VIETNAM'S FUTURE JOBS

LEVERAGING MEGA-TRENDS FOR GREATER PROSPERITY

MAIN REPORT

Wendy Cunningham
Obert Pimhidzai

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PREFACE

Jobs have been a fundamental part of Vietnam's rapid transformation to a modern, globally integrated, middle-income country. Doi Moi – the economic reform program that was launched in 1986 - not only changed Vietnam's economic structure, but it also had deep implications for jobs, and these jobs were themselves a key input to the economic reform process. In 1986, most workers were engaged in agricultural production, with a small share laboring in state-owned enterprises. Today, less than half of jobs are in agriculture and a heterogeneous private-sector driven jobs sector has grown up. Job quality has not evolved as quickly, with the majority of jobs still being low productivity, low-paid, and lacking social benefits or worker protection.

The world is on the cusp of new opportunities that could further shift Vietnam's jobs picture. The rise of the Asian consumer class especially in China, a shift toward knowledge economies, new trade partners and patterns, automation in the workplace, and aging all threaten Vietnam's current jobs structure. They also offer opportunities.

At the invitation of the Government of Vietnam, the World Bank produced the report *"Vietnam's Future Jobs: Leveraging Mega-trends for Greater Prosperity"* to explore the new challenges and opportunities facing Vietnam and to share policy reforms that could be a catalyst for more – and better – jobs. This work is aligned with the World Bank Group's FY18-22 Country Partnership Framework, which emphasizes inclusive growth and investment in people and knowledge and highlights the importance of jobs for continued economic growth and poverty reduction. The report *"Vietnam's Future Jobs: Leveraging Mega-trends for Greater Prosperity"* builds on *"Vietnam 2035: Toward Prosperity, Creativity, Equity, and Democracy"* a publication developed as a partnership between the Government of Vietnam and the World Bank Group, which lays out a long-term vision for Vietnam's growth and development. *"Vietnam 2035: Toward Prosperity, Creativity, Equity, and Democracy"*, together with a series of studies that the World Bank has prepared covering topics of agricultural and rural development, private sector development, and skills development, present pieces of the jobs story. This study is the first that pulls together the viewpoints of specialists in poverty, macroeconomics, trade, private sector development, gender, education, and labor—thereby painting a unified and comprehensive jobs picture.

The report identifies three reform areas that will be particularly important to capture the jobs-related opportunities offered by a changing economic and social context. *First,* create more jobs in specific segments of the modern sector, namely via Vietnam's small and medium enterprises, agro-industry, and value chains. *Second,* enhance the quality of jobs in the traditional sectors. Family farming and household enterprises will be a part of the jobs landscape for many decades and much can be done to increase the quality of these jobs. *Third,* connect qualified workers to the right jobs. This will require overhauling the education and training sectors to meet the 21st century, as well as a range of other support for workers to shift jobs and skills as economic and social context change ever more rapidly.

We hope that "*Vietnam's Future Jobs: Leveraging Mega-trends for Greater Prosperity*" serves to inspire and connect policymakers, the private sector, and development partners to pursue the multi-faceted jobs challenge in the context of a changing world towards further prosperity and equity for Vietnam.

Ousmane Dione
World Bank Country Director for Vietnam

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ABBREVIATIONS AND ACRONYMS

AISC	The Australian Industry and Skills Committee
ASEAN	Association of Southeast Asian Nations
BPO	Business process outsourcing
CMT	Cut, make trim
ESC	Employment Service Center
FAO	Food and Agriculture Organization
FDI	Foreign direct investment
GDP	Gross Domestic Product
GSO	Government Statistics Office
GVCs	Global value chains
HACCP	Hazard Analysis and Critical Control Points
ICT	Information technology and communications
IFC	International Finance Corporation
IPSARD	Institute of Policy and Strategy for Agriculture and Rural Development
IRC	Industry Reference Committees
LFS	Labor Force Survey
LMIS	Labor Market Information System
LTC	Long-term care
MARD	Ministry of Agriculture and Rural Development
MNCs	Multi-national corporations
MOET	Ministry of Education and Training
MOLISA	Ministry of Labor, Invalids, and Social Affairs
MPI	Ministry of Planning and Investment
M&E	Monitoring and evaluation
OECD	Organisation for Economic Cooperation and Development
PISA	Programme for International Student Assessment
R&D	Research and development
SMEs	Small and medium enterprises
SOEs	State-owned enterprises
SSO	Service Skills Organizations
STEM	Science, technology, engineering and mathematics
STEP	Skills Toward Employability and Productivity survey
TFP	Total factor productivity
UNIDO	United Nations Industrial Development Organization
VARHS	Vietnam Agriculture and Rural Household Survey
VET	Vocational education and training
VHLSS	Vietnam Household Living Standards Survey
VNSCO	Vietnam Standard Classification of Occupations
WDI	World Development Indicators, World Bank
WTO	World Trade Organization

CURRENCY EQUIVALENTS

(Exchange Rate Effective January 25, 2018)
Currency Unit = Vietnam Dong (VND)
US$ 1 = VND 22,710.75581

EXECUTIVE **SUMMARY**

Vietnam's 50 million jobs are a cornerstone of its economic success. The transformation toward services and manufacturing, and impressive labor productivity and wage growth led to plunging poverty rates and globally enviable economic growth over the last decades. Employment rates are high and unemployment rates are low by global standards.

The jobs challenge is to create more high quality and inclusive jobs. Shiny foreign factories paying above the minimum wage and offering social benefits typify, at best, only 2.1 million jobs. And registered domestic firms provide no more than 6 million jobs. **Meanwhile, 38 million Vietnamese jobs are in family farming, household enterprises, or uncontracted labor.** These traditional jobs tend to be characterized by low productivity, low profits, meager earnings, and few worker protections. While they have been a path out of poverty, they will not provide the means to reach the middle-class status that Vietnam's citizens aspire to. Ethnic minorities, women, and unskilled workers cluster in these jobs.

Transformational mega-trends may either create better job opportunities or threaten the quality of Vietnam's jobs. *Shifting trade and consumption patterns* will affect what Vietnam can export and in which value chains it can, or cannot, continue to be engaged. The *rise of the global knowledge economy* may provide new high-value jobs but will require a different skill set and export model than Vietnam currently uses. An *aging* population will demand care services from a shrinking working age population. *Automation* will replace jobs if workers are not equipped to use technology to their benefit. Together, these factors portend a tilt toward higher quality jobs, but only if firms, farms, and workers are prepared to take on these new opportunities.

The policy challenge is to capture the mega-trends so that Vietnam's jobs of the future are higher value-added, more productive, better paid and provide better opportunities to workers. As history shows us, economic growth is not enough to transform the jobs picture. Instead, a proactive set of policies is needed. This report identifies a narrow set of reforms areas for firms, farms, and workers that should be the focus of policy to improve job quality in Vietnam. It is not intended to be prescriptive, but instead to narrow down a complex challenge into a few actionable priority areas.

What Will Vietnam's Future Jobs Look Like?

If Vietnam continues to focus its efforts on attracting foreign direct investment in low-skilled assembly jobs, its future jobs will look a lot like today's jobs. If the current rate of transformation from family farms and enterprises to jobs that are covered by labor contracts continues for the next 20 years, contracted wage jobs would increase from 24 percent of jobs to 43 percent by 2040. These jobs would continue to be in low value-added activities, with related low per-unit profit and minimum wage-level jobs with limited opportunities for worker advancement. Family farming and household enterprise jobs would still account for more than half of all jobs in Vietnam in 2040.

Mega-trends could disrupt the future jobs picture, improving job quality in some sectors while expanding poor quality jobs in others. Or, current constraints may limit Vietnam's ability to capitalize on these new opportunities. Specifically:

More jobs will be associated with local, regional, and global value chains because of the growing consumer class both in Vietnam and the region,

increasing urbanization, the emergence of regional value chains, and Vietnam's reputation as a solid link in global value chains. This may come about because current jobs become linked to value chains (for example, family farms selling to retailers) or through the creation of new jobs in response to new markets. The low skill-level of the workforce and the emergence of regional competitors may hinder Vietnam's movement into more lucrative value chains or higher value jobs within value chains.

Small- and medium-sized Vietnamese-owned firms will continue to create good jobs, though possibly less successfully than today. Even though many of today's economic policies favor foreign investors and state-owned enterprises (SOEs), small- and medium-sized domestically owned firms were the largest source of new contracted wage jobs in the past decade, expanding by more than 5 percent. If foreign firms continue to operate in enclaves with little connection to the broader economy, and as Vietnam moves into more sophisticated segments of value chains, job creation by domestic firms could be further constrained.

Job quality in the modern sector will improve if Vietnam shifts toward higher value-added production activities. Contracted wage jobs are more productive and pay better than traditional, uncontracted jobs. However most of Vietnam's modern jobs are in low value-added manufacturing. The global shift toward knowledge-intensive production processes and complex value chains, can be an opportunity to create high quality, modern jobs in Vietnam.

Rural jobs will continue to become more diverse, with the development of rural manufacturing and services. Already, 4 of every 5 rural household derives at least some of their income from off-farm activities. Increasing mechanization will reduce the agricultural workforce who will take up off-farm jobs. This transformation could lead to better jobs if driven by the development of food chains to serve increasingly affluent urban Vietnamese consumers and the continued expansion of agricultural product exports to higher value regional markets.

The household enterprise sector will persist. With urbanization, helped by the relaxation of restrictions on internal migration *(ho khau)* and increasing demand for services by urban consumers, the household enterprise sector is likely to grow. Jobs quality will likely remain low quality if household enterprises continue to operate at the margins of the formal economy.

Automation will slowly begin to change the tasks in some jobs and (even more slowly) displace jobs. At first, technology will free up labor, allowing low-skilled workers to produce higher-value products. As educated new labor force entrants continue to raise the skill levels of the workforce, disruptions will be delayed. However, in the longer term, as labor costs increase while the cost of technology decreases, machines will start to replacing humans, thus reducing the number of available jobs.

The limited skill level of Vietnam's workforce will hinder the emergence of good jobs. Today's young people have a strong foundational set of skills, but the workforce as a whole has low levels of education and severe skill gaps. The growth of knowledge-intensive exports, the service industry, and automation will be hindered by a labor force that lacks a range of sophisticated skills and the means to upgrade their skills over their lifetimes.

Job search will need to be done more often. The expansion of modern firms will provide job opportunities that are less dependent on personal connections. Job turnover will become more frequent as a result of both the structural transformation of the economy and fluctuations in firm size. This increase in turnover will be offset by technology-enhanced job search. But more marginal populations will be left behind.

Future jobs will be more inclusive for some, but more of a challenge for others.

Young people are already benefitting from the onset of these mega-trends. Although

youth have higher unemployment rates than the national average, working youth tend to be in better jobs than older workers; the share of youth working in wage jobs in the private domestic and foreign sectors is higher than their share of the working population. However, a substantial number of less skilled youth employed in low-quality wage jobs is likely to persist.

Women may benefit from the expansion of export-oriented jobs and the emergence of a care economy to provide services to an aging population. On the other hand, the aging of the population may impose time demands on women that push them into worse jobs or out of the labor market entirely.

Aging workers who did not benefit from the good education system that Vietnam has today are likely to struggle as jobs become more skills-biased.

Ethnic minorities may not be able to take advantage of the emerging new jobs because of their location in remote communities and the limited existence of service and manufacturing jobs in their home villages.

How to Make Future Jobs Better and More Inclusive?

Vietnam can make its future jobs better and more inclusive if firms, farms, and workers seize opportunities and find ways to minimize downside risk of these future trends. This would entail complementing efforts to attract higher value-added foreign direct investment with new efforts to foster an innovative, dynamic domestic firm sector; incorporate largely excluded economic sectors and people into the economy; and generate a lean and smart labor force to create and work in higher value-added jobs. Eight policy focus areas and multiple policy directions that define the "how to", underlie these reform areas. While the policies may look familiar, they have been selected out of a long list of sectoral policies; these eight focus areas offer the best chance for better and more inclusive jobs.

Reform Area 1: Creating More Good Jobs in the Modern Sector

Jobs-friendly segments of the modern sector can be a significant source of new good jobs. The best jobs, defined by higher labor productivity and wages and social benefits, are largely in the modern sector. They are also inclusive of women and youth. These are the fastest growing jobs in Vietnam today and, if Vietnam prepares for the opportunities brought through the mega-trends, they have potential to grow, in quantity and quality, even more. Thus, the policy challenge is to foster the creation and growth of enterprises that are conducive to job creation, create high value jobs, and position Vietnam for even more as the mega-trends are realized. Three policy areas are proposed:

(i) lower the barriers to growth of domestic small and medium enterprises.
(ii) encourage enterprises to move into knowledge-intensive segments of regional and global value chains.
(iii) facilitate the development of Vietnam's agro-food system.

Reform Area 2: Enhancing the Quality of Jobs in the Traditional Sectors

Jobs in family farming (and related primary production) and household enterprises can be improved by integrating them into the broader economy. These jobs will be a significant part of the economy for many years so they cannot be ignored. They are overwhelmingly the source of employment for ethnic minorities, older workers, and the less educated, thereby being intricately linked to poverty reduction. Two policy areas are proposed:

(i) Encourage the agricultural sector to diversify into high value-added crops and local value chains.
(ii) Facilitate business links between household enterprises and SMEs.

Reform Area 3: Connecting Qualified Workers to the Right Jobs

Workers need different skills and a range of other supports to effectively engage in today's jobs and to be ready for the demands of tomorrow's jobs.

While Vietnam's youth are globally recognized for secondary school test scores that rival those of European students, most of Vietnam's labor force has, at best, incomplete secondary school and limited skills. The skills shortages observed today will be exacerbated as mega-trends begin to affect the jobs pictures. Even workers with the right skills do not have sufficient information about job openings, employers do not have good information about worker quality, social norms limit job options, and income constraints prevent skill upgrading or moving to more appropriate jobs. Three policy areas are proposed:

(i) build skills for XXIst century jobs through radical reforms to the education and training system,
(ii) generate and provide information to fit the right workers into the right jobs,
(iii) provide auxiliary services to facilitate labor participation and labor mobility.

A Coordinated Strategy for Better Jobs

A jobs strategy would visualize jobs goals and coordinate multi-sectoral action to reach those job goals. The current jobs strategy - that better jobs will emerge from solid economic and sectoral development strategies – has had success. This report argues that greater gains are possible through a deliberate jobs strategy that focuses on our eight policy reform areas. This will require defining targets for future jobs and monitoring progress toward them; engaging, and holding accountable, a range of government and private sector actors; and leadership by a coordinating body to champion the jobs issue and guide the many actors toward a shared future jobs vision.

The future for Vietnam's jobs is bright if Vietnam begins to prepare today for this future. The country can continue on its current path, which will yield job increases, but these will diminish as global trends erode some of Vietnam's comparative advantage as certain groups are left further behind. The government could reform on the margin in an effort to keep up with changing global trends, but this will become difficult as the global economy becomes increasingly crowded by new entrants. Or Vietnam could make some big investments now – in its domestic firms and farms, its labor force, regional and global trade networks, and even in integrating its own economy. These investments would enable Vietnam to leap forward to higher economic status and would yield better and more inclusive jobs for all its citizens.

Table ES.1: Detailed Policy Recommendations

	Policy Reform areas	Selected Policy Actions		
		Short-term (within the current five-year plan)	**Medium-term (in future five-year plans)**	**Long-term goal (by 2035)**
Creating More Good Jobs in the Modern Sector	Lower the barriers to growth of domestic small and medium enterprises.	Put together a task force to develop an action plan to level the playing field for private domestic firms vis-à-vis SOEs and foreign firms. The plan should be designed to build the political will to implement the necessary reforms to make this happen. Give relevant information on quality standards to local suppliers with the potential to provide services or goods to MNCs. Also, expand the accreditation system on quality standards into key sectors with the potential to expand exports	Investments in logistics, finance, marketing, and other professional services to support manufacturing expansion. Establish structures to enable effective dialogue between large public sector firms and SMEs within specific sectors to link SMEs with larger firms, especially MNCs or exporters.	Job growth in domestic SMEs exceeds 5 percent per decade, underpinned by strong links between a dynamic private sector and MNCs.
	Encouraging enterprises to move into knowledge-intensive segments in regional and global value chains	Streamline the regulatory environment for logistics and upgrade domestic infrastructure to foster the creation of logistics services companies. Support linkages between exporting firms and firms producing domestic inputs.	Broaden the Law on High Technologies to encompass a broader range of knowledge-intensive, exportable services. Lift all remaining formal restrictions on service trades such as foreign equity limitations and caps.	More and higher value-added jobs in the exports sector through doubling services as a share of total exports and shifting toward commercial services export industries.
	Facilitating the development of the agro-food system	Upgrade food market infrastructure (such as wholesale and urban wet markets) through public or PPP investments. Strengthen public food safety measures and support the adoption by private companies of HAACP, traceability, and other food system management processes.	Provide incentives for the food industry to encourage them to invest in provincial cities that are closer to the agricultural production base and areas with underemployment. Support labeling, certifying, and other control systems that will make it possible to rebrand Vietnamese agriculture as a sustainable source of global and regional supply.	Better paid and safer jobs in agro-food processing.
Improving the Quality of Existing Jobs in the Traditional Sectors	Encouraging the agricultural sector to diversify into high value-added crops	Adopt policies and programs to accelerate shifts in agricultural land use, especially from mono-crop rice to mixed farming or high-value crop production. Strengthen existing cooperatives to realize economies of scale among small and medium-sized farms.	Support the development of a broad range of private technical, advisory, financial, and other demand-led services for Vietnamese agriculture, including agro-entrepreneurship. Support the professionalization of farmer cooperatives and their provision of a broader range of commercial services.	More well-paid and safer jobs in in primary agriculture and less seasonal variability in these job opportunities. More entrepreneurial youths staying in agriculture.

Table ES.1: Detailed Policy Recommendations (cont)

	Policy Reform areas	Selected Policy Actions		
		Short-term (within the current five-year plan)	**Medium-term (in future five-year plans)**	**Long-term goal (by 2035)**
Improving the Quality of Existing Jobs in the Traditional Sectors (cont)	Facilitating business links between household enterprises and SMEs	Provide SMEs with information on industry standards, quality standards, and the importance of timely delivery as well as credit options. Introduce market-based and community-based information campaigns and registration platforms. Encourage development and adoption of technology to link household enterprises with the larger economy.	Open one-stop (virtual) shops where household enterprises can go for registration, information, and technical assistance. Provide extension services to the most promising household enterprises.	More well-paid and safer jobs in in primary agriculture and less seasonal variability in these job opportunities. More entrepreneurial youths staying in agriculture.
Connecting Qualified Workers to the Right Jobs	Building worker skills for today's and tomorrow's jobs through radical reforms to the education and training systems.	Develop a plan with financial incentives to encourage the private sector to provide, guide, and advocate for a more appropriate skills development sector. Integrate a broader range of skills into the primary, secondary, and tertiary curricula.	Define a new role for MOET and MOLISA in overseeing M&E and providing financial incentives to the private sector to encourage the delivery of demand-driven education and training services. Develop a system of continuous learning through demand-driven short courses and skills upgrading for adults.	A demand-driven, flexible, market-based skills development system
	Providing the information needed to place the right workers into the right jobs	Design, produce, and disseminate labor market information tailored to different users. Assess the current job search system, including the effectiveness of the Employment Support Centers.	Design and implement a Labor Market Information System (LMIS) for systematic data analysis and managing dissemination platforms. Design a job search assistance strategy that includes private sector services supplemented by public Employment Support Centers with an expanded remit to serve the needs of vulnerable populations.	Comprehensive and widely accessible LMIS. A private sector-driven job search system that is widely accessible, with public sector support targeted to excluded groups.
	Providing auxiliary services to facilitate labor force participation and mobility	Develop a plan for a long-term care system for the aging population. Design and implement a voluntary component of the unemployment insurance program for workers without contracts.	Allocate financing to incentivize the creation of markets for long-term care. Finance individual learning and job transfer accounts to facilitate labor mobility over a worker's career.	Fewer barriers to effective preparation for and integration into the labor market.

INTRODUCTION

Good and inclusive jobs have been, and will continue to be, a crucial component of Vietnam's economic and social success. Vietnam's strategy of a market-based economy with a socialist orientation has served it well over the past three decades.[1] The rapid embrace of markets and integration into the global economy resulted in annual GDP per capita growth rates of 5.5 percent between 1990 and 2015, globally second only to China's growth rates in the same period.[2] On the social side, extreme poverty was nearly eliminated and poverty rates plunged from 60 percent to 13 over a generation while a middle class began to emerge.[3]

This economic and social transformation was accompanied by an evolution of Vietnam's jobs structure. While jobs – defined as an activity that results in income or in-kind benefits and does not violate human rights – were characterized almost entirely by family farming, collectives, and state-owned enterprises (SOEs) in 1986, under Doi Moi employment shifted towards manufacturing and services in household enterprises outside agriculture, and private domestic and foreign-owned firms. In 1989, 71 percent of employed Vietnamese worked primarily in agriculture, fishing, or forestry, and private employment was almost non-existent. Today agriculture, fishing, and forestry accounts for 46 percent of jobs, and 1 in 10 Vietnamese workers—about 5 million—hold a formal sector wage job with a privately-owned Vietnamese firm.

But job quality has not evolved as quickly, even as aspirations are soaring. The shift out of agriculture has been primarily toward uncontracted wage labor or household enterprises, both characterized as low productivity, low-paid, and lacking social benefits or worker protection. While today's 50 million jobs may have lifted families out of poverty and generated high GDP growth rates, they are not of sufficient quality to compete with modern industry or to provide the means to live the middle-class lives that Vietnam's citizens aspire to. Further, good jobs are passing by some segments of Vietnam's population, threatening a further marginalization of some groups.

The current jobs strategy - that better jobs will emerge from solid economic and sectoral development strategies –will continue to slowly transform the jobs picture. Vietnam's high GDP growth rates, high levels of labor productivity, and fully employed labor force suggests that the Doi Moi strategy still has much to offer Vietnam and its people. The current economic activity characterized by low value-added export-oriented assembly jobs in enclaves with little connection to the broader economy is likely to continue to grow. If we assume that the transformation from family farms and enterprises to jobs that are covered by social benefits continues at the same rate over the next 20 years as during the period 2008 to 2015, then about two out of every five jobs (43 percent) will be wage jobs in the modern sector by 2040.

But emerging opportunities in regional and global markets can offer greater rewards. The world is on the cusp of new opportunities that could further shift Vietnam's jobs picture. The

1 Doi Moi launched Vietnam's move toward a market-economy structure through the removal of a multitude of distortions imposed under central planning (multiple price controls, production quotas, collectivized agriculture, trade and investment restrictions, and a ban on formal private enterprise). Most of these restrictions were lifted in the initial phases of Doi Moi, and systems that were friendlier to the market and private sector were in place by the early 1990s.
2 World Bank and MPI 2016
3 World Bank 2016b

rise of the Asian consumer class especially in China, a shift toward knowledge economies, new trade partners and patterns, automation in the workplace, and aging all threaten Vietnam's current jobs structure. They also offer opportunities.

To capitalize on these new trends, and transform jobs to meet Vietnam's aspirations for middle-class status, Vietnam will need to develop and implement a deliberate strategy to generate better and inclusive jobs. As noted, economic growth is not enough. Instead, a proactive set of policies can foster an innovative, dynamic domestic firm sector, generate a lean and smart labor force to create and work in higher value-added functions, and incorporate largely excluded economic sectors and people into the economy. This strategy is likely to both fuel economic development and result in the creation of better and more inclusive jobs for both men and women.

This Report

***Vietnam's Future Jobs: Leveraging Mega-trends for Greater Prosperity report* lays out a policy agenda for better and more inclusive jobs in Vietnam.** The purpose of the report is to identify the challenges and new opportunities for better and inclusive jobs in Vietnam and to share policy reforms that could be a catalyst to create these jobs. The inherently cross-cutting nature of jobs requires a multi-sectoral approach to the issue, drawing from macroeconomics, agriculture and rural development, private sector development, labor and employment, trade policy, gender, education and training, and demographics, as well as the linkages among these topics. Moreover, looking at jobs policy through different lens makes it possible to identify both synergies and trade-offs in expanding job opportunities.

This report has five chapters. Chapter 1 presents a picture of Vietnam's labor market today and in the future. It begins with an overview of Vietnam's labor market evolution over the past two decades and presents a comprehensive overview of Vietnam's current jobs structure, looking at job quality and wages, distribution of employment across occupations, employers, contract status and regions. Using the *Vietnam Household and Living Standards Survey (2010-2014),* the chapter discusses labor market transitions, regional disparities in job quality and why jobs today are leaving some segments of the labor force behind. It also introduces five emerging trends that will have a substantial impact on jobs now and in the future. It concludes by envisioning a jobs future if Vietnam does, or does not, embrace these new trends.

Chapter 2 takes a closer look at jobs in the agriculture sector, Vietnam's largest job-creating sector and the one with the greatest potential for job expansion. The chapter begins with a stocktaking of the role of agriculture in income and employment generation over time and discusses the composition of agriculture and agricultural growth by region, showing that primary agriculture remains the largest employer in Vietnam. It uses a new methodology, as well as newly collected data, to estimate labor productivity in agriculture, finding that agricultural productivity is on par with, or surpasses, labor productivity in low-skilled services and manufacturing. The chapter explores agro-value chains and identifies those that are both investor- and jobs-friendly. The chapter concludes by identifying different areas of improvement to ensure competitiveness of agricultural jobs and future creation of better jobs, notably, adopting measures to accelerate the movement of labor from less productive primary agriculture to more productive cultivation, industry and services, particularly in food system value chains and the food processing industry.

Chapter 3 explores enterprise dynamics to better understand productivity and employment growth. This chapter uses data from the *Vietnam Enterprise Census* of registered enterprises from 2004-2014 to explore a number of firm characteristic and performance variables in the formal private sector and SOEs. The analysis looks at the typology and evolution of firms, employment and market concentration by firm size and ownership type, spatial concentration of firm activity as well as patterns of job creation to determine which types of firms are creating jobs.

An analysis of labor and productivity identifies employment expansion potential by firm type and emphasizes the experience of private domestic firms in increasing productivity and employment over time. Of particular interest, is the trade-off between firm productivity and firm growth (measured by workforce size). Finally, the chapter provides a set of recommendations to encourage private enterprise job creation potential.

Chapter 4 approaches the jobs question from the worker perspective, providing an in-depth analysis of the supply-side of job creation. The chapter assesses certain aspects of Vietnam's human capital stock and identifies the skills workers have today as well as those needed for future jobs. It starts by presenting an overview of the labor force, including the number of potential workers, those who are working and their overall profile. The following section explores demographic trends and implications for, particularly, women's work. This is followed by an analysis of the skills of the labor force, those that cut across the largest occupations today and those they will need in order to address the challenges of today's jobs and tomorrow's emerging jobs. The analysis concludes that the current education and skills system will generate an acute shortage among those skills needed to pull Vietnam into higher valued-added jobs. The final section lays out the importance of, and challenges in, improving the job-matching process to connect the workers to the right jobs.

Chapter 5 provides a pathway to future jobs in Vietnam. It provides an integrated picture of future jobs based on the findings of the previous chapters, and identifies a proactive jobs strategy with three pillars: i) creating more good jobs in the modern sector; ii) improving the quality of existing jobs in the traditional sectors; and iii) connecting qualified workers to the right jobs. Lastly, it provides a framework to link short, medium and long-term objectives to this specific and comprehensive set of policy actions.

The report conclude that Vietnam's jobs are at a cross-roads. Vietnam can continue its current path and reap jobs rewards from the current system, but this will diminish as global trends erode some of Vietnam's comparative advantage and certain groups remain left behind. It can reform on the margin in an effort to keep up with changing global trends, though this will be difficult as the global economy becomes increasingly crowded by new entrants. Or Vietnam can make some big investments now – in its domestic firms, its labor force, regional and global trade networks, and even in integrating its own economy – to leap forward to higher economic status and better jobs for all its citizens regardless of age, gender, or ethnicity.


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CHAPTER 1 - VIETNAM'S LABOR MARKET TODAY AND IN THE FUTURE[4]

Vietnam is a success story in its sustained high and very inclusive economic growth in the past two decades. Extreme poverty, measured at the international 2011 PPP $1.90 per day per person, is almost eliminated, and less that 10 percent of the population lives in poverty, relative to both the national poverty line and the lower middle income international poverty lines. The country's success in uplifting its population out of poverty is largely attributable its pursuit of labor intensive growth that created many jobs.[5] Even in recent years, evidence suggests that continued growth in labor incomes contributed to more than 90 percent of the reduction in poverty since 2010, with growth in wage incomes accounting for more than half of poverty reduction in the country[6]. Because of this success, a large consumer class has emerged. More than 70 percent of the population are now classified as economically secure, having enough incomes to meet their daily costs of living, have savings to absorb income shocks and still have remaining income for discretionary spending. Their aspirations have changed from toiling to put food on the table to dreaming of joining the global middle class. Fulfilling these aspirations requires not just creating jobs, but creating better quality jobs.

This chapter lays out the agenda for better jobs in Vietnam. Its starts with an overview of how the labor market has evolved to highlight where and what types jobs were created and assess the current state of jobs in terms of their quality. It then presents trends, both domestic and global, that will affect the creation of better quality jobs in future, to map out what the job market could look like in future and highlight the challenges and opportunities that policy makers in Vietnam would need to address or embrace to create better jobs in the future.

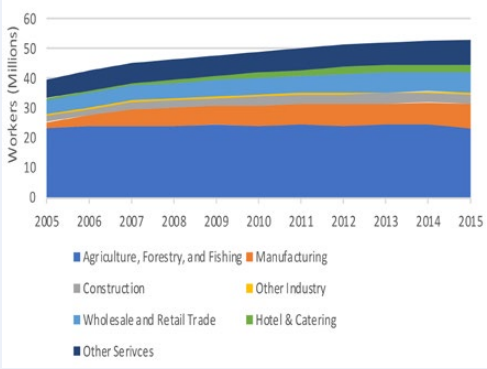
From past to present - the evolution of jobs in Vietnam

Major shifts in structure and type of jobs

Vietnam's economy grew and significantly transformed over the past two decades, leading to a substantial shift in what people do for a living. This was manifested in the changing composition of the labor market, characterized by a declining share of jobs in agriculture and an increasing number of people working for pay (wage jobs). As of 2015, 46 percent of the working age population, i.e., those between 15 and 64 years old, worked in agriculture, compared to 80 percent in 1986. In recent years, the share of workers in wage jobs rose to 41 percent in 2015 from 33 percent in 2009 when the earliest comparable data is available. Since 2009, 6.5 million more people found jobs outside agriculture (Figure 1.1) and 4.7 million more people had a wage job by 2015 (Figure 1.2). The record Vietnam had in creating jobs was remarkable and continues today.

4 This chapter was prepared by Obert Pimhidzai (Economist, Poverty and Equity GP).
5 World Bank 2016.
6 World Bank, (forthcoming). Vietnam Poverty and Shared Prosperity Update Report

FIGURE 1.1: Distribution Of 15-64 Years Old Workers by Sector, 2005-2015



Source: GSO, 2016

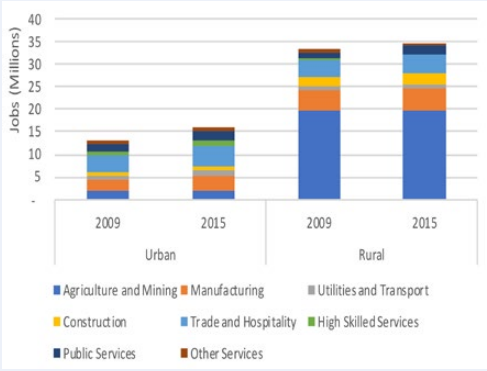
FIGURE 1.2: Growth in Number and Share of Wage Workers, 2009-2015

Source: Calculations from GSO, 2016

Manufacturing led the way. Jobs in the sector increased the most, adding 1.6 million jobs between 2009 and 2015 implying an average growth rate of 3.8 percent per year. The non-trade services sector (1.6 million jobs), wholesale and retail (1.6 million jobs) and construction (0.8 million) are the other most important contributors to job creation in Vietnam (Figure 1.3). The fastest growth rate in jobs though, was in the accommodation and food services which grew at an annual average of 7.6 percent and added close to 900 thousand jobs. The services sector in total, have created just as many jobs as the manufacturing sector, consistent with the high growth in value added in the sector between 2009 and 2015.

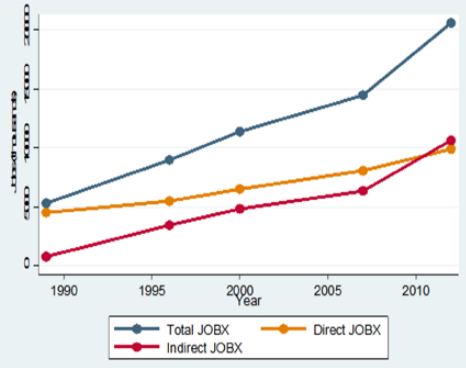
Exports are a strong source of jobs and wages in Vietnam. The country successfully integrated into the global economy, and today is one of the most open economies to trade in the world. The export sector became an important engine of economic growth, job creation and poverty alleviation.[7] It was only responsible for 4.5

FIGURE 1.3: Composition of Jobs in Rural and Urban Areas, 2009-2015



Source: Authors estimates from LFS 2009, 2015

FIGURE 1.4: Growth in Jobs Supported by the Export Sector, 1989 – 2012



Source: World Bank Staff estimates

7 For example, the boom in exports to the United States following the US–Vietnam Bilateral Trade Agreement of 2001 was particularly beneficial to wages of unskilled workers, reduced the skill premium, and was a key driver of poverty reduction in Vietnam because it was concentrated in unskilled, labor-intensive manufacturing sectors, most notably textiles (Fukase 2013, McCaig 2011).

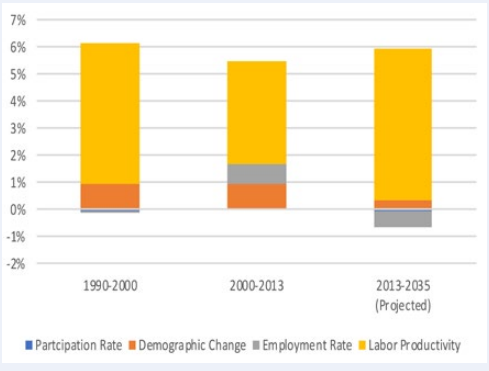
million jobs in 1989, mostly in agriculture, forestry and fisheries. By 2012, domestic and foreign owned producers for exports in Vietnam directly employed 9.9 million people, primarily in the manufacturing sector (Figure 1.4). More than 20.5 million jobs are attributable to the export sector when indirect employment in jobs that produce inputs for exported products are included. A large share of these indirect jobs is in the low-scale agriculture sector. In addition, Vietnam successfully integrated into several global value chains (GVCs), most notably automotive, apparel, information technology and communications (ICT), and agri-food. The top five global value chains account for 28 percent of export earnings and 43 percent of export jobs, primarily in manufacturing.[8] Employment growth in Vietnam is thus partly an outcome of Vietnam's pursuit of exported led growth.

The contribution of the domestic sector can however not be discounted. Vietnam has 50 million workers. Taking aside the 20 million supported by the export sector leaves 30 million workers still producing for the domestic economy. Other sectors focused on domestic demand are growing fast too as evidenced by the significant addition of jobs in wholesale and trade, non-trade services and accommodation and food services. Rural jobs in non-farm enterprises have expanded, accounting for 15 million jobs in 2015, and responsible for adding 1.5 million jobs since 2009. As recent studies on the sector show, many of these enterprises produce for the domestic economy, buying and selling from each other and to local consumers. This segment will remain an important source of jobs in future.

Increasing labor productivity, a major contributor to growth

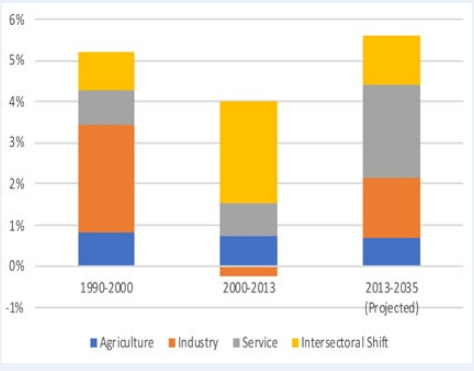
Labor productivity – defined as output per worker – increased, and is the prime driver of economic growth (Figure 1.5). It increased at an average of 4.4 percent annually between 1990-2013 and began to slow down in 2014-2015. However, there are indications that it is picking up again. The increase in average labor productivity contributed to more than 85 percent of the growth in value added in the 1990s and 69 percent between 2000 and 2013 for example. Thus, the shifts in the labor market were characterized by workers engaging in higher value-added jobs, representing an improvement in the quality of jobs. The productivity-driven economic growth is expected to continue for at least the next 20 years.

FIGURE 1.5: Decomposition of Growth in Per Capita Value Added, 1990-2013 and 2013-2035



Source: Authors estimates from LFS 2009, 2015

FIGURE 1.6: Productivity Change Decomposition. Annual Contribution to Per Capita Value Added Growth by Major Sector



Source: World Bank Staff estimates

8 Hollweg 2017.

Labor productivity growth is now being driven by inter-sectoral shifts in labor as opposed to the 1990s when intra-sectoral improvements contributed the most. The labor productivity growth during 1990-2000 emerged from within industry improvements as production processes began to modernize, market competition forced out less-productive firms, and new technologies were adopted (Figure 1.6). The post 2000 period was then characterized by workers moving between sectors, namely shifting from agriculture into the fast-growing service and manufacturing sectors. This is apparent from the rapid expansion in employment in industry and services that continued post the global financial crisis. The evolution of the labor market in recent years can thus be summed up as a movement of people from low productivity sectors to more productive ones, but with marginal improvements in productivity within sectors. A mix of intra- and inter-sectoral productivity improvement are expected over the next 20 years.

Jobs Today: Better jobs created, but low-quality jobs still dominate

The majority of workers are still concentrated in low value-added activities. Increasing labor productivity that accompanied the structural transformation of the labor market suggest better jobs are being created, but from a worker perspective, most jobs are still low quality. Workers assess job quality through a range of variables, from employment in a registered or unregistered job, to being in a more lucrative occupation, receiving social benefits through one's job, earning higher wages, stability of these earnings and flexibility of their time use. By these measures, about 76 percent of jobs in Vietnam are mostly classified as low-quality jobs. This reflects the structure of employment and occupations in which workers are concentrated in jobs with lower than average earnings, have long or irregular hours and do not pay social benefits.

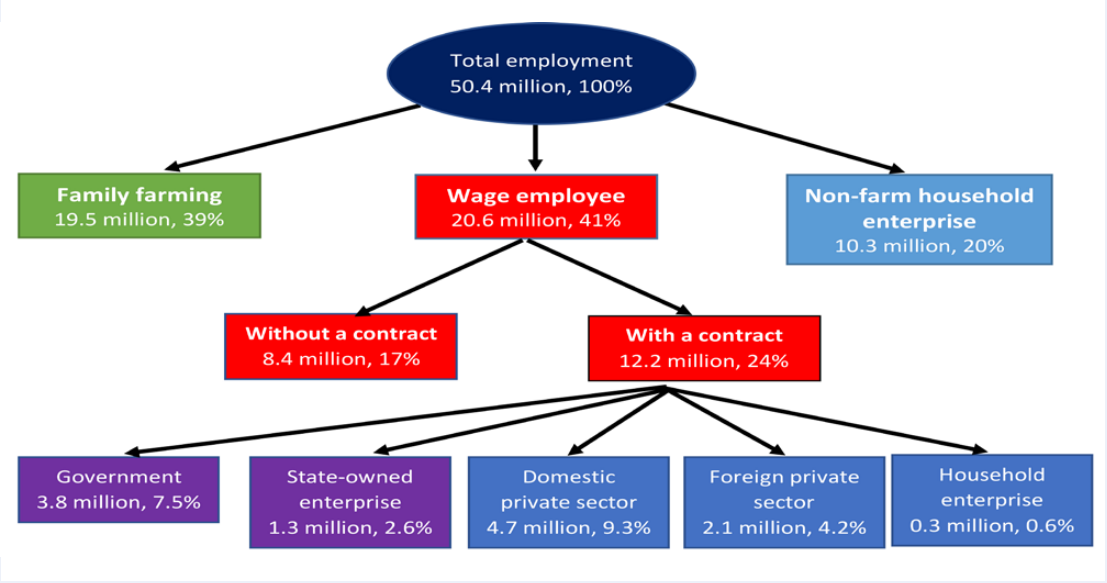
Two of three jobs are in farm or non-farm household enterprises. Of the 50 million or so workers in Vietnam, nearly 20 million people or 39 percent of all workers, declare work on farms as their principle labor market activity. Another 10 million (20 percent) identify their non-farm household enterprise as the primary labor activity (Figure 1.7).[9] Among the other 20.6 million with wage jobs, about 8.4 million of them, representing 17 percent of all workers, do not have a contract. These mostly work in the construction sector (30 percent), agriculture and manufacturing (more than 20 percent each). Less than 15 percent of all workers have a wage job with a contract in the private sector. Foreign owned enterprises (the FDI sector), where most employees have a wage job with a contract, contribute less than 5 percent of all employment. Though its share is growing very fast, it is still small having started from a low base. It is also an indication that most of the jobs in the export sector are provided by domestic owned firms where wage without a contract is predominant.

The structure of jobs implies that most of the workers are engaged in low value added, low pay activities. The least paying occupations in Vietnam are elementary occupations and sales persons which respectively earn about VND 3.2 million and VND 4 million per month. Though above the minimum wage,[10] they respectively, pay 30 percent and 25 percent less than the mean monthly wage of VND 5.7 million (Figure 1.9). Family farming, household enterprises and wage without contract have the highest concentration of such occupations (Figure 1.8). Four in five workers engaged in family farming are elementary workers, while two in three workers working in their own household enterprises are in sales occupations. The second highest concentration of elementary workers is among wage workers without a contract. Wage with contract type of jobs are dominated by the four highest paying occupation types, with the highest earning

9 Non-farm household enterprise is defined as "unincorporated businesses owned by individuals or families, which produce or distribute goods and services for the market."

10 The 2015 minimum wage was 3.1, 2.75, 2.4, and 2.15 million *dong* in regions I-IV, respectively.

FIGURE 1.7: Distribution of Jobs by Employer and Contract Status (2015)

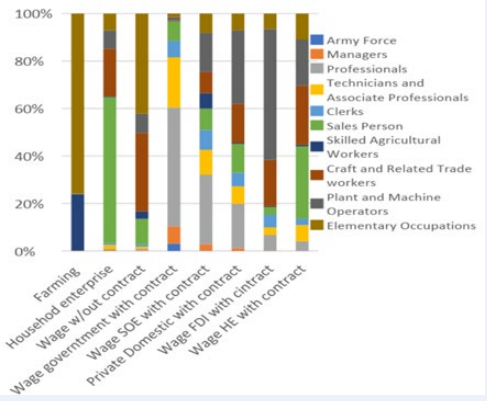


Source: Author's calculations based on VHLSS 2015. The percentages do not sum to 100% due to rounding errors.

occupations (professionals) mostly concentrated in the public sector.

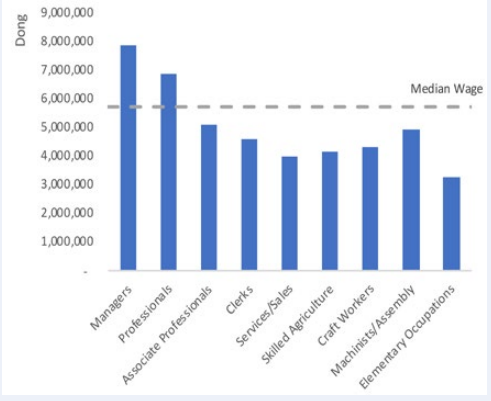
Wage jobs with a contract pay more on average. The median hourly wage for workers without a contract is about 30 percent lower than the median wage for those holding a wage job with a contract in private sector enterprises. The highest median wages are for public sector workers, either in SOEs or government departments, with a median hourly wage of 28,800 thus 75 percent higher than median wages for wage workers without contract (Table 1.1). These public-sector workers constitute just 10 percent of all workers and are mainly in professional occupations.

FIGURE 1.8: Occupational Distribution by Employment Type, 2015



Source: Authors estimates from LFS, 2015

FIGURE 1.9: Mean Monthly Wage Earnings by Occupation, ('000 dong)



Source: Adapted from GSO (2016)
Note: Solid horizontal line is the total mean wage

Jobs outside the wage sector earn less than the mean wage.[11] The household business sector earns net profits that are significantly below that of wage workers. A survey of household businesses in 2016 finds that nearly half of informal household business owners earn monthly profits below the minimum wage.[12] Average per capita earnings in agriculture is roughly the same as mean wage earnings. However, the agricultural income figure does not account for the value of inputs, likely pulling down net earnings significantly (see Chapter 2). Not all activities in this sector provide low labor productivity jobs though. Some – like cash crops production - are just as productive as in manufacturing. It is only that too much of agriculture activity is still at the low productivity end.

Most jobs in Vietnam are not accompanied by social benefits. Only 21 percent of all jobs are accompanied by social benefits and 19.6 percent provide a health insurance card. Almost none of the workers with a wage job without a contract have a health card or social insurance through their jobs (Table 1.1). In contrast, 85 percent of wage workers with a contract had both social insurance and a health insurance card acquired through their jobs. One-third of those working for a wage with a contract in non-farm household enterprises received bonuses and paid leave.[13] Those who own their own small enterprises are not required to pay social benefits, therefore family farm workers and household enterprise owners are largely not covered with social or health insurance cards through their jobs, outside that provided from universal social assistance programs. This leads to a job quality profile where nearly no one holding a job on a family farm or a household enterprise has social or health insurance through their jobs (Table 1.1).

Table 1.1: Job "Quality" by Job Sector, 2015

	Hourly Wages ('000 dong)		Average Hours Worked	% under-employed	% workers with insurance (via their jobs)		% working in jobs <5 years
	Average	Median			Social	Health	
Total	N/A	N/A	N/A	1.8	20.9	19.6	37
No Contract							
Farming	N/A	N/A	34	3.1	0.2	0.1	19
Non-farm Self-Employed	N/A	N/A	46	1.1	1.0	0.3	36
Wage no contract	18.2	16.5	46	2.0	1.1	1.0	56
Wage with contract							
Government	34.6	28.8	39	0.2	91.9	94.2	29
State-owned enterprise	35.7	28.8	44	0.1	92.9	92.8	30
Private Domestic enterprise	26.9	21.6	48	0.0	74.4	74.8	64
Private foreign enterprise	26.3	21.6	49	0.0	94.1	94.0	72
Household enterprise	21.7	19.2	50	0.2	20.1	10.1	72

Source: Author's calculations from LFS, 2015. Notes: Hourly wage is in 1000 dong. Underemployed is defined as employed less than 35 hours per week but available and willing to work more. Health insurance from Vietnam LFS 2014.

11 The data in this paragraph are derived from different sources, which do not allow us to compare point estimates. Instead, we present general trends, but even these should be cautiously interpreted.
12 Pasquier-Doumer et al. 2017.
13 This sample also reports that wages are low relative to the mean national wage; these workers earn 3-4 million dong monthly, depending on their region (Pasquier et al 2017), many workers feel that it is sufficient to meet their needs (Nguyen 2017).

Irregular hours worked and seasonality limit earnings or lead to unproductive time use among many workers. Farmers on average work 35 hours a week in their primary job compared to the 48 hours a week worked in the primary jobs outside farming and public sector employment (Table 1.1). Few workers outside agriculture express a desire to work more hours, reflecting that their primary job is too time consuming to allow them to take on other work. The exception is farm jobs, where one in three of those who identify farming as their primary job also hold another job. In the majority of cases (87 percent), their secondary jobs are also in agriculture. Other types of workers work full time or excessive hours. Household enterprise owners work more than 50 hours weekly, and usually get time off (and lose profits) only when ill.[14] The median hours worked in various wage jobs in the private sector range between 46 and 58 hours.

