Promoting the Productivity of SMEs in ASEAN Countries

Strengthening Capabilities, Enabling Business Dynamics
Foreword

This report is a contribution to the Canada-OECD Project for ASEAN SMEs (COPAS). It benefited from financial support from the Canadian government to the OECD Southeast Asia Regional Programme. Under COPAS, the OECD is conducting policy research to develop new policy insights to support implementation of the ASEAN Strategic Action Plan for SME Development 2016-2025. The report is co-ordinated with the ASEAN Secretariat and its members and has benefited from comments by the ASEAN Coordinating Committee on Micro, Small and Medium Enterprises.

The work on this report pre-dates the COVID-19 crisis where the urgency of policy actions to improve the performance of small and medium-sized enterprises (SMEs) has increased further. SMEs are faced with a sharp fall in demand for their products and services, and are expected to bear the brunt of the economic cost of the pandemic, as they account for the bulk of employment in the most affected sectors. The challenge for ASEAN countries will be to define the right strategy for SMEs following the crisis, including the provision of policy support to help SMEs overcome the crisis and structural reforms that will support them during the recovery and strengthen their role for the future. The policies set out in this report are focused on these structural reforms that can enhance productivity and make SMEs a stronger engine for ASEAN countries in the time to come.

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An early version of this report was presented to the 8th Meeting of the Regional Policy Network on SMEs on 17 October 2017 in Manila, the Philippines. A final version benefited from comments by the ASEAN Coordinating Committee on Micro, Small and Medium Enterprises.
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# List of acronyms, abbreviations and units of measure

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<th>Definition</th>
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<tr>
<td>AEC</td>
<td>ASEAN Economic Community</td>
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<tr>
<td>AIM</td>
<td>Amanah Ikhtiar Malaysia</td>
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<td>COPAS</td>
<td>Canada-OECD Project for ASEAN SMEs</td>
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<tr>
<td>DLT</td>
<td>Distributed ledger technology</td>
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<td>EAMP</td>
<td>Environmentally adjusted multi-factor productivity</td>
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<tr>
<td>EDB</td>
<td>Economic Development Board (Singapore)</td>
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<td>ERIA</td>
<td>Economic Research Institute for ASEAN and East Asia</td>
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<td>ETPL</td>
<td>Exploit Technologies</td>
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<tr>
<td>FDI</td>
<td>Foreign direct investment</td>
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<td>GDP</td>
<td>Gross domestic product</td>
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<td>GVC</td>
<td>Global value chain</td>
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<tr>
<td>ICT</td>
<td>Information and communication technology</td>
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<tr>
<td>ILO</td>
<td>International Labour Organization</td>
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<tr>
<td>ITAP</td>
<td>Industrial Technology Assistance Program (Thailand)</td>
</tr>
<tr>
<td>KBC</td>
<td>Knowledge-based capital</td>
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<tr>
<td>KPI</td>
<td>Key performance indicator</td>
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<tr>
<td>MFI</td>
<td>Microfinance institution</td>
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<tr>
<td>MNE</td>
<td>Multinational enterprise</td>
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<tr>
<td>MOHE</td>
<td>Ministry of Higher Education (Malaysia)</td>
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<tr>
<td>MOSTI</td>
<td>Ministry of Science, Technology and Innovation (Malaysia)</td>
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<tr>
<td>MTI</td>
<td>Ministry of Trade and Industry (Singapore)</td>
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<tr>
<td>NIEO</td>
<td>Nanyang Innovation and Enterprise Office (Singapore)</td>
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<td>NPR</td>
<td>Next production revolution</td>
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<tr>
<td>NRF</td>
<td>National Research Foundation (Singapore)</td>
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<tr>
<td>NTU</td>
<td>Nanyang Technological University (Singapore)</td>
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<td>OP</td>
<td>Olley-Pakes</td>
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<tr>
<td>PISA</td>
<td>Programme for International Student Assessment (OECD)</td>
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<td>PISA</td>
<td>Programme for International Student Assessment (OECD)</td>
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<tr>
<td>PPP</td>
<td>Purchasing power parity</td>
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<tr>
<td>R&amp;D</td>
<td>Research and development</td>
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<tr>
<td>SAP</td>
<td>Strategic Action Plan</td>
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<tr>
<td>SDG</td>
<td>Sustainable Development Goal (United Nations)</td>
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<tr>
<td>SEZ</td>
<td>Special economic zone</td>
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<tr>
<td>SMEs</td>
<td>Small and medium-sized enterprises</td>
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<tr>
<td>SNA</td>
<td>System of National Accounts</td>
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<tr>
<td>SOE</td>
<td>State-owned enterprise</td>
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<tr>
<td>STEM</td>
<td>Science, technology, engineering and mathematics</td>
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<tr>
<td>STRI</td>
<td>Services Trade Restrictiveness Index (OECD)</td>
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<tr>
<td>THB</td>
<td>Thai baht</td>
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<tr>
<td>TVET</td>
<td>Technical and vocational education and training</td>
</tr>
<tr>
<td>USD</td>
<td>United States dollar</td>
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<tr>
<td>WTO</td>
<td>World Trade Organization</td>
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Productivity is the main driver of long-run economic growth, and the foundation for improvements in wages, incomes and living standards. The productivity growth of ASEAN countries is determined by the performance of individual firms in a country, including small and medium-sized enterprises (SMEs), and by the reallocation of resources between the firms in that country. This firm-level perspective is applied in this report to explore the contribution of SMEs to productivity growth in ASEAN countries and examine policies that may help strengthen productivity and competitiveness in SMEs. Aggregate productivity growth will be shaped by two main factors: i) Enhanced capabilities for productivity growth within all firms in a country, including SMEs; and ii) The reallocation of resources between firms, including SMEs, which results from business dynamics, i.e. the growth of some (often the most productive and innovative) firms and the decline of other (often the least productive) firms. Today, a range of new technologies, notably digital ones, provide an opportunity to strengthen the productivity performance of SMEs in ASEAN countries and overcome some of the development traps that are affecting the region. Policy makers in ASEAN countries can help realise these opportunities, by taking supportive action in the following nine areas.

1. **Strengthen talent and skills.** The success of firms, including SMEs, is ultimately driven by the talent and skills of its workers. Education and training policies therefore remain central to policies to improve SME productivity. In the ASEAN region, this requires improvements in education policies, more attention to adult training, and a greater focus on emerging skills needs.

2. **Improved management.** Management matters for the performance of SMEs, but is not yet receiving sufficient policy attention in ASEAN countries. Policy makers should address policies or regulations that negatively affect the ability of managers to improve firm performance, and implement well-designed, targeted training programmes for managers.

3. **Foster innovation and digital transformation.** The ongoing “next production revolution” and the rapid pace of digital transformation, create new opportunities for SMEs to increase productivity growth. Policy makers in the ASEAN regions need to take action to draw the benefits from these new opportunities, while mitigating any risks. This requires: i) enhancing SME access to broadband networks and reducing the digital divides that persist across and within the ASEAN countries; ii) strengthening the diffusion of new technologies and related practices and business models to SMEs; and iii) helping SMEs engage with digital transformation by comprehensive national digital strategies that take SMEs into account.

4. **Enhance SME access to finance.** Investing in new capabilities, such as skills, innovation, digital technologies or machinery and equipment requires access to finance, which remains a key challenge for many SMEs in the ASEAN region. The OECD and the Economic Research Institute for ASEAN and East Asia provided detailed recommendations to ASEAN countries on this topic in 2018, distinguishing between early, mid and advanced stage financing.

5. **Promote entrepreneurship and healthy business dynamism.** Healthy business dynamism in ASEAN countries is essential to encourage the most efficient allocation of resources and facilitate structural change. However, evidence for ASEAN countries presented in this report shows that resource misallocation in many ASEAN countries remains considerable although it has been declining.
over time. Policy makers in ASEAN countries can ensure healthy business dynamics in several ways. The first is by ensuring that regulatory frameworks enable business dynamism, which implies that these should not implicitly or explicitly favour incumbents and hinder experimentation with new ideas, technologies and business models that underpin successful SMEs. Structural reform to enable efficient resource reallocation is also important and requires reforms in sectors that are being disrupted by technological change, policies to facilitate the entry, growth and exit of firms, healthy competition, as well as innovation-friendly regulation to enable the growth of new industries and business models. Policies targeting firms by size should avoid creating disincentives for SMEs to scale up. With the rapid growth of the digital economy, it is also important to ensure sufficient competition in the digital economy.

6. **Strengthen business services for SMEs and enhance collaboration.** No firm operates in isolation and productivity growth in SMEs can benefit from specialised services provided by other firms, or from collaboration with other small or large firms or research organisations. ASEAN countries can take action to strengthen business services for SMEs and enhance collaboration, e.g. by programmes that raise awareness of and create opportunities for linkages and partnerships between SMEs and larger firms, domestically and internationally, as this can help SMEs to exploit their potential in producing intermediate goods and digital services. It is also important to strengthen collaboration to foster technology and knowledge diffusion, as this not only relies on individual SMEs, but also on their networks of suppliers, users and customers.

7. **Strengthen the international connectedness of SMEs.** Further integration of ASEAN countries, including SMEs, in global value chains through trade and investment requires effective policies at and behind the border and in the domestic economy. Recent OECD studies have concluded that SMEs may be disproportionately affected by trade and investment restrictions, due the fact that smaller firms often provide niche services to expand internationally, while the high fixed and sunk costs of exporting can only be met by the most productive firms. Three areas of policy action are particularly important in the ASEAN context: i) continue addressing trade barriers at and behind the border; ii) address barriers to investment, as ASEAN countries remain among the most restrictive economies to foreign direct investment (FDI) in the more than 60 countries covered by the OECD FDI Regulatory Restrictiveness Index; and iii) invest in infrastructure.

8. **Address informality.** Tackling informality is important for ASEAN countries to ensure that policies to enhance SME productivity work for all, as there is a risk that greater use of advanced technologies throughout the economy will further enhance informality. While there is no “silver bullet” to combat informality, a package of policies promoting formalisation, including labour skills, encouraging investment in productive areas, enhancing the tax system and labour regulation, and deterring corruption, can make a difference. Digital tools, such as the use of electronic identities, can also help.

9. **Develop inclusive, people-centred SME strategies.** ASEAN governments need to develop a comprehensive SME productivity strategy and governance approach that supports effective co-ordination across policy areas and among all stakeholders. A strategic vision, clear priorities and objectives, measurable targets, sufficient budget, and thorough monitoring of progress and policy evaluation are essential elements of a successful SME productivity strategy. Moreover, across all of these policy areas, a people-centred and inclusive approach to policy making is essential to ensure that the benefits of stronger productivity growth in SMEs are shared as widely as possible.
This chapter first provides a brief context for this report on ASEAN small and medium-sized enterprises (SMEs) and then provides an outline of the seven chapters of the report, including the policy framework for SME productivity; the main elements of the framework; and the key policy challenges. It also summarises the main conclusions for policies to enhance productivity in SMEs, covering nine areas: i) skills and talent; ii) management; iii) innovation and digital transformation; iv) SME access to finance; v) entrepreneurship and business dynamism; vi) business services and collaboration; vii) international connectedness; viii) informality; and ix) inclusive and people-centred strategies.
1. INTRODUCTION AND POLICY RECOMMENDATIONS

Introduction

This report contributes to the Canada-OECD Project for ASEAN SMEs (COPAS). The COPAS project strives to develop competitive, resilient and innovative small and medium-sized enterprises (SMEs) in ASEAN countries, thus contributing to sustainable and inclusive development in the region. Its aim is to help enhance the knowledge of ASEAN SME policy makers on available good practices and help develop the necessary capacities. Its immediate objective is to support the implementation of the ASEAN Strategic Action Plan for SME Development 2016-2025 (SAP SMED 2025), which is the roadmap for improving the productivity of ASEAN SMEs. This would enable SMEs to fully benefit from a common ASEAN market (the ASEAN Economic Community), which will also contribute to poverty reduction in the region. The ASEAN Coordinating Committee on Micro, Small and Medium Enterprises, which has developed the SAP, is the main intermediate beneficiary of the COPAS Project. The objective is that participating policy makers will gain an increased understanding of the needs of SMEs, enabling the project to contribute to an improved policy environment and institutional framework for SME development across the ASEAN countries.

This report contributes to SAP Strategic Goal A (“Promote productivity, technology, and innovation”), and aims to help enhance SME competitiveness in ASEAN through the further use of productivity-boosting technology and innovation. In many countries, SMEs have a lower uptake of technology and a lower capacity to innovate, which creates an ongoing structural impediment to sustainable and inclusive growth. Addressing this challenge could bring sizeable benefits to ASEAN countries.

An interim report was discussed at the 8th Meeting of the Regional Policy Network on SMEs on 17 October 2017 in Manila, the Philippines. Based on the comments received, this final report includes new analysis and data for ASEAN countries, an integrated policy framework for SME productivity, as well as elaborated policy recommendations to strengthen SME productivity in ASEAN.

The report starts with a discussion of the importance of productivity for sustainable and inclusive growth, after which a policy framework to understand and promote productivity growth is introduced (Chapter 2). The sections that follow discuss the different parts of the framework, i.e.: the broader challenges and opportunities for productivity like digital transformation, structural change and informality (Chapter 3); the necessary capabilities for productivity growth within SMEs (Chapter 4); the role of business dynamics for productivity (Chapter 5); and the international drivers of productivity (Chapter 6). Based on this, Chapter 7 explores the key elements of productivity-enhancing policies and makes policy recommendations to promote productivity growth in SMEs in ASEAN countries. The remainder of this Chapter summarises the main policy recommendations from the report.

Policy recommendations: The productivity of SMEs in ASEAN countries

Productivity is the main driver of long-run economic growth, and the foundation for improvements in wages, incomes and living standards. The productivity growth of ASEAN countries is determined by the performance of individual firms in a country, including SMEs, and by the reallocation of resources between the firms in that country. OECD analysis has identified three key groups of firms that affect overall productivity growth: i) global productivity leaders, often large and multinational firms, that drive the global innovation frontier and that are the source of many new technologies and business processes; ii) national productivity leaders, that are key to absorbing ideas and technologies from global leaders and adopting them to the national context; and iii) follower firms, some of which may lag far behind the productivity frontier, that typically adopt technologies and business practices from other firms within the economy. SMEs are typically more prevalent in the latter group, although some, such as innovative start-ups, may be among the national or even among the global productivity leaders.

This firm-level perspective on productivity is applied in this report to explore the contribution of SMEs to productivity growth in ASEAN countries and examine policies that may help strengthen productivity and competitiveness in SMEs. Given the perspective on productivity highlighted above, aggregate productivity
growth will be shaped by two main factors: i) Enhanced capabilities for productivity growth within all firms in a country, including SMEs; and ii) The reallocation of resources between firms, including SMEs, which results from business dynamics, i.e. the growth of some (ideally the most productive and innovative) firms and the decline of other (ideally the least productive) firms.

The global dimension of productivity growth is also important for SMEs, even though only few SMEs engage directly in foreign markets, either through trade or investment. By tapping into knowledge from firms at the global frontier, through exports, foreign direct investment (FDI) or engagement in global value chains (GVCs), firms can learn from global leaders about advanced technologies and business practices. This is why this report also touches on the engagement of Southeast Asian economies in GVCs, including the role that SMEs play. Leading domestic firms within ASEAN countries, both large firms and SMEs, are often the key channel for this global engagement and can provide a source of technology, knowledge and good practices that can benefit a wider range of firms within the economy.

Most SMEs, however, with the possible exception of innovative start-up firms, are likely to be followers and will need to adopt technology and business processes from other firms, notably from other domestic firms. The speed and intensity of this diffusion process to SMEs are important drivers of aggregate productivity, as are the speed and intensity of resource allocation within the economy. In a well-functioning economy, innovative firms with a high growth potential can scale up, creating new opportunities for growth and jobs, while firms that do not perform well are likely to shrink in size and may ultimately close down, releasing resources (people and capital) in the process that can be used by other firms in the economy.

Today, a range of new technologies, notably digital ones, provide an opportunity to strengthen the productivity performance of SMEs in ASEAN countries and overcome some of the development traps that are affecting the region. Policy makers in ASEAN countries can help realise these opportunities, by taking supportive action in the following nine areas.

1. Strengthen talent and skills

In the end, the success of firms, including SMEs, is driven by the talent and skills of its workers. Education and training policies therefore remain central to policies to improve SME productivity. A recent OECD review showed that firm-level training has positive effects on labour productivity, worker loyalty, enterprise internationalisation and information and communication technology (ICT) adoption (OECD, 2019b). Strengthening talent and skills requires policy action at various levels:

- **Improvements in education systems.** Ensuring the long-term provision of skills to SMEs, including the skills needed in the digital age requires a fresh look at education systems. In addition to the central role of fundamental literacy and numeracy skills, students will increasingly also need access to education that delivers ICT and complementary skills, including problem-solving skills in technology-rich environments, to effectively navigate a digital world (of work). Curricula will also need to ensure a sufficient number of courses for ICT and data specialists as well as options to acquire important complementary competences, such as social, communication or management skills.

- **Adult training.** Collaboration among SMEs, training institutions and government agencies is key to support the upgrading of workforce skills. Governments can support training in SMEs in various ways, including through tax-based measures, direct support (such as vouchers) or through training networks. By gathering small companies with similar training needs, training networks enable SMEs to achieve economies of scale, benefit from more sophisticated training expertise that otherwise they could not afford, and save through reduced transactions costs in the handling of paperwork.

- **A new focus in skills development.** The focus of skills development also needs to attention to ensure that efforts address the skills that people will need to succeed in the emerging world of work, notably sound cognitive skills, ICT skills, complementary skills, specialist skills and the ability to cope with change and keep learning.
2. Improve management

Management matters for the performance of SMEs, but is not always receiving sufficient policy attention. Well-managed firms tend to be more effective in: i) screening talent; ii) developing new work practices; iii) internally reallocating staff; and iv) retraining or removing under-skilled workers. Policy makers have two options to improve management. The first is to address policies or regulations that negatively affect the ability of managers to improve firm performance, or that prevent good management from emerging within firms. Examples including overly strict employment protection legislation, or policies that unduly favour family-based firms. The second is to consider direct interventions to strengthen management, e.g. targeted training programmes for managers. Evidence from several countries shows that such programmes – if well designed and targeted – can have strong impacts on firm performance and help strengthen SME productivity.

3. Foster innovation and digital transformation

The ongoing "next production revolution", including the rapid pace of digital transformation, create new opportunities for SMEs to increase productivity growth. Policy makers in the ASEAN regions need to take action to draw the benefits from these new opportunities, while mitigating any risks. Innovation and the use of digital tools can help SMEs develop more efficient business processes and diverse product lines, as well as scale up and internationalise. However, their current underuse by SMEs highlights important barriers to adoption, which can include a lack of collateral to take risk and to access finance to invest in technologies and complementary assets, or a lack of key capabilities, e.g. human resources and management expertise. For instance, lack of investment in in-house innovation and organisational capabilities often limits the capacity of SMEs to take full advantage of data analytics, engage in e-commerce or participate in knowledge networks. To help SMEs overcome barriers to innovation and the effective use of digital tools, ASEAN governments can take the following actions:

- **Enhance SME access to broadband networks** and reducing the digital divides that persist across and within the ASEAN countries, as discussed in detail in a separate OECD report. This can help spread the opportunities linked to the digital transformation to SMEs across the ASEAN region and help ensure an inclusive transformation.

- **Strengthen the diffusion of new technologies** and related practices and business models to SMEs. This implies fostering investment in tangible (machinery and equipment) and intangible capital, i.e. skills, organisational capital, process innovation, intellectual property, research and development (R&D), as well as new business models. Targeted support schemes can play a role, and may help to facilitate the adoption of tools that are particularly beneficial to SMEs, such as cloud computing, as this requires limited up-front investment and offers flexible upscaling or downscaling of activities. Measures to help SMEs overcome obstacles to better exploit and protect intellectual property and leverage other intangibles are also important. This may include, for example, targeted skills development or measures to overcome hurdles to accessing intellectual property, such as administrative burdens and complex and costly litigation and enforcement mechanisms.

- **Help SMEs engage with digital transformation** by comprehensive national digital strategies that take into account SMEs, including policies that facilitate access to finance, knowledge networks and skills, and SME engagement with competency centres and/or technology extension services.

4. Enhance SME access to finance

Investing in new capabilities, such as skills, innovation, digital technologies or machinery and equipment requires access to finance, which remains a key challenge for many SMEs in the ASEAN region. The OECD and the Economic Research Institute for ASEAN and East Asia provided detailed recommendations to ASEAN countries on this topic in 2018 (OECD/ERIA, 2018), distinguishing between early, mid and advanced stage financing. Recommendations included:
1. INTRODUCTION AND POLICY RECOMMENDATIONS

1.1 Early stage:
- Develop legislation and provide support to facilitate the introduction of credit bureaus.
- Introduce legislation to oblige microfinance institutions and utility companies to report credit information.
- Develop national strategies for financial education.
- Look into the development of a credit guarantee scheme.

1.2 Mid stage:
- Enhance institutions to support secured bank lending, for instance via centralisation of the movable assets registry.
- Consider directing a small amount of government funds towards high-growth firms.

1.3 Advanced stage:
- Review secured transaction legislation to ensure that any ambiguity has been minimised.
- Consider developing common standards on data sharing and information security for financial institutions.
- Further experiment with regulatory sandboxes.

5. Promote entrepreneurship and healthy business dynamism

Healthy business dynamism in ASEAN countries is essential to encourage the most efficient allocation of resources and facilitate structural change, which in turn encourages the adoption and diffusion of new technologies, practices and business processes. Productivity growth involves a process of experimentation with such new tools, with some firms successfully adopting new tools and rapidly scaling up, and others scaling-down and potentially exiting the market. However, evidence for ASEAN countries presented in this report shows that resource misallocation in many ASEAN countries remains considerable although it has been declining over time. New OECD evidence shows that a relatively large share of resources are allocated to the more productive firms in ASEAN economies, indicating that the reallocation of resources contributes positively to the overall productivity level of the economy. At the same time, evidence on productivity growth at the firm level for three ASEAN countries (Indonesia, Viet Nam and Thailand) show that, despite robust productivity growth at the aggregate level, most firms have seen their distance to the productivity frontier increase in recent years. This suggests that the benefits of growth are unequally distributed across businesses and workers, and that the process of technology diffusion from the frontier and laggard firms may have slowed down.

Policy makers in ASEAN countries can ensure healthy business dynamics in several ways:

- Ensure that regulatory frameworks enable business dynamism. In some countries, existing frameworks may implicitly or explicitly favour incumbents and hinder experimentation with new ideas, technologies and business models that underpin successful SMEs. Policies that can affect competitive pressure and business dynamism, and in turn technology diffusion and better resource allocation, include: labour market regulations, employment protection legislation, and the design of insolvency regimes, e.g. less penalising sanctions for bankruptcy and lower barriers to corporate restructuring of insolvent firms.

- Foster structural reform to enable efficient resource reallocation. This requires reforms in sectors that are being disrupted by technological change, policies to facilitate the entry, growth and exit of firms, healthy competition, as well as innovation-friendly regulation to enable the growth of new industries and business models. Policies targeting firms by size should avoid creating disincentives for SMEs to scale up. For instance, in the case of regulatory simplification for SMEs, efficient firms may choose to remain small to avoid the additional regulatory burden that may come with a certain size threshold.
• Ensure sufficient **competition in the digital economy** by providing competition authorities with rules and tools to address the new challenges posed by the digital economy, where these prove to be necessary, and by strengthening co-operation across national competition agencies to address competition issues that are increasingly transnational in scope or involve global firms.

### 6. Strengthen business services for SMEs and enhance collaboration

No firm operates in isolation and productivity growth in SMEs can benefit from specialised services provided by other firms, or from collaboration with other small or large firms or research organisations. ASEAN countries can take action to strengthen business services for SMEs and enhance collaboration, e.g. by:

• **Programmes that raise awareness of and create opportunities for linkages and partnerships between SMEs and larger firms**, domestically and internationally, as this can help SMEs to exploit their potential in producing intermediate goods and digital services. Some ASEAN governments have implemented initiatives to increase opportunities for links between local firms and international partners. They involve the provision of information and building awareness, training facilities and courses, capacity-building programmes, upgrading activities, etc. The related OECD-COPAS work on inclusive investment in global value chains and opportunities for ASEAN SMEs (López González et al., 2019) discusses such policies in more detail including their advantages and drawbacks.

• **Collaboration to foster technology and knowledge diffusion**, as this not only relies on individual SMEs, but also their networks of suppliers, users and customers. Other key actors involved in diffusion include government technology transfer offices, universities, non-governmental stakeholders and test beds to help de-risk prospective investments. Examples of diffusion mechanisms used include industrial extension programmes, technology transfer, technology-oriented business services, applied technology centres, R&D centres, knowledge exchange and demand-based instruments. In addition, networks, partnerships, and open source collaborations are increasingly important in orchestrating diffusion.

### 7. Strengthen the international connectedness of SMEs

Further integration of ASEAN countries, including SMEs, in GVCs through trade and investment requires effective policies at and behind the border and in the domestic economy. Barriers to trade (of goods and services) and investment can hamper the flow of productive resources across borders, raise costs for firms and limit productivity gains. Recent OECD studies have concluded that **SMEs may be disproportionally affected by trade and investment restrictions**, due the fact that smaller firms often provide niche services to expand internationally, while the high fixed and sunk costs of exporting can only be met by the most productive firms. SMEs may also not be able to benefit from trade liberalisation to the same extent as larger firms. Three areas of policy action are particularly important in the ASEAN context:

• **Continue addressing trade barriers at and behind the border**. Through AEC 2025, ASEAN will continue to reduce or eliminate border and behind-the-border regulatory barriers that impede trade, so as to achieve competitive, efficient, and seamless movement of goods within the region. However, the performance of ASEAN countries across all OECD trade facilitation indicators remains below best practice worldwide, hence promoting policies that streamline border procedures, improve information availability, simplify trade documents and automate border processes are likely to help. Further progress can also be made in some ASEAN countries as regards non-tariff measures, e.g. regulatory improvements and streamlining of inspection procedures in the logistics sector. Investment in efficient services, e.g. logistics services and communication and information services can also facilitate the integration of ASEAN economies in GVCs. All of these measures may be particularly beneficial to SMEs, as they are particularly affected by high costs and complex procedures.
1. INTRODUCTION AND POLICY RECOMMENDATIONS

- **Address barriers to investment.** The international integration of ASEAN is to large extent due to the success of ASEAN counties in attracting multinational enterprise (MNE) affiliates through a mix of incentives, selective liberalisation and strong investment protection guarantees. Nevertheless, ASEAN countries are among the most restrictive economies to FDI in the more than 60 countries covered by the OECD FDI Regulatory Restrictiveness Index. The OECD Investment Policy Review of Southeast Asia formulated recommendations in four areas, i.e.: i) services liberalisation to support the development of the services sector; ii) streamlining of investment protection regimes; iii) improvements in the provision of investment incentives for FDI; and iv) the development of strategies to promote and enable responsible business conduct. As discussed above, MNE activities may contribute directly and indirectly to productivity in host countries. Technological knowledge and expertise may spill over to the domestic sector, including SMEs, and if sufficiently absorbed by domestic companies may stimulate productivity. The frequency and size of these spillovers depends among others on the size and type of linkages between MNEs and domestic companies and the absorptive capacity of domestic suppliers. Technology transfers are more effective when firms possess previously accumulated knowledge and innovative capabilities.

- **Invest in infrastructure.** In addition to trade and investment barriers, a high-quality transport infrastructure with major international gateways and corridor infrastructures such as airports, harbours, railways and highways facilitates economies’ participation in GVCs. Moreover, a performant digital infrastructure has become a key determinant of success in international production networks as GVCs crucially depend on seamless and uninterrupted information flows across companies and economies.

8. **Address informality**

Tackling informality will also be important for ASEAN countries to ensure that policies to enhance SME productivity work for all, as there is a risk that greater use of advanced technologies throughout the economy will further enhance informality. While there is no “silver bullet” to combat informality, a package of policies promoting formalisation, including labour skills, encouraging investment in productive areas, enhancing the tax system and labour regulation, and deterring corruption, can make a difference. Digital tools, such as the use of electronic identities, may also help to implement such policies.

9. **Develop inclusive, people-centred SME strategies**

Addressing all of these policy areas in a flexible, forward-looking and integrated strategy that cuts across policy silos is essential to fully realise the potential of SMEs for productivity growth. None of the policies set out above can be successful on their own. ASEAN governments therefore need to develop a comprehensive SME productivity strategy and governance approach that supports effective co-ordination across policy areas and among all stakeholders. A strategic vision, clear priorities and objectives, measurable targets, sufficient budget, and thorough monitoring of progress and policy evaluation are essential elements of a successful SME productivity strategy.

Moreover, across all of these policy areas, a people-centred and inclusive approach to policy making is essential to ensure that the benefits of stronger productivity growth in SMEs are shared as widely as possible. Ensuring access to finance and key technologies and knowledge for all SMEs, supporting jobs and strengthening skills in SMEs, sound competition and healthy business dynamics, are key elements of an inclusive and people-centred approach.

Policies to boost productivity in SMEs also need to consider some of the core elements of sound SME policies, as noted in OECD/ERIA (2018), i.e.:

- **Ensure coherence in SME policies,** whereby interventions are strategic, sequenced and coherent, as this can increase the impact of interventions and programmes.
• **Strengthen data collection and analysis** to help ensure that policies are evidence-based and well targeted. In many ASEAN countries, such statistics are missing or are not collected systematically. The lack of data also hinders monitoring and evaluation of the impact of SME policies. In the area of SME productivity, the further development of firm-level statistics on productivity would be particularly helpful.

• **Devote sufficient attention to policy processes throughout the entire policy cycle** from design, adoption and implementation, through to monitoring and evaluation, as this will help ensure that policies remain responsive to firms’ real needs and can be targeted on the most important challenges.

• **Expand regional co-operation on SME development**, which could allow countries to better leverage domestic resources. This could include a more extensive sharing of best practices on SME productivity.

• **Pay greater attention to the social contribution of SMEs in policymaking**, which could help ASEAN member states to pursue greener, more inclusive economic development.
This chapter sets out the importance of productivity for future growth in ASEAN countries, as growth will become less dependent on abundant labour and capital investment, and more on innovation and improvements in efficiency. It also provides a conceptual framework showing that aggregate productivity is shaped by two main factors: i) productivity-enhancing investments within each firm, and including in small and medium-sized enterprises, particularly in intangible or knowledge-based capital such as R&D, firm-specific skills and organisational capital; and ii) a market environment that facilitates the growth of the most productive firms and enables the reallocation of resources between firms from lagging to the most productive firms. The linking factors between firm productivity and aggregate productivity are business dynamism and the reallocation of resources within the economy. This firm-level perspective is illustrated with data for selected ASEAN countries, and will be applied throughout the report.
Productivity and economic growth

Rising productivity is the main driver of long-run economic growth, which in turn is the basis for improvements in wages, real incomes and living standards. Most of the existing gaps in income levels across countries are due to differences in labour productivity (Figure 2.1). ASEAN countries, with the exception of the Philippines, all have higher levels of labour utilisation than the United States (used as an international benchmark on productivity), mainly due to relatively long working hours. The gap in income levels with global leaders, such as the United States, is therefore entirely due to the low levels of labour productivity (i.e. gross domestic product (GDP) per hour worked) in ASEAN countries, showing how important it is to lift productivity performance.

Figure 2.1. Income and productivity levels in ASEAN and comparator countries, 2018

Percentage-point differences with respect to the United States

1. Based on hours worked per capita.
2. Based on GDP per hour worked.
Note: GDP = gross domestic product.
As the Nobel Prize winning economist Paul Krugman noted in 1994: “productivity isn't everything, but in the long run it is almost everything”. Productivity reflects the ability of a firm, industry or economy to produce more output by better combining labour, capital and other inputs, owing to new ideas, technological innovations, more efficient processes, and new business models. Two different measures of productivity – labour productivity and multi-factor productivity – are often used interchangeably in policy discussions although they have a somewhat different meaning (Box 2.1).

