, adult learning and on-the-job training. Many Vietnamese are aware of the challenges of digitalisation and ready to learn new skills, including basic digital skills. According to a recent survey, 84% of Vietnamese respondents say that they would learn new skills now or completely retrain in order to improve future employability in response to the digital transformation, which is higher than the global average (77%) (PwC, 2021^[43]). Governments can encourage firms to train their workers, for instance, by contributing to the cost of training. Additionally, the provision of e-government services can encourage ICT use by individuals by helping to foster an affinity with digital technologies. Financial support for digitalisation of the education sector is important to achieve ambitious targets. Special support also needs to be designed for “training of trainers” for all levels of education, especially at primary and secondary schools.

Looking ahead, there is a need for further identifying and monitoring skill gaps and mismatches; continuing reform of the training curricula across education levels; enhancing linkages between business and training institutions; developing and applying new learning platforms. Measuring people’s digital skills is also important to formulate more effective policy measures. Viet Nam could benefit from participating in international programmes to benchmark its workers’ skills. For example, the OECD’s Programme for the International Assessment of Adult Competencies (PIAAC) aims at providing assessment and analysis of adult skills, including literacy, numeracy and problem solving in technology-rich environments.

Digital finance: fast rise of cashless payments

The Vietnamese banking system has expanded rapidly in recent years, though it remains small by international standards. A large share of the population is without access to financial services: there are only 4.0 bank branches per 100 000 adults, much less than other countries in other ASEAN countries. By the end of 2020, only 68.4% of Vietnamese adults (aged over 15) had a bank account, much lower than Indonesia, China, Thailand, Malaysia, and Singapore. Although increasing, the penetration of stock-market accounts and insurance accounts was only 4% and 11% respectively in 2020. In addition, the banking system has been subject to cyber-threats and breaches, and further bank computer network attacks are feared in the future without improvement in cybersecurity.

When provided via new technologies such as mobile phones, digital finance offers the opportunity to deepen financial development and incorporate more people into the banking system. As in many other countries, the outbreak of COVID-19 accelerated the take-up of digital services in Viet Nam because

contactless payments were favoured during periods of confinement in order to avoid physical contacts. This acceleration of digital services has benefitted lower-income groups that previously did not have access to the financial system.

Cashless payments have expanded at a fast pace in Viet Nam, such as payments via QR code, mobile payment on Mobile Banking, Internet Banking, and Mobile-Money applications. The number of ATMs has increased to over 21 thousand, points of sales (POS) systems to more than 410 thousand and QR accepting points to over 100 thousand by end-2022. However, in terms of the number of ATMs, the level of development is still relatively low by international comparison: in 2020, Viet Nam had 26.3 ATMs per 100 000 adults, which was well below the world average (61.4), the ASEAN average (40.6), Indonesia (51.7) and Malaysia (55.6). On this metric, Viet Nam ranked 91 out of 110 countries. Security of transactions has also improved thanks to secure biometric authentication, card information encryption (tokenisation) and safe and convenient electronic identification (eKYC).

Three telecommunication companies, namely VNPT-Media, MobiFone, Viettel, were approved to pilot their Mobile Money services for goods and services of small value. This project aimed at promoting cashless payment and enhancing financial inclusiveness, especially for people in rural areas, mountainous areas, remote areas, border areas and islands. Mobile Money has provided these groups with a non-cash payment tool, and therefore accelerated the digital transformation of population groups who had previously not benefited from the technological innovation resulting from digitalisation. Various fintech companies have also been set up to provide digital wallets that combine online payments with e-commerce and other electronic services. Timo, a fintech company, provides technical solutions for banks. MoMo is the largest e-wallet, with a variety of digital services in addition to electronic payments.

The fast development of cashless payments, via private electronic platforms, in all countries around the world including Viet Nam, has triggered a debate about the future of currencies issued by central banks (Demmou and Sagot, 2021^[44]). Technological developments make it possible to send secure messages that are fully traceable and therefore offer the opportunity of deeply reforming existing payment systems. Consumers are increasingly expressing a preference for new payment methods, outside of the traditional infrastructures of commercial banking and central banking. The availability of blockchain technology has facilitated the fast growth of cryptocurrencies, created by private initiatives, which fall outside the existing regulatory framework and financial supervision networks. However, the risks of financial instability, payment fraud, tax evasion, money laundering and criminal activities are such that central banks have started to consider issuing their own form of digital currency rather than allowing the circulation of private digital currencies.

Viet Nam is currently restricting the use and mining of cryptocurrencies. In 2014, the State Bank of Viet Nam (SBV) warned against the risks and dangers of operations and transactions related to Bitcoin and other similar cryptocurrencies. It also confirmed the non-acceptance of Bitcoin and other similar cryptocurrencies as legal currencies and means of payment in Viet Nam. In 2019, the issuance and use of cryptocurrencies were forbidden. The SBV instructed credit institutions and payment intermediary service providers not to participate in transactions and operations related to cryptocurrencies due to possible risks of money laundering, terrorism financing, payment fraud, and tax evasion. It also asked these institutions to report suspicious transactions and operations related to cryptocurrencies.

Viet Nam should consider creating a more enabling environment for digital finance. If it is well regulated and supervised, digital currency-based payment systems offer the opportunity to reduce transaction costs – therefore lifting trade, growth and employment. At present, transaction costs on foreign remittances are large – the current global average cost for international remittances stands at 7%. As Viet Nam receives very large amounts of foreign remittances from emigrated workers and its diaspora, the benefits would be substantial. Furthermore, these benefits would largely accrue to lower and middle-income households. In 2021, Viet Nam received remittances of USD 18 billion and is one of the top-ten recipients among low- and middle-income countries (Ratha et al., 2022^[45]). In Asia, several central banks are piloting the issuance of

digital currencies including Cambodia, China, and Korea. As Viet Nam's authorities have adopted the dual stated objectives of expanding digital government services and promoting cashless payments, researching and piloting experiments involving a central bank digital currency is an option. In 2021, the Prime Minister assigned the SBV to study and propose mechanisms and policies on central bank digital currency and the Governor of SBV approved a Plan on digital transformation of the banking sector up to 2025. The SBV is actively investigating international experience. The State Bank of Viet Nam has already submitted to the government a new draft Decree on a Fintech regulatory sandbox. The sandbox will allow small scale live testing of innovative fintech products by private firms for a limited period in a controlled regulatory environment. The products could include credit provision on new technology platforms, credit scoring, P2P lending and data sharing through open application programming interfaces (APIs) that enable interactions between different software. Enhancing financial literacy and inclusion is also important to accelerate the development of digital finance.

Government digital services are a priority

Digital government services are an essential driver of any country's digital transformation. Such services can help transform how public agencies collaborate among themselves and with the public, and they make public organisations more open, user-driven and proactive. When digital services are well established, governments can be more resilient and responsive when confronted by shocks. Governments with effective digital services were well-prepared when the COVID-19 pandemic struck, and other countries accelerated the delivery of e-government services in 2020 and 2021 to ensure the continuity of government during periods of confinement and the ongoing fight against the outbreak, including vaccination campaigns, information, and public health monitoring.

In Viet Nam, the government has stepped up its digital efforts toward streamlining administrative procedures for businesses, especially for those involving finance, customs and tax management. According to the Ministry of Information and Communication's Annual Report 2021, 96% of online public services provided by the end of 2021 allowed customers to apply, process, get approval online of required administrative procedures, pay fees for these services and even receive final results online including online services for tax management, business registration and customs declarations (Ministry of Information and Communications, 2021^[46]). The government also rolled out an e-cabinet programme in 2019 which aims to apply a paperless system for all government meetings and processes to strengthen the government's efficiency. In addition, the Digital Transformation Index has been calculated annually since 2021 to evaluate the digitalisation of ministries, agencies and local governments.

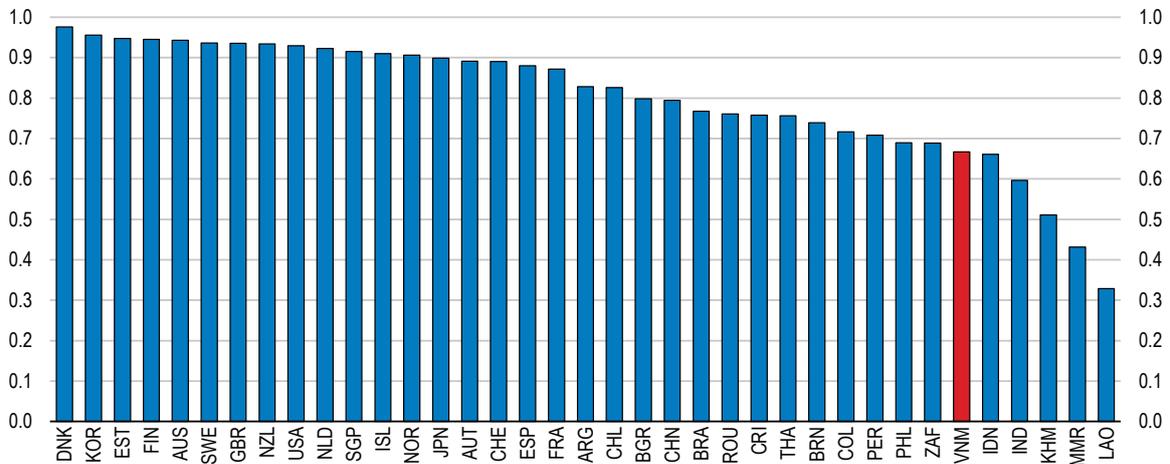
There is room to further improve the efficient delivery of digital services in Viet Nam. The United Nations E-Government Development Index (EGDI) summarises the quality and scope of digital governments in terms of provision of online services, participation of the public, digital infrastructure and human capacity, with top-performing countries including Denmark, Korea and Estonia. Viet Nam has improved its ranking over past years, but was still ranked only 86th in 2020 (Figure 16), lower than Malaysia (47th), Thailand (57th) and Philippines (77th), and similar to Indonesia (88th).

Creating a national data platform and implementing it effectively would help improve government services through access to information, sharing information for different policy purposes, including better targeting for many on-going government support programmes. The experience of implementing government financial support during the pandemic showed that these relief programmes could be better designed, well targeted and better delivered if a national data platform were operational. Therefore, the establishment and operation of such a national data platform should be accelerated.