Wage jobs with a contract offer better job opportunities on balance, based on average earning, social benefits and hours worked. The most inferior jobs on these three measures are in household based employment, where earnings are lower and unpredictable and most workers have no social benefits. Individuals employed in farming work fewer hours per week and almost never have written contracts, health insurance, or social insurance. These so called inferior jobs employed 59 percent of workers in 2015. The best jobs, on average, are in the public sector, where median earnings are higher and most workers have social benefits (Box 1.1). Only 10 percent of employees are in this sector.

BOX 1.1: Is Vietnam's public sector crowding out private sector employees?

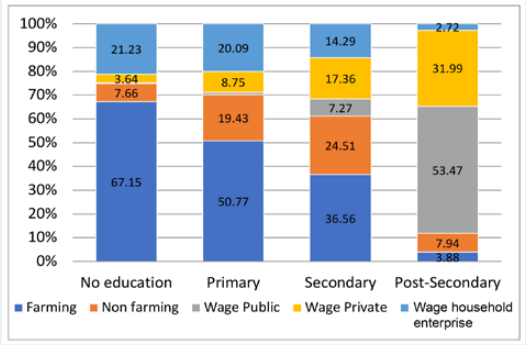
On average, the public sector offers the best jobs in Vietnam. It is the most highly paid sector of the Vietnamese labor market, with the greatest coverage of social and health insurance and low weekly work hours. This is not an unusual phenomenon; global statistics show that public sector employees earn a premium of 15 percent[15]. But is it a good investment?

Do these benefits create perverse incentives? A well paid public sector may attract the most talented workers to public service and may encourage high performance for fear of losing a lucrative job (an "efficiency wage"). Returns to education are higher than those in the private sector and increasing with time. However, if the public sector's high wages are not determined by productivity levels, they may have detrimental effects, by drawing talent away from a potentially more productive private sector. Namely, if salaries and work conditions are better in the public sector, more talented workers have an incentive to seek public sector jobs rather than directing their talents toward the for-profit sector[16].

Vietnam's talent is flocking to the public sector. In 2014, 86 percent of public sector employees had a post-secondary education --- 52 percent were university graduates, as compared to 21 percent of the domestic wage sector and 9 percent of the FDI wage sector[17]. Employers, in the meantime, are lamenting the shortage of skilled labor, particularly those in management and professional (i.e. university educated) fields.

These facts cannot determine if Vietnam's high public sector wages are distorting labor markets. But they do raise the question for further exploration. Would a lower public sector wage release talent and unleash productive potential of the private sector? Or is the current set of incentives optimal for jobs and growth in Vietnam?

FIGURE B.1: Employment Types by Education for Ages 15-64, 2015



14 Pasquier et al 2017.
15 Postel-Vinay 2015.
16 Caponi 2017.
17 Demombynes and Testaverde 2017

However, both informal wage workers and household enterprise owners find some positive benefits in their jobs, suggesting that not all employment in these sectors are of low quality, neither is it always involuntary. Chapter 2 will show that some agriculture production activities are just as rewarding as wage jobs in the manufacturing sector. In spite of not having a written contract, two-thirds of employees interviewed in HCMC felt their jobs were stable,[18] perhaps due to a sufficient number of jobs in this sector and high turnover among these kinds of jobs that nearly guarantees a similar job elsewhere.[19] Nearly 80 percent of household enterprise owners cite positive reasons for owning their own unincorporated business, i.e. better income (34 percent), independence (14.6 percent), family tradition (9.9 percent), or to balance personal and professional life (14.6 percent). In fact, more than 25 percent of women informal household business owners state the latter as a motivation, as compared to six percent of men. Only 20 percent would be willing to shift to formal employment at a slightly higher wage. Most felt that their lack of education prevents them from getting another job despite only a few of them wishing to continue their education.[20,21]

Improving the quality of jobs thus requires a two-pronged approach. One aspect is to facilitate transitions into wage jobs with a contract that on average, presents better job opportunities. Chapter 3 will dig deeper into the drivers of employment growth for such types of jobs. The second aspect, is to improve the productive potential in household based or informal employment in agriculture or household enterprises, to raise the earnings potential for people engaged in these sectors either by choice or involuntarily due to barriers to transitions to the wage jobs with a contract. A significant share of the labor force is in the latter category. Chapter 2 speaks more to this aspect, focusing mostly in agriculture jobs.

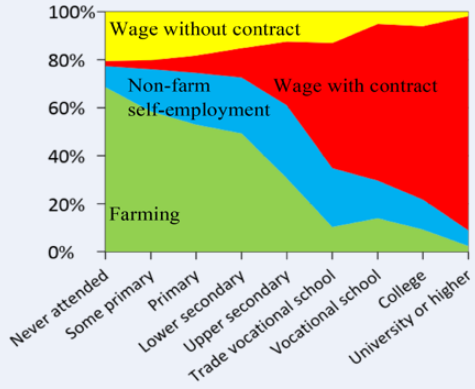
Jobs Today: Some segments of the workforce left behind

The better jobs – typically a wage job with a contract -are taken up by the more educated. That means older, rural and especially ethnic minorities, are largely left behind. Less than 25 percent of people with lower secondary education have a wage job, let alone one with a contract. On the other hand, more than 80 percent of workers with a college or university qualification have a wage job with a contract (Figure 1.10) The older generation and rural workers, who entered the labor market with low education and mostly operate in an economy dominated by household based production mostly on family farms, are therefore left behind in low quality jobs. More than half of workers who are at least 50 years old are engaged in farming and an additional 25 percent run their own household enterprises (Figure 1.11). They are deemed too old and not educated enough to begin to search for a first-time wage job now. Ethnic minorities are also left behind, with three of every four ethnic minorities (as compared to 35 percent of Kinh or Hoa workers) also engaged in farming. Those working in wage jobs without a contract, are mostly people with secondary education or less too, but these tend to be younger people. They still have an opportunity to transition into wage jobs with a contract.

While the export sector has been particularly beneficial for women's jobs, most women are still engaged in low paying occupations. Women have dominated the garment export sector for many years, and are also starting to take over the electronics and automotive export sectors.[22] Women held 61 percent of direct export jobs in the electronics sector in 2012 and 71 percent of direct export jobs in total wearing apparel jobs. However, jobs to directly produce transport equipment, including motorcycles, was

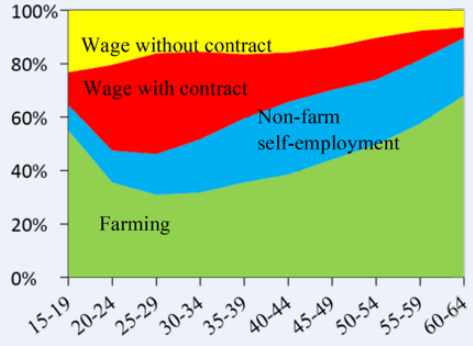
18 Pasquier et al 2017.
19 Nguyen 2017.
20 Nguyen 2017.
21 In fact, nearly 80 percent reported that their employers did not even inquire about their schooling or certificates when they were hired. (Nguyen 2017).
22 UN Women 2016.

FIGURE 1.10: Employment Profile by Education, 2014*



Source: Analysis of 2014 Labor Force Survey
Note: * The educational categories "Trade Vocational school" and "Vocational School" are not necessarily presented in a sequential order as these professional certifications can be obtained at different stage of academic education.

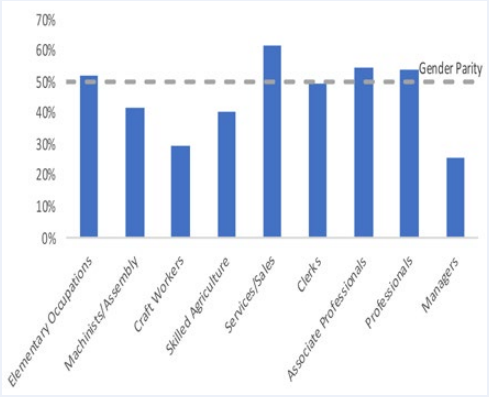
FIGURE 1.11: Employment Profile by Age, 2014



Source: Analysis of 2014 Labor Force Survey

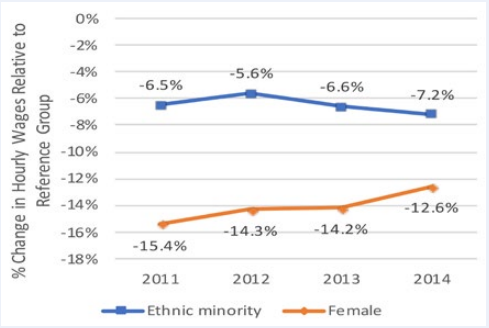
less female intensive (33 percent).[23] Because of women's high participation in the export sector, they face an even chance, or slightly better chance (1.5 percent more) of holding a wage job with a contract than men with similar qualifications[24]. However, women engage in lower level occupations even in the same industries. Only one in four managers or leaders is a woman. Instead, women are disproportionately represented in the low-paying "service sand sales" occupation group (Figure 1.12). This clustering does not seem to be driven by aspirations while young. Young girls have career aspirations that would result in *higher* wages than those of young boys.[25]

FIGURE 1.12: Share of Women in Each Sector



Source: Adapted from GSO (2016).
Note: solid vertical line is gender parity.

FIGURE 1.13: Gender and ethnicity wage gap, relative to men and Hoa/Kinh ethnicities, 2011-2014



Note: The reported coefficients are the marginal effectes of probit regressions that estimates the probability of holding a wage job (conditional on being employed) and controls for a cubic in age, urban/rural, region, education level, gender, and ethnic minority status.

23 Hollweg 2017.
24 Demombynes and Testaverde 2017.
25 Perova et al 2017.

Pay remains unequal, but the gaps have closed

On average, men earn about 10 percent more than women. Once adjusting for women's higher education levels, the gap expands to 12.6 percent (Figure 1.13). Notably, the gender wage gap has fallen rapidly in a short period. The gender wage gap is partly explained by "occupational segregation", namely that women and men are clustered into different occupations. However, even within broadly-defined occupations, except for "clerks", women earn less than men.

The gender wage gap is largely explained by women's preference for non-wage job qualities. Women seem to select those occupations that allow for a better work-life balance. Namely those that provide job security, flexible work hours, and vacation time. This association holds even when controlling for occupational selection that may be driven by gender identity; namely "female" jobs.[26] As discussed in Chapter 4, women's "full time" job in the household underlies the need to select into these more flexible jobs. Traditional discrimination may also play a role, though. A review of advertisements for top managers and supervisors found that 65 percent specified a (male) gender requirement for the job.[27]

Ethnic minorities fare a bit better, with wage gaps of 7.2 percent, once controlling for their lower educational attainment. This gap has increased over time. The reason underlying the wage gap and its increase has not been well studied, but movements in the labor market suggest some possible causes. First, ethnic minorities crowd into low-paying elementary occupations – more than 65 percent of rural ethnic minorities worked in agricultural activities in 2014, while 50 percent of Kinh and 25 percent of Hoa held agricultural jobs; wage growth is in other occupations. Second, a combination of factors faced by ethnic minorities has limited the number who have made the transition out of primary agriculture and into higher earning jobs, namely geographic isolation, lack of diversity in off-farm activities, and a low skill level.[28]

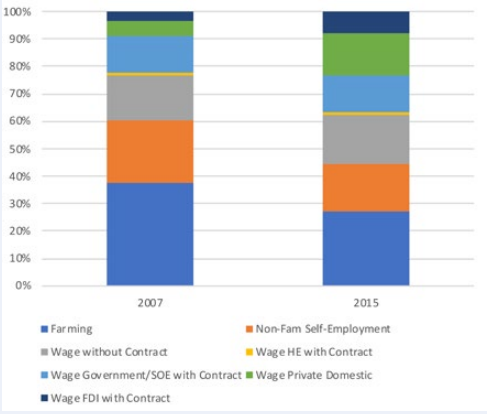
A better labor market for the young, not a good one for the old

Overall, the quality of jobs keeps getting better for younger workers who now enter the labor market with more education unlike the older workers. Compared to 2007, when 39 percent of workers aged between 25-34 years old worked in family farming, only 27 percent of workers in this age bracket in 2015 worked on family farms. Instead, 55 percent of them held a wage job in 2015, compared to the 40 percent in 2007. More than double the share worked in the FDI sector in 2015 than in 2007 (Figure 1.14). Younger workers are also getting into higher paying occupations. In 2015, about 30 percent of those aged between 25-34 were in an elementary occupation – the least paying of the lot, compared to 55 percent in 2007. There has been an increase in the share in professional occupations or as plant and machine operators or assembly (Figure 1.15).

Labor market transitions suggests the labor market is more dynamic for youth. Evidence from the VHLSS panel data for 2012 and 2014 suggests that about 50 percent of those in school in 2012 had a wage job in 2014 and only 18 percent went into farming. Youth hold out for a wage jobs, as 23 percent of those who left school after 2012 were not working in 2014. However, 75 percent of youths out of a job, either went back to school or mostly found a wage job within a two-year period. Thus, youth unemployment is largely transitory. Youths are clearly much more likely to enter better quality jobs than their share of the labor force would suggest. While adults have relatively low mobility across job types, youth are disproportionality drawn to "better" jobs in private domestic firms and foreign-invested firms (Table 1.2).

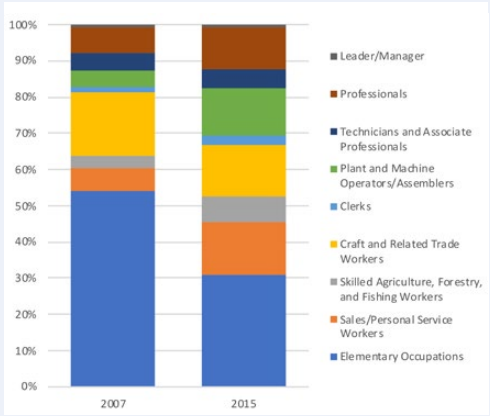
26 Perova et al 2017.
27 ILO 2016.
28 Due to history and practice, several factors limit the agricultural productivity of ethnic minorities more than that of Kinh or Hoa. For example, relative to Kinh and Hoa, cropland owned by ethnic minorities is largely unirrigated and low quality. The communal land-holding, that had been law, also aligns with some ethnic groups' sense of collective ownership who are unwilling to sell the collective land (Chapter 3).

FIGURE 1.14: Employment Profile of 25-34 Years Old Workers by Year



Source: Authors' calculations from LFS 2007, 2015. Notes: Focuses on the 25-34 age groups instead of 15-24 since most of them are in school at this age.

FIGURE 1.15: Occupation Profile of 25-34 Years Old Workers by Year



Source: Authors' calculations from LFS 2007, 2015. Notes: Focuses on the 25-34 age groups instead of 15-24 since most of them are in school at this age.

Table 1.2: Worker Transition between Employer Types, 2012-2014

		2014													
		15 – 24							35-44						
		Not working – not in school	Not working – in school	Farming	Self-employed	Private domestic	SOE	Foreign-invested	Not working – not in school	Not working – in school	Farming	Self-employed	Private domestic	SOE	Foreign-invested
2012	Not working - not in school	3.6	0.5	0.7	2.1	2.5	2.3	1.4	16.0		0.3	0.1	0.5	0.0	0.6
	Not working - in school	1.0	1.2	0.5	0.7	0.8	1.4	1.2							
	Family Farming	0.6	0.2	3.0	0.8	1.0	0.5	0.8	0.3		1.7	0.4	0.5	0.1	0.1
	Self-employed	1.0	0.1	0.8	8.6	4.2	0.5	0.6	0.5		0.5	3.4	0.5	0.0	0.4
	Private domestic	0.8	0.1	0.9	2.4	6.7	0.5	3.4	0.7		0.4	0.4	4.0	0.2	2.3
	SOE	1.5	0.1	0.4	0.6	1.1	55.9	0.0	0.0		0.1	0.0	0.7	7.9	0.6
	Foreign-owned firm	0.7	0.0	0.0	0.0	2.6	0.0	35.6	0.0		0.0	0.1	1.5	0.0	30.1

Source: Pimhidzai and Cunningham. Notes: The table shows conditional transition matrices. A value greater that one shows larger than expected transitions between sectors and is shaded in grey, a value less than one indicates less than expected transition. Yellow denotes the diagonal, signifying no change in work type across periods.

The entrance of youth into better quality job has been the main driver of the structural shift in the labor market in Vietnam. School leavers accounted for less than 17 percent of the working age population in 2014, but more than 21 percent new wage workers with a contract, or 22 percent of employees moving into the FDI sector during 2012-2014 for example. In a manifestation of the fast pace of change in the labor market in Vietnam, youth now enter a different labor market and are more likely to take up the better jobs being created than their predecessors a decade ago.

Regional disparities in job quality cut largely across rural-urban divides

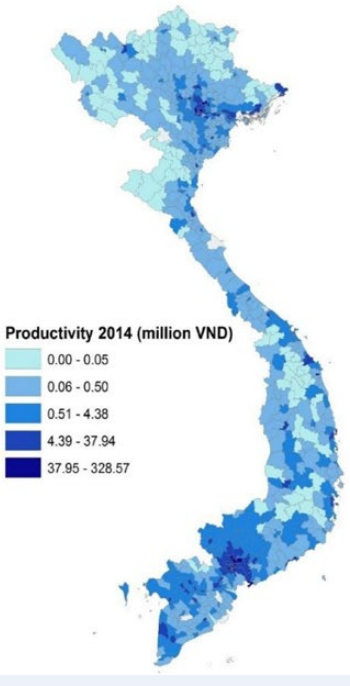
Higher earning and more productive jobs are concentrated around cities and coastal areas, thus rural, remote areas are largely left behind. Most formal private firms are concentrated in and around cities, that are better connected. There is a substantial overlap of regions with better (or worse) quality jobs, as measured by productivity (Map 1) and worker wages (Map 2). These good jobs are highest in densely populated and highly connected cities (Map 3). In contrast, workers in rural, remote areas in the Midlands and Northern Mountain areas are disadvantaged by geography. Being far, and less connected to either HCMC and Hanoi, they have limited access to centers of agglomeration where better jobs are being created in Vietnam.

Jobs in the Future

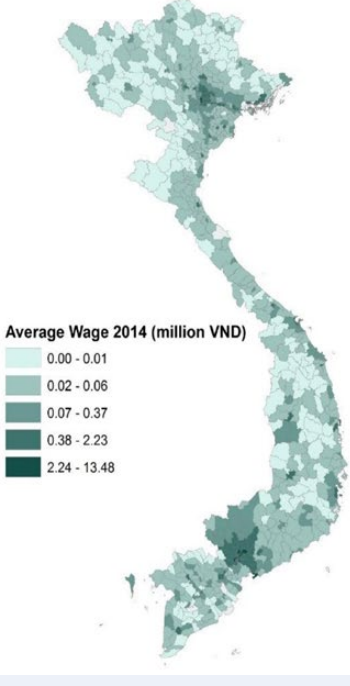
A shift to higher-value jobs is taking place

Just as the labor market for the young looks different from that of the old, so will the labor market of the future look different than today's as more human, higher value jobs are added to the labor market. The most recent trends show that growth in higher value occupations is taking off. The number of business and administration professionals grew by 12 percent per year

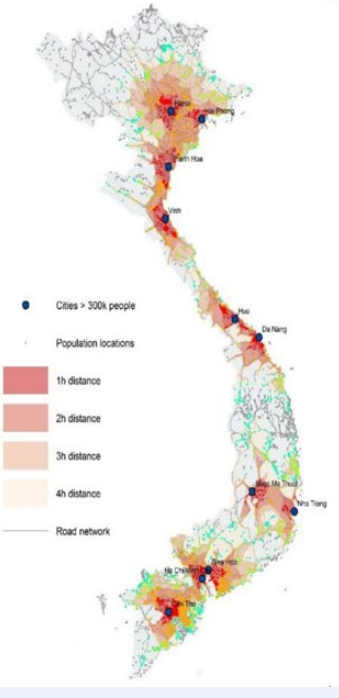
Map 1: Labor productivity



Map 2: Average wage per worker



Map 3: Access to markets



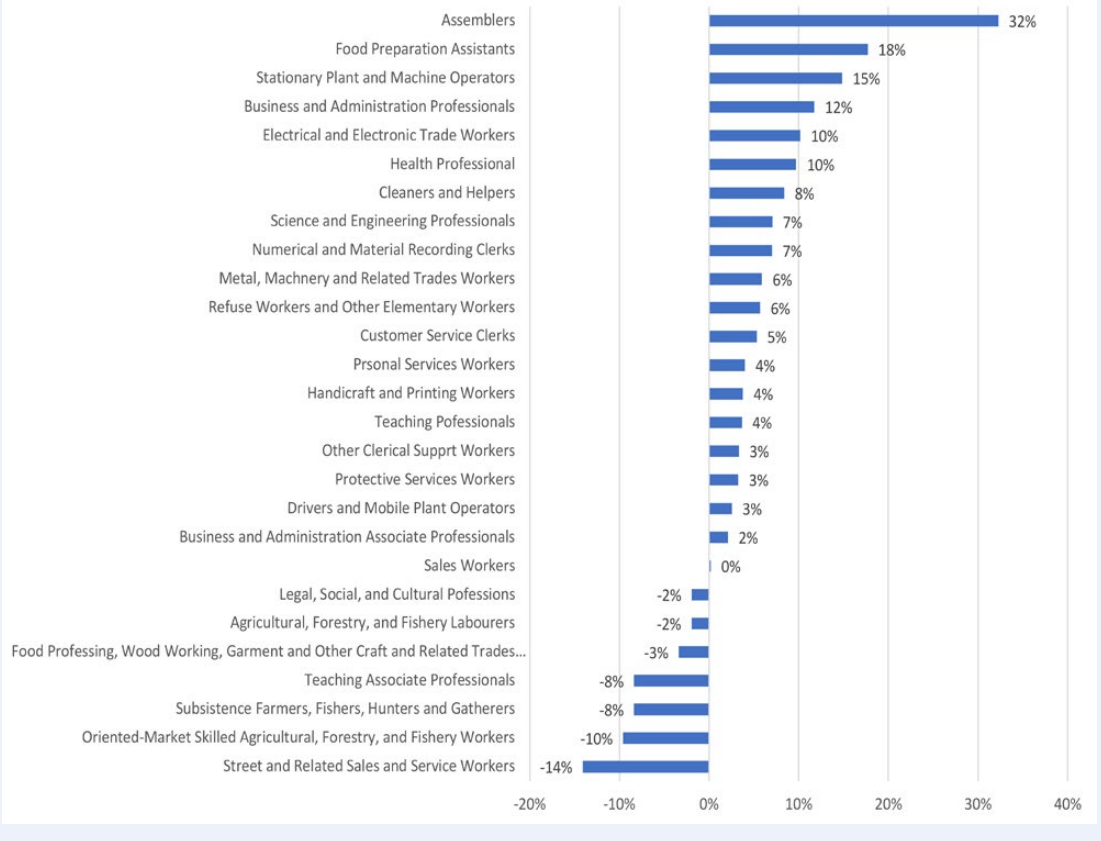
Source: World Bank staff mapping using GIS data from various sources (district-level population and economic census from General Statistics Office, and PCI from Vietnam Chamber of Commerce and Industry)

Disclaimer: The map shown is for illustration purpose. The boundaries, color, denominations, and other information shown on any map in this work do not imply any judgment on the part of the World Bank Group concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

during 2013-15. That of science and engineering professionals grew by 7 percent. Semi-skilled technical trades grew significantly, the fastest being electrical and electronic trade workers (by 10 percent per year) followed by metal and machinery related trade workers (6 percent per year). However, blue-collar work in manufacturing is expanding too. Assembly workers grew the fastest of all occupations, by about 35 percent per year since 2013, while stationery plant and machine operators grew by 15 percent per year. Other elementary occupation outside agriculture, manufacturing and industry also expanded by 6 percent per year (Figure 1.16). Being mainly wage with contract jobs, even the growth of blue collar occupations such as assembly line workers and plant and machine operators represents a shift towards better jobs than most jobs existing today.

Importantly, some of the most low-paying and low-value added occupations are rapidly contracting. Between 2013 and 2015, the number of street and related sales and service workers declined by 14 percent and subsistence farmers by 8 percent. In fact, most of the agriculture occupations declined, marking a turning point in which the number of people employed in agriculture declined. More so, the number of sales workers – mostly employed in household enterprises – barely grew. Thus, the emerging trend is one in which the poorer quality jobs are beginning to decline and being replaced by the more formal types of jobs . Even within agriculture, there is some shift towards more high value crops and more non-crop based agriculture activities.

FIGURE 1.16: Growth in Employment by Occupation, 2013-2015



Source: Authors calculations from LFS, 2013, 2015; Notes: Showing two-digit occupation classification level for occupations with an absolute change of more than 25 000 workers

The composition of jobs is thus slowly shifting toward those characterized as "better". Private sector employment grew while farm and off-farm household enterprise jobs contracted in the period 2007-2015. This reflects the continued structural transformation, urbanization, automation, demographic change and overall dynamism of Vietnam's economy. Whether this trend continues, stalls or accelerates depends on how Vietnam will ride the emerging domestic and global mega-trends that will affect the future of jobs.

Megatrends will reshape Vietnam's economy and Future Jobs

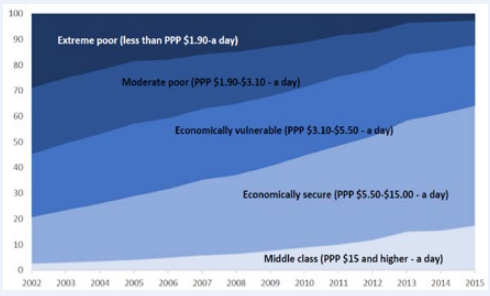
Five trends are particularly likely to affect the ability of the current economic model to create better and more inclusive jobs. These are the rise of an Asian consumer class – including in Vietnam itself, shifting trade patterns and new partnerships, demographic shifts, the rise of knowledge economies and automation. While many of these trends intersect with each other, all provide potential opportunities to improve Vietnam's jobs picture. This section sketches out the nature of the jobs trends, how it is currently affecting Vietnam, and how it might affect future Jobs. A brief mention is made about the role of climate change on the changing nature of jobs (Box 1.5). The evidence on the link between climate change and jobs is scarce, but as climate change evolves, it may become a significant force shaping the jobs picture.

Rise of the Asian Consumer Class

The Asian consumer class is rapidly expanding. While Asia is home to some of the richest countries in the world, it is also home to a growing number of middle-income countries. In 2002, approximately 20 percent of households in developing Asia countries could be classified as having high enough income to cover the cost of day-to-day living, savings to protect against income shocks, and have some left over for additional consumption.[29] By 2015, this had risen to more than half of households in developing East Asia, equivalent to a consumer class of more than a billion households (Figure 1.17). Projections predict that more than 80 percent of developing Asia households will have incomes for consumption by 2030 (Figure 1.18).

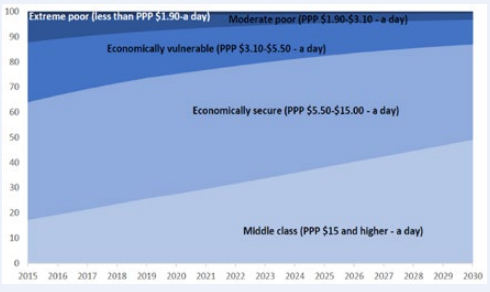
Within Vietnam, about 70 percent of households have disposable income. While most of these households can be categorized as "economically secure", namely that they spend US $5.50 – US $15.00 per capita daily, they are already a dominant potential source of consumers. This is reflected in the changing consumption patterns in Vietnam. For example,

FIGURE 1.17: Share of Developing Asia Households in Each Consumption per Capita Category, 2002-2015



Source: World Bank (2017)

FIGURE 1.18: Share of Developing Asia Households in Each Consumption per Capita Category, projections 2015-2030



Source: World Bank (2017)

29 World Bank 2017.

in the agro-food industry, rice consumption is expected to slightly decline in favor of higher value (and healthier) fruits, vegetables, livestock, and seafood products (figure 1.19).[30]

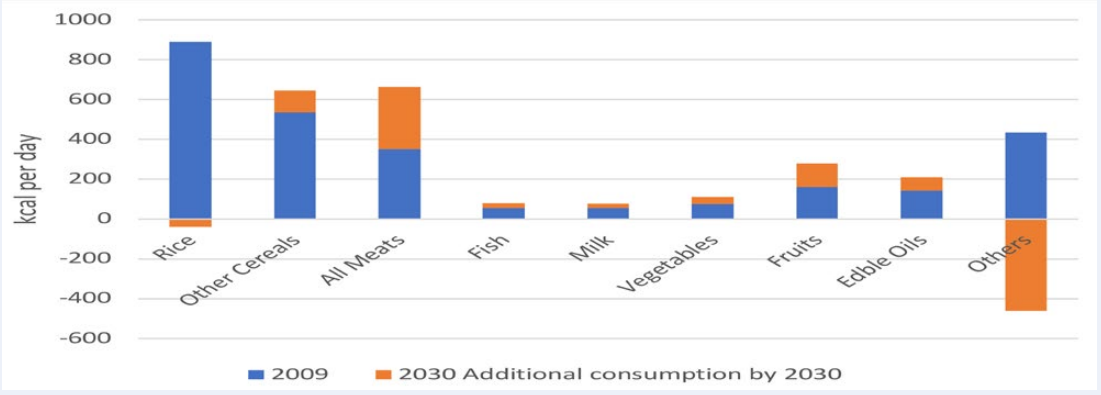
Rising income is coupled with increasing urbanization across the East Asia region, which is more reliant on traded consumption than on self-produced consumption. Not only do urban residents need to buy food that they may have previously produced, they tend to have higher incomes and thus purchase more expensive food baskets. Thus, the composition of the Asian food basket, while still dominated by rice, is expected to shift toward other products by 2030. Urban households also spend a higher share of their income on services (rather than food or other basic necessities) than do non-urban consumers, investing in communications, transport, restaurants, banking, and a range of other spending categories. While urbanization may re-shape Vietnamese consumer preferences, perhaps the biggest opportunity for Vietnam is China's rapid urbanization: the growth of China's 700 largest cities is expected to account for 30 percent of global urban consumption growth over the next 15 years. The increased spending is expected to be particularly heavy in general services, aged-care services, and education.[31]

These shifts may have two implications for jobs in Vietnam. First, jobs will diversify within sector. For example, as the demand for rice declines in favor of vegetables, jobs will shift out of lower-value rice and into higher value vegetables. Second, the demand for manufactured goods and services will increase. Rather than self-production, Vietnamese consumers will have means to purchase more processed goods and services on the market, thereby encouraging people to move into these sectors. If Vietnam successfully markets its goods to neighboring countries, the demand from foreign consumers could lead to an even bigger boom in manufacturing and service export jobs.

Shifting trade patterns and new partnerships

Foreign direct investment (FDI) flows have driven job creation across the globe. FDI inflows are an estimated USD 1.7 trillion in 2016, an increase of 30 percent just since 2000. More than USD 100 billion flowed into developing East Asia in 2015, one-third of that to Vietnam. Across the region, FDI has transformed the economic

FIGURE 1.19: Daily Consumption of Selected Food Groups in East and Southeast Asia, 2009 (actual) and 2030 (projected)



Source: Jamora and Labaste 2015. Note: Unit is kcal per day. *Others is residual that includes principally sugar, other sweeteners, legumes, pulses, nuts, other oils, and animal fats.

30 Jamora and Labaste 2015.
31 McKinsey 2017.

landscape and been the source of millions of jobs. Vietnam has successfully integrated into the global economy, and today is one of the most open economies to trade in the world. This sector is an important engine of economic growth, job creation and poverty alleviation.[32]

A number of factors are beginning to change the patterns of globalization, with potential implications for the number of and nature of jobs in Vietnam. The accelerating pace of technological change - smart automation, advanced robotics, and 3D printing - are affecting production processes of manufactured goods and affecting the location of manufacturing production decision. Re-shoring is starting to emerge, where previously out-sourced low-skilled jobs are returning to the home country of the lead firm, where high-skilled automated processes are being employed.

Related, knowledge-intensive flows of trade are growing faster than traditional goods- and services-trade, pointing to different types of exports than have driven the past three decades of growth in Vietnam. Goods exports are becoming more sophisticated and increasingly embedded with new technologies, requiring a more knowledge-based assembly process than in the past. Additionally, cost-competitive wages have driven growth in knowledge-based industry segments in developing countries, many of which have become major destinations for offshored / outsourced IT services, business process outsourcing (BPO) services, and fintech services, among others. In fact, the top 10 countries for outsourcing are all developing countries[33] while many others are positioning themselves to become major players.

Competitors for low-skilled production jobs are also emerging on the regional and global stage. Within the region, Cambodia is already a big player and Myanmar is emerging as a destination for FDI of garment and apparel factories. African countries are increasingly entering sectors where Vietnam enjoys significant FDI. In 2016, some of the top greenfield FDI in Africa were in manufacturing textile, clothing and leather and motor vehicles and other transport equipment.[34] While high transport costs between African countries and source/destination do not make them a serious threat for Vietnam at this time, they have the potential to crowd out Vietnam in its current role as a source of low-skilled assembly jobs in the future. Outward FDI of firms from developing countries has also grown dramatically in recent years, accounting for nearly one fifth of global FDI flows in 2015.[35] African countries are also an increasing source of outward FDI from other developing countries

China will also change the global manufacturing panorama and offer new job opportunities to Vietnam. As China's labor costs rise, more labor-intensive and low value-added activities are moving to lower cost locations. However, China itself is increasingly a source of outward FDI flows, looking for new investment opportunities overseas. To date, these movements have largely stayed within the Asia Pacific region, providing a greater opportunity for Vietnam to take on activities higher up the value chain than under the current model, where lead firms are remote and little integrated with local producers.[36] Though value chains in EAP are already extremely regional, the sources of final demand are also shifting. Today, most of the final demand of GVC products produced in Asia is Western countries. However, as developing Asia moves into middle-class status, as discussed above, and as China rebalances from investment-driven to consumption-driven growth, consumer demand in Asia is expected to boom. Protectionist sentiment in Western countries may accelerate the Asia Pacific regional integration.

32 For example, the boom in exports to the United States following the US–Vietnam Bilateral Trade Agreement of 2001 was particularly beneficial to wages of unskilled workers, reduced the skill premium, and was a key driver of poverty reduction in Vietnam because it was concentrated in unskilled, labor-intensive manufacturing sectors, most notably textiles (Fukase 2013, McCaig 2011).
33 India, Indonesia, China, Bulgaria, Philippines, Jordan, Singapore, Thailand, Lithuania, and Egypt.
34 UNCTAD 2016.
35 World Bank 2017.
36 Frederick 2017.

Vietnam may have a lot to win, or lose, from these shifting patterns. Vietnam's current export-oriented jobs may be threatened if on-shoring, automation, or emerging economies substitute for Vietnamese jobs. However, if Vietnam can better integrate into Chinese-led and regional value chains, as well as provide higher-value service exports, the global trends could benefit from these shifts.

Automation and Digitization in the Workplace

Machines, robots, artificial intelligence, and information technology are rapidly entering the workplace across the world and could provide great opportunities for jobs in Vietnam. Jobs are already incorporating technologies. Cell phone apps monitor weather conditions for farmers in the Mekong delta, electronic jobs boards are accessed by youth in Ho Chi Minh City who are searching for task-based work, machines are alleviating manual work in farms and factories, and the technology value-chains themselves have been the second largest source of FDI in Vietnam (after garments). This technology has the potential to free up Vietnamese workers from lower value-added tasks, allowing them to engage in less tedious, and potentially higher value-added, work tasks and jobs.

While jobs will adapt or emerge in response to new technology, others may be lost. Some jobs will adopt these technologies and boom, others will switch out some tasks with machines while taking on new tasks, new (unskilled and skilled) jobs will emerge because of technology, and some jobs will disappear. Recent studies predict that machines will displace 47 percent of the jobs in the United States by 2035[37] and that 70 percent of Vietnam's jobs are at a high risk of automation in the next decade or two, nearly wiping out the garment sector.[38] Other studies, mostly using developed country data, recognize that machines may transform the tasks underlying jobs, leaving 95 percent of jobs intact, but with a different profile.[39]

The estimates of job losses in Vietnam range from 10-70 percent, reflecting great uncertainty in when and how automation will affect the nature of and number of jobs. The most severe case – where machines eliminate any occupation that requires manual, repetitive work – street vendors, sewing machine operators, accountants – put the estimated job losses high. The most generous cases assume that job tasks, not occupations, will be replaced and humans will undertake different tasks in the same occupations – street vendors may spend less time buying product inputs and instead order those on-line while focusing on product innovation, for example. Other estimates are in the middle. But what tasks and jobs will be automated, and over what time frame depends on several factors, many of which portend a long transition process for Vietnam (Box 1.2).[40]

In rural areas in Vietnam, agricultural mechanization is on the rise following the global trend of increasing machinery use as real wages rise with overall economic development and structural transformation. In the areas of commercial rice production in the Mekong River Delta, for example, the use of machines for land preparation and harvesting, along with the shift from labor-intensive manual seed transplanting to manual broadcasting, reduced the average labor per hectare requirement from 80 days in the mid-1990s to 20 days in 2013. Vietnam follows the trend of the countries such as China, India or Thailand where rice production becomes increasingly mechanized. In the near future, many farming jobs in Vietnam will still be difficult to mechanize though. Examples include harvesting of coffee, tea or cashew nuts and production of fruits and vegetables. Yet where technical solutions become economically feasible, the use of agricultural machines will accelerate.

37 Frey and Osborne 2013.
38 Chang and Huynh 2016.
39 Arntz, Gregory and Zierahn 2016.
40 Kahn (forthcoming), Hallward-Driemeier 2017.

In some instances, mechanization replaces hired labor but in others, it creates more and better jobs in rural areas. Mechanization of manual processes tends to increase returns to labor thereby improving the quality of jobs. Irrigation infrastructure facilitated by mechanized pumps often allows two or three more crops to be grown on the same plot of land per year, increasing labor use. Mechanized rice transplanting, increasingly being adopted in the Mekong River Delta, not only reduces per hectare seed use from 170 kg to 70 kg, it also creates jobs for preparing seedlings suitable for transplanting machines. Agricultural machinery rental and repair services provided by cooperatives and private companies deliver well-paid jobs in rural areas and attract young people who otherwise migrate to urban areas.

This all means that some jobs will benefit from automation while others may be eliminated. Jobs that will be somewhat immune from automation are those requiring non-routine and non-manual tasks. Machines can be programmed to carry out routine, manual tasks. And smart machines can adopt a broad range of routines through interaction with humans. However, many jobs are not routine or manual. These may be low-skilled jobs such as a beautician, housecleaner, or harvester of coffee and tea or may be high skilled jobs such as child care provider, manager, teacher, or communications director. Some jobs that are considered "automatable" may, instead, adopt technology and morph into higher value added jobs, such as store clerks or office secretaries.[41]

These patterns are consistent with the Vietnam data. Based on the STEP survey – a specialized skills survey collected in 2012, the jobs with a low risk of being replaced by technology are those that require human skills (such as management), cognitively challenging skills, and higher level reading comprehension and math.[42] Those jobs that require basic math and reading are more susceptible to automation.[43] That said, the predictions of job loss are likely more imminent than is realistic (Box 1.3).

BOX 1.2: Rise of the sewbots? Maybe not for a while…

Recent publications have estimated that 86 percent of Vietnam's garment jobs will be replaced by machines in the next 15 years. This is certainly a frightening prospect, given that this $29 billion (annual exports) industry is the source of 13 percent of Vietnam's exports (2015) and 1.3 million jobs. However, a closer look at the apparel industry suggests that these predicted job losses may be excessive, especially in the short run.

Several factors need to come together for machines to begin replacing humans, none of which are the case in the apparel industry:

1. The existence of machines to replace labor. While technology is being employed in some parts of the apparel global value chain, there is still not a machine that can replace the cut-make-trim (sewing machine operators) that employs 70 percent of garment workers. While the first CMT machine is expected on the market in 2019, it can only produce the most basic garment – an 8 step tee-shirt – quite distant from the 78 step dress.
2. Repetitive tasks with few changes. Fashion changes quickly. While people can easily learn to stitch a new angle, stretch a new fabric, or add a new adornment, machines will not have the flexibility for many years.
3. High labor costs relative to the cost of machinery. Although labor costs are increasing in Vietnamese garment factories, they still pale relative to machines. While the CMT machine for tee-shirts is estimated to pay for itself within two years (of displaced worker wages), the machine itself will need to be replaced frequently as fashion changes

This is not so say that technology will not move into the apparel industry, only that it will not happen soon. The jobs that cannot be automated – specialized apparel, knowledge tasks that are higher up the value chain – will still exist. And a host of new jobs will arrive – running and repairing the machines, programming machines to accommodate new style, and designing shop floors to be machine-friendly.

ILO (2016), Frederick (2017): http://softwearautomation.com/

41 World Bank 2016a.
42 Kahn (forthcoming).
43 These estimates are derived from a logistic estimation strategy, using labor and skills data from the Vietnam STEP survey. See Kahn (forthcoming) for details.

BOX 1.3: Five Factors Influencing the Pace and Extent of Automation of the Work Place

The predicted rate of job loss is built from recent trends of technological change in developed countries. However, several factors in developing countries suggest that the change will be much slower due to certain developing country characteristics.

1. Technical feasibility. Many machines that would replace job tasks or entire occupations have not been invented. For example, while "sewing machine operators" are expected to be lost to machines, the technology is only beginning to emerge.
2. Cost of transforming production processes. The structure of the factory floor and the flow of the production processes limit a rapid and massive adoption of new technologies.
3. Labor market dynamics and the cost of labor. Ample skilled and inexpensive labor lower the motivation to automate. Automation is most pressing when there are labor shortages. In developing countries, employers express a concern about an absence of skilled workers to meet new technology demands.
4. Regulatory and social acceptance. The regulations to import and maintain machines, and the willingness of workers to engage with or allow replacement by machines can delay full mechanization. Social norms may enhance the adoption of technologies such as when mechanization facilitates the work tasks or takes the drudgery out of work
5. Rate of economic transformation. Mechanization may displace workers as economies of scale lead to merging of many small businesses that use productivity enhancing technologies. Such an economic transformation is not instantaneous. For example, stall and market salespeople is one of the most "automatable" jobs, but rival services – namely on-line purchasing – will likely take time to develop in Vietnam. This will require digital literacy, on-line sites in Vietnamese, sophisticated banking and payment systems, delivery services, and a range of other complements to take over.
6. Valuing the human touch. Although many jobs can be defined as consisting of routine and manual tasks, which should be easily automatable, some industries still derive value from the human touch. Though shop sales assistants are deemed highly replaceable in Vietnam, the customer is more likely to make the purchase if ensured by a human that the dress does, indeed, look fabulous.

Source: Manyika *et al* (2017), http://www.textileworld.com/textile-world/knitting-apparel/2016/05/the-rise-of-robotic-automation-in-the-sewing-industry/, https://www.washingtonpost.com/national/rise-of-the-machines/2017/08/05/631e20ba-76df-11e7-8f39-eeb7d3a2d304_story.html?utm_term=.8b8b9d824b39

Rise of the knowledge-economies

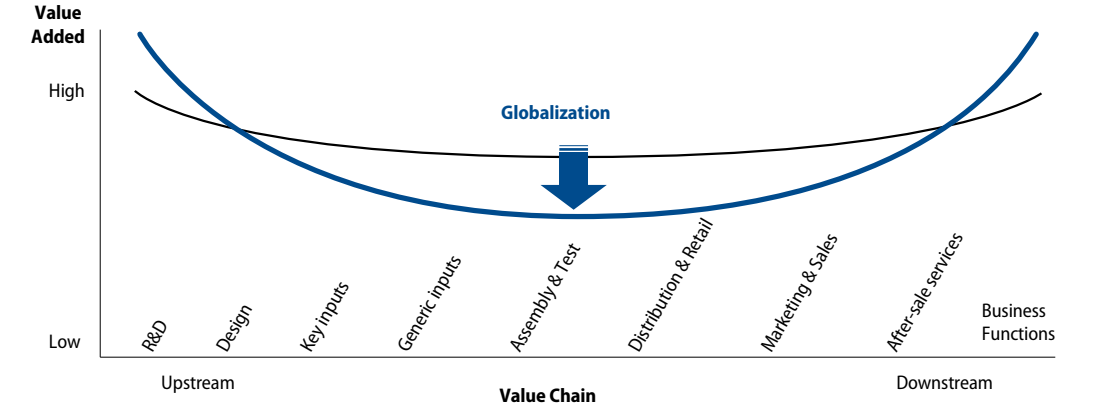
Twenty-first century workers require a more complex set of skills than in the past. While basic cognitive skills (reading and writing) and limited technical knowledge in one's field was the recipe for a productive worker in the past, today's employers are looking for a range of skills and knowledge. Many of these macro-trends reflect the rise of the knowledge economies.

Automation will require a broad range of knowledge; most of which is less about computer programming and more about digital literacy (technical knowledge) and human skills. While STEM (science, technology, engineering, and mathematics) is part of the new economy, general skills are the key to interacting with technology. For example, agricultural laborers in developed countries need to be able to do internet searches to consult manufacturer instructions for fertilizer use or a specific tool repair while accountants need to know how to use special software. But neither need to know how to program a computer. Instead, they need to have basic literacy, numeracy, and reading comprehension to use technology. Humans will also have to take on more non-routine, non-manual tasks, requiring higher-order cognitive and socio-behavioral skills. For example, employers in ASEAN identify technical knowledge (40 percent) and teamwork and communications (33 percent) as the most important skills in a digital workplace.[44]

Knowledge jobs are the better-quality jobs in the export sector. The jobs in global value chains that have been the source of economic growth and poverty reduction are mostly in low-knowledge assembly in the manufacturing sectors. However, the emerging higher value-added jobs are in services that are higher up the value chain in knowledge-intensive occupations. Indeed, design, R&D, marketing, after-sale services, logistics, and a range of other manufacturing or distribution jobs represent a larger share of overall value added compared to production (Figure 1.20).[45]

44 ILO 2016.
45 Fernandez-Stark et al 2011.

FIGURE 1.20: Schematic Presentation of Job Quality and Value Chain Stages



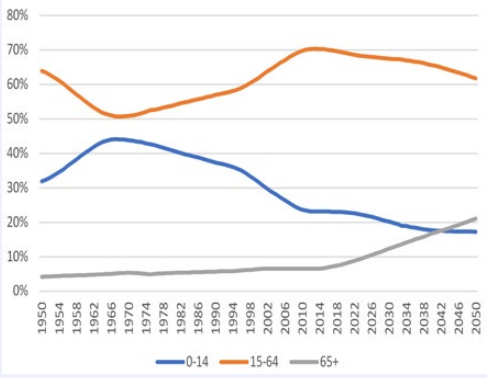
Source: Fernandez-Stark et al (2011).

The aging population, shrinking work force and shift toward higher productivity

The share of the population that is of working age has reached its peak and will begin its decline. Since 1972, the share of the population age 15-65 has been increasing, from 51 percent then, to 70 percent by 2017. Due to birth rates that have been slowing for many decades as well as an aging population, the working age share of the population is expected to begin its decline in 2018, just as the elderly share of the population takes off (Figure 1.21). While 6.7 percent of the population is age 65 or above in 2017, this is expected to reach 21 percent by 2050.

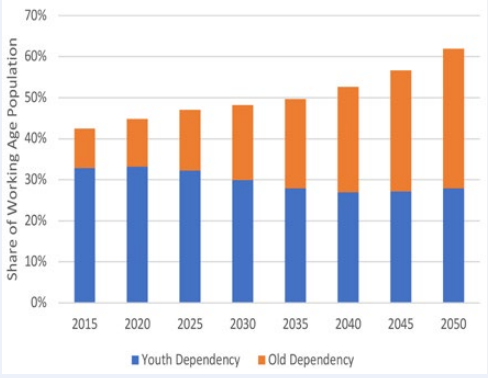
The combination of an increasing share of elderly and a declining share of working age implies an increase in the dependency ratio. In 1990, there were 0.7 people under the age of 15 or over the age of 64 for every person age 15-64. Implicitly, each worker "cared for" 0.7 people, primarily children. This ratio declined to 0.42 by 2015, meaning that the potential worker had fewer home burdens and could dedicate more time to the workplace. But with the aging population, the ratio is expected to begin increasing again in 2020, meaning that care of children and older adults will crowd out work time. By 2050, the ratio should be above 0.6. Unlike in the past, the rapid increase in

FIGURE 1.21: Share of the population by age, annual, 1950-2050



Source: UN (2015), extracted April 2017.