Box 2.1. Productivity: Explaining the concept

Both labour and multi-factor productivity are a measure of efficiency, hence are expressed as a ratio between output and input(s). Labour productivity is calculated by dividing total output by the number of workers or the number of hours worked. This type of productivity is the easiest to calculate, although there are a number of statistical issues in the calculation of this productivity measure (see, for example, Syverson, 2011). Because it is a single-factor productivity concept, labour productivity may provide an incomplete measure of efficiency, for example, when firms increase their output per man-hour by equipping workers with more or better machinery. If most labour productivity growth is due to greater use of capital (or capital deepening), there may be little or no gain in overall economic efficiency.

Another measure of an economy’s use of resources is multi-factor productivity, which captures the efficiency with which key factor inputs – typically capital as well as labour – are used. It is calculated as the percentage increase in output that is not accounted for by changes in the volume of inputs of capital and labour. In many advanced countries, which are typically characterised by a stable – or more recently even decreasing – labour force and which may sometimes have a very low return on additional capital investments, multi-factor productivity growth has become the main source of economic growth.

There has been quite some debate in academic and policy circles on which productivity measure to use. Because it takes into account several production factors, multi-factor productivity is generally considered to be a more complete measure although it is much harder to calculate. For example, while measuring the number of workers or hours worked is relatively easy, the calculation of capital services is much more difficult and different ways of valuing a country’s capital stock can produce different results. Moreover, multi-factor productivity is typically measured as a residual, i.e. the growth in output that cannot be explained by the increase in (observed) production inputs.

Both measures have thus their merits and are often simultaneously used in policy analysis and discussions. It is clear however that labour and multi-factor productivity capture different realities, hence their interpretation is and should be different.

From a policy point of view, the growth of productivity is more important rather than its actual level. High productivity growth indicates the ability of a country to improve the efficiency of its production processes and thus increase wages and incomes over time, whereas a high level of productivity may simply indicate an abundant resource environment. At the same time, realising high rates of productivity growth over a long time period is often difficult because it requires continuous improvements in the efficient use of production factors (OECD, 2015a).

Productivity growth is already the key driver of growth for many advanced countries, but is also expected to become the main driver of economic growth in ASEAN countries over the coming decades. Emerging economies initially typically derive most economic growth from the expansion of their productive resources, i.e. investment in capital and greater use of labour in the production process. But in the process of economic development, growth typically moves from being highly labour-intensive, when labour is abundant and cheap; to becoming more and more capital-intensive; and to ultimately becoming more and more rooted in innovation and the growth of multi-factor productivity.
Indeed, labour input has become less important as a factor of production over time in developed as well as some emerging economies, since the population in many countries is now ageing and the labour force has started to decline in several countries. Furthermore, studies of long-term economic development across countries show that multi-factor productivity growth typically becomes a more important driver of growth in relative terms as countries exhaust some of the possibilities for productive investment in (tangible) capital, i.e. machinery, equipment and buildings.

This macro-economic perspective of productivity growth, which is focused on labour input, investments in tangible (machinery, equipment, and buildings) and intangible capital (such as research and development [R&D], software, intellectual property, or skills), and multi-factor productivity growth points to several important elements in the analysis of productivity, but provides a rather static perspective of productivity growth, ignoring its dynamic nature.

As suggested by Schumpeter (1942), productivity growth and innovation are accompanied by creative destruction as new firms enter the market, sometimes growing quickly and thus increasing their market share, replacing other firms with low productivity that are in decline and that will eventually close down and exit the market. This dynamic feature of innovation, characterised by firm growth and resource allocation among firms (OECD, 2015b), has specific implications for policy, and in particular for the role of small and medium-sized enterprises (SMEs), as discussed further in this report.

Moreover, the macro-economic perspective can say little about the contribution of SMEs to productivity. To look at this it is important to move from a macro- to a micro-economic perspective, where the contributions of individual firms, including SMEs, can be taken into account. Accordingly, Figure 2.2 sketches an analytical framework that combines different types of firms – e.g. firms that are at the global frontier, those that are at the national (but not at the global) frontier and lagging firms.

**Figure 2.2. A stylised depiction of the factors shaping aggregate productivity growth**

Note: FDI = foreign direct investment; KBC = knowledge-based capital.
The global frontier firms are important for (global) productivity growth as they account for much innovation, including the development of new technologies and also to process and organisational innovations, including new business practices and business models. These new (global) frontier technologies typically do not immediately diffuse to all firms. At first, they are only accessible to the most productive firms in an economy (i.e. national frontier firms). Over time they can become a source of technology and business practices to lagging firms as well, but often only once global best practices have been adapted to domestic circumstances by national frontier firms.

The extent to which new technologies and knowledge diffuse to national frontier firms and in due course to laggards will depend on a host of policy and structural factors. In this context, aggregate productivity will be shaped by two main factors:

- productivity-enhancing investments within each firm, and including in SMEs, particularly in intangible or knowledge-based capital (KBC) such as R&D, firm-specific skills and organisational capital
- a market environment that facilitates the growth of the most productive firms and enables the reallocation of resources between firms from lagging to the most productive firms.

These two factors interact since firms’ productivity-enhancing investments (especially in KBC) will also be shaped by their perceptions of the costs and benefits of implementing and commercialising new ideas, the ability to scale up activity if successful or to exit at low cost if unsuccessful, which each depend on the ease of reallocating resources to their best use.1

This micro-economic perspective on productivity growth is of crucial importance to ASEAN countries. Tapping into knowledge from firms at the global frontier typically requires that countries and firms engage in global trade and value chains, where they become exposed to global leaders. This is why this report pays considerable attention to the engagement of Southeast Asian economies in global value chains (GVCs), including the role that SMEs play in this context. Leading (national frontier) firms within Southeast Asia are often a key channel for this global engagement and can provide an important source of technology, knowledge and good practices that can benefit a wider range of firms within the economy. Moreover, the growth of such leading firms within Southeast Asian economies can strengthen aggregate productivity performance, if these firms are able to enhance their market share at the expense of other firms.

Most SMEs, however, often with the exception of some innovative start-up firms and some niche players, are likely to be followers and will need to adopt technology and business processes from more advanced firms. Whether and how rapidly this diffusion to SMEs occurs is a key determinant of aggregate productivity growth and also determines how widespread or inclusive productivity growth is. The recent experience in many OECD countries shows that many SMEs have not (yet) been able to benefit from the new potential for productivity growth linked to new technologies, with many firms experiencing stagnating productivity growth despite the prevalence of new technologies. This report will explore this question for ASEAN countries.

Growth and productivity in ASEAN countries

The ASEAN region has witnessed strong economic growth during the past two decades: with the exception of Brunei Darussalam, annual growth rates have been above 4% to 5% in all ASEAN countries. Because of this strong economic performance, living standards and incomes have risen rapidly: GDP per capita in purchasing power parity (PPP) in ASEAN more than doubled from constant PPP Intl USD 4 470 (international dollars) in 2000 to constant PPP Intl USD 12 361 by 2017 (OECD, 2018a). Cambodia, Lao PDR and Viet Nam have experienced particularly strong income growth.

Capital investments have been the major determinant of economic growth over the past two decades with the contribution of capital inputs accounting for more than 50% of total GDP growth in all ASEAN countries (Figure 2.3). This illustrates that the catching-up trajectory of ASEAN has thus far been largely based on the accumulation of physical capital. From 2000 to 2008, multi-factor productivity growth accounted for...
around 25% of total GDP growth in several ASEAN countries, including Malaysia, Thailand, Singapore and Viet Nam. Since the economic crisis, the contribution of multi-factor productivity growth to GDP growth has fallen dramatically in most ASEAN countries, with only Thailand and the Philippines still experiencing a strong contribution.

Figure 2.3 also distinguishes information and communication technology (ICT) and non-ICT capital investments, and shows that in some countries, e.g. Cambodia, Malaysia, Thailand and Viet Nam, ICT investments accounted for a considerable share of total GDP growth.

**Figure 2.3. Composition of economic growth in ASEAN, annual average rates**

Note: No data are available for Brunei Darussalam and Lao PDR.
A long-term perspective on the productivity performance of ASEAN countries is provided in Figure 2.4, showing labour productivity levels from 1970 to today for eight ASEAN countries compared to a number of other countries. The graphs demonstrate the large gaps that still exist across ASEAN countries, where Singapore is close to the United States in its level of labour productivity, Malaysia is close to Korea but has
lost some ground, and Thailand is at a similar level of productivity as the People’s Republic of China (hereafter “China”). Labour productivity levels in Indonesia and the Philippines have now been surpassed by China, due to its rapid pace of productivity growth, whereas Viet Nam, Myanmar and in particular Cambodia still have a very low level of labour productivity. The two graphs also illustrate that progress can be made, sometimes quite rapidly. For example, China’s productivity performance has been very strong since the early and mid-2000s and Korea has also shown much progress. Similar opportunities may therefore exist for ASEAN countries to converge on leading countries.

Emerging Asia’s growth has been anchored by the resilience of private consumption (OECD, 2019a). The region’s exports were affected by the broadening economic weakness in advanced economies, compounded by the US-China trade tensions and uncertainties over Brexit. Policy signals are still mixed and risks remain high, even for countries where export growth is stabilising. Some countries in the region may benefit from trade diversion and deflection as a result of the trade tensions in the near term.

Previous OECD analysis for emerging Asia noted already that further domestic structural reform will be necessary to improve prospects for inclusive and sustainable growth, based on improved productivity performance. Important policy challenges include the domains of skills and education, foreign direct investment (FDI), infrastructure and connectivity, green finance, trade, state-owned enterprises, land use and innovation (OECD 2018b).

Looking beyond GDP

In ASEAN, as in other regions of the world, the exclusive focus on economic growth has become under increasing scrutiny in recent years as raising people’s overall well-being goes beyond productivity and economic growth. GDP per capita abstracts from important dimensions of well-being like for example health care and education, meaningful employment, social life, environment, etc. Recent initiatives going beyond GDP aim to capture non-income related factors that influence the standard of living in a society. The OECD for example has done much work in recent years on “measuring well-being and progress”, by analysing several factors that determine the quality of life and material conditions (OECD, 2017a). Accounting for the environment is also of great importance (Box 2.2), as growth may be overestimated in countries that rely on the depletion of natural resources or that invest heavily in polluting technologies.

Box 2.2. Greening productivity measurement: accounting for the environment in economic growth

Traditional productivity measures like multi-factor productivity only account for labour and produced capital as inputs and GDP as an output, but fail to fully capture the use of natural resources and the efforts to reduce pollution emissions. While the revenue from extracting natural resources is reflected in the GDP, the use of natural resources as an input is not taken into account. On the other hand, while the costs of reducing pollution are reflected in increased labour and produced capital inputs, no account is made of these efforts on the output side. As such productivity growth will be overestimated in countries where output growth relies on depletion of natural capital or on heavily polluting technologies. Reversely, productivity growth will be underestimated in countries that invest in more efficient use of (domestic) natural resources or in pollution abatement.

The OECD has introduced the concept of “environmentally adjusted multi-factor productivity” (EAMP) and provided first estimates. The new measurement takes into account the contribution of natural capital to economic growth (“How much does current income growth depend on natural resource use?”) while it adjust economic growth for pollution abatement (“To what extent economic growth has been achieved at the expense of environmental quality?”).
While still being a work in progress, the first results demonstrate the differences between the new measure of “EAMP” from the traditional measure of multi-factor productivity. Taking into account the contribution of natural capital and pollution abatements, EAMP is typically smaller than multi-factor productivity. OECD (2016a) has presented results for 51 OECD and G20 countries; Indonesia is the only ASEAN country included in this work thus far.

Figure 2.5. Sources of economic growth and environmentally adjusted multi-factor productivity growth

Selected countries, annual average, 1991-2013

Note: MFP = multi-factor productivity.

There are also growing concerns about a possible trade-off between these non-income outcomes and the more traditional, economic measures like GDP per capita. For example, inequality has been increasing over time in many countries, with a rising share of capital income in total income and wage growth concentrated disproportionately on high-wage earners (OECD, 2018c). And despite decades of (strong) economic growth, differences in income, living conditions and opportunities persist for certain groups (e.g. women, migrants, small firm employees, urban workers) (Box 2.3). There is a growing awareness among policy makers of the so-called productivity – inclusiveness nexus, with important implications for policy makers seeking to boost growth and well-being in their countries. Productivity growth as a prerequisite of economic growth needs to attain higher levels of inclusiveness across people, employees, firms and regions (Box 2.3).
Box 2.3. Gender inclusiveness, entrepreneurship and SMEs in ASEAN

The rapid economic growth in ASEAN has resulted in improved socio-economic conditions, with expanded and enhanced employment opportunities, gradually rising wages and better living standards. Yet, the dividends of this strong and multi-faceted dynamism have not, so far, been evenly shared between men and women. Whereas economic growth and better targeted social policies have contributed to shrinking gender gaps in educational attainment, significant disparities remain in women’s labour force participation, job quality and earnings in the region.

A number of observations on the gender gap are reported in the OECD-COPAS publication *Strengthening Women’s Entrepreneurship in ASEAN* (OECD, 2017b):

- Enrolment rates in primary education in ASEAN are high (at least 90%) with boys and girls enjoying broadly similar enrolment rates. However, there remain several millions of out-of-school children of primary school age in the region, and the likelihood to be excluded from basic education is stronger for girls.
- Female labour force participation was close to 67% in 2015, thus exceeding the OECD average by about 5 percentage points. Nevertheless, in the higher-income ASEAN countries, where in principle women are more likely to access jobs of better quality, the scope for reducing gender gaps in participation remain large. Important gender disparities are displayed by the most disadvantaged socio-economic groups.
- Self-employment is common but female-owned businesses are in general of lower quality and less profitable than male-owned businesses. Not only do female-owned businesses typically concentrate in the most disadvantaged sectors, predominantly in agriculture, but even when operating in industry or services, such businesses concentrate in a limited number of activities, such as catering, tailoring, beauty and food processing and lag behind those of men in terms of occupational strategy, size and productivity.
- Although earning inequality between men and women has tended to diminish over the past few years for the Southeast Asian region, women continue to earn significantly lower wages than men.
- Women more often than men face problems associated with lack of initial capital or limited access to investment credit necessary to develop their businesses.
- Large disparities in job quality and remuneration between men and women in the Southeast Asian region are also reflected in the low prevalence of women in leadership positions in both the public and private sectors.

By increasing value added and creating quality jobs, SMEs and entrepreneurship can represent important channels for inclusion and poverty reduction. Small businesses contribute to inclusion by serving locations, populations and markets that do not have enough scale to attract larger firms. Entrepreneurial opportunities represent an important vector for economic and social participation and upward mobility, by allowing disadvantaged or marginalised groups, including young people, women, seniors, migrants, ethnic minorities and the disabled, to participate in the economy. Increasing entrepreneurship among these groups, as well as improving the quality of their business start-ups, represents an opportunity to increase participation in the labour market and boost productivity (OECD, 2017b).

Firm-level perspectives on productivity

As noted above, traditional analysis of productivity at the aggregate, economy-wide level focusing on labour input, capital investment and multi-factor productivity growth provides some important insights in the drivers of growth, but abstracts from important developments at the firm level. Research across many countries has demonstrated significant and persistent productivity differences across firms within countries, even within narrowly defined industries.

Productivity growth is also crucial at the firm level as it supports the competitiveness, growth and performance of firms. Just like at the aggregate level, productivity (growth) at the firm level is an important indicator of performance in addition to other core indicators such as profitability, costs and market share. Productivity measures demonstrate how efficiently available resources are utilised to produce a given level of output. Hence, when businesses become more productive, they use less resources to produce a given amount of input, enabling them to increase profits and market share. Productivity also enables firms to expand and gain market share, invest and create additional jobs.

Productivity performance is also closely related to the internationalisation of firms, i.e. the growth of its activities abroad. Previous research has shown that internationally active firms, through trade or FDI, are more productive than domestically active firms. For example, multinational enterprises are typically characterised by a higher productivity level than purely domestic firms. Likewise, exporting firms show higher productivity levels than non-exporting firms. One reason for these productivity differences is that firms are confronted with additional costs when they want to target foreign markets, e.g. to modify domestic products for foreign consumption; transport, distribution and marketing costs; or to hire skilled personnel to manage foreign networks. These costs serve as entry barriers for firms, resulting in a process of self-selection with higher-productive firms more likely to cope with these extra costs (Roberts and Tybout, 1997; Bernard and Jensen, 1999). SMEs are disproportionally affected by these costs and are therefore less likely to internationalise than larger firms, although today digital technologies and new business models allow firms to engage in international networks more easily than before.

Moreover, being active in foreign markets may in itself bring advantages. Entering foreign markets often means higher competitive pressures, larger economies of scale, or access to new technology. Learning-by-exporting or investing means that firms may improve their productivity by operating abroad. Both hypotheses are not mutually exclusive: high-productivity firms that can afford the extra cost of entry into foreign markets may improve their productivity as a result of their international activities. However, most empirical evidence suggests that self-selection is the dominant factor, i.e. the more highly productive firms are more likely to engage in international markets.

SMEs and productivity growth

Large differences in productivity performance exist between firms due to a multitude of factors. A first group of determinants is related to the technology firms use to produce and thus to the industry in which firms operate. Industry characteristics such as capital intensity, scale economies, R&D investments, and technological intensity are all factors that help explain differences in average productivity (level and growth) between firms across industries.

At the firm level, in addition to internationalisation, another important factor is firm size. SMEs account for the vast majority of enterprises in ASEAN (Box 2.4). Empirical evidence demonstrates a persistent productivity gap between SMEs and large firms across countries. Productivity typically increases with firm size due to increasing returns to scale. However, this relationship between employment size and productivity is less present in the growing service sector of advanced economies (Berlingieri, Calligaris and Criscuolo, 2018). In the services sector, medium-sized firms may sometimes outperform large firms, exhibiting competitive
advantages in niche, high-brand or high intellectual property content activities, as well as in the intensive use of affordable ICT (OECD, 2017c).

In addition to scale economies, other factors like internationalisation (as SMEs are typically less internationally active) and certain size barriers (in finance, skills, etc. – see below) may also help explain their productivity disadvantage.

Box 2.4. The importance of SMEs in ASEAN

Although the definition of what constitutes an SME varies between ASEAN countries, SMEs are estimated to represent around 97% to 99% of the enterprise population in most ASEAN countries. The SME sector tends to be dominated by micro enterprises, which typically account for 85% to 99% of enterprises (where data is available). There is a relatively low share of SMEs across the region as a whole, which may be indicative of a “missing middle” in the region’s productive structure (López González, 2017). In most ASEAN countries, SMEs are predominantly found in labour-intensive and low value-added sectors of the economy, particularly retail, trade and agricultural activities. As such, they continue to account for a high share of employment but for a lower share of gross value added in most countries. The latest available data for the region suggests that SMEs account for around 66.3% of employment (based on the median average) and 42.2% of gross value added (López González, 2017). SMEs’ relative importance as a source of employment varies across countries in Southeast Asia: according to ASEAN (2015a), micro, small and medium-sized enterprises account for 97% of employment in Indonesia but for only 51.7% of employment in Viet Nam.

Evidence from the MultiProd project, a distributed micro-data project carried out at the OECD (Box 5.3), shows that the positive correlation between firm size and productivity (Lucas, 1978; Melitz, 2003) also holds for ASEAN countries. Figure 2.7 shows the size productivity relationship for three ASEAN countries where detailed firm-level data are available: Indonesia, Thailand and Viet Nam. The figure shows the productivity level of the typical firm in a certain size group relative to the level of the average firm in the

Figure 2.6. SME share of total establishments and employment in ASEAN countries, 2014

20-49 employee size group. Due to data availability and cross-country comparability, the analysis in this report focuses on manufacturing, while evidence for non-financial market services (referred to as “services” for brevity) is available only for Viet Nam.

Consistent with empirical evidence across countries, both labour productivity and multi-factor productivity increase strongly with employment size in manufacturing (Berlingieri, Calligaris and Criscuolo, 2018). However, compared to a benchmark of selected OECD countries, the productivity gap between large and small businesses is much more pronounced in the ASEAN countries under study. Large firms with more than 500 employees display a productivity level that is about 2.7 times higher than firms with 20 to 49 employees both in Indonesia and in Thailand. Conversely, the gap is less marked in Viet Nam, where it is only marginally larger than in the benchmark group of countries.

Figure 2.7. Relative productivity by size classes, manufacturing and non-financial market services
Indonesia, Thailand, Viet Nam compared to benchmark countries (Index, 20-49 = 1)
2. WHY PRODUCTIVITY MATTERS

Notes: This figure presents average productivity across four different firm size classes (50 to 99; 100-249; 250-299; more than 500 persons engaged) relative to the average productivity of firms with 20 to 49 workers (as well as below 20 workers, for Thailand). It shows relative labour productivity (Panel A) and relative multi-factor productivity (Panel B) in three ASEAN countries and a set of benchmark countries. The data are aggregated up to the sectoral level (manufacturing and non-financial market services) using weighted means, and then averaged (unweighted) over time for each country. In the case of Thailand, small firms with less than 20 employees are included in the analysis. The benchmark represents the median of country averages. Benchmark countries include Australia, Austria, Belgium, Canada, Chile, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Japan, the Netherlands, Norway, Portugal, Sweden and Switzerland. The period considered is 2000-12 for the benchmark. Source: OECD (2019d), MultiProd (internal database).

As noted, productivity increases with size much more strongly in the selected ASEAN countries compared to the group of benchmark countries. Similar results have been found for Latin American firms (OECD et al., 2019), suggesting that developing countries often display a productivity gap between frontier and laggard firms that is higher than in developed countries. This is also in line with previous research using firm-level data in East Asia in the 1990s, which showed that smaller firms were far less productive than their larger counterparts in the less developed economies among East Asian countries, such as Indonesia and Thailand (Hallward-Driemeier, Iarossi and Sokoloff, 2002).

PROMOTING THE PRODUCTIVITY OF SMES IN ASEAN COUNTRIES © OECD 2021
The evidence for the service sector is less abundant, since the relevant data are available only in Viet Nam. Interestingly, the relationship between productivity and size in Vietnamese market services is very similar to that in manufacturing. This result stands in contrast to the empirical evidence in the selected OECD countries, where the relationship between productivity and size is quite flat for firms above 20 employees. While there are many concomitant explanatory factors, the higher productivity level of large firms likely reflects the role of FDI in providing access to productivity-enhancing technologies and resources (Kang and Johansson, 2000; Bronzini, 2007). Moreover, the multi-factor productivity gap between large and small service firms is even larger than the labour productivity gap, suggesting that intangible capital or skills, rather than tangible capital, explain differences in performance across firm size.

Compared to large firms, SMEs are at disadvantage due to their lack of absorptive capacity. SMEs face relatively higher costs in accessing and retaining information technology, and often lack the necessary entrepreneurial, managerial and marketing skills. In addition, SMEs often have limited information on market opportunities and lack skills in dealing with customers in both domestic and export markets. Lack of knowledge in languages and culture, as well as in the legal and administrative frameworks, constitute other important barriers to their development (Harvie, 2015).

In light of the large share of SMEs in ASEAN economies, policies should therefore focus on the development of SME’s absorptive capacities. Two main impediments to capacity building require special attention. First, the building of absorptive capacities is directly linked to firms’ participation in GVCs. However, the typical development strategy in ASEAN countries, which focused on producing export intensive goods in manufacturing, has often magnified inequalities between SMEs and large firms (Lee, Narjoko and Oum, 2017). SMEs that cannot access the export market directly are often excluded from both intra- and inter-regional integration.

Second, access to finance and technology is one of the key constraints for the development of absorptive capacity in SMEs (Alfaro, Kalemli-Ozcan and Sayek, 2009). However, SMEs find it more difficult to access external finance and need to rely on internal sources due to their limited ability to provide collateral, as well as their relatively young age, local ownership and the fact that loans are often conditional on relatively costly financial auditing (Beck and Demirguc-Kunt 2006; Wignaraja and Jinjarak, 2015). Moreover, credit constraints restrict firms’ entry in foreign markets, total exports, and export product range, which prevents SMEs to achieve economies of scale (Manova, Wei and Zhang, 2015). Policies in favour of large firms further exacerbate SMEs’ disadvantage, such as subsidised interest rates for large firms in Thailand (Mazumdar and Sarkar, 2012).

**A policy framework for productivity**

Because of the importance of productivity for economic growth, well-being and other societal challenges, promoting productivity has traditionally been an important policy objective. And today, against the current backdrop of sluggish growth, policy makers are increasingly looking for new sources of growth. As productivity performance across countries, regions, industries and firms differs significantly, there is a challenge for policy makers to better understand the drivers of productivity and identify the policy levers than can help to increase productivity. The determinants of productivity are numerous however, hence the importance of a policy framework on productivity that allows to describe the different factors and their interdependencies in a clear and policy-relevant manner.

Different frameworks have been proposed in the literature dependent on the approach and objective to study productivity. Based on a framework developed in previous OECD work (e.g. Albrizio and Nicoletti, 2016; OECD, 2015b), Figure 2.8 presents the framework used in this report to study (SME) productivity within ASEAN, which was already touched on earlier in the report. It is clear however that there is not one correct and exhaustive framework of productivity, hence the proposed framework should be interpreted and used accordingly. By combining the macro- and micro-perspectives on productivity, the framework aims to provide a comprehensive view on aggregate and firm productivity and the linkages between them.
One of the objectives of this report is to understand the determinants of the contribution of SMEs to productivity growth in ASEAN countries. Productivity levels and growth at the aggregate level – be it at country, region or industry, hide a whole distribution of different and often diverging developments at the firm level. That is the reason why in addition to aggregate productivity growth, firm productivity is introduced as the second important concept in the framework.

The linking factors between firm productivity and aggregate productivity are the dynamism and the reallocation of resources within the economy. Aggregate productivity growth will be higher if more productive firms are able to grow and attract more resources. Market and other barriers in national economies may prevent this process of reallocation taking place, hence curtailing the productivity potential of national economies. As suggested by Schumpeter (1942), productivity growth and the related innovation are accompanied by creative destruction as new firms enter the market, sometimes growing quickly and thus increasing their market share, replacing other firms with low productivity that are in decline or that will eventually shut down and exit the market. This dynamic feature of innovation, which involves upscaling and resource allocation (OECD, 2015b), has specific implications for policy, and in particular for the role of SMEs.

Firm productivity is in the first place determined by firm-level determinants – i.e. within the firm. Like at the aggregate level, productivity measures how efficient firms employ their productive resources, hence the quantity but especially the quality of resources have to be taken into account. Investments in tangible and intangible capital as well as in labour and skills are therefore important and will be discussed in this report. Not surprisingly, specific attention needs to be devoted to innovation (in products, processes, technological as well non-technological) as it allows firms to use their productive resources more efficiently, hence increase (multi-factor) productivity. The report also highlights the importance of management expertise, reflecting the growing research in recent years on the effect of management quality on firm performance.

Given the numerous firm-level factors influencing firm productivity, a broad range of policy domains and measures can (help to) facilitate and promote productivity. Examples are infrastructure (traditional infrastructure like roads, ports, etc. as well as digital infrastructure); regulation of product and labour markets; institutions to design, implement and enforce regulation; the wider business environment; specific innovation policies; or access to finance (of particular importance for SMEs).

But government policies are not the only external factors affecting firm productivity and firm-level determinants. First, technological progress has traditionally driven the productivity of firms. In the past, innovations such as the steam engine, electrification and the combustion engine have led to radical changes in the production of goods and services thereby raising productivity. Today, and as part of this broader technological progress, the ongoing digital transformation is creating many new opportunities and challenges for productivity growth in countries.

Second, (aggregate) productivity performance is also affected by structural change taking place in the economy. The average level and growth of productivity differs from one industry to another industry with manufacturing typically considered to be more productive than services. As a consequence, the growth of the services sector in the process of economic development has been argued to reduce the potential for economy-wide productivity growth (Baumol, 1967).

Lastly, of particular importance for developing and emerging economies, the issue of informality needs to be taken into account as in some cases a large share of economic activities are not included in the formal economy. The links between informality and productivity are complex and not necessarily the same at the macro- and micro-level.

The following chapters will discuss each of these forces affecting firm and aggregate productivity growth as well as firm dynamism in order to provide policy makers in ASEAN countries with more detailed insights on the potential for productivity growth of their firms and national economies.
Figure 2.8. A policy framework for productivity

Economic growth
- Capital growth
- Labour growth
- Multifactor productivity growth

Inclusiveness across
- Regions
- Firms
- Workers

Aggregate productivity growth

Reallocation: firm dynamics
- Firm growth
- Upscaling/downsizing
- Entry/exit

Firm productivity growth
- At the frontier (global, national)
- Behind the frontier
  - Diffusion
  - Spillovers

Internal (to the firm) factors
- Capital, tangible
- Capital, intangible
- Innovation
- Absorptive capacity
- Labour and skills
- Management

Policy - business environment
- Infrastructure
- Institutions
- Regulation (product and labour market)
- Trade and investment liberalisation
- Innovation policies
- Access to finance

External (to the firm) factors
- Technological advances
- NPR
- Digitalisation
- Structural change
- Manufacturing - services
- Informality

Notes

1 If the costs of reallocation are too high, firms may be discouraged from productivity enhancements or focus merely on incremental improvements, rather than experiment with risky technologies, because it will be more difficult to realise the benefits when successful and contain losses when unsuccessful (Bartelsman, Haltiwanger and Scarpetta, 2004). Put differently, policies may provide direct incentives for within-firm productivity improvements but such incentives may also be enhanced by policies that facilitate between-firm reallocations (see Andrews and Criscuolo, 2013).

2 The figure is restricted to firms with more than 20 employees because data for smaller firms are either not available or not representative. The only exception is Thailand, where the underlying data are from the Census of Manufactures that contains the universe of firms, hence the results for firms below 20 employees are also displayed.
This chapter sets out four important factors that will affect the prospects for future productivity growth in ASEAN countries: i) how to benefit from the ongoing production revolution; ii) closely related, how to adjust to the rapid digital transformation of economy and society; iii) how to adjust to structural change within ASEAN economies, notably the continued decline of agriculture, the slow decline of the share of manufacturing, and the growth of services; and iv) the role of the informal sector.
Benefiting from the production revolution

As ASEAN countries increase income and productivity levels, technology and innovation become more important drivers. In advanced economies, innovation and technological change have traditionally been important drivers of productivity and economic growth: on average, accounting for over half of all economic growth (OECD, 2015a). Today, however, there is extensive discussion on the prospects of technological progress for future productivity growth. On the one hand, technological pessimists like Gordon (2012) argue that the current productivity slowdown in many advanced economies may become permanent as recent and future innovations are relatively insignificant compared to those that took place during previous industrial revolutions. On the other hand, technological optimists argue that the current productivity slowdown is not permanent and that the underlying rate of technological progress has not decelerated.

For example, Brynjolfsson and McAfee (2014) argue that advances in digital processing power will entail large productivity gains in the future although their introduction might lead to a temporary slowdown. OECD work shows that despite the productivity slowdown over the 2000s, productivity growth at the global frontier has remained relatively robust; at the same time however, a rising gap in productivity growth between firms operating at the global frontier and other firms can be observed since the beginning of the century (OECD, 2015b).

Although the impacts of new technologies on productivity are still uncertain, it is clear that many countries around the world are today faced with a wide range of new technologies, i.e. the next production revolution (NPR). This is the result of a confluence of technologies that will dramatically transform the production of goods and services. A variety of digital technologies (e.g. 3D printing, the Internet of Things, advanced robotics, 5G networks), new materials (e.g. bio- or nano-based) and new processes (e.g. data-driven production, artificial intelligence, synthetic biology) are emerging.

As nano-, bio-, and information and communication technologies (ICTs) are all general-purpose technologies and hence applicable across a broad range of industries, they are well placed to generate long-term productivity increases and thus economic growth. In addition, as these NPR technologies are expected to transform production, they will have far-reaching consequences across a broad range of domains including employment, skills, income distribution, trade, well-being, environment, etc. (OECD, 2017c). For example, the advent of this NPR may help transform production towards greater sustainability, as it will not only enhance productivity growth but can at the same time also address the growing demands for green growth.