Furthermore, a Decree (No. 47/2020/ND-CP) issued in 2020 provides a legal framework on the sharing of digital data between government agencies and the private sector. While considering a draft decree on privacy protection, the government issued a new decree on electronic identification and authentication in September 2022. The government has started to improve data collection and sharing practices through the National Government Service Platform (NGSP). 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 16. Viet Nam has scope to improve its digital government services



Note: The EGDI is a composite measure of three important dimensions of e-government: provision of online services, telecommunication connectivity and human capacity. The EGDI is not designed to capture e-government development in an absolute sense; rather, it aims to give a performance rating of national governments relative to one another. The figure shows the first top 18 that are also mostly OECD countries, together with selected emerging and ASEAN countries.

Source: United Nations, E-Government Development Index (EGDI 2020).

Pursuing green recovery

Viet Nam is faced with a significant challenge of achieving both high economic growth and lowering carbon emissions. Growing energy supply has been both a source and consequence of Viet Nam's past economic development. Almost universal access to the electricity grid has been achieved both for households and firms. Hydro-based power has been augmented with coal-based and gas-based sources, and more recently renewables. The development of large-scale offshore oil and gas fields has increased domestic energy supply and strengthened the country's energy security, while also increasing government revenue. Access to affordable energy has facilitated the expansion of the transportation sector and its integration into international supply chains.

However, like in other countries, fast economic growth has been accompanied by rising emissions of greenhouse gases that contribute to climate change (Table 1). As a fast-growing emitter of greenhouse gases, Viet Nam is adding to global environmental risks and weather hazards. The country is itself highly exposed to the consequences of global warming – such as rising sea levels, flooding, and severe heat – which could threaten its future socioeconomic development. The government has therefore made commitments to gradually reduce the country's greenhouse gas emissions. At COP26 in October 2021, Viet Nam's Prime Minister announced the country's commitment to achieve net zero emissions by 2050.

Pursuing a low-carbon economy can improve people's well-being, stimulate innovation and make the economy more resilient against energy shocks, which are important drivers of economic growth. Nonetheless, this will require broad-based policy measures that could radically change the way people work and spend their life. The transformation requires financial resources, as well as a comprehensive government action programme that plots the path forward. The process of decarbonisation also needs to be just, balancing the need of reducing carbon emissions with growing aspiration for economic prosperity and helping those who may be adversely affected by this transition. This section first discusses the trends in greenhouse emissions and policies introduced to abate and adapt to climate change. Sectoral developments in power generation, agriculture and transportation are then reviewed in the second section.

Table 1. The national GHG inventory results for 2010, 2014 and 2016

2006 IPCC code	Sector	2010	2014	2016
Total net emissions, ktCO₂e		264 210.67	278 659.70	316 734.96
1	Energy	151 879.06	175 540.20	205 832.20
2	IPPU	25 844.05	38 732.71	46 094.64
3	AFOLU	68 710.81	44 997.92	44 069.74
4	Waste	17 776.74	19 388.87	20 738.38

Source: (Ministry of Natural Resources and Environment, 2020^[47]).

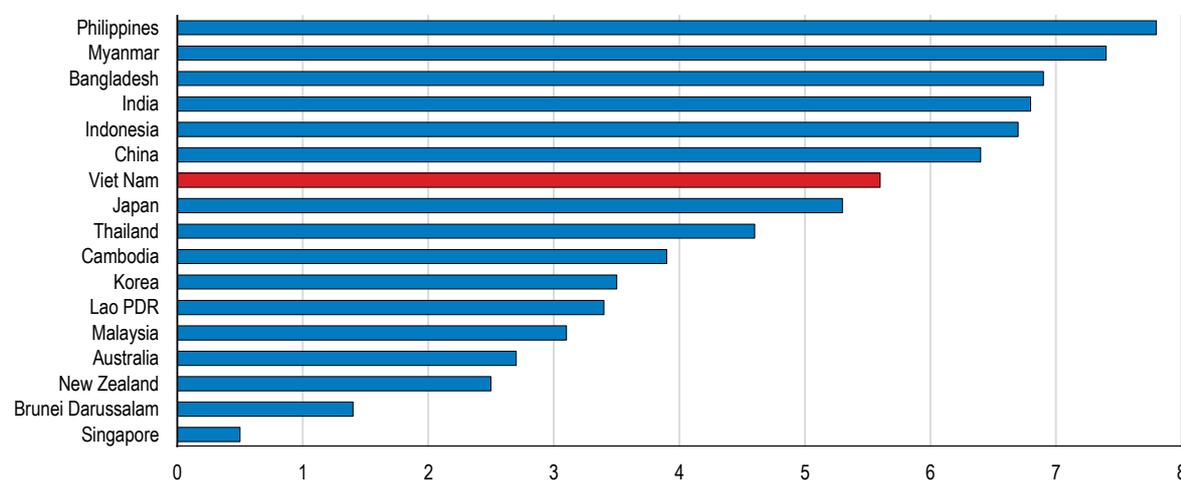
Viet Nam is severely exposed to weather hazards

For emerging-market economies, climate change presents the risk of derailing their convergence toward higher income levels and the fight against poverty. Flooding, rising sea levels and extreme weather events put production facilities and transport infrastructure at risk of severe disruptions. Extreme heat events can make working conditions unhealthy and reduce workers' productivity. Climate change also creates risks for the financial stability of emerging-market economies and for fiscal sustainability. Reflecting these various risks and their likely fiscal impact, sovereign bond spreads have increased for many of the emerging-market borrowers facing climate risks (Beirne, Renzhi and Volz, 2021^[48]).

According to the Climate Change Vulnerability Index, Viet Nam is considered one of 30 "extreme risk countries" in the world. Among Asian countries, Viet Nam is highly exposed to climate hazards (Figure 17). Recent catastrophic flooding events and successive typhoons have underscored the need to prepare for extreme weather events. Vulnerable communities in coastal, rural and mountainous areas need to be protected against such large-scale disruptions. In particular, strengthening the resilience of transport infrastructure would bolster the sustainability of economic growth and generate significant social benefits.

Figure 17. Viet Nam is at risk of climate hazards

Climate-driven hazard & exposure, index score from 0 (best) to 10 (worst), 2022



Note: INFORM Risk is a global multi-hazard risk assessment tool that combines hazards, exposure, vulnerability and lack of coping capacity indicators with the purpose to quantify the risk of humanitarian crisis. The hazard & exposure dimension reflects the probability of physical exposure associated with specific hazards. For more details, see Source.

Source: INFORM, INFORM Risk Index 2022 (<https://drmkc.jrc.ec.europa.eu/inform-index>).

Densely populated coastal cities are exposed to rising sea levels and intensifying tropical cyclones, while inland areas will have to cope with greater climate variability that results in droughts and floods (World Bank Group and Asian Development Bank, 2021^[49]). The rising temperature will increase economic burdens, ranging from health risks to higher electricity bills. Viet Nam has already experienced severe environmental issues related to climate change and local air pollution. Droughts and strong typhoons have

occurred more frequently and severely. In 2020, Viet Nam was hit by 14 storms and several depressions that triggered heavy flooding and landslides. Natural disasters like storms, floods and drought caused costly damages.

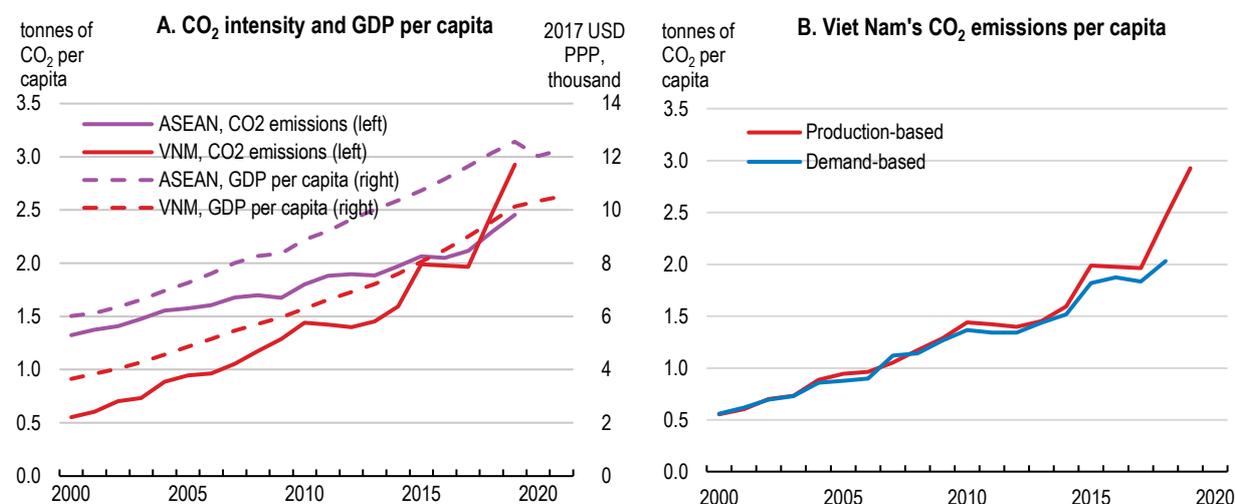
The Mekong River Delta and Red River Delta have already suffered from saltwater intrusion, which threatens agricultural productivity and contributes to greater rural poverty. A 1-meter sea level rise could affect more than 4% of the railway system, 9% of the national highway system and 12% of the provincial roadway system (World Bank Group and Asian Development Bank, 2021^[49]). Major urban centres in low-lying areas, such as Hanoi and Ho Chi Minh City, face significant climate change challenges. Both cities are also among the world's most threatened urban areas by heat stress. Ho Chi Minh City itself is regularly prone to flooding. This trend is likely to increase, with rising costs related to prevention of floods and clean-up operations.

Against this background, the government has been implementing a number of measures for climate adaptation and mitigation. In 2011, the first National Climate Change Strategy was adopted, followed by an Action Plan setting numerical targets and timeframes. Efforts have been made to cope with adverse impacts of climate change such as introducing new cultivation technologies and new varieties of crops which are drought and saline-resistant to regions that are heavily affected by drought or sea-level rise and salination. Land use regulations have also been modified together with spatial regional development planning that takes into account climate risks. However, implementation of the first National Climate Change Strategy also revealed a range of constraints that hindered its successful completion, such as lack of financial resources, ineffective coordination among different government entities and inconsistent regulations. Accordingly, only 9 of 18 targets were achieved by the end of 2020.