FIGURE 1.22: Vietnam Dependency Ratio, by youth and older adults, 2015-2050



Source: Merotti *et al.* 2017.

the future dependency ratio is due to an increase in the elderly, from a dependency ratio of 0.096 in 2015 to 0.34 by 2050; the child dependency ratio is expected to only increase slowly (Figure 1.22).

This has several implications for jobs. First, women, who already have high work rates and spend significant time on housework (Box 1.4), will be pressured to provide unpaid eldercare services for family members, thus crowding out market work time. Second, since there will be fewer people, it will be necessary for the existing workers to do more, creating a strain on an already overworked working age population. This means moving into more knowledge-intensive work and jobs that allow for high labor productivity. Third, the falling size of the workforce may encourage, and help align, Vietnam's future jobs with labor saving technology. If Vietnam's workers can harness technology to do the low-value added tasks, the smaller labor force can focus on the higher value-added tasks. Fourth, this may be the boom of a new care industry, as is occurring in China, which may offer new job opportunities to women. However, the implications of the demographic shifts are not destiny, it is possible to make adjustments now to lower the burden of aging on Vietnam's labor markets.

BOX 1.4: Measuring Total Work

A recent study by ActionAid (2017) provides micro- data to better understand the burden of non-market work that women and men carry. Time diaries were collected from more than 800 people in 9 provinces to estimate the hours dedicated to home and family care. The women in the sample worked an average of 35 hours weekly, which is nearly equal to a full-time job. Men contributed to the household as well, offering 21 hours weekly.

Women spent more than five hours daily engaged in housework, child care, collection of fuel or water, and eldercare, as compared to men who spent three hours daily on the same tasks.[46] Women without an education and those from certain ethnic groups and more rural zones calculated more than nine hours of unpaid care work daily.

The homecare burden limits women's access to jobs, particularly those jobs that require extended periods away from home. It also reflects certain labor market choices. Over 25 percent of female household enterprise owners stated that owning a business allowed her to reconcile personal and professional demands, as compared to 6 percent of men.[47] Similarly, women gravitate toward lower-paid yet more flexible wage jobs that allow family leave and provide social insurance.[48]

46 The last year that the VHLSS collected data on time use was in 2008. The data from that random sample found that women who engage in housework (79%) spend an average of 132 minutes per day – just over two hours – in this activity, as compared to men (56%) who spent about 90 minutes daily (cited in UN Women 2016).

47 Pasquier et al 2017.

48 Chowdhury et al 2018.

BOX 1.5: Climate change and jobs

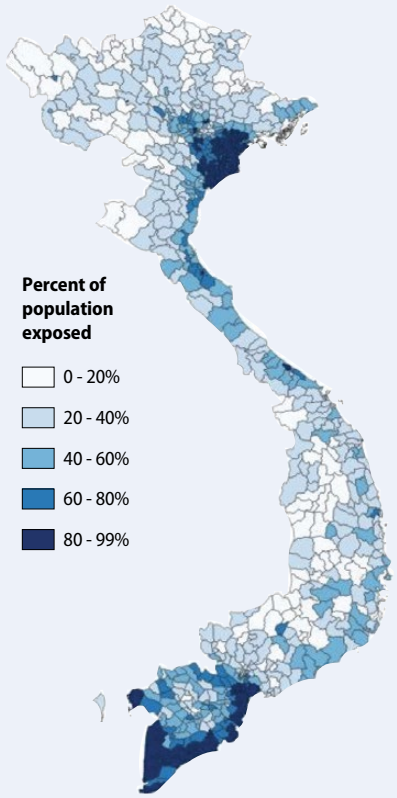
Climate change is expected to have a significant impact on jobs globally. There is little evidence about its exact impacts, but there are some scenarios that merit consideration.

Climate change is a significant risk to Vietnam. Temperature increases per decade in Vietnam since the 1960s is double that of the global average. Rising sea-levels expose a third of Vietnam's population to the risk of flooding, rising to more than 80 percent in the Mekong and Red River Deltas (see map). These shifts are accompanied by greater rainfall variability, more extreme weather, increasing water salinity, droughts, and the nature and frequency of crop and livestock (and human) disease.

These changes may lead to jobs loss, particularly in industries that rely on the environment. Changing salinity threatens 2/3 of Vietnam's fish from aquaculture. Agricultural land in the Mekong Delta is slowly eroding and, when coupled with increasing salinity, puts at risk the livelihood of 13.6 million rice farmers. The services and manufacturing jobs that form the up-stream jobs in agro-food value chains may be affected. The tourism industry may suffer as temperatures rise, coasts erode, and weather becomes more unpredictable and severe. And productive assets may be lost to floods or sold-off to manage the income losses induced by weather shocks

Jobs will be created, destroyed, or transformed. They may respond to the new conditions created through climate change, such as more air conditioner installers, deep water irrigation engineers, or infrastructure repair or they may slow down climate change, as in renewable energy. But international experts predict that the primary implications of climate change are the transformation of jobs. Primary producers may need to shift to drought (or flood) resistant crops or livestock. Tourism operators may need to diversify into regions that are less threatened by rising sea levels or high temperatures.

Climate changed-induced migration is also expected to change the jobs picture. Massive out-migration from the Mekong Delta is partly attributed to impact of climate change; a similar picture is emerging in the north. The movement of low-skilled people to cities will expand the size of the household enterprise sector as well as provide new workers in low-skilled manufacturing. More workers will be looking for jobs and income insecurity will increase.



Disclaimer:
The map shown is for illustration purpose. The boundaries, color, denominations, and other information shown on any map in this work do not imply any judgment on the part of the World Bank Group concerning the legal status of any territory or the endorsement or acceptance of such boundaries

The policy challenge is to facilitate the transitions now to limit the negative jobs impacts and prepare for a changed future jobs market.

Summary

More jobs and better jobs could be created if Vietnam deepens links to local, regional, and global value chains. The country and the region's growing consumer class and urbanization, as well as the emergence of regional value chains offer opportunities for Vietnam to increase the jobs in value-chains. As Vietnam's workforce becomes more sophisticated, this also opens the potential to move into higher added value chains. This could see a continued change in the structure of the jobs, towards more private sector wage jobs that pay more and on average offer better quality. It could also be seen through a greater leveraging of the agriculture sector by shifting crop production and developing agro-value chains to serve Vietnamese, Asian, and global markets. Chapter 2 of this report explores how Vietnam could improve job quality and create new jobs that are linked to a higher value-added agricultural sector. Chapter 3 looks at how Vietnam could create more quality jobs in the private sector in general, by putting in place the right policies to capitalize on a growing middle class, urbanization and the growing regional value chains.

The movement to the knowledge jobs threatens to leave some populations behind. While young, urban, and educated people are already benefitting from the shifting jobs picture, others – women, the older population, ethnic minorities, and those living in remote areas – may face challenges in integrating into the new structure. This requires Vietnam to prepare its workforce for future jobs and implement labor supply side measures to enhance access to better jobs for those at risk of being left behind. This is explored further in Chapter 4 of this report.

Still, many jobs will look like today's jobs in many ways. The jobs structure is changing and will continue to provide better jobs if Vietnam take full advantage of opportunities provided by a changing domestic and global economy as described above. However, "good" wage jobs only comprise one in four jobs. If we assume the same rate of transformation that has been observed in the period 2008-2015, about 2 in 4 (43 percent) will be in "good" jobs by 2040. Family farming and household enterprises jobs will continue to decline – though still being the source of more than half the jobs in 2040. This points to a policy agenda that both supports profitability and earnings in agriculture (Chapter 2) and family enterprise while also setting the stage for expansion of large domestic and foreign enterprises (Chapters 2 and 3) and the job opportunities they will bring.

CHAPTER 2 - **SHAPING VIETNAM'S AGRICULTURE AND FOOD SYSTEM** TO DELIVER JOBS[49]

Vietnam's rate of agricultural growth has been impressive by regional standards. During the 1990s, Vietnam's growth in agricultural value added averaged 4.2 percent per annum, and between 2000 and 2009 it averaged 3.9 percent per annum (Table 2.1). This was a higher growth rate than that experienced in all other Asian countries other than China and Cambodia. Agricultural growth in Vietnam has also been less volatile than elsewhere in the region. Having very ample water supplies and a comparatively large proportion of its agricultural area serviced by irrigation, Vietnam has not experienced the wide fluctuations in food and other agricultural output faced by other countries. More than 70 percent of Vietnam's cultivated area (considering multiple crops within a year) is now serviced by irrigation infrastructure. For the Philippines, Indonesia, Malaysia and Thailand, only between 25 and 40 percent of cultivated land is serviced by irrigation. In recent years, however, Vietnam's agricultural growth in value-added has been decelerating—between 2010 and 2016 it averaged only 2.5 percent per annum.

Within Vietnam's agricultural sector, the pace and pattern of growth has varied considerably among different subsectors. The growth of paddy production was weak, at 2.8 percent per annum over 2000-2014, but steady, according to the Food and Agriculture Organization Statistics (FAO). Capture fisheries and aquaculture grew at a very impressive 8.5 percent per annum over 2000-2014 period, although the bulk of this growth took place in the period up through 2007. Since then, capture fisheries have had to contend with a partially depleted near-shore fisheries resource-base,

Table 2.1: Annual growth in agricultural value added in selected Asian countries, 1991-2016, percent

Countries	1991-1999	2000-2009	2010-2016
Cambodia	4.4	4.8	2.1
China	4.0	3.9	4.0
India	3.9	2.5	3.7
Indonesia	2.3	3.4	3.9
Philippines	1.8	3.2	1.0
Thailand	2.1	2.9	0.5
Vietnam	4.2	3.9	2.5

Source: World Development Indicators (WDI), 2017.

49 This chapter is prepared by the team consisting of Sergiy Zorya and Steven Jaffee from the World Bank and Nguyen Do Anh Tuan, Truong Thi Thu Trang, Nguyen Le Hoa, and Nguyen Thi Thuy from Vietnam's Institute for Policy and Strategy for Agriculture and Rural Development (IPSARD). It builds on the World Bank and IPSARD (2016).

while the shrimp aquaculture industry has faced large losses of production, as in 2012 and 2013, due to disease. Livestock production grew at 4.5 percent per annum over 2000-2014 period. Yet, this production has been quite volatile, in large part due to disease outbreaks plus volatility in the costs of animal feed and in prices of meat, especially pork. While domestic milk production is growing rapidly, this still accounts for a very small share of livestock value-added.

Over the past two decades, Vietnam has also emerged, seemingly out of nowhere, to become a major supplier in international agricultural commodity markets. Both the scale and the breadth of this trade have been very impressive. Vietnam now has more than US$1 billion in trade for eight different commodities (or commodity groups), and it ranks among the top five global exporters of each[50]. Vietnam's farmers have responded exceptionally well to the opportunities provided by (i) growing global demand for agricultural raw materials and both staple and higher value foods; (ii) Vietnam's entry into the World Trade Organization and into various trade agreements; (iii) an improved domestic environment for business and investment; (iv) the country's diverse agro-ecological conditions; and (v) Vietnam's favorable geography nearby rapidly growing middle-income countries. Particularly impressive is the recent increase in the export of horticulture products—from the very low values in 2000s to above US$1 billion in 2016. In 2017, the export of dragon fruit alone is projected by the Ministry of Agriculture and Rural Development (MARD) to exceed US$1 billion.

Yet the picture of Vietnam's agro-food trade is not all positive. Most of Vietnam's expanding export subsectors have failed to take full advantage of the market opportunities for generating increased value and, in some cases, failing to have a transformative impact on the farmers and communities which serve as their foundations. Vietnam has been cost-competitive when it comes to crop-based commodities but they were sold at a discount as a result of several factors, including: (i) issues related to lower or inconsistent quality or food safety; (ii) the incidence of and perceived risk of contract non-fulfillment by Vietnamese suppliers; (iii) real or perceived risks regarding the environmental footprint of Vietnamese commodities; and (iv) intensive competition among Vietnamese exporters, which has enabled international buyers to negotiate prices downward.

Another contextual point about Vietnam's agriculture is its regional differences. Several regions, including the Red River Delta and the two Central Coast regions, have seen their rates of growth lag over most of the period since 2000 (Table 2.2). The Red River Delta, for instance, has seen an absolute decline in agricultural gross value-added in four of the past five years. Urbanization and industrialization are the main drivers of economic development there. The Central Highlands region has witnessed the most rapid and sustained rates of agricultural growth. The Southeast has also seen higher-than-average growth. Commercial tree crop development has underpinned this growth in both regions, together with expanding livestock development in the Southeast. The Mekong Delta region, which accounts for about one- third of agricultural gross value-added, saw growth taper off between 2009 and 2013 due to some disruptive events in the aquaculture subsector and declining rates of growth in rice value-added. Among regions, Vietnam's two rice bowls—the Mekong and Red River Deltas—have experienced the slowest pace of agricultural growth since 2009. Three regions, the Mekong Delta, the Southeast, and the Central Highlands, now account for about 60 percent of Vietnam's gross agricultural output and more than 80 percent of its agricultural exports.

Despite diversity and regional differences, primary agriculture remains the largest employer in Vietnam. In 2013, the farming share accounted for 50 percent of total employment, down from 80 percent in 1986 (Figure 2.1). By 2015, this

50 These commodity groups include rice, coffee, pepper, rubber, cashew nuts, cassava, fishery products, and horticulture.

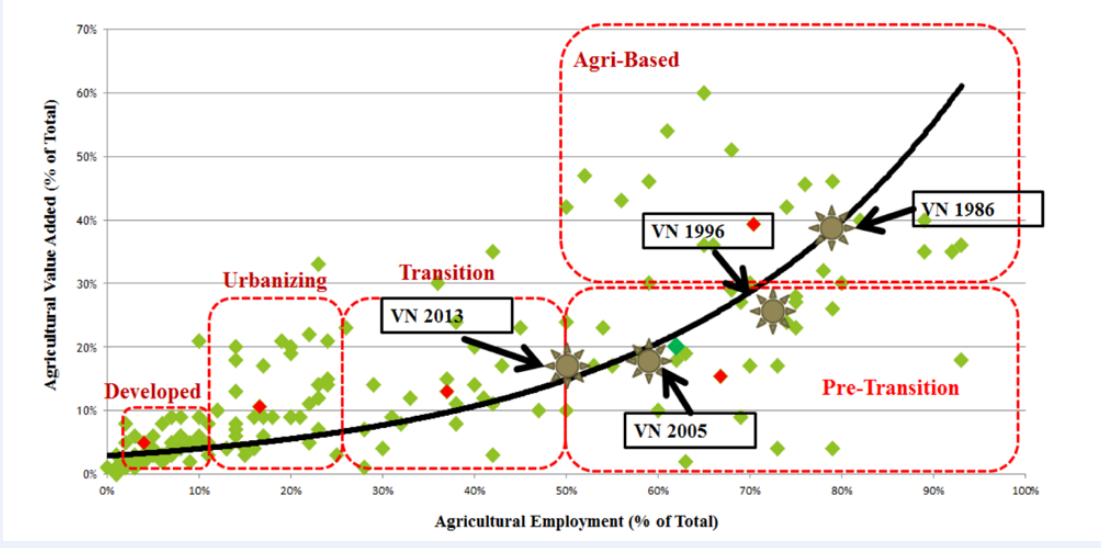
Table 2.2: Composition of agriculture and agricultural growth by Vietnam's region

	Rate of growth in agricultural value-added, %, in constant prices			Share of national agricultural value added	
	2000-2013	2000-2004	2009-2013	2000	2013
Total	**3.6**	**3.9**	**2.8**	**100**	**100**
Red River Delta	1.2	1.9	0.3	20	14
North East	4.4	3.4	5.7	9	10
North West	4.5	4.7	4.2	2	3
North Central Coast	2.5	3.0	1.2	11	9
South Central Coast	2.9	3.1	1.7	7	6
Central Highlands	8.7	8.5	8.6	6	11
Southeast	4.6	4.0	5.6	12	14
Mekong Delta	3.5	5.0	1.1	33	32

Source: IPSARD calculations based on GSO data.

share dropped further to 46 percent.[51] The most rapid labor movement out of agriculture occurred between 2005 and 2013, a period in which many jobs were created in industry and services. Rural people, especially the younger generation, have taken up these opportunities, with many men finding at least periodic employment at construction sites around large cities and women being heavily employed in garment, footwear and fish processing industries. The decline in agricultural employment was accompanied by a decline in the share of agriculture in GDP, from 40 percent in 1986 to 17 percent in 2013 (Figure 2.1) and 14 percent in 2015.

FIGURE 2.1: Vietnam moved from an agro-based to transition economy during the last 30 years



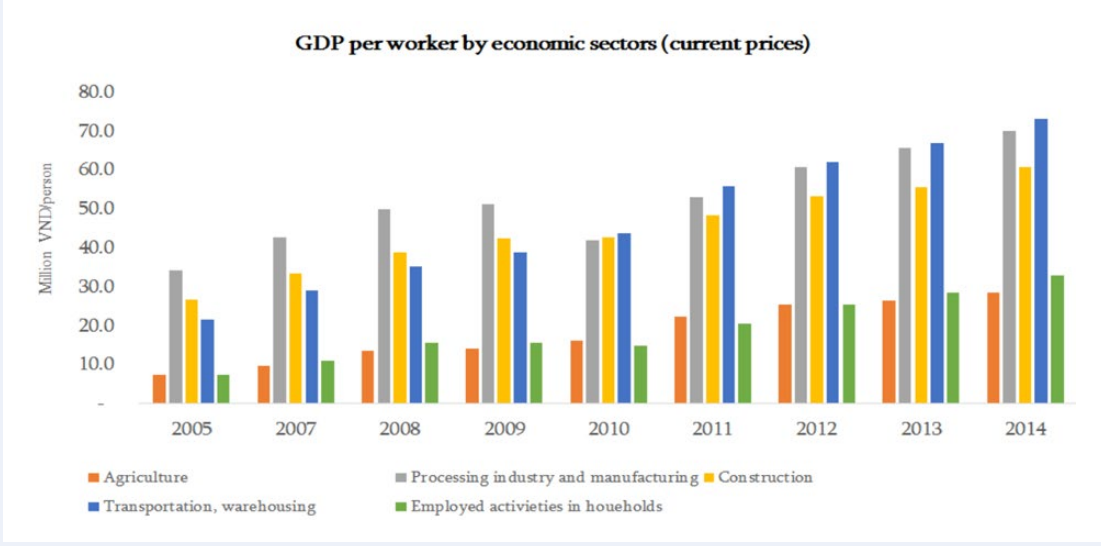
Source: WB staff based on the WDI, 2017

51 Vietnam's Government Office of Statistics (GOS), 2016.

As a result of the shift in labor composition, agricultural labor productivity, measured as value-added per worker, increased. Yet, it continued lagging the labor productivity in industry and services. Despite some convergence with productivity in manufacturing and construction during the past 10 years, productivity in these sectors was more than double productivity levels in the agricultural sector (Figure 2.2). On the positive side, however, the productivity gap in Vietnam was lower than the 3.5-fold gap estimated by Gollin *et al.* (2014)[52] for developing countries overall and the 6-fold gap in Sub-Saharan Africa.

Based upon the official classification of 'agricultural labor' Vietnam's agricultural labor productivity has also lagged that of many regional peers (Figure 2.3). This is even though the land productivity in Vietnam is among the highest in the region, due, in part, to the very broad coverage of irrigation and thus the ability to produce multiple crops in a year (Table 2.3). These data suggest that in 2014, agricultural labor productivity in Vietnam was only 60 percent that of China, less than half that of the Philippines and Thailand, and about the same as of Cambodia. These findings are plausible for China and Thailand, yet seem less likely for the other two countries considering Vietnam's much greater dynamism in terms of agricultural diversification, yield improvement and mechanization. While the numerator (i.e. agricultural value-added) should be reasonably accurate, there is likely to be a problem with the denominator (i.e. number of agricultural workers). More on this below.

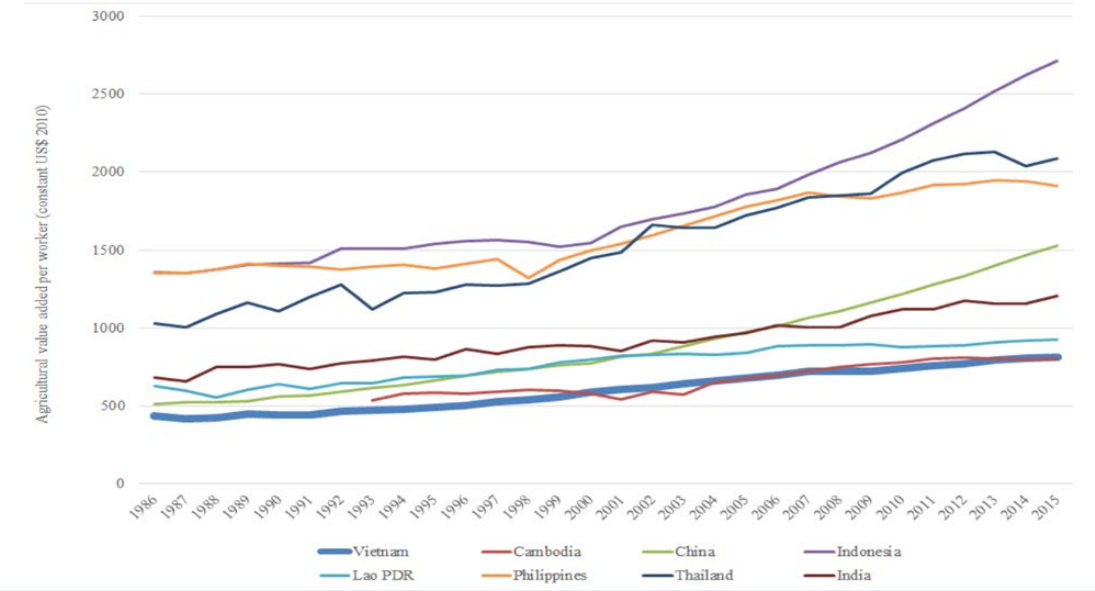
FIGURE 2.2: Sectorial GDP per worker in Vietnam, 2005-2014



Source: GSO, 2016.

52 Gollin, Lagakos and Waugh 2014.

FIGURE 2.3: Agricultural labor productivity in Vietnam and selected countries, 1986-2014



Source: WDI, 2017.

Table 2.3: Agricultural land and labor productivity, selected countries, 2000-2014

Country	Agricultural land productivity (in constant 2010 $ per ha)		Agricultural labor productivity (in constant 2010 $ per worker)	
	2000	**2014**	**2000**	**2014**
Cambodia	486	765	575	803
China	749	1,328	774	1,398
Indonesia	1,586	2,179	1,545	2,521
Philippines	1,651	2,143	1,495	1,949
Thailand	1,464	1,776	1,446	2,134
Vietnam	**1,729**	**2,232**	**585**	**791**
Germany	1,336	1,069	22,442	32,521
France	1,348	1,558	45,774	94,946
United States	329	430	44,136	76,457

Source: WDI, 2017.

The above analysis would naturally lead to a recommendation to adopt measures to accelerate the movement of labor from less productive primary agriculture to more productive industry and services. This would yield higher overall labor productivity in the country. Yet, Vietnam is already on this path. The share of farm labor in the labor force declined by 32 percentage points during 2000-2015, from 65 percent to 46 percent.[53] For comparison, the decline in Indonesia and

53 World Development Indicators, 2017.

Thailand averaged 27 percentage points (from 44 percent to 32 percent). Only in China has the share of farm employment declined faster, by 44 percentage points (from 50 percent to 28 percent). Thus, Vietnam is already undergoing a fast transformation and accelerating it further will be challenging, for several reasons.

First, the aggregated statistical analysis does not give an accurate picture of the underlying productivity levels and trends and the associated incentives for inter-sectoral changes in employment. As will be illustrated below, labor productivity differs widely within the agricultural sector. For some commodities, it is relatively high—including relative to industries requiring similar skills—while for other commodities it is quite low. Own production or wage labor in some segments of agriculture pays better than minimum wages in industry and may also involve better work (and social community) conditions. We want to see more employment in more productive and remunerative segments of agriculture (which still have opportunities to substantially grow) and less reliance on employment in those areas providing low returns, although we should not ignore the important social safety net function, which own rice production serves for large numbers of rural households.

A second consideration is that many of the future work opportunities for today's underemployed rural workers may occur in manufacturing or service industries closely affiliated with agriculture. These would be jobs in the agricultural inputs or services sub-sectors, in food and agro-industrial processing, in agro-logistics, and the broad range of formal and informal food distribution services. In some cases, the growth and stability of these jobs would be closely linked to the performance of agriculture. Unlike in some of Vietnam's export-oriented assembly industries, such agriculture-related exporting subsectors tend to have strong forward and backward linkages and so growth has direct multiplier effects. We will see below some illustrations of the changing composition of employment within the agro-food system in accordance with broader economic development and income growth.

A third consideration is the ability of other manufacturing and service sectors to absorb large numbers of underemployed rural workers and offer better pay than farm jobs. As this Report indicates, this process has been slow in Vietnam, due to both the supply-side constraints, such as poor enabling environment for private investments or lagging development of secondary towns, and the demand-side constraints, such as low skills of rural workers, poor working conditions in new jobs, and constrained mobility from rural to urban areas. Only when these constraints are addressed can a faster structural change can be expected.

This chapter seeks to better understand the situation regarding Vietnam's agricultural labor productivity and how it can be improved. This is important to ensure competitiveness of agricultural jobs in the context of slow nonfarm job creation and opportunities to create more jobs in the food system in the future. The chapter begins with a stocktaking of the role of agriculture in income generation and jobs and how this has changed over time, spatially, and ethnically. It is followed by a re-measurement of labor productivity in Vietnamese agriculture, on an aggregate and disaggregated basis. Subsequently, a preliminary look is taken at the job prospects in Vietnam's broader agro-food system. Policy options to spur better jobs in primary agriculture and related downstream businesses services in the future and strengthen the ability of rural people to access these jobs are then presented.

Agricultural Jobs and the Jobs Portfolio of Rural Households in Vietnam

The number of people working in Vietnam's primary agriculture[54] is large, but it is decreasing

54 Agriculture in this report is defined to include crop cultivation, livestock, fishery, and forestry.

over time. In 2000, about 25 million people worked in agriculture, accounting for 65 percent of total labor force. In 2012, their number reduced to 24.3 million (or 47 percent), and in 2015, the latest data available, it decreased further to 23.2 million (46 percent), out of whom 50.7 percent were women. Within the sector, the largest number of workers was engaged in paddy production, 7.7 million (Table 2.4). Commodities with agricultural employment above 1 million people included coffee, cattle, and pigs. Among major commodities, the lowest employment numbers were observed in production of cashew and pepper. Most agricultural labor force work on their own farms (self-employed) or provide services to other farmers (wage work). A small number of farmers are members of cooperatives and other farmer organizations (estimated at 121,200 people in 2014 by the Labor Force Survey) and this number is decreasing over time, in spite of the government efforts to promote cooperatives.

The movement of rural people out of agriculture has largely been a result of rapid economic growth that created many nonfarm jobs. Government investments have significantly improved service delivery, education and public infrastructure, which facilitated growth and enabled broad participation in the economy. The transformation from an agrarian economy to labor-intensive manufacturing and services industries has been key, where these sectors created 15 million jobs over the past 20 years[55]. Improved education has been an important pathway to obtaining better jobs. A college degree, for example, significantly increases the likelihood of having a wage job (by 52 percent compared to only lower secondary education). Migration to cities further presented rural households with non-farm opportunities. These factors have contributed to households diversifying their income sources from agriculture.

In rural areas, the reliance on agriculture among rural households is declining. The transformation from farm to nonfarm activities is reflected in the changing composition of household incomes. The share of households classified as "agricultural" households declined from 71 percent of all rural households in 2006 to 58 percent in 2016, according to the 2016 Agricultural Census. Only 49 percent of rural households in 2016 reported their leading source income to be from agriculture, compared to 68 percent in 2006 (Table 2.5).

Table 2.4: Vietnam's agricultural labor force by activity, 2012

	Number of workers
Paddy	7,658,156
Sugarcane	453,453
Cashew	231,158
Pepper	255,591
Rubber	710,960
Coffee	1,900,286
Tea	304,218
Cattle	1,103,091
Pigs	1,344,549
Poultry	846,302
Forestry	957,689
Catching fish	628,798
Aquaculture	630,474

Source: Input-Output Matrix, GSO, 2012

Table 2.5: Role of agriculture in rural areas of Vietnam, 2006-2016

	2006	2011	2016
Number of rural households	13,768,472	15,343,852	15,990,000
Agricultural households, %	71	62	58
Rural households with leading income from agriculture, %	68	57	49

Source: Vietnam Agricultural Census 2016 (GSO, 2017).

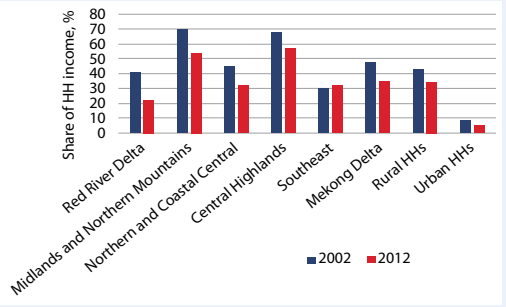
55 World Bank 2017.

Vietnamese households increasingly rely on nonfarm sources of income. Between 2004 and 2014, the share of rural households relying entirely on nonfarm income and wages increased from 22 percent to 32 percent. At the same time, the share of rural households relying only on income from agriculture declined from 23 percent to 19 percent. About 90 percent of rural households have multiple sources of income.[56]

Wages are the largest single income source for rural households. In 2014, they accounted for 37 percent of average rural income, up from 32 percent in 2010 (Figure 2.4). The income from self-employment in agriculture comprised 30 percent of total income, followed by the income from own nonfarm businesses, either formal or informal.

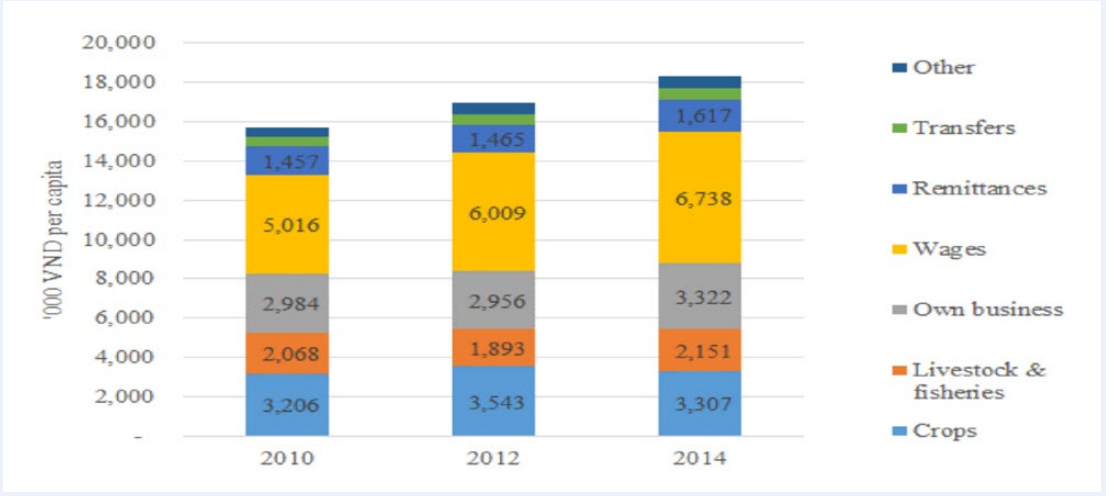
The pace of the shift in income sources has, however, varied substantially across the country. The most significant declines in agricultural as a share of household income have occurred in the Red River Delta and the North Central Coast, regions which have been experiencing a stagnation or decline in agriculture (Figure 2.5). There has been less change elsewhere, with agriculture remaining the leading income source in Mekong Delta, Central Highlands, and Midlands and Northern Mountains. In 2014, the income from agriculture accounted for about 40 percent of total per capita income in these parts of the country (Figure 2.6).

FIGURE 2.5: Agriculture's contribution to rural household income by region, 2002-2012



Source: IPSARD's estimate based on VHLSS 2012 (GSO 2013).

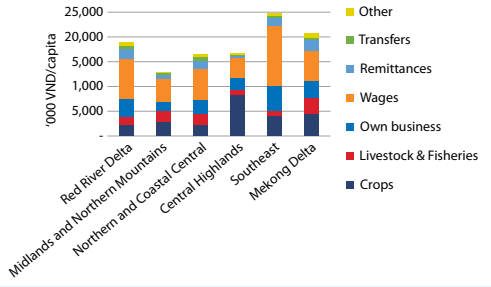
FIGURE 2.4: Sources of income of rural households in Vietnam, 2010-2014



Source: IPSARD's estimate based on VHLSS 2014.

56 These shares are drawn from the national Vietnam Household Living Standard Surveys (VHLSS) and they imply that the number of agricultural workers used to calculate agricultural labor productivity is significantly biased upwards.

FIGURE 2.6: Job portfolio of rural households by region, 2014

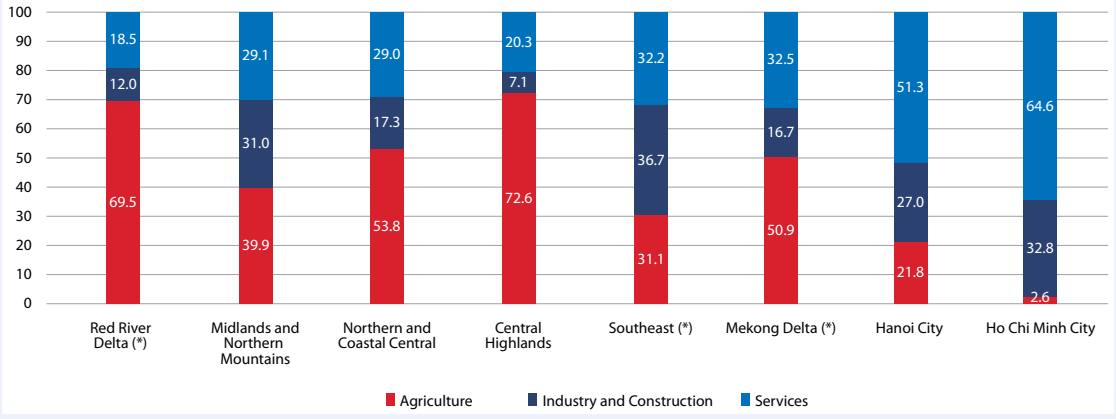


Source: IPSARD's estimate based on VHLSS 2014.

The degree of change in the structure of rural households' income reflects factors such as landholding size, education, availability of nonfarm jobs, and proximity to urban centers. In much of the Central Highlands, where nonfarm job opportunities remain rare, agriculture continues to account for the largest share of GDP and employment, and most rural households still obtain a large share of their income from agriculture – from their own farms and through seasonal work for others (Figure 2.7). In the Mekong Delta, where many households have landholding less than 1 hectare cannot continue to rely only on rice, a traditional crop there, to increase their income in line with nonfarm earners. A 2009 survey of the Mekong Development Institute found that only farmers with more than 3 hectares were earning a large part of their income from paddy, while farms with below one hectares obtained nearly two-thirds of their income from off/non-farm sources.[57]

Agricultural jobs and income play a much more important role for poor households than for non-poor ones. In 2014, agriculture accounted for 44 percent of the income for poor households vs. 29 percent for non-poor households (Figure 2.8 and Figure 2.9) The non-poor derive more of their income from wage work and income from their own businesses.

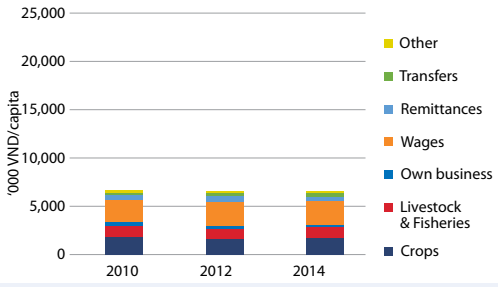
FIGURE 2.7: Distribution of employed population by sector and socio-economic regions, 2014



Note: (*) Red River Delta excludes Hanoi, and Southeast and Mekong River Delta exclude HCMC.
Source: Labor Force Survey, GOS 2015.

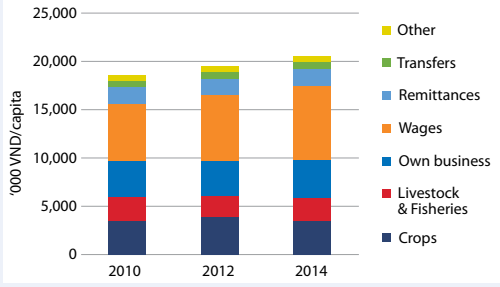
57 Le Canh, Nguyen and Duong 2010.

FIGURE 2.8: Source of per capita income of poor households, 2010-2014



Source: IPSARD's estimate based on VHLSS 2014.

FIGURE 2.9: Source of per capita income of non-poor households, 2010-2014



Source: IPSARD's estimate based on VHLSS 2014.

The ethnic minorities, made up of 53 groups, accounted for 15 percent of total population in 2016. On average, ethnic minorities rely on agriculture for a much larger share of their income than does the Kinh population (42 vs. 18 percent). Few ethnic minority workers are trained and have skills to get jobs outside of farming, and more than 75 percent of them do simple jobs (Table 2.6) This lower level of skills, together with their access to more marginal agricultural land and their limited participation in most aspects of high value agriculture, is responsible for the lower agricultural productivity and incomes of ethnic minorities.[58]

Differences in agricultural productivity, wages, own business income, and remittances account for the income gap between the ethnic minority and majority in Vietnam. The per capita income of ethnic minorities from agriculture is less than half

TABLE 2.6: Selected labor indicators for Vietnam's ethnic minority, 2014-2015

	Ethnic minority	Total Population
Number of people, million	13.4	91.7
Average income per person, million VND	1.2	2.8
Average poverty rate, %	23.1	7.0
Income sources, %		
Agricultural and non-agricultural wages	39.6	46.9
Own agriculture	42.1	17.8
Non-agriculture	9.9	20.2
Others	8.4	15.2
Share of trained labor, %	3.0	20.3
Number of over 15-year old workers, million people	8.1	52.8
Share of over 15-year old workers with technical qualification, %	6.2	20.3
Employment of over 15-year old workers by sector, %		
Agriculture	81.9	44.0
Industry and construction	8.6	22.8
Services	9.5	33.2
Share of over 15-year old workers who do simple jobs	75.4	39.8

Source: IPSARD's estimate based on VHLSS 2014, 2015 socio-economic situation survey of 53 ethnic minorities, and World Bank 2017a.

58 World Bank 2012.

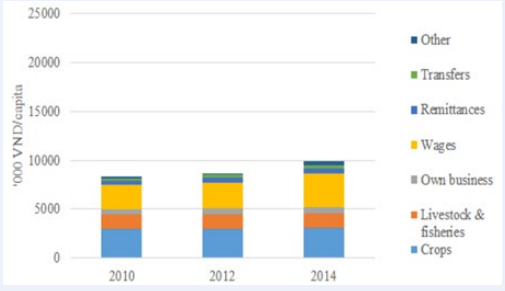
of that of the Kinh majority. The ethnic minorities also earn much less from own businesses and receive much less remittances than the Kinh majority (Figure 2.10 and Figure 2.11). Lower income from wages for the ethnic minorities has been a result of their weaker participation in wage activities and the lower wages in rural areas with ethnic minorities.

Agriculture is especially important as a source of employment for ethnic minorities. Few ethnic minority people own non-farm businesses, with some exception in the Northern Mountains and Mekong Delta, yet they actively complement their self-employment in agriculture by wage work, especially in Central Highlands, Mekong Delta, and Southeast (Table 2.7).

This limited access to higher-paying jobs underlies the high poverty rates experienced by ethnic minorities. Poverty in Vietnam is, increasingly, linked to ethnicity and a variety of human development and locational factors. While the national poverty rate was 13.5 percent in 2014, the respective rates amongst ethnic minorities and the Kinh ethnic minority group were 58 percent and just over 6 percent.[59]

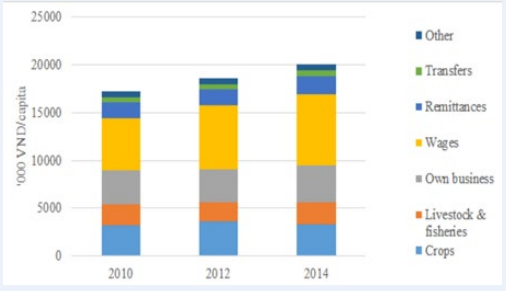
Vietnam has closed many gender gaps though a wide range of social and economic measures[60]. For example, in 2015, female-headed households in Vietnam were less likely to be poor than male-headed households. There are more female students attending school than male at the upper secondary and tertiary education levels. Women's economic empowerment has also steadily improved over the past decade. Women's labor force participation rate is within 10 percent of that of men. There has been an upward trend in the share of women in wage work, mostly driven by increased employment for women in foreign-owned export-oriented factories. Nevertheless, some gaps persist, including: (i) women's access to high level leadership positions in public and private sectors; and (ii) a widening gender earnings gap, with women earning 13 percent less than males (for similar work) in 2004. In 2012, this gap was 20 percent[61].

FIGURE 2.10: Source of per capita income of ethnic minority households, 2010-2014



Source: IPSARD's estimate based on VHLSS 2014.

FIGURE 2.11: Source of per capita income of Kinh majority households, 2010-2014



Source: IPSARD's estimate based on VHLSS 2014.

59 World Bank, 2017.
60 See World Bank Group's CPF, 2017a, where the data and analytical work on this topic come from various sources, including the UN Women (2016) report.
61 UN Women 2016.

TABLE 2.7: Jobs of rural households by region and ethnicity, 2014 (%)

	Wage jobs		Self-employment in agriculture		Self-employment in non-agriculture	
	Ethnic minority	Kinh majority	Ethnic minority	Kinh majority	Ethnic minority	Kinh majority
Red River Delta	25	29	55	41	0	14
Midlands and Northern Mountains	18	25	65	51	6	13
Northern and Costal Central	28	26	66	47	1	12
Central Highlands	33	23	56	43	3	11
Southeast	48	33	36	21	0	12
Mekong Delta	34	28	40	38	9	12
Total	25	28	60	40	5	12

Source: IPSARD's estimate based on VHLSS 2014.

Women also make up a large share of unpaid family workers, particularly in agriculture. Their role in farming is changing along with the structural transformation (e.g., more job opportunities outside agriculture, farm mechanization, and population aging, which leads to a growing demand for elderly care services—most often a female occupation). Women increasingly do farming activities, which are traditionally viewed as male such as cleaning of the fields, pesticide spraying, seed gap filling, and shrimp feeding. Women are also largely responsible for production of vegetables and small livestock. Yet cultural norms and expectations about gender roles prevail over changes in the division of labor and create constraints for many women. These include: (i) insufficient recognition of their unpaid work; (ii) excessive work burden and limited time to engage in other activities; (iii) insufficient access to technology, services, training and credit; and (iv) unequal participation in the decision-making process surrounding farm-related activities,[62,63]

Where the gender gaps are the largest is between women from ethnic minority and majority groups. Ethnic minority women have lower literacy rates and working knowledge of the Vietnamese language, higher maternal mortality ratios, and lower access to social and basic services, and are poorer than women from the Kinh majority group[64]. The ethnic minority women are much more likely to be unpaid agricultural family workers and own fewer nonfarm businesses than Kinh women (Table 2.8). They also less likely to engage in wage work than other women and all men.

TABLE 2.8: Jobs portfolio of rural people by gender, 2014

	Male		Female	
	Ethnic minority	Ethnic majority	Ethnic minority	Ethnic majority
Having a wage job	32%	34%	17%	22%
Self-employed in agriculture	62%	40%	59%	40%
Self-employed in non-agriculture	4%	11%	6%	13%

Source: IPSARD's estimate based on VHLSS 2014.

62 Grassi, Paris, and Chi 2017.
63 FAO 2017.
64 World Bank 2017.

Several jobs-related conclusions can be derived from the above analysis. First, the large and increasing proportion of rural people in Vietnam earn income from a range of sources, doing several jobs at the same time. Most of them are part-time farmers, rarely spending 250 working days a year and 8 hours a day on farming. Second, agriculture as a source of income and jobs is very important in the Central Highlands, Mekong Delta, and Northern Mountains, partially due to their favorable agro-ecological environment and partially due to fewer nonfarm jobs there. It is important to capitalize more on agriculture's advantages in these areas and the fact that nonfarm job opportunities are still rare there. Third, the dependence of ethnic minorities on agriculture, especially women and youth, is disproportionally high. Increasing quantity and quality of jobs for them would require not only investments in raising their agricultural productivity but also in economic development of close-by secondary cities to complement their agricultural income by nonfarm jobs.

Re-Measurement of Agricultural Labor Productivity in Vietnam

As primary agriculture remains a large employment and income source in many parts of rural Vietnam, improving the remuneration of this work is an important task for policy makers. How to do it is strongly related to labor productivity, which is perceived to be low. When measured in a traditional way, by dividing the sectoral value-added by number of workers, it is indeed low: the average agricultural labor productivity in 2014 was 2.5 times smaller than the average labor productivity in Vietnam's industry and construction (Figure 2.2). The same is largely true for many countries where during the process of structural transformation the share of labor engaged in agriculture declined more slowly than the share of agriculture in GDP. This leads to a large productivity gap between agriculture and non-agriculture, as noted earlier.

Yet agricultural labor productivity is not necessarily lower than other sectors when measured on per-hour-worked basis. The recent survey evidence from around the world indicates that on a per-hour-worked basis, rather than simply using national accounts data on the number of people employed in agriculture, and accounting for differences in human capital, agricultural labor productivity is not intrinsically lower than other sectors – it is often similar[65]. When accounted for hours worked and human capital, the productivity gap is reduced from 3.5 to 2.2 times in the developing countries and from 6.0 to 3.5 times in Sub-Saharan Africa in study of Gollin *et al.* (2014), and it disappears altogether in Sub-Saharan Africa[66]. The difference in annual and per-hour-worked productivity estimates suggest underemployment in agriculture due to seasonality and other factors, such as small farm sizes, which is highly relevant to Vietnam.

The below estimates of labor productivity in Vietnam are derived using the following methodology. The labor productivity is estimated as value-added (defined as revenue less variable costs) divided by actual time spent on production of certain commodities measured in person days. The data on actual time spent by commodity are derived from the 2014 VHLSS covering various agro-ecological zones (Table 2.9). Only half of the households receiving any income from crop production receive 70 percent or more of total income from crop production; they are therefore considered "specialized" in crop production. The proportion of specialized farms in other subsectors, except fisheries, is smaller than a half of total farms, confirming a wide-spread phenomenon of part-time farming in Vietnam.

65 World Bank 2017.
66 McCullough 2015.

TABLE 2.9: Vietnam's households receiving income from and specialized in agriculture

	Number of households with income from activity above zero	Number of households with income from activity > 70 percent of income
Crops	**4,234**	**2,380**
Livestock	1,075	365
Agricultural services	46	7
Fisheries	356	221
Forestry	171	61
Paddy	1,779	536
Coffee	79	50
Pepper	31	11
Mango	15	13
Citrus	20	10
Pigs	195	58
Shrimps	109	34
Fish	149	106

Source: IPSARD's estimate based on VHLSS 2014

On average, on per-hour-worked basis, the labor productivity of specialized agricultural households is found to be higher than that of non-specialized households. The productivity gap was estimated at 28 percent for crop producers, 38 percent for livestock producers, and 11 percent for providers of agricultural services (Table 2.10, Table 2.22 and Table 2.23 in Annex). At the same time, no difference was found for households involved in fisheries, while the productivity of forestry-engaged households declined along with specialization, for reasons which need to be further explored. This might simply relate to locational factors with 'specialized' forestry households being in more marginal and remote areas.