The extent to which economies can take advantage of new and emerging technologies is crucial for the creation of sustainable economic growth across countries. An important question is whether ASEAN countries can benefit from these ongoing technological changes and innovations in the global economy and apply them to strengthen their productivity performance. Although the ASEAN region contains countries at different stages of economic development, successful absorption of NPR technologies in ASEAN countries could – in principle – raise productivity, speed up structural transformation, stimulate sustainable economic growth and increase income levels. Indeed, some new production technologies are suited to economic conditions found in parts of the ASEAN region. For example, certain state-of-the-art robots are relatively inexpensive and do not require highly skilled operators. And low-cost drone technologies could improve productivity in agricultural processes. Especially with improved channels of knowledge diffusion, such as the Internet, opportunities for technological “leapfrogging” could arise.

A critical issue for small and medium-sized enterprises (SMEs) is the diffusion of already-developed and new technologies, ideas and business practices. The diffusion of general-purpose technologies typically follows an S-shaped curve where technologies are initially only adopted by some leading firms and later diffuse to all firms, as they become more established, prices fall and markets grow. Consequently, there is a significant gap between what can currently be implemented from a technical point of view (and what may be implemented by the world’s frontier firms) and what is currently being implemented by an average firm.

The history of technological change also demonstrates that the successful implementation of new technologies involves much trial and error, and that it takes time to reorganise production processes, introduce new business models, and provide workers and management with new skills.
Previous OECD research has demonstrated that several factors shape the diffusion process at national and international levels: i) global connections via trade, foreign direct investment (FDI), and the international mobility of skilled labour; ii) connections and knowledge exchange within the national economy, such as the interaction between higher education institutions and businesses, and between firms; iii) the process of experimentation by firms – especially entrants – with new technologies and business models; and iv) the extent of complementary investments in research and development (R&D), skills, organisational know-how (i.e. managerial capabilities) and other forms of knowledge-based capital. ASEAN countries will also need to ensure efficient resource allocation processes, such that firms which could lead in the NPR are able to attract the human and financial resources they need to grow, while at the same time designing and implementing effective diffusion policies, enabling a wide range of firms, notably SMEs to benefit from the new opportunities.

But NPR technologies also raise the possibility of economic disruption in ASEAN countries. As the technologies lead to a realignment of relative costs and the development of new business models, the low-wage advantage of many ASEAN countries may become eroded.¹ NPR technologies have the potential to dramatically change the current organisation of global production. For example, while advances in communication technologies will further promote the growth of global value chains (GVCs), information technologies could have opposite effects and may shorten GVCs (Baldwin, 2016).

The emergence of the Internet of Things and the more complete diffusion of existing communication technologies throughout emerging economies (such as high-speed Internet, enterprise resource planning and supply chain management software), could continue the fragmentation of production activities to emerging economies. But new technologies, such as robotics, automation, additive manufacturing, artificial intelligence, could reduce the advantages of production in low-labour-cost emerging economies, hence curtailing the progress of international fragmentation of production and potentially even leading to some relocation back to advanced economies (De Backer and Flaig, 2017).

ASEAN economies will therefore face the challenge of upgrading entire production systems for a future of interconnected production, which can be difficult to retrofit to outdated technologies (OECD, 2017c). In addition, digital technologies like additive manufacturing and 3D printing, autonomous robots, big data, etc. may reduce the costs of small-scale customised production, incentivising production close to the destination market. At the same time, any relocation of production will be moderated by growing demand in emerging markets. Rising income levels in emerging economies are likely to re-orient consumption towards more sophisticated and higher quality products, which commonly rely on inputs from foreign economies. Moreover, as the emerging economy producers upgrade their capabilities, the shifting consumption patterns are likely to lead to an increasing importance of domestic or regional producers and supply chains for some parts of production.

Proficiency in NPR technologies may be the only route for many enterprises in ASEAN countries to withstand competition from technologically advanced foreign companies. Developments in the People’s Republic of China (hereafter “China”) are also likely to play a role. Aside from the fact that China accounts for the leading share of global manufacturing output, China’s goal of increasing the knowledge content of domestic production will expose ASEAN producers to acute competition, while also presenting opportunities for diffusing new production technologies in ASEAN markets through Chinese FDI. The more that ASEAN governments understand how production could develop, the better placed they will be to attract FDI that brings NPR technologies with it, to successfully diffuse NPR technologies across the productive base and, in a few cases, to play a role as technology producers.

The digital transformation

Digital technologies are central to the NPR with different ICT technologies driving the digital transformation (Box 3.1). Digital technologies have particular scope for spurring innovation and productivity growth across many activities in manufacturing as well as services (Goldfarb and Tucker, 2017). In addition, digital technologies will also help transform public services and can improve well-being as information, knowledge and data become more widely available.
Box 3.1. Technologies driving the digital transformation

Digital technologies have come a long way since the invention of the first computer during World War II and the emergence of the Internet in the 1990s. Some of the key technologies and applications that are driving the digital transformation today include:

- **The smartphone.** The introduction of the smartphone in 2007 transformed computing by enabling constant mobile connectivity and providing individuals with access to a wide range of new applications and services. It has also enabled the development of the “platform” economy.

- **The Internet of Things (IoT).** The IoT comprises devices and objects whose state can be altered via the Internet, with or without the active involvement of individuals (OECD, 2015d). The networked sensors in the IoT serve to monitor the health, location and activities of people and animals and the state of production processes and the natural environment, among other applications.

- **Big data analytics.** Big data analytics is defined as a set of techniques and tools used to process and interpret large volumes of data that are generated by the increasing digitisation of content, the greater monitoring of human activities and the spread of the IoT. Firms, governments and individuals are increasingly able to access unprecedented volumes of data that help inform real-time decision making.

- **Artificial intelligence (AI).** AI is defined as the ability of machines and systems to acquire and apply knowledge and to carry out intelligent tasks, e.g. sensing, processing oral language, reasoning, learning, making decisions and demonstrating an ability to move and manipulate objects accordingly. AI is making devices and systems smart and empowering new kinds of software and robots that increasingly act as self-governing agents, operating much more independently from the decisions of their human creators than previously.

- **Blockchain or distributed ledger technologies (DLT).** Blockchain or DLT enables protocols for value exchange, legal contracts and similar applications. It is a distributed database that acts as an open, shared and trusted public ledger that cannot be tampered with and that everyone can inspect. The technology offers the potential for lower transaction costs by removing the necessity of trustworthy intermediaries to conduct sufficiently secure value, legal or other transfers.

Many other technologies underpin the digital transformation that is currently underway – some with applications in almost all sectors of the economy (true “general-purpose” technologies); some with more narrow applications in specific sectors. But together, they underpin a wide-ranging and rapid digital transformation of economy and society, which are fundamentally different from the analogue era that we are used to.


Evidence on productivity impacts from new production technologies comes mainly from firm and technology-specific studies (OECD, 2017c). A sample of these studies is reported below and suggests sizeable potential productivity impacts. However, by way of caveat, such studies follow a variety of methodological approaches, and often report results from just a few, early adopting technology users:

- In the United States, output and productivity in firms that adopt data-driven decision making are 5% to 6% higher than expected given those firms’ other investments in ICT (Brynjolfsson, Hitt and Kim, 2011).

- Improving data quality and access by 10% – presenting data more concisely and consistently across platforms and allowing them to be more easily manipulated – is associated with a 14%
3. CHALLENGES FOR PRODUCTIVITY GROWTH IN ASEAN COUNTRIES

A 1% increase in maintenance efficiency in the aviation industry, brought about by the industrial Internet, could save commercial airlines globally around USD 2 billion per year (Evans and Annuanziata, 2012). In Southeast Asia, the digital transformation could help in changing the development paradigm towards growth that is driven less on the demand side by exports and more on the supply side by productivity increases, enabling countries to “move up the value chain”. Already the uptake of digital technologies has grown rapidly, with over 80% of adults now connected to the Internet in Singapore, and around 20% in Lao PDR and Cambodia (OECD, 2017d). The rapid diffusion of mobile broadband, in particular, is enabling more people to connect to digital networks and digital services.

Regional co-operation on ICT, such as the ASEAN Broadband Corridor and inter-country projects, is also increasing ICT connectivity in the region (ASEAN/UNCTAD, 2015). At present, low-cost, fast and high-quality broadband markets and infrastructure in ASEAN are concentrated in wealthy, urban, and/or coastal areas. Large differences exist in international fibre connectivity, domestic connectivity, competitiveness of telecommunications and Internet markets, fixed and mobile broadband infrastructure, and the affordability of broadband services (Ruddy and Ozdemir, 2013).

Productivity – at the firm and aggregate level – in ASEAN countries could gain substantially from harnessing the potential of digital technologies. In OECD countries, almost no business today is run without ICTs and most businesses in advanced economies now have access to the Internet and have developed a web page. Digital technologies may offer new opportunities for SMEs in ASEAN to participate in the global economy, innovate, scale up and enhance productivity. Digital transformation facilitates the emergence of "born global" small firms, and SMEs’ access to customers in local and international markets, with Internet platforms increasing the supply of products and services and allowing trades that otherwise would not happen. Big data and data analytics can enable SMEs to better understand the processes within the firm, the needs of their clients and partners, and the overall business environment. The use of digital technologies can also ease SMEs’ access to skills and talent, such as through better job recruitment sites, and the outsourcing of key business functions, e.g. through cloud computing, all of which can help improve performance. It can also facilitate access to a range of financing instruments and the development of innovative solutions to address information asymmetries and collateral shortages.

Despite these potential benefits, SMEs typically lag in the uptake of ICTs relative to larger firms. Large adoption gaps across small and large firms exist because SMEs face a range of barriers in adopting ICTs and other digital technologies in their operational activities. SMEs tend to have limited financial resources, which makes adopting new technologies, including ICTs, difficult given these tools are often expensive. Another important barrier is related to human (including management expertise) and organisational capital since investments in new technologies often require investments in complementary knowledge-based assets. SMEs do not often have the skilled people to operate new digital technologies in their teams, the resources to train these workers, or have the management that can help them make the most of the new technologies. SMEs also face specific challenges in managing digital security and privacy risks, mainly due to lack of awareness, resources and expertise to assess and manage risk effectively.
The policy response to the digital transformation has been mixed. Certainly ASEAN countries differ substantially in their starting conditions for the digital transformation, such as the level of economic development, the structural make-up and trade specialisation of the economy, geography, and institutional characteristics and approaches to policy. Nevertheless, there are some common challenges that all need to address and the need to close the “Technology 4.0 – Policy 1.0” gap is one that is both urgent and would have significant payoffs for economic development and social inclusion.

Adjusting to structural change: From manufacturing to services

Throughout their economic development, national economies are going through an important process of structural change with some industries growing at the expense of others. A typical development path – characteristic of most countries – starts from agriculture, then moves to manufacturing and then to services. The International Labour Organization (ILO) (Chang, Rynhart and Huynh, 2016) discussed the declining importance of agriculture in ASEAN and estimated agriculture accounting for on average 40% of employment in 2014. This regional average however masks important country differences, with agriculture still being the largest employer in Cambodia, Lao PDR, Myanmar and Thailand. Substantial decreases in agricultural employment have been recorded in Indonesia, Thailand and Viet Nam during the past decades.

As some industries are more productive than others, this process of structural change directly affects aggregate productivity levels and growth. Manufacturing industries are traditionally characterised by higher levels and growth of productivity in most countries. This is not different in ASEAN countries with manufacturing showing consistently higher labour productivity levels than other sectors (apart from the group of services sectors including finance, insurance, real estate and business services) (Chang, Rynhart and Huynh, 2016). The superior productivity performance of manufacturing is due to a number of reasons. For example, manufacturing is a major source of R&D and innovation with the majority of R&D investments taking place in manufacturing. In addition, manufacturing accounts for the majority of international trade of countries: the higher international competition often means higher productivity. Moreover, manufacturing tends to benefit more from economies of scale than many services sectors, though with important exceptions, such as information technology and financial services.

The strong economic and productivity growth in ASEAN countries during the past decades has gone hand in hand with rapid industrialisation. Many ASEAN countries have built up a strong manufacturing base during the past decades: Malaysia, the Philippines, Singapore, Thailand and Viet Nam have managed progressively to develop manufacturing capacity in higher value-added products (such as electronic parts and automobiles) while Cambodia has developed a strong textiles and garments industry (OECD/ERIA, 2018). These countries have benefited strongly from the growing offshoring from industrialised economies such as Japan, Korea, and, more recently, China, often through the use of economic processing zones.

The share of manufacturing in total output, employment and value added has substantially increased since 1995 in most ASEAN countries with Singapore, Malaysia, the Philippines and Thailand showing the largest manufacturing industries in 2005. But more “rural” economies like Cambodia and Viet Nam also witnessed a very strong growth in manufacturing output, value added and employment between 1995 and 2005 (Figure 3.1).

The data in Figure 3.1 however suggest that several ASEAN countries are showing the first signs of de-industrialisation. In countries like Cambodia, Indonesia, Malaysia, Singapore, Thailand, the share of manufacturing in output, value added and employment appears to have peaked and has fallen in recent years. Some have recently argued that economic development through industrialisation is coming under increasing pressure. The traditional model of industrialisation – starting with low-end, labour-intensive manufacturing allowing to move large number of people from agriculture to manufacturing – is increasingly being eroded. Rodrik (2015) demonstrated that a trend of premature deindustrialisation is taking place with many
developing countries becoming service economies without having gone through a complete industrialisation process.

Figure 3.1. The importance of manufacturing in value added and employment, ASEAN

A. Value added (current prices)

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B. Employment

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A number of ASEAN countries have today become service-driven economies. In Malaysia, the Philippines and Singapore, services account for more than 50% of gross value added and private-sector employment, while in Thailand services account for more than 50% of gross value added and generate the highest share of private-sector employment (44%) (OECD/ERIA, 2018). Singapore is a global hub for financial and insurance services, while the Philippines is a world leader in business process outsourcing. Furthermore, tourism is increasingly becoming a growth industry across the region.

At this stage, it is unclear if the declining share of manufacturing will result in lower productivity growth in ASEAN countries in the coming years. According to Baumol's model of unbalanced growth (Baumol, 2012), if resources are shifting towards industries where productivity is growing relatively slowly (for example services), the aggregate productivity growth rate will slow down. The argument is that productivity improvements in services are often harder to achieve than in goods producing industries because of the labour-intensive character of services and especially the face-to-face interaction necessary to deliver these services.

But services include a wide variety of different activities and technology has enabled some services to change dramatically over time. Technological innovations combined with new business models have profoundly altered the nature of services provision and structure in certain categories of services. These are increasingly produced according to manufacturing methods including capital- and energy-intensive production processes, scale economies, extensive use of technology, engagement in international trade, etc.

Ghani and Kharas (2010) argue that the so-called 3 Ts (technology, transportability and tradability) have given rise to a category of progressive services labelled by Mishra, Lundstrom Gable and Anand (2012) as “modern” services. These modern services are more similar to manufacturing goods in the sense that they can be digitally stored and more easily traded. Technological progress particularly in ICT has increased the ability to codify certain services, giving them a physical and storable presence (e.g. financial products, telecommunications, data, etc.). Via ICT networks (telecom networks, Internet, satellite, etc.), these services can be electronically transported over long distances, rapidly and without any deterioration in quality. The increased transportability has in turn thus rendered services more internationally tradable; services that were not traded at all are now more often exchanged across borders.

While manufacturing often still has the highest growth of labour productivity, “modern” – i.e. typically more knowledge- and ICT-intensive – services such as information and communication and finance and insurance have also recorded high growth rates of labour productivity over the last ten years. Reflecting these changing dynamics in some categories of services, some analysis argues that services will be the next growth escalator, including in developing economies (Ghani and O’Connell, 2014). Nevertheless, there is ongoing discussion whether emerging economies can embark on a sustainable growth path driven by the services sector (Fiorini and Hoekman, 2018).

Informality

In many developing and emerging economies, informal employment is estimated to exceed 60% to 70% of employment outside agriculture and even more if agriculture is included. The ILO presented estimates of informal employment to be around 65% in East and Southeast Asia of non-agricultural employment (for comparison: 82% in South Asia, 66% in Sub-Saharan Africa and 51% in Latin America). Behind these averages, large differences exist between countries with the share of informal employment in Thailand at 42%, 68% in Viet Nam and 73% in Indonesia. The 2018 OECD Economic Survey of Indonesia also indicates that about 70% of national employment is informal with important differences across sectors – highly informal industries are agriculture, construction and transport and storage – and groups of people – informality is above the national average among women, youth and older people (OECD, 2018d).

Measuring the informal economy is fraught with important statistical difficulties, which explains the lack of timely, high-quality and internationally comparable statistics on informality. Schneider, Buehn and Montenegro (2010) presented estimates of the informal economy as a percentage of gross domestic product (GDP) for a
number of ASEAN economies and a number of other countries (Figure 3.2). Although the data refer to the first half of the 2000s, the issue of informality in ASEAN is highlighted as in a number of countries the informal sector was estimated to account for more than one-third of GDP (and close to half in Thailand and Cambodia).

**Figure 3.2. Size of the informal economy, average 1999-2006**

![Bar chart showing the percentage of GDP contributed by the informal economy in various countries, with Thailand, Cambodia, Philippines, Malaysia, Laos-PDR, Korea, Indonesia, Vietnam, Australia, China, Singapore, Japan, and United States.]

Note: GDP = gross domestic product.

The extent of informality has significant implications for countries’ productivity (level and growth) as the informal economy tends to result in an important misallocation of productive resources. While informality can represent a life jacket for small firms which tend to be disproportionately affected by poorly designed regulations, informality typically also acts as an obstacle to economic development due to its low productivity. Several factors play a role.

First, informal businesses are typically concentrated in low-productivity sectors. The informal sector typically dominates small commerce, neighbourhood services, and those manufacturing industries that do not require heavy capital investments and modern technical equipment and that are not engaged in international trade (La Porta and Shleifer, 2014).

Second, informal firms are smaller than formal ones, and even when controlling for size, they are on average less productive, less likely to access external finance, have less educated managers and innovate less. They often use old production technologies, partly reflecting their sub-optimal size (Dabla-Norris, Kersting and Verdier, 2012) and their predominantly inward orientation. Informal businesses are typically also managed less efficiently than their better educated formal-sector counterparts, and are typically below their optimal efficiency scale to avoid detection (La Porta and Shleifer 2014).

Informal sector firms are unlikely to be able to either access international markets directly, or as suppliers to exporters, due to the stringent quality and traceability standards required by foreign customers that cascade through their supply chains. In addition, informal sector firms face additional barriers to developing the scale needed to join GVCs, with limited access to formal sources of credit and services also since they may intentionally stay small to avoid detection.

Third, the detrimental effects of high informality seem to be higher in the most productive sectors of the economy and lower in the least productive sectors. This is a direct result of negative spillovers from the
misallocation of labour away from high-productivity activities. This also implies that the benefits of tackling informality are likely to be higher for the most productive industries (OECD, 2015c).

Fourth, a large informal sector often results in competitive distortions for the formal sector. For example, some studies have pointed to the strong and “unfair” competition formal SMEs are confronted with in domestic markets in China and Southeast Asia (Wignaraja, 2015). Informal firms are typically not adhering to fiscal, social and legal requirements in doing their business, and a level playing field between the formal and informal sector is therefore lacking.

Besides its negative effects for productivity and economic growth, informality has broader consequences for countries including on inequality (OECD, 2015c). Formality enables workers to have access to social rights – such as unemployment insurance, health care and pensions. Informality results in lower fiscal and social revenues, and may thus negatively affect investments in productivity-enhancing infrastructure and the provision of social entitlements.

As countries advance in their process of economic development, a dual economic structure often emerges. A growing modern formal sector and an informal sector will often develop in parallel. Technological changes and growing integration in the global economy will slowly marginalise informal businesses, but the pace at which this will happen varies depending on the policy, cultural and institutional context. The final section of this report will explore some approaches that may help countries address informality, which can also help advance productivity in SMEs.

Notes

1 Rising wage costs in emerging economies erode one of the major cost advantages of fragmenting labour-intensive activities to such markets, which may lead to the reshoring of some production stages closer to home or to the relocation of offshore production to new emerging economies. However, rising wage costs are often accompanied by productivity increases, tempering the net effect on production costs.

2 In contrast to the “traditional” investment in emerging ICTs, recent years have witnessed a growing trend towards buying ICTs as a service. This externalisation of the costs of ICT investment by purchasing services that are functionally equivalent to ICT investment may help SMEs to overcome the high, upfront sunk costs of digital investments. Further on, given the fast advances in ICTs and the continual churning of technology use, buying ICT services allows companies, and SMEs in particular, to switch more rapidly from one technology to another as they are not locked in by the large investment of specific ICTs which may become rapidly obsolete because of the arrival of newer – and better – technologies.

3 A lot of countries are characterised by a process of de-industrialisation, as the manufacturing share in GDP (in nominal terms) and employment decreases over time.

4 Productivity in finance and insurance is however very difficult to measure accurately.

5 Existing statistics on productivity are not always suited for measuring productivity in services accurately.

6 For example, it is not clear if the falling manufacturing share is (also) the result of the economic crisis. Also the changing topography of global manufacturing – reflected in falling offshoring and growing reshoring – because of (digital) technologies may explain this observation.
Empirical evidence shows that large productivity differentials exist between firms, even within narrowly defined industries. Thanks to the growing availability of firm-level data across countries, recent years have witnessed rapid growth of research on the analysis of firm-level determinants of productivity. “Why” do some firms perform consistently better than other firms? What are the factors and conditions that explain their superior productivity performance and how and to what extent can these conditions be developed? Not surprisingly, this research has attracted the attention of policy makers who are looking for new sources of growth. This chapter explores the main determinants of productivity growth within small and medium-sized enterprises (SMEs), notably: i) investments in tangible capital; ii) investment in intangible capital; iii) the role of innovation; iv) skills and talent; and v) the role of management.
**Investments in tangible capital**

New investments in tangible capital like machinery, equipment, buildings, etc. help to raise (multi-factor) productivity as newer capital may embody better technologies, more research and development (R&D), etc. – i.e. if these machines and equipment are more efficient. Several studies have tried to measure the rate of this capital-embodied technological progress using different methodologies and demonstrated the importance of new vintages of tangible capital for productivity.

The ability of firms to invest in new material and equipment is to a large extent – although not exclusively – shaped by the financial possibilities of firms, which is in turn is correlated with firm (including SMEs) productivity (Lage de Sousa, 2016). Overall, SMEs across developed as well as emerging countries often face more stringent financing opportunities than larger firms. In middle- and low-income countries, funding gaps are often even more pronounced and among the main barriers to small business formalisation. In addition, access to finance is an even larger problem in developing economies given that financial resources are typically limited.

Also in the ASEAN region, capital markets have been observed to inadequately meet SMEs requirements. The key challenges include high transaction costs, lack of firm transparency as well as absence of bank expertise and the non-existence of SME business plans (Harvie, 2015). Available data indeed show that the propensity to invest in fixed capital is lower in ASEAN SMEs with a negative relation between firm size and investment in tangible capital in most ASEAN countries: (Figure 4.1).

Most SMEs rely primarily on internal sources of finance, i.e. retained profit or private resources of the business owners (Wignaraja and Jinjarak, 2015). Several factors severely limit SMEs’ chances of attracting external sources of financing. Asymmetric information and agency problems, including high transaction costs, and SMEs’ opacity limit access to credit by small businesses. Start-ups, in particular, often have too little collateral, have limited credit history and, and may lack the expertise and skills needed to produce sophisticated financial statements (OECD, 2013a).

*Figure 4.1. Share of firms buying fixed assets, by size class, ASEAN*

Note: Data for Indonesia, Malaysia, the Philippines and Viet Nam are for 2015. Data for Cambodia, Myanmar and Thailand are for 2016. Source: OECD (2018e), SME and Entrepreneurship Policy in Indonesia 2018, [https://doi.org/10.1787/9789264306264-en](https://doi.org/10.1787/9789264306264-en).
Due to their size, most SMEs lack collateral to obtain bank loans. Given SMEs' limited turnover, loans for individual SMEs are typically relatively small compared to loans requested by larger firms. As banks have to incur some fixed costs (for credit checks, etc.) for every loan, from the banks' point of view the high ratio of costs relative to the loan volume make SMEs less attractive borrowers than larger firms. The problem is further exacerbated by the difficulty of assessing SMEs' creditworthiness. Compared to larger firms (whose solvency can often be assessed via large databases and is further supported by their reputation), there is a scarcity of easily available information about SMEs' credit history and business performance (Harvie and Charoenrat, 2015). Many SMEs lack the managerial experience and accounting skills needed to provide the balance sheet information that banks need for credit checks. Besides, SMEs rarely have the managerial expertise required for a strong business plan that could generate confidence in their growth prospects.

Those SMEs that do manage to secure bank loans often have to accept conditions that are worse than the ones for large firms. The loan tenure for SMEs is often relatively short, i.e. five years or less (Shinozaki, 2015). Given SMEs' lack of collateral, the small amounts of lending involved, and the higher risk associated with loans to SMEs, they are also typically forced to pay higher interest rates. There are also concerns that knock-on effects of the tighter risk management rules and capital requirements defined by Basel III may further limit SMEs' access to finance (ADB, 2014).

Previous research has indicated that SMEs in ASEAN are confronted with higher interest rates and have to comply with more restrictive requirements on institutional credit than larger firms. Furthermore, smaller SMEs in less developed countries are found to get smaller loans with shorter terms and higher interest rates than larger SMEs in more developed economies (Indonesia, Malaysia, the Philippines, and Thailand) (OECD/ERIA, 2018). Debt financing is overall limited for SMEs and informal financial markets remains a major source of funding for SMEs (Wattanapruttipaisan, 2003).

The OECD's *Financing SMEs and Entrepreneurs 2018: An OECD Scoreboard* (OECD, 2018f) included more specific and recent evidence for ASEAN countries Malaysia and Thailand. The available data largely confirm that SMEs have major problems obtaining bank credit and pay an interest rate premium compared to larger firms, although the situation seems to have improved somewhat in the most recent years. Several government have been taking specific measures to improve access to finance for SMEs and entrepreneurs, for example Credit Guarantee Corporation Malaysia Berhad Financial Technology (fintech) initiatives in Malaysia and Thai Credit Guarantee Corporation in Thailand.

Equity financing is the second broad category of external finance, but SMEs also face major hurdles for this type of financing. While venture capital is increasingly attracting policy makers’ interest as a way of enhancing the growth opportunities of innovative SMEs, it is currently still at a nascent stage in ASEAN (Wignaraja and Jinjarak, 2015). In Thailand, for example, the venture capital and private equity industry remains small and has been largely focusing on mergers and acquisitions, providing little support for innovative start-ups in need of capital (OECD, 2018f). Conversely, Malaysia’s venture capital industry is substantially more advanced. Venture capital but also other forms of equity investment like business angels are more suited to higher risk-return profiles of firms such as start-ups, fast-growing ventures, but also established firms undergoing a major transition.

In general, poor access to credit tends to be a more pronounced problem at lower levels of economic development and the set of capital sources available to SMEs becomes larger as countries achieve higher levels of development (Beck, Demirgüç-Kunt and Singer, 2013). In ASEAN’s least advanced economies, Cambodia and Myanmar, internal sources and non-bank instruments (e.g. micro finance or informal community lending) are more common financing options than bank loans. For example, in 2014, only 30% of the enterprises covered by the World Bank enterprise survey in Myanmar reported having a bank account, this share amounted to 89% in Viet Nam and 98% in the Philippines in 2009 (World Bank Group, 2015: 15). Especially in rural areas, microfinance has an important role to play in countries like Lao PDR. These less developed countries require strengthening in terms of financial infrastructure, including collateral registries, credit guarantees, and banks’ due diligence capacities (ADB, 2015). In lower middle-income countries like Viet Nam and the
Philippines, additional financing models are available, such as equity finance. In upper middle-income and high-come countries, such as Malaysia and Thailand, the access to bank loans is improved and more sophisticated equity and bond options are available. However, the financial systems of Southeast Asian countries remain bank-centred and non-bank financial institutions in the region play a limited role in the financing of SMEs (ADB, 2014; Shinozaki, 2015).

The role of intangible investment

While investment in tangible capital already raises challenges for SMEs, investment in intangibles raises additional issues. Investments in intangible or knowledge-based capital (KBC) have grown rapidly in many countries, typically at a faster pace than investment in tangible capital (OECD, 2013b). KBC refers to R&D, software and data, intellectual property, brand equity, firm-specific skills and organisational know-how. Investments in intangible capital, often embodied in the organisation of the firm, directly increase the “know-how of doing business” and thus the productivity of firms. Moreover, intangible assets are important for firms to differentiate themselves from other firms, thus enabling them to target niche markets and increase profit margins.

Empirical evidence on KBC is not (yet) widely available with aggregate information only available for a subset of OECD countries, but mostly lacking for ASEAN economies. The available data show that business investment in KBC helps boost growth and productivity. Studies for the European Union and the United States for example estimate business investment in KBC contributing to 20% to 34% of average labour productivity growth (OECD, 2013b). The empirical evidence at the firm level has largely focused on the impact of R&D investments (and in some case patents) for productivity. Numerous studies across a wide range of countries have documented the positive correlation between R&D and firm productivity, although it has to be taken into account that the direction of causation seems to go in both directions.

Figure 4.2. Share of firms investing in R&D, by size class, ASEAN

4. THE DRIVERS OF PRODUCTIVITY: WHAT CAPABILITIES FOR SMES?

Given that (a lot of) these investments in intangible assets result in important economies of scale and scope, SMEs may be at a disadvantage vis-à-vis large (often multinational) firms. Empirical evidence for most countries shows that smaller firms invest relatively less in R&D; fewer SMEs invest in R&D and the ones that do, invest relatively less than large firms. Data for a number of ASEAN countries confirm this is also the case in Southeast Asia: the percentage of firms that invest in R&D is significantly smaller among small and medium-sized firms (Figure 4.2).

As for tangible capital, access to finance is an important policy domain for investments in intangible capital. The intangible character of these investments may also exacerbate the barriers SMEs face in attracting external finance. Because of the growing importance of KBC for innovation, policy domains affecting firm innovation (see below) are also of direct relevance for investment in intangible capital. For example, given the close links between KBC and human capital – knowledge is typically the fruit of human capital – policies related to education, lifelong learning, etc. are of particular importance.

Furthermore, evidence for OECD countries has demonstrated that the impact of investments in KBC is greatly enhanced when resources including tangible capital flow easily to KBC-intensive firms so that these can grow and increase their market size (Andrews and Criscuolo, 2013). As such, it is important that an efficient reallocation of resources takes place within national economies to fully benefit from investments in KBC. This has implications for a broad range of policy domains (see below), for example the regulation on product and labour markets.

Innovation capabilities

Innovation is recognised as a crucial driver of productivity growth, which in turn contributes to higher economic growth and growing competitiveness at the firm level. Over the years, the character of innovation has been changing with firms increasingly looking beyond R&D investments to product, process, organisational and marketing innovations (OECD, 2015a; 2010a). Directly building on the empirical evidence on firm productivity and R&D, a broad literature has established the link between innovation and productivity at the firm level although the same caveats made above apply. The link between innovation and productivity is empirically generally positive and significant (see, for example, Mohnen and Hall, 2013 for an overview; as well as recent studies by Hall and Sena, 2014, for the United Kingdom; Raymond et al., 2015, for Dutch and French manufacturing firms; Crespi and Zuniga, 2012, for six Latin American countries; and Masso and Vahter, 2008, for Estonia).

The available evidence suggests that in developing and emerging economies innovations are often implemented in large and medium-sized enterprises. This seems to be in line with the evidence found for a number of ASEAN countries as product innovation is less frequent in smaller firms (Figure 4.3). Informality is also likely to play an important role in this: the informal sector is typically composed of especially smaller firms who innovate less and/or of which innovations are, for the most part, likely to remain localised and small-scale. Furthermore, firms in developing countries may have a smaller incentive to invest in innovation because of institutional obstacles (access to credit, corruption, poor intellectual property rights) and because of their distance to the technological frontier (Bartz, Mohnen and Schweiger, 2016).

The concept of innovation is quite broad and various “innovation policies” can be used to stimulate innovation at the firm level. The policy objective is to create an attractive business environment for innovation so that firms invest more in innovative activities. OECD (2015a) discussed different types of policies ranging from R&D investments over tax policies to access to finance, intellectual property rights, etc. The choice and design for specific policies depends on the particular characteristics of national economies.