Greenhouse gas emissions are rising fast

Viet Nam has increasingly used fossil fuels to meet its fast-rising energy demand. CO₂ emissions have increased at the rapid rate of 7.9% annually since 2005, faster than real GDP (by 7% per year; Figure 18, Panel A). Although Viet Nam's integration in global supply chains has contributed to higher emissions, especially fast-rising exports of goods by foreign-owned firms (Borga et al., 2022^[50]), domestic demand has also made a large contribution to the rise of emissions (Figure 18, Panel B). Increased use of fossil fuels and weak energy efficiency have made Viet Nam one of the most carbon intensive economies in the world. The country now emits more carbon dioxide per unit of GDP (at PPP rate) than regional peers in Southeast Asia, such as Malaysia, Thailand, Singapore and Indonesia (Figure 19). Adding other greenhouse gases (GHG) such as methane and nitrous oxide, Viet Nam's GHG emissions reached 369 million tonnes of CO₂ equivalent in 2018 mostly coming from the energy (29.6%), agriculture (19.2%), manufacturing (17%) and transport (9.8%) sectors. In this context, the adoption of the National Green Growth Strategy in 2021 is an important step. The Strategy aims at reducing the GHG emission intensity per GDP at least by 15% in 2030 and by 30% in 2050 compared with the 2014 level.

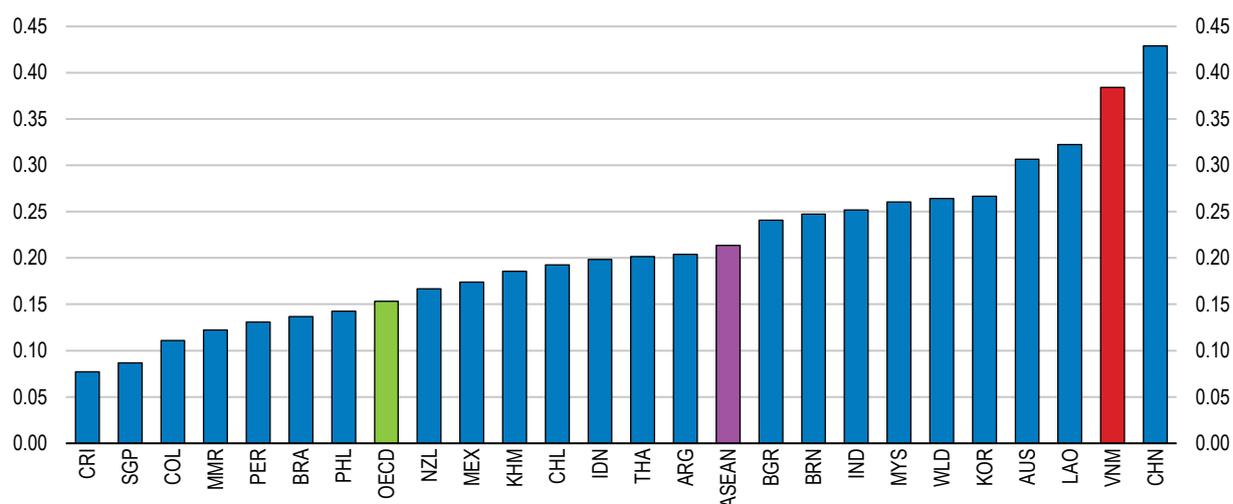
Figure 18. GDP growth has become more carbon intensive



Note: Intensity of energy-related CO₂ emissions is expressed in tonnes of CO₂ per capita. In Panel A, they refer to production-based.
 Source: OECD, Green Growth Indicators database; World Bank, World Development Indicators database.

Figure 19. Viet Nam's emission intensity is higher than in peer countries

CO₂ emissions per unit of GDP in USD PPP, 2020 or latest year available



Source: OECD, Green Growth Indicators database.

Viet Nam aims at net zero greenhouse gas emissions in 2050

Viet Nam has adopted a welcome climate strategy to moderate the past rise of its high level of greenhouse gas emissions. The overall objective is to achieve economic prosperity, environmental sustainability and social justice, hence usefully contributing to the abatement of global warming. To implement this strategy, in 2012, the government established the National Committee on Climate Change, chaired by the Prime Minister and including key ministers, in charge of supervising the rollout of various climate programmes. In addition, the Viet Nam Panel on Climate Change (VPCC) was established in 2015 to advise the government on policy and scientific aspects.

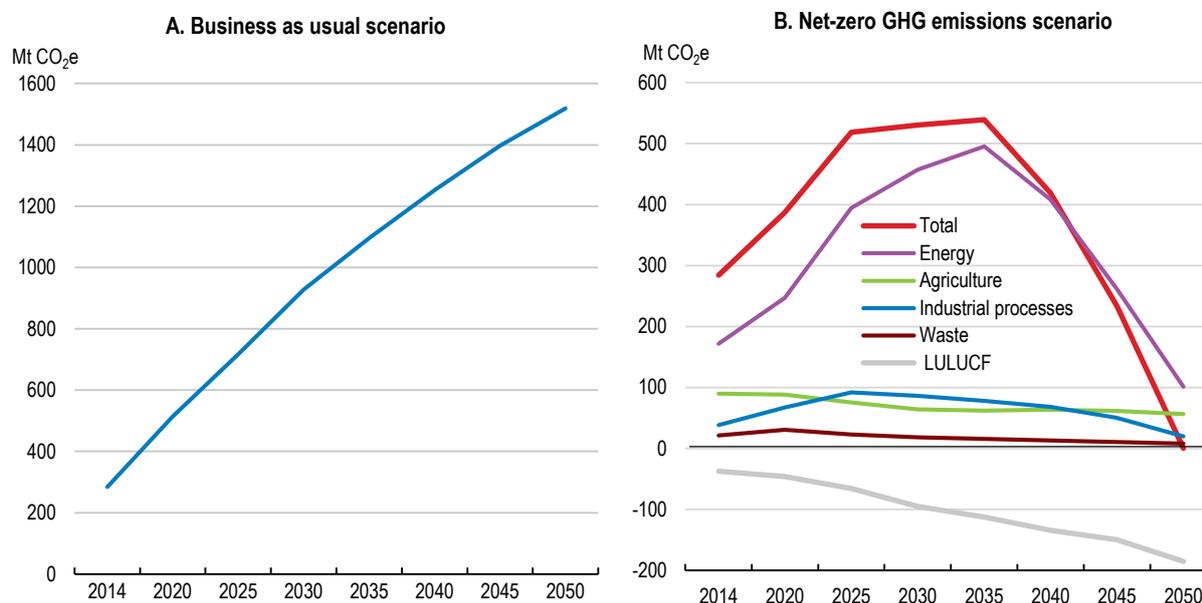
At COP26 in Glasgow, Viet Nam's Prime Minister announced the country's commitment to reduce greenhouse gas emissions to net zero in 2050. In July 2022, the Prime Minister issued a new National Strategy on Climate Change to 2050. A key interim objective is to lower total national greenhouse gas

(GHG) emissions by 43.1% by the end of the decade, compared to the government's business-as-usual scenario. The government projects that emissions will peak in 2035 (Figure 20). To achieve this goal, Viet Nam plans to gradually shift away from coal: no new coal-fired thermal power projects would be developed after 2030 and the scale of coal power would be reduced after 2035. Viet Nam would also consider developing nuclear power plants after 2035 if conditions on advanced technology and safety are met. Full implementation of this strategy would lower the share of coal in electricity generation from 50% presently to 9.6% in 2040. To address the problem of intermittency inherent with renewable energies, the government would encourage private investment in integration technologies such as battery storage, pumped hydropower, heat storage and smart grids that aim to ensure a high level of stability and integration of renewable energy in the power system. The government is also aiming to improve energy efficiency, for instance by reducing the need for cooling in buildings through implementing higher efficiency standards and regulations of buildings. A shift from individual passenger transportation to public transportation will be facilitated by investing both in inner-city and inter-city railways infrastructure.

Realising this ambitious strategic vision is an enormous challenge for Viet Nam. Drawing from the lessons learned from the first Strategy 2011-2022, such as a lack of effective coordination within the government, it will require a multi-faceted and well-coordinated effort over a short period. A clear roadmap that stipulates tasks, responsibilities and timeframes should be prepared. This roadmap should also be underpinned by adequate human, financial and institutional resources to ensure a smooth implementation. In addition, some areas are still not adequately addressed in the Strategy. Recognition of the potential social impacts of the green transition is weak (see below) and promoting investment in research and development and human capital development, both of which are currently at low levels, will require significant institutional reforms that are not discussed. The government should detail these issues in a new Action Plan that builds on this new Strategy.

Figure 20. Viet Nam plans to reduce greenhouse gas emissions to net zero in 2050

Total greenhouse gas emissions, million tonnes CO₂ equivalent



Note: The business as usual scenario is based on the latest nationally determined contribution. Panel B is based on the government's latest scenario for net-zero GHG emissions by 2050 and its sectoral contributions.

Source: Viet Nam updated Nationally Determined Contribution (NDC), 2020; Ministry of Natural Resources and Environment.

Achieving carbon neutrality in less than 30 years will require large investments in low-emission capital and in green skills. As a fast-growing emerging market, Viet Nam will face the dual challenge of replacing a significant share of its capital stock – such as high-carbon electricity generation plants and combustion-

engine cars – and meeting the rapid growth of demand for products such as electricity and transportation. In agriculture, systemic changes in farming techniques, currently dominated by methane-intensive rice production, will have to take place quickly. Such large changes can be disruptive because they require reallocating labour and capital away from high-emission to low-emission activities. However, the experience of countries having already made large cuts in their GHG emissions suggests that, with the right policy tools, this can be done without harming economic growth and while staying at full employment (OECD, 2021^[51]). Some population groups will be exposed to disruptions during the energy transition, such as workers in fossil-fuel industries, but training programmes can be effective in providing them with skills to reallocate to other sectors.