The labor productivity of some specialized agricultural households appears to be even higher than that in nonfarm sectors where skill requirements are comparable to that in primary agriculture[67]. The value of the unadjusted agricultural labor productivity in 2014 was VND 28.6 million per worker; yet the per-hour-worked adjusted annual productivity is estimated to be almost as twice as large at VND 53.7 million per worker (Table 2.11). Some productivity gap with manufacturing and construction remains, but it narrowed from more than 200 percent when using national accounts annual data to only 20 percent for construction and 30 percent for manufacturing and transport and warehousing when using

TABLE 2.10: Estimates of per-day-worked agricultural labor productivity by sub-sector

VND/day[68]	Households with income from activity above zero	Households with income from activity above 70 percent of income
Crops	159,000	204,000
Livestock	165,000	228,000
Agricultural services	262,000	304,000
Fisheries	277,000	275,000
Forestry	202,000	157,000

Source: IPSARD's estimate based on VHLSS 2014.

67 Table 22 in Annex presents the labor productivity for all subsectors covered by the government statistics.
68 The daily rate is calculated with assumption of 8 hour working day and 40 hours per week.

per-hour-worked data. In addition, the labor productivity in agricultural services, provided by cooperatives and other farmer organizations, was found to be higher than that in nonfarm sectors, and the labor productivity in fisheries was higher than that in construction, a common off-farm jobs alternative to farmers.

High labor productivity in some agricultural activities offers good income as confirmed by wage data. Daily wages in agriculture, estimated by dividing the total wage fund by the number of workdays, ranged from VND 83,000 in livestock production to VND 183,000 in forestry, averaging VND 117,000 (Table 2.12). Nominal daily wages were higher in non-agriculture but once adjusted by the lower cost of living in rural areas they were largely in par with that in agriculture. This is not a surprise given that many workers in processing industries, garment factories, and construction in Vietnam receive only minimum or just-above-minimum wages.

TABLE 2.11: Comparison of annual and per-hour-work adjusted labor productivity, 2014[69]

	Annual labor productivity (GDP/worker) (VND)	Per-hour-work adjusted annual productivity (VND)
Agriculture	28,600,000	53,710,000
Crops		51,000,000
Livestock		57,000,000
Agricultural services		76,000,000
Fisheries		68,750,000
Forestry		39,250,000
Manufacturing and processing industry	70,000,000	
Construction	60,700,000	
Transport and warehousing	73,200,000	

Note: The share of crops in total agricultural output was 56 percent, livestock accounted for 16 percent, fisheries for 16 percent, forestry for 3 percent, and agric. services for 1 percent.
Source: IPSARD's estimate based on VHLSS 2014 and GSO 2016.

TABLE 2.12: Estimated wages by sector, 2014

	Number of workdays	Total wage, VND	Wage per workday, VND
Agriculture	313	36,664,000	117,000
Crops	300	33,965,000	113,000
Livestock	269	22,203,000	83,000
Agricultural services	259	26,502,000	102,000
Forestry	226	41,432,000	183,000
Fisheries	299	43,671,000	146,000
Non-agriculture	451	87,281,000	194,000
Food processing	349	44,419,000	127,000
Construction	300	52,924,000	177,000
Textile	338	50,291,000	149,000

Source: IPSARD's calculation using VHLSS 2014.

69 Working hours in manufacturing and construction were not adjusted for actual labor time spent. On average, wage workers in Vietnam's industry and services are reported to work 40-48 hours per week, which is more than assumed for agricultural workers in Table 11 (40 hours per week). It implies that the nonfarm labor productivity in Table 11 is overestimated, further reducing the gap between agriculture and nonagriculture.

The analysis of labor productivity by agricultural commodity provides even more insights on the range of productivity within various subsectors. We observe major differences between subsectors (i.e. crops vs. livestock) and within subsectors (i.e. paddy vs. coffee). Based upon 2014 VHLSS data, the daily labor productivity ranged from VND 94,000 for paddy to VND 511,000 for pepper, against the average productivity for crops at VND 204,000 (Table 2.13). The daily labor productivity in producing coffee was VND 411,000 and mango was VND 484,000. The daily labor productivity in fish production was estimated at VND 329,000 and in shrimp production VND 403,000 compared to the average fisheries subsector productivity at VND 277,000.

Labor productivity varies significantly by commodity, pointing to the ability of different jobs to provide differentiated income. This analysis suggests that large gains can be achieved from changes in land use, e.g. by moving land from less labor productive to more labor productive commodities[70]. Importantly for employment discussions, is also the fact that the commodities with higher labor productivity in Vietnam also tend to be more labor intensive, allowing the full use of sector resources for job and income generation (see Table 2.14 below)[71].

Supplementing this use of VHLSS 2014 data, a rapid survey was undertaken to estimate more recent farm labor productivity in six major agro-ecological zones. The survey was carried out by IPSARD in late 2016-early 2017, with the following coverage: (i) paddy in Thai Binh and Dong Thap; (ii) fruit: oranges in Hoa Binh and Nghe An, mango in Dong Thap, and dragon fruit in Tien Giang; (iii) black pepper in Kien Giang and Dak Lak; (iv) coffee in Dak Lak; (v) pigs in Thai Binh and Dong Nai; (vi) shrimp in Kien Giang; and (vii) pangasius fish in An Giang. In each Province, two case studies were conducted by commodity, differentiating between large- and small-scale production, following the guidance of the Provincial Departments of Agriculture and Rural Development. In addition, for maize and cassava, data were drawn from a 2013 World Bank/IPSARD survey carried out in Phu Tho province of Northern Vietnam[72].

TABLE 2.13: Estimates of the per-day-worked agricultural labor productivity in Vietnam by commodity for 'specialized' households

	Labor productivity by subsector, VND/day	Labor productivity by commodity, VND/day
Paddy	204,000 (crops)	94,000
Coffee		411,000
Pepper		511,000
Mango		484,000
Citrus		297,000
Pigs	228,000 (livestock)	157,000
Shrimp	277,000 (fisheries)	403,000
Fish		329,000

Source: IPSARD's estimate based on VHLSS 2014.

70 The impacts of lifting rice land-use restrictions were estimated using the MONASH-VN CGE model. The major results were (i) an 11 percent decline in rice plantings, yet little impact on the overall national rice balance; (ii) significant positive impacts on agricultural growth and per capita expenditures of nearly all income groups; and (iii) significantly accelerated growth in certain regions, especially the Mekong Delta. Giesecke, Tran, Corong and Jaffee 2013.

71 See also Annex Tables 25 and 26. Some of the more labor intensive production systems—i.e. those for coffee, horticulture, and spices—rely heavily on hired labor, thus providing an important seasonal or regular source of income for rural households with the smallest landholdings and/or lower potential agricultural land.

72 Keyser, Jaffee and Nguyen 2013.

TABLE 2.14: Labor input and productivity from the field data by commodity, 2016-2017

	Labor input, days/ha	Labor productivity, '000 VND/day
Paddy [VHLSS 2014]	46-150 [278]	174-276 [94]
Maize	165-170 [n/a]	95-110 [n/a]
Cassava	185-220 [n/a]	118-135 [n/a]
Oranges	350-415 [300]	600-1,000 [297]
Mango	200-300 [182]	500-900 [484]
Dragon fruit	700 [n/a]	550-650 [n/a]
Pepper	360-500 [329]	520-1,830 [511]
Coffee	115-130 [287]	500-700 [411]
Pork	500-1,500 [n/a]	320-950 [157]
Shrimp	240-335 [261]	1,700-3,300 [403]
Fish	212 [373]	280-980 [329]

Source: IPSARD's estimate using the data collected in 2016-2017; Maize and cassava from Keyser et al. (2013) Figures in parentheses are the estimates based on VHLSS 2014

The field surveys confirmed the results based on VHLSS data, illustrating large differences in labor intensity and labor productivity among the selected commodities. Again, among the major commodities, paddy production involves the lowest labor intensity as well as lowest labor productivity (Table 2.14 and Annex's Table 26)[73]. The result is similar for two other important crops —maize and cassava. Maize was historically a food crop in upland areas yet more recently has been grown primarily as an animal feed ingredient. As Vietnam's feed and feed ingredient imports have surged (now more than $4 billion per annum), the government has more actively promoted maize cultivation. There is now more than one million hectares under this crop, although productivity and farmer profitability are still low as Vietnam tries to catch up with varietal and agronomic practice advances made elsewhere. Cassava was also a traditional upland area food crop, whose cultivation was expanded to meet growing national and regional demand for feed, starch, and biofuel feedstock. Much of this expansion occurred on sloped or degraded forest land. For several years, this was something of a 'boom' crop for farmers, yet this low value commodity has more commonly given a low return to labor. More than a half million hectares are planted with cassava. The low labor productivity for paddy, maize, and cassava has dragged down the aggregate measure for the entire sector. On the other hand, the highest labor productivity was found for shrimp aquaculture and relatively high labor productivity was also found for each of the tree crops reviewed. Their labor productivity is between three and ten times that for the staple food/feed crops. Importantly, considerable differences in labor productivity are found among farms, illustrating the existing potential for considerable gains by assuring that farmers adopt available technologies and known good production practices. Structural changes are underway in Vietnamese agriculture, with consolidation occurring in pork and aquaculture production and in commercial, higher quality paddy production. The implications of this consolidation, both for employment and for labor productivity, requires further analysis.

This analysis has illustrated that labor productivity in primary agriculture is generally

73 The variation in paddy production is notable between the Red River Delta and the Mekong Delta. In the former, labor use per hectare remains significant as landholdings are typically very small (0.2-0.5 hectares) and are divided among multiple tiny plots between which household members must walk. There is little mechanization of paddy production there. In contrast, the average landholding for paddy producers in the MKD exceeds one hectare and mechanization has advanced significantly at nearly all stages of paddy production. See, for example, Keyser, Jaffee, and Nguyen 2013.

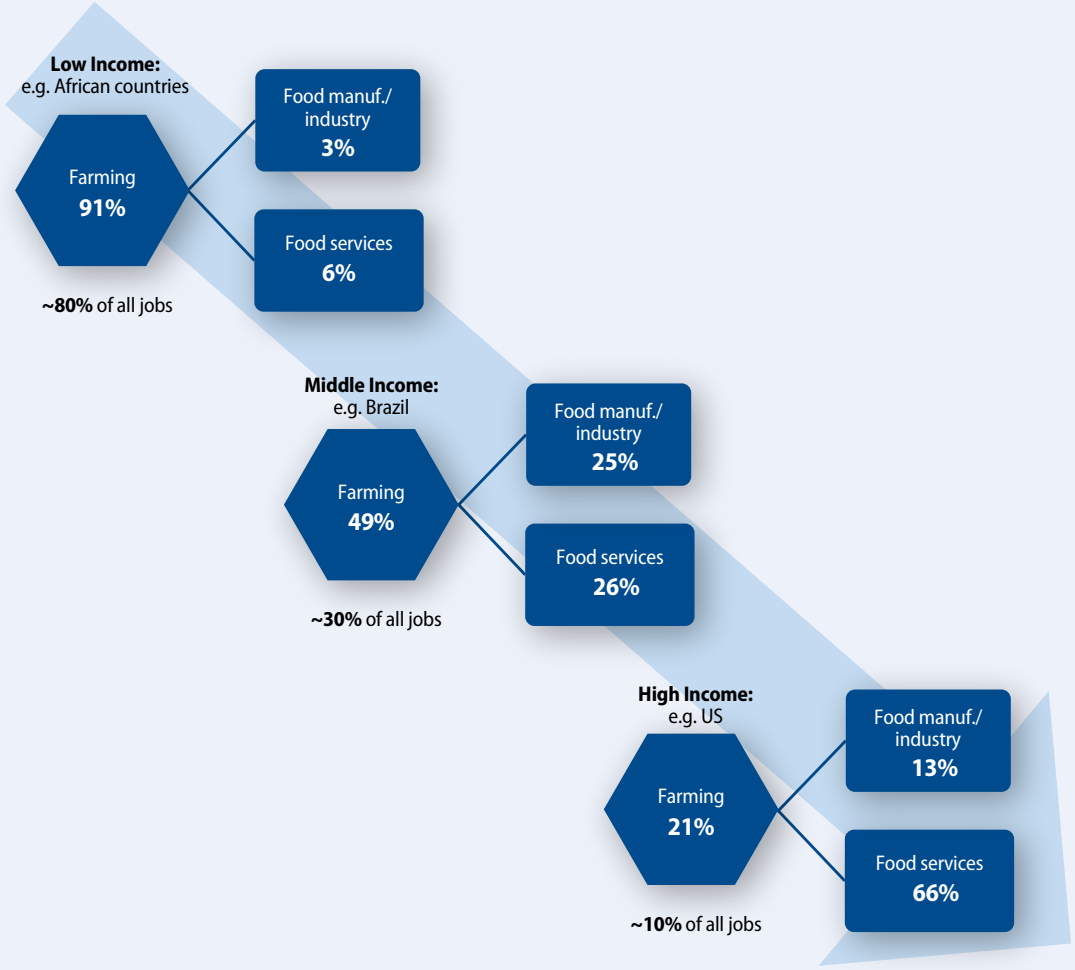
higher than often perceived in Vietnam. This is most evident when one looks beyond paddy production or production of other low value feed commodities. The latter have dragged down the aggregated estimate of labor productivity in the entire sector, and this is especially the case when statistics do not take account of the part-time and highly seasonal nature of paddy production—especially in the Mekong Delta, which has accounted for a large majority of Vietnam's rice production expansion since 2000. When adjusting labor input by per-hour-worked efforts and differentiating by commodities, some of which are more labor intensive and higher value than others, a brighter picture arises for agricultural labor productivity. Significant economic and "better job" gains can still be achieved in Vietnam's primary agriculture going forward by facilitating the shift of labor from less to more productive activities, often requiring a shift of farmland from paddy and maize to other crops. This would be consistent with the government efforts to promote high-tech agriculture and would be similarly consistent with a broad employment agenda.

Jobs in Food Processing Industry in Vietnam: A First Look

A return to a more accelerated pace of growth in agriculture will not only contribute to better jobs in the primary sector, but it will also help the whole agro-food system to deliver better jobs. The agro-food system comprises more than just primary agriculture. It includes farm inputs and services, food storage, food and agro-industrial processing, distribution and logistical services retailing, food service provision and other services that together include many enterprises (and self-employment persons) and a relatively large share of jobs in the manufacturing and service industries. In Vietnam, the agro-food system is comprised of multiple complete value chains, which (can) locally produce raw materials, intermediate products and end products, either for domestic use/consumption or export. In contrast, many of Vietnamese traditional (and non-traditional) export manufacturing sub-sectors feature significant imports of raw materials or product components and involve limited backward linkages to the economy.

With a growing middle class seeking higher quality and more varied food offerings and with favorable trends in international demand for agro-food products which Vietnam can produce competitively, the country's agro-food system is very well positioned to create more of better jobs. This is supported by the global experience, which shows that as countries progress with economic development, the share and composition of jobs in the agro-food system change. For low-income countries, farm jobs predominate (Figure 2.12). This pattern changes for middle-income countries as the number of farmers tends to decline, while significant job creation occurs in agro-industrial and food processing and in the various services associated with food distribution, especially to urbanizing populations. In high-income countries, the size of the farm labor force shrinks further. Agro-processing employment may continue to grow, yet is typically overtaken by employment growth in other manufacturing sectors. In these countries, the bulk of (new) jobs in the agro-food system occur in food services.

FIGURE 2.12: Progression and distribution of jobs in a food system as the countries develop

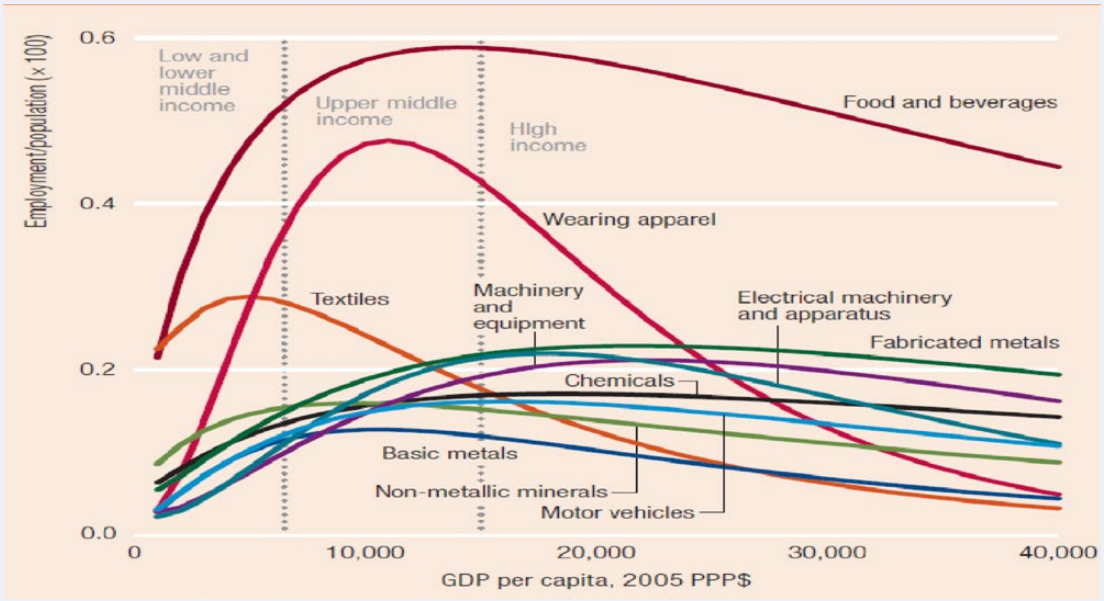


Source: WB presentation.

Vietnam is now at a transition point where the number of 'farm households' has begun to decline and where faster employment growth will occur in agro-food processing and in food distribution than at the level of primary agriculture. In 2016, the country's GDP per capita in purchasing power parity prices was US$6,400.[74] Using the pooled data of 95 countries from 1993 to 2007, UNIDO estimated that employment in the food and beverage industries accounted for at least one-half of all industrial jobs in those countries with a similar level of income, while wearing apparel and textile industries also accounted for significant shares (Figure 2.13). The UNIDO analysis suggests that significant employment growth in food and beverage manufacturing can be expected in Vietnam up through its realizing a per capita GDP of US$15,000. The upcoming decade is thus one in which large employment opportunities will emerge in this area.

74 World Development Indicators (WDI) 2017.

FIGURE 2.13: Changes in employment by income and manufacturing industry, 1963-2007



Source: UNIDO, 2013

Only a partial picture is available on the current size, composition, and productivity of Vietnam's agro-industrial and food and beverage labor forces. These industries together account for 11 percent of GDP, yet we estimate that they currently account for only 4.5 percent of all jobs in the economy (equivalent to about 31 percent of industrial jobs) (Table 2.15). This is lower than we would expect given Vietnam's level of income.

Employment and productivity in Vietnam's food and beverage sector differ by industry, but there seems to be a strong inverse relation between the number of workers and the labor productivity. For example, the fish processing industry employs the most workers but its labor productivity seems to be below average. On the other hand, labor productivity within the dairy industry is very high, while employment numbers are low, although these

TABLE 2.15: Estimates of the size of Vietnam's agro-food system*, 2014

	% of GDP	% of labor force
Primary agriculture	14.2	46.0
Agroprocessing industry (Total)	11.0	4.5
Food processing	4.4	2.3
Agro-industrial processing (leather, bamboo, rubber, paper, and furniture)	6.6	2.2
Farm inputs	0.6	0.1
Total Food System	**25.8**	**50.6**

Source: IPSARD's estimate using the input-output matrix and labor surveys.
Note: * Food services are not included in this table because little is known about employment in food services (e.g., wholesale, retail, restaurants, and street food), which is likely to be high in Vietnam, given its rapid urbanization and the growing middle class.

data are from 2012 and that industry has been experiencing rapid growth during the past several years[75] (Table 2.16). This inverse relationship can be partially explained by the difference in capital intensity—milk processing requires more machines and equipment than fish processing, which, in Vietnam, involves heavy manual handwork (for sorting, cutting, etc.). It also can be explained by the low skills of most workers in Vietnam (see more discussion on this below), which translates into low value creation. While these questions require more research in the future, the labor productivity in food processing appears to be consistently higher than that of primary agriculture (see Annex's Table 2.27). The transition of people shifting from agricultural to agro-processing work would raise the overall productivity of Vietnam's economy.

What is less clear and much less studied in Vietnam is which segments of the food processing industry would deliver the most jobs in the future. Several factors will contribute to this, including: (i) the trajectory of domestic demand for different food and beverage product lines; (ii) the continued competitiveness of Vietnamese industry, both for it exports (i.e. aquatic products) and products for which increased import competition can be expected (i.e. other animal products); and (iii) the technologies used and labor-intensity of production as the industry grows and modernizes. These issues need to be further studied as well as the growth (and employment) prospects for other agro-industrial sectors (i.e. furniture and other wood products; leather).

Employment generation was one of the factors considered in a recent analysis by the International Finance Corporation of the potential attractiveness of foreign direct investment in Vietnamese agriculture and food/beverage processing. Twenty-two subsectors were considered both for their attractiveness to investors and their value to the Vietnamese economy. Segments identified for investment targeting included fish farms and processing, fruits/vegetables/flower farms and processing, and specialty rice products--they are all located in the top right corner of Figure 2.14 offering the high rates of return to investments. Some of these areas would also deliver jobs, but others would not (Table 2.17). For example, investments in production and processing of fish and horticulture (fruits, vegetables, and flowers) are expected to create more jobs, while investments in rice, coffee, seeds, and milk processing might be expected to generate few new jobs or even contributed to a reduced number of jobs in a consolidated subsector, even if increasing the productivity of the fewer remaining workers. Note that the strong capacity of fish and horticulture processing to deliver jobs is consistent with its strong capacity to create jobs in the primary agriculture. It implies that investments in and support of development of strategic value chains such as for horticulture and aquatic products would deliver many jobs with high returns in both primary and tertiary segments of the value chain[76].

TABLE 2.16: Employment and labor productivity in food processing industry of Vietnam, 2012

	Value added, million VND	Labor force	Value added per worker, '000 VND
Meat processing	13,957,047	68,988	202,311
Fish processing	24,386,273	235,533	104,414
Vegetables and fruit processing	4,469,052	170,793	26,166
Vegetable oil products processing	2,287,562	5,479	397,906
Milk and dairy products	10,668,590	11,977	890,749
Milling products and flour production	19,480,667	153,546	126,872

Source: IPSARD's estimate using the GOS's input-output data for 2012.

75 *Business Monitor International,* Vietnam Agribusiness Report, quarterly reports.
76 The sustainable expansion of these industries will depend, in part, upon improved management of natural resources, the broad adoption of sustainable production practices, and advances in food safety practices and oversight.

FIGURE 2.14: Prioritization of food system's segments for investment attractiveness in Vietnam

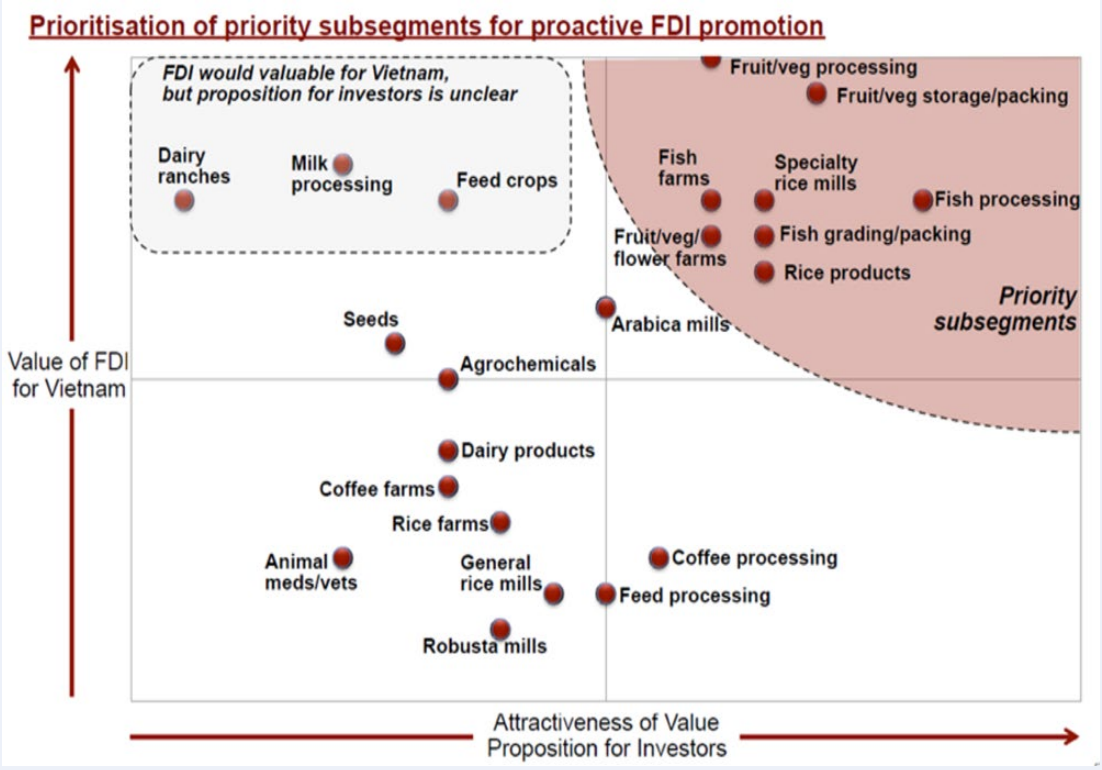


TABLE 2.17: Job creation's capacity of different segments of food system

Seed production	1
Commercial rice farms	1
General rice mills	1
Specialiaty rice mills	2
Rice products manufacturing	3
Robusta coffee mills	1
Arabica coffee mills	2
Fruits/flower/vegetable farms	5
Fruits/flower/vegetable packing	5
Animal and feed fish procesing	4
Fish/seeafood farms	4
Fish/sefood grading/packaging	4
Secondary fish processing	3
Milk collection and treatment	3
Dairy manufacturing	2

Note: Note: 5=very positive; 4=positive; 3=neutral; 2=negative; and 1=very negative.
Source: IFC, 2014

More agro-food processing jobs would do good for Vietnam, but as mentioned above, they are being created slowly. Several factors likely contribute to this. One is the strong preference of Vietnamese consumers for fresh produce and ingredients, although changing living and work patterns are certainly raising the demand for more convenience (i.e. processed/prepared) foods. A second factor is the legacy of and continued large presence of state-owned enterprises (SOE) in a number of industries (i.e. sugar, tea, dairy, beer, rice milling, rubber processing) deterring private investment at one time or another. These and other constraints on the more rapid take-off of the food and beverage processing industry warrant further attention. Also requiring attention is the spatial distribution of this industry. This has important implications for efficiency (i.e. proximity to raw materials) and, especially for

employment. Most current fish processing and rice milling operations are in close vicinity to primary production, yet the remainder of the food and beverage processing industry appears to be concentrated in and around Hanoi or Ho Chi Minh City. The development of this capacity in secondary cities, especially among the upland provinces of north Vietnam and the Central Highlands, would provide greater employment opportunities for Vietnam's ethnic minorities[77].

While addressing the supply side issues of job creation, it is important to pay attention to the demand side, too. Do farmers or rural people in general have the skills to get nonfarm jobs? While most jobs in food industry are considered to require a relatively low set of skills such as literacy, numeracy, and simple technical and managerial training, these skills seem to be higher than required in primary agriculture. The share of workers with good skills in the food processing industry in Vietnam is estimated at 54 percent, compared to 30-40 percent in wage work in agriculture (Table 2.18). There is growing demand for technical, adaptable skills for a variety of new jobs in the food industry with multitasking capacity (Annex's Table 2.28), calling for public investments in vocational training. Investments in skills are especially important for rural people. They are, on average, less educated than urban people, thereby having fewer chances to find better-paid occupations outside of agriculture (Figure 2.15). The skill gap is especially large for ethnic minorities (Figure 2.16), which is exacerbated by the slow industrialization of most secondary towns and thus a lack of nonfarm jobs near the areas with a high proportion of ethnic minorities.

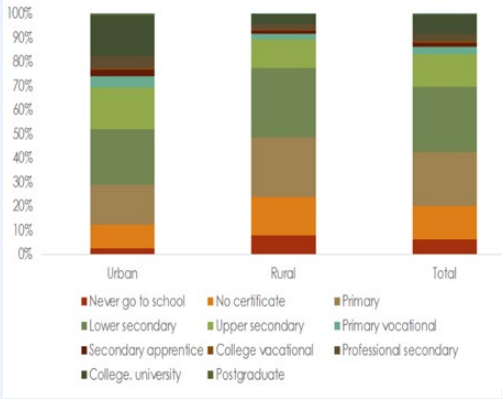
TABLE 2.18: Skills by employment, Vietnam

	Subsector	Share of skilled workers (*)
Workers receiving wages	Agriculture	36.9
	Crops	30.1
	Livestock	43.3
	Forestry	55.9
	Fishery	28.1
	Nonagriculture	77.3
	Food processing	53.5
	Construction	56.6
	Garment	78.3
	Footwear	63.8
Workers in agricultural households	Crops	46.3
	Livestock	44.6
	Forestry	44.8
	Fishery	29.8
Workers in nonagricultural households		60.4

Note: (*) Primary vocational, Secondary apprentice, College vocational, Professional secondary, College, University, Postgraduate.
Source: IPSARD's estimate using the VHLSS 2014

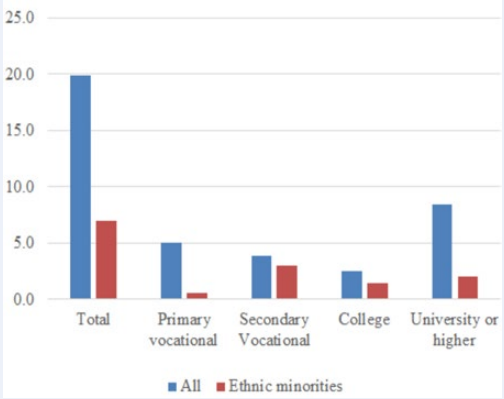
77 Food processing factories remain rare in the industrial zones, established in more than 60 cities and provinces. By the end of 2015, Vietnam developed 304 industrial zones, with many industrial production parks. Almost each zone has plans for food processing factories to capitalize on the local raw materials for exports, but very few of these plans get realized.

FIGURE 2.15: Education level of rural versus urban population, Vietnam



Source: IPSARD's estimate using VHLSS 2014.

FIGURE 2.16: Formal training of Vietnam's labor force by ethnicity



Source: Data for all labor (Kinh and ethnicity) from mid-term Census 2014 and data for ethnicity from Ethnic Minority Survey 2015

Policy Options for Supporting Vietnam's Agriculture and Food System to Deliver Jobs

Vietnam's government has several policy options available to increase the agro-food system's contribution to jobs. Strategically, attention needs to be given to: (i) re-accelerating *agricultural growth*; (ii) reflecting *employment intensity* considerations in policy decisions; (iii) promoting growth in *agro-food processing industries and other parts of the food system*; and (iv) facilitating continued *inclusion as the system modernizes*. Table 2.19 presents specific options in these areas, which are substantiated by more details below.

TABLE 2.19: Spectrum of action areas and options in the food system to deliver more jobs

General areas	Specific actions
Promote growth in primary agriculture	Relax remaining restrictions on agricultural land use and facilitate a more vibrant land (rental) market
	Support collective action to enable small farms to achieve economies of scale
	Upgrade skills of farmers and support innovations to facilitate transformation
	Support the adoption of good agricultural and animal husbandry practices to improve productivity, protect the environment and ensure food safety
	Reposition and rebrand Vietnam's offerings to enhance its commercial performance in the food and other sectors.
Ensure policies do not undermine employment intensity relative to long-term market trends	Continue to facilitate agricultural diversification to respond to emerging food demand
	Promote cooperatives and other farmer organizations
Promote growth in food and beverage processing industries and other parts of the food system	Improve investment climate and competition in the food sector, including through SOE reforms
	Provide incentives and support for investments in food processing in secondary cities
	Upgrade skills of workers and facilitate job matching
	Enter into further trade agreements to improve the competitive international market access of Vietnamese products
	Strengthen public and private sector capacities to ensure safe food

TABLE 2.19: Spectrum of action areas and options in the food system to deliver more jobs (cont)

General areas	Specific actions
Facilitate continued inclusion as the system modernizes	Upgrade skills of ethnic minority farmers, through agricultural extension and communication
	Invest in improved vocational training, experiential learning, and formation of other skills of the ethnic minority youth to prepare them for nonfarm jobs
	Develop secondary cities to create jobs near rural populations
	Support the upgrading of practices within informal food distribution channels rather than restricting the operations of small scale operators.

Source: World Bank and IPSARD staff.

Promoting Agricultural Growth[78]

The potential for promoting agricultural growth, anticipated to generate better jobs, lies in reforms relating to agricultural land, irrigation, agricultural research and extension, and food safety. The following are examples of promising directions and steps that can be taken:

- Enable (small) farms to achieve economies of scale. Land consolidation, in various forms, will be critical for upgrading production systems and product quality, reducing transaction costs within value chains, and enabling households to gain and maintain a middle living standard based at least partly on agriculture. Land consolidation will also enable further mechanization, a process which will become increasingly important as labor costs rise. Vietnam has already demonstrated that the development of land rental markets can offer an important pathway to land consolidation. In this respect, much will be gained from improved land services (e.g., information, recording, dispute settlement) and other interventions that improve the efficiency of land rental markets. By the same token, there could be significant gains from interventions that bolster farmers' embrace of collective action (see Table 2.11 showing high labor productivity in provision of agricultural services, which is mainly done by cooperatives) or that enable entrepreneurs to develop the shared economy on a commercial basis, enabling economies of scale to emerge based on pooled resources (e.g., high-tech agriculture).

- Upgrade skills of farmers and support innovations to facilitate agricultural transformation. Too many farmers in Vietnam still operate much below the production possibility frontier as indicated by a large range in labor productivity reported in Table 2.14. Shifting from resource-intensive to knowledge-based growth will require major changes in the ways farmers and other actors in the food system learn and gain access to technical and commercial information and knowledge. While the government has initiated a shift away from top-down, supply-driven approaches to agricultural research and extension, a deeper rethink is needed with respect to public sector objectives, approaches, and roles. For example, public sector extension services may still have an important role to play, though less as the main provider of centralized advisory services and more as a broker, mobilizer, and funder of services provided by others. For many agencies, moving into these roles will rest on an embrace of structural and behavioral changes, both internal and external to their organization. Integrating brokerage functions into traditional extension services will often require these institutions to build new skillsets, reframe their mission, and modify staff incentives by changing performance measurement criteria. Brokering requires

78 This section is largely derived from the World Bank and IPSARD 2016.

specific facilitation skills for managing group processes and building trust; and it cannot be judged by traditional performance indicators such as publications or numbers of trainings. In parallel, the heavy focus on improving yields and output suggests room for rebalancing investments to ensure their alignment with the realities and aspirations of a modernizing food system.

- Promote the accelerated adoption of sustainable production practices. This is critical for maintaining the productivity of farms as well as that of artisanal fishing operations. Poor environmental stewardship has manifested itself in over-fishing, increased pest resistance, soil degradation/erosion and large contributions by agriculture to water and air pollution International experience highlights the need for pro-active agro-environmental strategies which anticipate and prevent degradation from occurring in the first place. In practice, this can involve strengthening capabilities and infrastructure to monitor, learn, and do things differently, through investments in anything from testing laboratories and data collection, to introducing incentives for behavioral change, to training in areas of technical specialization and facilitation skills. It can also involve mobilizing multiple stakeholders, developing public-private partnerships, and intervening at multiple levels, from farm, to landscape, to region.

- Reposition and rebrand Vietnam's offerings to enhance its commercial performance in the food and other sectors. Noting the low visibility and perceived value of many Vietnamese exports overseas, Vietnam could consider any number of repositioning and rebranding strategies that draw on the rich experience of other countries in this domain. In several countries, such strategies, together with competitive pressures and market opportunities, have stimulated shifts to differentiated commodities or value-added product development. Enhancing Vietnam's national brand in certain industries could help in attracting foreign direct investment and tourism, and more generally promote exports and domestic sales.

Reflecting employment intensity in policy decisions

Further diversification of Vietnamese agriculture will contribute to rising labor productivity in the sector. Despite the significant growth in Vietnamese production of animal and horticultural products, agricultural land use remains heavily skewed toward paddy production, as well as production of maize and cassava (Table 2.20). Note that while the land devoted to rice has begun to decline, the planted area for paddy has increased due to shift to multiple crops per year. While many other segments of agriculture feature higher labor productivity than does rice cultivation, it will take a decade or more before significant proportions of lowland irrigated 'rice land' are converted into alternative use. This will require adjustments in irrigation systems, the acquisition of new knowledge and skills by transitioning farmers, and greater investment in marketing infrastructure, especially for perishable commodities. But, Vietnam already has some successful experience with this, with land conversions and the expansion of aquaculture production in the 1990s and 2000s. In the uplands, future agricultural growth will come from land conversion but from increasing productivity on existing (or even reduced) agricultural land, in the contexts of climate change and increased competition for natural resources.

TABLE 2.20: Labor input, productivity, and land use by commodity, 2016-2017

	Cultivated area, ha	Labor input, days/ha	Labor productivity, '000 VND/day
Paddy	7,816,476	46-150	174-276
Maize	1,178,648	165-170	95-110
Cassava	552,760	185-220	118-135
Oranges	46,214	350-415	600-1,000
Mango	84,691	200-300	500-900
Dragon fruit	n/a	700	550-650
Pepper	58,527	360-500	520-1,830
Coffee	589,041	115-130	500-700

Source: Table 2.14 and GSO data on farmland use.

On the consumption side, however, Vietnam is already experiencing an accelerated process of dietary transformation, featuring a decline in per capita and aggregate national consumption of rice and rapid rates of growth in the consumption of fruits and vegetables, processed foods and, especially, animal products[79]. These dietary shifts are most rapid and profound in major urban areas[80], where changes take place in shopping patterns and increased levels of out-of-home eating. Significant changes in urban food consumption and expenditure patterns are occurring across the full spectrum of household income levels. It is projected that the domestic consumption of livestock and seafood products will surge in Vietnam, and the value of domestic spending on fruits and vegetables will exceed the spending on rice and other cereals (Figure 2.17). Vietnam is the part of the regional global trend in food consumption changes (Table 2.21), and as a large agricultural exporter it can not only follow the trend but benefit from supplying the higher-value products to the global market.

TABLE 2.21: Daily consumption of selected food groups in East and Southeast Asia, 2009 (actual) and 2030 (projected)

	2009	2030	Change, %
Rice	889	850	-4
Other cereals	535	645	21
All meats	350	664	90
Fish	54	79	46
Milk	55	78	42
Vegetables	74	111	50
Fruits	160	280	75
Edible oils	143	210	47
Others*	434	273	-37
Total	2,694	3,190	29

Note: Unit is kcal per day. *Others is residual that includes principally sugar, other sweeteners, legumes, pulses, nuts, other oils, and animal fats.
Source: Jamora and Labaste 2015

79 See World Bank and IPSARD 2016.
80 In 2012, some 55 percent of urban food expenditures were for animal products or seafood compared to only 17 percent for rice.

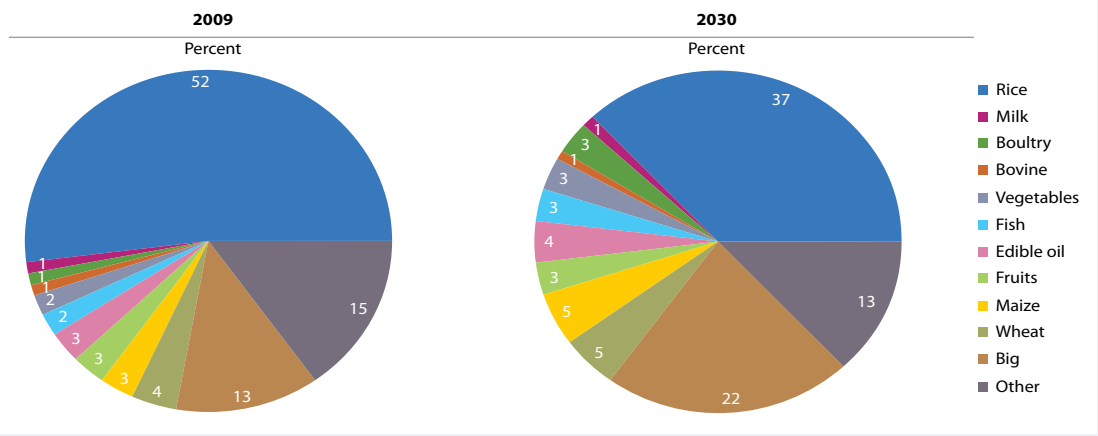
The government is, therefore, recommended to support accelerated agricultural diversification to respond to emerging food demand and improve income and employment opportunities. Among other things, this will require giving farmers more land-use choices by further loosening restrictions on uses of rice-land, improving irrigation services, and developing more flexible irrigation infrastructure suited to growing various crops. Other examples of supportive measures include strengthening animal health and pest surveillance services, better enforcing regulations relating to the use of agro-chemicals and antibiotics, and facilitating farmers' and small enterprises' access to finance.

Strengthening collective action to build competitive and inclusive value chains would help promote agricultural diversification and increase agricultural employment intensity. The government can support this in producer and industry organizations (and commodity boards) in two broad ways, by investing in organizational strengthening, and through legal and regulatory means. Many such entities currently perform government (program) liaison functions, but in the future, it will need to play more important technical and/or commercial roles. While contract farming is primarily private-sector led, government support for such arrangements is not uncommon because these can contribute to meeting broader policy objectives such as inclusive growth, food security, or the protection of natural resources (though this approach has its pitfalls). In several Vietnamese contexts, such as in aquaculture, specialty rice, and horticulture/floriculture, agricultural cluster development may be an appropriate strategy and lends itself to incremental forms of public sector support.

Promote the growth in agro-food processing industries and other parts of the food system

The constraints on private investment in food and beverage processing should be reviewed and acted upon. Developing a detailed agenda on this was beyond the scope of the present jobs review. For example, to what extent has SOE operations and an unlevel playing field discourage private investment? What role, if any, has an underdeveloped local industry for food grade packaging played in the industry's modest development? Have restrictions on (international) companies from sourcng raw materials directly from farmers played an important role? Have prospective investors encountered multiple layers of regulations—at national, provincial and district levels—which have deterred investment, especially beyond the country's lead cities? These and other issues need to be taken up.

FIGURE 2.17: Composition of food calories in Vietnam, 2009 (actual) and 2030 (projected)



Source: Jamora and Labaste 2015.

Strengthen public and private sector capacities to ensure safe food. In response to food safety challenges, Vietnam has already revamped its food safety regulations, invested in laboratories, and streamlined institutional structures by reducing the number of ministries in charge of food safety from six to three. It is also redirecting capacity developed to ensure export food safety to focus on the domestic market. To bolster these changes, the government will need to address financial and human resource pressures creatively, and may consider models such as co-regulation, which rely on greater private sector involvement, to manage the constraints it is encountering. In any case, technical and other forms of support may be needed to enable private food operators (and especially SME food processors and informal sector food distributors) to improve their food safety management practices.

Facilitate inclusion of the vulnerable groups in food system's jobs

While past agricultural growth in Vietnam has been highly inclusive, the modernization and consolidation of primary production and the modernization of the downstream elements of the food system may pose considerable challenges for some stakeholders to remain commercially engaged. We are already beginning to see a major shift from backyard pig and poultry production to the development of larger, vertically integrated feed and farming operations. Much of the recent growth in dairy production has been occurring on very large farms. The implications of these patterns for employment has thus far received little attention in Vietnam. Similar questions pertain to the emergence of modern retail formats in urban areas. At present, the bulk of the Vietnamese population obtains its fresh produce through traditional ('wet') markets which provide employment and livelihoods for large numbers of people. Supermarket/convenience store penetration remains low (i.e. below 15 percent) in most cities, yet this will certainly increase in the future. How this development will impact different stakeholders—and the policy implications of this—has likewise received little attention in Vietnam to date.

Skills development can help improve earnings and job perspectives. The global evidence suggests that more educated and skilled individuals are more likely to adopt and effectively use modern technologies, respond to market opportunities, and increase their earnings. Skilled farmers are the first to innovate, capitalize on emerging market opportunities, and adopt modern technologies. Well-educated rural young and women trained in business development and vocational skills are likely to benefit from increasing knowledge intensity of the food system, with significant opportunities in high-value agriculture and associated agro-processing and value addition[81]. Improved skills and education has already been an important pathway to obtaining better jobs in Vietnam. A college degree, for example, sharply increases the likelihood of having a wage job, by 52 percent compared with only lower secondary education[82]. The big problem is that less than 10 percent of labor force in Vietnam have college and University degrees (Figure 2.16). Skills acquisition (and practical work experience) will be especially important for ethnic minority youth.

81 World Bank 2017.
82 World Bank 2017.

Annex

TABLE 2.22: Vietnam's labor productivity by sector and subsector, 2005-2015

	In VND million per worker, nominal prices			
	2005	2010	2014	2015
TOTAL	21.4	44.0	74.7	79.4
Agriculture, forestry and fishery	7.5	16.3	28.6	30.6
Mining	346.6	742.2	1,683.3	1,695.6
Manufacturing and processing industry	34.2	42.0	70.0	71.0
Production and distribution of electricity, gas, hot water, steam and air conditioning	220.0	504.8	1,024.7	1,146.6
Water supply, wastewater, and waste management and treatment	37.3	94.6	179.0	179.9
Construction	26.9	42.7	60.7	66.5
Wholesale and retail; repair of automobiles, motorcycles and other motor vehicles	24.3	31.1	58.3	63.4
Transportation, warehousing	21.7	43.8	73.2	71.9
Lodging and meals	35.6	45.5	64.2	63.7
Information and communication	66.0	77.3	84.9	87.0
Financial operations, banking and insurance	257.3	457.8	588.2	631.1
Real estate business	3,232.2	1,300.0	1,278.6	1,284.7
Professional activities, science and technology	82.0	128.8	204.2	220.7
Administrative activity and support services	32.3	42.5	56.3	56.6
Activities of the Communist Party, political social organizations; State management, security and defense; compulsory social security	13.7	35.2	62.5	66.9
Education and training	21.4	30.0	64.9	72.1
Health care and social assistance activities	35.0	53.4	134.4	133.8
Arts, entertainment and recreation	76.9	62.8	80.7	84.6
Hiring work in households to produce products, materials and consumption services in the household	7.5	15.0	32.9	35.9

Source: GSO, 2016.

TABLE 2.23: The detailed estimates of the labor productivity by sector, Vietnam, 2014, households earning any amount of income from agriculture

	Crops	Livestock	Ag Services	Forestry	Fisheries
Revenue ('000 VND)	48,845	**64,197**	**104,137**	**15,213**	**135,703**
Intermediate costs ('000 VND)	18,388	45,556	48,623	1,910	65,932
Value added ('000 VND)	30,456	18,641	55,514	13,303	69,771
Hired labor costs ('000 VND)	3,456	429	14,677	3,182	12,781
Wage of hired labor ('000 VND/day)	71	57	91	112	107
Hired labor input (person days)	49	8	161	28	120
Household labor input (person days)	142	106	51	38	132
Total labor inputs (person days)	191	113	212	66	252
Area (m2)	7,434			19,850	12,443
Total labor input (person days/ha)	528			103	476
Labor productivity ('000 VND/day)	**159**	**165**	**262**	**202**	**277**
Number of households	4,234	1,075	46	171	356

Source: IPSARD's estimate based on VHLSS 2014.

TABLE 2.24: The detailed estimates of the labor productivity by sector, Vietnam, 2014, specialized households earning 70 percent and more of total income from agriculture

	Crops	Livestock	Ag Services	Forestry	Fisheries
Revenue ('000 VND)	66,283	**88,565**	**223,000**	**35,659**	**191,819**
Intermediate costs ('000 VND)	25,369	60,237	99,407	4,753	93,756
Value added ('000 VND)	40,914	28,329	123,593	30,906	98,064
Hired labor costs ('000 VND)	4,825	453	24,936	9,993	20,869
Wage of hired labor ('000 VND/day)	78	64	96	80	111
Hired labor input (person days)	62	7	261	125	187
Household labor input (person days)	139	117	146	72	169
Total labor inputs (person days)	201	124	407	197	356
Area (m2)	8,775			27,250	16,572
Total labor input (person days/ha)	492			160	588
Labor productivity ('000 VND/day)	**204**	**228**	**304**	**157**	**275**
Number of households	2,380	365	7	16	221

Source: IPSARD's estimate based on VHLSS 2014.