Furthermore, while governments can and have to play a key role in fostering a sound business environment for innovation, their role is much larger in ensuring that innovation contributes to the key goals of public policy (OECD, 2015a). Getting the policy mix right can help governments in shaping and strengthening the...
contribution that innovation makes to economic performance and social welfare. These policies for innovation are much broader than the policies that are often seen as “innovation policies” in a narrow sense. Such broader innovation policies relate to education and skill formation, diffusion of knowledge, entrepreneurship policies, etc. (OECD, 2015a).

Figure 4.3. Share of firms that introduced a new product/service, by size class, ASEAN

In analysing innovation in Southeast Asia, OECD (2013a) described in detail the successful and rapid catch-up of most ASEAN countries with advanced economies over the last decades. However, limits to their model of “extensive” growth have become more evident and it is expected that innovation will become increasingly important for future economic growth. Not surprisingly, innovation capabilities vary widely across countries in the region: countries like Singapore and Malaysia have achieved already a substantial level of capabilities but other ASEAN countries have not. This was reflected in the recommendations made in OECD (2013a) regarding the priorities for national innovation policies and particularly the promotion of innovation in SMEs. In the case of Singapore, OECD (2013a) suggested Singapore to encourage greater involvement of SMEs and the domestic private sector in innovative activities in order to complete the transition from technology adaptor to innovator. For Malaysia, since its export-oriented economy had started to struggle with slow productivity growth and smaller inward foreign direct investment flows, policies to boost SMEs’ ability to adopt more knowledge-intensive roles in the context of growing competition were considered to be important.

In less advanced economies like Viet Nam and Thailand which lagged behind Malaysia and Singapore with respect to the development of domestic technological capabilities, further efforts to strengthen linkages between SMEs and multinational enterprises as well as improvements in terms of training and higher education were deemed necessary. In Indonesia, efforts to enable SMEs in commodity-related activities to move further downstream could be envisaged. The least developed countries in the region – Lao PDR, Cambodia and Myanmar – still needed to continue their efforts to strengthen their education systems and establish the basic physical infrastructure as well as legal and financial framework required for the improved absorption of foreign technologies (OECD, 2013a).
Especially in middle-income countries like in ASEAN, policy makers face the challenge of designing innovation policies that are simultaneously ambitious and inclusive. Developing countries often possess fragmented or “dual” innovation systems, with parts of the economy displaying signs of technological dynamism and upgrading while other parts remain reliant on outdated technologies and may appear stagnant (Chaminade and Padilla-Pérez, 2017). On the one hand, policy makers have to strengthen emerging islands of excellence and strategically address barriers to the next stage of development. On the other hand, they have to reduce the gaps between urban and rural areas as well as between increasingly competitive and lagging industries and firms.

**Talent and skills**

Human capital – i.e. the knowledge and skills embodied in workers – is an important determinant of innovation at the firm level. First, skilled people generate knowledge that can be used to create and implement innovations. Second, certain types of KBC are the direct result of human capital: for instance, software is a translation of human expertise into code. Third, firms’ ability to identify the value of new technologies and integrate them in their own production processes – often called absorptive capacity – is directly linked to the skills of their employees. Workers with higher levels of human capital are more adaptable to technological change, making it easier for firms to adopt and reorganise around emerging technologies (Bartel and Lichtenberg, 1987; Bresnahan, Brynjolfsson and Hitt, 2002). Furthermore, human capital complements other inputs in the production process, including capital investment (OECD, 2015b).

However, developing or acquiring the right mix of skills, ideas and talents is often a challenge for firms and for SMEs in particular, especially in markets where the required skills are scarce or expensive. Evidence shows that workers in smaller firms tend to have lower cognitive skills (including literacy, numeracy and problem-solving skills) than those in larger firms.

At the economy-wide level, the positive impact of human capital on productivity, growth and incomes has been clearly demonstrated. More education fosters technological progress and increases the ability of economies to absorb innovations developed abroad. Moreover, rising business investment in intangible assets is often enabled by rising educational attainment and investment in skills.

Despite progress in recent years, both access to education and quality of education remain a concern in many ASEAN countries. The OECD’s Programme for International Student Assessment results show that, even in middle-income countries like Indonesia, Malaysia and Thailand, a large number of secondary school students fail to reach the level of performance corresponding to basic skills. Phan and Coxhead (2015) highlight that many economies in Southeast Asia display lower levels of human capital than Korea and Chinese Taipei had at the same level of income. A noteworthy exception is the case of Viet Nam: its human capital performance appears similar to the level attained by Korea at a similar stage of development. After decades of extremely low public spending on education, Myanmar has recently increased its expenditure on education – from 5% of total public spending in 2011 to approximately 13% in 2015 (UNESCO, 2016: 348). In addition to problems of poor quality and accessibility of education, outward migration of skilled labour has been contributing to skill shortages in many parts of Southeast Asia.

A challenge is that the human resource policies of SMEs often prioritise short-term objectives. Moreover, they may fear that larger firms might poach their skilled employees, which may further contribute to underinvestment in training. Raising awareness and providing incentives (e.g. fiscal measures) could encourage SMEs’ involvement in training. The know-how and applied skills covered in technical and vocational education and training (TVET) appear particularly important to the development of absorptive capacities for innovation. Among ASEAN countries, Singapore possesses a sophisticated technical education and training portfolio. Similar efforts in Malaysia and Thailand have been described as less effective and, overall, TVET policies seem to remain underdeveloped in Southeast Asia (OECD, 2013a). In Lao PDR, the absence of measures aimed at enabling SMEs to develop a training strategy and employ apprentices or interns has been highlighted as a gap in the existing TVET policies (ILO, 2016).
For training programmes to be aligned with demand and changing production profiles, it is crucial to involve employers in their design and implementation. The Penang Skills Development Centre in Malaysia is an example of a successful training initiative that has been praised for its involvement of SMEs as well as large enterprises and for its ability to adapt curricula to changing production processes. In addition, sector-specific skill councils can provide a valuable platform for a dialogue between SMEs, large firms, training providers, employee representatives, and governmental agencies. Malaysia has recently intensified its efforts to increase SMEs’ participation in the National Dual Training System that combines on-the-job and institutional training. Yet, in most Southeast Asian countries, the involvement of SMEs in TVET efforts remains limited. For example, while Viet Nam’s TVET-related legislation increasingly attributes importance to the involvement of employers, in practice TVET institutions remain poorly connected to employers. Apart from pilot models inspired by Korea’s and Germany’s approach, TVET in Viet Nam typically does not involve on-the-job training (EPF, 2017).

The role of management

Recent research has increasingly established a strong correlation between management quality and firm productivity. The management in firms is directly responsible for the decisions on production inputs and outputs, hence can be expected to influence productivity. Poor management skills are usually correlated with an inefficient use of the workforce, higher frequencies of wastage and damaging of tools, machinery, materials and inputs, and overall ineffective use of the manufacturing floor (Bloom et al., 2012; Iacovone and Qasim, 2013). Management can be considered as a type of technology which, if used effectively, can enhance the competitiveness of a firm (Bloom, Schweiger and Van Reenen, 2012; Bloom et al., 2013a), and significantly raise their productivity (Andrews and Criscuolo, 2013).

A recent OECD review of the literature (OECD, 2019b) found the following as regards the role of managerial skills and management practices in driving SME productivity:

- There is a positive link between certain formal management practices and business productivity (Aragon-Sánchez, Barba-Aragón and Sanz-Valle, 2003; Parker, Storey and van Witteloostuijn, 2010; Patel, Messersmith and Lepak, 2012). At the same time, there is also evidence that management activities in SMEs tend to happen in an informal and unstructured way, which helps explain part of the productivity gap with large companies.

- Returns from certain managerial practices depend on firm size, with returns that are greater the greater is the size of the company (Baker and Hall, 2004). There may also be low incentives to invest in long-term management goals when competition is too hard and business survival is difficult, deterring small business owners from investing in long-term goals and resulting in a lack of strategic vision (Nunes et al., 2006).

- The lack of strategic vision at the management level negatively affects the use of other factors impacting on productivity, such as information and communication technology (Love and Irani, 2004). As such, cultural, behavioural, and organisational issues may have to be tackled before considering more technical aspects related to productivity (Nunes et al., 2006).

- Certain enterprise characteristics – such as having highly skilled employees or participating in networks with other organisations – will increase the likelihood of observing more formal managerial practices in SMEs (de Kok and Uhlaner, 2001; Bacon and Hoque, 2005; Gray and Mabey, 2005).

- The rapid expansion of so-called “gazelles” can be explained by certain management strategies such as customer surveys, selling to other companies rather than to customers directly, avoiding issuing shares to workers, directors or other outside investors, and refraining from developing new products or services to focus on profit maximisation from existing product lines (Parker, Storey and van Witteloostuijn, 2010).
Benefiting from new data collections, better management practices have been demonstrated to increase firm productivity in developed (Bloom and Van Reenen, 2007, 2010; Bloom et al., 2013a) as well as developing countries (Bloom and Van Reenen, 2010; Bloom et al., 2013b). Bartz, Mohnen and Schweiger (2016) report that the positive effect of management quality on productivity differs depending on the economic development of the country. They report that above-median-quality management practices of firms operating in lower-income economies are associated with a stronger positive impact on labour productivity than the introduction of product, process or technological innovation. This would mean that improving management quality in developing countries have a larger productivity potential than innovation.

The World Management Survey presents (average) data on management quality at the country level across different management dimensions including for Myanmar, Singapore and Viet Nam (Figure 4.4). Throughout the different vintages of data, the United States persistently scores the highest on management quality while Singapore and Viet Nam are both in the (large) middle group of countries: Singapore at the higher end of this group and Viet Nam rather at the lower end. The average management quality in Myanmar is found at the lower end of the ranking, similar to that of other developing economies presented in the sample. The available data therefore show that several ASEAN countries lag behind management best practices. Moreover, the dispersion in management is high in some ASEAN countries (Bloom, Draca and Van Reenen, 2016).

Figure 4.4. Average management scores by country

![Average management scores by country](https://www.nber.org/system/files/working_papers/w22327/w22327.pdf)

There is some evidence that SMEs, particularly in emerging markets, generally have weaker managerial skills and less efficient organisational practices than large firms (OECD, 2018f). In a similar vein, family-owned and -managed firms – which in a lot of cases tend to be SMEs – also show a lower quality of management (Bloom and Van Reenen, 2010).

In addition, differences in management practices emerge from a number of other factors (Bloom and Van Reenen, 2010): imperfectly competitive markets (competition could force badly managed firms to exit the market), regulations restricting good management practices (for example when hiring and firing is difficult) and informational barriers (firms might not know certain management practices or some practices are too complicated).
These determinants directly suggest a number of government policies that could benefit management quality in countries, for example regulation in product and labour markets. Furthermore, as informational barriers seem to be more important for SMEs and in developing regions, training programmes covering even basic operations (such as inventory management and quality control) could be very helpful in these countries. Often such training services however, if they exist, are targeted to larger firms, however, making them less suited and too expensive for SMEs.

Notes

1 Microfinance also plays an important role in Cambodia, where banks primarily lend to larger enterprises. Total microfinance loans in Cambodia corresponded to 10.7% of GDP in September 2017 (ADB, 2015: 15).

2 Reversely, other studies have reported that that a lack of managerial skills explains the low productivity of state-owned and formerly state-owned firms (see OECD, 2019b for references).

3 In higher-income countries, the find that firm-level management practices play a somewhat less important role in boosting firms’ labour productivity; it seems that firms need to engage in innovation first.
This chapter explores the firm-level dimensions of productivity, including the role of business dynamics. It explores the heterogeneity of productivity performance across firms, as well as the process of creative destruction, that enables new, productive firms to enter the market, grow and replace inefficient firms. The analysis is based on firm-level analysis for a limited number of ASEAN countries, using OECD approaches applied to many other countries. The analysis also looks at the size and age of firms.
Designing adequate policy responses to the challenge of the small and medium-sized enterprise (SME) productivity in ASEAN countries requires understanding the nature of productivity developments. Aggregate productivity trends emerge from two underlying micro-economic processes: i) the productivity performance at the firm level, which is famously heterogeneous across firms, even within narrowly defined industries (Syverson, 2004); and ii) the process of creative destruction, which eases the productivity-enhancing reallocation of inputs by enabling new, productive firms to enter the market, grow and replace old, unproductive ones (Bartelsman, Haltiwanger and Scarpetta, 2013). These two processes underlie job creation and destruction, and ultimately aggregate job flows. Moreover, the process of creative destruction enables start-ups and young firms to grow and be the key source of job creation.

This chapter examines both processes for a limited number of ASEAN countries. Given the substantial heterogeneity of economic performance across firms, the analysis ought to go beyond the representative firm paradigm. Indeed, comparable average productivity at the country or sector level may hide very different underlying distributions. For example, low average productivity may reflect the scarceness of firms at the top of the productivity distribution, which possibly points to a lack of innovation at the productivity frontier. However, it may also arise from the clustering of firms at the bottom of the distribution, which suggests the existence of impediments to technology diffusion from the frontier firms to the others or weak market selection (Andrews, Criscuolo and Gal, 2016; Berlingieri, Blanchenay and Criscuolo, 2017). Similarly, comparable aggregate employment flows hide the concomitant creation and destruction of jobs by firms of different age and size, and they do not disentangle the contributions of entry, exit and post entry growth (Calvino, Criscuolo and Menon, 2016). Thus, similar averages at the country or sector level can have very different policy implications. This calls for studying the entire productivity distribution and examining job creation and destruction by firms of different types. In doing so, the analysis points to the micro-drivers of productivity and employment growth in ASEAN countries, thus informing the design of appropriate policies.

In this regard, the policy and research communities’ interest in harmonised cross-country micro data has increased significantly. This has been partly driven by improvements in computing power but, fundamentally, it reflects the recognition of the need of micro data for understanding the growing complexity of the way economies work and explaining the heterogeneity in economic outcomes. Empirical evidence shows substantial dispersion across firms’ productivity, size, age, and growth. Significant obstacles remain, however, for transnational access to official micro data. As a result, cross-country studies based on the analysis of official micro data are rare, in particular for ASEAN countries (Box 5.1).

The OECD addresses this data challenge in two ongoing projects, DynEmp (Box 5.2) and MultiProd (Box 5.3), for which data are currently available for a number of ASEAN countries. The projects ensure comparability of the country level results via the use of a commonly specified protocol for data collection and aggregation, and a commonly specified model for the econometric analysis. This chapter relies on these two distributed micro-data projects to reach the level of granularity required to study employment and productivity and business dynamics.

Box 5.1. Data availability in selected ASEAN countries

Researchers and policy analysts have increasingly recognised the importance of micro data for understanding the complexity of economic dynamics and the heterogeneity in economic outcomes across firms. For ASEAN countries, access to micro data has been a major challenge. Although significant improvements have been made in recent years, issues in terms of data representativeness and inconsistency arising from fragmentation of national statistical frameworks can present enormous hurdles to researchers in this field.
5. BUSINESS DYNAMICS AND PRODUCTIVITY

The OECD DynEmp and MultiProd projects ensure comparability of the country level results via the use of a commonly specified protocol for data collection and aggregation, and a commonly specified model for the econometric analysis. Both projects use the data from administrative sources or national surveys, whose coverage might be somehow time- and sector-specific. Even though the projects aim at the widest possible coverage for each of the countries concerned, there may be some caveats hampering data comparability across countries. Currently, DynEmp is available for Cambodia, Indonesia, and Viet Nam while MultiProd is available for Indonesia, Thailand, and Viet Nam. The details of the micro-data sources used for the countries included in this report are reported below.

Cambodia

The DynEmp project is based on the 2011 Economic Census, administered by the National Institute of Statistics, a branch of the Ministry of Planning. The Census provides a complete coverage of all establishments operating in all economic sectors used.

Indonesia

For DynEmp, data are combined from two surveys carried out by the National Statistical Office (Badan Pusat Statistik): i) the Annual Manufacturing Survey, covering establishments with 20 or more employees; and ii) Survei Industri Mikro dan Kecil, covering smaller establishments and non-manufacturing sectors. However, the sample has been restricted to the manufacturing sector only. Since the population coverage might be different in the two surveys and the sample size varies across years, results should be interpreted with caution. Specifically, small and young firms might be underrepresented. For MultiProd, the main data source is the Annual Manufacturing Survey for the period 2002-14.

Thailand

The MultiProd project is based on the 2007 and 2012 Business and Industrial Census Data administered by the National Statistical Office. The Census provides a complete coverage of all establishments operating in the manufacturing sector.

Viet Nam

The main data source is the Annual Enterprise Survey from the General Statistics Office of Viet Nam. Underlying data for employment come from the General Department of Taxation of the Ministry of Finance and from the Business Registration Management Agency of the Ministry of Planning and Investment. The Annual Enterprise Survey covers all state-owned enterprises (SOEs) and foreign-owned firms without firm threshold. For domestic private firms, the survey contains the universe of firms above 20 employees and a stratified random sample of smaller firms. Firm identifiers and employment are available for the universe of firms regardless of their size, hence statistics based on other variables (e.g. labour productivity) can be re-weighted and made representative for the entire population of firms. For the other variables, the analyses in this report are based on annual surveys for the period 2000-14, except for 2011 when a Census is available for all variables.¹

¹. In principle, for small firms with less than 20 employees, a stratified sampling strategy is used according to the location and four-digit industry classification to collect the information on revenues, value added, capital, and other variables that are needed for the productivity analysis. Firm identifiers and employment information are derived from administrative tax data and are in principle available for the universe of firms. However some concerns remain on the actual coverage of very small firms, which could still be underrepresented in the data. An avenue to improve the quality of the data would entail accessing the underlying administrative data from the tax authorities, which should constitute the most reliable source for the full register of businesses. Unfortunately this data source was not made available by the relevant authorities. Finally, an important difference with respect to the data for Cambodia and Indonesia is the unit of analysis (firm rather than establishment).
Box 5.2. The DynEmp project

The distributed micro-data approach adopted in the DynEmp project is based on a common statistical code developed by the OECD DynEmp team, which is run in a decentralised manner by national experts from statistical agencies, academia, ministries, or other public institutions with access to the national micro-level data. The micro-aggregated data generated by the centrally designed but locally executed program codes are then sent back for comparative cross-country analysis to the OECD.

This approach reduces confidentiality concerns as it aggregates information at a sufficiently high level. It achieves a high degree of harmonisation because the definition of the extracted information is the same across all data sets, thanks to the centrally written computer routine. The experts also implement country-specific disclosure procedures to ensure that confidentiality requirements are respected.

The first phase of the project, DynEmp Express, was implemented in early 2013. This first phase entailed a simplified statistical code that resulted in the assembly of a database at the national level covering 18 countries (see Criscuolo, Gal and Menon, 2014). The second phase of the project, called DynEmp v.2, aimed at collecting more detailed data on the within-sector contribution of start-ups and young firms to employment growth, and allowed a more detailed analysis of the role played by national policies and framework conditions for employment dynamics (see, for instance, Calvino, Criscuolo and Menon, 2016; Calvino, Criscuolo and Menon, 2018). The ongoing third wave of data collection is featuring a more sophisticated statistical routine called DynEmp3. Novelties include additional adjustments to the employment variables to proxy total employment in the calendar year, additional aggregations, variables, and distributed regressions. Recently, the DynEmp code has been modified to enable the analysis of employment and business dynamics at the regional and local level as well (OECD, 2017g), and to allow for its application to cross-sectional databases that do not entail a panel dimension (DynEmp XS).

DynEmp XS is available for Cambodia, Indonesia, and Viet Nam and produces a set of statistics based on micro-level data on employment dynamics. It is suitable for cross-sectional data and provides additional aggregations based on age and size.

The role of firm-specific factors

Differences in firm size have direct implications for productivity and output (Pagano and Schivardi, 2003). In ASEAN countries, micro and small enterprises account for a large part of manufacturing firms. This means that a large fraction of productive resources are concentrated in those firms, which are typically less productive than medium or large firms. Figure 5.1 documents this by showing the share of businesses by size class in the manufacturing sector of Indonesia, Cambodia and Viet Nam, where the results from DynEmp are available. In Cambodia, the share of small businesses (two to nine persons engaged) makes up for around 95% of the entire firm population, whereas the share is around 57% in Indonesia, and around 40% in Viet Nam. The disproportionally high share of small establishments, with only very few large firms, is common to many developing and emerging economies (Hsieh and Olken, 2014; Tanaka and Hatsukano, 2010).

Although the comparison is challenging, the differences in the share of SMEs between Indonesia and Cambodia may reflect differences in the barriers to growth for these firms, such as a limited access to finance as well as regulatory barriers. In Cambodia, fewer small businesses scale up than in Indonesia, which seems in line with the fact that Indonesia has a more stable business environment and more policies directed towards increasing the ease of doing business (The World Bank, 2019). Enabling businesses to scale up is important since larger firms tend to have increased returns associated with research and development (R&D) intensity, especially in manufacturing, and therefore positive effects on productivity growth.
The way employment is distributed over size classes also matters. With increasing size, the productivity of firms tends to increase with a positive effect on wages, especially in manufacturing (Berlingieri, Calligaris and Criscuolo, 2018). Despite the high share of small businesses in Indonesia, Cambodia, and Viet Nam, looking at the share of total employment by size class in Figure 5.2 reveals that in the three countries, the small fraction of large units accounts for around 60% of total employment.²

Government policies in favour of foreign direct investment (FDI) liberalisation and the creation of an ASEAN Investment Area (AIA) are likely to have contributed to the concentration of employment in large firms (Piyaareekul Uttama and Peridy, 2010). FDI inflows to ASEAN countries have indeed grown substantially in the previous decade. FDI can be an important source of technology transfers, as shown for Indonesian firms (Bialock and Gertler, 2003). Further evidence on Indonesia shows that jobs created by foreign-owned firms in developing countries are likely to pay higher wages than those paid by local firms (Sjöholm and Lipsey, 2006; Arnold and Javorcik, 2009).³

The high share of state-owned enterprises (SOEs) in some ASEAN countries might also play a role in explaining the concentration of employment. Indonesia is among the ten countries worldwide with the highest share of SOEs (OECD, 2016c). In Viet Nam, SOEs represented 25% to 30% of fiscal revenues...
(OECD, 2010b). The high share of employment in large companies could therefore be linked to the larger size of SOEs in the three countries considered here.

**Figure 5.2. Size distribution: Share of employment**

The distribution of firms according to their age is also closely linked to the substantial share of small units observed in Cambodia, Indonesia, and Viet Nam. Looking at the age distribution reported in Figure 5.3, it is clear that young businesses are prevalent, with the number of units declining with age. Young firms tend to be small and still need to learn about demand (Foster, Haltiwanger and Syverson, 2016). At the same time, young and small firms have also been found to be more volatile and more sensitive to national policy settings such as bankruptcy laws and contract enforcement (Calvino, Criscuolo and Menon, 2016).

In Cambodia and Viet Nam, firms or establishments younger than five years account for more than 40% of the total number of firms (or establishments). Looking at the second age group (five to nine years) the results show that in Viet Nam those firms account for a higher share than in Cambodia, where there is stronger decrease of the share of businesses with age. One way to interpret these results is that economic reforms to foster entrepreneurship may have taken place later in Cambodia than in Viet Nam, and that firms still face difficulties to stay in the market and scale up. Economic reforms may also reduce the number of informal businesses in the economy, which can also explain the high share of young establishments in the countries shown. In Indonesia, the distribution of businesses looks the most stable, with the share of businesses decreasing less with age compared to the other two countries, where old firms are the exception.
The process of scaling up of firms is an important feature of the business environment with important implications for economic growth. Even though the available data do not allow to follow single firms over time, looking at the average employment by age class in Figure 5.4 is suggestive of general tendencies of employment growth. In both Indonesia and Viet Nam, older units seem to be larger than younger ones, which suggests that firms may be able to scale up with increasing age. In Cambodia, where economic reforms have taken place later than in the other two countries, some small differences in average employment between young and older units are evident only in recent years (among firms born in the last 15 years), as older firms are particularly small. However, this is a positive signal for the development of scaling-up capacities among Cambodian firms, although they remain much smaller than firms in Indonesia and Viet Nam.

The difficulties of entrepreneurs to scale up are often closely linked to the underlying business environment and can be addressed through different policy responses. Enhancing business-friendly legislations, increasing the availability of finance for entrepreneurs, building entrepreneurial skills, and creating inclusive start-up networks can positively affect the capacity of firms to scale up. More discussion of these possible responses is presented in Chapter 7 of this report, which explores different possibilities for governments to create favourable conditions for young businesses.
5. BUSINESS DYNAMICS AND PRODUCTIVITY

Figure 5.4. Average employment by age class

As noted above, aggregate productivity trends emerge from two underlying processes at the level of firms: i) the productivity performance of the individual firm, which can be very heterogeneous across firms, even within narrowly defined sectors (Syverson, 2004); and ii) the Schumpeterian process of creative destruction, which eases the productivity-enhancing reallocation of resources by enabling new, productive firms to enter the market, grow and replace old, unproductive ones (e.g. Bartelsman, Haltiwanger and Scarpetta, 2013). The previous section has analysed the heterogeneity of firms’ characteristics, while this section focuses on the link between business dynamism and aggregate productivity.

Business dynamism favours not only job creation but also productivity-enhancing reallocation. Productivity reflects the efficiency with which resources are allocated within an economy. Resource allocation is directly linked to aggregate productivity: the latter is higher (resp. lower) if production factors are mostly allocated to high (resp. low) productivity firms. This “allocative efficiency” varies considerably across countries and sectors (Bartelsman, Haltiwanger and Scarpetta, 2004). In particular, in developing economies, low productivity can often be attributable to the misallocation of resources across heterogeneous firms (Restuccia and Rogerson, 2008; Hsieh and Klenow, 2009).

Empirical research finds a high level of firm churning, with a continuous reallocation of resources between heterogeneous firms within sectors (e.g. Olley and Pakes 1996; Bartelsman, Haltiwanger and Scarpetta,
This reallocation is driven not only by the exit of shrinking firms and the entry of new firms, but also by the constant upscaling and downscaling of incumbents, a churning that can significantly contribute to aggregate productivity growth. The extent of the contribution depends on how effectively resources are reallocated across firms and sectors.

The effect of resource misallocation in ASEAN countries has been examined by many studies including for Viet Nam (Ha, Kiyota and Yamanouchi, 2016), Indonesia (Hayakawa, Matsuura and Takii, 2017), and Thailand (Dheera-Aumpon, 2018). A cross-country study covering Indonesia, Malaysia, Philippines and Viet Nam (De Nichola, Kehayova and Nguyen, 2018) finds that resource misallocation is large within sectors although it has been declining over time. Moreover, the empirical literature finds that higher productivity is associated with higher investments in intangible assets (for example, by conducting more R&D), belonging to export-oriented sectors, or being foreign-owned (IMF, 2018).

The importance of reallocation can be assessed by analysing the contribution of both firm entry and exit as well as the contribution of surviving firms to aggregate productivity growth. The Melitz and Polanec (2015) decomposition provides a dynamic analysis of the contribution of resource reallocation to productivity growth, accounting for entry and exit while the Olley and Pakes (1996) decomposition offers a decomposition of levels of aggregate labour productivity into simple average firm-level productivity and the covariance between size and productivity in a given year, which is a proxy for the capacity of economies to allocate resources, i.e. employment, to the most productive firm.

Using the productivity decomposition developed by Melitz and Polanec (2015) would provide a more detailed understanding on the dynamic aspects, and in particular the role of firm entry and exit, as well as productivity growth within existing firms. However, for ASEAN countries, the static Olley-Pakes (OP) decomposition was chosen for two reasons: i) given the partial coverage of firms over time, it is not possible to accurately capture firm entry/exit dynamics; and ii) more importantly, in developing countries, productivity growth is mainly driven by the growth of incumbent firms rather than by entry and exit (Ambashi, 2018; Yang et al., 2018). Indeed, much of the literature focuses on the market share reallocation of surviving firms as a driver of aggregate productivity growth (Baldwin and Gu, 2006; Brandt, Van Biesebroeck and Zhang, 2012; Melitz and Polanec, 2015).

Figure 5.5 plots the rescaled OP gap over time, and measures the contribution to aggregate productivity of the reallocation of resources from low to high performing firms. Although patterns are different across countries, the OP gap accounts for a sizeable share of aggregate productivity in general, implying that a relatively large share of resources are allocated to the more productive firms in ASEAN economies. In addition, the OP gap displays positive values for all countries, which suggests that the reallocation of resources contributes positively to the overall productivity level of the economy.

In Viet Nam, allocative efficiency accounts for a significant fraction of the overall productivity level and labour resource allocation significantly improved between 2000 and 2014 in both manufacturing and services. This result is suggestive of the increasing role of private non state-owned firms and FDI-led foreign firms after World Trade Organization (WTO) accession (Iram and Malik, 2017). The literature confirms this, pointing both to the effect of policy reforms (Ha, Kiyota and Yamanouchi, 2016), as well as trade liberalisation (Baccini, Impullitti and Malesky, 2019) followed by WTO accession. Policy reforms might be particularly important in the service sector as the regulatory environment is typically stricter (Arnold, Scarpetta and Nicoletti, 2011). This is in line with the findings in Figure 5.5, which shows a significant increase in the OP gap in the service sector.

Compared to Viet Nam, the Indonesian manufacturing sector displays a worsening of allocative efficiency between the first and the last year in the sample, which is reflected in the drop of the OP gap over the period. As noted, previous research finds that high shares of SOEs in manufacturing hinder resources allocation as well as the transformation of the industrial structure towards a more productive technology-based economy (Yang et al., 2018).
The OP gap also declined in Thailand from 2007 to 2012. A study by Paweenawat, Chucherd and Amarase (2017) finds the same empirical pattern and suggests that size-dependent policies, limited access to credit and government ownership all play a role in explaining the extent of misallocation of resources in the Thai economy.

While the available data only covers some ASEAN countries, the results of the analysis suggest that the extent of allocative efficiency is closely linked to policy reforms. Some policies can create a market environment that increases the efficiency of resource reallocation, which in turn positively affects aggregate productivity. At the same time, ineffective regulations, lack of reform, or a large role for SOEs, can raise the barriers to entry, increase the cost of investment, and lower competitive pressure, thereby reducing reallocation and hindering economic growth and welfare. There is a wide range of policies that affect reallocation, which include measures for alleviating credit constraints (Aghion, Fally and Scarpetta, 2007; Klapper, Laeven and Rajan, 2006), labour market legislation (Haltiwanger, Scarpetta and Schweiger, 2006; Micco and Pagés, 2006), product market regulations and trade liberalisation (Arnold, Scarpetta and Nicoletti, 2011; Bernard et al., 2003; Melitz, 2003; Melitz and Ottaviano, 2008), bankruptcy (Selowsky and Martin, 1997; Lim and Hahn, 2004), and R&D tax credits (Acemoglu et al., 2013).

Nevertheless, several policies that are commonly found in developing economies can affect the efficiency of resource reallocation. For instance, policies to promote international integration have been intensively analysed in the reallocation literature. The entry of foreign multinational enterprises can accelerate the exit of poorly performing firms and enable the reallocation of market share among incumbents. At the same time, resources can be reallocated towards FDI-related firms regardless of their performance. Foreign firms (in Indonesia, Viet Nam, and the Philippines) and SOEs (in Viet Nam and the Philippines) may benefit from privileges that enable them to capture an inefficiently high share of resources (De Nicola, Kehayova and Nguyen, 2018). Similarly, other studies show that trade protection policies in the Philippines may have had a detrimental impact on firm dynamics and reallocation (Aldaba, 2010).
In addition, factor market distortions are related to reallocation. Preferential credit access in favour of state-owned firms in Viet Nam (Baccini, Impullitti and Malesky, 2019) and the absence of a financial system that could screen capital flows from less productive projects likely hinders productivity growth (Banerjee and Duflo, 2005; Midrigan and Xu, 2014). The prevalence of informality and excessive labour market protection in developing countries also might prevent resource reallocation among firms (ADB, 2016).

Business dynamism needs to be analysed in conjunction with firms’ ability to catch up with leading firms, which will be discussed in the next chapter. Despite a general increase in the level of gross domestic product (GDP) per capita over time, ASEAN countries have not yet grown fast enough to catch up with the GDP level of developed economies. Moreover, economic growth has recently slowed down after the global financial crisis. Existing evidence points to the role of an export dependent growth model, which might have caused ASEAN economies to be more vulnerable to external shocks. However, some studies have warned that, more fundamentally, countries such as Indonesia (Rhee, 2012), Malaysia, Philippines, Thailand and Viet Nam run the risk of falling into the middle-income trap unless they intensify economic reforms that can foster reallocation and improve allocative efficiency (Tran, 2013; Aghion and Bircan, 2017).