For a smooth and successful transition towards decarbonisation, research and development (R&D) and innovation will also play an important role. Viet Nam has adopted a number of policy measures to support R&D and innovation in green and sustainable consumption and production. In a new Action Plan for sustainable production and consumption in the period 2021-2030 (Decision 889/QD-CP issued in June 2020), the government aims at designing policy instruments to encourage developments of green industries and environmentally friendly products, to support businesses participating in sustainable value-chains, to promote a circular economy and to support R&D activities for sustainable consumption and production, including those in collaboration with international partners. This is a welcome step, but it is crucial to promote actual implementation of these policies ideas, such as through government subsidies to R&D activities.

Multiple funding sources are available to reach net zero GHG emissions

A sustainable pathway would involve making upfront large investments in renewable energy sources, with incentives coming from price signals such as carbon prices and tradeable emission permits (see below); large public investments especially in public transport, recharging stations, and the power transmission grid; and further market openness to private providers as a way to accelerate the adoption of energy efficiency and low-carbon innovative technologies. Reaching the objective of net zero emissions by 2050 will require large public and private investments to increase the share of renewable electricity – currently only one-third of overall power production. This will involve building new power plants using energy sources such as solar, wind, biomass and hydropower to replace coal, gas and oil. Such a transition towards net zero emission electricity would be costly. Additional investment of USD 81 billion would be required during 2022-2040 (1.5% of GDP per year) (World Bank, 2022^[52]). This accounts for one fifth of the total additional investment that would be needed for climate change policies, including adaptation measures (USD 254 billion) and social programmes (USD 33 billion). The scenario does not consider new technologies such as carbon capture and storage and green hydrogen, which remain expensive at present and would lead to even higher investment costs. Similarly large investments will be required to reduce the carbon footprint of transport, housing, manufacturing and agriculture.

Hence, the transition to green growth will require a large amount of funding to finance the required investment. Significant financing will also be needed to facilitate the reallocation of the workforce from high-carbon to low-carbon activities. Households and businesses will need to be helped during the transition, as they will initially face higher energy prices and will need to purchase new vehicles and upgrade their housing appliances. Considering the public debt ceiling (60% of GDP) and additional spending needs for the ageing society, there will be limited fiscal room for the government to finance the energy transition. The banking sector's financing is also constrained, given increasing potential mismatch of short-term capital with long-term financing. Hence, funding will need to come from the capital market sector, private investors and borrowing from multilateral organisations.

State-owned enterprises and large domestic private corporations with positive credit rating can attract the attention of capital market participants and mobilise the funding required for their investment needs: Electricity of Viet Nam has received a Fitch long-term debt rating of BB, with a positive outlook affirmed in

September 2021. However, government involvement in energy markets, such as administrative decisions regarding the retail price of electricity and gasoline, can have negative implications for the financial health of state-owned enterprises and therefore reduce investor interest.

Viet Nam's banking system is playing a growing role in the green transition. Credit institutions have increased their outstanding credit to green investment by 25% per year during the period 2017-2021, reaching the level of VND 443 trillion in 2021 (5.2% of GDP). Commercial banks in Viet Nam provide debt financing to renewable energy projects. For example, the State Bank of Viet Nam developed a directive on "Promoting Green Credit Growth" in 2015, followed by the "Action Plan of Banking Sector" to implement its national "Green Growth Strategy" until 2020. The Viet Nam Development Bank financed a 40.7 MW small hydropower project with Asiatic Group Holdings.

Further credit expansion would be facilitated by a clarification of the taxonomy of activities considered as climate friendly by authorities. At present, Viet Nam has not yet issued its own taxonomy, unlike Malaysia and Indonesia, and it has not yet adhered to international definitions of green investments (Box 2). However, preparations for issuing such a green taxonomy are currently ongoing. Adopting such a taxonomy would provide clarity to investors about government climate priorities. In addition to providing clarity to banks, this would also encourage green investment coming from institutional investors such as life insurance and pension funds, and therefore facilitate the funding of large private low-carbon investments that will need to put GHG emissions on a fast-declining pathway. However, increasing pressure for the banks to apply Basel II requirements for capital adequacy ratio will limit bank finance for the energy transition. In this regard, the Ministry of Natural Resources and Environment is currently preparing a draft Decision concerning criteria and certification for investments financed by green credits or green bonds, which is expected to be submitted to the Prime Minister in 2022. This will be an important step.

In addition to scaling up their funding of green investments, Viet Nam's credit institutions should gradually reduce their exposure to high-carbon borrowers, such as coal-fired power plants or carbon-intensive manufacturing facilities. Such borrowers have become riskier around the world and have faced difficulties in attracting funding, as investors have been working to improve their ESG scores and reduce their loan portfolio in these sectors. These high-carbon emitting borrowers also need the support from credit institutions in their smooth energy transition. Viet Nam's credit institutions are also facing physical risks which are related to direct losses due to the country's high vulnerability to extreme weather events (as noted above) and transition risks which can occur when moving towards a less carbon intensive economy. The perception among credit institutions has changed markedly concerning the implementation of environmental and social risk assessment in credit granting activities. As of end-2021, 17.7% of the total outstanding loans were assessed by credit institutions concerning their environmental and social risks. A further step would be that bank supervisors conduct climate risk stress tests of credit institutions, with different scenarios for climate policies and temperature increases, as done in several jurisdictions such as the European Central Bank and the Bank of England and considered by the US Federal Reserve. Membership in the Network for Greening the Financial System would help the central bank and supervisors familiarise themselves with the best practices in this area.

Box 2. Taxonomies of green activities

Following the Paris Agreement and COP26 discussions, decarbonisation efforts have become increasingly important for governments, private companies and financial markets. To facilitate these efforts, work has been underway around the world to identify appropriate definitions for which economic activities can be considered environmentally sustainable. The objective of such a taxonomy is to create security for investors, protect private investors from greenwashing, help companies to become more climate-friendly, mitigate market fragmentation and help shift investments where they are most needed. For instance, bonds can be considered as “green bonds” if the proceeds are invested in the activities covered by the taxonomy.

Viet Nam has not yet adopted an official taxonomy of green finance. The State Bank of Viet Nam considers the following set of activities in its statistics on green finance, but does not enforce related regulatory measures: green agriculture; sustainable forestry; green industry; renewable energy, green energy; recycling and reuse of resources; waste treatment and pollution prevention; environmental protection, ecological restoration and prevention of natural disasters; sustainable water management in urban and rural areas; green construction works; sustainable transport; provision of environment-friendly and energy saving services; other green sectors.

The **EU taxonomy** is considered as the most advanced effort to agree on a list of environmentally sustainable activities. The EU Taxonomy Regulation was published in June 2020 and delegated acts were issued in December 2021, January 2022 and February 2022. It establishes six environmental objectives: climate change mitigation; climate change adaptation; the sustainable use and protection of water and marine resources; the transition to a circular economy; pollution prevention and control; and the protection and restoration of biodiversity and ecosystems. In order to qualify as environmentally sustainable under this classification system, an economic activity must make a substantial contribution to at least one of six environmental objectives, while doing no significant harm to any of them (OECD, 2021^[53]). The use of natural gas and nuclear activities is included under the taxonomy, with strict and clear conditions such as being clearly established as transitional activities making identifiable contributions to the transition from coal to renewables. The United Kingdom is reviewing the EU taxonomy and is working to adapt it to the UK specific circumstances.

In April 2021, **Malaysia** published its national climate-focused sustainability taxonomy for the financial sector, the Climate Change and Principle-based Taxonomy (CCPT). The CCPT sets out five guiding principles intended to help financial institutions assess and categorise economic activities according to the extent to which they meet climate objectives and promote the transition to a low-carbon economy. Activity falls inside the taxonomy if they relate to a) climate change mitigation, b) climate change adaptation, c) if they cause no significant harm to the environment, and d) if they provide remedial measures to the transition. The taxonomy identifies also explicitly prohibited activities such as illegal deforestation, illegal waste management, and using fire for land clearance. Apart from these prohibited activities, the taxonomy does not explicitly exclude unsustainable activities, such as palm oil plantation, but makes it subject to strict and transparent conditions such as independent verifications.

Indonesia launched its green taxonomy in January 2022. It contains a list of classifications of economic activities that support environmental protection efforts and management efforts, as well as climate change mitigation and adaptation. The taxonomy classifies 2 733 sectors and sub-sectors in three categories: green (do no significant harm, apply minimum safeguard, provide positive impact to the environment, align with the environmental objective of the taxonomy); yellow (do no significant harm); and red (harmful activities).

To provide a regional taxonomy framework, **ASEAN** countries have worked on a taxonomy intended to serve as a common language for sustainable finance while complementing the national sustainability initiatives of its members. The first version of the ASEAN Taxonomy for sustainable finance was

circulated in November 2021 for comments. It consists of two main elements: the Foundation Framework which is applicable to all ASEAN member states and allows a qualitative assessment of activities and the Plus Standard with metrics and thresholds to further qualify and benchmark eligible green activities and investments. The ASEAN Taxonomy aims to facilitate climate change mitigation and adaptation, protection of healthy ecosystems and biodiversity and promotion of resource resilience and transition to a circular economy. A non-exhaustive list of green and red activities has been compiled for possible implementation, which could be used for building a green taxonomy for the Vietnamese context.

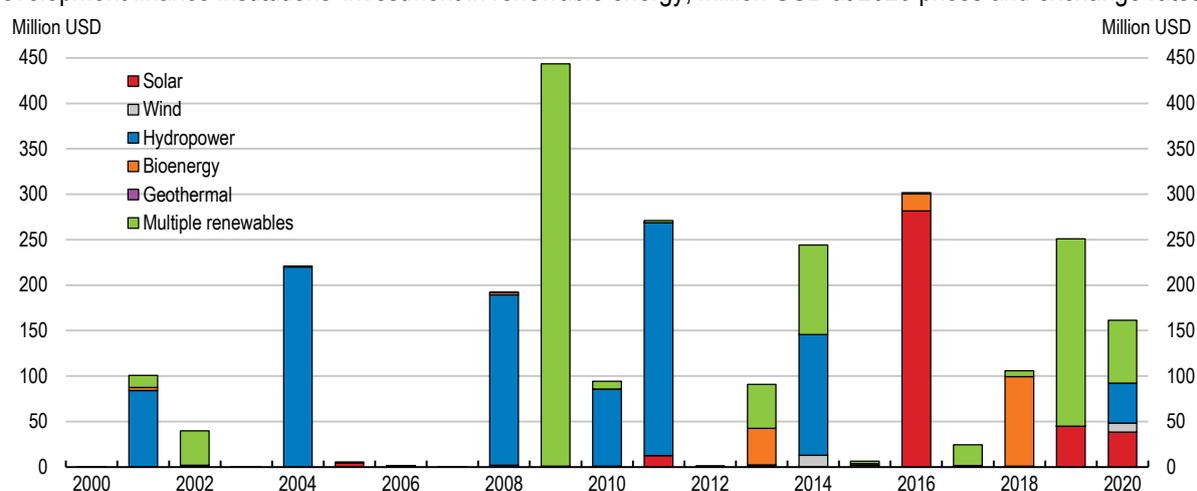
As a developing country, Viet Nam is still eligible for concessional finance from multilateral organisations and bilateral aid agencies. However, fast growth has enabled Viet Nam to reach the status of lower middle-income country, and concessional flows have therefore declined. Net disbursements from DAC donor countries have declined from USD 1.7 billion in 2011 to about USD 620 million in 2020 (constant prices at 2020 prices), while net disbursements from multilateral organisations have declined from USD 1.1 billion to USD 530 million during the same period. Disbursements targeted to renewable energies have been variable, but generally insufficient to finance the large-scale investment required to achieve fast decarbonisation (Figure 21).