TABLE 2.25: The detailed estimates of the labor productivity by commodity, Vietnam, 2014, specialized households earning 70 percent and more of total income from agriculture

	Paddy	Coffee	Pepper	Mango	Citrus	Pork	Shrimp	Fish
Quantity (kg)	6,553	**5,171**	**1,529**	**10,045**	**5,472**	**2,125**	**1,233**	**4,147**
Price ('000 VND/kg)	6,677	38,176	14,2750	13,369	19,910	44,299	16,1178	42,435
Revenue ('000 VND)	43,621	197,408	218,265	134,292	114,323	94,135	198,734	42,435
Intermediate costs ('000 VND)	17,585	79,499	50,125	46,191	25,314	65,626	93,670	53,188
Value added ('000 VND)	19,220	116,698	126,074	35,791	68,441	21,722	73,546	51,267
Hired labor costs ('000 VND)	2,884	21,138	15,656	3,852	7,072	48	6,584	16,312
Wage of hired labor ('000 VND/day)	61	182	125	85	63	67	114	98
Hired labor input (person days)	48	116	126	45	112	0.7	60	167
Household labor input (person days)	97	266	317	88	116	138	147	101
Total labor inputs (person days)	145	382	442	133	228	139	207	268
Area (m2)	11,147	17,646	12,504	5,904	4,632		17,662	2,817
Total labor input (person days/ha)	278	287	329	182	300		261	373
Labor productivity ('000 VND/day)	**94**	**411**	**511**	**484**	**297**	**157**	**403**	**329**
Number of households	1,779	79	31	15	20	195	109	149

Source: IPSARD's estimate based on VHLSS 2014.

TABLE 2.26: Labor intensity and productivity from the field data, Vietnam, 2016-2017

	Labor input, person-days/ha	Labor productivity, value added/day, VND
Paddy		
Thai Binh (household 1)	148	174,000
Thai Binh (household 2)	156	185,000
Dong Thap (commercial farm)	46	276,000
Oranges		
Nghe An (households 1)	350	574,000
Nghe An (households 2)	370	581,000
Hoa Binh (households 1)	405	586,000
Hoa Binh (households 2)	414	966,000
Mango		
Dong Thap (household 1)	199	897,000
Dong Thap (household 2)	300	500,000

TABLE 2.26: Labor intensity and productivity from the field data, Vietnam, 2016-2017 (cont)

Dragon Fruit		
Tien Gian (household 1)	717	644,000
Tien Gian (household 2)	708	556,000
Pepper		
Kien Giang (in-land)	500	1,730,000
Kien Giang (Phu Quoc island)	360	1,833,000
Dak Lak (households)	454	518,000
Coffee		
Dak Lak (household 1)	115	522,000
Dak Lak (household 2)	130	692,000
Pork		
Thai Binh (household 1)	500	320,000
Thai Binh (household 2)	1,500	946,000
Dong Nai (commercial farm 1)	1,466	355,000
Dong Nai (commercial farm 1)	1,466	578,000
Fish		
An Giang (enterprise 1)	212	283,000
An Giang (enterprise 2)	212	978,000
Shrimp		
Kien Giang (enterprise)	335	3,340,000
Kien Giang (household)	240	1,722,000

Source: IPSARD's estimate using the data collected in 2016-2017.

TABLE 2.27: Estimates of labor productivity in different sub-sectors of the economy, Vietnam

	Value added, billion VND	Labor force, people	Labor productivity (value added per worker), '000 VND	Ratio of actual labor to standardized labor, VHLSS	Per-hour-worked labor productivity, '000 VND
1. Agriculture					
Crops					
Paddy	122,158,159	7,658,156	15,951	0.38	41,751
Sugarcane	11,156,937	453,453	24,604	0.35	70,172
Cashew	3,620,090	231,158	15,661	0.35	44,664
Pepper	8,947,592	255,591	35,007	0.33	106,390
Rubber	32,192,509	710,960	45,280	0.35	129,140
Coffee	27,558,370	1,900,286	14,502	0.51	28,254
Tea	3,532,342	304,218	11,611	0.35	33,155
Livestock					
Cattle	9,233,096	1,103,091	8,370	0.22	37,225
Pigs	22,348,272	1,344,549	16,621	0.36	46,572
Poultry	10,118,184	846,302	11,956	0.22	53,172
Forestry	13,633,140	957,689	14,235	0.28	50,681
Fisheries					
Catching fish	31,273,680	628,798	49,736	0.36	139,182
Aquaculture	50,539,582	630,474	80,161	0.36	224,325
2. Industry					
Food processing					
Meat processing and meat product preservation	13,957,047	68,988	202,311	1.00	202,311
Fisheries processing	24,386,273	235,533	104,414	1.00	104,414

TABLE 2.27: Estimates of labor productivity in different sub-sectors of the economy, Vietnam

	Value added, billion VND	Labor force, people	Labor productivity (value added per worker), '000 VND	Ratio of actual labor to standardized labor, VHLSS	Per-hour-worked labor productivity, '000 VND
Vegetables and fruits processing	4,469,052	170,793	26,166	1.00	26,166
Oil processing	2,2,87,562	5,479	397,906	1.00	397,906
Dairy products	10,668,590	11,977	890,749	1.00	890,749
Milling and flour production	19,480,667	153,546	126,872	1.00	126,872
Textile and footwear					
Textile	127,494,081	1,656,672	76,959	0.83	93,729
Footwear	91,255,730	441,955	206,482	0.83	250,519
Construction	179,908,222	2,748,265	65,462	0.95	70,285
3. Services					
Hired services in households	3,085,464	177,740	17,536	1.00	17,359

Source: IPSARD's calculation based on the input-output matrix for 2012, labor surveys, and VHLSS 2014.

TABLE 2.28: Potential occupational growth and related skill sets in selected food value chains in Vietnam

Occupations and skills	Rice	Fruits and Vegetables	Aquaculture
Occupations			
Senior manager		X	X
Assistant manager/supervisor	X	X	X
Accountant	X	X	X
Marketing (export, domestic)	X	X	X
Buying agents	X	X	
Inventory management	X		X
Warehouse management	X		X
Quality control	X	X	X
Production/machine operation	X	X	X
Equipment maintenance	X	X	X
Skills			
Pre-harvest techniques			
Agricultural production		X	
Aquaculture technicians			X
Farm management			X
Post-harvest handling			
Electricians for cooling systems		X	
Equipment operators	X		
Rice milling	X		
Food processing		X	
Test for pesticide residue		X	
Standards			
International system and quality control	X	X	X
Viet GAP	X	X	X
Cooperative management	X	X	
Marketing	X		
Labor safety			X

Source: Agriteam Canada 2015

CHAPTER 3 - **ENTERPRISE DYNAMICS** AND JOB FLOWS[83]

While many factors have contributed to Vietnam's success in transforming to a more diversified, higher quality jobs sector, a more dynamic private sector will be crucial to even greater success. Since 1986, Vietnam has achieved one of the highest sustained rates of growth in the world, becoming an attractive location for foreign investors, expanding its exports, increasing productivity in the agriculture sector, and building a large manufacturing sector. To maintain this momentum, three shifts are needed. First, the allocation of resources needs to be driven by open competition and productivity. Preferential access to subsets of firms can serve to help them succeed, but can have larger costs on productivity, innovation and growth for the economy as a whole. Second, Vietnam needs to develop a more vibrant service sector that can contribute to productivity and growth in its own right, but also provide inputs to industry and commercial agriculture. Third, improving the linkages across more productive exporting firms with local suppliers will enable more domestic firms to get pulled up the productivity ladder.

One of the factors that affects all these dimensions, which was identified in the *Vietnam 2035 Toward Prosperity, Creativity, Equity and Democracy* report, is that the playing field is not level. In particular, there are distinct advantages – and lack of advantages – by firm ownership. Foreign firms can enjoy preferential access to land and tax treatment. State owned enterprises can also have preferential access to land and to credit, as well as to government procurement – and continue to have monopolistic positions in certain sectors, including in some service sectors that serve as important inputs to other sectors. The domestic private sector, on the other hand, does not enjoy these benefits. While they are seen as prime drivers of productivity, growth and hiring going forward, they face disadvantages compared to these other ownership groups. To enable them to play a larger role in driving Vietnam's future, these imbalances will need to be addressed.

This chapter takes a deeper look at firms to better understand the key dynamics in firm productivity and employment that can inform policy debates about the choices and opportunities facing Vietnam. It describes the typology and evolution of firms, labor and productivity to identify the types of firms that have been creating the most jobs and the gaps that remain. Given concerns about the uneven playing field by ownership type, the work gives particularly emphasis to differences in the performance of firms by ownership categories. It also tries to identify the extent to which private domestic firms are increasing their productivity and employment over time and whether they are being efficient in their input allocation. Of particular interest is knowing whether more productive firms employ more people, and the extent to which resources, including human resources, are being allocated to firms that are becoming more productive. As these

83 This chapter was prepared by Reyes Aterido (Jobs Group, World Bank) and Mary Hallward-Driemeier (Trade & Competitiveness, World Bank).

are often more productive, higher paying and more secure jobs, understanding the determinants of job creation and the scope for further growth and productivity is central means of improving opportunities for more workers going forward.

In contrast to most analysis on firm dynamics and jobs flows in Vietnam, which rely on aggregate data for the country as a whole[84] or on household data, this chapter uses firm-level data. The *Vietnam Enterprise Census 2004-2014* data allow for more detailed investigations of the determinants of productivity growth, what types of firms are creating jobs and how patterns may be evolving across the ownership classes of enterprises that can inform the policy debates (Box 3.1). It tells the story of more than 415,000 firms and 11 million jobs.[85] The chapter also puts Vietnam in an international perspective.

The chapter has eight sections. Section 2 presents an evolution of the firm sector, giving context to the ownership structures observed in today's economy and legacy laws and practices that may be stunting competitiveness and job growth in today's markets. Section 3 provides a typology of the types of firms where wage workers work. Section 4 looks at how these patterns are changing, i.e. which firms are driving job creation. Section 5 looks at the links between productivity and job flows, whether more productive firms are creating more jobs, and how productivity is shifting overtime and the efficiency in the allocation of inputs. These sections provide the key results on whether productivity and employment trends are reinforcing each other or if there are trade-offs between these two objectives. The rest of the chapter looks in more detail at other measures of competition that could also provide deeper insights into the process of allocative efficiency and the types of policies that could address ways to improve both productivity growth and employment. Section 6 looks at minimum wages and Section 7 considers the situation of women workers. The chapter finishes with a conclusion that discusses the policy implications of the results.

BOX 3.1: Introducing the Vietnam Enterprise Census 2004-2014

The chapter analysis relies on a census of registered enterprises, 2004-2014. It covers the formal private (and SOE) sector: formal wage work in industry and services; and household enterprises and the self-employed who are registered, excluding agriculture (except formal agribusiness). It is important to keep in mind that the work covered here analyzes the performance and trends of about one in five Vietnamese jobs, but is an economically significant segment that is driving growth and the expansion of 'good jobs'.

The enterprise level data explore a number of firm characteristic and performance variables in the period 2004 - 2014. Enterprises report on their ownership and legal status, their total revenue and employment, their location and a detailed sector code (at the 4-6 digit code). The data can differentiate between firms that have a majority or minority ownership stake by the state, firms that have foreign owners and enterprises that only have private domestic owners. Respondents provide overall revenues, total workers and in most years, the number of female workers and the number that are formally registered. Firms are linked by the same identification number over time so the dataset is an unbalanced panel that captures both entry and exit.

There are 1,899,723 observations in the sample (several are repeated across years), with the number of enterprises reporting in a given year expanding over time. The average firm has 39 employees and is relatively young (4.8 years old). For most of the descriptive work, we group size and age into categories to facilitate comparisons. Within the census, 19.5 percent of firms are in the manufacturing sector, 43.6 percent in trade, and 24.7 percent in services. The rest of the firms are in agriculture-mining-fishing, construction and utilities.

84 World Bank 2002, 2011; McCaig and Pavcnik 2013.

85 The Vietnam's Enterprise data is a census of registered firms. It captures a large number of enterprises, 415,649 in 2014, that provide a quarter of the overall jobs in the economy. These enterprises account for all the non-governmental formal wage jobs (but does include SOEs); employing 11.4 million of the 50 million workers in the labor force or approximately half of those not in agriculture. While most of these jobs are covered by contract, a fair share are uncontracted labor.

Doi Moi and the Evolution of Firm Ownership Types

Vietnam's rapid transition from an agricultural economy, with significant SOEs, to a more diverse ownership structure underscores some of the perverse incentives that may be constraining firm growth and job creation today. In 1986, Vietnam was in the bottom decile globally in terms of GDP per capita and one of the countries with the highest share of employment in agriculture in the world. In 1987 and 1988, the Doi Moi economic strategy was implemented; private economic activity was legalized, collectives were replaced with household farms and price controls were eliminated, exposing farms to markets and competition.[86] A series of land reforms also allowed households to lease, exchange and mortgage their land, thereby increasing the length of tenure of plots over time.

In the 1990s there were a series of trade liberalization measures, including in the agricultural sector that further raised productivity in that sector and released labor to other sectors. Vietnam moved from being a significant importer of rice to being the second largest exporter by 1997. This increased productivity in agriculture would allow the release of labor that could then move to other sectors. This growth was somewhat constrained through only partial liberalization of land markets; even today, land markets are not free and access to land and market based transactions of land are limited.

The Doi Moi successfully attracted foreign investment via policies that persist today. In 1987 restrictions on foreign ownership were lifted (except in areas of national defense) and 100 percent foreign owned firms were allowed to enter. Foreign multinationals were even offered generous tax breaks and incentives to locate in Vietnam.[87] One of the favored policies was the establishment of special economic zones.

The private domestic sector began to expand. In 2000, the new Enterprise Law made it significantly easier for enterprises to register. It had the effect of quadrupling the number of enterprises that were registered, partly by encouraging firms to change their informal household enterprise status to registered enterprise.[88] The vast majority of these 'new' enterprises were very small.

The SOE sector rapidly morphed under Doi Moi, though SOEs still play a large role in output and jobs. SOEs accounted for 29 percent of overall output in 1986, including half of the output in industry and services, and employing about 16 percent of the labor force or half the non-agricultural labor force. The reforms in this sector also served to decentralize decision making, freeing price setting and trade. SOEs also received reduced subsidies and other support from the government. The SOE sector responded by consolidating its activities. There were closures, but often there were mergers that were accompanied by layoffs. The number of SOEs thus fell dramatically, and the share of workers employed in SOEs likewise declined – but the share of output fell by less. In 2014, SOEs still account for 35 percent of total output and employ less than 10 percent of the formal wage sector.

In spite of these deep reforms, the state sector does not participate on even footing with the private domestic sector. It has a virtual monopoly on production in sectors such as fertilizer, coal, electricity and gas, telecommunications, water supply, and insurance.[89] State owned firms also tend to have better access to capital and land markets. The state-owned sector's share of domestic credit in 2009 was 27 percent. These firms have also been noted for their high rates

86 Glewwe 2004.
87 Dodsworth et al, 1996.
88 World Bank 2002; Minh et al. 2010; Malesky and Taussig 2009.
89 World Bank 2011.

of investment, with capital intensities among the SOEs accelerating during the 2000s.[90]

Beyond ownership, however, the government still played and continues to play important roles in shaping firm dynamics. Land policies are one important way, setting limits on where firms can locate. Another is through state investment policies and the commitment to spread investment across all provinces. While the aim may be to have more even development and access to opportunities, agglomeration benefits will be realized with a critical mass of production. And firms, particularly foreign firms that can chose among multiple options as to where to locate, will chose those that have the best access to input and output markets and that have sound infrastructure. The state has also had influence through support programs it has offered to some start-ups The state remains an important buyer of goods; not surprisingly, the firms that supply SOEs have higher survival probabilities and are more likely to grow.[91]

Cutting across all firm ownership types is the evolution of external trade over the period. Vietnam successfully leveraged external agreements to encourage domestic reforms – and in lifting growth in the process. The US lifted its trade embargo in 1994. In 1995 Vietnam joined ASEAN and its free trade area and initiated its application into the WTO. The US-Vietnam Bilateral Investment Treaty was signed in 2001, leading to a huge increase in exports, particularly in garments, textiles and footwear. Finally, Vietnam's members in the WTO was finalized in 2007. The US trade deal and the WTO accession help account for the surge in reallocation in the 2000s.[92]

Where do wage workers work?

Workers are employed in large firms. The majority of registered firms are small; up to 80 percent of firms have less than 20 employees (Figure 3.1). But most wage workers are in larger firms (Figure 3.2). More than forty percent of workers in registered firms work in firms with over 500 employees. Thus, while there are relatively few large firms, their size ensures they account for a significant share of employment. In contrast, registered firms with up to 9 employees account

FIGURE 3.1: Firm Distribution by Size

Source: Authors calculations, based on Vietnam Employer Census, 2004-2014.

FIGURE 3.2: Employment Share by Firm Size

Source: Authors calculations, based on Vietnam Employer Census, 2004-2014.

90 World Bank 2011.
91 Hansen, Rand and Tarp 2009.
92 McCaig and Pavcnik, 2014.

for 10 percent of employment. Relative to other countries, overall concentration of employment in large firms is high.[93]

The share of workers in small firms is increasing over time. The largest firms (500+ employees) have seen a 10 percentage point drop in their share of formal employment since 2004. While both the number of large firms and the average firm size in this category expanded over the ten year period – a growth of 1000 large firms with an average size increase from 1,471 to 1,668 employees – firms with up to 50 employees have seen almost as large a gain in their number of firms and employment share (Figures 3.1 and 3.2). Namely, the number of firms with 500 or more employees has been expanding, but at a slower rate than small firms. This nets out to an increase in the share of jobs attributable to firms with 50 employees or fewer.

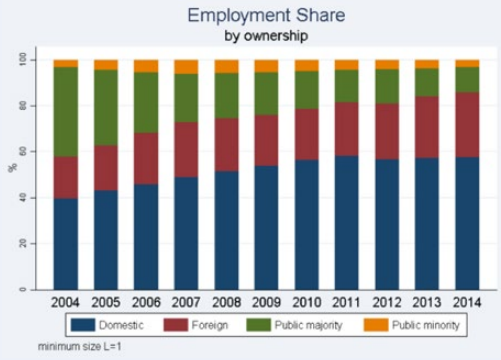
Most firms, and jobs, are in the domestic private sector. The vast majority of firms are privately owned domestic firms (Figure 3.3). This has changed little over time. But only about half of formal wage jobs are in the private domestic firms (Figure 3.4). This is explained by the predominance of smaller firms and relatively few larger firms in the domestic private sector (Figure 3.6). Thus, the employment share of the domestic private sector is less prominent.

Among predominantly large firms, employment share of state owned firms has been steadily declining while the foreign sector has been increasing. Publicly owned firms (SOEs) are the largest on average in Vietnam; foreign owned firms tend towards large but have a wider distribution by size (Figure 3.6). While SOEs were the bulk of formal wage employment in 2004 (Figure 3.5), this had flipped to foreign-owned firms by 2014 (Figure 3.6). SOE's share of formal wage jobs shrunk from 40 percent to 15 percent in the period of 2004-2014, while the share of workers in foreign firms rose from 18 to 30 percent (Figure 3.4).

FIGURE 3.3: Distribution of Firms by Ownership

Source: Authors calculations, based on Vietnam Employer Census, 2004-2014.

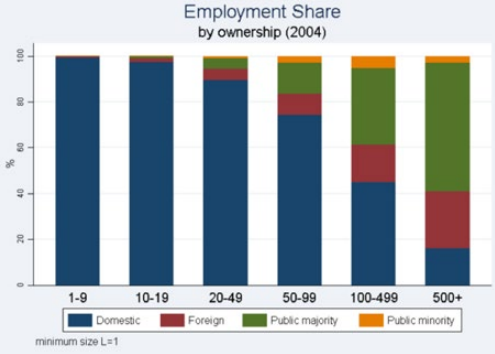
FIGURE 3.4: Employment Share by Ownership Type



Source: Authors calculations, based on Vietnam Employer Census, 2004-2014.

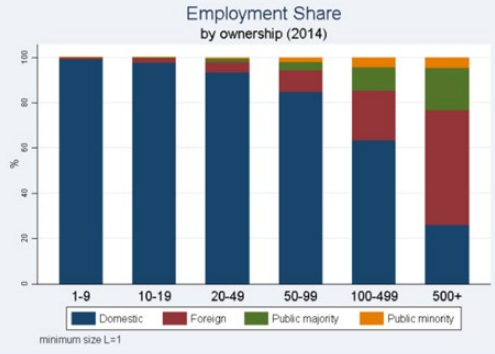
93 Aterido and Hallward-Driemeier 2017.

FIGURE 3.5: Employment Share by Ownership (2004)



Source: Authors calculations, based on Vietnam Employer Census, 2004.

FIGURE 3.6: Employment Share by Ownership (2014)

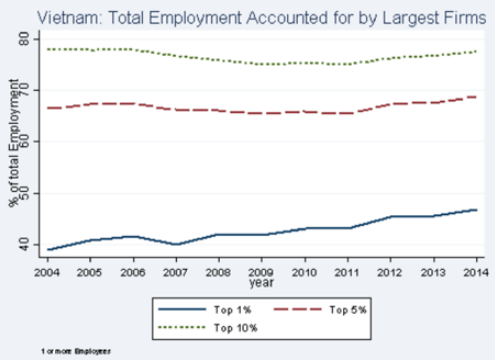


Source: Authors calculations, based on Vietnam Employer Census, 2014.

A look at employment/market concentration

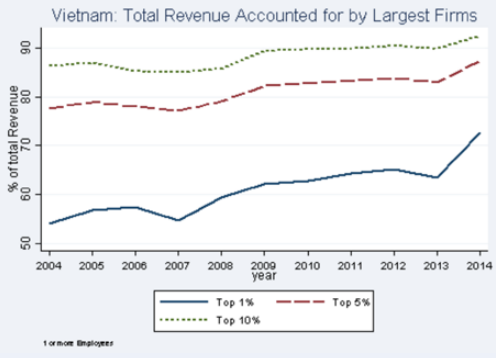
Indeed, the largest of the large firms are responsible for the growth in jobs (and revenues). Another way to show the shift in the composition of ownership is by the change in employment shares of the largest firms over time rather than the absolute size categories (Figure 3.7). The top 5 percent of firms account for almost 67 percent of jobs, and this remains true even as the size composition of firms has changed. However, the top 1 percent of firms account for a growing share of employment and even greater share of revenues over the ten year period (Figures 3.7 and 3.8). So, while the composition of firms is shifting towards smaller firms over time, the share of employment accounted for by the largest 1 percent of firms has increased from 40 to 48 percent in the period. The employment share of the top 5 and 10 percent largest firms has remained constant at around 68 and 78 percent respectively.

FIGURE 3.7: Total Employment Accounted for By Largest Firm



Source: Authors calculations, based on Vietnam Employer Census, 2004-2014.

FIGURE 3.8: Total Revenue Accounted for By Largest Firm

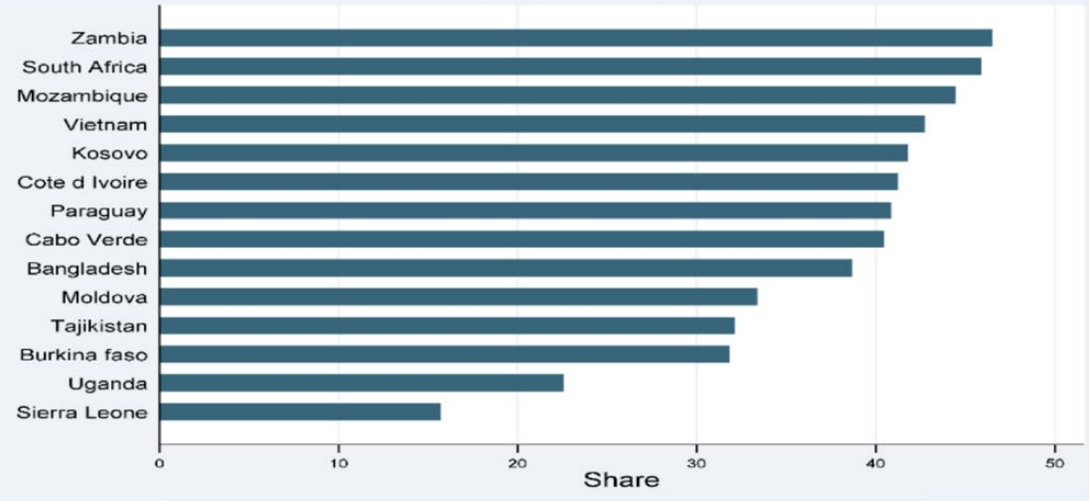


Source: Authors calculations, based on Vietnam Employer Census, 2004-2014.

Vietnam's extreme clustering of workers in the largest of the large firms may signal barriers to innovation and new firm entry. Compared to countries for which comparable data are available, Vietnam ranks fourth in concentration of workers in the top percent largest firms (Figure 3.9). In essence, a few firms play an outsized role in overall employment. While this may flag the importance of enabling efficient exporters to reach scale, it also raises concerns about possible monopolistic behavior that should be watched. A balance is needed as too much market share can stunt competitive processes and innovation and entry.

While market concentration is declining across most sectors, there are some outliers that drive the overall aggregate higher concentration trends. Among sectors that employ at least 0.01 percent of formal wage workers and already have a significant level of concentration, most show a decrease in market concentration in employment in the period 2004-2014, with a notable, but somewhat less decrease in market concentration in revenues. This is represented by the dots below and to the right of the 45 degree line in (Figures 3.10 and 3.11).[94] Those sectors that are above and to the left of the 45 degree line are those where market share has become more concentrated. This would signal a greater contestability and competition in sectors.[95] While the overall story is clearly one of extensive and growing competition, there could still be a few important sectors where concentration could remain significant.

FIGURE 3.9: Share of Employment by Top 1% Largest Firms

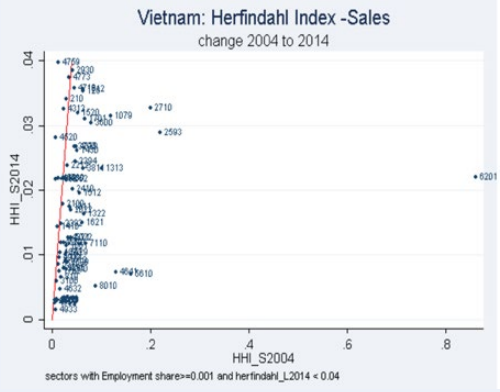


Source: Jamora and Labaste 2015.

94 Figures 10 and 11 plot the Herfindahl index, calculated for both sales and employment. To facilitate scales that enable graph visibility, sectors included are conditioned to having employment share larger than 1 percent and a Herfindalh index based on employment concentration larger than 0.04. Thus, small or not concentrated sectors are excluded. The Herfindahl Index is the weighted sum of squared market (employment) shares so a higher number indicates greater market concentration. Each four-digit sector is plotted separately, with the Herfindahl index value plotted on the x-axis and the 2014 index on the y-axis.

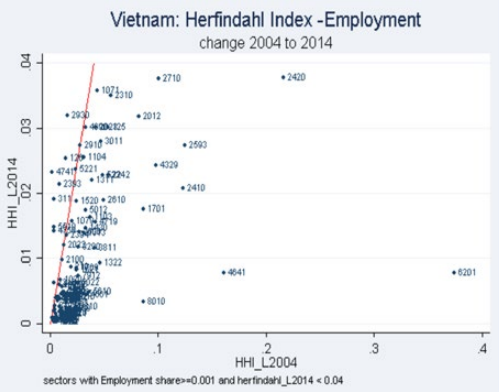
95 Note, this graph is drawn looking at those with a concentration below .25 in 2004. However, there are few even more highly concentrated sectors that were not included as the scale of the diagram reduces the ability to discern the dots among all these sectors. For the dozen or so outliers, however, the pattern is the same and almost all demonstrate a decline over time in market concentration.

FIGURE 3.10: Market Concentration, Sales, 2004-2014



Source: Authors calculations, based on Vietnam Employer Census, 2014

FIGURE 3.11: Market Concentration, Employment, 2004-2014



Source: Authors calculations, based on Vietnam Employer Census, 2014

Market share concentration differs across ownership categories. State owned firms have sizeable shares in oleaginous crops, construction and real estate. Majority state owned firms may be justified in sectors that are natural monopolies, but if they dominate sectors for which the private sector should be well placed, it could be a signal of policies tilting the playing field rather than leveling it. Foreign firms, on the other hand, are dominant in manufacturing, with the largest players in communication equipment, followed by footwear, plastics, apparel, and animal feed (Table 3.1). The strong presence of foreign firms in communications and garments is consistent with their strong showing in exports. It also reinforces the point that these sectors are really dominated by foreign firms; it would be encouraging to see more domestic private firms able to enter and compete in these areas for which there is a clear external market being served. The opportunity for technology transfer and better linkages is there; these are sectors with clear supply chains (Box 3.1).

TABLE 3.1: Market Concentration (10 Top Sectors)

Industry		Sector Employment Share	Sector Sales Share	Share top 4 in sector	Domestic Share	Foreign Share	SOE Share
Agriculture	125 Fruits and Nuts	**34%**	**22%**	**32%**	**63%**	**4%**	**33%**
	311 Fishing	9%	16%	31%	98%	0%	2%
	161 Support crop production	27%	13%	16%	98%	0%	2%
	145 Swine/pigs	2%	9%	52%	83%	4%	13%
	146 Poultry	1%	5%	74%	80%	4%	16%
	322 Aquaculture	1%	5%	60%	84%	1%	16%
	323 Aquatic breed production	2%	4%	54%	87%	4%	9%
	210 Silviculture and Forestry	3%	4%	27%	63%	1%	36%
	118 Growing vegetables	2%	4%	65%	76%	5%	19%
	126 Oleaginous	7%	3%	37%	20%	0%	80%

TABLE 3.1: Market Concentration (10 Top Sectors) (cont)

Industry		Sector Employment Share	Sector Sales Share	Share top 4 in sector	Domestic Share	Foreign Share	SOE Share
Industry	4100 Construction buildings	9%	21%	82%	69%	1%	30%
	2630 Communication equipment	2%	8%	93%	23%	69%3%	8%
	3510 Electric power generation	2%	5%	40%	75%	1%	23%
	4312 Construction site preparation	1%	3%	93%	81%	12%	18%
	1080 Manufacture animal feeds	1%	3%	32%	62%	13%	25%
	1410 Apparel	15%	3%	16%	77%	6%	10%
	1020 Preservation fish	3%	3%	15%	75%	11%	19%
	2410 Manufacture iron and steel	1%	2%	21%	67%	24%	22%
	1520 Footwear	11%	2%	27%	67%	13%	9%
	2220 Plastics	3%	2%	5%	72%	1%	15%
Services	4620 Wholesale agriculture and animals	1%	32%	95%	85%	2%	14%
	6820 Real state	1%	21%	100%	60%	1%	38%
	4669 Wholesale waste	3%	7%	71%	83%	1%	15%
	5229 Other transportation	2%	5%	90%	83%	1%	16%
	4661 Wholesale solid, fuels	2%	4%	32%	79%	1%	20%
	4649 Wholesale household goods	5%	4%	60%	80%	1%	19%
	4632 Wholesale food	4%	2%	9%	87%	1%	13%
	4663 Wholesale construction materials	5%	2%	18%	82%	0%	18%
	4662 Wholesale metals	2%	2%	16%	81%	0%	18%
	4773 Retail specialized stores	1%	2%	78%	96%	0%	4%
Agriculture		3%	0%				
Industry		67%	31%				
Services		30%	68%				

Note: The table selects the 10 sectors with the largest market share in each agriculture, industry, and services and by ownership category (e.g. of the 10 sectors in manufacturing with largest market shares, share of firms that are private-domestic, foreign, and SOEs). Column (1) provides the employment share in the whole economy. Column (2) shows the overall market share of the sector in the economy as a whole. Column (3) is the overall sector market share of the top 4 firms (regardless of ownership). Columns (4) to (6) display the employment share of that specific ownership type in that sector. Source: author's calculations using Vietnam Enterprise Census, 2014.

BOX 3.2: Jobs in apparel and skills for upgrading

Integrating into apparel global value chains (GVCs) has provided Vietnam with greater export opportunities, which in turn has provided economic growth, job creation and poverty alleviation. Apparel has been one of Vietnam's top export categories over the last decade, accounting for 13 percent of total exports in 2015. The sector is the largest formal manufacturing employer in Vietnam, providing jobs for more than 1.3 million people.

Developing countries enter GVCs by performing basic assembly functions, and Vietnam is no exception. Vietnam is predominately in the manufacturing-related stages of the apparel value chain with firms operating on an assembly (referred to as cut, make, trim or CMT) or assembly and fabric sourcing business model (often referred to as FOB). Globally, most workers in the apparel global value chain are concentrated in the production-related segments, and are principally young, female workers earning minimum wages. In Vietnam, over three-quarters of employees in Vietnam's apparel sector are in production-related occupations.

However, upgrading beyond manufacturing activities has been limited. Some of the constraints Vietnam faces in moving into these segments include perception as a low-cost supplier, limited exposure to global markets/buyers, and minimal interaction between foreign and domestic firms that could provide this exposure, learning and buyer-relationship opportunities.

Opportunities for Vietnam to functionally upgrade will be higher if there are more domestically-owned firms and those firms focus more on selling to Asian markets. As such, to facilitate upgrading opportunities, equal emphasis should be placed on entrepreneurship and shifting focus to the Asian region. Skills constraints and other workforce gaps in Vietnam's domestic private sector, however, could impact opportunities to upgrade in the apparel GVC. English language, sales/marketing, design, research and product development present the largest skills gaps to move into these areas. It should be noted however, that Vietnam's limited participation in these areas is not unique to Vietnam. No country outside of the US, Europe and Japan has moved into these stages for the global export market. If Vietnam moves into these areas, it will likely be for the domestic market or ASEAN region.

Source: Frederick (2017)

The overall trend in terms of firm size and ownership is one where the biggest players appear to be getting bigger, but with high rates of entry of smaller firms, overall market concentration is increasing though it is decreasing within most sectors. So there is evidence of greater competition and a decrease in market concentration – but there are exceptions. FDI is mostly likely to dominate in manufacturing and the private domestic sector in services. But among the SOEs there are some surprises for which the case for (near) monopoly power is not straightforward.

Young Firms tend to be smaller than older firms

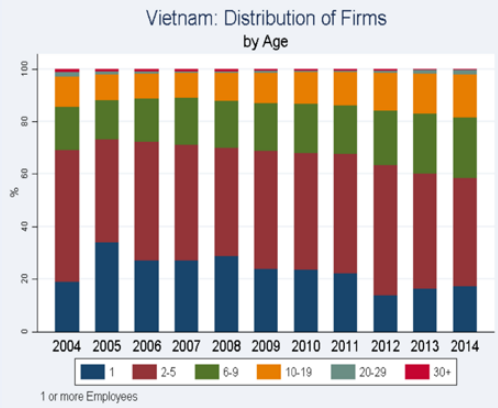
Most firms are young, though more than half of jobs are in older firm. Vietnam has a relatively large share of young firms; more than 60 percent were 5-years old or less in 2014 (Figure 3.12).[96] Young firms are mostly small, thus employing a smaller share of employment than expected (Figure 3.13). Older firms are larger than new firms. There is a strong relationship between ownership and age, where continued privatization of SOEs and a strong foreign investment has characterized the period. For example, there are virtually no 'old' (firms 25 years +) foreign owned firms; again, reflecting the earlier bans on foreign ownership.

By international comparisons, Vietnam stands out for its young private sector and few old firms compared to other countries.[97] Some of this age phenomenon reflects Vietnam's history and the limited role for private enterprise pre-Doi Moi. It may also be an artifact of the Enterprise Law of 2000 that encouraged registration in the early 2000s, resulting in mass registration, although the firms may have been in operation for a longer period.

96 In the period 2004-2014, 74 percent of Vietnamese firms were 5 years old or younger compared with 35 percent in the US and 22 percent startups compared to 8 percent in the US.

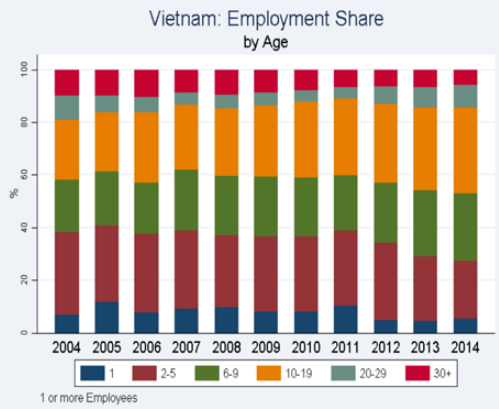
97 Aterido and Hallward-Driemeier, 2017.

FIGURE 3.12: Distribution of Firms by Age



Source: Authors calculations, based on Vietnam Employer Census, 2014

FIGURE 3.13: Employment Share by Age



Source: Authors calculations, based on Vietnam Employer Census, 2014

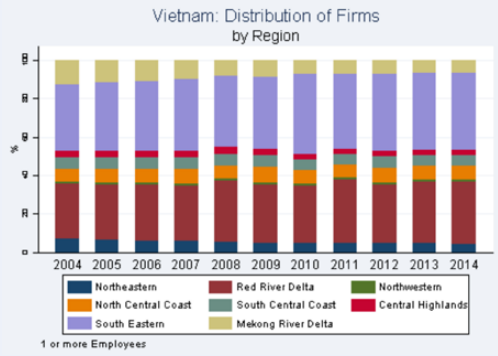
Economic activity is geographically concentrated

Looking across locations within Vietnam, the distribution of firms and jobs is fairly stable over time (Figure 3.14 and Figure 3.15). Two regions dominate due to the economic prominence of Ho Chi Min City and Hanoi. As the distribution of firms and employment remain consistent, the size distribution of firms within region has not changed much either.

What are the patterns of job creation and which types of firms are creating jobs?

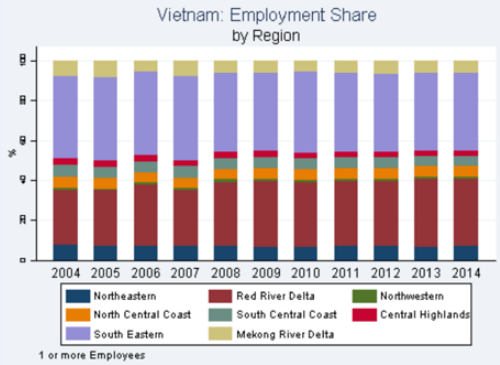
In the aggregate, the rates of job creation and job destruction have increased over time. Net job creation has been increasing since 2004 (Figure 3.16). Job creation can occur through the entry of new firms or through the expansion of existing firms or incumbents. For Vietnam, job creation by incumbents is 11.2 million or 62 percent of all jobs created, while entry is 38 percent (Figure 3.17).[98]

FIGURE 3.14: Distribution of Firms by Region



Source: Authors calculations, based on Vietnam Employer Census, 2014

FIGURE 3.15: Employment Share by Region



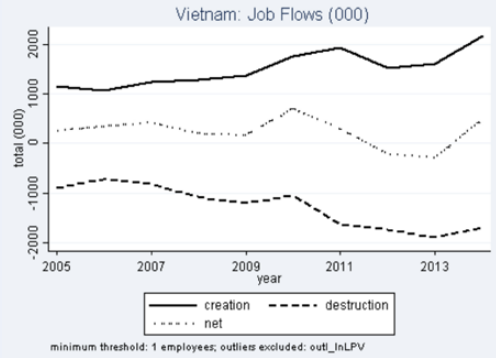
Source: Authors calculations, based on Vietnam Employer Census, 2014

98 Figure 17 has net job creation (job creation minus job destruction), but also total job creation by entry and incumbents and total job destruction by exit and incumbents. See Annex 2 for a discussion on job creation with different ways of calculating it.

Likewise, more jobs are lost from incumbents who are downsizing (8.9 million) than from exit (though 32 percent of all jobs destroyed, are due to exist, roughly 13 million jobs). If we consider only the net jobs created by incumbents, entry is 75 percent of jobs created. Overall, net job creation has been positive as the wage sector has expanded in the economy.

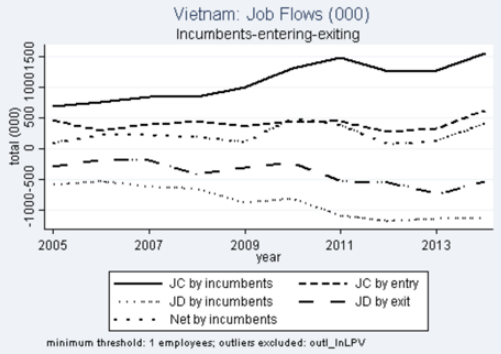
Most net job creation is by small firms. Given the crucial role of entry on net job creation, and that most new firms are small, most net jobs are generated by small firms. Large firms proved to be erratic. They shed net jobs in 2008 and progressively more from 2010 to 2013, recovering by 2014. Medium size firms had an unimpressive record with slight downslope trend (Figure 3.18).

FIGURE 3.16: Job creation and destruction



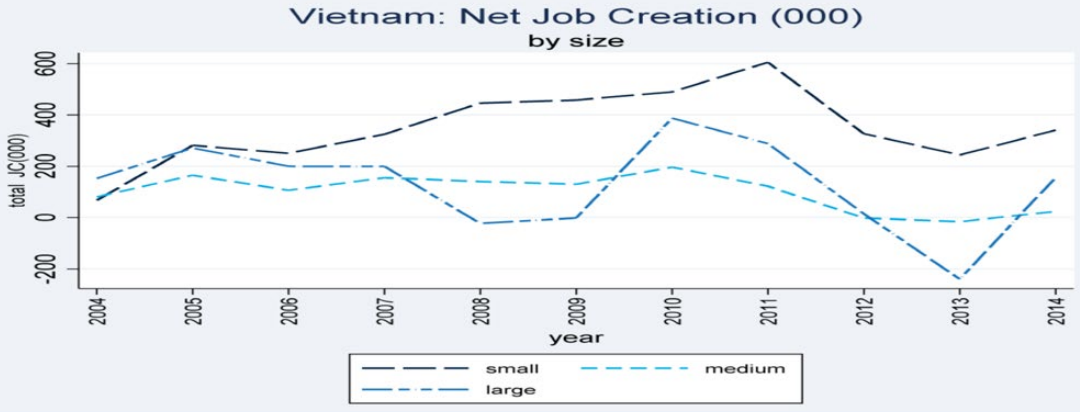
Source: Authors calculations, based on Vietnam Employer Census, 2014

FIGURE 3.17: Job creation and destruction by incumbents, new firms (entry) and exiting firms



Source: Authors calculations, based on Vietnam Employer Census, 2014
Note: JC=jobs created. JD=jobs destroyed.

FIGURE 3.18: Net Job Creation



Source: Authors calculations, based on Vietnam Employer Census, 2004 - 2014

Net job creation is overwhelmingly accounted for by private domestic firm entry (Figure 3.19). Regardless of firm size, most net job creation from entry is by private domestic firms. Only very large entering foreign firms and SOEs play a significant role.

Net firm expansion does occur, but is limited. Net job creation through expansion (rather than entry) is largely limited to the first five years of a firm's life. And even then, it is limited to younger large foreign firms, and micro private domestic firms. SOEs do not create net jobs after entry (Figure 3.19).

Net job destruction is mostly among larger firms of all ages. Larger firms, other than foreign, destroy more jobs than they create. The foreign sector does not show net job losses for any size or age of the firm. Both domestic private and SOE firms shed similar numbers of net jobs (Figure 3.19).

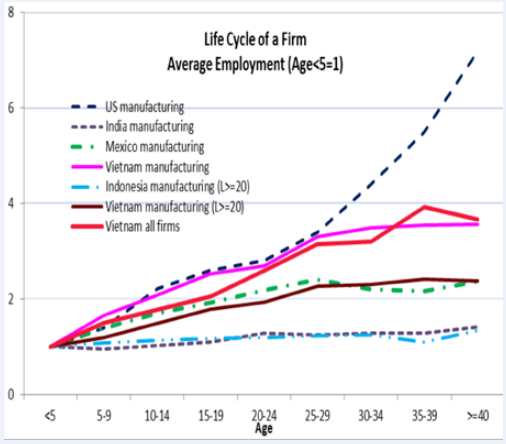
Compared to other countries, Vietnam's firms show net growth potential, especially among service and larger manufacturing firms. Our limited data do not permit an exploration of actual age-growth trends, but there are methodologies to estimate these trends and compare them to other countries. Vietnamese manufacturing firms, on average double their size by age 25 (Figure 3.20). However, these manufacturing firms do not grow in the first 10-14 years, only catching up with Mexico, a comparator country, after they are 25 years old. On the other hand, Vietnam clearly outperforms manufacturing firms in India or Indonesia. When the smallest manufacturing firms are excluded, the results improve. The thin red line (Figure 3.20) is higher than the pink one and rises even for the younger cohorts and tracks just below the performance of Mexico. When services are included and all firm sizes are included (the thick red line), Vietnam's firms' growth even catches up with the US by the 20-24 years old cohort This chart thus indicates there are two patterns worth examining. Firm hiring is expected to rise with age, particularly among service firms and secondarily among larger manufacturing firms.

Domestic firms grow over their lifecycle but SOEs do not. Employment doubles by age 25, with growth occurring among young firms and continuing increase slowly (Figure 3.21). This pattern is quite different from those of publicly owned and foreign firms. These firms start on average at a size that is 2.5 to 3.5 times larger than private domestic firms. Foreign firms tend to grow at a similar rate as private domestic firms, doubling their size when they are 25 years old. Public firms, with majority or minority ownership, on the other hand do not grow. For certain some sectors – such as utilities – the employment might not be expected to increase over time, but as these public firms span a range of sectors, this is a worrying indicator that they are not subject to the same competitive pressures to expand over time. Thus, this analysis indicates, consistent with the graphs above, that state owned firms enter at a larger size, particularly the majority publicly owned firms, but that growth over time is very limited.

FIGURE 3.19: Net Job Creation by Ownership

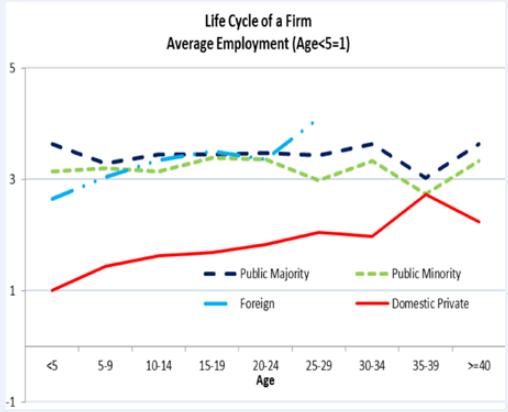
Source: Authors calculations, based on Vietnam Employer Census, 2004 - 2014

FIGURE 3.20: Life Cycle of a Firm



Source: Author's calculations for Vietnam and Indonesia; Hsieh and Klenow (2014) for India, Mexico and USA.

FIGURE 3.21: Life Cycle of a Firm, Average Employment



Source: Author's calculations for Vietnam and Indonesia; Hsieh and Klenow (2014) for India, Mexico and USA.

Exploring dynamics over a shorter period, as in most countries, a sizable share of firms changes size category. Depending on size category, 40 to 85 percent of firms changed size category over 10 years (Table 3.2). Very few firms grow significantly, moving from a micro or small firm to a large firm. Instead, firms that grow mostly do so by moving up one size category. But downsizing is more common. More than 30 percent of small (10-19) and medium (20-99) size firms downsized, and another 20 percent went out of business. Downsizing and exit was less prevalent among larger firms.