Box 5.3. The MultiProd project

The MultiProd project contributes to the analysis of productivity by offering new evidence based on firm-level data. This enriches the policy debate on productivity by extending the analysis beyond aggregate industry performance to the important underlying dynamics and developments within industries. Thanks to information at the level of businesses, this new data source offers, for example, new insights on productivity dispersion within industries, its evolution over time and its structural and policy drivers. Policy makers can gain further insights from these measures of “inequality in firm performance” by means of an international comparison owing to the collection of harmonised, and therefore comparable, data. Each country can be then compared to a cross-country benchmark, which sheds light on the strengths and weaknesses of the economy in terms of productivity.

The MultiProd database generally covers most sectors of the economy, but in order to enhance cross-country comparability this report focuses on manufacturing and, wherever available, non-financial market services (or “services” for brevity). Coke and refined petroleum, and Real estate are excluded from the analysis. Macro-sectors, i.e., manufacturing and non-financial market services, for brevity also referred to as “sectors” in the document, are defined according to a customised seven-sector aggregation of ISIC Rev.4/NACE Rev.2 industries. Detailed industries follow the SNA A38 classification, for brevity also referred to as “industries” in the document.¹

As of February 2019, the following countries are included in the benchmark group for ASEAN economies: Australia, Austria, Belgium, Canada, Chile, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Japan, the Netherlands, Norway, Portugal, Sweden, and Switzerland.

See Berlingieri et al. (2017) for a more detailed presentation of the methodology used in the MultiProd project, and Desnoyers-James, Calligaris and Calvino (2019) for more details on data sources, industry coverage and classifications.

Notes

1 Due to the specificities of the data discussed previously, the findings for Indonesia and Viet Nam should be interpreted with caution and taken as lower bounds. Differences in the degree of informality across the three countries may also be an additional challenge.

2 Taking into consideration that in both Indonesia and Viet Nam the share of very small units is likely to be underrepresented, the share of employment of very large units might be overrepresented in those countries.

3 The positive FDI developments are also in line with findings showing that new foreign-owned firms tend to be larger. FDI has been found to increase local firm productivity in Thailand, Indonesia, Malaysia, Singapore, Philippines (Piyaareekul Uttama and Peridy, 2010), as well as Viet Nam (Tran and Pham, 2013) and Lao PDR. Employment in a foreign-owned affiliate also tends to also offer more training opportunities.

4 As mentioned previously, the share of young firms (that are likely to be small) may be underrepresented in Indonesia.

5 Besides not accounting for a large share of units in the economy of the three countries, further unreported analysis suggests that old firms also do not account for a large share of employment.

6 The OP gap is a proxy of allocative efficiency as it increases if more productive firms capture a larger share of labour inputs. The rescaled OP gap corresponds to the OP gap in a given year divided by the weighted sector level of productivity in the same year.

7 Conversely, the contribution of SOEs in total GDP declined from about 60% (1986-90) to 20% (2011-15) while private and FDI firms now account for 80% of the economy in Viet Nam.

8 According to the income thresholds classification by the World Bank, there is only one ASEAN economy in the high-income group by 2018, namely Singapore. Malaysia and Thailand have attained upper-middle-income status while Cambodia, Indonesia, Lao PDR, Myanmar, Philippines and Viet Nam were in the lower-middle-income group as of 2018.
This chapter explores productivity growth in ASEAN countries in an international context. It first explores the role of frontier firms versus that of laggards within selected ASEAN countries, demonstrating the importance of technology and knowledge diffusion from leaders to laggards. It then explores the internal dimension of productivity growth, notably the role of foreign direct investment and multinational firms in accessing foreign technologies, and the engagement of ASEAN countries in global value chains as a mechanism for technology and knowledge diffusion.
Diffusion: Global frontier firms and laggards

Productivity growth is not only affected by national developments, but – in an increasingly interconnected world – also by international development. Neo-Schumpeterian growth models predict that productivity growth is a function of the growth at the technological frontier and the distance to that frontier (Acemoglu, Aghion and Zilibotti, 2006). The growth at the frontier accounts for technological progress, while the distance to the frontier – or productivity gap – reflects the potential for spillovers from the frontier to other firms. The extent to which this productivity gap is associated with higher productivity growth can be interpreted as a proxy for the pace of diffusion of knowledge and innovation from the frontier, and it is referred to as the “catch-up” effect. Such catch-up effects have been documented at the country, sector and firm level (see, for instance, Griffith, Redding and Van Reenen, 2004; Bartelsman, Haskel and Martin, 2008).

Low productivity growth in a country may arise from a lack of innovation at the productivity frontier, possibly due to having too few firms at the top of the productivity distribution. At the same time, it may also reflect impediments to technology diffusion from the productivity frontier to other firms, with too many firms stuck at the bottom of the distribution. Moreover, the overall productivity dispersion may hide an asymmetry between the top and the bottom of the distribution. An important question in many countries is whether an increase in productivity dispersion is the result of frontier firms pulling away from the rest or of firms at the bottom lagging behind relative to the median firm.

In ASEAN countries, the data collected through the MultiProd project for Indonesia, Thailand and Viet Nam, reveal sizeable differences in firm performance (Figures 6.1 to 6.3). Two main points can be observed. First, the productivity gap between laggards and the top performing firms in ASEAN countries is large, and significantly larger than the gap observed in the group of benchmark OECD countries. Second, each country displays different patterns in productivity dispersion; however, with the exception of Indonesia, there is little evidence of a decrease in productivity dispersion and a catch-up of laggard firms with the frontier.

The productivity gap across firms in the selected ASEAN countries is significantly higher than in the gap observed in the benchmark group of OECD countries. In these countries, frontier firms in manufacturing display a level of log labour productivity that is 2.4 times higher than the log labour productivity of the least performing firms. This ratio is over 3.7 in Viet Nam, which is characterised by the smallest gap among the ASEAN countries for which data are available.1

By looking into each country, in Indonesia (Figure 6.1), the productivity gap between laggards and the top performing firms has decreased during the period 2002-14 for both labour and multi-factor productivity. The evidence suggests that Indonesia’s least performing firms are catching up with frontier firms. Conversely, there is no evidence of catch-up in Thailand (Figure 6.2) and Viet Nam (Figure 6.3): the gap is relatively constant for Vietnamese manufacturing firms, while it has even increased for Vietnamese service firms and Thai manufacturing firms.2

Despite the robust aggregate productivity growth in the three ASEAN countries under study, the increase in the distance to the frontier for the majority of firms suggests that the benefits of growth are unequally distributed across businesses and workers, and that the process of technology diffusion from the frontier and laggard firms may have slowed down.

The results for Thailand confirm existing empirical research that finds a large dispersion of productivity among manufacturing firms, which has grown wider over time (Paweenawat, Chucherd and Amarase, 2017). The literature suggests that firms with high productivity and high export share tend to invest more in research and development (R&D). However, firms’ productivity depends not only on their own R&D efforts but also on foreign R&D, transmitted through channels of knowledge spillovers such as trade (Keller, 2004). But 88% of Thai firms in 2015 are not directly linked with any international trade activity (Apaitan, Disyatat and Samphantharak, 2016). This might explain why productivity dispersion has increased, with most of firms lagging behind while exporting firms at the frontier accelerating their productivity growth. Conversely, Indonesia displays a decrease in the productivity dispersion over time.
Figure 6.1 Differences in productivity performance across firms: Indonesia

5th percentile = 0

Notes: The figure plots the difference in productivity between bottom 5% percent decile and each of the productivity performance groups: 5th to 10th percentile of the productivity distribution, 5th to 25th percentile, 5th to 50th percentile, 5th to 75th percentile, 5th to 90th percentile and 5th to 95th percentile. The bottom 5th percentile is taken as the baseline. The figure takes two data points: the beginning year and the latest year of available data: Indonesia (2002 and 2014), Thailand (2007 and 2012), Viet Nam (2000 and 2014). Results are estimated separately for manufacturing and non-financial market services based on detailed industries, following the System of national Accounts (SNA) A38 classification (see Desnoyers-James, Calvino and Calligaris, 2019). Benchmark countries include Australia, Austria, Belgium, Chile, Denmark, Finland, France, Germany, Hungary, Italy, Japan, the Netherlands, Norway, New Zealand, Portugal and Sweden. The benchmark period is 2000-12.
Source: OECD (2019d), MultiProd (internal database).

Figure 6.2. Differences in productivity performance across firms: Thailand

Labour productivity (manufacturing); 5th percentile = 0

Notes: The figure plots the difference in productivity between bottom 5% percent decile and each of the productivity performance groups: 5th to 10th percentile of the productivity distribution, 5th to 25th percentile, 5th to 50th percentile, 5th to 75th percentile, 5th to 90th percentile and 5th to 95th percentile. The bottom 5th percentile is taken as the baseline. The figure takes two data points: the beginning year and the latest year of available data: Indonesia (2002 and 2014), Thailand (2007 and 2012), Viet Nam (2000, 2014). Results are estimated separately for manufacturing and non-financial market services based on detailed industries, following the System of national Accounts (SNA) A38 classification (see Desnoyers-James, Calvino and Calligaris, 2019). Benchmark countries include Australia, Austria, Belgium, Chile, Denmark, Finland, France, Germany, Hungary, Italy, Japan, the Netherlands, Norway, New Zealand, Portugal and Sweden. The benchmark period is 2000-12.
Source: OECD (2019d), MultiProd (internal database).
Figure 6.3. Differences in productivity performance across firms: Viet Nam

5th percentile = 0

A. Labour productivity

B. Multi-factor productivity

Notes: The figure plots the difference in productivity between bottom 5% percent decile and each of the productivity performance groups: 5th to 10th percentile of the productivity distribution, 5th to 25th percentile, 5th to 50th percentile, 5th to 75th percentile, 5th to 90th percentile and 5th to 95th percentile. The bottom 5th percentile is taken as the baseline. The figure takes two data points: the beginning year and the latest year of available data: Indonesia (2002-2014), Thailand (2007 and 2012), Viet Nam (2000, 2014). Results are estimated separately for manufacturing and non-financial market services based on detailed industries, following the SNA A38 classification (see Desnoyers-James, Calvino and Calligaris, 2019). Benchmark countries include Australia, Austria, Belgium, Chile, Denmark, Finland, France, Germany, Hungary, Italy, Japan, the Netherlands, Norway, New Zealand, Portugal and Sweden. The benchmark period is 2000-12.

Source: OECD (2019d), MultiProd (internal database).

This is in line with the growing patterns of export participation and export intensity in the manufacturing sector, although there has been some slowdown following the financial crisis (The World Bank, 2012). Previous literature also confirms the positive relationship between exports and R&D intensity of Indonesian firms as well as productivity and exports (Yang and Chen, 2012).
Due to limited data availability, the results for the service sector are presented only for Viet Nam (Figure 6.3), where productivity dispersion appears to have increased over the period. The low level of labour productivity in the service sector relative to manufacturing has hampered overall economic growth in Asia. And the primary concern has been related to the lack of technology diffusion in the sector. In middle-income ASEAN economies, the service sector is often characterised by the coexistence of large capital-intensive firms in modern services such as information and communication technology (ICT) and of small inefficient businesses in traditional services such as retail, with weak backward and forward linkages (Noland, Park and Estrada, 2012).

Despite the opportunities in terms of inclusive growth and productivity, ASEAN countries have not yet reaped the full potential from the development of the service sector. Even with some recent progress, services are typically less well developed in ASEAN compared to countries in similar or higher-income groups. The productivity gap is particularly pronounced in backbone services such as telecommunications and transport. Underperforming services in many ASEAN impede exports, productivity growth and, importantly, the contribution of services to value added in manufacturing (López González et al., 2019).

However, previous evidence at the two-digit ISIC sectoral level shows that the faster productivity growth in the service sector contributes to the sustained and balanced growth of Asian economies including Indonesia and Thailand (Lee and McKibbin, 2014). This adjustment depends on the sectoral composition of each economy, the capital intensity of each sector, and the openness of each sector to international trade. In particular, the ongoing digital transformation has the potential to spur innovation as well as enhance productivity across a wide range of sectors (OECD, 2017c).

Research for OECD countries shows that productivity divergence has been more pronounced in the lower tail of the productivity distribution than at the top, suggesting that laggard firms might have suffered a more severe slowdown in the speed of diffusion of technologies with respect to other firms in the economy (Berlingieri, Blanchenay and Criscuolo, 2017). In addition, a stronger focus on firms that are lagging behind might have relevant policy implications for inclusive growth, especially through the effect of lagging productivity on wage differentials (Berlingieri, Calligaris and Criscuolo, 2018).

The latter study also looks at the main characteristics of laggards, and finds that such firms are on average smaller and younger than the median firm. This result implies that this group of firms also (small) young firms with a potential for growth. Using a productivity growth decomposition firstly introduced by Melitz and Polanec (2015), this research further shows that entry and exit occur mainly at the bottom of the distribution and that reallocation of resources plays a particularly important role for laggards.

Likewise, the increase in productivity dispersion found in ASEAN countries shows that the large number of lagging firms, which consists of smaller and younger firms, does not manage to keep up with the more productive firms in the economy. This fact suggests that the focus should be put on the performance of the least performing firms to better understand what impedes their growth and what policies could help strengthen their performance.

These findings also suggests that small and medium-sized enterprises (SMEs) might not take advantage of the benefits associated with participation in global value chains (GVCs). For instance, the share of firms that export, whether intermediates or final products, is significantly lower for SMEs (e.g. only 13% in Indonesia, 8% in Viet Nam and 5% in Thailand) than large firms (50%, 69% and 55%, respectively). Moreover, only 19% of SMEs in Indonesia, 14% in Viet Nam, and 6% in Thailand import foreign goods, compared to 44%, 71% and 49% of large firms in these respective countries.

In addition, the evolution of the position of countries in GVCs is important for productivity diffusion, as GVCs can present important channels for scaling up and gaining access to new knowledge that could improve business processes and competitiveness. Globally, it appears that smaller firms, and those with lagging productivity performance, show faster productivity growth in sectors that become central hubs of global production networks, and in sectors with stronger linkages to faster growing foreign buyers or suppliers (Criscuolo and Timmis, 2017). GVCs are therefore an important driver for productivity growth and scaling up of laggard firms.
To fully benefit from their role in production networks, including their connections to the more productive buyers, non-frontier firms need to fully leverage these new sources of knowledge and technology. This implies an important role for policy, to ensure that firms operate in a climate that enables investment in skills, management organisation, and new processes, and that enables resources to flow to innovative firms.

**The role of international connectedness**

**Trade**

The traditional (static) benefits of trade openness (on productivity) result from the fact that international trade helps countries specialise in the activities in which they possess a comparative advantage, increases competition in product and labour markets and helps realise economies of scale. International trade opens foreign markets for goods and services that can be most efficiently produced in the home country, while at the same time wider markets due to trade may enable firms to take advantage of economies of scale that are not available when sales are limited to the domestic market, thereby lowering costs (OECD, 2013c). Industries with relatively large reductions in trade costs tend to experience larger increases in productivity, fuelled by intra-industry reallocations and the reduction of inefficiencies at the firm level.

In addition, empirical research has shown that imports and exports may generate international spillovers as products and services embody technological knowledge (Coe, Helpman and Hoffmaister, 1997; Keller, 2004). Technology spillovers have a positive (dynamic) impact on the long-run rate of productivity growth as spillovers from investments and activities (in knowledge) in one location and by one party may result in beneficial effects for other economic actors in other locations. As noted before, a country’s productivity depends not only on its own R&D efforts but also on foreign R&D, transmitted through channels of knowledge spillovers. International trade is a first important channel through which knowledge and technology are transferred across boundaries.

Trade in goods and services embody foreign knowledge, hence countries may benefit from importing these goods and services and use them locally – on the condition that they have sufficient skills and expertise to absorb this knowledge. Imports might facilitate learning about the products through reverse engineering, spurring imitation or innovation of competing products. In addition, trade relationships stimulate personal interaction and other channels of communication leading to cross-border learning of production methods, product design, organisational methods, and market conditions.

In principle, all trade may result in spillovers, although research has indicated that different types of goods and services embody relatively more knowledge. Imports of capital goods and intermediate goods may increase domestic productivity more strongly as they embody the transfer of technology, more than imports of final goods (Keller, 2004). For example, when a country imports a manufactured consumption good (such as an automobile), local firms can absorb some technological know-how by simply studying the design and the engine of the imported automobile. But while important, reverse engineering of consumption goods has been demonstrated to contribute less to technology transfer than trade in capital goods like machinery and equipment (Saggi, 2002).

Likewise, the growing trade of intermediates within GVCs reflects the embodiment of the skills, factors and technologies used to produce them and therefore can be a form of technology transfer from abroad to local firms (OECD, 2013c; Amiti and Konings, 2007; Bas and Strauss-Kahn, 2015; Halpern, Koren and Szeidl, 2015). Imports of intermediates can provide access to less expensive or higher quality inputs and benefit the competitiveness and productivity of domestic firms (Grossman and Rossi-Hansberg, 2008; Fontagné and Toubal, 2011). Miroudot, Lanz and Ragoussis (2009) show that industries with a higher proportion of imported intermediate goods display on average higher productivity in OECD countries, as foreign inputs embody more productive technology and push the frontier of reallocation of resources to greater efficiency. Goldberg et al. (2008) reported that trade liberalisation resulted in significant falls in the prices of existing...
imported intermediates (larger than for final goods), a large expansion in the range of imported intermediates, increased sales, higher productivity and the introduction of new varieties in the final goods sectors. Recent OECD work (López González, 2017) shows that SMEs with greater exposure to imported intermediates and foreign technologies are more likely to be engaged in export and/or are more productive (in terms of labour productivity), even if their sales are purely domestic. Hence, confirming that access to foreign inputs and technologies may be two effective channels to positively influence SME productivity in an open economy. These findings hold across all income categories, from high- to low-income countries.

ASEAN imports and exports have strongly grown during the past decades, largely reflecting ASEAN’s growing integration into the global economy. Imports (of goods) into ASEAN have almost tripled during 2000-16, while goods exports having grown by more than 250% between 2000 and 2016 (Figure 6.4). Intra-ASEAN trade grew at roughly the same rate between 2000 and 2016 and accounted on average for about 22% of total ASEAN trade. Due to its strategic geographic location and large supply of low-cost labour, ASEAN has become an important production and export hub within GVCs. The growing middle class in emerging Asia – within ASEAN but also in countries close by – is another factor that has strongly contributed to the attractiveness of ASEAN.

Figure 6.4. ASEAN trade

Open trade policies have played an important role in this strong growth of ASEAN trade. Several initiatives have been taken at the policy level to liberalise trade at intra-regional between ASEAN economies as well as with other countries and regions in the world. The vision of One Economic Community with one single market and production base is crucial in promoting regional economic integration between ASEAN economies. The ASEAN Economic Community Blueprint 2025 (ASEAN, 2015b) foresees in the free flow of goods and services as well as of investment, capital and skilled labour.

The strong growth of ASEAN imports may/will have provided important spillovers for firms in ASEAN economies. Capital and intermediate goods accounted respectively for 13% and 64% of total imports into ASEAN in 2016 – shares that have been relatively stable across the period 2000-16. Some differences exist between individual ASEAN countries – e.g. higher shares for capital goods in countries like Myanmar, Lao PDR – but these are overall quite limited. Embodied in the fast-growing imports of especially intermediate and capital goods, it can be expected that substantial amounts of knowledge and expertise have been “imported” from abroad into ASEAN. In order to contribute to domestic productivity growth, these foreign imports need to be efficiently used in domestic production processes.

**Foreign direct investment and multinational enterprises**

A second spillover channel that has attracted a lot of attention is international investment and in particular the activities of multinational enterprises (MNEs) in host countries. By encouraging MNEs to establish local affiliates, host countries hope to generate technology transfers to local firms. Foreign-invested firms are technologically more advanced – in production methods, management, etc. – and unintended benefits might spillover from MNEs to local firms resulting in productivity growth for the host economy. For example, highly skilled staff moving from MNEs to domestic firms may take with them knowledge which may be usefully applied in the domestic firm. Likewise, domestic firms may learn superior production technologies from MNEs through imitation, reverse engineering, etc. Furthermore, vertical linkages between domestic firms and MNEs within value chains – for example, MNEs sourcing inputs domestically – may be beneficial as domestic suppliers are supported to attain certain quality standards.

While international investment is believed to be one of the most important channels through which technology is transferred across countries (OECD, 2013c), the spillover literature is however (very) ambiguous. Large numbers of papers have found evidence of positive spillovers while others reported only insignificant results and still other papers (especially analysing emerging economies) reporting significant negative spillovers. The same picture emerges from the studies on spillover results in ASEAN countries. Foreign direct investment (FDI) was found to increase local firms productivity in Thailand, Indonesia, Malaysia, Singapore, Philippines (Piyaareekul Uttama and Peridy, 2010), as well as Viet Nam (Tran and PHAM, 2013), Lao PDR (Kyophilavong, 2011) and Indonesia (Blalock and Gertler, 2003). For Cambodia however, the negative market stealing effects from firms’ competition within the same sector outweigh the positive productivity spillovers. The negative effects are found to be particularly relevant for formal firms, while their informal counterparts benefit the most from productivity spillovers (Chhair and Newman, 2014).

Just like in the case of trade, spillovers from MNEs to the host economy do not occur automatically and might not materialise in reality. Absorptive capacity has been demonstrated to have an important effect on spillovers, indicating that domestic firms need to possess a minimum of knowledge in order to capture and absorb knowledge spillovers. Also spatial proximity seem to affect the incidence and size of spillovers as being geographically close to the knowledge source is important for these externalities to arise. Further on, also similar to trade, studies have shown that spillovers may differ between types of ownership (majority, minority, joint-venture, etc.), the nationality of the parent company and the motives for international investment.

ASEAN has witnessed large inflows of FDI during the past decades, much larger than other emerging economies. MNEs from over the whole world have established affiliates in ASEAN countries attracted by the abundance of low-cost labour, central location within Asia, and the growing domestic markets. In addition, supportive government policies including the provision of (tax) incentives have welcomed foreign investment.
as key to the export promotion strategies of ASEAN countries. While during and after the financial Asian crisis, FDI slowed down, foreign investments has only increased. Singapore is the largest recipient of foreign investment, with a significant proportion in the financial services sector. In recent years, also other countries like Malaysia, Indonesia and Thailand have increasingly attracted FDI.

**Figure 6.5. ASEAN foreign direct investment**

![Figure 6.5. ASEAN foreign direct investment](image)

Note: FDI = foreign direct investment; CLMV = Cambodia, Lao PDR, Myanmar and Viet Nam.

Related OECD-COPAS work on inclusive investment in global value chains and opportunities for ASEAN SMEs (López González et al., 2019) discusses in more detail the importance of FDI and its impact on the domestic sector. Evidence is presented about the linkages between foreign MNE affiliates and local SMEs as well as the different dimensions of absorptive capacity for domestic firms. The report shows that foreign MNEs constitute an important market and source of inputs for ASEAN SMEs and that the intensity of linkages depends on MNE business models and SME capacities (López González, 2017).

**Global value chains**

The strong growth of ASEAN trade and FDI goes together with the growing importance of ASEAN economies in GVCs. The past decades witnessed the strong fragmentation of production across national border through GVCs (OECD, 2013c). The emergence and strong growth of GVCs has drastically changed the outlook of the global economy and it is key for national economies to participate in these international production networks. Participation and upgrading within GVCs are important strategies for stronger economic growth, rising productivity and extra employment of national economies (OECD, 2013c).

ASEAN countries have integrated very strongly in GVCs during the past decades (Figure 6.6). Economies can participate in GVCs by using imported inputs in their exports (the so-called backward linkages in GVCs) or by supplying intermediate inputs for third country exports (forward linkages). Brunei Darussalam and Indonesia have seen large increases in GVC participation, predominantly as suppliers of natural resources to foreign exporters, which is reflected in their high forward linkages. Conversely, Cambodia, Malaysia, Thailand, the Philippines and Viet Nam have become more integrated in terms of manufacturing, and Singapore is heavily engaged in the sale of high-skill intensive products and services (López González, 2017).
Aggregate figures on GVC participation for a national economy however mask however considerable heterogeneity at more disaggregated levels. For example, large differences exist in GVC participation between larger firms – which are often MNEs and typically show higher participation in GVCs – and SMEs. Because of their more limited trade activities (see above), SMEs are vastly under-represented in GVCs when looking at direct exports only. But SMEs – like larger firms – may also be involved in GVCs through so-called indirect exports, i.e. they provide inputs domestically which are included in the exports of the larger firms. In line with previous OECD work for OECD countries, López González (2017) showed that “direct” GVC participation rates for SMEs in a number of ASEAN countries are overall low, but increase when also taking into account their indirect exports. Figure 6.7 confirms this observation for a larger number of ASEAN countries, by looking at the number of direct and indirect exporting SMEs rather than at the exporting values.

Related OECD-COPAS paper “Participation and Benefits of SMEs in GVCs in Southeast Asia” (López González et al., 2019) provides a detailed analysis of ASEAN SME participation in GVCs and its effects on the performance of these SMEs. It discusses the potential risks and benefits that participation in GVCs may bring for SMEs in the region. The report also explores the extent to which firm characteristics and the policy environment determine SME engagement in GVCs.

Second, aggregate GVC participation indexes can also mask large changes in the organisation of GVCs. Asian value chains for example have moved from being centred on Japan to increasingly turning towards the People’s Republic of China (hereafter “China”). This can be captured by a measure of “centrality” within GVCs, with central hubs in GVCs typically being very influential through their strong and widespread connections to other sectors and countries. Conversely, peripheral sectors and countries typically exhibit weak linkages and so are less influential.

In 1995, a few key hubs dominated regional value chains: Asian value chains were predominantly centred on Japan, while Europe and North America were centred on Germany and the United States respectively as reflected by the size of the circles in Figure 6.8 (Criscuolo and Timmis, 2017). However, by 2011, although Germany and the United States remained dominant hubs within their respective regions, Asian value chains had undergone substantial reorganisation. Over 1995-2011, the position of Japan as a key hub within Asian value chains diminished substantially, while that of China rose.
More generally, there was a rising centrality and influence in GVCs of emerging economies within Asian production networks. Many of the economies in Asia that were relatively more peripheral in 1995 had become increasingly central by 2011. By 2011, influence within GVCs was much more evenly distributed across Asian economies, and there were strong intra-regional linkages within “Factory Asia”.

Underpinning these aggregate changes were several developments at the industry level, reflecting the pivoting of some manufacturing industries from Western Europe and the United States towards emerging European and Asian economies and the increasing importance of services more broadly. These changes were particularly evident in digital sectors, reflecting a rise in importance of digital sectors in GVCs from emerging economies. In ICT manufacturing, value chains in 1995 were organised around a handful of central hubs in developed economies, notably the United States and Japan. However, these central hubs witnessed an almost universal and substantial decline in importance and a number of Asian economies saw large increases in centrality by 2011, not only China, but also Korea, Chinese Taipei and Malaysia. Indeed, China (20th in 1995) had replaced the United States as the most central economy-industry in 2011. In ICT services, in contrast, the period 1995-2011 saw this sector become more central in GVCs for almost every country, reflecting the importance of ICT services for global production as a whole.
Figure 6.8. Centrality and the organisation of global value chains

1. Note by Turkey
The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

Note by all the European Union Member States of the OECD and the European Union
The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Notes: GVC = global value chain. Economies are placed according to their location. Node size denotes total (forward and backward) foreign centrality aggregated at an economy-level and includes all sectors within global production networks. Edges reflect direct input flows. For clarity only the largest input flows are reflected, those exceeding 2% of total inputs used in the importing or exporting economy. Calculated using the OECD Inter-Country Input-Output (ICIO) Database, 2015 edition.

This evolution of the position of countries in GVCs is important for productivity in SMEs, as GVCs can present important channels for scaling up and gaining access to new knowledge that could improve business processes and competitiveness. It now appears that smaller firms, and those with lagging productivity performance, show faster growth in sectors that become central hubs of global production networks than in sectors on the periphery, and also in sectors with stronger linkages to faster growing foreign buyers or suppliers (Criscuolo and Timmis, 2017). In other words, centrality and being connected to more productive buyers can play a role in the catch-up of non-frontier or smaller firms, if it helps those firms to fully leverage these new sources of knowledge and technology. On the other hand, for firms or economies that are already central or near the frontier, becoming more influential does not appear to impact productivity.

This is an important finding for policy, which can help ensure that firms operate in a climate that enables investment in skills, management organisation, and new processes, and which enables resources to flow to innovative firms. The link between the changing structure of GVCs and firm productivity is indeed dependent upon the policy environment. The evidence shows that framework policies, particularly flexible labour markets, matter for the diffusion of productivity. In economies with flexible labour markets the diffusion of foreign productivity growth to non-frontier firms is more strongly present, an effect that weakens with the stringency of employment regulation. In addition, the correlation with firm productivity is strengthened in environments with stronger investor protection, through contract enforcement and intellectual property protection. Finally, policies commonly associated with trade participation, such as the availability of credit and the complexity of customs procedures, are associated with stronger productivity diffusion.

Ensuring that firms can respond in an agile manner is especially important given the rapid technological changes that are taking place at the global level. New technologies, such as robotics, automation, additive manufacturing, artificial intelligence, could reduce the advantages of production in low-labour-cost emerging economies, hence curtailing progress in the international fragmentation of production (De Backer and Flaig, 2017). Many emerging economies face the challenge of upgrading entire production systems for a future of heavily interconnected production, which can be difficult to retrofit to outdated technologies (OECD, 2017c). In addition, digital technologies like additive manufacturing and 3D printing, autonomous robots, big data, etc. may reduce the costs of small-scale customised production, incentivising production close to the destination market. At the same time, any relocation of production may be moderated by growing demand in emerging markets.

Notes

1 A log ratio 2.4 and 3.7 correspond to a productivity level ratio of, respectively, 10.95 and 40.33. For Indonesia, this ration stands at 41.62, and for Thailand is stands at 145.33.

2 A caveat in the interpretation of the results is that the results for Thailand are based on the universe of firms, while the underlying data for Indonesia contain only firms with more than 20 employees. Hence, the firms at the bottom of the productivity distribution might not be comparable and the patterns of dispersion might be affected by this.

3 Amiti and Konings (2007) show that productivity in Indonesia has benefitted relatively more from the decrease in tariff barriers for intermediate goods than from a similar tariff decrease for final goods.

4 Thailand, Indonesia, Singapore and Viet Nam.
This chapter explores the most important policies for promoting small- and medium-size enterprise (SME) productivity in ASEAN. The discussion is focused on a number of important policy priorities to promote productivity directly following from the analysis in previous chapters. In addition, specific policy measures are discussed within each policy productivity objective. The key topics covered include the need for a broad and coherent SME policy agenda; SME capabilities for innovation; talent and skills; SME access to finance; international connectedness of SMEs; entrepreneurship and business dynamism; and informality.
Foster a broad and coherent policy agenda

The previous chapters of this report have explored a wide range of factors that determine directly and indirectly firm-level and aggregate productivity. They demonstrated that productivity is affected by many factors and policies, across a wide range of policy domains. The responsibility for these policies is typically shared across various ministries and agencies, although there may be one ministry responsible for the development of an overall or small and medium-sized enterprise (SME) productivity strategy (see below). Best practices from OECD countries and partner economies show that productivity-enhancing policies can benefit from a whole-of-government approach, characterised by strong co-ordination across different policy domains to ensure that policies are streamlined, coherent and effective.

The OECD SME Policy Index for ASEAN explored the governance of SME productivity policies across ASEAN countries, focusing on the planning, design, implementation as well as the evaluation of the different policies (Box 7.1). Not surprisingly, the diverse development trajectories of ASEAN countries combined with large social and cultural differences result in different objectives and somewhat different approaches to the promotion of productivity growth in SMEs.