Viet Nam can benefit more from international funding facilities that have been pledged by developed economies, including concessional green finance. Under the Paris Climate Agreement, developed economies announced that they would provide climate funding of USD 100 billion annually to help developing countries cover the cost of their mitigation policies and adaptation measures. For example, the Green Climate Fund (GCF), an international funding mechanism established by the UNFCCC, provided USD 86.3 million in financing to Viet Nam through its guaranteed instrument for technical assistance and capacity building activities. Additionally, the GCF also provided a dedicated credit line to scale up investments in energy efficiency in Viet Nam's industrial sector. International funding mechanisms have been reinforced further since then. At COP26, a Just Energy Transition Partnership between South Africa and France, Germany, the United Kingdom, the United States and the European Union was launched, which contains investment plans and financing packages in addition to technical support, which will be provided by various institutions, including multilateral development banks. The programme plans to mobilise USD 8.5 billion over the next three to five years. In June 2022, G7 countries expressed their strong support for these collaborative programmes between developing countries and development and green finance institutions, acknowledging that similar initiatives are underway for Indonesia, India, Senegal and Viet Nam. In Southeast Asia, Indonesia launched a similar mechanism, an Energy Transition Mechanism (ETM), which aims for early retirement of coal-fired power plants and acceleration of the green energy transition with the Asian Development Bank and Indonesia's national infrastructure fund in July 2022. Some other Southeast Asian countries, namely the Philippines and Viet Nam, and the Asian Development Bank are studying the feasibility of a possible ETM. As the ETM focuses on divestment of coal-fired power plants, Viet Nam could greatly benefit from this mechanism.

Viet Nam needs to simplify further its procedures for external concessional green finance from developed economies. Current regulations for official development assistance targeting the energy transition and climate change are still complicated, discouraging donors to invest in green growth in Viet Nam. In particular, extremely low recent disbursement of overseas development assistance suggests that this source of funding is being underutilised. Often, this is related to periodic changes to the regulations and lengthy review and clearance processes; implementation bottlenecks resulting from slow investment policy adjustment decisions, delays in land clearance and counterpart funding shortages. There is also an issue of government coordination and governance to support project implementation. A special "green channel" for green projects may be needed to facilitate mobilisation and effective use of green finance through overseas development assistance programmes. Further simplifying administrative procedures including applying digitalised fast-track approval and coordination for green projects would be highly desirable.

Figure 21. Investment in renewable energy is variable

Development finance institutions' investment in renewable energy, million USD at 2020 prices and exchange rates



Source: International Renewable Energy Agency, IRENASTAT database.

Emission pricing

In addition to government investment and regulation, price signals play a key role in determining the level of energy demand and carbon emissions in an economy. Policy tools affecting carbon prices include the level of taxation applied to the use of energy, and prices established on trading markets for emission allowances such as the European Union Emissions Trading System (EU ETS), California's cap-and-trade programme and America's North-East Regional Greenhouse Gas Initiative. Using these tools to influence carbon prices is widely viewed as an important part of policy packages to encourage investment in low-carbon energy sources and to mitigate climate change. Viet Nam applies taxes on the use of some energy products, and it plans to operate a trading market in the future.

Although Viet Nam does not have a carbon tax at present, it collects an environmental protection tax on products that, when used, are deemed to cause negative environmental impacts. The environmental protection tax is applied on the production and imports of polluting goods, while exports are not taxed. All petroleum products are subject to the environmental protection tax (gasoline, diesel, fuel oil, jet fuel) as well as various categories of coal. In 2021, the equivalent of USD 2.37 billion was collected by the environmental protection tax (about 0.7% of GDP), the bulk of it coming from the taxation of petroleum products. This helps to price negative externalities and sends useful price signals.

However, the environmental protection tax does not necessarily reflect the carbon content of the polluting commodity. In addition, it is not applied uniformly to all activities emitting greenhouse gases and is therefore not the most efficient policy tool to mitigate climate change. At present, gasoline is taxed at a high level relative to its carbon content, while diesel and coal face a tax rate that is lower than that on gasoline, relative to their respective carbon content (Table 2). A better alignment of taxation with the carbon content of these energy sources would be a more efficient approach to decarbonisation. In addition to the environmental protection tax, under the current price setting for petroleum products, the price components include additional taxes such as a special consumption tax, value-added tax, import tax, business expenses charge (a special charge on the quantity of gasoline sold to retailers/distributors), profit norm (an additional charge on the quantity of gasoline for sale) and a contribution to the stabilisation fund. Altogether, in mid-May 2022, the retail price of gasoline including taxes was equivalent to USD 1.332 per litre, higher than in Malaysia (USD 0.468), Indonesia (USD 1.143) and the United States (USD 1.191), but lower than in Thailand (USD 1.434), China (USD 1.351) and Singapore (USD 2.179) (GlobalPetrolPrices.com, 2022^[54]).

Table 2. Tax rates for various fossil fuels under the Environmental Protection Law

Item	Gasoline	Diesel	Coal
Tax rate	4 000 VND/litre	2 000 VND/litre	15 000 VND/tonne
Rate in VND/tCO ₂ e	1 259 755	766 598	5 969
Rate in USD/tCO ₂ e (1 USD = 23 108 VND)	54.52	33.17	0.26

Source: National Assembly Standing Committee, 2018. Resolution 579/2018/UBTVQH14 dated September 26, 2018 on Tax rates under Environment Protection Law. Coal does not include anthracite coal. The tax rate on anthracite coal is 30 000 VND/tonne.

At present, Viet Nam does not operate a trading market for carbon emission allowances, but it plans to launch such a market in the future. To prepare for it, the government decided to establish a GHG inventory for large emitters which emit more than 3 000 tonnes of CO₂ equivalent per year. Specific thresholds apply to thermal power plants, industrial facilities, merchandise transport companies and commercial buildings that consume more than 1 000 tonnes of oil equivalent (TOE) in total per year. In January 2022, the government identified facilities that are required to submit information (1 662 facilities in industry and trade, including power plants, 70 in transport, 104 in construction and 76 in the natural resources and environment sector). The information will feed into a monitoring, reporting and verifying (MRV) system for greenhouse gas emissions and will be updated every two years.

The inventory of greenhouse gas emissions will provide key information necessary to launch a carbon market. Viet Nam's revised Law on Environmental Protection (LEP) legalises the establishment of a carbon market that will aim to reduce greenhouse gas emissions, enhance Viet Nam's contribution to global climate change goals, and encourage greener technology innovation. The government plans to establish and operate a pilot carbon credit exchange from 2025. This will be followed during the 2026-27 period by the preparatory phase. During this period, the government will put forward regulations on the management of carbon credits, the exchange of GHG emission quotas and carbon credits, and the operation of a carbon credit exchange. From 2028, the carbon market will fully be operated.

While higher carbon prices help to reduce emissions, they will increase production costs of manufacturing industries and could raise concerns about competitiveness. If Viet Nam is no longer an attractive location for manufacturing industries because of high carbon prices, this could encourage the relocation of firms to other countries without carbon pricing, thus resulting in "emission leakages". Policymakers can mitigate the risk of such leakages with appropriate measures such as exemptions from carbon pricing, output-based rebating and border carbon adjustments (Fischer, 2015^[55]).

Carbon markets are best suited from large emitters such as power plants, industrial facilities, truck fleets or airlines, which have the capabilities required to enter the market and trade emission permits. However, they are impractical for small emitters such as households emitting carbon anytime they use their passenger vehicles and when they heat or cool their house. For small emitters, a carbon tax paid directly at the retail level is more appropriate, with a tax level corresponding to the carbon market price. A uniform carbon price across energy uses is important to avoid introducing distortions and to encourage carbon savings where it is the most economically efficient to do so. Announcing carbon pricing plans ahead of time, and making future price increases predictable, is also essential to help emitters prepare for future changes and adopt investment plans.

Carbon pricing can negatively impact low-income households who need to purchase energy for their daily use, such as commuting to work. For households in the lowest income quintile, fuels represented 3% of monthly income in 2018, while it was 2% for most other income quintiles. While this is much lower than the budget allocated to food, considerable variation is likely to occur inside the quintiles depending on factors such as commuting distance. While households will eventually transition toward low-carbon ways of life – such as electric vehicles, shared rides, public transportation and energy-efficient houses – the transition can be disruptive for the most vulnerable groups. Hence, the revenue proceeds from carbon pricing could partly be used to assist low-income households during the transition phase, with means-tested cash

transfers, as done in other countries. In addition, cash transfers can also incentivise these groups to cut their carbon emissions, for example through specific subsidies for improvements in housing energy efficiency or the purchase of an electric vehicle. Such measures have been used in other countries but need to be calibrated carefully to be cost-effective.

Aligning domestic energy prices with costs would also be important. According to the International Energy Agency, the gap between end-user prices and full costs of supply amounts to 2.3% of GDP in Viet Nam in 2021, higher than in some regional peers such as Malaysia (1.0%) and Thailand (0.6%), but smaller than Indonesia. This suggests that there is scope for improving domestic energy markets, including the efficiency of distribution systems and the price adjustment mechanism of some energy sectors such as electricity.