When simultaneously considering the effects of firm size, age and ownership on employment growth, growth rates are highest among young small and medium enterprises and lowest for SOEs. The graphs above allow us to account for one or two firm characteristics but taking all together form a slightly different, and more nuanced, story.[99] Growth rates are highest for young firms (less than 6 years old, but not including entry). This is a common finding, but what is noticeable is how growth then drops off after age 6, with rates becoming progressively lower as firms age, with older firms growing up to

TABLE 3.2: Transition Matrix

Transitions 2004 - 2014		1-9	10-19	20-99	100+	exit	%
Size at birth to age 5	1-9	**55**	**12**	**7**	**1**	**25**	**100**
	10-19	34	24	18	2	22	**100**
	20-99	18	15	42	8	18	**100**
	100+	6	3	17	61	13	**100**
Size to t+3	1-9	54	9	4	0	32	**100**
	10-19	30	33	16	1	21	**100**
	20-99	11	15	54	6	14	**100**
	100+	2	2	16	72	8	**100**

Source: Authors calculations, based on Vietnam Employer Census, 2004 and 2014

99 These results are derived from a linear, multi-variate regression. See Aterido and Hallward-Dreimeier 2017 for details.

11 percent lower than the youngest incumbents. However, the story is a bit different for size. A firm with 20 to 49 employees grows on average 9 percent more than a firm with less than 10 employees. For firms with 50 employees or more the growth with respect to micro firms increases by 10. By ownership type, foreign firms are the ones with the highest rates of employment growth. Domestic private firms are next, with the state-owned firms decreasing employment growth with respect to the private sector.

The relationship between productivity and employment

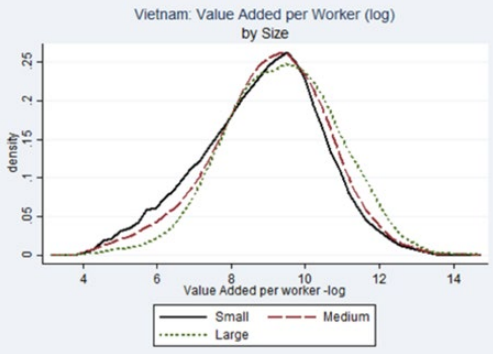
It is desirable to have a positive correlation between the size of a firm and productivity (static efficiency), but even more so to have the ones that are increasing their productivity by growing (dynamic efficiency). More productive firms gaining resources and expanding will be the drivers of overall productivity growth so these relationships are important in informing where bottlenecks may occur and thus what type of policy response may be appropriate.

Static efficiency: are resources allocated to productive firms?

Larger Vietnamese firms are more productive, on average, though productivity differences by firm size are not that notable. In the presence of scale economies, larger firms should be more productive. Figure 3.22 shows that there are very productive (right tail) – and unproductive (left tail) – firms in each size category. Though larger firms skew more toward higher levels of productivity.

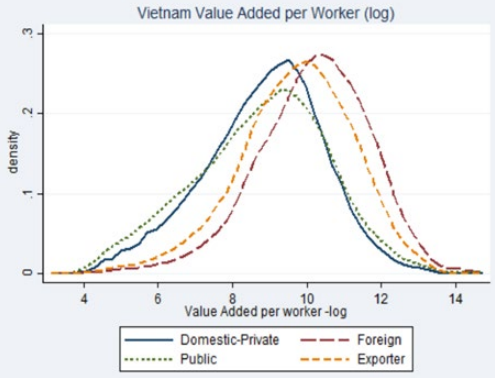
Productivity differences are much more pronounced by ownership, with foreign firms being the most productive. Foreign firms are the most productive firms on average, with the productivity distribution of foreign owned firms clearly shifted to the right (Figure 3.23). Exporting firms (foreign or domestic) are also more productive. The domestic private sector has lower productivity on average, with the distribution shifted to the left and with a longer left-hand tail.[100]

FIGURE 3.22: Value Added per Worker by Size



Source: Authors calculations, based on Vietnam Employer Census, 2014.

FIGURE 3.23: Value Added per Worker by Ownership and Export Status



Source: Authors calculations, based on Vietnam Employer Census, 2014.

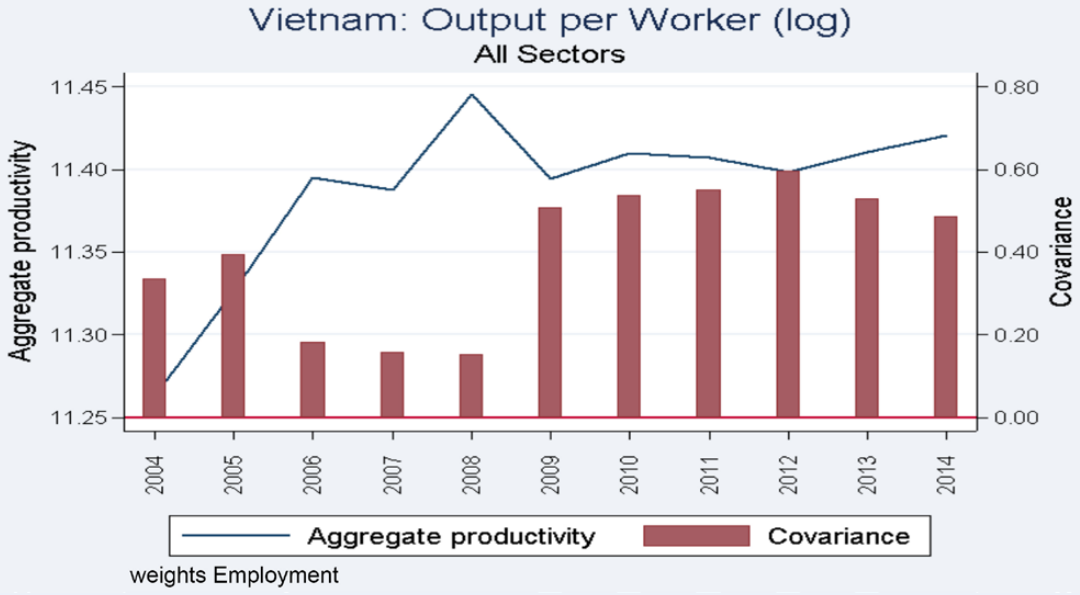
100 When using TFP as a proxy for productivity, rather than value-added per worker, domestic and SOE firms seem slightly more efficient. So, the strong performance in value added per worker could be simply due to foreign firms being more capital intensive.

Dynamic Efficiency: How is productivity shifting over time?

Productivity and firm size have both been increasing over time. Productivity, proxied by overall sales per worker, has been increasing over time. The line in Figure 3.24 slopes upward, although leveling off since 2009. More productive firms have larger workforces; this relationship has grown stronger over time, 2009.[101] This is demonstrated by the bars in Figure 3.24, which measure the correlation between firm size and productivity levels. The reallocation of labor to more productive firms accounts for about half of aggregate productivity, and is fairly stable over time after 2009.[102]

The productivity-employment relationship is more nuanced, though.[103] The positive relationship is particularly strong for domestic private firms. However, the effects are reduced by half in the case of foreign firms and by a fourth in the case of SOEs[104] Young productive firms (younger than 10 years old) grow faster than older productive firms. Although the main result prevails; productive firms of all ages tend to grow faster than less productive firms. While the positive relationship holds on average for many different productivity measures, the most productive firms actually reduce firm size. This is primarily driven by domestic firms; though FDI and SOE firms shed jobs faster if the productivity

FIGURE 3.24: Output per worker and correlation between firm productivity and firm size, All Sectors



Source: Authors calculations, based on Vietnam Employer Census, 2004-2014.
Note: The estimates are derived from an Olley-Pakes static decomposition, which looks at the cross-sectional distribution of productivity and size over multiple years. It is not looking at changes within firms over time. "covariance" is the correlation between firm productivity and firm size, measured by number of workers.

101 As firms become more productive they grow while less productive shrink or exit. Intuitively, the covariance can be understood thinking that if it were zero, workers would be distributed randomly between productive and unproductive firms. US manufacturing sector has a covariance value of 0.5.

102 Alternative methodologies found a trade-off between productivity and employment. Since the regression estimates find a positive correlation between these variables, the non-parametric estimates are not reported here. These can be found in Aterido and Hallward-Dreimeier 2017.

103 These results are derived from conditional estimates (regressions) that first control for random effects then account for fixed effects results. The latter are our preferred specification, but the former allow for some insights of the role of firm characteristics, generally time invariant, that cannot therefore be captured with the fixed-effects approach. The inclusion of the productivity measure does not substantially change the effect of firm characteristic; size is still associated with higher rates of employment growth and age is negatively associated with employment growth.

104 The effect is still positive as shown by the sum of the interaction coefficients with the productivity coefficient.

gains are driven by a range of factors (capital-intensive technologies, worker productivity, etc.). Thus, as FDI and SOEs are shifting to more capital-intensive technologies, these firms are not hiring as they gain in productivity.

Overall, there is evidence that more productive firms grow more and there is a favorable allocation of labor "between" firms. Young and domestic productive firms grow faster. However, firms increasing productivity, particularly among the most productive firms, do so at the expense of labor.

Productivity and firm survival

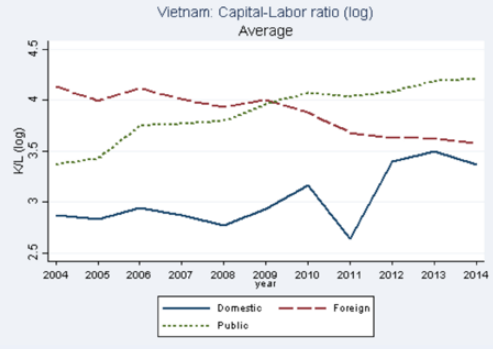
More productive firms have higher survival rates[105]. An important dimension of adjustment is through firm exit; more productive firms should survive and expand while less productive firms should exit the market. As is common in other countries, smaller and younger firms are more likely to exit. For age, the biggest effect is those under 6 years of age; exit increases very slightly thereafter. This can have negative implications for job creation since (surviving) young firms grow fastest. SOEs are more likely to survive than domestic firms, but surprisingly, foreign firms are less likely than domestic firms to survive. So while SOE firms are not shedding their labor as quickly as others, their survival might crowd out a more efficient use of their resources. Firms that are more productive have higher survival, while unproductive firms are more likely to exit. This result is consistent with all three measures of productivity, and thus for both the shorter and longer periods of time too[106].

In summary, survival patterns are as expected in well-functioning markets. However, that public firms tend to survive longer is justifiable as long as they are involved in sectors geared toward a public good where the private sector would have difficulties to be.

The capital-labor trade-off

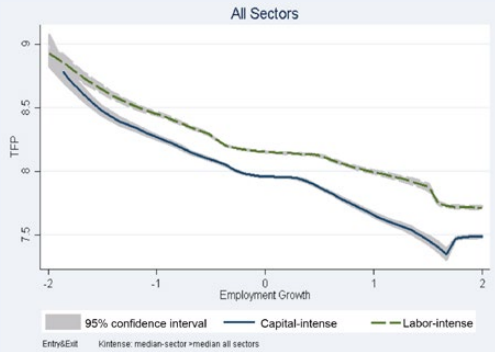
The relationship between capital intensity and jobs differs by ownership type. Foreign firms tend to be more capital intensive than domestically owned firms but have become less so over time (Figure 3.25). This may reflect that some labor-intensive firms are shifting production from China to Vietnam. In contrast, private domestic firms used to be significantly less capital intensive but they have been investing and raising their capital labor ratios on average – although they are still lower than other ownership categories. The publicly listed companies experienced an upward trend towards capital-intensity overpassing foreign firms. This points to a possible market distortion where public firms have an advantage in access to capital.

FIGURE 3.25: Capital-labor ratio, by ownership



Source: Authors calculations, based on Vietnam Employer Census, 2004-2014.

FIGURE 3.26: Total factor productivity and employment growth



Source: Authors calculations, based on Vietnam Employer Census, 2014. The grey shading is the range of the confidence interval..

105 These findings are based on probit marginal effects coefficients.
106 Results on sales per worker refer to the whole period 2004-2014, while value added per worker and TFP only to the last half 2009-2014.

Firms in relatively more labor-intensive sectors have higher total factor productivity. Firms with the same level of employment growth and greater labor intensity have higher productivity levels than those with greater capital intensity (Figure 3.26).[107] It is also true for manufacturing sectors. This would be in line with key exporting sectors, garments and electronic assembly, being relatively labor intensive. It also points to the fact that some productive services are relatively capital intensive.

Do workers share in productivity gains?

Workers in older firms and foreign firms earn higher wages, though faster wage growth is in other types of firms.[108] Older firms tend to pay higher wages and increasingly do so as firm becomes older. Similarly, foreign firms are strong predictors of high wages (on average, a FDI firm has 5.5 percent higher wages). Surprisingly, SOE firms seem to pay lower wages than private domestic firms. In terms of wage growth, larger and older firms increase their wage bill more than younger and smaller firms. Exporters, higher share of female workers, and capital intense firms are also more likely to increase wages. Foreign firms do not increase wages faster than domestic firms, but SOEs are least likely to increase wages.

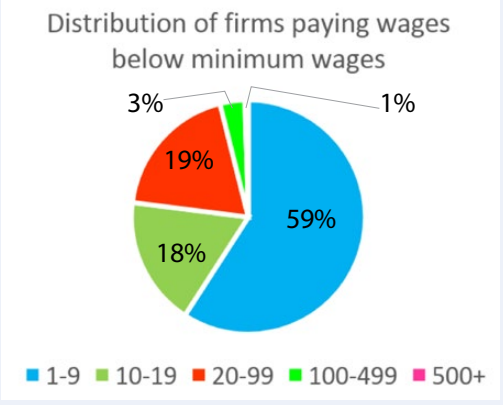
More productive firms do not have higher average wage growth. Two of the three measures of productivity - sales per worker or value added per worker – are negatively (conditionally) correlated with wage growth, meaning that as firms increase productivity, they do not share the benefits with workers. Only one productivity measure (total factor productivity) was weakly correlated with wage growth: firms with ten percent higher total factor productivity (TFP) pay 0.025 percent higher wage.

But as firm's productivity *increases*, they share gains with workers. As firms increase their productivity, wages do tend to rise. This result was found for all three ways of measuring productivity. The increase is not one for one, but workers are sharing in the rise in productivity through higher earnings. This is particularly observed for foreign firms. However, as SOEs increase productivity, wages actually fall. The fact that the correlation between productivity growth and wage growth is positive but modest reflects that the firm deploys gains on new investments to other uses, such as to reward stockholders or savings to stabilize business cycle.

Minimum wages

Most registered firms pay at least the minimum wage; though compliance increases with firm size. An important issue to investigate is whether changes in minimum wages is good for overall workers' wages and employability. Minimum wages in Vietnam vary by region and by ownership type, and they have increased in recent years. Almost 90 percent of firms pay average wages above the minimum wage, so compliance is very high (Figure 3.28). Of those not complying, more than half are micro firms and very few firms larger than 100 employees do not comply (Figure 3.27).

FIGURE 3.27: Distribution of Firms Paying Wages below Minimum Wage

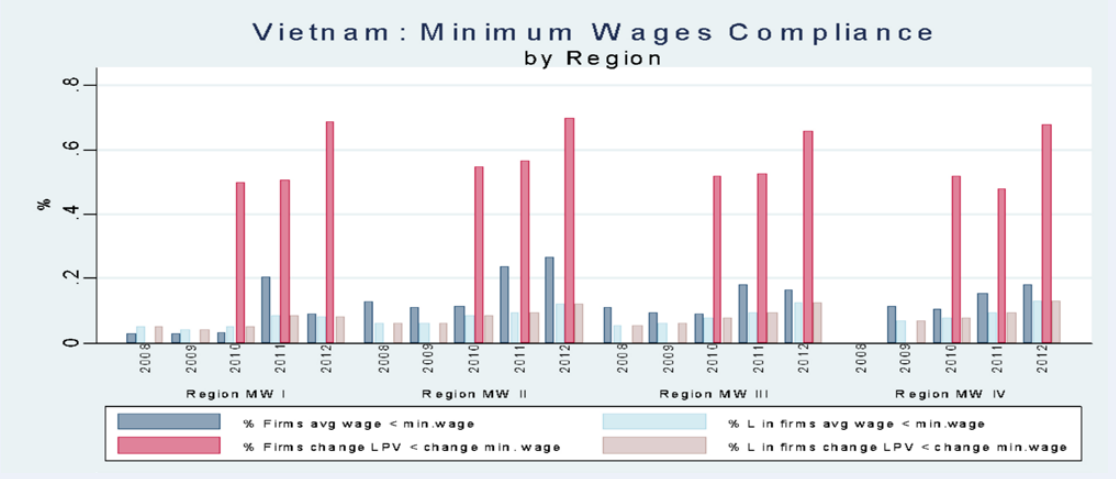


Source: Authors calculations, based on Vietnam Employer Census, 2014.

107 A sector is capital intense if the median capital intensity in the sector-year is above the overall median capital-labor ratio across sectors for the same year.

108 Wage growth rate is constructed like employment growth (bounded by -2 and 2): (waget-waget-1)/[(waget + waget-1)/2].

FIGURE 3.28: Minimum Wage Compliance by Region



Source: Authors calculations, based on Vietnam Employer Census, 2014.

High compliance rates indicate that the vast majority of firms are able to pay the mandated minimums. Depending on region, no more than 23 percent of firms paid wages below the minimum in at least one year in the period 2008-2012, though non-compliance was generally below 20 percent for all regions in most years (the dark blue bars in Figure 3.28). Non-compliance has increased in all regions since 2008. The share of workers employed in firms that do not pay the minimum – depicted by the light blue bars in Figure 3.28 – is less than the share of firms earning below the minimum wage, indicating that smaller firms that are more likely to be non-compliant.

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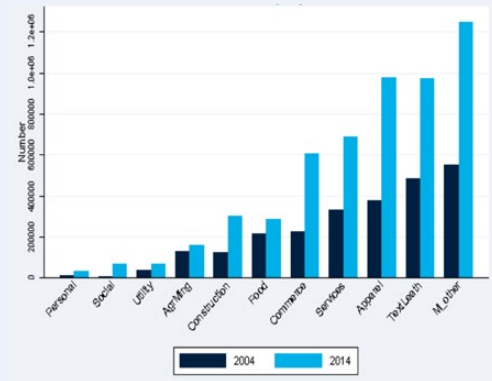
The change in minimum wages over time outstrips the additional value added earned by the majority of firms, though these tend to be small firms. The change in valued added per worker was less than the annual change in the minimum wage in 70 percent of firms in 2012, as shown by the dark pink bars in Figure 3.28. But these firms only represent less than 10 percent of employment (the light pink bars). Meaning that the smaller firms are most affected. So, policy makers should consider the impact of further wage increases on smaller firms. If minimum wage increases outstrip value added per worker increases, this is likely to push up non-compliance, particularly in smaller firms.

How about female employment?

Female employment has increased tremendously over the period 2004-2014, primarily due to the apparel and textiles sector. Manufacturing has received most women entering the labor force. Textile, leather and apparel are the chief sectors, with services and commerce playing an important, but lesser role. However, men have also increased in formal-wage jobs over the period, so women's overall share of employment in these sectors has changed little over the decade (Figures 3.29 and 3.30). The strongest predictor of female

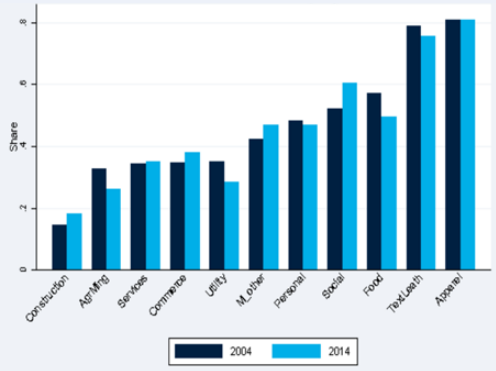
employment is the apparel sector, with textiles and leather and social services also playing a large role. Even when adjusting for the fact that these tradable sectors are more correlated with female employment, the foreign sector stands out for its hiring of female workers.[109]

FIGURE 3.29: Female Employment



Source: Authors calculations, based on Vietnam Employer Census, 2004 and 2014.

FIGURE 3.30: Share of Female Employment



Source: Authors calculations, based on Vietnam Employer Census, 2004 and 2014.

109 These conclusions are drawn from parametric estimates, regressing female employment share on dummies for firm size, firm age, ownership status, and sector.

Policy Recommendations

Three striking patterns emerge from the analysis of job dynamics across firms, which should motivate priority areas for policy reform efforts.

First, much of the gains in employment and productivity are accounted for by FDI; more needs to be done to ensure greater dynamism among private domestic firms. This involves three recommendations: i) a closer examination of the business environment and how the regulatory environment, access to credit and access to markets can vary by firm types; ii) looking more closely at the effectiveness of support programs in place to support SMEs. A promising avenue is doing more to enable local firms to supply FDI firms, which would expand productivity spillovers, enable more firms to expand and underscore the external orientation of firms and the need to remain competitive; and iii), a re-examination of the case for continued SOE engagement, especially in sectors where the case for state ownership is not necessarily compelling.

Second as productivity has increased, the number of wage jobs has doubled in the last decade. The expansion effects have dominated substitution effects, meaning that more productive firms are using their new profits to expand the workforce rather than enhancing productivity by cutting jobs. And wages have risen, even if not proportionally with firm productivity. Policies such as minimum wage legislation and tax incentives on investments can tilt these factor choices.

Third, looking forward, new labor-saving technologies may shift the prospects for continued FDI coming to Vietnam and the labor intensity of the production. Having the skills and supporting business environment to remain an attractive location for production brings out greater urgency on issues around logistics, liberalization of services, worker and management skills and the approach to the data ecosystem of privacy, security and trade in data that underlie the digital economy, both more data driven production processes and the services that are embodied and embedded in them.

Each policy area is considered in turn.

Strengthen the dynamism of the domestic, private sector

Vietnam's aggregate performance is impressive, but underneath it there are continued gaps based on ownership and, related, size. The analysis of this chapter shows seven trends that underscore the importance of raising the dynamism of the domestic private sector.

First, Vietnam has doubled the number of formal wage jobs in the productive sector from 2004 to 2014 – with high rates of entry of small, domestic private firms, a significant growth in the share of FDI firms (often large), even as there was continued privatization and consolidation of state owned firms (SOEs). The high rates of entry are a sign of dynamism, but the concentration of employment among the largest firms underscores the need to look at broader dynamics – whether scale efficiencies are being realized among the smaller firms and if there is evidence that these smaller and younger firms can gain productivity and market share and grow.

Second, the number of small domestic firms has increased significantly, but their employment growth remains limited. A large share of mature micro and small firms is indicative of lack of growth in this type of firms. Only 6 percent of micro firms were able to expand to have over 10 employees after five years in operation.

Third, the distribution of productivity varies significantly by ownership. FDI firms are the most productive on average. Domestic firms are significantly less productive than FDI firms. SOEs also have lower productivity, somewhat more dispersion – particularly at the lower end. Firms with a higher level of productivity employed a relatively larger share of workers by 2014. This

has been especially positive in manufacturing, measuring productivity by value added per worker. However, once capital is accounted for, the association of total factor productivity and employment is weaker and only positive at the end of the period.

Fourth, productivity growth is driven by young, foreign, and large firms. SOEs have the least productivity growth, all other things equal, but the growth of young domestic firms is only a small share of overall productivity growth.

Fifth, those firms whose productivity is improving (i.e. a positive change in productivity rather than a high level of productivity) are not all expanding their share of employment. Some of the efficiency gains are being realized by labor saving technological change or by shifting production to become more capital intensive. This is particularly true at the upper end of the productivity distribution. This could have important implications for the ability to create sufficient jobs for an expanding population in the future, for developing domestic markets and ensuring a sustainable balanced growth.

Sixth, there is evidence of shared prosperity: at the lower end of the productivity distribution, firms that are raising productivity are also hiring. These positive productivity-employment dynamics are also more evident among firms over 6 years of age.

Seventh, there are signs of greater competition, but employment is highly concentrated in very large firms and this trend has been rising throughout the period. Selected sectors are dominated by a few players. The overall degree of market and employment concentration has fallen across almost all sectors; consistent with greater competition. However, while this is true overall, it is not true at the very top. Whereas the composition of firms is shifting towards smaller firms over time, the share of employment accounted for by the largest 1 percent of firms has increased from 40 to 48 percent by 2014.

In addressing the need to strengthen the dynamism of the domestic private sector in particular, there are three sets of policy recommendations. The first focuses on addressing ways to improve the business environment – particularly in leveling the playing field based on ownership. The second looks to improve the government's efforts to support SMEs, particularly to strengthen links between the SMEs and FDI firms to encourage spillovers and growth. The third looks to the remaining reform agenda for state owned enterprises.

Address inequalities and improve the business environment

- **Level the playing field to improve all firms' competitiveness.** The dynamism of the domestic private sector continues to lag. Part of the challenge is that domestic firms do not enjoy some of the same privileged access to land, tax benefits or regulatory facilitation that foreign owned firms may enjoy. At the same time, domestic firms can find it difficult to compete with state owned enterprises, particularly with regard to procurement and access to finance. In addition to continuing to strengthen the business environment, ensuring equal enforcement will be important in giving all firms the same competitive advantages.

- Facilitate the adjustment of firms, including making it easier for firms to enter – and to exit. Within the business environment, more could be done to improve the ability to reallocate resources to their most productive uses. The number of procedures to register a business is higher than regional averages and above what those most other lower-middle income countries according to Doing Business. Even more concerning is that bankruptcy proceedings can be very lengthy, with considerable difficulties in resolving cases of insolvency. The difficulties of an orderly exit from the market can have implications for the allocation of credit as well as hiring patterns. Making exit more transparent and efficient can help with ensuring the most productive firms continue and can thrive.

Improve support to SMEs, including expanding linkages between local SMEs and Multi-national corporations (MNCS) (or their tier one suppliers)

Given the large and growing presence of FDI firms, one would expect spillovers to the domestic private sector. Indeed, this is the usual motivation for seeking at attract foreign firms. However, rather than serving as a broader catalyst for growth, with spillovers to the domestic private sector in the form of increased demand for inputs, access to new technology and managerial techniques, demonstration effects and agglomeration benefits, the domestic private sector has not been able to expand its share of GDP to the same extent as foreign firms.

- **Address information gaps between SMEs and MNCs and support SMEs to meet Quality Standards.** A lack of information about quality and reliability can hamper supplier relationships from developing. Having certification that is widely recognized is important for exporters, but also for firms that are seeking to supply to multinationals or their tier one suppliers. Providing easy access to what the standards are and how to meet them is a service the government can provide. Key sectors to focus on would be those that could prepare more local firms to service foreign producers in garments, electronics and automotive parts. With the coming reduction of tariffs to ASEAN countries in sectors such as automotives, competitive pressures will rise, but there will be expanded opportunities for low priced goods of sufficient quality.

  From the MNCs' perspective, there is the need to overcome information asymmetries about the quality and timeliness of delivery from prospective suppliers. From the SMEs' perspective, there can also be considerable risk if there is no secondary market for the specialized good the MNC is seeking to purchase. This is in addition to concerns about how to meet the standards and how to have credit necessarily to make the necessary investments or upgrading that may be needed. The potential to develop a suppliers' database could be one solution – if there is critical mass to use it and it is seen as reliable enough and with sufficient repeat transactions to develop a reputation for quality.

- **Support SME's quality of management and its capacity to absorb new technologies and ways of operating.** The low quality of management limits SME capacity to absorb new technologies and processes. Surveys of firms also indicate there is an information disconnect whereby local managers are not aware of MNCs' sourcing strategies, or where to get the information on the quality, cost and delivery (QCD) standard requirements needed to become a supplier – as well as how to meet these standards. For example, the recent Enterprise Survey showed that the lack of management skills topped the list of skills firms reported as difficult to find (compared to other skillsets like IT, non-IT, writing, and interpersonal skills). Lastly, access to finance appears to be a binding sectoral concern for nascent firms, including in the electronics/ICT software sector. Financial access is particularly restrictive for firms aiming to make a breakthrough to become suppliers.

- **Strengthen government's capacity to serve SMEs.** There are also issues on the government side that should be addressed. A review of SME programs[110] points to policy and institutional constraints such as lack of contract enforcement, insufficient policy alignment, and poor implementation and capabilities constraints in the public sector:
  - **Use the new SME law to streamline and prioritize support to SMEs: Vietnam has a plethora of overlapping programs for SMEs.** As the World Bank study on Linkages points out, separate regional TAC Assistance Centers for SMEs (provided by the Ministry of Planning and Investment)

110 Linkages study, 2017.

and Centers for SI Development (sponsored by the Ministry of Industry and Trade) provide training courses, direct development support for companies using international experts, and opportunities for overseas visits seeking to promote international business linkages. The SME law that is under advanced preparation by the MPI also promises wide-ranging support for all SMEs, with targeted programs for start-ups, formalization of household enterprises and SMEs to become part of GVCs. As this gets rolled out, there is the risk that overlapping efforts expand – or there is the opportunity to undertake greater streamlining and prioritization now.

- **Building capacity within the lead agency - or other relevant investment promotion institution – to provide systematic matchmaking services between buyers and sellers.** It draws feedback from MNCs/ lead firms regarding their demands to help design and implement follow-up support.
- **Upgrading local firms to address the weak domestic supply capacity.** This may entail, among other things, designing and implementing a demand-driven Supplier Development Programs (SDP). This may require a package of horizontal and vertical initiatives in specific sectors/GVCs. Based on good practice lessons, support can be provided through behavioral incentives to local suppliers for upgrading, and to FDI firms to encourage sourcing locally or investing in supplier training, and research and development.
- **Strengthening public-private dialogue between the government with some key stake holders from both large firms and SMEs to better understand what the constraints and opportunities are to deepen linkages.** This may be most effectively done on a sectoral basis; garments, electronics and transportation equipment may be the places to start given the prevalence of larger, FDI firms in these areas. Agri-processing is another area that may have greater backward linkages to smaller firms and could involve a wider range of domestic players.

Review the role of state owned enterprises and support important input services – for success in manufacturing as well as an important driver of productivity and job creation.

- **Even with the privatization and consolidation over the last decade, state owned enterprises continue to have a significant presence in the economy.** There are sectors where natural monopolies can justify this approach. However, where the private sector can be expected to operate efficiently, the approach to using the public sector should be reviewed. The concern is that private sector actors may be more innovative and responsive, particularly in services that are important inputs to other sectors throughout the economy.

- **Further support to the service sector is also important in its own right.** Vietnam has had a strong focus on developing its manufacturing sector, particularly for exports. Capturing scale economies, facing strong competition and benefitting from technology diffusion are all important elements of this successful strategy. But services are also becoming an increasingly important source of value added within the overall manufacturing process. Indeed, design and R&D as well as marketing and after-sale services represent a larger share of overall value added compared to production. Currently Vietnam is primarily active in the production stage; really moving up the ladder will require moving into some of these services as well. Logistics services is one important one. But financial services, design, marketing and other professional services deserve attention too.
  Given its importance in facilitating trade, logistics services deserve attention and supporting public investments in infrastructure. As an exporting country and seeking to expand in this regard, policies around trade and the logistical performance supporting the movement of goods will be critical. Vietnam performs well overall, higher than many other

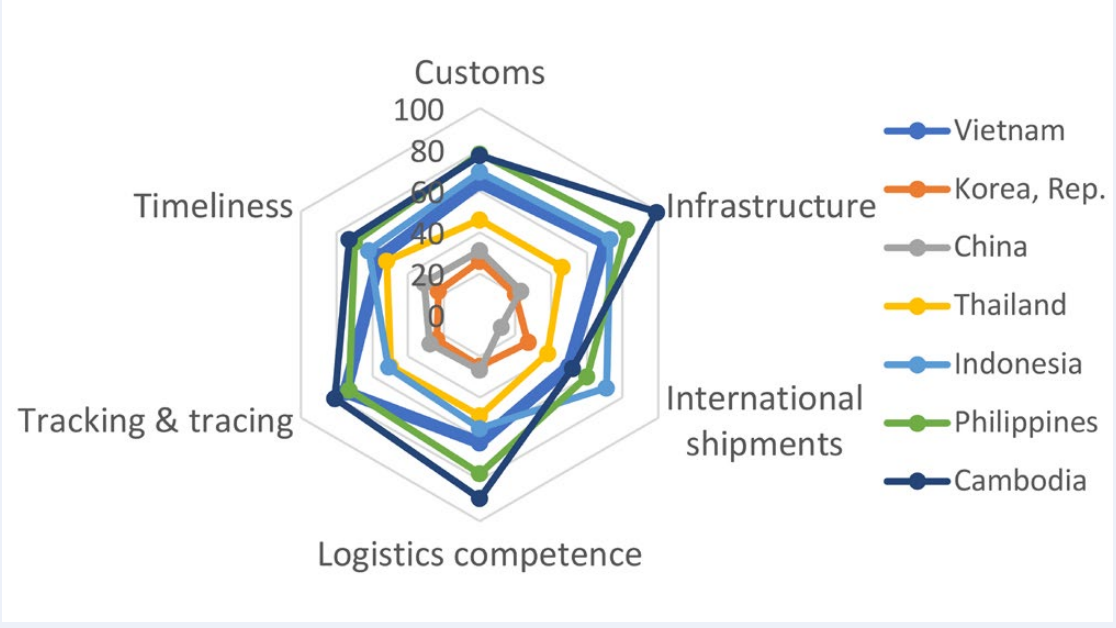
lower middle-income countries. But it is far behind China, and not that much ahead of the Philippines (Figure 3.31). Its international shipping scores favorably, but its ability to track and trace shipments is less sophisticated. This type of more micro-management system is likely to become more important, particularly with more advanced goods and processes, and as customers are expected to want greater speed in getting customized goods to market. This will be an area for Vietnam to continue making improvements in the logistics performance index areas on to maintain its export growth.

Review policy incentives that aim to support workers and those that may tilt incentives to favor capital over labor

Ultimately, the decision on the production process is based on cost effectiveness. But government policies influence the costs of factors (labor, capital, land and technology). The incentives governments provide through minimum wages and labor regulations, subsidies for particular activities (e.g. R&D, training), depreciation rates, discounted loans and tax breaks can all affect the choice of factor mix. If the aim is to increase productivity, the impact on the labor intensity of production may be less of a concern. If expanding employment is also an objective of policy makers, the effect of all of these incentives need to be taken into account on how they affect this mix of factors.

- **Rising capital intensity.** The evidence shows shifting patterns of capital intensity, particularly increasing among private domestic firms and some SOEs and decreasing for foreign firms. Private domestic firms have always been less capital intensive, but the gap has been decreasing significantly over time as these firms expand their investments faster than employment. Capital can raise labor productivity, but can also substitute for labor. Paying attention to whether output effects or substitution effects dominate will determine how labor fares. Monitoring the relative productivity and incentives affecting the relative choices between labor and capital will be important not only in maintaining

FIGURE 3.31: Logistics Performance Index, 2016



Source: World Bank's Logistics Performance Index

growth, but ensuring employment also expands and enables Vietnam's workers to share in these gains.

- **Minimum wage laws aim to ensure workers share in gains over time, but increases need to be calibrated with changes in firms' ability to pay overtime too.** Minimum wage levels have increased in recent years. While these can be well-intended, they need to be sustainable and not repeatedly outstrip the gains in productivity firms are able to achieve to be able to pay these higher wages. If the adjustments are an attempt to catch up and to have labor's share reflect its true contribution to firm performance, the increases can be justified. However, if they exceed labor's contribution or value added per worker, the mandated increase in wages become unaffordable, particularly for smaller or less productive firms. The risk is that there will be employment losses or increased non-compliance. Currently, 89.8 percent of firms pay average wages above the minimum wage. Of those that do not, 98 percent are private domestic firms. The 2015 minimum wage increases outstrip about 10-15 percent of firms' changes in productivity – already pushing up non-compliance, particularly in smaller firms.

- **Women are sharing in the expanding formal wage sector –maintaining similar rates of employment rather than increasing their share – but more could be done to encourage greater diversification of women's participation across sectors and sizes of firms.** Women have been active in significant numbers throughout the period, although there is no significant overall trend in the share of women in these wage jobs. What is striking is the concentration of women in particular (important) sectors such as apparel. Particularly based on sector, women are relatively concentrated in either very large firms (particularly apparel) or smaller firms (e.g. retail) compared to mid-sized firms. Sector-sorting by gender is not uncommon, but in the education system and with training and mentoring programs, it is possible to encourage more women to enter a wider set of sectors, including ones with higher returns.

Strengthening Vietnam's readiness for new technology

Larger changes in the global economy and technological advances – whether they are happening within Vietnam or in countries that compete with Vietnam in export markets – the ability to upgrade and improve performance over time will be an increasingly important agenda.[111] In addition, enabling entry of new firms using new technologies and business models will also be important for innovative approaches to contribute to Vietnam's growth. Some may be disruptive and require social safety nets to adapt,[112] but enabling firms and workers to pursue new opportunities will be key to shaping the overall impact and prospects going forward

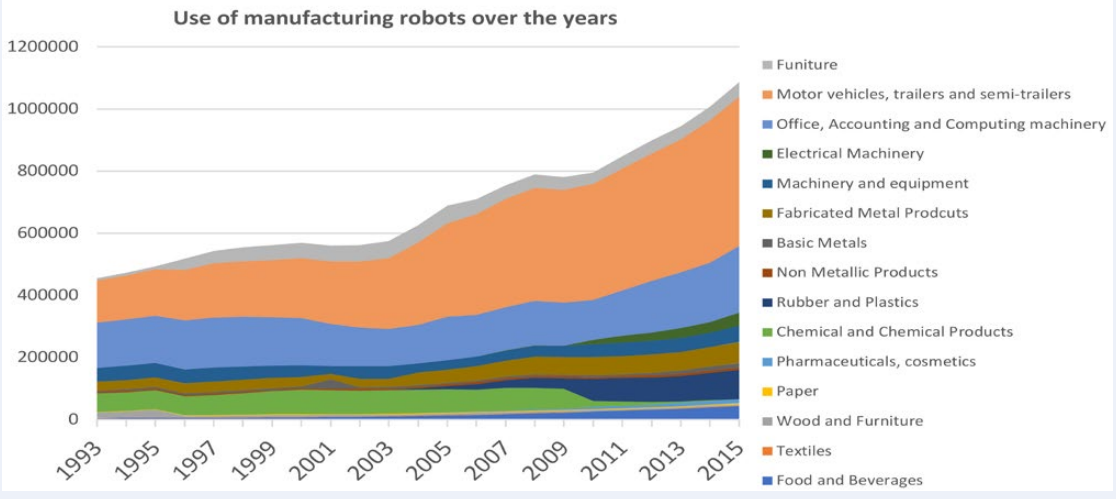
Looking forward, several trends will affect the competitiveness of Vietnam. One is the diffusion of new technologies, particularly labor-saving process technologies that can shift the sources of comparative advantage for making traditional manufactured goods. At the moment, transportation equipment and some types of electronics and machinery are automating fastest. Garments is one of the least automated – for now (Figure 3.32). That certain sectors are automating does not mean that all jobs will be replaced by machines, or that it will not be viable to compete with efficient low unit labor costs using older technology. But it does put a premium on raising the competitiveness of the country.

Vietnam's readiness for technological adoption compares favorably to other lower-middle income countries. The World Economic Forum provides 10 dimensions for 'readiness', using largely subjective indicators to rank countries.

111 Hallward-Driemeier and Nayyar 2017.
112 World Bank 2016.

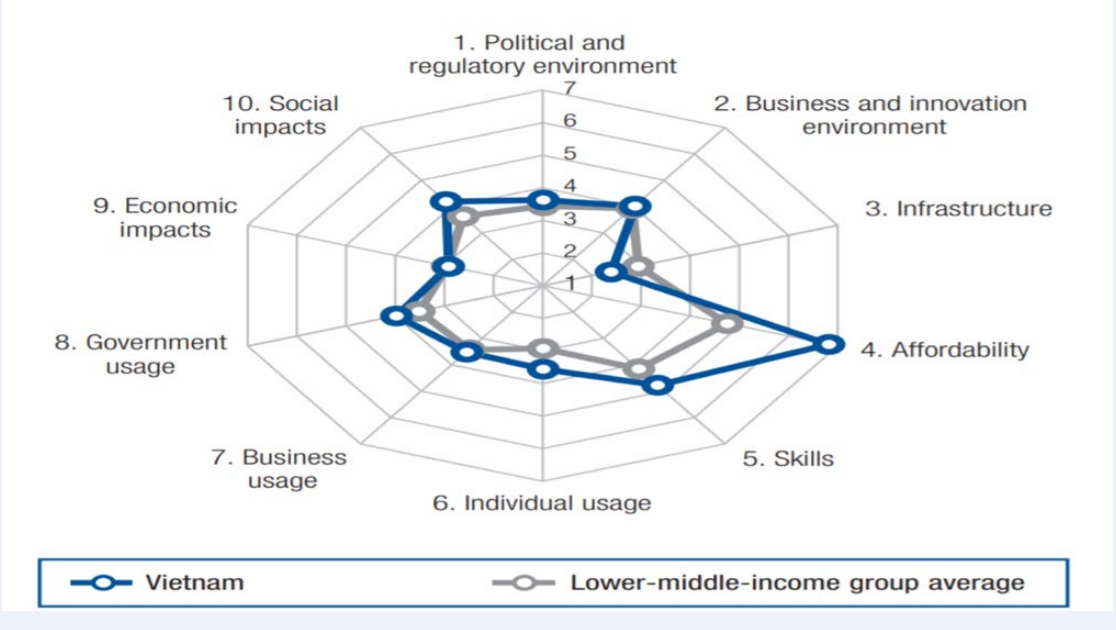
Again, Vietnam does well compared to lower-middle-income countries – particularly on affordability, but the supporting infrastructure is lagging somewhat. Vietnam does have a nascent programmers' community, which can help provide local context and adaptation; further supporting the development of these skills will be important (Figure 3.33).

FIGURE 3.32: Automation is spreading – but unevenly across sub-sectors



Source: Hallward-Driemeier and Nayyar, 2017, using International Federation of Robotics data.

FIGURE 3.33: Technology Readiness Index, 2016



Source: World Economic Forum.

However, the evidence of the erratic performance of productivity growth within firms over time points to the importance of strengthening innovation and internal management of the firm -- even with today's technology. Few firms consistently improve their productivity over time and many improve to regress another year. Measurement issues and changes in the business cycle can be part of this story, but this result is consistent with weak incentives or capabilities of innovating or adopting more efficient practices within the firm. These are areas where increased attention is being paid, where firms' abilities to absorb new ways of doing things need to be expanded and government incentives tailored to these abilities.[113]

Supporting the diffusion, absorption and use of technologies will be critical. As new technologies that will likely be more labor saving, digitally based and more oriented to customization diffuse further, there will be additional items on the reform agenda to be able to support the absorption and use of technologies. For Vietnam, this is a high priority for sectors such as electronics and transportation equipment where automation is rising.

Supporting business environment, including infrastructure, ICT, and data ecosystem

- There will need to be a supportive regulatory framework to enable new technologies to be used. This will include fostering a data ecosystem – balancing data privacy and security with international data flows that can allow firms to compete effectively in networked value chains.

- Continuing the expansion of ICT infrastructure as well as training will be important for enabling more firms and workers to participate in new opportunities new technologies will bring. Access to the internet remains fairly low (23 percent of the population), although the use of mobile phones is much more widespread. Thus, digital literacy and the ability to use a wider set of ecommerce tools is still limited.
- Expanding use of technology could itself represent a way to help overcome some of the information asymmetries that can make forming linkages with new suppliers difficult. While business-to-business transactions are expanding, there is the potential to develop far more. Online platforms can both dissemination information about standards, how to meet them – but also as a trading platform, can serve to build up a reputation for quality and dependability.

Ensure continued connectivity to international trade – not only in goods, but of services.

- Export-led growth has been a successful development strategy for Vietnam, following in the footsteps of several neighboring countries. Continued liberalization on goods trade and engagement in larger regional trade agreements would ensure access to larger markets and encourage technology diffusion and competitive pressures to keep improving performance.

- Continued improvements in logistics is also needed to support increasingly competitive international trade and the shift to demands for faster times to market and the ability to support greater customization of trade (see discussion above).

- Greater liberalization of services trade is an area where more progress is needed. As the importance of pre- and post-production services rise as a share of the value added in a value chain, ensuring access to these services is becoming a more important source of success within production itself.

Strengthening worker and firm capabilities

- The first is worker skills, not just literacy and numeracy but also digital skills, creativity

113 Cirera and Maloney 2017.

and more interpersonal skills. These will increasingly important in helping workers move to good jobs, beyond just repetitive, manual tasks that are at highest risk of automation.

- The second is management skills. These are important predictors of productivity in any case, but as many of the new technologies depend on data flows and efficient feedback loops, more sophisticated management practices will be needed.


Gall Gall
Flowers & More

CHAPTER 4 - WORKERS & JOBS: **CURRENT TRENDS AND EMERGING OPPORTUNITIES**[114]

Workers are the "supply" side of the jobs market. Workers do not create jobs. Instead, firms create job openings and workers offer their labor so that a job opening becomes job. That job creates profits for the firm, remuneration for the worker and economic growth for the country. But it is not just the presence of the worker that is needed, her skill level is also a fundamental input to the jobs process.

Workers are under-performing today and, if not addressed, they could hold back Vietnam's ability to capitalize on the mega-trends. As noted in Chapter 1, most workers are in low-skilled occupations, working in family farm- and non-farm enterprises, with unfavorable work conditions. At the same time, the economy continues its transformation toward deeper global integration, diversification within sectors, shifts toward high-value services and manufacturing, and automation. If workers are not ready to take-on these challenges, Vietnam will lose out, as will its workers and their families

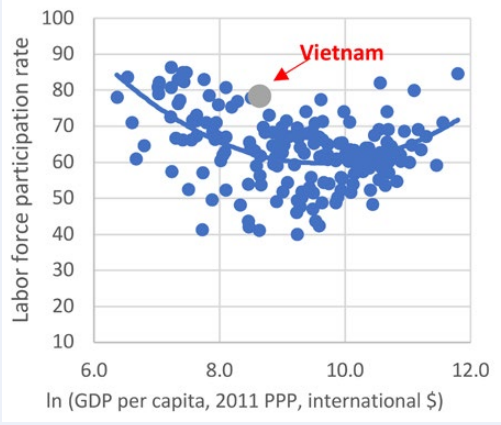
This chapter explores the jobs question from the worker perspective and reflects on how to prepare workers for tomorrow's jobs. It has four sections. It starts with a quick profile of the labor force, including the number of potential workers, those who are working, and the overall profile of workers. Section 2 explores the skills that they have, both to address today's challenges and tomorrow's emerging jobs. The third section lays out the importance of, and challenges in, the job-matching process. The final section talks through policy areas for consideration.

Labor Supply: Today's labor force

The Vietnamese are a hardworking people. The Vietnamese labor force – defined as the share of the working age population (16-65) who are working or seeking work – exceeded 51 million people in 2015. About one million of these people were unemployed, meaning they actively searched for a job in the week prior to being interviewed; a low unemployment rate relative to global standards.[115] Another 50.4 million declared that they worked at least an hour in the week preceding the survey, equivalent to nearly 81 percent of the working age population. This far exceeds the 68 percent average labor force participation rates in countries at similar levels of development as Vietnam (Figure 4.1).[116] In fact, Vietnam's labor force participation rates are among the highest in the world.

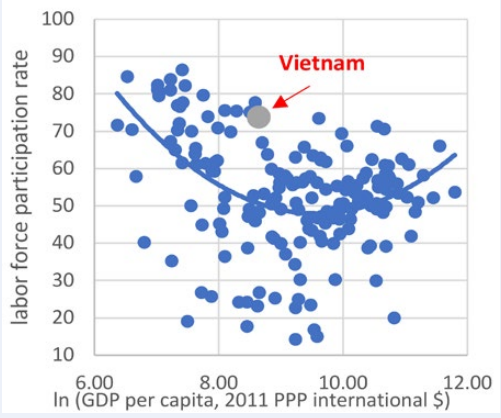
114 This chapter was prepared by Wendy Cunningham with inputs from Mauro Testaverde.
115 Vietnam's unemployment rate was approximately 2.0 percent in 2015, as compared to a global unemployment rate of 5.7 percent and an East Asia and Pacific rate of 4.3 (extracted from WDI http://mydatabank.worldbank.org on December 2, 2017).
116 Figure 1 uses a slightly different sample than the sample used in this chapter to analyze the Vietnam Labor Force Survey. The sample for Figure 3 is the population older than age 15, while this chapter limits the sample to the 15-65 age range. The longer age range slightly reduces Vietnam's labor force participation rate to 80 percent.