Box 7.1. The governance of SME productivity policies in ASEAN

Planning and design: Few ASEAN countries have clear action lines with measurable targets

The structure of the agencies responsible for planning productivity policies and programmes varies across ASEAN. In all ASEAN countries except the Philippines, the national productivity policy development agency takes charge of productivity for both SMEs and large firms. While the Philippines has a separate planning agency for SME productivity (the MSMED Council for MSME Productivity Policy), in practice other government agencies also plan or create their own projects and programmes related to productivity enhancement, including for SMEs (e.g. the Department of Labour and Employment’s National Wages and Productivity Commission).

All ASEAN countries except Brunei Darussalam and Myanmar are members of the Asian Productivity Organisation (APO), which aims to enable economies to be more productive by strengthening national productivity offices, promoting the development of SMEs and communities, catalysing innovation-led growth and promoting green productivity.

SME productivity policies are generally embedded in overall national development plans and/or SME development plans, though few ASEAN countries have clear action plans with defined measures and key performance indicators (KPIs) on productivity. Thailand has a stand-alone strategic plan on productivity enhancement that consolidates various programmes and policies in this area. Singapore’s Industry Transformation Programme lists productivity as the first of its four pillars to move Singaporean enterprises to higher value-added activities and raising their operational efficiency. Malaysia’s Productivity Blueprint, launched in May 2017, connects SME productivity-related measures being implemented under the SME Masterplan 2012-20 to broader strategic goals. In Lao PDR, productivity enhancement is included as the first pillar of the country’s new SME Development Plan (2016-20).

Most ASEAN countries have a developed consultation processes for policy development. In eight of the ten countries, the private sector and research organisations are almost equally represented in such processes. In Lao PDR, the private sector is more involved in consultations than research organisations. In Viet Nam, it is the opposite. Given that strategic plans on productivity enhancement appear in different sections of national strategic plans, consultations are generally conducted at varying levels across different ministries.
Implementation: Execution of productivity measures varies highly across ASEAN countries

The main implementing agency for SME productivity enhancement programmes generally falls under the main ministry responsible for implementing SME development programmes. Aside from the SME implementing agency, the Ministry of Science and Technology is also among the government stakeholders implementing productivity enhancement measures in all ASEAN countries except Brunei Darussalam. In Singapore, the Future Economy Council is responsible for policy design and overseeing implementation by different government agencies. Two ASEAN countries have an autonomous productivity implementing agency: the Malaysia Productivity Corporation and the Thailand Productivity Institute. In the other ASEAN countries, the main national productivity institute conducts research/planning and/or implementation of its own programmes. The placement of the national productivity agency in the government varies across countries, too. For example, the Viet Nam Productivity Institute is under the Ministry of Science and Technology while Indonesia’s National Productivity Institute is under the Ministry of Manpower and Transmigration.

In all ASEAN countries except Cambodia and Lao PDR, public-private dialogues are conducted regularly during the implementation of productivity enhancement programmes. However, in terms of the extent of such a dialogue, some countries have big gaps between targets and the actual activities conducted. In the Philippines, for example, the MSME Development Medium-Term Evaluation Report found that, of the 59 active provincial/city SME councils, only 35 were conducting meetings regularly. In Myanmar, while public-private dialogue is being conducted regularly every two months, it takes place in only three to four out of seven regions.

Capital investment programmes for SMEs exist in five ASEAN countries. For countries with such programmes, implementation is generally at a small scale. Also, except for Singapore and the Philippines, ASEAN countries with capital investment programmes have not examined the best practices for funding these programmes, which may lead to mismatched investments. In the Philippines’ Shared Services Facility programme, technical proposals are evaluated first through criteria such as whether they address manufacturing or processing gaps and whether they increase cluster productivity.

All ten ASEAN countries have instruments for enhancing SME productivity. In higher-income countries, these instruments tend to be mostly financed by the government, although organisations such as the APO often also provide support. In lower-income countries, they tend to be financed or co-financed by development partners. In Myanmar, for instance, programmes are run by the United Nations Industrial Development Organization (UNIDO) and the Japan International Co-operation Agency (JICA). Where programmes rely on donor support, stakeholders should ensure that they are sustainable in the long run.

Monitoring and evaluation: ASEAN countries vary on the collection of key indicators

In a majority of ASEAN countries, productivity enhancement programmes have monitoring components. However, in terms of KPIs, the countries in the early stages of development do not systematically collect information on SME labour productivity and the value added of SMEs in gross domestic product (GDP). Brunei Darussalam, Malaysia, Singapore, Thailand and Viet Nam have more solid monitoring mechanisms on productivity indicators, as they collect data on total factor productivity in addition to labour productivity. However, at the SME productivity level, Viet Nam does not collect official data on value added of SMEs in GDP. Singapore collects comprehensive productivity KPIs (value added per worker and per hour worked) for the overall economy by industry, as well as a set of indicators for each of the 23 industries covered by the Industry Transformation Programme. For example, the Infocomm Media Development Authority of Singapore collects KPIs that are needed to calculate productivity measures, such as nominal value-added growth, new jobs created (specifically professionals, managers, executives and technicians) and the number of workers in the infocomm and media sectors.
In most ASEAN countries, the budget is not broken down into specific programmes on productivity, thus making it hard to monitor and evaluate the budget’s efficiency. Since productivity covers a wide range of areas, the tendency is for the different components, e.g. access to finance, skills development, etc., to have a budget that implicitly aims to increase productivity.


The next few sections will explore the most important policies for promoting SME productivity in ASEAN. The discussion is focused on a number of important policy priorities to promote productivity directly following from the analysis above. In addition, specific policy measures are discussed within each policy productivity objective. Because certain policies have effects along different productivity dimensions, a number of policies feature in the different sections, underlining the importance of strong co-ordination in the design and delivery of policy measures.

The policy recommendations for promoting productivity in ASEAN are guided by previous OECD work on different dimensions of productivity – based on OECD evidence – and – where available – specific data and insights for ASEAN countries. The list of policy objectives and measures is however not exhaustive and may be complemented dependent on the policy discussion in individual ASEAN countries (Box 7.2 for a discussion on “greening SME productivity”).

Box 7.2. Greening SME productivity

Across the globe, there is growing interest in developing more environmentally sustainable economies. Although SMEs’ aggregate impact on the environment is considerable – for example, SMEs are responsible for an estimated 70% of industrial pollution in Malaysia – environmental enforcement efforts in ASEAN are targeted chiefly towards large enterprises. As countries in Southeast Asia continue to develop economically, they will need to incorporate support for better environmental performance into overall SME and industrial development strategies.

Rather than being seen as a cost and burden to business, better environmental performance can provide a competitive advantage and contribute to cost savings. Reducing the environmental impact of SMEs can improve SME competitiveness and lower their operating costs while giving them access to new markets. Improving environmental performance before pollution and damages occur is also significantly cheaper than remediating the consequences afterwards. Supporting the adoption of green practices is a long-term investment in the country’s economic and social well-being.

However, SMEs often face constraints related to their size, skill deficit and knowledge limitations that impact their willingness and capability to adopt sustainable practices and seize green business opportunities generally. Ideally, protecting the environment should not be associated with technical complexity, burdens and costs, but with potentially financially beneficial opportunities.

Furthermore, even when SMEs are aware of the potential for better environmental performance to improve a firm’s competitiveness, a lack of appropriate skills and expertise often prevents firms from acting upon possible win-win opportunities. At the same time, the lack of resources often leads SMEs to being risk-averse and less willing to invest in new technologies, partly because of the uncertainty about the payback period involved.
As green industries like renewable energy and eco-innovation gather greater public attention, there are benefits for conventional SMEs in adopting greener practices. Governments have a vital role in creating the conditions to support the uptake of green practices by SMEs. Through a variety of policy tools, governments can support SMEs in adopting greener practices that help ensure the green transition is a business opportunity rather than a compliance cost.

Work in the context of the OECD-COPAS project on environmental policies and SMEs discusses the policy levers available to government, and provides some examples of how these policies have been implemented in OECD and ASEAN member states. The guidance for policy makers and SMEs starts from the perspective that supporting SMEs to adopt greener practices is best done through a mix of financial, regulatory and information tools. The strategies and instruments described in this document to promote environmental compliance and green business practices are divided into three broad categories:

- **Regulatory tools.** Examples are the simplification of regulatory requirements for SMEs through standardised permits or general binding rules as well as other better regulation initiatives; offering regulatory incentives for the establishment of environmental management systems; moving towards sector-specific strategies for compliance assurance.

- **Financial tools.** Examples are grants, low-interest loans and tax incentives for businesses willing to go beyond compliance and invest in greener technologies; encouraging supply chain pressure from larger companies and exerting it through green public procurement.

- **Information tools.** Examples are advice to individual businesses or disseminating guidance on environmental compliance and good practices to a wide audience in the printed and, increasingly, electronic form; introducing sector-specific certifications and eco-labels as well as other environmental recognition awards.


Of course, the heterogeneity of ASEAN countries makes it difficult to come up with recommendations that are applicable to every country. Singapore has already reached the top tier of countries worldwide in terms of income per capita and productivity levels, followed by oil-rich Brunei Darussalam. The challenge for Singapore is to maintain and further strengthen its achievements as an advanced urban economy and logistics hub of global significance. Malaysia has succeeded in diversifying its economy by developing an export-oriented manufacturing sector and is looking for new sources of growth to attain the upper-middle of high-income countries. Thailand is a diversified economy with strengths in agriculture, manufacturing and services, with close ties across the Southeast Asian region. Viet Nam has achieved considerable dynamism and an impressive diversification of the economy but needs to prepare for the next steps by building the basis for future upgrading in global value chains (GVCs). On the other hand, low-income ASEAN economies such as Cambodia, Lao PDR and Myanmar have only recently started to become integrated in the global economy and have much lower productivity levels at this stage.

**Strengthen SMEs’ capabilities for innovation**

A range of new technologies are contributing to a revolution in production, which will have broad and deep effects in ASEAN economies. There is an urgent need for policy makers to better understand the opportunities for productivity and growth, but also the challenges that technological change brings about. More public discussion and consultation would be beneficial in order to identify and address the policy implications of the new production technologies. ASEAN leaders in business, education and government should be ready
to examine policy implications and prepare for developments beyond the next ten years (for instance with respect to progress in machine learning). Inspired by the German initiative of “Plattform Industrie 4.0” – where the Federal Ministry for Economic Affairs and Energy and the Federal Ministry of Education and Research have created a co-ordinating body bringing together stakeholders to assess long-term strategy – several countries, including some in ASEAN, have launched so-called Industry 4.0 initiatives (Box 7.3).

**Box 7.3. The next production revolution, robotics and Industry 4.0 in Thailand**

Policy makers in Thailand have been encouraging the use of advanced technologies, acknowledging the fact that higher automation will determine the country’s competitiveness in the future. “Thailand 4.0” has been launched identifying a future based on high-value production enabled by connectivity, data and high levels of automation. Although the market for robotics is currently still too small in Thailand to develop an indigenous robotics industry, the government aims to build its own robotics industry, and has rolled out incentives to try and stimulate investment in robots.

Recently, a robotics development plan was announced to enhance a THB 200 billion (USD 6 billion) investment scheme for the industry over the next five years. The measures are aimed at encouraging the manufacturing and service sectors to increase their productivity through the use of robotics and automation systems. Under the Super Cluster policy, investments in targeted industries – including automation and robotics – attract an eight-year corporate income tax holiday, followed by a five-year 50% corporate income tax relief after that. There is also an import duty exemption on machinery and raw materials.

The range of policy issues relevant to the next production revolution (NPR) is broad. Production is affected by many types of policy, from those on skills and training, to policies affecting domestic and international competition, to tax codes that affect investments in machinery and software, to policies which influence the efficiency of judicial systems and the effectiveness of bankruptcy laws, to policies on infrastructure and financial services. To begin to meet the challenges posed by the NPR, and to ensure that SMEs do not get excluded from the opportunities, ASEAN policy makers will need to design, implement, and in some areas co-ordinate, effective policies across such a broad range of themes.

One critical issue is how already-developed technologies diffuse. As discussed above, several factors shape the diffusion process at national and international levels: trade, foreign direct investment (FDI), skilled labour; co-operation between higher education institutions and businesses, etc. Designing effective institutions for technology diffusion will facilitate the adoption and use of knowledge, methods and technical means. Some of the institutions involved, such as technical extension services, tend to receive low priority in the standard set of innovation support measures. But there is evidence that they can be effective, if well designed, incentivised and resourced. An example of such an institution is Thailand’s Industrial Technology Assistance Program (ITAP), which has been operated by the country’s National Science and Technology Development Agency since 2001. ITAP’s activities include information services, feasibility studies, technology acquisition, technology-business matching, networking, technical consultancy, industrial needs assessments, and a variety of dissemination activities.

Another key part of developing the capacity to absorb new technologies is through investment in local innovation. Strengthening intellectual property protection, developing research and development (R&D) fiscal incentives and promoting university-industry collaborations are important policy levers. However, these areas have the substantial policy gaps for many ASEAN economies (ERIA/OECD, 2014). Policies that encourage stronger links between firms and research, educational and training institutions can facilitate
the knowledge transfers required for upgrading in GVCs and these policies are likely to become even more important with the arrival of new technologies.

NPR-related financial services will also need strengthening in some Southeast Asian economies. Many emerging production technologies require large financial outlays. Investments in new technologies are often not limited to specific technologies but require a range of complementary expenditures. Investments in robots, for example, usually entail investments of similar size in peripherals (such as safety barriers and sensors) and system implementation (such as project management, programming, installation and software). Financing NPR investments can thus necessitate a range of financing institutions, such as venture capital firms and development banks, machinery-related term lending, and specialised SME and start-up lending. Such a breadth and depth of financial services is not equally available across the ASEAN region.

Rapid technological change also challenges the adequacy of skills and training systems to match demand and supply for new skills. The NPR is expected to shift skills demand from manual dexterity and basic functional skills towards cognitively intensive abilities such as data analytics, problem solving and critical thinking. Well-functioning tertiary-level institutions are needed to educate students in science, technology, engineering and mathematics (STEM) disciplines, along with a close integration between production and vocational training institutes. Developing a high level of generic skills throughout the population of ASEAN countries will also be important. Generic skills such as literacy, numeracy and problem solving provide a foundation for the acquisition of technology-specific skills (whatever those technology-specific skills turn out to be in future). Greater interaction between education and research organisations and industry will be necessary as the knowledge content of production rises. Furthermore, in their development, some new production technologies require significant inter-disciplinary education and research. ASEAN policy makers need to examine successful practices adopted internationally (such as Stanford’s Bio-X), across research institutions, and departments – private and public – to enable inter-disciplinary education and research.

New urgency might be given to employment-related policies and institutions if changing production technologies create large labour market shocks. Labour-intensive industries which predominate in many ASEAN countries, such as garments, footwear, furniture and food processing are yet to be fully (or economically) automated. However, technological change could threaten capacity in some ASEAN countries. For instance, because of dexterity requirements, footwear manufacture has to date been labour-intensive. But Adidas recently built a fully automated shoe manufacturing facility in Germany (Shotter and Whipp, 2016). And Sewbo, a new start-up, is developing automation for garment fabrics where fabrics are woven by machines and cut by computer controlled cutting machines. The International Labour Organization (ILO) (Chang, Rynhart and Huynh, 2016) estimates that 60% of salaried workers in Indonesia and 70% of workers in Thailand face high automation risk. In some industries, such as automotive manufacture, adopting NPR technologies is expected to be determined not so much by wages or the potential for automation, but by domestic demand and consumers’ growing desire for quality and customisation. Without perfect foresight, governments should plan for scenarios in which future technology-driven shocks are large and arrive quickly.

Last but not least, there is a close connection between public resistance to novel technologies and the disruption of trust in public scientific and regulatory authorities. Public perceptions can feed into regulatory choices that condition the adoption of technology. ASEAN governments will need to interact with citizenries in open and interactive ways, providing information relevant to new production technologies, openly acknowledging risks and areas of uncertainty (OECD, 2017c).

**Embrace the digital revolution for SMEs**

The digital transformation offers many opportunities for enhanced growth, productivity and well-being and contribute significantly to a more inclusive and productive society. The United Nations Sustainable Development Goals (SDGs) pick out access to information and communication technology (ICT) and universal and affordable access to the Internet as one of the key targets and indicates that the achievement of many other SDGs can benefit from the use of digital technologies. But just like the NPR, the digital transformation
also creates important challenges as it changes the nature and structure of organisations and markets, raises important issues around jobs and skills, privacy, security, tax and competition, etc.

New policy approaches are needed to ensure that policies harness the benefits of digital transformation while mitigating the challenges. The OECD’s Going Digital project seeks to provide new evidence and insights for digital transformation policies, with the aim to help policy makers navigate the opportunities and challenges inherent in the ongoing digital transformation. The related OECD-COPAS project *Southeast Asia Going Digital* provides a more detailed analysis and discussion what this means for ASEAN countries (OECD, 2019c).

**Enhance access**

People and firms can only benefit from the digital transformation if they have access to key technologies, including the Internet. To ensure an inclusive digital transformation, it is essential to enhance access and reduce digital divides, including by age, education, gender, income, and geography (Box 7.4). Addressing these divides, e.g. by policies aimed at providing affordable broadband access to all, is crucial to ensuring an inclusive transformation.

**Box 7.4. The digital gender divide**

Digital technologies new businesses and business model to arise, and help improve firm performance, by ensuring better communication and information flows. However, this unprecedented growth in connectivity has not been enjoyed by everyone equally. Differences in resources and in the ability to access and effectively utilise ICT within and between countries, regions, sectors and socio-economic groups have led to a digital gender divide, which sees women worldwide particularly at disadvantage (UN, 2005).

Today, globally, there are some 250 million fewer women online than men (ITU, 2016). This is especially worrying as the gender gap in terms of Internet penetration has been increasing since 2013. Furthermore, today 200 million fewer women than men own a mobile phone (GSMA, 2015) and even those who own one tend to use it for less complicated tasks than men (Demirgüç-Kunt et al., 2018).

The gender digital divide is observed in in developing countries (e.g. the gender gap in mobile broadband access is 45% in Sub-Saharan Africa and up to 50% in some parts of rural Asia) and OECD (e.g. Internet usage among women is below that of men in countries such as Turkey [-16%], Italy [-6%], and Germany [-3%]). Gender differences in Internet uptake being more marked for older generations, a further narrowing of the gender gap can be expected in the future, as the technology continues to reduce the cost of online access and today’s “digital natives” become adults.

Together with affordability of the technology, lack of relevant knowledge and skills in using digital tools are among the main reasons for the digital gender divide worldwide. In addition, sociocultural perceptions are often reported among the top barriers for women in owning and using a mobile phone, especially in rural zones of developing countries. In India, for instance, around 12% of women would not use the Internet because of negative social perception, and 8% of women don’t use it due to the lack of acceptance by family members (Intel and Dalberg, 2012). Social-cultural perceptions and stereotypes may be also playing a role in determining a different facet of the gender divide; i.e. the under-representation of women in senior roles within digital companies and in ICT fields. In the mobile communications industry, for instance, women worldwide are 20% less likely to hold a senior leadership position (GSMA and AT Kearny, 2015), while only 8% of the investing partners at the top 100 Venture Capital firms are women.

One critical factor is digital infrastructure, where wide access to efficient and reliable broadband communication networks is a key building block for the digital transformation. It is essential that governments promote investment in digital infrastructures and competition in the provision of high-speed networks and services, such as fibre networks, and ensure that key complementary enablers are in place (e.g. fibre optic back-haul, sufficient spectrum and increasing uptake of IPv6 Internet addresses).

**Foster use and innovation**

Access is the basis upon which to build policies that can translate the digital transformation into greater use and innovation, and ultimately into growth, productivity, jobs and incomes. This is true for individuals and for firms. Digital technologies – and the related business models and organisational practices – are not (yet) diffusing sufficiently in ASEAN countries. Large firms typically have much greater uptake of digital technologies than SMEs. This is despite the new opportunities that the digital transformation offers to SMEs, e.g. in outsourcing business processes to the cloud, engaging in (global) e-commerce and in operating a business in a more flexible way and at lower cost.

Harnessing digital transformation for firms and notably SMEs requires policies that strengthen the diffusion of digital technologies and related practices and business models across the economy, as well as greater investment in tangible (machinery and equipment) and intangible capital. Investments in this intangible capital are crucial as digital transformation requires not only investment in the technology, but also in complementary assets such as skills, organisational changes, process innovation, intellectual property, R&D, new systems and new business models.

The impact of digital transformation on the economy also relies on healthy business dynamism and efficient resource reallocation (see above), which should enable the growth of digitally intensive firms and facilitate the transfer of resources from declining firms. Strengthen business dynamism requires attention to structural reforms in sectors that are being disrupted by digital transformation, policies to facilitate the entry, growth and exit of firms, healthy competition, as well as innovation-friendly regulation to enable the growth of new business models.

Helping SMEs engage with digital transformation is another key component of policies aimed at strengthening the use of digital technologies and enabling innovation. Comprehensive national digital strategies that take into account SMEs, policies that facilitate access to finance, knowledge networks and skills, and SME engagement with competency centres and/or technology extension services, can be helpful. National digital security strategies can also help address the needs of SMEs by providing them with practical guidance and incentives to adopting good practices.

**Recommendations for ASEAN countries**

As discussed in more detail in a separate report for the COPAS project (OECD, 2019c), the Southeast Asian region faces a number of challenges that need to be overcome to fully benefit from the digital transformation, particularly with regard to the integration of SMEs in the digital economy. On the supply side, the main challenge concerns connectivity. So far, broadband deployment has not been a priority in most countries of Southeast Asia, but without it there is no possible path towards the digital transformation. Certain regulatory and policy frameworks pertaining to the communication sector in the region are not favourable for private-sector investment in communication infrastructure. However, connectivity is emerging as the bridge between individuals and governments and between enterprises and innovation. Promoting the use of broadband access for all firms, small and large, should increase productivity and competitiveness in the region.

On the demand side, other regulatory frameworks inhibit innovation in digital services that are fundamental to SMEs going digital, among them policy frameworks on financial services and e-commerce. Besides the limited offer of local digital content, the lack of digital awareness and trust in digital services from both consumers and businesses further constrains the effective use of digital technologies and realisation of the digital transformation of SMEs in the Southeast Asia region. To make sure that SMEs in Southeast...
Asia are able to maximise the benefits of the digital transformation, it is crucial to also promote the use of digital services and tools.

In short, according to the relevant OECD report (OECD, 2019d), SEA needs a comprehensive overhaul of both national and cross-border regulations and policies to enable SMEs to go digital. Key recommendations for countries in Southeast Asia include:

- Strengthen the institutional and regulatory frameworks for connectivity and implement regulatory measures and policies that are based on consistent, clear and transparent principles, to foster competition in both fixed and mobile broadband markets and extend access to affordable and high-quality communication services.
- Increase the effective use of digital services by SMEs by fostering digital skills for people and firms, supporting SMEs to overcome challenges in adopting digital tools, and harnessing the potential of digital government to promote relevant digital content.
- Unleash innovation by re-evaluating regulations that are not fit for a fast-changing digital age, promote digital start-ups and young firms with the support they need at each stage of their life cycle, and foster policy experimentation in support of the digital transformation.
- Promote inclusiveness by increasing access to and use of digital services and applications by vulnerable and rural populations, addressing gender digital divides, and preparing SME employees for the changing work environment brought about by the digital transformation.
- Strengthen trust of SMEs in digital tools and services by raising awareness about digital security risk management, developing privacy and digital security frameworks with a whole-of-society perspective, and continuing to facilitate cross-border data flows.
- Foster e-commerce by removing barriers to e-commerce, including those that distinguish between online and offline commerce, and by harmonising national regulatory frameworks in the Southeast Asia region to minimise frictions and costs for cross-border trade by SMEs.
- Leverage regional integration, regional connectivity infrastructures, cross-border data flows and sharing of experiences in the Southeast Asia region to minimise frictions and costs for cross-border trade by SMEs and to improve connectivity across countries.
- Establish and effectively implement a strategic and coherent policy framework for the digital transformation of SMEs through co-ordinating the government institutions and stakeholders dealing with both SME and digital policy issues; identifying the main challenges and policy objectives; and building an evidence-based action plan with clear milestones and allocation of responsibilities.

Enhance the innovation potential of SMEs

Productivity growth in ASEAN countries will greatly depend on their ability to further upgrade their broader innovation capabilities. Strengthening innovation capacities will be necessary for ASEAN economies to maintain and strengthen their competitiveness. As ASEAN countries climb up the income ladder, innovation is expected to become a more important factor for their economic growth. This is more evident for those countries which have already moved well into the middle-income range and perhaps less so for the new cohort of catching-up economies in the region, which still have reached lower level incomes and a more modest level and range of manufacturing capabilities. Yet, these countries too have to look ahead and build the resources and capabilities to innovate which will allow them to upgrade and avoid getting locked-in to low value-adding activities.

While important manufacturing capabilities have been acquired by a number of countries such as Indonesia, Malaysia and Thailand (in particular in the electronics, electrical engineering and the automotive industries), others have been less successful than their forerunners (such as Chinese Taipei, Korea and Hong Kong, China) in developing their own domestic capabilities to innovate, diversify into new areas and develop their international brands. R&D and innovation is primarily performed by multinational enterprises (MNEs).
Develop sound government support policies for business R&D

To support innovation in the business sector, governments around the world often offer direct support through public procurement for R&D and a variety of grants, subsidies, loans or equity funding. They also provide indirect support through fiscal incentives, such as R&D tax incentives. Direct funding allows governments to target specific R&D activities and steer business efforts towards new R&D areas or areas that offer high social returns relative to private returns, e.g., green technology, social innovation or other novel areas. Direct funding instruments typically depend on discretionary decisions by government agencies, which can help reduce deadweight loss, but creates opportunities for rent-seeking and can lead to lock-in. Tax incentives reduce the marginal cost of R&D and innovation spending; they are usually more neutral than direct support in terms of industry, region and firm characteristics, although this does not exclude some differentiation, most often by firm size (OECD, 2010a). While direct subsidies are more targeted towards long-term research, R&D tax schemes are more likely to encourage short-term applied research and boost incremental innovation rather than contribute to radical breakthroughs. In the ASEAN region, both instruments are being used.

For example, in contrast to many emerging economies in Southeast Asia and around the world, the business sector is a major performer and funder of R&D in Malaysia (OECD, 2016d). However, business R&D activity remains concentrated in multinational and some government-linked enterprises and its share seems to have decreased recently. For Malaysia to achieve its goal to upgrade the economy towards higher value-added activities it needs to strengthen the R&D and wider innovation capabilities of domestic businesses, including SMEs. Currently, the bulk of domestic SMEs barely innovate and do not engage in R&D. Improving in-house innovation capabilities of domestic firms – which requires skills to engage in design, engineering, marketing, information technology and R&D – in a broad range of enterprises should therefore be an overarching priority.

Malaysia has devoted considerable efforts to attracting and supporting business R&D, particularly in “high” and “medium technology” industries. A wide range of measures has been put in place to promote business R&D and innovation, including fiscal incentives, and support to consortia and clusters, public-private partnerships, and the promotion of science-industry linkages and knowledge transfer. Along with an increasing emphasis on upgrading towards higher value-added activities and a considerable expansion of its R&D base, Malaysia has put in place a comprehensive set of funding instruments for R&D and innovation. Major R&D funding instruments are provided by the Ministry of Science, Technology and Innovation (MOSTI) and the Ministry of Higher Education (MOHE). MOSTI operates the Pre-commercialisation Fund (the TechnoFund and the smaller InnoFund targeting enterprise Innovation micro/small businesses and individuals, respectively). MOSTI is also in charge of the Science Fund. MOHE offers, among others, several Research Grant schemes for academics. The Ministry of Finance enters the science, technology and innovation (STI) arena directly by operating the Cradle programme.

Singapore’s National Research Foundation (NRF) was established in 2006 and has been playing a key role as a public funding agency for R&D, operating both top-down and bottom-up instruments for a wide range of activities related to R&D and innovation. The NRF provides – among others – support for basic technology research, feasibility studies, technology development and commercialisation. Operating under the Ministry of Trade and Industry (MTI), Enterprise Singapore is the government agency that champions enterprise development, including SMEs. In supporting innovation among enterprises, Enterprise Singapore focuses on demonstration and proof-of-concept, development, test, launch, operations and commercialisation at the venture capital stage. According to Degelsegger and Suprasertchai (2014: 70), Enterprise Singapore supports SMEs by catalysing technology projects, seeding technology start-ups through proof-of-concept and proof-of-value grants, assisting companies which intend to initiate projects through expert provision schemes and secondment, and finally, by investing in infrastructure, e.g., in innovation centres where companies can obtain business services. Other areas of Enterprise Singapore’s focus areas include supporting industry development and building trust in Singapore’s products and services through quality and standards. The Economic Development Board (EDB) under the MTI is the leading agency that is
responsible for strategies that enhance Singapore’s position as global centre for business, innovation and talent. Aiming at establishing and maintaining high value-added business activities in Singapore, the EDB also provides financial support for R&D. The Research Incentive Scheme for Companies (encourages the development of R&D capabilities and technologies by awarding grants to science and technology projects. The Partnerships for Capability Transformation programme encourages mutually beneficial collaborations between companies, which may be related to capability development or joint business development.\footnote{1}

A number of ASEAN countries – such as Malaysia, the Philippines, Singapore, Thailand and Viet Nam (KPMG, 2014) – have been providing different types of tax incentives for R&D. Malaysia, for instance, made extensive use of various kinds of tax incentives to attract FDI as a key pillar in support of its export-oriented economic policy. In the course of time, benefits were withdrawn from low-skilled labour-intensive and shifted towards more sophisticated activities. Since 1987 Malaysia offers a “double deduction” (200%) for R&D expenditure. This incentive scheme seems to have been ill-designed and its uptake slow. R&D activities were also listed – together with other attributes (“high-tech”, etc.) – among the criteria for attaining “pioneer status” providing for full temporary income tax exemption for ten years. Other tax incentive schemes such as the investment tax allowance for R&D companies, and various tax exemptions have also been offered in parallel to the “double deduction” scheme. These schemes seem to have been used by a relatively small number of applicants (OECD, 2016d).

In the Philippines, tax breaks for firms pursuing R&D activities have been modest at best. KPMG (2014) reports a 100% deduction without uplift for R&D. Together with innovation vouchers, tax incentives are considered the most important policy instruments of financial support for business R&D in Thailand. A recent tax reform increased the deductible maximum of R&D and innovation tax expenditures from 200% to 300%. Viet Nam also has a number of tax incentives for R&D (see OECD/The World Bank, 2014).

Fostering the innovation capabilities in SME is an issue that, in different ways, all ASEAN countries face. As mentioned, very few domestic Malaysian SMEs engage in innovation, either for lack of adequate skills, funding or incentives to change their traditional business model. The same holds true for other ASEAN countries. With only limited in-house innovation capabilities, SMEs rarely co-operate with academia, do not take part in collaborative R&D with MNEs and barely use shared equipment at universities, while at the same time MOSTI’s collaborative grants are short of high-quality applications and equipment at universities is often underutilised. The government has acknowledged and taken action to address this issue – which puts Malaysia’s SME policy ahead of that of other ASEAN countries.

Recent initiatives provide SMEs with external technological and managerial expertise (e.g. Amanah Ikhtiar Malaysia [AIM]’s Steinbeis Foundation Malaysia, the SIRIM-Fraunhofer partnership and MOHE’s Public-Private Research Network – PPRN). They recognise that the first steps towards innovation in SMEs often involve on-demand problem solving and require collaboration with experienced academics or industrial experts. In order to be effective, support to SMEs, especially those with low innovation capabilities, has to be continuous, affordable and readily accessible in facilities located in their proximity. Malaysia could still benefit to put in place local innovation centres which fulfil, on the one hand, a general public mission (provision of information, awareness-raising, promotion of innovation, general capability building, etc.) while, on the other hand, providing project-based support to individual (or groups of) SMEs and initiating collaborative innovation on a more permanent basis. In Singapore, “thematic” innovation centres established at several polytechnics – in co-operation with Enterprise Singapore – help SMEs to enhance their technological innovation capabilities. These centres provide laboratory and testing facilities, as well as consultancy and training (Degelsegger and Suprasertchai, 2014: 72).