Price signals can also be used to attract private investment in renewable energy production, such as feed-in tariffs and auction mechanisms. Independent power producers are already playing an important role in Viet Nam's renewable energy markets, and this role could be further expanded with the right conditions. These private producers have the technical skills and efficiency in terms of operations and delivery of projects. The government has successfully used feed-in tariffs to boost investment in solar photovoltaic panels, but feed-in tariffs have entailed the risk of uncontrolled expansion of solar supply, with unwanted repercussions on the short-term stability of the electricity system. OECD countries are now increasingly offering volume of renewable energy supply through auction mechanisms, rather than feed-in tariffs, in order to obtain prices closer to levelised costs, which represent the average revenue per unit of electricity generated or discharged that would be required to recover the costs of building and operating a power plant over an assumed financial life and duty cycle. The government of Viet Nam is considering an auction system in the market of wind-powered electricity generation from 2023 onwards, akin to a scheme already experimented for solar power projects.

Sectoral trends and prospects

While cross-cutting approaches, such as carbon pricing, are important to accelerate the green transition of the broader economy, different economic sectors require different policies. Each sector relies on different technologies and thus policy measures which are most effective to reduce GHG emissions vary from sector to sector. This section discusses trends in three sectors with large GHG emissions: power generation, transport and agriculture.

Power generation

Power generation has expanded at a particularly rapid pace to meet the country's demand for electricity. Hydropower provided a large share of electricity supply until the late 1990s, but coal and petroleum products have become the predominant source of energy since then, accounting for 50% and 19% of power generation, respectively, in 2019. Coal has traditionally been procured domestically for the most part: a state-owned company (Vinacomin) extracts coal in the North-Eastern province, with an annual production of 40 million tons in 2019. About 25% of coal used for electricity generation is imported.

In recent decades, Viet Nam has moved away from a centrally planned monopoly of electricity towards a market-based system, where independent power generators can sell electricity in the wholesale market managed by a system and market operator. Electricity liberalisation started in 2004 with the unbundling of Viet Nam Electricity (EVN), the establishment of Electricity Regulatory Authority of Viet Nam (ERAV) as a regulator, and the introduction of competition in power generation and the wholesale market. With more open access to the electricity market, plants are currently operated by Viet Nam Electricity, other state-owned entities, private domestic companies, and a few foreign investors (including from China, Korea and the United States). Transmission and distribution of power remain the monopoly of Viet Nam Electricity for now. The liberalisation of the electricity market will continue with the expansion of a competitive wholesale

market and an introduction of competition in the retail market. The government is embarking on a similar liberalisation process for natural gas.

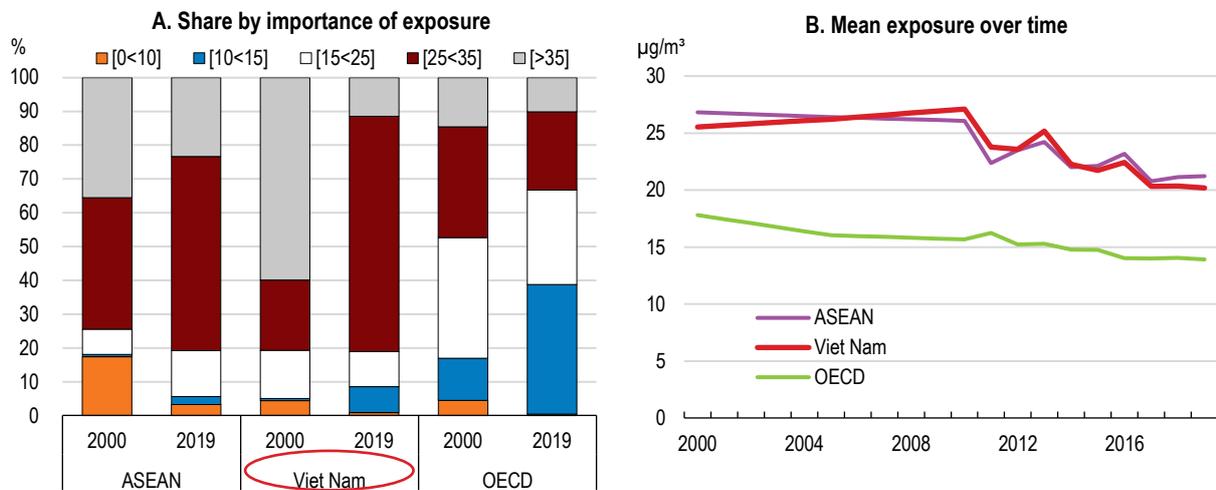
Viet Nam's electricity tariffs are regulated by the Prime Minister Decision No.24/2017/QĐ-TTg. Unified retail electricity tariffs are applied across the country, at levels that are low in comparison with other countries in the region. In September 2021, retail electricity prices paid by households were the equivalent of 8.2 US cents per kWh, higher than in Malaysia (5.2 cents), but lower than in China (8.8 cents), Thailand (11.2 cents) and Singapore (18.4 cents). Business consumers paid a slightly reduced price (7.7 cents), which was also set at a lower level than in regional peers. To attract more investment into private and independent power generation facilities, the government has developed a price bracket scheme which can reflect market-based costs. The state-owned enterprise responsible for electricity distribution, Viet Nam Electricity, may now increase or decrease the retail electricity prices every six months as far as the prices change by up to 5% and within a predetermined price bracket. Viet Nam Electricity is also allowed to increase the prices by 5% or more after consulting with the Prime Minister and the Ministry of Industry and Trade. The retail electricity prices are adjusted annually according to changes in input costs, such as those of generation, transmission, distribution and sector administration. Within-year adjustments could also be possible based on the changes in other input costs, such as fuel prices, foreign exchange rates and prices in the wholesale market.

Growing concerns about the environmental impact of coal-fired generation plants, including unhealthy local pollution of particles (Figure 22), have led to a pushback against new investment in coal-fired energy capacity. Not only do coal-fired plants generate large amounts of climate-warming carbon dioxide, but they also emit local air pollution and contribute to poorer health of residents mainly due to an increased incidence of heart disease and stroke.

Faced with rising public opposition and growing reluctance of lenders, the government has encouraged investment in renewable energy sources. Over the past decade, it has offered feed-in tariffs and various tax incentives to producers of renewable electricity sourced from wind, solar, biomass, small hydropower and waste. Attractive feed-in tariffs for solar photovoltaic energy, especially for rooftop panels (USD 0.0838 per kWh), together with significant reductions in the levelised cost, have made such investments profitable and caused a surge in solar-powered capacity. At end-2020, Viet Nam had approved solar rooftop installations of almost 10 GW. As a result, renewable energy investment has increased from around USD 500 million in 2016 to USD 7.4 billion in 2020. The share of solar and wind generation increased by 4.3 percentage points of generation in 2020. However, this has not been enough to offset the declining relative weight of hydropower generation, which has decreased by 12 percentage points as most locations suitable for large hydro power have already been developed. On the other hand, the share of fossil fuel generation has increased from 60% to 64%, with a significant impact in terms of rising carbon emissions (Figure 23, Panel A).

Figure 22. Intense use of fossil fuels entails high levels of air pollution

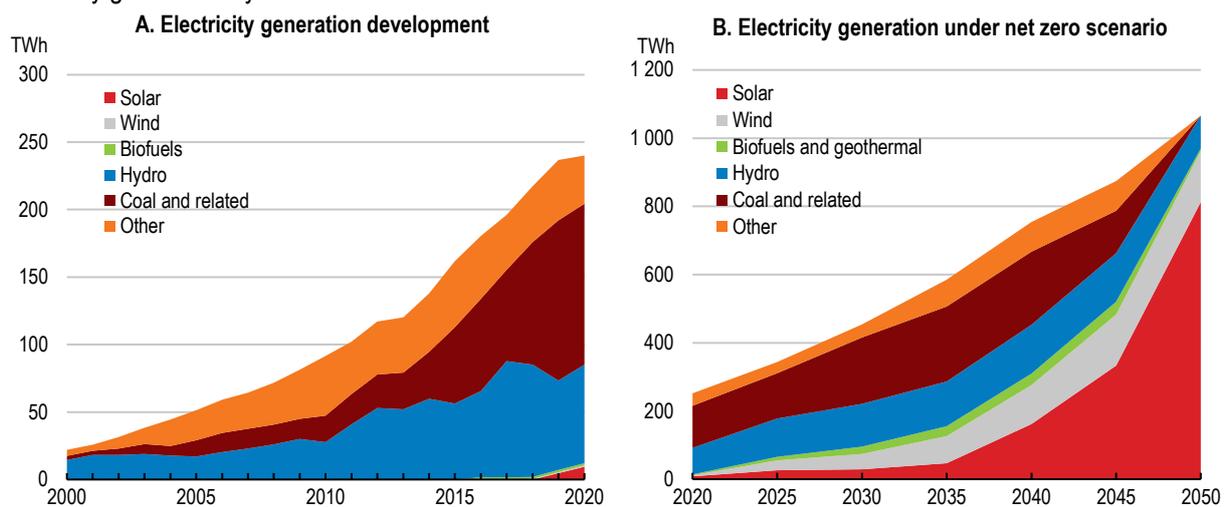
Population exposure to PM2.5, $\mu\text{g}/\text{m}^3$



Source: OECD, Environment database.

Figure 23. Viet Nam should reduce coal-fired and increase renewable electricity generation

Electricity generation by source



Note: TWh = Terawatt (thousand Gigawatt)/h. Panel B: For more details on scenario assumptions, see Handayani et al. (2022).
 Source: International Energy Agency, Energy database; Handayani, K., Anugrah, P., Goembira, F., Overland, I., Suryadi, B. and Swandaru, A. (2022), "Moving Beyond the NDCs: ASEAN Pathways to a Net-Zero Emissions Power Sector in 2050", Applied Energy 311, No. 118580, Elsevier.