FIGURE 4.1: Labor force participation rate, global, 2015



Source: Author's calculations based on WDI (extracted June 2017).

FIGURE 4.2: Female labor force participation, global, 2015



Source: Author's calculations based on WDI (extracted June 2017.)

Certain groups of the working population have particularly high work rates. First, 93 percent of prime-aged adults age 25-49 are working, as well as 80 percent of those older than age 50. Second, women's labor force participation rates are particularly high in Vietnam: 79 percent of adult women are working, as compared to a global average of 49.6 percent and a regional average of 61.1 percent (Table 4.1).[117] Similarly to overall work rates, a larger share of Vietnamese women work as compared to women in countries at a similar level of development (Figure 4.2). While Vietnamese women have lower labor force participation rates than men (86 percent), this does not account for women's "second" job, namely nearly full-time care of the household (Box 4.1). Third, ethnic minorities have particularly high employment rates, with more than 90 percent of those age 15-65 holding a job, as compared to 82 percent of those of Kinh or Hoa ethnicity (Table 4.1).

TABLE 4.1: Distribution of the working age population (WAP, age 15-64), labor force (WAP who are working or unemployed), and labor force participation rates by demographic/geographic characteristics, 2015

	Variable	Share of total WAP	Share of total LF	Share of category in the labor force
Gender	Male	49.4	51.7	86
	Female	50.6	48.4	79
Age	Age 15-24	21.6	15.5	59
	Age 25-49	54.7	61.7	93
	50+	23.6	22.8	80
Education Level	No Education	3.5	3.3	78
	Primary	31.5	33.0	87
	Secondary	54.1	51.0	79
	Post-secondary	10.9	12.0	91

117 48.4 percent of the Vietnamese labor force is female as compared to a 40.4 percent global average (WDI, extracted June 2017).

TABLE 4.1: Distribution of the working age population (WAP, age 15-64), labor force (WAP who are working or unemployed), and labor force participation rates by demographic/geographic characteristics, 2015 (cont)

	Variable	Share of total WAP	Share of total LF	Share of category in the labor force
Ethnicity[118]	Kinh	84.9	83.5	82
	Other Ethnic Group	15.1	16.6	91
Location	Urban	34.4	31.9	77
	Rural	65.6	68.1	86
Region	Red River delta	22.0	22.0	83
	Northern midland & mountainous areas	12.9	14	90
	Northern and Coastal Central	21.3	21.43	83
	Central Highland	6.2	6.42	86
	South Eastern	18.0	16.99	78
	Mekong delta	19.6	19.16	81

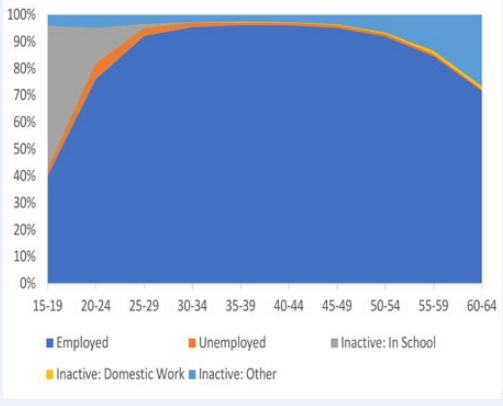
Source: LFS 2015, author's calculations.

BOX 4.1: Measuring Women's Work

Although a smaller share of women than men are engaged principally in market work, a sizeable share of women identify homecare and family care as their primary activity. If we "count" women's work as both market and full-time housework, a higher share of women than men work after age 30. By age 34-44, 97 percent of women are engaged in full-time market or homecare (Figure B2).

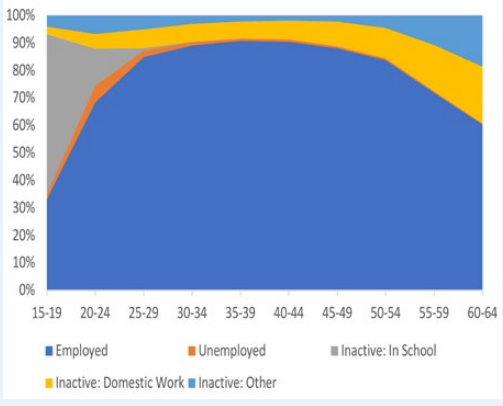
Dedication to full time home care increases as women age, while it remains very low for men (Figure B1).

FIGURE B.1: Time use by age, males



Source: Author's calculations based on LFS 2015.

FIGURE B.2: Time use by age, females



Source: Author's calculations based on LFS 2015.

118 As the 2015 LFS does not capture information on ethnicity, statistics on ethnicity are based on the 2014 LFS.

BOX 4.1: Measuring Women's Work (cont)

Women spend almost an entire work week in unpaid care work. A recent study by ActionAid (2017) provides micro-data to better understand the incidence of housework by gender. More than 800 people in 9 provinces kept time diaries, recording their home and family care, market work, and leisure activities every 30 minutes all day, for several weeks. The women in the sample worked an average of 35 hours weekly, which is nearly equal to a full-time job. Men contributed to the household as well, offering 15 hours weekly.[119] Women without an education and those from certain ethnic groups and more rural zones calculate more than nine hours of unpaid care work daily. The homecare burden limits women's access to jobs, particularly those jobs that require extended periods away from home.

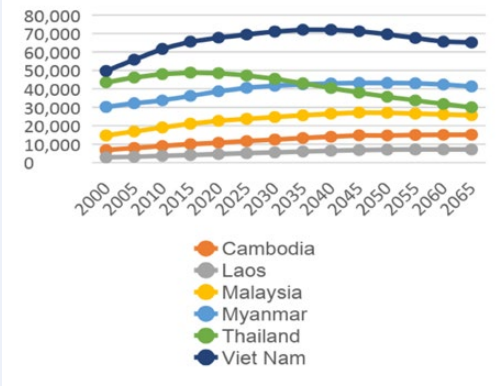
As noted in Chapter 1, these high work rates have been a driving force in Vietnam's economic development. It would be difficult to squeeze more workers out of the working age population. But Vietnam's changing demographic profile will lead to shifts in the working age population itself, potentially putting even more strain on labor supply, as discussed next.

Demographics: Fewer potential workers and less potential work time

As discussed in Chapter 1, the Vietnamese population is rapidly aging. The combination of low birth rates[120] and increased life expectancy[121] is leading to a growing population and an older population. As this trend continues, it could have significant implications for labor supply.

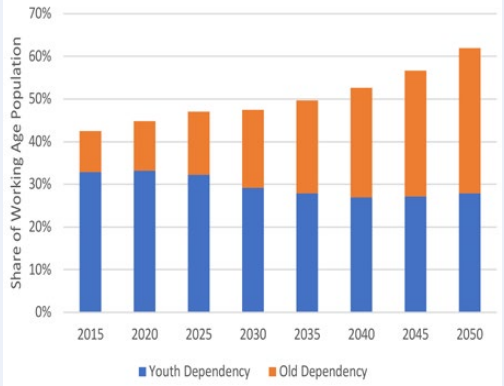
First, the size of the labor force will begin to decline in 2040. The number of potential workers is projected to reach approximately 72 million adults age 15-65 by 2040 **(Figure 4.3).**[122] This will be the largest potential workforce in the developing East Asia region after China and Indonesia, and will allow Vietnam to expand its jobs and output. The size of the labor force will decline thereafter, creating a strain on an already overworked population.

FIGURE 4.3: Size of the working age population, '000s, 2000-2065



Source: UN (2015), extracted April 2017.

FIGURE 4.4: Vietnam Dependency Ratio, by youth and older adults, 2015-2050



Source: Merotto *et al.* 2017

119 The last year that a national survey about time use was carried out was the 2008 VHLSS. The data from that random sample found that women who engage in housework (79%) spend an average of 132 minutes per day – just over two hours – in this activity, as compared to men (56%) who spent about 90 minutes daily (cited in UN Women 2016).

120 While there were 5 children born to every woman, on average, in 1980, this had declined to an average of 2.0 children by 2014. Vietnam has the lowest fertility rates among key comparator countries since 1996 (Merotto et al. 2017).

121 WDI, extracted July 2017.

122 Life expectancy has been increasing, being among the highest in the developing Asia (East and South) region, at 76 years (WDI, extracted April, 2017).

Second, the demographic shifts threaten the available time for market work as soon as 2020. As noted above, women already have high work rates and spend significant time on housework. But as the population ages – old age dependency rates are expected to increase from 0.096 in 2015 to 0.34 by 2050 (Figure 4.4), the demand for women's unpaid work in eldercare of family members will also rise.[123] So while the size of the working age population will increase until 2040, the number of available people – women, in particular – who can enter the labor force may be lower due to an increasing elder-care burden.

But eldercare does not have to squeeze out work time. Public and private services and technology can provide quality care to older members of society. Many aging societies are investing in community-based care so that older citizens can stay in their homes while relying on community-level supports to assist them in managing their daily needs. Technology can provide access to services, such as transport, on-line shopping, or virtual medical appointments. Improving the access to and delivery of health services can provide greater health, and independence, into old age. Further, a smarter labor force, labor-saving technology, and shift toward less labor-intensive service jobs can help counter-balance the demographic trends. These are discussed in the next section.

Skill-Up or Lose Out

Skills underlie labor market productivity. While important today, they will need to play an even larger role as Vietnam's work force downsizes and as knowledge-intensive industries and technologies shape future jobs. Skills interact with the mega-trends in several ways.

Machines, robots, artificial intelligence, and information technology are rapidly entering the workplace and will affect jobs. Some jobs will adopt these technologies and boom. Others will hand-over some tasks to machines and take on new tasks.[124] Some jobs will disappear and yet others will be invented.[125] The jobs that will be somewhat immune from automation are those that require non-routine and non-manual tasks. For example, beautician, housecleaner, child care provider, manager, teacher, or communications director require a series of non-routine decisions and human interactions, although they may increasingly use technology, thus requiring a different skills set than today. Some jobs that are considered "automatable" may, instead, adopt technology and morph into higher value-added jobs, such as store clerks or office secretaries, which also will require a broader skill set than in the past.[126] While other jobs may thrive with technology, such as the small businesses that use apps to reach new consumers and markets, if the business-owners have the skills to take advantage of technology.

Digital literacy and human skills will rise in the age of automation. While STEM (science, technology, engineering, and mathematics) is part of the new economy, general skills are the key to interacting with technology. For example, agricultural laborers in developed countries need to be able to do internet searches to consult manufacturer instructions for fertilizer use or a specific tool repair while accountants need to know how to use special software. But neither need to know how to program a computer.[127] Instead, they need to have basic literacy, numeracy, and reading comprehension to use technology.[128] Workers will also have to take on more non-routine, non-manual tasks, requiring uniquely

123 Taken together, while 6.7 percent of the Vietnamese population is older than age 65 today, this is expected to reach 14.6 percent by 2035 (Merotto et al. 2017).
124 Arntz, Gregory and Zierahn (2016) recognize that machines may transform the tasks underlying jobs, leaving 95 percent of jobs intact, but with a different task profile.
125 Frey and Osborne (2013) estimates that machines will displace 47 percent of the jobs in the United States by 2035.
126 World Bank 2016b.
127 Of the 160 million jobs in the United States, 0.002% are computer programs (328,000).
128 O*Net occupations database, available at https://www.onetonline.org/

human skills. Employers in ASEAN identify technical knowledge (40 percent) and teamwork and communications (33 percent) as the most important skills in a digital workplace.[129]

Moving up value chains and into the knowledge-economy. Moving to the service-segments of value chains and into more sophisticated value chains will require both greater mastery of some of today's skills as well as an emphasis on knowledge-intensive skills. This implies trading out assembly for jobs that manage logistics, marketing, design and the many before-and after- assembly activities that are knowledge intensive and have higher value added. For example, Table 4.2 shows the stages of an apparel value chain. The occupations that pay higher wages are in services and general management; they are also associated with higher levels of education.

Emerging occupations. As noted in Chapter 1, the fastest growing jobs in Vietnam require more cognitive and fewer physical abilities than the most prevalent jobs in today's labor market. This points to a broader set of skills requirements in the top growing jobs, such as science, writing, time management, and judgement and decision making. The most striking differences between the most common and the top growing occupations is the type of knowledge required in the newly created jobs. While language, customer and personal service, and administration and management continue to be important, new fields of relevant knowledge also include computers and electronics, education and training, and psychology.

TABLE 4.2: Employee and Wage Profile for the Apparel Value Chain

Stage	Position	Share	Education Level	Tasks/Skills	Wages
Production	Sewing Machine Operators (55%)	70%	Primary education; on the job training	Knowledge of how to operate a sewing machine	
	Other Assembly-Related (10%)		Primary or technical	Cutters, packers, spreading	
	Supervisors/Inspectors (5%)		Secondary education, technical	Communication skills	
Services	Sourcing/Logistics (backward links)	20%	Tertiary; university degree in business	Business, organizational, computer, communication	
	Sales (forward links)		Tertiary; university degree in business	Customer service; take orders; find buyers	
	Design		Tertiary; university or apparel-specific degree	Creativity; computer skills	
General	Administrative	10%	Tertiary; university degree in business	Sales, finance, customer service	
	Top Management		Tertiary; university degree in business	Business, interpersonal	

Wage Levels	Low	Low-Medium	Medium	Medium – High	High
	Hourly; Minimum wage or piece rate	Hourly	Hourly or salary	Salary	Highest paid employees; salary

Source: Frederick (2017); relative increases in salary based on analysis of (U.S. BLS, 1997-2015)

129 ILO 2016.

Vietnam's current labor force, and its skills development system, is not effectively serving today's jobs and will not be ready for tomorrow's. Vietnam needs to skill-up or it will be left out of future economic growth.

A Stock problem: Vietnam's youth are showing progress, but overall labor force has a low education profile, with pockets of exclusion.

Vietnam's basic education system is reaching global standards. Vietnam's success in creating a quality primary and (lower) secondary education system is a globally recognized success, best demonstrated by its performance on internationally comparable standardized tests. Vietnamese 15-year olds outpace the average OECD adolescent in language, math and science on the 2012 PISA tests.[130] Remarkably, nearly one in five Vietnamese students from the most socioeconomically disadvantaged households were in the top quartile of test-takers worldwide. Young workers (age 16-25) have literacy scores on par with those of Austrian and Danish students.[131] If these trends continue, Vietnam's labor force will eventually possess the fundamental skills that could offset the eventually shrinking labor force. However, the education system can offer more to today's youth. One in four students does not complete upper secondary school. Dropouts lament the lack of relevance of secondary education, little support is available to those who have fallen behind, and students express general boredom with the learning process in schools.[132] Certain groups, such as ethnic minorities fair rather poorly on a range of indicators (Box 4.2).

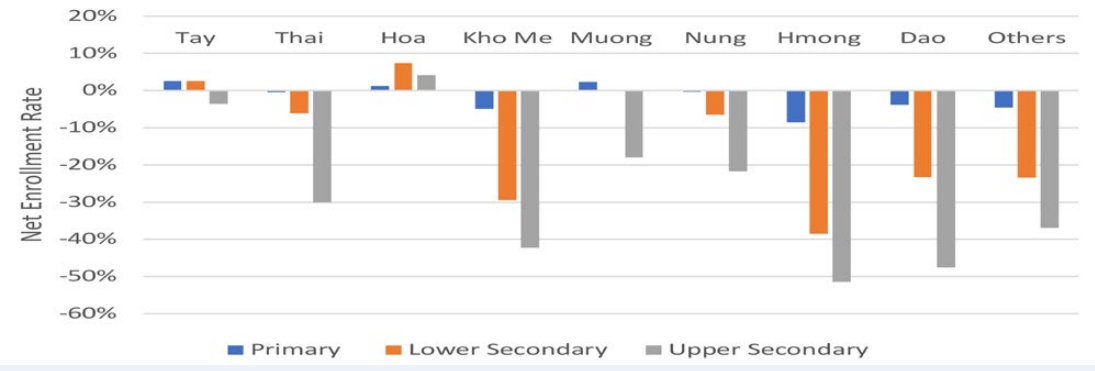
BOX 4.2: Left Behind, But Glimmers of Breakthrough

Ethnic minorities have lower school enrolment rates and lower skill levels than Kinh or Hoa children and adults. While ethnic minority and Kinh children have similar primary school enrolment rates, parity begins to quickly drop off by lower secondary for some ethnic groups. By upper secondary, only the Hoa and the Tay are at par or have higher enrolment rates than the Kinh; all other groups show an enrolment gap of 20 percent or more (Figure B3).

On average, the quality of education is lower in ethnic minority schools, as well. Ethnic minority children score 15 percent lower on fifth-grade standardized mathematics and reading tests than Kinh children. Though ethnic minority children who speak Vietnamese perform at levels closer to their Kinh peers.

Among adults, only 6 percent of ethnic minorities have a vocational or tertiary education. This compares to 20 percent of Kinh or Hoa adults, the low university education is particularly troubling given its high economic returns.

FIGURE B.3: Net Enrollment Rate, Difference from Kinh average, by level of education (2014)



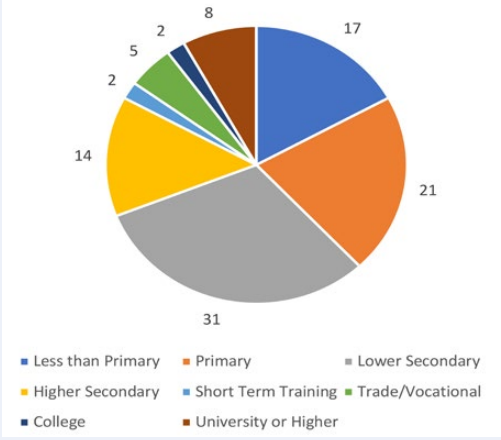
Source: Author's adaptation from (Social Inclusion chapter of World Bank and MPI 2016). Notes: The Kinh net enrolment rates are 93 percent, 84.5 percent, and 65.1 percent, respectively.

130 Bodewig and Badiani-Magnusson 2014.
131 Bodewig and Badiani-Magnusson 2014.
132 Nguyen 2017.

But the majority of the labor force is left behind. The rapid improvement in basic education is benefitting today's young workers but has little effect on the majority of the workforce, some of whom left the education system more than 50 years ago. Instead, most of the workforce has skill levels far below international standards. As of 2015, 70 percent of the Vietnamese labor force (age 15-64) has no more than a lower secondary education (Figure 4.5).[133] While Vietnamese youth have literacy scores on par with Western European students, Vietnam's labor force (age 15-65) has the lowest scores in the sample (Figure 4.6).[134]

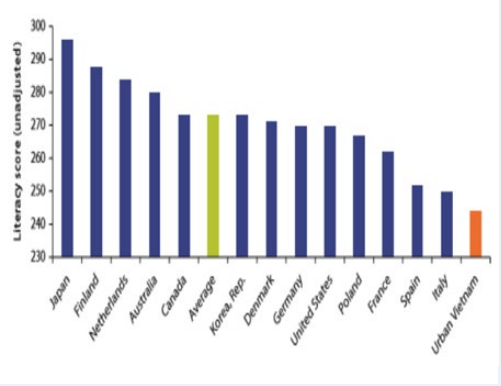
Women are left behind even before entering the labor force. Girls' enrolment in secondary and tertiary education are higher than that of boys. Moreover, at the age of 12 girls appear to aspire to better remunerated positions than boys.[135] However the trends begin to shift by post-secondary school. Girls cluster into management, education or health fields of study while boys cluster into IT and science (Figure 4.7). Such clustering across occupations and industries explains a significant portion of observed gender wage gap.[136] If these patterns continue as automation enters the work place, the gender wage gap is at risk of expanding.

FIGURE 4.5: Highest level of education of the labor force, 2014 (% of total)



Source: adapted from Demombynes and Testaverde 2017 (based on LFS 2014)

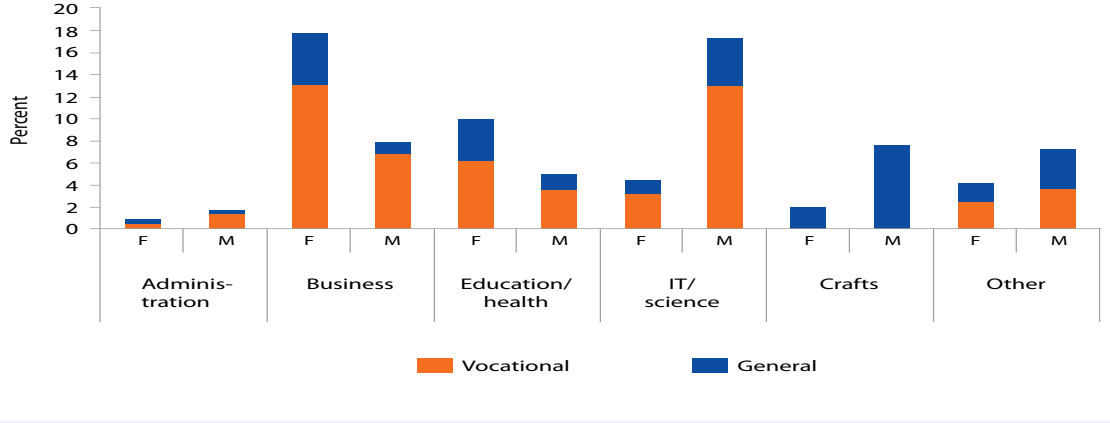
FIGURE 4.6: Literacy Proficiency Scores of the Labor Force



Source: Bodewig and Badiani, 2014. Note: the OECD figures are based on the PIAAC survey, summarized in OECD 2013; the Vietnam data are based on the STEP survey 2014.

133 Demombynes and Testaverde 2017.
134 The Vietnamese workforce is particularly lagging in higher-level comprehension and inference (Bodewig and Badiani-Magnusson 2014).
135 Chowdhury et al. 2018.
136 Chowdhury et al. 2018.

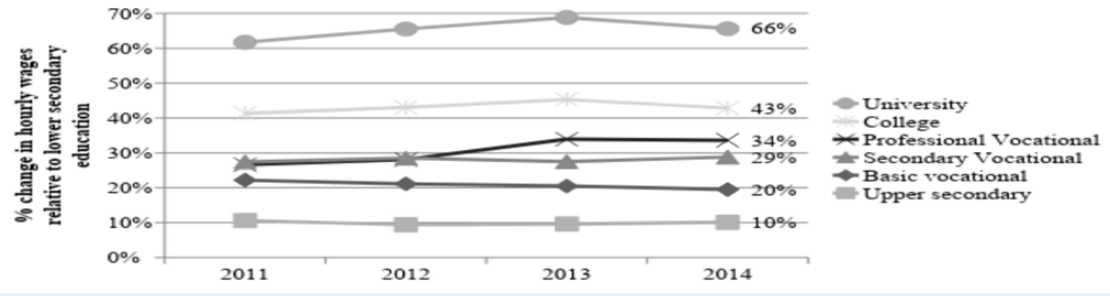
FIGURE 4.7: Gender Gaps in Field of Study in Post-Secondary Education



Source: Bodewig and Badiani-Magnusson (2014).
Notes: F=Female and M=Male

Impressive rates of return to higher education also signal an under-educated labor force. Hourly earnings of university educated workers is 66 percent above those who never reached upper secondary school (Figure 4.8). While university graduates who work in the private sector – less than eight percent of the labor force – earn 70 percent above those who never reached upper secondary school.[137] This gap could reflect higher productivity of university workers but, given that employers most complain of skills gaps in occupations that university workers should hold, the gap is more likely due to a scarcity of those with (even limited) university education.[138]

FIGURE 4.8: Rates of Return to the Level of Education, Private Sector, 2014



Note: The reported coefficients are calculated from (hourly) log wage (including bonuses) regressions restricted to all wage workers which control for a cubic in age, urban/rural, region, gender, and ethnic minority status.
Source: Demombynes and Testaverde 2017

137 Demombynes and Testaverde 2017.
138 Cunningham and Perroti (forthcoming).

Employers voice concern about the education-level of Vietnam's labor force. When presented with a list of 15 potential business environment constraints – ranging from taxes to electricity to access to finance - Vietnamese firms that are hiring workers cite "education" as one of the three top obstacles to their firm's operations; more than three times as much of a problem as comparator countries in the region.[139] This likely reflects the poor education system that most of today's labor force went through, rather than an assessment of today's education system, whose graduates are still a small share of the whole workforce.

The labor market values a range of skills, which are largely missing from the workforce[140]

A mix of skills are needed in the most prevalent occupations in today's labor force. Although Vietnam's economy is characterized by low-skilled occupations, these require a mixed set of skills.[141] Some skills cut across all ten of the largest occupations today: active listening, critical thinking, speaking, monitoring, and coordination (Table 4.3). Others are very occupation-specific, such as the multiple social skills needed by shop salespeople or the technical skills needed by textile machine operators.[142] And yet others do not rank among the most important skills in Vietnam's most common occupations.

139 Cunningham and Perotti (forthcoming).
140 This report differentiates between years of education and skills, where the former is the time spent in school while the latter is the abilities that an individual has, which may or may not have been developed in an education institution. See Hanushek (2007) for a discussion on the difference between the concepts.
141 Nearly 40 percent work in agriculture, forestry, and fisheries and another 10 percent are in retail sales. A range of other low- to semi-skilled jobs round out the top ten.
142 Demombynes and Testaverde 2017.

Table 4.3: Most important Skills in the largest 10 occupations (at the 3-digit level) by employment size, 2014

Skill Type	Skills Valued Across All Occupations in Vietnam	Top 10 Occupations in Vietnam, 2014 (3-digit VSCO)									
		Agricultural, forestry and fishery labourers	Street and market salespersons	Market gardeners and crop growers\	Shop salespersons	Building frame and related trades workers	Textile, fur, leather products machine operators	Garment and related trades workers	Mining and construction labourers	Taxi, van and motorcycle drivers	Subsistence crop farmers
Basic	Active Learning										
	Active Listening										
	Complex Problem Solving										
	Critical Thinking										
	Mathematics										
	Monitoring										
	Reading Comprehension										
	Science										
	Speaking										
	Writing										
Resource Management	Management of Financial Resources										
	Management of Personnel Resources										
	Time Management										
Social	Coordination										
	Negotiation										
	Persuasion										
	Service Orientation										
	Social Perceptiveness										
Systems	Judgment and Decision Making										
	Systems Analysis										
Technical	Operation and Control										
	Operation Monitoring										

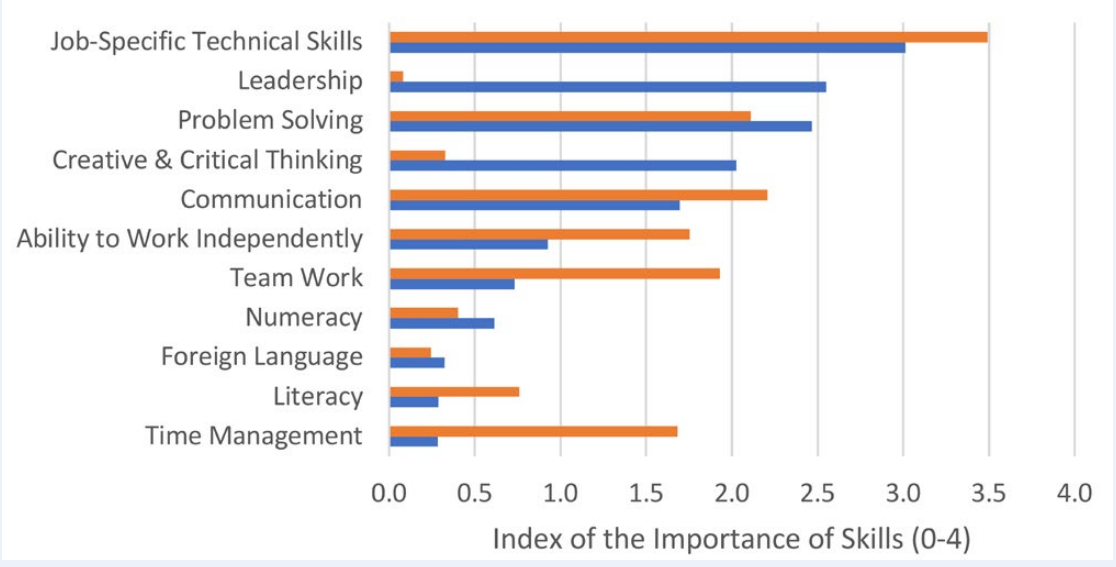
Note: the following technical skills were not listed as most important: equipment installation and maintenance, operations analyst, programming, repairing, technology design, and troubleshooting.

Based on the most populous occupations, defined at the 3-digit VSCO. yellow shading = Indicates that a skill is in the top 5% percentile of importance in an occupation; blue shading = Indicates that a skill is NOT in the top 5% percentile of importance in an occupation, but still ranks high in importance. Blank = indicates that the skill is not important for that particular occupation in Vietnam, but is important in other occupations. Source: derived from Demombynes and Testaverde (2017)

Employers also point to a diverse set of skills for today's jobs. The 2012 STEP survey asked employers to rank the skills that are most important for white and blue-collar workers (Figure 4.9). Job-specific technical skills were the most important skill named for all workers. This may range from cooking skills to machine operation to accounting to management.[143] Other skills that emerged for all workers are problem-solving, communications, ability to work independently, and teamwork skills; reflecting the same priorities as employers worldwide.[144] Employers particularly valued time management (punctuality) among blue-collar workers and leadership and creative and critical thinking among white-collar workers. Numeracy and literacy came in very low – perhaps due to adequate basic literacy across the workforce – whereas more sophisticated "communication" was deemed more important.

The current education and skills system does not address several of these priority skills, with a particularly acute shortage among higher skilled-occupations, exactly those jobs that are needed to pull Vietnam into higher valued-added jobs. Employers identify managerial skills as the hardest skill to fill in Vietnam (Figure 4.10); higher than any other country in the region.[145] This is problematic since high-quality managerial skills are increasingly seen as the key to unlocking innovation and productivity in the knowledge economy.[146] Employers also point to difficulties in finding those with an appropriate work ethic and those with the interpersonal skills to do the job. While definition of "work ethic" category is not provided in the data, casual interviews suggest that it may be related to the punctuality and labor turnover. "Interpersonal skills" involve the leadership, communication, and teamwork

FIGURE 4.9: Employer's View of the Importance of Job-Related Skills for Blue- and White-Collar Workers



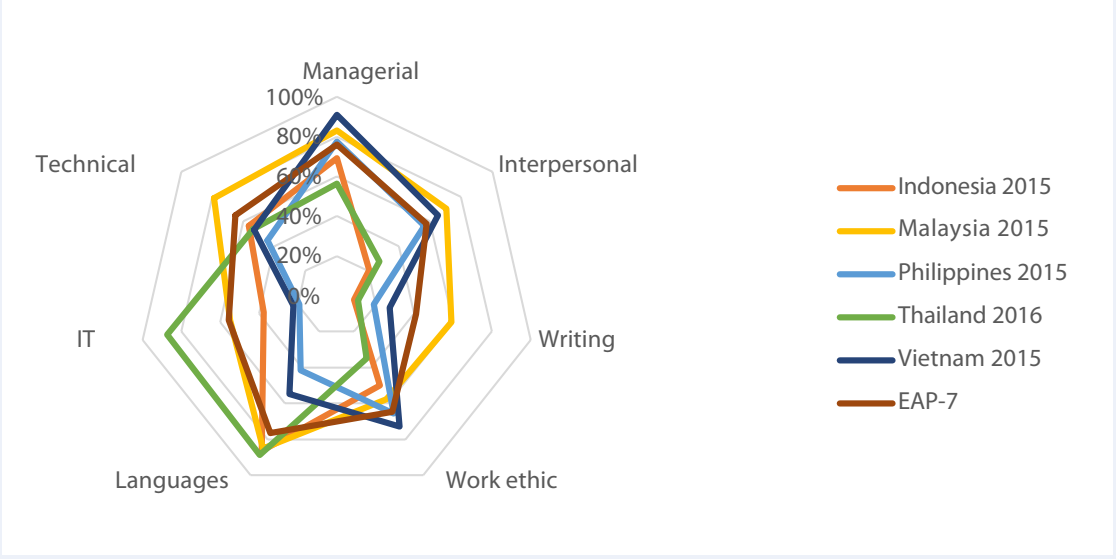
Source: Bodewig and Badiani-Magnusson (2015).

143 This is a difficult category to interpret since it can be a catch-all for the ability to accomplish all the tasks required by a job (Cunningham and Villaseñor 2017).
144 Cunningham and Villaseñor 2017.
145 A survey of Vietnamese employers found that more than 70 percent of employers hiring in technical, professional and managerial professions could not find appropriately skilled workers, as compared to 30 percent of those hiring machine operators or manual workers (Bodewig and Badiani-Magnusson 2014).
146 Cirera and Maloney 2017.

skills highlighted in Figure 4.10. While foreign language is not commonly identified as important for most jobs in Vietnam, it is difficult to fill when hiring. Notably, both IT and writing skills are not necessarily difficult to find in Vietnam, as compared to other countries.

Although vocational education and training is generally not viewed very favorably by Vietnamese students and parents, it cannot be left behind in a race for a sophisticated economy. Technical skills are still the primary skill that employers look for (Figure 4.9) and the right skill level for most jobs in Vietnam (Table 4.3). Even in economies as developed as Germany and South Korea, more than 50 percent of their labor force has a solid technical school training. Developed countries (such as the US) are recognizing that "low-skilled' occupations can become more productive and more lucrative to workers, if workers have higher level technical skills. Although Vietnam's vocational education system is deemed low-quality by students[147] and by more objective measures,[148] it still potentially boosts earnings (Figure 4.8). Those who complete post-secondary vocational education see a wage premium of 34 percent, compared to 10 percent for those who only finish non-technical secondary school.[149] Even secondary vocational school graduates earn more than standard secondary school graduates. This points to a job market that values low-skilled technical workers more than low-skilled general education workers. In spite of the wage premium to technical school, less than 10 percent of men and 2 percent of women have a technical or vocational secondary or higher education.

FIGURE 4.10: % of firms that state that it is difficult or very difficult to find each skill, when hiring



Source: WB Enterprise Surveys.

147 Nguyen 2017.
148 Viet 2017.
149 Demombynes and Testaverde (2017) argue that the primary labor market benefit of completing academic secondary education is to pursue post-secondary education. The likelihood of obtaining a wage job is 45 percent greater for university graduates than for those with only upper secondary school and the earnings are 56 percent higher. However, vocational education also increases the chance of holding a wage job and boosts earnings over those with an academic secondary degree. Those who graduate from secondary vocational have a 17 percent greater chance than academic secondary degree holders of getting a wage job and a wage premium of 19 percent. The probabilities are 29 percent and 24 percent respectively for those who have completed professional vocational school (Demombynes and Testaverde 2017).

In summary, twenty-first century workers require a more complex set of skills than in the past, and Vietnam's workforce must have them. Vietnam's current high work rates, low unemployment rates, and shifting demographics indicate that there is little room for further mobilization of the working age population. Instead, labor supply increases will have to come from the abilities embodied in the workers through skills. Some mega-trends will exacerbate the skills shortage as Vietnam strives to move into service and higher valued added jobs and welcomes technology to the workplace. So while basic cognitive skills (reading and writing) and limited technical knowledge in one's field was the recipe for a productive worker in the past, today's employers are looking for a range of skills and knowledge, and emerging jobs will need these even more.

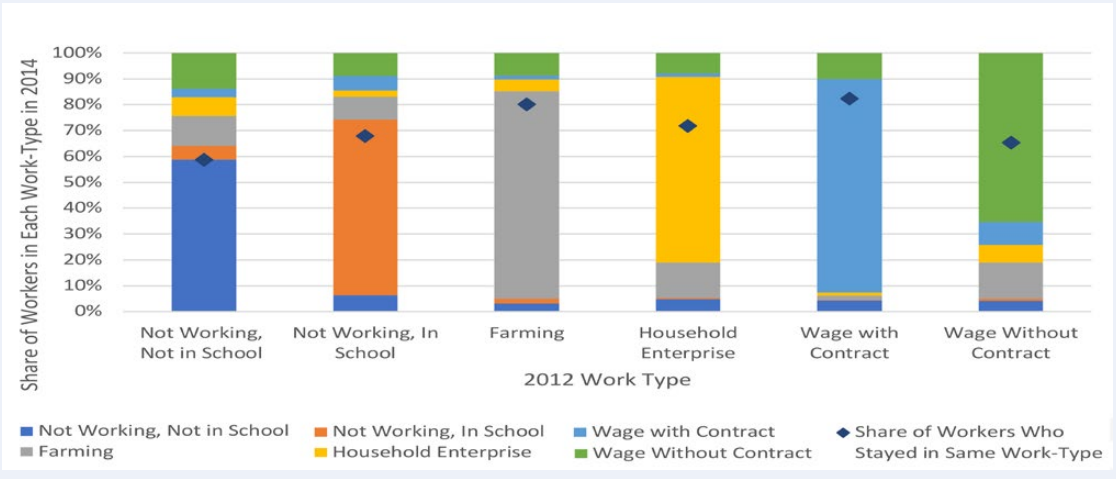
Transitioning up the jobs ladder

Worker movements between sector were a key contribution to economic growth, as well as a means to acquire greater job stability and benefits, as discussed in Chapter 1. This labor mobility is expected to continue with on-going structural transformation, though it may speed up in response to opportunities offered by the mega-trends: shifting product markets to serve the growing consumer class, moving position in the value chain, and automation changing the nature of and the structure of jobs.

Already, Vietnam's workforce is mobile. One-fourth of the labor force changes their type of job, the type of employer, sector, or occupation over a two-year period (Figure 4.11). This share is closer to 35 percent for youth (age 16-24) and over 40 percent for youth who are not in school. These estimates likely underestimate labor mobility since movement within sector or occupation are not captured in these data.

The job transitions seem to result in little "upward" movement, except for youth. As workers change job type, employer type, or occupation, there is not a clear trend that the job switching is to "better" jobs. Workers enter some job types and others leave those jobs, as seen in Figure 4.11. On average, all this labor mobility nets out to a very similar distribution of workers across job types, employer types, sectors, and occupations. Youth are the exception. Among those age 16-24, the last row of Table 4.4 "wage with contract" in nearly all grey, indicates that

FIGURE 4.11: Share of the working age population (age 16-65) who were in each Work Type in 2012 (x-axis) and 2014 (bar)



Source: Adapted from Pimhidzai and Cunningham (forthcoming).
Note: * indicates the same work type between periods.

youth disproportionately move from all work, school, and inactivity types into holding jobs with a contract. Movement to wage without a contract is also quite prevalent, but not into farming or household enterprise ownership. A similar pattern is observed when considering the type of firm, as presented in Chapter 1.

In spite of this mixing, the transitions are not as fluid as they could be. There are significant wage differentials across job types and occupations, indicating that something is preventing workers from transitioning to higher paying jobs. In fact, labor mobility (across sectors) costs are significant in Vietnam, averaging 3.1 times the average annual wage within the economy.[150] The impediments to job switching might include skills mismatches, limitations to geographic mobility (administrative procedures for internal migration and direct relocation costs), severance and hiring costs (including those imposed by law or convention), location preferences, job search costs, and even the psychological costs of changing jobs. Not surprisingly, unskilled workers in Vietnam face higher costs to transition across sectors compared to skilled workers, although the results vary by sector.

Most Vietnamese workers find their jobs through ad hoc, informal channels. In 2013, about half of job-seekers relied on friends or relatives to find a job (Figure 4.12). Young people and the less-skilled gravitated toward personal networks, even though they likely have smaller employment-relevant social circles.[151] Search in cities, with their more organized labor markets, rely less on personal connections.[152] Another 22 percent did not look for a job but instead undertook means to start their own business; this reflects a new generation of (mostly) household enterprise owners. Older groups of workers have a higher tendency to start their own firms, as is observed across the world.

Table 4.4: Worker transition between work types, 2012-2014, age 16-24

		Work type in 2014					
		Not working, not in school	Not working, in school	Farming	Household enterprise	Wage without contract	Wage with contract
Work type in 2012	Not working, not in school						
	Not working, in school						
	Farming						
	Household enterprise						
	Wage without contract						
	Wage with contract						

Note: Yellow denote the diagonal, signifying no change in work type across periods; grey indicate a larger transition between sectors than expected, given sector size.
Source: Pimhidzai and Cunningham (forthcoming).

150 Hollweg 2017.
151 The statistics on job search by level of post-secondary education is drawn from the 2015 Labor Force Survey (GSO 2016).
152 GSO 2016.

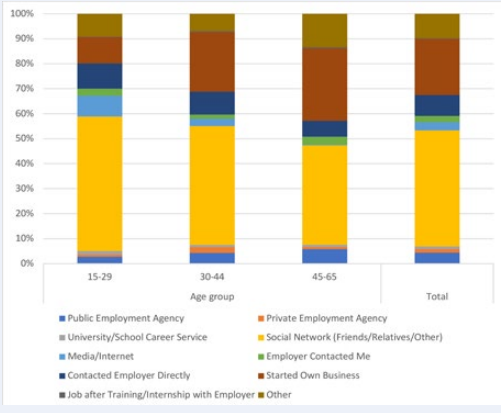
In spite of the emergence of a range of e-platforms and services to facilitate the job match, few job-seekers use these methods to find jobs. Internet-based job search sites are proliferating, but only 2-3 percent of job seekers use these sites; not surprisingly, youth are more inclined to find jobs via the internet. However, even person-to-person job search assistance – via recruitment firms, education institution-based services, and public employment services – are infrequently used. Older workers depend more on publicly provided services than do younger workers, but this still accounts for less than 10 percent of job search by workers age 45-65 (Figure 4.12). This may be partly explained by anecdotal evidence about abusive private and public search support services.[153]

Poor information about labor markets hinders efficient jobs matches. Employer cite three issues, that can be tied to information: poor information about the skills required to do a job, insufficient information about the kinds of jobs that are available, and incorrect information about the wages or work conditions for which the applicant is eligible (Figure 4.13).

First, students do not have adequate information about the skills needed for their target jobs. Nearly half of hiring employers say that applicants lack the required skills. This could be due to students not having good information about the kinds of skills that they should acquire. Young people use a range of methods to select a field of study – newspapers, internet, guidance from youth unions and schools, MOET's book *What a Student Should Know*, parents, relatives, flyers from universities - some of which may provide misleading or incomplete information. Rural students use even fewer resources.[154]

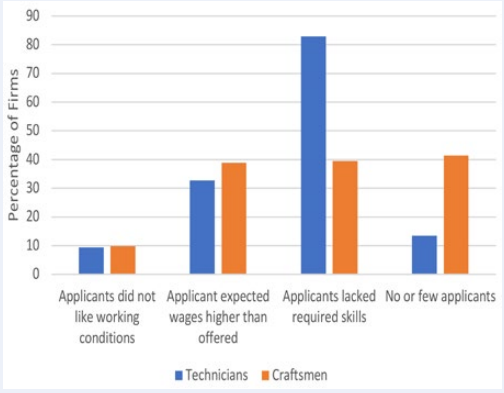
Second, there is little digestible information about the jobs market, thereby limiting young people's options for selecting a skills development path or for job search. Thirty-four percent of formally registered employers say that there were few job applicants for open positions. This may signal an occupational shortage, namely

FIGURE 4.12: Job Search Methodologies, by Age



Source: Bodewig and Badiani-Magnusson (2014).

FIGURE 4.13: Problems firms encounter when hiring



Source: Bodewig and Badiani-Magnusson (2014). Notes: the data are drawn from interviews with 132 businesses that hired craftsmen and 34 businesses that hired technicians.

153 Nguyen 2017.
154 Oxfam and Action Aid Vietnam 2012, as cited in Bodewig and Badiani-Magnusson (2014).

that the skills are missing. Or it may be that job content and terms (wages, work conditions) are below the aspirations of jobseekers. Thus, people may not train for or apply for these kinds of employment, even though there are job openings. Further, as mentioned above, job search is rather ad hoc, so information about these job openings may not even be getting out.

Third, more than 40 percent of hiring employers say that the offered wage or work conditions are not acceptable to job candidates. This is partly due to poorly informed jobseekers with misaligned expectations. Better information about earnings potential would both help job-seekers set realistic expectations as well as reduce their applications to jobs that are not aligned with their own expectations.

In sum, the limited upward mobility and costly transition suggest that the job search and placement system is not working as well as it could, thereby limiting labor productivity and associated GDP growth. Job search is not efficient and signals from both sides of the market suggest serious information asymmetries. Inefficient allocation of labor both reduces firm productivity and leads to poorer jobs for workers who are in the wrong job.

Policy for More, Better, and Better-Matched Workers

Labor supply policies will not increase the number of jobs in Vietnam, but they can better prepare workers to meet labor demand and to get the right workers into the right jobs as well as expanding the employment opportunities for more vulnerable population groups. Vietnam currently has a range of public and private programs and policies to support the development of human capital and get people into the right jobs but, in the face of a changing labor market due to automation and structural transformation, the current methods to support workers may be outdated. Now is an opportune time to adapt the current system to meet the new megatrends.

Vietnam will need to develop policy to serve two labor markets: the current market that is primarily comprised of low-skilled technical jobs and a small and emerging modern sector that will require a new level and type of skills. Three policy areas are proposed: (i) moderating the impacts of the demographics shifts on the labor market by support to the aging population, (ii) rethinking the skills development process to agilely respond to shifting market needs, and (iii) generating information for better preparation for, integration into, and movement across the labor market.

Moderating the Impacts of the Demographic Shifts on the Labor Market

Two policy areas that can alleviate the impacts of demographic shifts on the size of Vietnam's workforce: developing an aged care system and extending the productive work life of the population.

Developing an Aged Care System to Alleviate the Household Eldercare Demands

Vietnam needs to start developing a comprehensive long-term care system (LTC). Vietnam's tradition of family care for aging household members may have been efficient when families lived together and worked family farms. But with greater urbanization and women working outside of the home, work and eldercare are not necessarily compatible. Other countries with similar demographic profiles are developing comprehensive LTC systems, characterized by a broad range of services designed to support people who are unable to perform the daily activities that they need to stay happy and healthy. LTC services may be provided in the home, community, or institutions; be full time or a few hours a week; paid or free; and cover everything from basic social interaction to medical care.

Different models across the East Asia region provide a range of options for the shape of Vietnam's support to the elderly. For example, Thailand has a program in rural areas that pays community-based caregivers a small monthly stipend to provide in-home (of the client) services. Singapore offers a range of services from home-based care to integrated care. And China is rapidly expanding a range of services for its older population (Box 4.3). Not only do these services provide support that otherwise would have been provided by (mostly) daughters and daughters-in-law, they also provide an activity, and perhaps some modest earnings, for the young-elderly who have retired but are still eager to remain active.[155]

Extending the Productive Life of the Adult Population

With advances in health care and the changing nature of jobs, Vietnam's population has the potential to work longer. Those living in rural areas already work well into their later years, but urban workers are quicker to leave the workforce at the formal retirement age – 55 for women and 60 for men. Thus, there is a stock of urban residents who will spend nearly half of their adult life not working. Two shifts can change this: improved health care services so people are physically able to work more years and incentives or programs to encourage working longer.

To keep people healthy longer, Vietnam will need to expand its health system where prevention and treatment are offered in a coordinated manner over a long period of time. Many disabilities associated with old age are acquired over time and, if treated early, can be minimized. This will require strengthening primary care services, shifting care away from acute care hospitals, improving coordination among health providers, and strengthening the quality of the health workforce. Preventative interventions over time also teach individuals to take more responsibility in managing their own care than if they only interact with the health care system in cases of emergency.[156]

Just because people can work does not mean that they necessarily will; incentives may be needed to encourage people to stay economically engaged. The structure of Vietnam's pension system currently incentivizes people to retire long before they are physically and psychologically ready to stop working. There is no evidence that moving older workers out of the labor force opens spaces for younger workers. Instead, the pension system may be slowing down Vietnam's economic growth. But even those who wish to work may have difficulty finding jobs due to obsolete skills, a shifting labor market, employer discrimination, or homecare burdens in caring for grandchildren. Older

BOX 4.3: A Room of One's (Aged) Own

China's economic and population policies have led to rapid growth but also a potential aged-care problem. Yesterday's one-child families are today's couple with four aged parents to care for. Coupled with rapid urbanization and rising female labor force participation, traditional models of aged care are being reinvented to serve today's reality.