The need for supporting SMEs, especially in traditional industries, based a broad notion of innovation (including incremental and non-technical innovation) has been recognised by the creation of the Malaysian Global Innovation and Creativity Centre (MaGIC), the broadening of eligibility criteria of existing and the creation of new support instruments.
Supporting innovation in the business sector raises a wide range of issues. Some recommendations from the *OECD Reviews of Innovation Policy for Malaysia* (OECD, 2016d) are shown in Box 7.5.

**Box 7.5. Recommendations of the OECD Reviews of Innovation Policy: Malaysia**

**Main recommendation on fostering innovation in the business sector**

Make raising business firms’ innovation capabilities a central priority of Malaysia’s innovation policy and implement an accessible, effective and coherent set of public support measures designed to best meet the varied needs of different kinds of firms, in particular those of SMEs, which need continuous and hands-on support.

**Other recommendations:**

- Ensure that a sufficiently differentiated set of instruments is in place to meet varied needs of firms while taking provisions for maintaining the coherence of the policy mix as a whole.
- Set up local innovation centres to provide domestic SMEs easy access to critical resources for upgrading their innovation capabilities (information, expertise, specific equipment, etc.).
- Foster relations between MNEs and domestic suppliers, including SMEs, through dedicated schemes and incentives beyond the support already in place, such as the vendor development and technology procurement programmes.
- Encourage and support networks and collaborative platforms. These typically include stakeholders from the business sector (MNEs and domestic firms), public research institutes and universities, government and agencies involved in policy implementation, and end users. They can engage in the co-ordination of R&D, capacity building, advancing the business environment etc. The Collaborative Research in Engineering, Science and Technology (CREST) platform in Penang provides a good practice example.
- Foster the role of government-linked companies in promoting and enhancing innovation, within the scope of their own activities and that of their partners (suppliers and clients).
- Mobilise resources (both financial and human) to strengthen and upgrade standard-setting organisations, especially for priority products.


**Foster technology transfer**

The discussion above has already pointed to the important role that diffusion and technology transfer play for innovation and productivity growth. A wide range of policies are in place across the ASEAN region. For example, Singapore’s public research institutes and research universities have their own technology transfer facilities. A*STAR, the government agency for Science, Technology and Research, established Exploit Technologies (ETPL) as its arm for commercialisation and technology transfer. ETPL is aiming at transferring A*STAR research results to business and managing the agency’s portfolio of over 1 200 patent families. ETPL works with research scientists, advises on IP generation, clears research results for publication and negotiates licensing agreements.

The Nanyang Innovation and Enterprise Office (NIEO) manages Nanyang Technological University (NTU’s) IP portfolio and facilitates grant applications for promising novel technologies. NIEO helps faculty members to assess the potential of new discoveries, protect IP, and to bring in industry experts to make the most out of the technologies. NIEO negotiates research collaboration agreements for contract research or license
agreements. A university subsidiary company, NTU Ventures, helps faculty, students and alumni with their start-ups by assisting them in the application for start-up funding schemes of the NRF, Enterprise Singapore and similar organisations. (Degelsegger and Suprasertchai, 2014: 72).

Some of Singapore’s polytechnics have also been given a role in technology transfer although rather at the level of adaption and technology diffusion (Degelsegger and Suprasertchai, 2014: 72).

While linkages between research and industry have developed as illustrated by the rise in the share of private R&D funding in PRIs and universities, Thailand continues to lack sufficient qualified human resources in technology transfer and commercialisation of research, both in terms of quality and quantity. For this reason, the Alliance for Innovation Managers was launched in 2015 to strengthen the exchange between technology professionals from private and public sectors with a special focus on science park personnel and incubators.

In the whole discussion of technology transfer, also investment in local innovation is necessary in order to enhance the capacity to absorb new technologies. Strengthening research capabilities will also facilitate technology adoption. Many policy settings determine the strength of research systems, from the volume of resources allocated, to the procedures for allocating funds for public research, to the implementation of efficient, transparent and simple migration regimes for researchers and technicians. Strengthening intellectual property protection, developing R&D fiscal incentives and promoting university-industry collaborations are important policy levers.

**Strengthen STI governance and policy implementation**

In many cases, the implementation of sophisticated STI strategies and plans (Box 7.6) and the effectiveness and impact of policies seem to be hampered by the interplay of sub-optimal governance arrangements and weak implementation capabilities. The discussion in Malaysia related to the establishment of the new National Science Council and recommendations for a unified Research Management Agency (OECD 2016d) reflects an attempt to develop a more clear-cut and effective governance structure in STI policy. This is also an issue in Malaysia’s SME policy. While the latter is further developed than in the majority of ASEAN countries, greater efforts to monitor, evaluate and streamline the large number of instruments available to support the upgrading of SMEs, in particular in the context of the SME Masterplan 2012-20 and the governance architecture set up for its implementation, would help improve its cost-effectiveness (OECD, 2016d).

**Box 7.6. Malaysia’s high-level plans and strategies**

Malaysia has developed an impressive set of plans and strategies addressing key policy issues in a medium and long-term framework. Overall policy guidance is provided by Malaysia’s New Economic Model (2010-20), the series of five-year plans – currently the 11th Malaysia Plan (2016-20), with reference to the long-term Vision 2020 published in the early 1990s. These comprehensive strategy and planning documents are complemented by a number of dedicated strategies and policies focusing on specific areas, including research and innovation (National Policy on Science, Technology and Innovation 2013-20; Science to Action Program 2013-20), higher education (National Higher Education Action Plan 2007-10; Higher Education Blueprint, 2015-25) or specific functions and groups of actors in the economy (e.g. the SME Master Plan 2012-20).

Malaysia’s strategies and plans are typically of high quality, and innovative ways have been devised in defining entry projects; however — as in many countries — implementation remains a major issue.

Thailand has revamped and streamlined its STI governance arrangements through its 2016 STI Governance Reform. This reform has the following main objectives: i) integrate STI into the 12th National Economic and Social Development Plan; ii) revise the STI administration system; and iii) introduce an agenda-based budgeting system. As a result, the National Research and Innovation Policy Council was established in October 2016 as a single body to set the policy direction for research and innovation and its implementation. The STI Office and the National Research Council (NRC) of Thailand jointly share the secretariat role of the Council.

The discussion above leads to a more general observation regarding the quality of the information base for STI policy making. In most countries in the region, even an advanced country like Malaysia, recent data on R&D, innovation and related policies are often hard access in the necessary detail. Singapore seems to be an exception in this regard. These data are needed, however, to monitor and steer the implementation of ambitious plans and strategies and feedback necessary to improve policies over time.

Foster talent and skills

The skills challenge

As noted also already in previous chapters, a lack of adequate skills is an obstacle for the growth of innovative domestic enterprises, especially SMEs. For those countries which are hosting FDI projects, skills are critical for developing links to the local economy and for the country's attractiveness to more sophisticated activities of MNEs yielding higher value added.

Independent of the size of the impact of digitalisation on jobs, it is clear that workers will need different skills, not just more skills (OECD, 2016b). Regardless of the precise number of jobs at risk of automation, continued hollowing-out will disrupt the labour market, leading to job losses in some areas and gains in others. Up-skilling will be part of the answer – the same policy priority as required to respond to SBTC. But workers will also need a different sort of skill-set. Data from OECD (2016f) show that, on average across the 22 countries that implemented the first Survey, 55% of workers lack basic problem-solving skills in technology-rich environments. This suggests weak prospects for these workers, but also for employers' and for countries' aiming to capitalise on the opportunities offered by a digital economy. Younger people are better prepared for this environment than older people.

Data from the OECD's Programme for International Student Assessment (PISA) studies show a large variation in educational achievement in mathematics and science across Asia and the ASEAN region (2016e) (Figure 7.1). An important challenge in several Southeast Asian countries is that education outcomes are still influenced by socio-economic status. In Indonesia, some 85% of economically, socially and culturally disadvantaged students are categorised as low performers in mathematics by PISA, and some 70% in Malaysia and 60% in Thailand are in the same situation. In Malaysia, this compares to under 30% of advantaged students, with the 40 percentage-point differential well above the gaps found in participating Southeast Asian countries and 12 percentage points higher than the OECD average (OECD 2016e).

Education has indeed been a major focus of Malaysia's and Singapore's development effort. Measured against its comparatively low GDP per capita, Viet Nam has been investing heavily in education. As a result, Malaysia's literacy rates are comparable to the OECD level, and an increasing share of the population is receiving tertiary education. Singapore comes out first in the 2015 OECD PISA test as regards science and mathematics, and Viet Nam’s performance remarkably exceeds the OECD average on both scores. In contrast, Thailand and Indonesia lag far behind. However, in many countries businesses – especially innovative firms – still find the lack of suitable skills an important barrier. Even in Malaysia, and at times Singapore, a shortage of skills has been prevailing in various domains, including university graduates and specialised technicians. Singapore's National Innovation Strategy has put sustained emphasis on fostering human resources with competencies to learn and adopt new technologies. The government has played a
critical role in promoting industrial workforce development including through vocational and technical training institutes, polytechnic education and setting up specialised technical training programmes. Singapore has a well-developed tertiary education system, composed of universities, polytechnics, and a network of institutes for technical education with a host of vocational training programmes.

Figure 7.1. Share of low performers in mathematics and science

Despite its successful effort, human resources for innovation are a critical bottleneck in Viet Nam (OECD/The World Bank, 2014). Viet Nam has made a substantial effort on education and skills. The results already of the 2012 OECD PISA assessment of the performance of secondary students bode well. However, there is still scope for increasing the quantity and improving the quality of human resources, particularly at the tertiary and secondary vocational levels. Funding of tertiary education has been insufficient to cope with the increase in technical and research students.

The skills supplied through formal education and training are often out of date or too theoretical and do not meet the demands of the labour market. In addition to financing constraints, the governance of higher education suffers from weaknesses in terms of information about skills needs and incentives for alignment. The accumulation of innovation capabilities within businesses depends on the availability of specialised professionals. Broadening options for professional specialisation in upper secondary education and enhancing the standing of vocational training seem necessary.

It is also important to provide more opportunities for upgrading the skills of those already in the workforce and to improve the effectiveness of short-term training. An expansion of part-time tertiary education and other lifelong learning opportunities could help address gaps in “soft” skills. Public-private partnerships could be
used to encourage businesses to take greater part in the national effort on human resource development. Firms, especially SOEs and MNEs, should be encouraged to increase their training investments, to fund demand-tailored aspects of formal education and to partake in decisions over curricula and programme design.

Many ASEAN countries perceive a need to improve the relevance and quality of skills in both tertiary education and technical and vocational education and training (TVET). The match between the supply of skills and the needs of industry requires improvement, e.g. by including the business sector in curricula development, improving the delivery of the TVET system, and increasing the attractiveness of TVET courses. Several countries have taken steps in this direction.

Despite efforts to improve the education system over the last two decades Thailand still has a low population at tertiary education level and lags far behind Viet Nam with regard to OECD PISA test results. At the same time the demand for skilled R&D personnel has been rising in recent years. R&D staff in the business sector has quadrupled between 2008 and 2014. The government aims to improve human resources and skills through specific policies and programmes such as the STEM Education and Workforce Development Policy, the Dual Education Program, the Work-integrated Learning Program and the Skill Development Program. Managed by the STI Office, Talent Mobility is a national platform to co-ordinate and increase mobility of research personnel between public and private sectors. Thailand’s STI Office has developed the Entrepreneurial University Programme to strengthen entrepreneurial skills of graduates with the goal to enhance Thailand entrepreneurial capacity and ultimately raise the number and quality of start-ups. As of September 2016, thirty universities had joined the programme.

Malaysia has developed important initiatives and strategies such as the Human Capital Development Strategic Reform Initiative and the Higher Education Blueprint 2015-25 to address human resources issues. The OECD Review of Innovation Policy: Malaysia 2016 recommended that more emphasis should now be put on the implementation of these various blueprints and plans, and on setting up a mandatory schedule to evaluate the outcomes of these initiatives (OECD, 2016d).

**Foster skills for the digital economy**

Addressing the challenges arising in an increasingly digital world will require changes to current employment and skills policies. Governments in collaboration with stakeholders must help ensure that the digital economy yields better quality jobs and that both employers and workers have the means to take advantage of new job opportunities. There are four key priorities for skills policies to facilitate take-up of these opportunities and promote inclusive growth:

- Ensure that initial education equips all students with solid literacy, numeracy and problem-solving skills, as well as basic ICT skills and complementary socio-emotional skills, such as teamwork, flexibility and resilience. Many of these skills are also acquired outside of education and training institutions – for instance, in the workplace – emphasising the need to recognise skills acquired outside formal channels.
- Better assess and anticipate changing skill needs and foster more responsive education and trainings providers in order to adapt programmes and pathways offered and guide students towards choices that lead to good outcomes. Big data, e.g. from the Internet, can be harnessed to complement labour market information systems and monitor changing needs.
- Improve the use of skills across different workplace setting and working arrangements so as to achieve higher productivity and greater competitiveness.
- Offer better incentives for individuals and firms to re-skill and up-skill. This also means using the possibilities of new technologies to adapt new job tasks to the skills sets of incumbent workers. At the same time, the diffusion of “on-demand” jobs on digital platforms puts increasing responsibility on individuals to manage their own skills development. Low- and medium-skilled adults are the least likely to participate in training, even though they may face the greatest risk of job loss.
Improve management skills

As discussed in previous OECD work (OECD, 2015b), higher managerial quality raises within-firm productivity (Bloom, Schweiger and Van Reenen, 2012) while better managed firms may also be less susceptible to skills mismatch if they are more effective at: i) screening job applicants; ii) developing new work practices; iii) internally reallocating over-skilled workers; and iv) retraining or removing under-skilled workers.

While product market regulations are a key determinant of managerial quality, competition may be less effective at facilitating the exit of poorly managed family-owned firms to the extent that they are subsidised by their family owners through cheap capital (Bloom et al., 2014). In fact, family-owned firms are typically less well managed (Bloom and Van Reenen, 2007). Through this channel, inheritance tax exemptions with respect to family firms might contribute to lower managerial quality. Indeed, in OECD countries where inheritance tax exemptions for family firms are generous – e.g. the United Kingdom, France, Germany and Italy – the share of family managed firms tends to be higher than in the United States, which has no substantial family firm exemptions (Bloom and Van Reenen, 2007). Hence, reducing such exemptions could increase the likelihood that badly managed family-owned firms change ownership, potentially raising aggregate productivity and intergenerational social mobility.

Independent of the level of managerial ability, other policies may shape the leeway for managers to reduce skills mismatch within firms. For example, stringent employment protection legislation is found to thwart the ability of managers to reduce mismatch for any given level of managerial quality (Adalet McGowan and Andrews, 2015), possibly reflecting excessive protection for incumbent workers in a firm, who might not be the best match for their job.

Reallocation-friendly policies can also magnify the gains to aggregate productivity from a given improvement in managerial quality by ensuring that the most effective managers are responsible for a larger share of the economy’s resources (Bloom et al., 2014).

Apart from such changes in framework policies that can indirectly affect the quality of management, ASEAN countries may also consider more direct policies to strengthen management, e.g. targeted training programmes for managers. Such programmes – if well designed – can have strong impacts on firm performance and can help strengthen productivity.

Enhance SME access to finance

Access to finance is key to the creation, growth and productivity of firms as it allows these firms to invest in tangible and intangible capital, new technologies including digital. At the same time, access to finance is crucial for firms’ innovation and internationalisation because of the required investments. Financing constraints, which are typically larger for SMEs, prevent firms from investing in innovative projects, seizing growth opportunities, undertaking restructuring in case of distress (OECD, 2018f). Academic research (e.g. Gorodnichenko and Schnitzer, 2013) confirms that financial constraints disproportionately harm small firms’ ability to innovate. SMEs face problems for participating and upscaling in GVCs as this often requires investment in product and process innovation to meet foreign standards and working capital to finance exports. Because of the importance of access to finance for different policy objectives, countries have implemented different (types of) policy measures.

ASEAN countries draw on a wide range of interventions to improve access to finance, particularly for SMEs. Policies generally seek to broaden the set of available financing modes beyond traditional bank loans and simultaneously try to address the underlying reasons for SMEs’ poor “bankability”. The corresponding measures are often implemented via specialised financial agencies and banks. Several ASEAN countries (Brunei Darussalam, Cambodia, Lao PDR, Malaysia, Myanmar, the Philippines and Thailand) have established a development bank to address the missing market for SME finance. In contrast, Singapore uses a sophisticated portfolio of instruments to support SMEs’ access to finance, including tax exemption schemes.
and a public start-up fund (SEEDS capital) that matches funds that young start-ups have obtained from private business angels (Zhang and Bayhaqi, 2013).

**Stimulate the demand for finance of SMEs**

Demand as well as supply factors explain the financing constraints of SMEs in OECD as well as ASEAN countries. At the demand side, many SMEs lack the financial knowledge, strategic vision, resources and sometimes even the willingness or awareness to successfully attract finance other than straight debt² (OECD, 2017b). Policy measures addressing these demand factors include financial education programmes for (would-be) entrepreneurs as well the general population (in order to increase financial literacy – particularly important in emerging economies), counselling and mentoring, support to compose business plans and investment projects, etc.

**Box 7.7. Micro finance and financial inclusion**

Many countries have started to implement proactive financial inclusion strategies over recent years, with supply-side microfinance policies and programmes playing a key role. Following the development of an institutional framework for microfinance in 2006, Bank Negara Malaysia developed a range of microfinance products for disbursal by three state-owned banks. Thailand’s Master Plan for Financial Inclusion, which runs until 2018, likewise aims to increase the microfinancing products provided by specialised financial institutions. In the Philippines, the government launched a National Strategy for Financial Inclusion in 2015, alongside a range of programmes to pursue it. Finally, to complement regulatory measures taken by OJK, Bank Indonesia developed Branchless Banking rules in 2015 and piloted the scheme as part of a push to increase the number of banked citizens in the country. Financial inclusion programmes are particularly imperative in Cambodia, Indonesia, Lao PDR, Myanmar, the Philippines and Viet Nam, where the proportion of the 15+ population with a bank account ranges from 12.6% in Cambodia to 35.9% in Indonesia.

Many microfinance schemes across ASEAN target women entrepreneurs as opposed to offering universal access. In some countries, this choice reflects the fact that microfinance services have principally been provided by NGOs, which have adopted a Grameen approach. This is the case in the Philippines, which has an active and long-established microfinance sector. In Malaysia, the country’s largest microfinance institution (MFI), AIM, also adopts a Grameen approach and provides microfinancing predominantly to women in order to promote income-generating activities. Conversely in Viet Nam, this approach has been influenced by the way that microfinance developed in the country – since the beginning, the Women’s Union of Viet Nam has been a major partner in implementing many of the country’s microfinance policies and programmes. This approach is consistent in AMS where women have much higher rates of financial exclusion than men, as is the case in Cambodia, Thailand and Malaysia. However, the validity of this approach could be explored in financial inclusion strategies in the Philippines, Viet Nam and Indonesia, where women are more likely to be banked than men. In these countries in particular, microfinance facilities may be directed more towards achieving social goals, such as poverty alleviation, than increasing competitiveness through more equal competition among enterprises.


The OECD Review of SME and Entrepreneurship Policy for Indonesia (OECD, 2018j) reports that increasing financial literacy and financial education is an important policy objective in Indonesia to enhance the financial
inclusion of micro-enterprise owners. Just like in many other ASEAN countries, this is complemented with a National Strategy for Financial Inclusion targeted at certain social groups, such as low-income people, women, and people living in rural/disadvantaged areas. Many ASEAN countries have implemented proactive financial inclusion strategies over recent years, using demand as well as supply-side microfinance policies and programmes (Box 7.7).

Lastly, SME agencies or business support centres in several ASEAN countries (Brunei Darussalam, Malaysia, the Philippines, Singapore and Thailand) provide advisory services or awareness-raising programmes on the types of financing instruments.

**Increase the supply of bank loans to SMEs**

On the supply side, potential investors are held back by the overall opacity of SME finance markets, a lack of exit options and regulatory impediments. As a consequence, financial instruments for SMEs often operate in thin, illiquid markets, with a low number of participants, which, in turn drives down demand from SMEs and discourages potential suppliers of finance (OECD, 2017e; Nassr and Wehinger, 2016).

Different policies have been used to increase the bank lending specifically to SMEs. A lot of countries have implemented credit guarantee schemes to mitigate the risk of a third-party lender. Through such schemes, governments typically absorb a part of the lender’s losses on loans to SMEs in case of a default. Examples of credit guarantee schemes in Southeast Asia include among others Indonesia’s People’s Business Credit and the Malaysian portfolio guarantee scheme. Many of the programmes in ASEAN countries designed to increase bank credit for SMEs are mainly governed by state-owned entities. The World Bank Group (2015) has argued that credit guarantee schemes can play a crucial role particularly in countries characterised by weak institutions. Other policy measures impacting on the debt-financing supply side include export guarantees and measures to support trade credit, direct lending schemes, interest rate subsidies, as well as the provision of business advice and consultancy to SMEs looking for external finance (OECD, 2018e).

Another instrument to increase the supply of bank lending for SMEs is to provide a credit line to banks for SME lending. Eight out of the ten ASEAN countries (except Brunei Darussalam and Myanmar) are currently using this type of intervention. In Cambodia, Indonesia, the Philippines and Malaysia, interest rate subsidies are provided, while in Indonesia and the Philippines mandatory lending programmes have been implemented (OECD, 2018f). For example, state-owned and commercial banks operating in Indonesia must comply with requirements on the proportions of loans given to SMEs (the target has gradually increased from 5% in 2015, to 10% in 2016, to 15% in 2017, and to 20% in 2018) (OECD, 2018e).

Several ASEAN countries have active and large network of non-bank micro-financers mainly developed by non-governmental organisations (e.g. in Cambodia, Lao PDR, Myanmar) or driven by the government (e.g. Indonesia and Malaysia). For example, the largest microfinance programme in Thailand is the government-sponsored Village and Urban Revolving Fund – a scheme with a network of 80 000 village banks and 8.5 million borrowers in 2011, and one of the largest in the world (The Economist, 2013). In Lao PDR the “village bank” model of microfinance also predominates, but these were set up by NGOs and donor agencies after the country began to open up in the 1990s (OECD, 2018f). There seems to be trend to bring microfinancing increasingly into the formal financial system with more legal and operating requirements to be taken into account. As noted above, micro finance is playing a central role in the financial inclusion strategies launched in several ASEAN countries in recent years (Box 7.6).

**Diversify the supply of finance beyond bank credit**

In order to broaden the financing possibilities beyond traditional debt financing in particular equity, direct investments by governments through funds, matching or co-investment funds and funds-of-funds have been used in several countries. Such measures would particularly benefit start-up and early-stage capital since they can increase the scale of SME markets, enhance networks and catalyse private investments that would not have materialised in the absence of public support (OECD, 2017e). Governments in a number of countries
have also leveraged private resources and competencies and develop appropriate risk-sharing and mitigating mechanisms, such as through co-investment or guarantee schemes and private-public equity funds.

Although there are relatively few government-sponsored programmes in the ASEAN region, policy makers in a number of ASEAN countries have tried to stimulate equity capital financing for SMEs. For example, Malaysia has supported the development of its private equity/venture capital industry, by directing institutional investor funds such as Khazanah (Malaysia's sovereign wealth fund) and Kumpulan Wang Persaraan (one of the country’s largest pension funds) towards venture-backed start-ups. In addition, it has introduced an SME Investment Partner Programme as its third High Impact Programme under the SME Masterplan 2012-20, which aims to increase SME access to non-bank financing (OECD, 2018e). In order to increase the supply of venture capital, Singapore has introduced a tax exemption for venture capital funds. In addition, the Singaporean government co-invests with a qualified third-party investor in start-ups (through StartupSG Equity) and provides funds to venture capital firms that invest in Singapore-based early-stage tech start-ups (through the Early Stage Venture Fund).

In addition to debt and equity financing, alternative financing instruments have been introduced in recent years although the development and use of alternative financing instruments by SMEs is highly uneven across countries (OECD, 2018e). One example is asset-based finance, whereby firms obtain funding based on the value of specific assets rather than on the firm’s overall credit standing. Specific policy measures for example in Japan, Korea and the People's Republic of China (hereafter “China”) aim to unlock SME financing through intangible assets and help the market determine which company-owned intangible assets have realisable value. Examples of such policies include subsidised IP evaluation reports, underwritings for an IP valuation for lending or securitisation, interest rate subsidies for IP-backed loans for purchasing, commercialising and collateralising IP, etc. (OECD, 2017e).

Other examples of alternative financing instruments are factoring, leasing, alternative forms of debt such as corporate bonds, and hybrid instruments which combine debt and equity features. Crowdfunding, by which external finance is raised through web platforms, has been growing rapidly in recent years. But more broadly, the digital transformation is expected to help to improve SME access to finance. Digital technologies, such as online and mobile banking and payment solutions, have had already an important impact on traditional SME financing as they considerably lower transaction costs. But fintech – combining technology and innovative business models in financial services – may alter SME financing more significantly as it helps to reduce information asymmetries and collateral shortage as main barriers to financing (OECD, 2018e). These developments are particularly relevant for emerging economies and small businesses that currently find it hard to access the formal financial sector, such as micro enterprises, informal ventures and firms operating in rural and/or remote areas (OECD, 2017e).

Although some government initiatives around asset-based financing (Malaysia, Thailand and Singapore) and factoring and leasing (Cambodia, Lao PDR) have been taken in recent years, the use of such financing products in rather limited with ASEAN – and in some countries completely absent. Apart from the leading ASEAN countries like Singapore, Malaysia and Thailand, demand from SMEs for these new types of financing is rather limited.

**Improve the business and legal environment**

Recent OECD work has also demonstrated the importance of framework conditions for access to finance, particularly the financing of innovation. Andrews and Cingano (2014) have demonstrated that framework policies such as access to seed and early-stage financing, as well as efficiency in the judicial system could significantly affect the extent to which firms attract the tangible resources required to innovate. Likewise, product and labour market regulations which overall inhibit competition and reduce the reallocation of resources (see also below) are found to have an important impact. Reducing such barriers will accentuate competitive pressures, encouraging inefficient firms to exit, and channel resources to firms that are best able to make use of the resources. While such measures are typically implemented with other policy objectives in mind, their unintended implications should be taken into account (OECD, 2015b).
In addition, previous research has demonstrated that the level of institutional development to be the most significant determinant of cross-country variation in SME access to financing (Beck and Demirgüç-Kunt, 2006). For example, to reduce the perceived riskiness of investing in SMEs, information infrastructures for credit risk assessment, such as credit bureaus, registries or data warehouses have been set up in different countries. The OECD/ERIA SME Policy Index: ASEAN 2018 (OECD/ERIA, 2018) includes a specific chapter on SME access to finance and assesses the legal, regulatory and institutional framework across ASEAN countries. The benchmark shows – not surprisingly – a large heterogeneity of the institutional framework for SME finance across ASEAN countries with countries like Singapore and Malaysia performing above the others, while a country like Myanmar is trying to catch up.

In addition to the benchmark of the institutional environment, the OECD SME Policy Index also assesses the diversity of the sources of SME finance across ASEAN countries. Based on this and taking into account the differences in development stage of ASEAN countries, the report proposes different policy recommendations for individual ASEAN countries (Table 7.1).

### Table 7.1. Policy recommendations to increase SME access to finance in ASEAN

<table>
<thead>
<tr>
<th>Level of policy</th>
<th>Challenges</th>
<th>Policy recommendations</th>
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<tbody>
<tr>
<td><strong>Early stage</strong></td>
<td>Very little credit information is available. This makes it difficult to establish the likelihood of repayment, and credit is thus commonly allocated to groups rather than individuals.</td>
<td>Develop legislation and provide support to facilitate the introduction of credit bureaus. Private credit bureaus can be a cost-effective way to increase coverage while providing value-added services such as credit scoring that would lower transaction costs for banks.</td>
</tr>
<tr>
<td>Cambodia, Lao PDR and Myanmar</td>
<td>Financial literacy tends to be rather low, particularly among micro enterprises.</td>
<td>Develop a national strategies for financial education. Policy makers could consider developing a financial education strategy for the population in general, with specific interventions that target SMEs. To build knowledge in this area, countries could consider becoming members of the OECD’s International Network on Financial Education.</td>
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<tr>
<td></td>
<td>SMEs, particularly micro enterprises, own few assets to collateralise, and in several of these countries land rights remain unclear.</td>
<td>Look into the development of a credit guarantee scheme. Credit guarantee schemes can be a market-friendly instrument to incentivise lending to SMEs. A diagnostic exercise could be completed to explore whether such a scheme is desirable and feasible, as well as what form it should take.</td>
</tr>
<tr>
<td><strong>Mid stage</strong></td>
<td>Firms have more assets to collateralise, but financial institutions still find it difficult to firmly secure claims over assets provided as collateral.</td>
<td>Enhance institutions to support secured bank lending, for instance via centralisation of the movable assets registry. All mid-stage countries have a movable assets registry, but it is often still difficult to firmly establish ownership. Movable asset registries could be further developed, for instance via centralisation, to ensure that all notices recorded under secured transactions legislation can be easily retrieved.</td>
</tr>
<tr>
<td>Brunei Darussalam, Indonesia, the Philippines, Thailand and Viet Nam</td>
<td>Capital markets remain rather shallow, as is common across many middle-income countries, and this limits the use of equity instruments.</td>
<td>Consider directing a small amount of government funds towards high-growth firms, for example institutional investor funds or by co-investing with a third party. This may be a way to catalyse equity financing where private investors and high-growth firms are scarce.</td>
</tr>
<tr>
<td></td>
<td>Ambiguities remain in the national framework for secured transactions – particularly as concerns the filing of securities by unincorporated entities and individuals. This may limit collateralisation options and access to a range of financial products.</td>
<td>Review secured transaction legislation to ensure that any ambiguity has been minimised, for instance by adopting a law similar to Article 9 of the Uniform Commercial Code. This recommendation is shared across many common law countries.</td>
</tr>
<tr>
<td><strong>Advanced stage</strong></td>
<td>Demand for innovative financial products is increasing, both from national and regional firms.</td>
<td>Consider developing common standards on data sharing and information security for financial institutions, to support the use of APIs and stimulate the development of customised and innovative financing solutions.</td>
</tr>
<tr>
<td>Malaysia and Singapore</td>
<td>Demand for regulatory oversight of innovative products such as fintech is increasing.</td>
<td>Further experiment with regulatory sandboxes. Regulatory sandboxes can be a good way to test regulation in innovative new areas.</td>
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Strengthen international connectedness for SMEs

While firms are the main actors in GVCs, governments play an important role in creating appropriate framework conditions and a conducive business environment. Further integration in GVCs through trade and investment requires effective policies at and behind the border and in the domestic economy. Barriers to trade (of goods and services) and investment hamper the flow of productive resources across borders, raise costs for firms and limit productivity gains. Recent OECD studies have concluded that SMEs may be disproportionally affected by trade and investment restrictions, due to the fact that smaller firms often provide niche services to expand internationally, while the high fixed and sunk costs of exporting can only be met by the most productive firms. SMEs may also not be able to benefit from trade liberalisation to the same extent as larger firms. Anecdotal country evidence shows that export liberalising schemes are too costly for SMEs in the Philippines (Aldaba, 2010).

The establishment of the ASEAN Economic Community (AEC) in 2015 has gradually eliminated tariffs and facilitating trade of goods, advanced the services trade liberalisation agenda and facilitated international investment. Although (full) integration is still a work in progress, the AEC Blueprint sets out ambitious goals by 2025: the seamless movement of goods, services, investment, capital, and skilled labour within ASEAN in order to enhance ASEAN’s trade and production networks, as well as to establish a more unified market for its firms and consumers. The (further) integration of ASEAN economies in the global economy will directly benefit from the strong regional integration within ASEAN.

Address trade barriers at and behind the border

Trade costs play a large role in GVCs because goods and services cross borders several times before reaching the final consumer (Yi, 2003; Ma and Van Assche, 2010). Trade barriers depend on the level of tariffs and the existence of non-tariff barriers; the efficiency of border processes and customs practices are also an important determinant of the costs and time required to export and import. Domestic regulations and trade-related bureaucracy are also important cost factors, because of the importance of operating in a timely manner (IDE-JETRO and WTO, 2011).