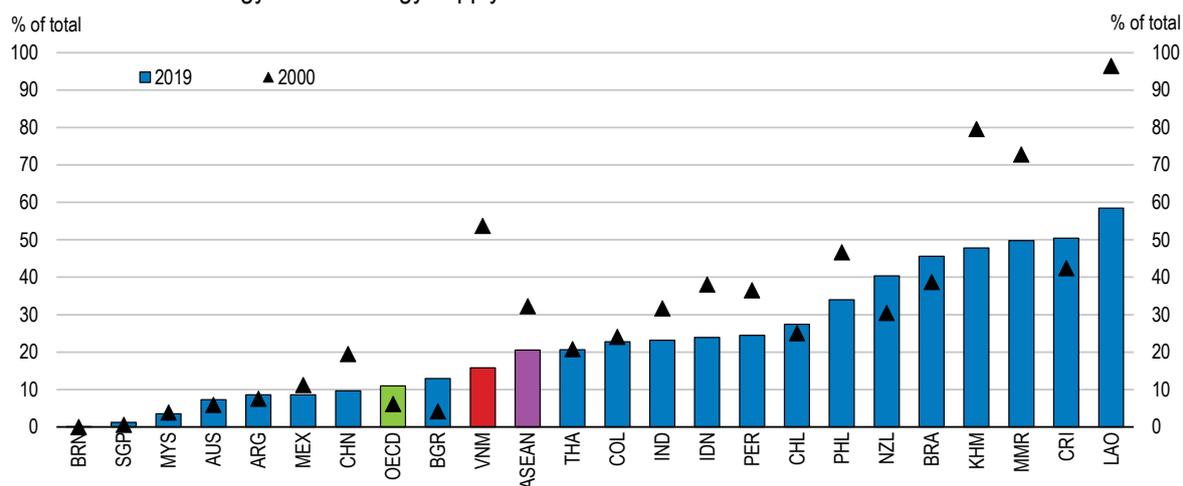
Viet Nam plans to invest further in renewable energy as part of its net zero objective by 2050. The draft eighth Power Development Plan (PDP8) outlines a roadmap to cut coal-fired electricity to just 9.6% of total capacity by 2045, while the share of wind and solar power is raised to 50.7%. Thanks to favourable geographic conditions, Viet Nam has a large potential for solar energy production, especially in the central and southern regions. Viet Nam’s potential capacity of wind energy is also considerable. With a coastline of more than 3 000 km and a location in the monsoonal climate zone, the country has considerable potential for harnessing its wind resources. Estimates indicate that the total technical potential for wind power development in the country is 24 GW (AWS Truepower LLC, 2011^[56]). There is also scope to further expand hydropower generation capacity.

Making investments in renewable energy happen will require establishing many enabling conditions, such as identifying adequate funding sources, pricing energy at levels that make these investments profitable,

and adopting a regulatory framework that opens the door to the entry of new market participations (OECD, 2021^[57]). According to simulations by (Handayani et al., 2022^[58]), Viet Nam can achieve net zero electricity emissions by expanding multiple times its present solar-based generation capacity (Figure 23, Panel B). Implementing a strategy to rapidly increase renewable electricity generation is essential to reverse the sharp decline of renewable sources in the country's energy supply since 2000, which goes against the trend observed in many OECD countries and regional peers (Figure 24).

Figure 24. The share of renewable energy has declined sharply in Viet Nam since 2000

Share of renewable energy in total energy supply



Source: OECD, Green Growth Indicators database.

Shifting the supply of electricity from thermal-based power generation to renewable energy poses many challenges. Solar and wind power generations provide intermittent energy: they can be insufficient at night and when wind is lacking, or they can overload the grid when solar output is very high in the middle of the day. However, like other Southeast Asian countries, Viet Nam has many opportunities to mitigate the problem of intermittency (Lu et al., 2021^[59]): pumped-storage hydropower can be made available; grid integration with neighbouring countries can provide diversification and help to smooth the peaks and troughs; demand response to price fluctuations can be solicited in housing and industry, while electric car batteries will provide in the future a source of demand response; finally hydro-based power can be dispatched to offset fluctuations in solar-based and wind-based power generation. Establishing a wholesale electricity market would facilitate the take-up of these solutions and would promote the impact of price signals. Further decarbonisation of electricity generation will also require large investments in the electricity grid, as solar generation mostly takes place in the south and central regions of the country, while electricity demand is high in the north, where the potential for solar power is more limited.

In addition to changes in the energy mix, the overall supply of electricity will need to increase rapidly to meet the fast-rising demand of electricity fuelled by the shift to electricity in electric vehicles, electric heating, and industrial processes. The National Development Programme expects that power consumption will grow annually by 8.4% from 2025-2030, 6.3 % from 2030-2035 and 3.0% from 2040-2045, reflecting fast economic growth and the above-mentioned switch in the fuel mix to electricity. Large investments will be needed to satisfy this rapid growth and to replace older equipment that will have to be shut down to meet the country's net zero emission objective. According to the latest government assumption, the capital requirement for the high-load scenario is about USD 362.2 billion (USD 24.1 billion/year) and for the high-load scenario operating is about USD 345.9 billion (USD 23.1 billion/year). Large investments in energy efficiency will also be necessary.

Estimating the capital cost of such investment comes with a high degree of uncertainty. Assumptions need to be made about the future pace of economic growth, improvements in energy efficiency and the various

shares of the energy mix. Large uncertainties also prevail on the capital cost of different energy technologies – past developments have involved faster-than-expected declines in the cost of solar panels and wind turbines. Technological innovation is also difficult to predict at long-term horizons.

To meet this fast-rising demand for electricity, the government projects under the PDP8 investments in renewable sources of 19-20 GW of solar and 18-19 GW of wind. The draft PDP8 also cancels or postpones one-third of coal power capacity currently in the pipeline until after 2030. Only coal plants already under construction will be allowed, with no new coal plants being planned. However, this would still imply large investments in fossil fuel power generation to reach 22 GW of gas-fired and 37 GW of coal-fired plants – a substantial increase from present levels. Viet Nam is a large producer of natural gas, crude oil and coal and therefore wishes to use its domestic resources and promote activity and jobs domestically. However, this would involve large increases in carbon emissions inconsistent with its climate strategy. In addition, mobilising financing to build new coal-fired power plants would be very difficult. Multilateral organisations, bilateral aid agencies, private lenders and capital markets have all announced decisions to cease funding new investment in coal-fired plants in the short to medium term, in compliance with international sustainability commitments. It is also noteworthy that China has announced its decision to stop funding overseas investments in new coal-fired plants as part of its COP26 commitments. By contrast, as noted earlier, large pools of sustainable finance are available from the same sources to invest in renewable sources, which could be tapped by Viet Nam.

Agriculture

Agriculture is responsible for about 20% of Viet Nam's greenhouse gas emissions – with livestock and rice production being primary sources. Not only should agriculture reduce its emissions, but the sector must itself adapt to future climate trends. Rising sea levels and salinisation of farming land will threaten rice production in river deltas, while elevated temperatures will have a negative effect on staple commodities such as coffee. The government has identified mitigation measures to reduce emissions focused on improving farming management practices, such as different irrigation and drainage techniques in rice fields and converting livestock waste into biogas. Forestry management, new crop techniques, and use of biomass have also the potential to reduce net emissions. Agriculture provides income to a large group of the vulnerable population, making climate mitigation and adaptation crucial for inclusive growth.

Viet Nam is a large producer and exporter of rice, with a large part of its production located in the Mekong River Delta. The rice sector plays an important role in economic and social development, providing income to a large share of the rural population. Moreover, Viet Nam is currently maintaining a strict food security policy which requires at least 3.5 million hectares for rice cultivation. However, the rice sector represents 15% of the country's greenhouse gas emissions. It is also facing challenges relating to low efficiency, resource intensiveness, environmental pollution, and climate change. Farming techniques involve flooding the rice fields with water, thus preventing the exchange of air between the soil and the atmosphere, and feeding the development of methane-producing bacteria. At the time when rice production is harvested, large quantities of methane are released into the air, thus strongly contributing to climate change. The rice sector is itself negatively affected by the effects of climate due to dry weather, high temperature, and the intrusion of saline water in rice fields. The government has encouraged pilot projects seeking effective measures to reduce the emission of methane in rice production, such as alternating wetting and drying techniques. Farmers are also encouraged to diversify their activities, such as taking up shrimp farming and other aquaculture opportunities.

Viet Nam has adopted a new "Strategy for Sustainable Agriculture and Rural Development in the period of 2021-2030 and vision towards 2050" in 2022 which aims at developing green agriculture that is friendly to the environment, adapts to climate change and reduces rural pollution. GHG emissions from agriculture activities are expected to fall by 10% by 2030; forest coverage will be maintained at a stable level of 42%. At least one million hectares of forest will be given a Certificate of Sustainable Forest Management. In

addition, in June 2022, the government approved a project called “Developing Circular Economy in Viet Nam” that will further facilitate the green transformation of agriculture in the overall green growth strategy framework. It is crucial for the government to develop a comprehensive and well-coordinated evaluation framework with good monitoring systems.

Transport

The rapid expansion of Viet Nam’s transport infrastructure has contributed to the country’s strong economic growth and poverty reduction. Almost all municipalities can be reached by weather-proof roads, and the transport infrastructure has played a key role in integrating the country into global value chains. However, transportation now account for about 10% of Viet Nam’s GHG emissions and these emissions are expected to continue rising fast without policy changes (Figure 25). Viet Nam’s urbanisation continues at a fast pace, with parallel increases in transportation needs of commuters. All modes of transport based on combustion engines have increased fast: freight transport, passenger cars, and motorcycle ownership. The country’s climate objectives cannot be achieved without reforms in transport policies.

Although car ownership is still low at 23 cars per thousand people, about half of the population owns motorcycles, and metropolitan areas have registered sharp increases in traffic congestion as well as local pollution linked to combustion engines. Many countries have adopted policies to discourage vehicles with internal combustion engines and to encourage low-emission transportation modes, such as electric vehicles. The transition to low-carbon transportation faces challenges such as ensuring enough recharging stations are available to meet the demand of the increasing numbers of electric vehicles. A massive shift to low-emission vehicles would also boost demand for electricity and require additional capacity in power generation. While more wind-powered and solar-powered installations will add more capacity, they supply electricity intermittently and the peak time of supply may not match the peak time of demand, making it necessary to plan for baseload power, or hold sufficient buffers such as pumped-storage hydroelectricity, as mentioned earlier. Promoting public transport can help mitigate serious traffic congestion and reduce overuse of high-carbon emitting vehicles in urban areas. The potential impacts would be large since the share of public transport passengers in Hanoi was 13.7% in total and 9.4% in Ho Chi Minh City as at 2018.