Through AEC 2025, ASEAN will continue to reduce or eliminate border and behind-the-border regulatory barriers that impede trade, so as to achieve competitive, efficient, and seamless movement of goods within the region. The ASEAN Trade in Goods Agreement and trade facilitation have resulted in larger free flows of goods. In addition to its own within-ASEAN Trade Area, ASEAN has concluded a number of so-called ASEAN + 1 agreements with China in 2005, Korea in 2007, Japan in 2008, Australia and New Zealand in 2010 and India in 2010. Further on, a more comprehensive regional trade agreement (RTA) among ASEAN, China, Korea, Japan, Australia and New Zealand, the Regional Comprehensive Economic Partnership, has now been finalised. These different agreements are currently under review to further reduce the existing tariff barriers on trade in goods.

Further progress is also planned for trade facilitation as important enabler of deeper integration into GVCs. The complexity of customs procedures affect the ability of firms to access international markets, raising compliance costs and time delays and obliging firms to hold larger inventories and working capital. OECD estimates have shown that every extra day needed to ready goods for export and import reduces trade by around 4% (Korinek and Sourdin, 2011). ASEAN performance across all OECD trade facilitation indicators remains below best practice worldwide (OECD, 2018k), hence promoting policies that streamline border procedures, improve information availability, simplify trade documents and automate border processes are likely to help.

Non-tariff measures increase the costs of exporting and importing and disproportionately affect SMEs. Further regulatory improvements and streamlining of inspection procedures in the logistics sector are of particular relevance in Cambodia and Lao PDR (OECD, 2013a). Based on common indicators of costs of exporting and importing (e.g. USD per container), these two economies display particularly high costs of
trading across borders. Especially in the agricultural sector, where standard conformity checks are particularly relevant, SMEs lack the capacity to comply with technical requirements (ITC, 2016). The range of policy measures that could help to address this problem include efforts to facilitate the processing of regulatory documents via the establishment of national single windows and the broadening the ASEAN single window (currently used by Indonesia, Malaysia, Singapore, and Thailand for the exchange of certificates of origin). Besides, the streamlining of national requirements can help to lower the burden on SMEs. In the agricultural sector, Southeast Asian countries could also consider raising – possibly in a gradual way – their standards to the level of the frequently more demanding export markets (e.g. European Union) to reduce frictions associated with differential standards (Nguyen, Nguyen and Hoang, 2016). More generally, governments can also use public procurement as an instrument to motivate firms to adopt higher standards (ITC, 2016).

International integration in GVCs is also critically dependent on efficient services inputs as embedded services are the “glue” between economies’ infrastructure and companies’ activities in GVCs (OECD, 2013c). Investments in logistics services (which move goods from one country to another) enhances trade through efficient organisation and management of international shipment operations and effective tracking and tracing of shipments. High-quality logistics often affect trade relatively more than less policy-dependent factors such as distance and transport costs. Likewise, the development of communication and information services as “enablers” of GVCs leverages economies’ integration in GVCs.

The OECD’s Services Trade Restrictiveness Index (STRI) has demonstrated that the trade cost equivalent of services trade barriers largely exceeds the average tariff on traded goods. Services trade barriers have a strong anti-export bias that impedes services exports as much as services imports. Services trade barriers allow incumbent firms to gain market power, limit competition, delay innovation and hence productivity. Further on, the OECD work has also shown that the costs of dealing with regulatory hurdles and complying with diverging regulations fall more heavily on SMEs. For example, micro firms engaging in cross-border exports face an additional 7% in trade costs relative to large firms for the average level of services trade restrictiveness. Establishing an affiliate abroad involves even higher costs; for a small firm an average level of services trade restrictiveness is estimated to be equivalent to an additional 12% tariff compared to large firms (OECD, 2018k).

The OECD STRI evidence does not (yet) include ASEAN countries apart from Indonesia, making a detailed discussion difficult. ASEAN has continued to broaden the coverage and reduce the limitations on market access and national treatment across services sectors through the subsequent rounds of negotiations under the ASEAN Framework Agreement on Services. The next agenda is to facilitate the negotiations and implementation of the ASEAN Trade in Services Agreement as the legal instrument for further integration of services sectors in the region (ASEAN, 2015).

**Address barriers to investment**

The international integration of ASEAN is to large extent due to the success of ASEAN counties in attracting MNE affiliates through a mix of incentives, selective liberalisation and strong investment protection guarantees (OECD, 2018g). FDI has been very instrumental for ASEAN’s strategy of export promotion with offering partial openness for targeted – largely export-oriented – investors. At the national level, governments have continuously refined and reformed their investment legislation by, for example, opening more sectors to foreign investment and clarifying protection provisions. At the regional level, the ASEAN Comprehensive Investment Agreement strives for an open, transparent and predictable investment regime (ASEAN, 2015). Beyond ASEAN, several ASEAN + 1 free trade agreements include a specific investment chapter.

Nevertheless, ASEAN countries are among the most restrictive economies to FDI based on a sample of more than 60 countries covered by the OECD FDI Regulatory Restrictiveness Index (Figure 7.2). ASEAN countries also seem to have a higher level of restrictions that many other emerging economies (OECD, 2018g).
In its first *OECD Investment Policy Reviews: Southeast Asia*, the OECD has discussed in detail the investment regimes in ASEAN and formulated a number of recommendations to address future opportunities and challenges:

- **Services liberalisation** remains in general an important challenge within ASEAN countries and foreign investors in particular still have limited access to key service sectors in many ASEAN countries. Overall, services are still relatively underdeveloped as ASEAN countries are “trapped” in low-productivity services although progress has been made over the past decade. With the exception of Singapore, business services – which are of growing importance for manufacturing and GVCs (see above), remain underdeveloped in ASEAN countries.

- **Investment protection regimes** could be further streamlined to achieve a more consistent and transparent legal landscape under the single ASEAN umbrella. Complexity arises as ASEAN-wide free trade agreements and bilateral investment treaties continue to coexist. In addition, the issue of investor-state dispute settlement has become increasingly controversial in Southeast Asia as in many other parts of the world. To deal with this growing concern, ASEAN should consider further developing dispute prevention mechanisms.

- ASEAN has a long tradition of providing **investment incentives** in attracting FDI, although the evidence on the effectiveness of this measure is limited (in general and in ASEAN in particular). As tax incentives may be costly, most ASEAN countries use targeted incentives to attract investment in specific sectors or regions, to promote SME linkages, skills, environmental protection, etc. Tax incentives should be better co-ordinated within ASEAN countries and tax incentive practices should increasingly be discussed at the regional level. Furthermore, monitoring and re-evaluation of tax incentives – what is currently lacking in most ASEAN countries – is essential.

- In order to enhance the social and environmental benefits of foreign investment, a strategy to promote and enable **responsible business conduct** could/should be developed. While RBC initiatives have been taken at the national and ASEAN-regional level, a more integrated approach is desirable.

As discussed above, MNE activities may contribute directly and indirectly to productivity in host countries. Technological knowledge and expertise may spill over to the domestic sector and if sufficiently absorbed
by domestic companies may stimulate productivity. The frequency and size of these spillovers depends among others on the size and type of linkages between MNEs and domestic companies and the absorptive capacity of domestic suppliers. Technology transfers are more effective when firms possess previously accumulated knowledge and innovative capabilities.

In order to promote the linkages between domestic and foreign firms, some governments – also in the ASEAN region – have implemented initiatives to increase opportunities for links between local firms and international partners. They involve the provision of information and building awareness, training facilities and courses, capacity-building programmes, upgrading activities, etc. The related OECD-COPAS work on inclusive investment in global value chains and opportunities for ASEAN SMEs (López González et al., 2019) discusses such policies in more detail including their advantages and drawbacks.

**Invest in infrastructure**

In addition to trade and investment barriers, a high-quality transport infrastructure with major international gateways and corridor infrastructures such as airports, harbours, railways and highways facilitates economies’ participation in GVCs. Gateway ports, hubs and inland transport connections are crucial for the international transfer of goods, services and people. Maritime transport has greatly benefited from containerisation: standardisation, automation and inter-modality of freight have resulted in faster movement of intermediate and final goods through GVCs. Air transport is especially important for the (international) transfer of high-value and low-volume products, and for goods that are time-sensitive goods for just-in-time production and other lean production processes.

Speed and flexibility are crucial not only for exchanging physical goods/services but also for information flows. In addition to the quality of the more traditional infrastructure networks, a performant digital infrastructure has become a key determinant of success in international production networks. Overall, reductions in transport and communication costs can be seen as equivalent to trade liberalisation for reducing the costs of trade and enhancing trade between countries (Globerman, 2011). GVCs crucially depend on seamless and uninterrupted information flows across companies and economies; ICT networks channel business information and the data needed for the efficient co-ordination of activities across locations. A well-developed ICT infrastructure (communication, broadband, etc.) is necessary to connect economies’ value-chain activities across countries (see the section “Embracing the digital revolution for SMEs” above).

Particularly for the least developed ASEAN economies, access to land is an area where SMEs face considerable disadvantages compared to larger firms. In Viet Nam, where rules on private ownership remain restrictive, SOEs continue to enjoy privileged access to land (The World Bank and Ministry of Planning and Investment of Vietnam, 2016). Given their superior financial resources and Southeast Asian policy makers’ enthusiasm for special economic zones (SEZs), access to land is generally not a primary concern for MNEs. Conversely, SMEs often find it difficult to purchase land or obtain official certificates for their land ownership. In Myanmar, for example, 21% of small enterprises cite access to land as a factor hampering their business, whereas only 2% of large firms see it as an obstacle (World Bank Group, 2015: 19). Similarly, in Viet Nam informal linkages with state actors are often essential for access to land. Importantly, limited access to land is directly linked poor access to finance, since many banks in Southeast Asia rely on land as the main collateral. To address this bottleneck, measures to reduce privileges of SOEs and MNEs as well as efforts to improve formalisation and transfer of landownership rights seem appropriate.

In addition, fundamental infrastructure remains a key area that requires improvement. While Thailand has achieved nearly universal access to electricity and Indonesia has made substantial progress towards this objective in recent years (ADB, 2017), the share of the population that has access to electricity amounts to less than 80% in the case of Lao PDR and less than 60% in the case of Myanmar and Cambodia. Given the multi-faceted linkages between access to electricity and productivity – e.g. regarding SMEs’ ability to use cooling technology to store agricultural produce –, further progress in broadening of the grid coverage must be considered as a key ingredient of the mix of measures required to facilitate SME upscaling and
GVC integration. Examining firm-level effects of electricity grid expansion in Indonesia, Kassem (2018) finds that connection to the grid causes firms to be more profitable and larger in terms of revenue and employment size.

In terms of transport infrastructure, the World Economic Forum’s Global Competitiveness Report 2016-2017 (World Economic Forum, 2016) provides a first insight into the Southeast Asian economies’ diversity in terms of the quality of different types of transport infrastructure (Table 7.2).

Table 7.2. Quality of different types of transport infrastructure

<table>
<thead>
<tr>
<th>Mode</th>
<th>Cambodia</th>
<th>Indonesia</th>
<th>Laos</th>
<th>Philippines</th>
<th>Singapore</th>
<th>Thailand</th>
<th>Viet Nam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads</td>
<td>93 (3.4)</td>
<td>75 (3.9)</td>
<td>91 (3.4)</td>
<td>106 (3.1)</td>
<td>2 (6.3)</td>
<td>60 (4.2)</td>
<td>89 (3.5)</td>
</tr>
<tr>
<td>Railroads</td>
<td>98 (1.6)</td>
<td>39 (3.8)</td>
<td>x</td>
<td>89 (2.0)</td>
<td>5 (5.7)</td>
<td>77 (2.5)</td>
<td>52 (3.1)</td>
</tr>
<tr>
<td>Ports</td>
<td>76 (3.9)</td>
<td>75 (3.9)</td>
<td>132 (2.0)</td>
<td>113 (2.9)</td>
<td>2 (6.7)</td>
<td>65 (4.2)</td>
<td>77 (3.8)</td>
</tr>
<tr>
<td>Airports</td>
<td>99 (3.9)</td>
<td>62 (4.5)</td>
<td>100 (3.8)</td>
<td>116 (3.2)</td>
<td>1 (6.9)</td>
<td>42 (5.0)</td>
<td>86 (4.1)</td>
</tr>
</tbody>
</table>

Note: x = not applicable.

In the case of Cambodia, improvements of the road network are a key obstacle that prevents farmers and agricultural SMEs from diversifying their customer base and reaching faraway markets (OECD, 2013a). Particularly in the cases of Indonesia and the Philippines, further measures to improve internal market integration appear necessary. While the Philippines possess a relatively large road network, less than a third of all roads are paved (OECD, 2017d). Indonesia needs further infrastructure investments to address the east-west divide as well as the rural-urban gap in development (OECD, 2013a). Recent academic research shows that steps towards greater market integration in these countries characterised by fragmented territories are likely to enhance the growth potential of SMEs.

Efforts to improve the maritime infrastructure linking islands are high on the country’s policy agenda (Carruthers, 2016). Indonesia, for example, faces challenges in terms of connectivity between islands. Moreover, a considerable number of the country’s roughly 1 700 ports are not containerised yet, driving up the cost of imported components and limiting export opportunities for SMEs. Yet, after years of underinvestment, the country’s main trading ports simultaneously need investments in capacity expansions and modernisations. For instance, Jakarta’s Port of Tanjung Priok, Indonesia’s busiest port, has been struggling with capacity constraints and long waiting times in recent years. The situation has improved after the completion of the first phase of the multi-stage construction of the New Priok port (or Kalibaru Port), which is expected to be fully operational in 2023.

Five major container ports supposed to act as hubs and 19 feeder ports are expected to be upgraded or newly constructed in Indonesia. Yet, the multi-mode logistic networks linking different ports still require closer attention, e.g. with respect to congested roads between New Priok port and Tanjung Priok. Moreover, recently subnational governments have received a growing share of Indonesia’s transport infrastructure budget, while national ministries have seen their share of the budget decline. Capable subnational administrations may be able to use these additional resources to address previously neglected infrastructure bottlenecks. However, subnational heterogeneity in local authorities’ capacity to absorb additional funds and implement infrastructure projects also warrants thorough monitoring of the use of these resources.

The Philippines are another country that requires substantial investments in its maritime infrastructure. The country has been expanding its capacities in recent years; between 2010 and 2012, 128 new domestic ports and 16 additional international ports were constructed (OECD, 2017d). Investments in maritime
infrastructure are also of relevance in the context of Myanmar. Given the country’s strategic geographic position, improvements of its infrastructure can help the country to capitalise on the growth potential of South Asian–Southeast Asian trade. The majority of trade between South Asia and Southeast Asia is expected to rely on sea transport in the foreseeable future. The World Bank’s IFC has recently provided USD 40 million – the first phase of a USD 200 million financing package – to Myanmar Industrial Port (MIP) for capacity upgrades and efficiency improvements. The MIP is one of the country’s two main container ports and handles roughly 40% of Myanmar’s container traffic. Further investments in port infrastructure in Myanmar are associated with large SEZs developed with partner countries. For example, Thailand’s government is involved in the ambitious Dawei SEZ that also encompasses investments in seaport facilities. Beyond Myanmar, China’s Belt and Road Initiative, and its efforts to reduce its reliance on the Strait of Malacca, are associated with planned investments in ports in several Southeast Asian economies, including in Vietnam (UNCTAD, 2018).

As demand for air transport – regarding passengers as well as cargo – increases, airport expansions are necessary in several Southeast Asian economies, such as the Philippines, for example (OECD, 2017d). An additional terminal is expected to open at Mactan-Cebu International Airport next year; it will increase the capacity of the country’s second biggest airport from 6 million to 12.5 million passengers per year. Several Southeast Asian economies are increasingly gaining experience in the implementation of public-private partnerships in infrastructure investments – although still to a limited extent. For example, private companies are involved in the preparations for Myanmar’s new Hangthawaddy International Airport. Similarly, private firms contribute to the management of the airports in Mandalay and Yangon as well as several of the river ports in the Yangon region (OECD, 2017d). Beyond individual projects, international connectivity via air transport in Southeast Asia would benefit from greater efforts to fully implement the single ASEAN aviation market, e.g. regarding the coverage of secondary cities.

The political and regulatory context of infrastructure investments still leaves room for improvement in many Southeast Asian economies. In the case of the Philippines, for example, the Philippine Ports Authority (PPA) adopts multiple roles with conflicting interests, including a mandate as an industry regulator, builder of ports, and active player in the shipping market (OECD, 2017d). In the case of Indonesia, SOEs act as key investors in infrastructure investments (ADB, 2017). While the government has taken steps to create a more favourable environment for private involvement in infrastructure projects, one of the factors hampering public-private partnerships is the relatively poor co-ordination of key agents involved in infrastructure projects in Indonesia, including between SOEs and key ministries.

Lastly, beyond investments in “hard” transport and communication infrastructure, a “soft” infrastructure (facilitating policies, procedures and institutions) is at least as important for integration in GVCs. The quality of the institutional framework can be a source of comparative advantage (Grossman and Helpman, 2005). Since GVCs involve many activities involving different companies (MNEs, independent suppliers), contract enforceability is crucial for their smooth functioning. Countries with good legal systems export more in more complex industries (Costinot, 2009; Levchenko, 2007). Moreover, tasks that require more complex contracts (e.g. R&D, design or branding) are conducted more easily in economies with well-functioning contractual institutions (Acemoglu, 2008). Economies characterised by bad governance and political instability, e.g. some economies in Sub-Saharan Africa, have failed to attract foreign investors to export processing zones in spite of promises to shelter them from local rules (Farole, 2011; Cadot, Carrère and Strauss-Kahn, 2011).

### Promote entrepreneurship and business dynamism

***Enable business dynamism***

Promoting entrepreneurship is key to innovation and technological diffusion. There is increasing awareness among ASEAN governments of the crucial role of entrepreneurship for overall economic success and poverty
reduction. Moreover, given their important contribution to growth and job creation, support to entrepreneurship is increasingly being recognised as a policy tool in ASEAN countries (Bruton, Ahlstrom and Si, 2015).

Business dynamism, defined as the entry, exit, and growth of businesses, favours productivity-enhancing creative destruction. Entrepreneurship therefore also plays a central role in driving structural economic change and development by enhancing the reallocation of resources towards more productive firms (and often sectors) in the economy (Sen, 2016).

To promote entrepreneurship and increase dynamism, policy efforts have to take into account the different types of entrepreneurs, which vary in capabilities and skills (Schoar, 2010). Subsistence entrepreneurs who create their own business to escape unemployment and typically do not scale up have to be distinguished from transformational entrepreneurs, who have the ambition to build large businesses and generate employment growth. One of the major challenges for many ASEAN countries, as well as other developing countries, is the high share of subsistence entrepreneurs. Transformational businesses have the potential to be very important for economic development, but are more sensitive to the policy environment and therefore often face difficulties in scaling up (Schoar, 2010; Bruton, Ahlstrom and Si, 2015).

The difficulties faced by firms who want scale up is closely linked to one of the main challenges for productivity growth in some of the ASEAN countries, namely the high share of the informal economy (see further below). Informal firms have low productivity and produce lower quality products, and most of economic growth comes from the formal sector (La Porta and Shleifer, 2014). Tackling informality and providing opportunities and incentives for the creation of formal firms is therefore another important element to foster inclusive growth.

Another major challenge in many ASEAN economies is the rural-urban divide. Limited transportation and ICT infrastructure provision, as well as low school enrolment rates, and limited access to credit remain a major challenge for entrepreneurs in rural areas. Furthermore, the share of informal economic activities, especially in the agricultural sector, is higher in rural areas (OECD, 2017d).

From a policy perspective, it is crucial for ASEAN countries to develop a business environment in which transformational entrepreneurs are able to enter the market and achieve rapid growth. In order to help identify and create favourable conditions for entrepreneurs to enter the market and grow, recent OECD work (Calvino and Criscuolo, 2019) proposes a guiding policy framework for business dynamism. It includes the main policy drivers of business dynamism such as enhancing business-friendly legislation and regulations, increase the availability of finance for entrepreneurs, building entrepreneurial and management skills, as well as creating inclusive start-up networks.

**Enhance business-friendly legislation and regulation**

Legislation, regulation, and tax systems more aligned to the needs of people with entrepreneurial skills are beneficial at all stages of the business life cycle, including starting, expanding and going out of business.

The World Bank “Doing Business” database, comparing business regulations across countries, indicates a high degree of variation across ASEAN countries (Figure 7.3). In 2020, Singapore, where starting a new business takes one and a half days on average, ranked second in the worldwide “ease of doing business” indicator. It was followed by Malaysia in the 12th position as the second ASEAN economy, while Cambodia, Lao PDR and Myanmar ranked in the bottom tier. Several ASEAN countries are increasingly aware of the importance of improving business-friendly legislations, regulations, and tax systems. Some, for example, have created inter-ministerial committees charged of ensuring improvements in the ranking (OECD, 2018a). Almost all ASEAN countries improved their ranking in 2020 from their 2019 ranking. However, the complexity of regulatory procedures remains in many cases a major obstacle for entrepreneurs in ASEAN countries.
Figure 7.3. ASEAN countries in The World Bank’s Ease of Doing Business Index, 2020

Note: The figure shows the Doing Business scores (up to a maximum of 100) and country rankings out of all 190 countries included in the index. Source: OECD, based on The World Bank (2020), Doing Business (database), www.doingbusiness.org.

Broad-based reform programmes to reduce regulatory barriers, specifically those related to administrative burdens for entrepreneurs, enhance the ease for entrepreneurs to start a business. They include the introduction of simplified business licenses and the reduction of the length and cost required to register a new company (Calvino and Criscuolo, 2019). The harmonisation of permits or the development of a one-stop shop system to obtain information could also reduce obstacles for transformational entrepreneurs to start their business (OECD, 2018f). Efficient bankruptcy procedures and strong contract enforcement are also central for establishing a dynamic environment for entrepreneurship (Calvino, Criscuolo and Menon, 2016).

Increase availability of finance for entrepreneurs

One of the major obstacles to start and expand a business are the severe liquidity constraints faced by entrepreneurs. The availability of finance for new firms and efficient capital markets are thus central to create a dynamic firm environment, and to level the playing field for new entrepreneurs.

Access to external finance remains costly and difficult in a number of ASEAN countries. Domestic credit to the private sector, which indicates the level of financial intermediation within an economy, varies strongly across countries. In 2017, it ranged from 144.5% of GDP in Thailand to 23.5% in Myanmar (OECD, 2018a). The level of financial inclusion is also an indicator of the ease for entrepreneurs to receive access to credit. Currently, only 50% of adults in ASEAN countries have a bank account. Financial "exclusion" is particularly high in rural areas, and among the poor and less educated people. In rural areas, only 36% of adults report having a bank account (Demirgüç-Kunt, et al., 2018). This has strong adverse implications for entrepreneurs.

ASEAN member states have increased their efforts to improve access to microfinance and to bring rural credit operators into the formal financial system. Eight ASEAN countries currently have a network of non-bank microfinance providers (OECD, 2018a). Even though microfinance provides access to credit for a large number of people, it might not be sufficient to serve the needs of transformational entrepreneurs (Schoar, 2010; Bruton, Ahlstrom and Si, 2015). Alternative sources of finance, such as venture capital availability at seed and early stages as well as access to private equity, remain scarce in many countries, but are particularly important to increase business dynamism, and could effectively complement microfinancing.
Improvements in lending technologies, such as digital banking, and enhancing financial innovations can increase financial inclusion and can also make it easier for entrepreneurs to start their business.

**Build entrepreneurial and management skills**

Education and workplace training, determining the supply and quality of entrepreneurs, strongly influence the number of entrepreneurs starting a business. Therefore, building entrepreneurial skills and developing an entrepreneurial mind-set are other major policy areas where governments can enhance business dynamism.

Across many ASEAN countries, limited managerial and business skills, as well as a lack of financial literacy, are major impediments to the scaling-up of businesses (OECD/ERIA, 2018). Indonesia and Singapore have already incorporated policies to enhance entrepreneurial education. In Indonesia, both the Ministry of Research, Technology and Higher Education as well as the Ministry of Education and Culture support entrepreneurship education in universities. Other countries, such as Cambodia, Lao PDR, Myanmar, and Viet Nam are still at an early stage of developing such policies (OECD/ERIA, 2018).

One relevant policy instrument in this context could be to integrate human capital development targeting specifically entrepreneurial and management skills into the national education systems. Fostering inclusive education that focuses on women and youth has the further potential to tap into a new pool of entrepreneurs. Furthermore, an important aspect of entrepreneurial education is financial literacy. Enhancing knowledge on the variety of financing options is important to facilitate the scaling up of small entrepreneurs.

**Create inclusive start-up networks**

The core of entrepreneurship is bringing together the right people into an effective team. In addition to providing the necessary institutions and networks, governments can help entrepreneurs flourish by expanding their pool through supporting the inclusiveness of entrepreneurship.

The focus on social enterprise start-ups and start-up networks, a relatively new policy area, varies strongly across ASEAN countries. Singapore’s government for example has played an active role in fostering entrepreneurship through the creation of entrepreneurial networks, which can serve as a best-practice example. One of its main initiatives is Startup SG Network, which provides a platform for Singapore’s tech start-up community to connect with both national and global investors and mentors, and expand their opportunities of growth.

ASEAN countries also need to increase the inclusiveness of entrepreneurship by empowering different groups of people – in particular women and young adults. Giving all groups the same opportunity to start up and operate a business has the potential to generate work, inclusive growth, and reduce poverty (OECD, 2017b). Providing business support services, such as training, advice, counselling consultancy, and coaching, making finance sources more available, and expanding education in the respective groups are effective policy measures for fostering inclusiveness in entrepreneurship. Finally, establishing networking communities can help making use of the synergies between the different actors.

**Reduce informality**

Informal employment undermines the efforts of developing and emerging economies to lay down the foundations for a modern, work-based, social insurance system. Formal employment is essential both to increase productivity and improve inclusion: formality enables workers to have access to social rights – such as unemployment insurance, health care and pensions – and allows business to expand, modernise, innovate and become more productive. Furthermore, reducing informality decreases the vulnerability of social institutions while increasing fiscal revenues and strengthening the long-term sustainability of social entitlements (Albrizio and Nicoletti, 2016).
Moving forward, formal and quality job creation should be at the centre of the agenda for SME-driven growth. To this end, governments should improve the quality of the public services they deliver. Improving opportunities of formal employment so that workers and companies can fully enjoy not only the benefits of social insurance, but also the capacity for personal growth and added value that comes from formal economies is critical.

There is however no silver bullet as regards policies that promote formality given the large heterogeneity between (ASEAN) countries as well as within countries between informal firms. A broad package of policies is typically needed including improvements to educational outcomes, reforms of business regulation, strengthening legal institutions and reducing corruption. Digital tools may contribute to this agenda, e.g. in helping reduce tax evasion, addressing corruption, improving social policies, or reducing bureaucracy and red tape. Crucial in the transition from informal to formal is that firms and workers recognise the benefits of formalisation, hence the need to strengthening the incentives for workers to seek formal-sector jobs, and decreasing the costs of formalisation for employers.

In general, governments should improve the quality of the public services they deliver and strengthen the link between contributions and benefits in social protection schemes (OECD, 2017f). For example, introducing progressivity into social security contributions could encourage both workers and businesses to register. Lowering these same contributions temporarily for low-paid workers whose jobs are brought into the formal sector can also support transitions out of the informal sector. In addition, some of the most rapid successes in reducing informality have come from removing specific legal obstacles that prevented workers from being formal in the first place.

In addition, gains from better enforcement can be large and relatively quick. Improved enforcement methods and sufficiently resourced enforcement agencies are a prerequisite in this. Labour inspectors should be adequately qualified and able to use modern statistical techniques to increase the efficiency of their work. These techniques include statistical profiling so as to identify the workers and firms who are most at risk of informality and selective targeting of enforcement actions. One important policy lesson that can be drawn from these experiences is that good enforcement should be transparent and strict, but not be overly harsh, as informality ultimately constitutes a means of survival for many people (OECD, 2017f).

In particular, the growing availability of digital tools could help to tackle informality in the future. The combined adoption of new digital technologies, increased reliance upon new data sources, and use of advanced analytic methods opens up different avenues for increasing efficient enforcement but also for identifying potential informal workers and firms. The extent to which this potential is realised will depend on whether governments prove willing to adopt and able to scale the use of such technologies, obtain reliable access to relevant data which is often in the hands of private actors, and how successfully concerns such as privacy and cybersecurity are addressed.

On the other hand, the digital transformation may have adverse effects on access to good jobs, inclusiveness and informality. The technological advances and the introduction of new business models in an increasingly digitalised world is giving rise to new forms of work such as “crowd work”, “gig work”, and other forms of on-demand labour. These non-standard forms of work and jobs can offer an important source of income and flexibility for workers. But labour market outcomes vary greatly across non-standard workers in particular in terms of pay, job security and social protection. Given that certain population groups are over-represented in non-standard forms of work (typically women, youth, the least-skilled, workers with disabilities, and workers in small firms as well as migrants), on-demand labour risks being a source of inequality in access to good jobs.

Creating formal, good quality jobs can also be supported by policy action on the supply side, for example, through the provision of and access to more and better skills for all workers. In addition, business-friendly policies to reduce administrative barriers will help to launch new entrepreneurial activities. Skills certification mechanisms that acknowledge competencies acquired outside formal education, hence including while
working in informal jobs, could be very effective in increasing matching the skills in offer with the needs of the business sector (OECD, 2017f).

When designing skill training programmes, it is important not to neglect the basic (e.g. numeracy) and managerial (e.g. opportunity analysis) skills that can help small-scale informal enterprises to grow and enter the formal sector. At the same time, policy makers should also improve the accessibility of training opportunities. In Lao PDR, for example, only 4% of all recipients of training come from remote rural areas (ILO, 2016: xviii). To ensure that SMEs in rural and peripheral regions obtain access to training, the use of mobile training in ASEAN countries has been proposed.

The choice for (the combination of) particular policies depends on the characteristics of the national economy and the broader society including the national policy framework. Reducing informality may generate different impacts on (SME) productivity and performance as illustrated by two ASEAN country studies. In Indonesia legality has been observed to negatively affect SME productivity, due to complicated bureaucracy and legal aspects requiring too many resources. Policy makers in Indonesia may therefore wish to focus on simplifying bureaucracy and deregulating legal aspects to enhance SME growth in the Indonesian formal sector (Indarti and Langenberg, 2004). On the contrary, SMEs in Vietnamese manufacturing have reported profit gains and a declining share of casual workers – suggesting improved contract conditions for employees. Yet, no clear evidence of formalisation on improved access to credit or higher shares of wages was observed. In the case of Viet Nam, policy should encourage firms to shift out of informality by emphasising the potential gains associated with an upgrade in legal status (Rand and Torm, 2012).

Notes

1 Typically, one enterprise should undertake the role of a leader (known as a “Lead Enterprise”) in driving projects to benefit the group of companies. More detail on the PACT programme is available at https://www.enterpriseg.gov.sg/financial-assistance/grants/for-partners/pact-programme/overview.

2 The lack of appetite by SMEs for alternative financial instruments, equity in particular, can also be attributed to their tax treatment vis-à-vis straight debt.

3 The AEC foresees further in streamlining and harmonising capital market regulatory frameworks and platforms; facilitating skilled labour mobility; promoting the development of regional frameworks in competition policy, consumer protection and intellectual property rights; promoting connectivity; narrowing the development gap; and strengthening ASEAN’s relationship with its external parties (ASEAN, 2015).


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Promoting the Productivity of SMEs in ASEAN Countries

STRENGTHENING CAPABILITIES, ENABLING BUSINESS DYNAMICS

This report is a contribution to the Canada-OECD Project for ASEAN SMEs (COPAS) and explores how to promote productivity in SMEs in ASEAN countries. It finds that aggregate productivity growth is shaped by two main factors, i.e. enhanced capabilities for productivity growth within firms, including SMEs; and the re-allocation of resources between firms, including SMEs, which results from business dynamics, i.e. the growth of some firms and the decline of others. Today, a range of new technologies provide an opportunity to strengthen the productivity of SMEs in ASEAN countries. Policy makers in ASEAN countries can help realise these opportunities by developing comprehensive, inclusive and people-centred SME strategies. Key elements include strengthening skills, improving management, fostering innovation and digital transformation, enhancing access to finance, promoting entrepreneurship and healthy business dynamism, strengthening business services, strengthening the international connectedness of SMEs and addressing informality.