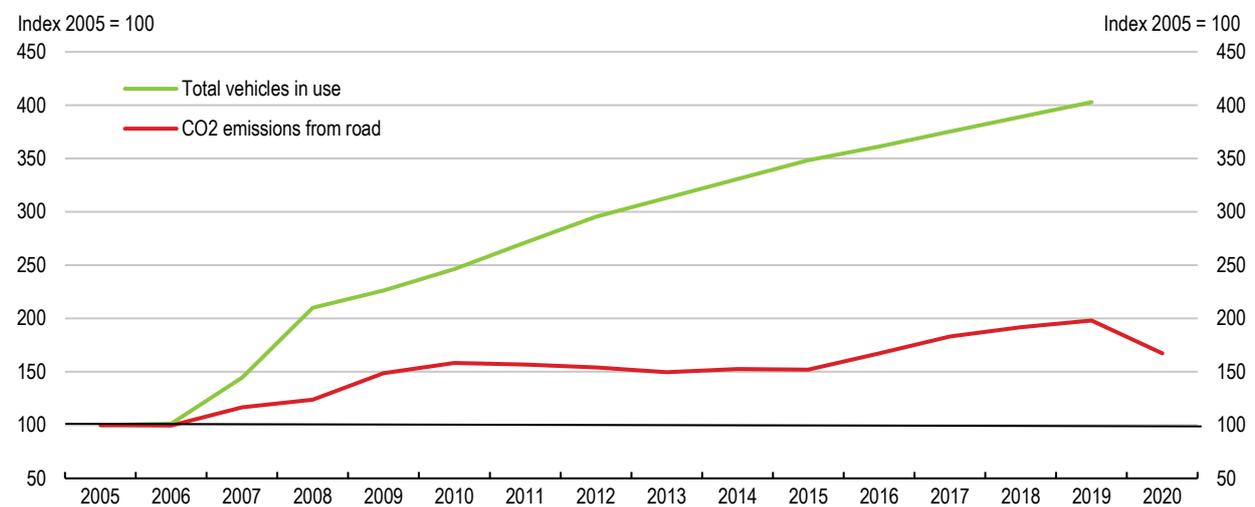
Tax incentives have been introduced in many countries to encourage a shift to low-emission vehicles, and penalties are used to discourage using highly polluting cars and trucks. Tax incentives could also promote the adoption of low-emission vehicles in Viet Nam, such as cuts in registration fees of electric vehicles or a feebate system with additional excise taxes on fossil-fuel cars providing resources to subsidise the purchase of low-emitting vehicles. Nevertheless, any measures to encourage greater electric vehicle usage would require further complementary efforts to decarbonise electricity production.

Some cities, such as Singapore, have decided to phase out all fossil-fuelled vehicles over the next decades, as part of their path toward net zero emissions. Indonesia, Malaysia and Thailand have released roadmaps for electric vehicle development. Access to mass transportation systems is currently insufficient to replace private vehicles and large projects will have to be accelerated if daily commutes are to exclude CO₂-emitting combustion engines.

Viet Nam has adopted many measures to deal with environmental problems caused by unsustainable development of the transport sector. Key policy initiatives are focused on limiting vehicles with internal combustion engines, shifting transportation modes for both passenger and freight from heavily polluted means of transport and vehicles to greener ones; accelerating use of electric vehicles and speeding up public transport that use greener vehicles (including buses and urban subways). Under a moderate transport development scenario developed by a group of experts, 34% of newly sold motorbikes and 30% of newly sold cars in 2030 will be electric. The Viet Nam Automobile and Motorcycle Association (VAMA) projects that by 2028, Viet Nam will have 1 million electric vehicles, although combustion engine vehicles will still dominate. For all vehicles to become electric, it is projected that the number of electric vehicles will need to increase to 3.5 million units by 2030-2040 and 4.5 million units by 2040-2050.

Given the importance of the transport sector for the climate transition, the government adopted a new Action Programme for the sector's green transition in July 2022 (Decision No. 876/QD-TTg). The Programme set a target that all road transport should be electric or use green energy by 2050. It also aims at developing charging infrastructure with green energy use across the country. In recent years, one domestic company has been very active in developing and promoting electric vehicles for both domestic and international markets. The government adopted some measures to support the development of electric vehicles, providing some tax incentives such as reducing registration fees and excise taxes for the domestic purchase of electric vehicles, starting from March 2022. In March 2022, VAMA requested the government to work with them for a new strategic development plan for the automobile industry with special focus on the transition to electric vehicles. The government positively responded to this request and instructed the Ministry of Commerce and Industry to work on this matter (Circular No2506/VPCP-CN in April 2022). It is crucial for the government to start this process with wide public consultation and in-depth analyses that lead to specific and comprehensive measures to speed up the green transformation of the sector.

Figure 25. Viet Nam's road transport vehicles have become more fuel efficient



Source: International Energy Agency, Energy database; OICA (International Organisation of Motor Vehicle Manufacturers).

Table 3. Table of Recommendations

MAIN FINDINGS	RECOMMENDATIONS (key in bold)
Enhancing product-market competition and boosting productivity	
Viet Nam has made remarkable progress in improving the business climate with the aim of boosting productivity. Total factor productivity has rebounded during the 2010s. Nonetheless, large differences still prevail between provinces, and some procedures remain cumbersome.	Continue to simplify business regulations, including through stronger use of digital technologies in areas such as tax payments and insolvency procedures.
Despite the transfer of SOE ownership to the Commission for the Management of State Capital at Enterprises, reductions in government holdings of SOE equities have been slower than planned and ministries and government agencies are still perceived as having an active influence on the management of these firms.	Clarify the functions of the state as owner of companies and regulator of the same companies in order to ensure effective separation.
The appointment of SOE board members remains influenced by non-professional considerations.	Increase the independence of boards and improve the transparency of the nomination process, in line with OECD guidelines on SOEs.
The establishment of a single National Competition Commission (NCC) envisaged by the 2018 Law on Competition has not yet been realised and the incumbent Competition and Consumer Agency (CCA) lacks independence and a sufficient budget.	Give the competition authority the power to take action against state-owned enterprises at central and local levels that abuse their market power, to advocate for competition and to perform market studies. Accelerate the establishment of the National Competition Commission with clear mandate and high transparency and accountability.
Viet Nam invites public comments before adopting new legislation, but there are shortcomings, especially regarding subordinate regulation.	Make public consultation mandatory for new regulations at all levels of government, including through notify and comment procedures, public hearings, and discussion with advisory bodies.
Price controls are widespread, with government agencies setting prices of many retail goods and services, thus undermining the benefits of competition.	Liberalise prices in competitive markets and support low-income groups instead with targeted social transfers.
Boosting the digital economy	
In the telecommunications sector, foreign investors still face some restrictions. Consequently, key telecommunication markets are dominated by three state-owned enterprises, holding back potential economy-wide productivity gains.	Open telecommunications markets to foreign investors, especially by accelerating the adoption and implementation of a new Law on Telecommunications to reduce barriers to foreign entry and easing the foreign ownership restrictions.
The government has improved the delivery of its digital services, but access to government information remained underdeveloped.	Create a national data platform which can be shared among related parties and enterprises.
Both basic and advanced digital skills are lacking, and few students opt for academic courses in science and computing areas.	Enhance digital skills by providing more training opportunities for basic skills and allocating more resources to the technical and vocational education training system and on-the-job IT training of advanced skills.
Cross-border data flows are strictly regulated by the government, which results in high compliance costs.	Ease restrictions on digital cross-border data flows and data localisation.
Early progress has been made with cashless payments, especially during the COVID-19 pandemic, but market entry restrictions remain in place.	Create a more favourable legal environment for digital financial services, including introducing regulatory sandboxes for Fintech, P2P lending and new digital financial models; and updating the National Personal Identification database.
Achieving net zero emissions by 2050	
Viet Nam's greenhouse gas emissions have increased faster than GDP, and the country is one of the largest emitters relative to GDP. The current emissions target of the authorities include reaching net zero emissions by 2050.	Adopt a clear and predictable climate strategy, with consistent long-term goals, especially in relation to greenhouse gas emissions and energy sector reform.
Coal-fired power plants have become the main source of electricity but the government plans to shift away from coal gradually with no new investment after 2030.	Halt investment in new coal-fired power plants as planned and strengthen investment incentives for renewable energy sources, especially onshore and offshore wind energy.
International momentum for green financing to help accelerate the green transition in developing countries has been strong since the Paris Climate Agreement, such as a recently proposed Energy Transition Mechanism that focuses on early retirement of coal-fired power plants.	Participate actively in available international green finance mechanisms, including the acceleration of a feasibility study for the Energy Transition Mechanism.
Agriculture is responsible for about 20% of greenhouse gas emissions and vulnerable to climate change.	Set up a simple, comprehensive and well-coordinated evaluation framework to monitor progress in reducing agriculture emissions.
Car ownership is increasing rapidly and public transportation is still underdeveloped.	Develop a comprehensive programme for decarbonising the transport sector and promoting the shift to electric vehicles.

Unlike some other ASEAN countries, Viet Nam has not yet adopted a green taxonomy to direct finance toward climate-friendly investments.	Adopt a taxonomy of activities that are considered to be contributory to the net zero target.
Credit institutions are exposed to significant risks from the high level of fossil fuel consumption and vulnerabilities to extreme weather events.	Conduct stress tests of commercial banks for their exposure to climate transition and physical risks.
An environmental tax partially reflects the social cost of carbon for gasoline prices, but other fossil fuels face a lower tax burden than gasoline, relative to their respective carbon content. A market for trading emission allowances and carbon credits is planned but the implementation horizon is long.	Accelerate the implementation of the carbon market, starting with an emission trading system in high emission sectors, including the power sector, and eventually expand its coverage, in order to ensure that energy prices can duly reflect cost and increasingly include the negative externalities from greenhouse gas emissions.
Feed-in tariffs have been successful in attracting investment in roof-top solar panels, but they are not the most efficient policy tool.	Use well-coordinated auction mechanisms to attract independent power producers to renewable energy supply.
Carbon pricing can disproportionately impact low-income households whose energy expenditure tends to account for a larger share of their total income compared with other households.	Allocate a certain portion of any carbon pricing revenues to schemes compensating low-income and fuel-poor households and supporting their green investments.

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