In response, the Chinese government is implementing pilots in 42 cities to provide comprehensive care services for the aging population. The publicly financed program is leveraging private actors to collectively address the challenge by: establishing or strengthening community care centers to provide comprehensive services, purchasing services from the market (or via vouchers), and encouraging the participation of volunteers in innovative time banks where younger elderly provide LTC services for older elderly. This is underpinned by the development of management and information communication technology to monitor and evaluate, provide quality control, and ensure solid management.

Source: O'Keefe et al (2016).

155 O'Keefe et al 2016.
156 O'Keefe et al 2016.

potential workers in several other countries are facing similar challenges, which are being met by public policy in job search services for older workers, vouchers to employers who hire older workers, and retraining schemes targeted toward those who were educated long ago. The most economically (and demographically) advanced countries in EAP employ a mix of strategies.[157]

Rethinking the Skills Development Process

"Vietnam should not be concerned about the existence of skills gaps and occupational skill shortages but about the ability of the skills development system to overcome them."[158] **Vietnam's Socio-Economic Development Strategy 2011-2020 paints a vision of an agile, highly skilled, scientific labor force to respond to a world that is changing "fast, complicatedly, and unforeseeably."**[159] This vision aligns with the discussion in this Report and will require a re-think of the current skills development system in the context of a rapidly changing job structure, automation, and globalization. At the same time, Vietnam's labor force does not have the skills needed for today's jobs, even in more traditional trades. But whether new skills or old skills, the current skills development model needs to expand beyond the current strategy of learning while young in an intensive school-based process. To achieve this, today's workers need a broader set of skills and learning modalities over the lifetime while the skills development system needs a larger set of actors and mechanisms to support adult learning.

Developing a broader set of skills

The education system needs to continue to augment the traditional knowledge and basic cognitive skills with higher-order cognitive skills, digital literacy, and socio-emotional skills.[160] In addition to enhancing the relevance of the knowledge-based curriculum and improving learning of such material,[161] there is a growing consensus that the classroom can be used to teach a range of non-academic skills. Vietnams' current initiative to reform curricula to include competencies (in addition to knowledge) in creativity, teamwork, self-guided learning, problem solving, and self-management/efficacy is a promising start, as well as other initiatives (Box 4.4).

Various school-based models have been used successfully in other countries to add higher-order cognitive skills and socio-emotional skills to the curriculum without sacrificing quality of cognitive skill development.[162] They can be grouped into four types of interventions.[163] First, develop teachers' socio-emotional skills so they model them in the classroom. Second, strengthening the school environment to provide a safe place for practicing pro-social behavior. Third, create and implement a socio-emotional curriculum. The curriculum can take many forms – a full class period or just a 10-minute daily exercise, using worksheets or using play-acting and music, for 5-year olds or for adolescents – but all require engagement and practice. A range of toolkits have been created in developed and developing countries. Fourth, incorporate socio-emotional skills into the pedagogical method. Course content is best learned when the student actively works with the information. There is an

157 O'Keefe et al 2016.
158 Bodewig and Badiani-Magnusson 2014.
159 From the unofficial English language translation: file:///C:/Users/WB176789/OneDrive%20-%20WBG/harddrive%20back-up/FY17/Vietnam%20JD/lit/Socio-economic%20Development%20Strategy%202011-2020.pdf
160 This section refers to actions that schools can take to enhance these skills. However, parents play varying roles across the lifecycle. In fact, some Vietnamese parents view socio-emotional skills as their domaine (Parankekar et al 2017). This section will not speak to the role of parents, referring readers to a broader literature on the topic.
161 For a detailed discussion of strategies to improve teaching, see World Bank (2018).
162 CASEL (2014) points to four types of in-classroom learning: (i) teacher modeling skills that she has learned through a structured program, (ii) pedagogical methods that incorporate socio-emotional and digital learnings into the curriculum, (iii) a dedicated class period for socio-emotional learning, and (iv) school climate. Cunningham et al (2016) add to this framework the role that after-school activities can play.
163 CASEL 2014.

increasing appreciation of the use of a range of socio-emotional and higher-order cognitive based learning methodologies, which may incorporate teamwork, problem-solving, oral presentation skills, empathy, and other skills that are valuable for the labor market. However, there is not a consensus on how to teach this broader range of skills, and successful teaching will be context specific.[164] This points to experimentation and evaluation to identify what works for Vietnam.

To highlight the importance of these skills, and assist students in acquiring them, it will be important to evaluate student success, just as traditional skills are evaluated. Vietnam's great success in PISA is partly attributed to a clear understanding by students, parents, and teachers of what "success" is, thus enabling all to work toward that success.[165] A similar benchmark-setting for socio-emotional skills is being used across the world. For example, the successful US KIPP schools provide socio-emotional skills report cards that are discussed by teachers, students and their parents throughout the school year. These scores are treated on par with scores for more academic subjects.[166]

Older students, and those outside the school system, can acquire these skills in a broader range of contexts. The OECD points to the importance of "experiential learning," where skills that are "taught" in the schoolroom are honed in a workplace environment. This is particularly relevant for these new skills, that can be difficult

BOX 4.4: New Schools for Vietnam? Importing Colombia's *Escuela Nueva,* with Great Success

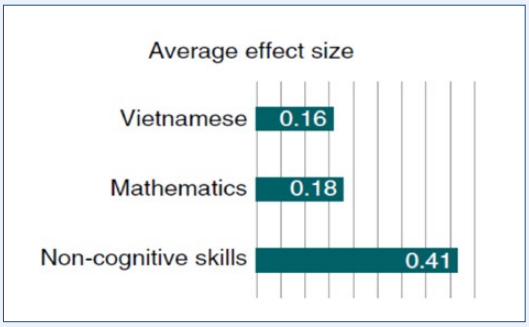
In response to Resolution 29 of November 4, 2013 and Resolution 44 of June 9, 2014 from the Prime Minister's Office, the Vietnam Escuela Nueva pilot was born. The idea was to adapt the successful Colombian "new school" model *(Escuela Nueva)* for the Vietnam context in order to assess if, indeed, team-based, applied learning could more successfully shape well-rounded citizens for a modernizing world, as compared to Vietnam's traditional learning model.

The *Escuela Nueva* model includes a number of elements that differ from traditional teaching models and contexts:

- Project-based learning where students collectively solve problems requiring a mix of skills
- Children working together to learn from each other, guided by a teacher who acts as a facilitator
- Self-paced learning and instructional material designed to allow children to learn at their own pace,
- Parent participation in the learning process and work "artifacts" in the classroom to expose children to real-life problem solving

Vietnam adapted these principles to its own context for a small group of 3rd grade classroom, thus creating the Vietnam Escuela Nueva (VEN) model.

Importantly, Vietnam's pilot also tracked VEN's students' mastery of mathematics, Vietnamese language, and socio-emotional skills over the next two years, as well as tracking scores of non-VEN students. By the fifth grade, the VEN students had higher mathematics and Vietnamese language scores and much higher socio-emotional scores than their counterparts who were not selected to participate in the program. The figure shows that VEN students had math scores that were 0.18 standard deviations above those of non-VEN students, equivalent to nearly half a year of schooling (an effect size of 0.5 is equivalent to one year of instruction), while socio-emotional skills were 0.41 standard deviations above the non-VEN group.



Source: Parandekar et al. 2017.

164 For example, cultural differences underlie the starting point, target level of, and teaching methodology of socio-emotional and higher-order cognitive skills such as empathy, teamwork strategies, and communications. Or, access to electricity or the internet may affect how digital literacy skills are taught.
165 Parandekar et al 2014.
166 Cunningham et al 2016.

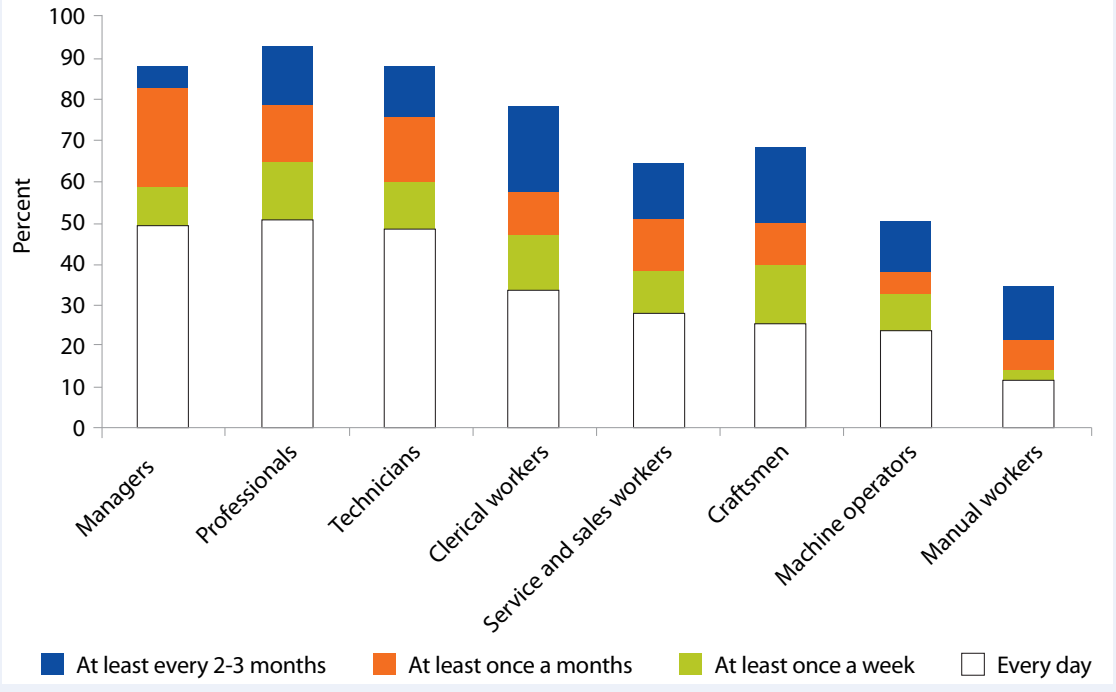
to teach in a school-based setting. Although Vietnamese higher education and training institutes are attempting to develop learning partnerships with private enterprise, success has been limited, particularly in more rural areas. Job search firms can fill this gap, by expanding their services to include information about apprenticeships. Further, geographic mobility grants for students, accompanied by training vouchers that firms can redeem, may alleviate the cost of relocation and incentivize employers to hire those from other zones. This may be particularly helpful to ethnic minorities, who have fewer personal connections in urban areas and who may face discriminatory hiring practices in urban zones.

Learning modalities over a lifetime: firms, short-courses, and adult-driven skills upgrading

Learning can no longer stop at the schoolhouse door at age 18 or 22. Today's technologies and shifting markets require workers to be agile and adjust rapidly by continuously relearning and retooling for a 50- year work life. Thus, an expansion of quick knowledge and skills acquisition programs are necessary to keep up with changes in the labor market.

First, recognize, and expand, on the job training. Most learning for the job occurs on the job. While on-the-job training is not often recognized for the role that it plays in the skills development system, in fact a large share of workers learns something new in their jobs daily; this is particularly the case among more skilled professions (Figure 4.14). This learning largely does not come from training courses within firms – which Vietnam's employers are notoriously scarce on – but instead learning by doing with the assistance of more skilled supervisors, the opportunity to learn something new, and hands-on coaching (Box 4.5).

FIGURE 4.14: Percentage of Wage Workers in Different Occupations Who Report Having to Learn New things, by Frequency



Source: Bodewig and Badiani-Magnusson (2014).

BOX 4.5: Extension Services – for Managers

Management skills are emerging as one of the most important factors for firm competitiveness and success, as well as one of the most difficult skills to teach in a classroom. But recent evidence is showing that managers may most benefit from a service delivery mechanism more commonly enjoyed by those at the other end of the occupation ladder: subsistence farmers. The most rapid, and most effective, management training may be in-firm coaching by management specialists; the strategy that was undertaken by Japan and Korea in the 1950.

Extension services that are geared toward managers have many of the same characteristics of those provided to subsistence farmers. The extension officers go to the workplace. They work with the manager to identify her firm's needs and coach the manager on strategies to overcome these challenges. They bring latest research and methodologies to the manager to address the shortcomings.

For example, the Japan Productivity Center goes into firms to provide technical assistance on a range of business management skills. These skills may be as simple as more efficiently organizing the production process, cleanliness and industry standards, or firm discipline or as complex as implementing entire management systems, such as Total Quality Management. For such a model to be effective, though, it must aim to bring outside knowledge in, namely to not to use Vietnamese managers to advise others, but for global experts to advise Vietnam's managerial class. Such an intervention in Indian textile factories increased productivity by 11 percent.

Source: Bloom et al. (2013), Bloom et al. (2015), Cirera and Maloney (2017).

Better information and incentives can enhance on-the-job training. While there is scarce evidence about the factors that encourage firms to invest in learning opportunities for their workers, there is a consensus that firms that under-invest in training do not fully understand the benefits accruing from a greater investment in their workers. A better measurement of skills acquired on the job and the rates of return may provide firms with the information that they need to enhance their investment in skills development. Further, evidence finds a link between better management and investment in the current workforce.[167]

Second, strengthen, expand, and co-finance technical short courses. While short VET courses are often viewed as a poor substitute for college or vocational education, they are a viable form of adult learning for most of the workforce. Firms and workers do not have the flexibility in their business processes or personal lives for a worker to disappear for several years in order to upskill. Instead, courses that teach narrowly defined skills in a short period are more realistic. For example, an older worker might enroll in a short course to learn Excel so that she can better manage her small business or enroll in a short course on electronic repair to take on a supervisor position in the electronic assembly plant where she works. **This points to an upgrading of Vietnam's short courses.** Vietnam's public and private VET sector currently offers a plethora of short courses. And students are logging in to MOOCS (massive open on-line courses) to learn the most basic skills to the most complex. The public sector can play several roles to expand and improve the system. First, to identify market-demanded skills that the private training sector cannot fill and incentivize the provision of such courses. Second, incentivize the creation and maintenance of central platforms where information about short term training course is stored, for access by workers and firms. Third, provide monitoring information on the short course quality via the website. Fourth, provide learning grants that people can use throughout their lifetimes to upgrade skills. For example, Singapore's SkillsFutureCredit aims to encourage skills development at different stages in life by providing an opening credit of SGD500 to all Singaporeans 25 years of age and older. This credit does not have an expiry date and can only be used for accredited skills courses.[168]

167 Saraf 2017.
168 Adapted from World Bank 2017.

Third, information for Adult-driven skills upgrading. Learning across the work life requires the worker to take control of her own skill development process. As people age, they spend less time in formal skills acquisition processes. However, the workforce is aging and, with better health care, will likely be able to have longer work lives. While the process of transition from school to higher education is well understood, planning a career path that is intertwined by short course learning is much more difficult to map.

To make these choices, adult-learners need information about labor market trends, skills needed to meet those trends, and where to acquire the skills (and how to finance it). This will require both the creation and provision of information. The MOLISA and GSO produce strong labor force data; these data can be used to generate statistics that are relevant for career planning and in a format that is easily understandable to workers. These data will also need to be supplemented by better information on short course (and longer) offerings. Private and public employment support services can guide workers to the use of these services to map out a life plan, in terms of the adult-learning they will need to do to meet career goals.

Transition from Education/ Training Services to a Skills Development System

Today's skills needs cannot be met solely by the education and training sector. Instead, to provide a range of skill development opportunities across a broad population for continuous learning will involve both a larger set of actors and will change the role of the education and training sector. This transition process will require public sector leadership, as well as incentives, to move the skills development system toward the XXIst century. In addition to students taking control of their own skill development strategies:

First, bring employers into the skills development system. De facto, employers play a large role in skills development; they are the consumers of the labor force's skills set and they are a source of skills development themselves.[169] However, there is limited interaction between employers and the education system, largely confined to the recruiting process.[170] The enterprise sector can play a bigger role in three ways:

Provide skills development opportunities. As noted, firms provide quite a bit of skill development however, given the skills gap that training and education institutions are not filling, they need to do more. This must align with the firms' profit-driven business. For example, boutique training for specific skill needs of enterprises,[171] alleviating the firm cost of training,[172] and subsidies for hard-to-employ workers so they may acquire job experience[173] have been effectively used in other countries to the benefit of enterprise and workers.

169 Bodewig and Badiani-Magnusson (2014) report that more than half of workers have learned something new on the job over a three month period, rising to 100 percent of more skilled workers.

170 Bodewig and Badiani-Magnusson (2015) find that 83 percent of firms that have contact with education and training institutions do so for recruitments purposes. However, another 45 percent cite student work experience (internships and apprenticeships) and 38 percent interact for further training of employees. However, firms provide little guidance on the core-business of training and education institutes: only 9 percent engage on curriculum development.

171 For example, a program in China serves as a full service employment service for urban firms and rural workers. Firms request a specific number of workers with a defined skill set; the program identifies potential workers, provides the required training, and assists with relocation to the urban center where the firm is located. The public sector is engaged as the workers who are targeted are hard-to-serve populations due to their geographic dispersion and unique skill sets. For less challenging job-seeking populations, private search firms could play this role. World Bank 2011b. More generally, Jovenes programs across Latin America (and emerging in other countries) provide public financing to training institutes that have a signed MOU with an enterprise that will provide apprenticeships to their students. The program has been frequently evaluated, with positive results in terms of wages and formal sector employment (Ibarraran and Rosas 2008).

172 For example, Colombian Law 789 introduced a reimbursement of the training tax on firms that trained their own workers. Very few enterprises took up the rebate due to program design that incurred costs on the firm.

173 A program in Jordan gave "employment vouchers" to young women who had graduated from college, as a means to subsidize wages and benefits in firms that temporarily hired these new labor market entrants. The vouchers successfully opened on-the-job learning opportunities to the young women though they did not have long-term employment effects (Groh, McKenzie and Vishwanath 2012).

Guide the education and training institutions. The public sector can facilitate engaging employers and institutions in a common conversation and set of solutions. Such dialogue needs to be structured, driven, and results-oriented. Australia's Industrial Skills Council plays this role, with impressive results. (Box 4.6).

Advocate for broader policies. In addition to service delivery, the enterprise sector can use its platform to encourage complementary policies that will encourage skills development, such greater transparency and information about skills providers, public support to financial assistance to students, and social policies to allow for workers to take time off work for skills upgrading or to change jobs as per shifting skills demands.

BOX 4.6: Australian Industry and Skills Council – Guiding the Education and Training Sector

The Australian Industry and Skills Committee (AISC) in an example of formalized collaboration between industry and government. The AISC advises the Australian federal and state governments on matters related to vocational policies, ranging from review and development of training packages, implementation of national training policies, quality assurance of training packages and development and approval of accredited training (Figure B.4). In performing these functions, the AISC is advised by the Industry Reference Committees.

Comprised of industry representatives and unions, 64 Industry Reference Committees (IRCs) advise the AISC on the development and review of training packages. Each industry finances participation of industry representative in IRCs. The role of IRCs is key as they provide insights from employers on skill needs and use this information in the process of developing and reviewing training packages. Membership in IRCs is through appointment by AISC based on public consultation or an open nomination process. Membership lasts for three years with the possibility to be re-appointed for only one more year. At least one meeting is expected to take place per year for each IRC.

FIGURE B.4: Organizations gathering industry input to inform training programs in Australia

Source: Adapted from World Bank, 2017. HRDF National Workforce Human Capital Development Blueprint 2018-2020 & 2021-2025. Report prepared by the World Bank for the Human Resource Development Fund.

Service Skills Organizations (SSOs) support IRCs in the process of developing and reviewing training packages. An important characteristic of the six SSOs is that they are independent of both industry and the training sector and their main objectives is to facilitate industry engagement. The SSOs provide a range of activities, the most important being support to the IRCs to develop a four-year skills forecast based on industry analysis. The process is such that the AISC receives the skills forecast and uses it as an input for the development of a four-year National Schedule of training package development and review. Training package review and development is then undertaken by the AISC based on this schedule.

Funding for the SSOs are provided by the federal Department of Education and Training for three-years subject to performance, with the option to be extended for two additional years. The selection of the SSOs follows a competitive grant process. SSOs are not restricted to only work with the IRCs and can undertake additional commercial activities.

Source: Adapted from World Bank, 2017. *HRDF National Workforce Human Capital Development Blueprint 2018-2020 & 2021-2025.* Report prepared by the World Bank for the Human Resource Development Fund

Second, hand-over the institution-based learning to VET and university institutions via greater autonomy in the design and provision of their services. The current move toward higher education and VET autonomy is expected to improve the quality and relevance of education services to better respond to market needs. The autonomy in curriculum development and human resources should allow both vocational education and training colleges and universities to retro-fit their course offerings and delivery mechanisms to local and global needs. Financial autonomy will also encourage quality enhancements as institutions compete for students. Shifting from a supply-driven model, where historical financing and human resources provided services using a centrally determined curriculum, to full autonomy requires a different set of management skills than Directors usually has. This highlights the need to develop a cadre of University and VET institution Directors who can envision and drive the transformation toward results-based institutions.

However, none of this will benefit students if there is not an accessible and reliable information system that will give students and their parents the tools to select among education and training options.

Third, focus the role of the Ministry of Education and Training (MOET) and the Ministry of Labor, Invalids, and Social Affairs (MOLISA) and their department-level equivalents, on monitoring and evaluation and results-based quality assurance. Vietnam is at a stage where it can, and should, use results-based monitoring and financing to guide the transition of Vietnam's post-secondary education system toward higher-quality skills that are linked to labor markets and morph as the skills needed in jobs changes. Rather than micro-managing the service delivery process of the VET and education institutions, energy and resources should be dedicated to ensuring that students, parents, career counselors, and institutions have the information that they need to make the right decision. The public sector has the role to monitor education/VET institution results and *share the information with users* so they can make good decisions.

Two types of information need to be collected, analyzed, systematized, and made public. First, outcome indicators on job placements, post-graduation salaries, and employer satisfaction for each field of study in each institution.[174] This information can be collected via tracer studies and employer surveys, processed using simple statistical software packages, and shared through communications materials and on-line portals. Second, general management information – number of students, faculty, courses, and other variables that paint a picture of the skills development system - will allow systems monitoring and provide information on how to improve it.

This information can also be used to encourage greater quality in the skills development sector. The MOLISA and MOET will need to review the information to ensure equality in the provision of services by users across the country. It will need to monitor if certain demographic groups are being left behind and may need public interventions (via incentives) to close the gaps. But most importantly, it can be used to transparently redirect resources to the most results-oriented institutions, further encouraging reform toward a market-responsive training and education system.

Design A National Skills Development Strategy

The changing nature of the Vietnam's labor market and work force, as well as its current lagging skills profile, will require a much more complex set of actors and goals than is currently envisioned. This points to the need to develop a

174 For example, Singapore monitors three outcome-based indicators, and ranks (and subsidizes) institutions based on these: number students entering the institution, number of students acquiring a job upon graduating from the institution, and employer perceptions of the institution

skills development strategy, which reaches beyond a level of education or ministry, and instead envisions the system from the perspective of the citizen and what she will need to navigate a work life that will shift throughout her lifetime.

Policy and User-Friendly Information for Good Decision-making

Job opportunities in Vietnam are rapidly changing, and will change even faster as the new megatrends affect the work place and the working population. It is impossible for students and their parents who are mapping an education trajectory or job searchers who are looking for better options to obtain good information about the kinds of jobs that are emerging, the wages associated with them, and the skills and experience needed to fill them.[175] A lack of labor market knowledge by jobseekers partly underlies current employer frustrations.

Low-cost information-based interventions can lead to better education and work outcomes.[176] For example, middle school students exposed to short information sessions about the earnings gains to completing secondary school have shown lower school dropout rates than those who did not.[177] Or a program that taught girls about the higher earnings in traditionally "male" work – such as motorbike repair – had a higher incidence of females entering these fields of work and three times higher wages, as compared to girls who were not informed of and encouraged to explore these types of jobs.[178]

For information-based interventions to be successful, there must be information about jobs trends. An effort to analyze and present information in targeted and user-friendly formats may allow schools to guide students on education pathways toward a career, universities and VET institutions to design courses for jobs that are in high demand, students to figure out what they would like their future work lives to look like, parents to guide their children toward an education pathway and world of work, workers to upskill or change jobs according to emerging careers and associated skills demands, and the public sector to design education, training, and labor policy.

A Labor Market Information System (LMIS) can provide a range of users with the jobs market information for better decision-making. Vietnam's Labor Force Survey is a rich data trove and its annual yearbook provides valuable information on labor trends. But it is difficult for those who are not labor market specialists to interpret the information in a way that would guide decisions. An LMIS can be the solution.

An LMIS is information on the labor market that is presented in a consolidated, structured, and user-friendly way and is easily accessible to different users. The objective of an LMIS is to enhance labor market efficiency by providing actors with relevant and timely information for decision-making. The actors are students, parents, jobseekers, education and training institutions, career advisory services, public employment services and employers. Development of an LMIS requires three steps: data collection and processing, analysis and presentation, and dissemination. The three core types of information are:

Job prospects. The objective is to provide clear and continuous feedback about the past, current, and projected state of the labor market. This would include disaggregated information

175 The poor knowledge about labor market opportunities is not limited to Vietnam or developing countries. Babcock et. al (2012) point to evidence from the United States that demonstrates that job seekers commonly pass up job opportunities due to inaccurate assessment of own skills and a misunderstanding about how markets will reward their skills and experience.

176 McGuigan, McNally and Wyness (2016) argues that these low-cost, simple interventions are more successful in environments with low information flows.

177 Jensen (2010) for Dominican Republic and Nguyen (2008) in Madagascar.

178 These results were derived from a program in Uganda (Campos et al 2016. A similar program is underway in Lao PDR, where training institutes that participate in the program must follow quotas to ensure that girls receive training in non-traditional areas, such as construction and automotive repair. The girls are also given a 6-month post-training wage subsidy (ADB 2013).

about the fastest growing occupations, wage trends in a particular occupation or region, and employment trends by gender, age, and level of education, for example. The information would be more detailed and user-oriented than the current GSO and MOLISA publications.[179] Users – jobseekers, students, parents, career counselors – would access this information to identify the job opportunities in different careers, locations and industries. The underlying data are a range of regular and specialized surveys that the GSO and other organizations field.

Skills. The objective is to provide information on the skills that are associated with different careers. This would include a description of a career; typical duties; the range of knowledge, technical, IT, and behavioral skills that are used in the career; and level of education. Ideally, information about the education or training institutes that successfully prepare learners for the career would be included, as well as information on the careers, earnings, and satisfaction of program graduates. This information would allow students to plan a skills development path and job seekers to assess their fit for different careers or to upskill to dream careers. The underlying data are both regular surveys as well as an adaptation of the US O*Net database, which lists the skills used in all occupations. This information is not systematically generated for Vietnam.

Job Vacancies. The objective is to provide information in a single site on job openings and job seekers across a wide-spectrum of the economy. The information on job vacancies would include not only basic information about the job (wages, hours worked, location, etc.) but also a skills profile for the job and task description. This would allow jobseekers to self-assess and decrease the inefficiency of wrongly-skilled job applicants or unrealistic job expectations, as discussed above. The underlying data would come from a range of sources: outreach by Employment Promotion Centers, on-line job boards such as JobStreet.com or Indeed.com, and job vacancy apps. Financial incentives may be necessary for public or private actors to acquire vacancy information in for low-skilled jobs (which are still the majority of Vietnam's jobs) or in remote or less organized sectors.

Once students, parents, and workers have the labor market information in hand, simple tools can help them to use it. Programs to help people access different labor markets than those in their networks are some of the few active labor market policies that have been found to be effective.[180] This may mean providing information or facilitating access to sectors of employment, types of jobs, or other locations where the job seeker may not naturally search for jobs. Goal setting, and supports to translate goals to behavior, is emerging as a low-cost means to prepare for a broader range of job options.[181] Some schools guide students through "life plans," where students from a young age identify the job that they want as adults and the associated implementation map[182] – the schooling, family decisions (marriage, family formation), migration – to get there. While the effect of early life planning on later labor force outcomes has not been empirically established, a strong psychology literature suggest that it may be effective.

Vietnam's Employment Support Centers (ESCs) can strengthen their career planning services by providing "life planning", as well. In fact, such an intervention can have more immediate effects

179 GSO 2016, MOLISA Bulletins.
180 McKenzie 2017.
181 The power of goal setting to orient people toward long-term desired outcomes has been proven across a range of behaviors including weight loss (Stadler et al 2010), savings (Ashraf, Dean and Wesley 2010.), school performance and attendance (Duckworth et al, 2013), and time management (Oettinger et al, 2015).
182 Babcock et al 2012, van Hooft et al 2005, Locke and Latham 2006.

on adult job search than on youth planning.[183] This would require ESCs to provide deeper career planning and guidance services in addition to the short-term job matches that are the current focus. The ESCs would ideally focus on harder-to-employ jobseekers, namely urban informal workers, who live in a dynamic labor market but are not investing to move up the jobs ladder;[184] women who tend to have weaker labor market links than men do and greater constraint to work (due to home duties) thus limiting potential job opportunities; ethnic minorities who are living in remote areas or are not well integrated into urban life and thus face fewer job opportunities; older jobseekers who may face age-discrimination; and youth who have little labor market experience or networks. One significant challenge is for ESCs to reinvent its image to overcome some of the negative stereotypes that these jobseekers have.

In closing, Vietnam's labor force is underperforming and is at risk of falling even further behind if it does not address today's shortcomings and prepare for the future. Some important reforms are underway – the incorporation of a broader range of skills into the school curriculum and operational and financial autonomy of higher education and training institutes. Others can be scaled up and modernized, such as improving the preventative health system so that people can work later into life, using existing survey data to expand on and disseminate labor market information so that students can better prepare for their work lives and jobseekers can better design their job search process, and tightening and upgrading VET services for adult upskilling. But others are starting from scratch: the creations of a long-term care system to alleviate women's eldercare burden, systematic engagement of employers in the skills-development system, and transition toward a skill-development system. But even these new reforms have seeds in Vietnam. The challenge is to prioritize them, grow them, and implement them to the benefit of Vietnam's workers, with spillovers to firms and society at-large.

183 Nguyen 2017.
184 Nguyen 2017.

CHAPTER 5 - **THE PATHWAY** TO FUTURE JOBS

Given the nature of Vietnam's jobs today and the opportunities presented by a changing local and global landscape, what initiatives can lead to better jobs in Vietnam? Vietnam's people are fully employed, the economy is still booming by global standards, and the population is the most prosperous that it has ever been. But success is tenuous in the face of automation, shifting trade and consumption patterns, an aging population, and a labor force that is not job-ready. And Vietnam's ambitions for middle income status by 2035 will require more than maintaining the status quo with marginal adjustments; it will require some radical changes. A move toward better jobs, whether through the creation of new well-paid, good work condition and high productivity jobs or upgrading current jobs, calls for more than just economic growth and a conducive investment climate.

What Will Vietnam's Future Jobs Look Like?

Future jobs will look a lot like today's jobs. The jobs structure is changing and is expected to continue doing so if Vietnam keeps up with the evolving global economy and continues up-skilling its workers. Structural transformation, the role of FDI, and the growth of the domestic private section are responsible for a net increase in jobs that are (largely) accompanied by social benefits and higher wages than traditional family farms or household enterprises. However, "good" wage jobs only comprise one in four jobs (12 million workers). If we assume the same rate of transformation that has been observed in the period 2008-2015, about 2 in 4 (43 percent) will be in "good" jobs by 2040. This transformation can be faster if Vietnam abandons the status quo for deeper reforms. Family farming and household enterprises jobs will continue to decline – though still be the source of more than half the jobs in 2040. The rate of decline will be largely driven by the degree to which Vietnam integrates its own markets and engages in emerging regional and global markets.

Rural jobs will continue to become more diverse. Rural jobs will continue to diversify into manufacturing and services. Limited geographic mobility has led to a diversification in the jobs portfolio of rural households such that wage earnings, not agricultural earnings, are the main source of income for rural households (with the exception of ethnic minorities). The relaxation of the ha khou may speed up urbanization, but existing food-chains, significant agricultural-product exports, and proactivity by rural municipalities are the base for significant jobs upgrading in rural zones.

Jobs will be more linked to local, regional, and global value chains. Vietnam's export sector is directly responsible for 10 million jobs, and indirectly responsible for millions more that provide inputs to the exported goods. Vietnam's and the region's growing consumer class and urbanization, as well as the emergence of regional value chains and Vietnam's reputation as a solid link of global value chains, is expected to increase the number of jobs in value-chains. This may be through more efficient linkage of current jobs to value chains – such as is occurring for family

farms that sell to retailers – or the creation of new jobs in assembly, logistics or other services. As Vietnam's workforce becomes more sophisticated, this also opens the potential to move into more lucrative value chains.

Automation will slowly begin to change the tasks in some jobs and (even more slowly) displace other jobs. Vietnam's jobs likely will benefit from technology for a period. Automation of agriculture is starting to displace labor, thereby freeing up workers to engage in higher value-added services or manufacturing. Computers are allowing accountants to better manage firm finances. More advanced sewing machines permit detailing for higher value-added garments. Thus, for a time, technology may change the task content of jobs and may displace low-skilled jobs, thereby freeing up time for higher value-added activities. As the skill level of new labor force entrants continues to shift the workforce to a higher level of skills, the disruption will be delayed. However, in a longer future, as labor costs increase while cost of technology decreases, machines could start replacing jobs. This may be partially offset by a falling working age population.

Job quality will improve with the movement toward work in bigger firms, with emerging low-quality jobs. The movement toward employment in larger firms will increase access to jobs-related social insurance and more secure jobs (less cyclical). However, some of the benefits derived from household farm- and non-farm enterprises will be lost: time flexibility, the joy of being one's own manager. The number of wage-jobs that are not covered by social insurance will also increase as the private domestic sector – which currently only provides social insurance to 70 percent of its workers – continues its rapid expansion.

Future jobs will be more inclusive for some, more of a challenge for others. Youth are already benefitting from the shifting composition of jobs. Though they spend time looking for jobs, as reflected in high unemployment rates, they are disproportionately moving into wage-jobs, especially in the private domestic and foreign sectors. However, there are excluded youth who circulate in low-quality wage-employment, which may expand in the future. Women may benefit from the jobs growth due to new opportunities in higher quality jobs; and their education levels and the emerging care-economy jobs will push them along. However, an aging population may limit their choices even more than current household duties do, pushing them into lower paying yet more secure jobs or, in the worst case, out of the labor market. Aging workers may also struggle as jobs become more skills-biased and there is greater job turnover, perhaps excluding them from new jobs. Ethnic minorities risk not engaging in emerging new jobs. Their rural remoteness, limited engagement in service and manufacturing jobs in their home villages, and weak connections with emerging jobs centers threatens to exclude them even more.

Job search will become more frequent though less difficult. With the emergence of new jobs in domestic SMEs and foreign firms, new jobs will open in jobs markets that are easier to access as compared to today's jobs, which require assets (family farming) or start-up capital (household enterprises). Job losses may also pick-up as more jobs are in the SME sectors and larger firms – the latter being a primary source of job loss. This points to more job turnover – and potential inefficiencies as people spend time not working or move into the wrong jobs – though easier to access markets and more information about job openings due to technology.

But Vietnam can do even better with some proactivity by government, firms, and workers to seize opportunities and minimize downside risk of these future trends.

How to Make Future Jobs Better and More Inclusive?

This report proposes eight policy areas to unleash the potential for better and more inclusive jobs in Vietnam, classified into three groups. These proposals take as given the strategies to attract a diversified FDI portfolio as well as to develop the

private sector, agriculture sector, and skills sectors. Instead, they identify those actions within sector strategies that are particularly important for jobs, as well as strategies that may not be important for overall growth, but will have a big impact on the quality, quantity, or inclusiveness of jobs. The first three policy areas call for enhancements within the modern economy by leveraging under-developed domestic firms and moving into more sophisticated value chains. The next two policy areas focus on enhancing the quality of jobs in the traditional sectors by initiatives to increase value added and job quality and generate linkages between economic segments to share the good jobs more broadly. The last three proposed strategies are intended to prepare workers and get them into the right jobs (Figure 5.1). This section summarizes the policies; details are provided in the preceding chapters.

Reform Area I: Creating More Good Jobs in the Modern Sector

The best jobs, defined by higher labor productivity and wages and social benefits, are through contract wage employment. They are also inclusive of women and youth. These are also the fastest growing types of jobs in Vietnam today and, if Vietnam prepares for the opportunities brought through the mega-trends, they have potential to grow even more. Thus, the policy challenge is to foster the creation and growth of enterprises that

FIGURE 5.1: Policy for Better and More Inclusive Jobs

are conducive to job creation, create high value jobs, and position Vietnam for even more as the mega-trends are realized. Three policies areas are proposed.

First, lower the barriers to growth of domestic small and medium enterprises. Although SOEs and MNC firms are large (in terms of number of workers), domestic SMEs are the primary source of contracted employment. Unlike SOEs and FDI-owned firms, they expand for several years after birth. While they are less productive and have lower quality jobs (in terms of wages and social benefits) than SOEs or MNCs, they are more likely to share their gains with their workers by using productivity improvements to expand their workforce and sharing a greater portion of profits with workers. Women have disproportionately benefitted from employment in SMEs.

The shift toward greater globalization, automation, and the rising consumer class can create a greater demand for domestically-produced goods and services. The growth in FDI will continue to play a significant role, particularly as Vietnam moves toward a Next Generation FDI Strategic Vision (Box 5.1). Additional policies can be taken to enhance SMEs to meet those new opportunities:

(i) *Level the playing field for the private sector* by loosening government controls over factors of production (land, domestic input markets, capital); reconsidering the virtual monopoly held by SOEs in certain sectors; and strengthening the overall business environment.

(ii) *Further facilitate firms' market entry and exit* by further simplifying business registration (Vietnam's process is still more tedious than the regional average and than most other lower-middle income countries) and making bankruptcy proceedings faster and less complex (thereby leaving the most productive firms to continue, thrive, and potentially grow).

(iii) *Engineer links between local SMEs and MNCs* by providing SMEs with information on industry standards and how to meet them, the quality of goods and timeliness of delivery from prospective suppliers, credit options, and a supplier's database with information about secondary markets for the specialized goods that the MNC is seeking to purchase; providing systematic matchmaking services between buyers and sellers; and helping SMEs to upgrade their capacity.

BOX 5.1: Next Generation FDI Strategy

Vietnam's FDI strategy has served it well since the early 2000s. Attracted by low labor and energy costs and generous tax incentives, FDI flows reaching more than US$12 billion in the year 2016, employing more than two million workers, primarily in low-value manufacturing across a range of sectors.

Global trends may lead to a decline in labor-intensive FDI globally. With automation, reshoring, MNC supply chain de-risking, and a host of other factors, FDI will likely begin to seek out more knowledge-intensive supply-chain partners.

This shift in global FDI strategy can also move Vietnam in a new direction in terms of its relationship with FDI. As Vietnam's workforce becomes more educated, its consumer class expands, and its domestic sector develops, it can ask more from FDI. Namely, Vietnam should aim to attract FDI that

- Pays more through jobs that are higher valued-added per worker
- Increases local skills development, technology transfer, and R&D
- More efficiently uses resources (land, energy, raw materials)
- Creates opportunities for local entrepreneurs and investors as part of GVCs and not to displace local investors and SMEs
- Increases the competitiveness of all business in Vietnam

But Vietnam is a diverse country, and the reach of FDI, as well conditions to "move up" are regionally specific. In this context, the new Vision would (i) continue to attract FDI in basic agriculture, manufacturing, and services in less developed provinces, and (ii) attract higher-value manufacturing and services in Hanoi, HCMC, and other leading provinces.

Source: T&C PPT.

Second, encourage enterprises to move into knowledge-intensive service exports in regional and global value chains. Vietnam's unskilled labor has gotten it far through low-skilled assembly in a growing number of industries. But the slowing labor force expansion, growing consumer class that will spend more on services, growing automation in the workplace, and solid education base of its youngest citizens suggests that Vietnam is positioned to expand its provision of services linked to GVCs. Other regional competitors show that Vietnam's GVC service exports should be at least double of its current value of 7 percent of GDP. Vietnam also needs to upgrade its service exports, complementing current travel and transport with a growth in commercial services. Additionally, Vietnam may consider moving into value chains where the manufacturing process is high skilled. To develop its export-oriented services, Vietnam would need to:

(i) *Streamlining the logistics regulatory environment and upgrade domestic infrastructure to improve connectivity.*

(ii) *Support links between exporting firms and domestic input-supplying firms* through the creation and sharing of information on industry standards and practice and through publicly provided matching services to bring together potential foreign and domestic firms.

(iii) *Foster R&D and innovation.* This will require legislation or incentives to attract private investment or public subsidies to bolster Vietnam's meager R&D infrastructure and connect local facilities with national or international partners who have knowledge of local and global markets. The Law on High Technologies also needs to be revised to encourage R&D in a much broader range of sectors.

(iv) *Lift formal restrictions on service trade.* The current regulatory framework puts Vietnam at a disadvantage in service exports. For example, lifting foreign equity limitations and caps would facilitate greater regional integration for Vietnam within ASEAN.

(v) *Build the human capital needed for knowledge-intensive service exports* by relaxing emigration regulations and allow foreign professionals in the service industries to move to Vietnam; participating in regional markets for Vietnamese firms to learn from foreign leading companies - this would require Vietnamese companies to explicitly align their products and services with regional value chains and to build into their own trade agreements opportunities for Vietnamese professionals to receive on-the-job training –and developing Vietnamese service professionals who can compete to the highest international standards.

Third, facilitate the development of the agro-food system. Domestic food chains are already an important source of employment in rural areas, being the largest share of average income in rural households. However, these chains are not as well organized or as lucrative as they could be, thus constraining their potential to generate more and higher quality jobs outside of Vietnam's urban centers. Given the opportunities presented by a rising Asian consumer class, urbanization, emerging regional value chains, and automation, food chains could be a lucrative source of new jobs. Efforts to support this direction include:

(i) *Encourage investment in agro-food processing, food logistics, and modern retail* by reducing the cost of domestic enterprises in the agro-food system, leveling the playing field between SOEs and private agro-food processors, entering further trade agreements to increase the access of Vietnamese products to international markets, implementing agro-food incubation programs for emerging and start-up SMEs, and upgrading skills for the service jobs that are particular to the agro-food system.

(ii) *Encourage financing to upgrade food market infrastructure at the local level* by upgrading

the sanitation, logistics, hygiene standards, and facilities of wholesale and urban wet markets, and encouraging credit agencies to provide preferential lending rates and repayment schemes to attract public-private investments.

(iii) *Strengthen public and private sector capacity to ensure safe food for both domestic and international markets* by strengthening public control measures for food safety; requiring private companies to adopt HACCP (Hazard Analysis and Critical Control Points), traceability, and other food system management systems; implementing regulations and providing technical support to ensure safe food practices across the spectrum of small to large food processing, handling, and distribution enterprises, and developing Vietnamese brands and trade promotion.

(iv) *Provide incentives to encourage food industries to invest in cities close to the agricultural production base and areas with underemployment to foster the creation of inclusive jobs.* Such investments are particularly needed in the upland provinces of north Vietnam and the Central Highlands where they would create employment opportunities for Vietnam's ethnic minorities.

Reform Area II: Enhancing the quality of jobs in the traditional sectors

Although structural transformation continues to modernize Vietnam's economy, Vietnam has a large stock of jobs in low-value added activities, namely family farming (and related primary production) and household enterprises. Today they comprise more than 60 percent of all jobs and, if they continue to contract at the rates observed in the past 8 years, they will still comprise more than half of all jobs by 2040. They are overwhelmingly the source of employment for ethnic minorities, older workers, and the less educated, thereby being intricately linked to poverty reduction. Thus, these job sectors cannot be ignored. Two policy areas are proposed to better integrate family farms and household enterprises into the modern enterprise sector.

Encourage the agricultural sector to diversify into high-value crops and local value chains. Since farmers keep the profits from their efforts, enhancing agricultural productivity will improve the quality of jobs in the agriculture sector, which still account for more than half of the jobs in the economy. This may be through mechanization or better farm practices, but also by diversifying to meet the demands of the rising Vietnamese (and regional) consumer class as well as urbanization. Wealthier and more urban consumers create a demand for a more varied food basket as well as for processed food, which may add value to certain crops. The movement out of rice could particularly benefit rural female-headed households, which are disproportionately engaged in rice production as well as ethnic minorities who heavily rely on agriculture as their main income source. In addition to promoting growth in primary agriculture, attention should be given to:

(i) *Adopt policies and programs to accelerate shifts in agricultural land use, especially from mono-crop rice to mixed farming or high value crop production* by further loosening restrictions on the use of rice-land, improving irrigation services, developing more flexible irrigation infrastructure suited to growing various crops, and supporting farmers in acquiring the new skills needed to cultivate high-value crops.

(ii) *Enable (small) farms to achieve economies of scale and, thus, greater productivity and higher earnings* by encouraging the growth of Vietnam's nascent land rental market, consolidating titling to reduce land fragmentation, facilitating joint production by small and medium-sized producers and strengthen cooperatives, and using regulatory and market-based measures to increase the adoption of sustainable agricultural practices.

(iii) *Provide family farmers with professional development services* by developing a broad range of private technical, advisory, and financial services for Vietnamese agriculture, and developing dedicated programs to support agro-entrepreneurship, particularly for women who currently benefit from fewer extension services than men.

(iv) *Foster stronger and more consistent links between primary producers and the agro-food system* by strengthening farmer cooperatives and expanding their provision of a broader range of commercial and marketing services; providing public financing and technical assistance to encourage the formation of agricultural clusters; strengthening animal health and pest surveillance services and enforcing regulations governing the use of agro-chemicals and antibiotics; and integrating primary producers into the food safety program.

Second, facilitate business linkages between household enterprises and SMEs. Although household enterprises are the source of 10 million jobs –and another 3 million informal wage employees – they are a silent and generally forgotten source of jobs. While household enterprise owners largely prefer to continue running their small firms, they would like to access wider markets to increase earnings and decrease income risk. This sector also is a lucrative source of income for rural households, though ethnic minorities have very little success in running their own businesses. Given how isolated household enterprises are from SME production chains, the linkages are not naturally occurring. Policy could help:

(i) *Facilitate information flows to household enterprises* by public initiatives that provide household enterprises with information on industry standards and how to meet them in key sectors that serve local markets; the quality and timeliness of delivery required by SMEs; and credit options to enable them to make the necessary investments or upgrading to do business with SMEs.

(ii) *Further ease the process involved in registering a business and communicate more clearly the benefits of registering* by launching market and community-based information campaigns and registration platforms and providing registration services to enhance managerial competence through one-stop-shops located in commercial centers where household enterprises operate.

(iii) *Provide extension services to promising household enterprises.* Similar to extension services for farmers, household enterprise owners would benefit from learning new business skills, technologies, and business processes to enhance the productivity of their enterprises. These would be most effective if provided on-site, such that the enterprise itself is the classroom for learning to solve practical challenges.

(iv) *Encourage development and adoption of technology to link household enterprises with the larger economy.*

Reform Area III: Connecting Qualified Workers to the Right Jobs

Workers do not have the skills for today's or tomorrow's jobs and a myriad of factors further limit their acquisition of and success in those jobs. While Vietnam's youth are globally recognized for secondary school test scores that rival those of European students, most of Vietnam's labor force has, at best, secondary school and limited skills. The skills shortages are noted today and will be exacerbated as mega-trends begin to affect the jobs pictures. This may be due to poor information about job openings, poor information about worker quality, time constraints that limit job options, income constraints that prevent moving to more appropriate jobs, or a range of other issues. Three policy areas are presented.

First, build worker skills for today's and tomorrow's jobs through radical reforms to the education and training systems. Today's youth have a strong foundational set of skills, but the workforce at large has low levels of education and missing skills. The skills gap not only constrains output in today's jobs, but it also threatens new jobs as investors assess whether or not to invest in higher value-added production processes (through automation) or industry (through GVCs). Thus, Vietnam needs a two-pronged strategy: upgrade the skills of the current labor force to enhance productivity in today's jobs and prepare workers for tomorrow's jobs by:

(i) *Facilitate development of a broader set of skills* by experimenting with and evaluating models that teach socio-behavioral skills; establishing a system to evaluate student acquisition of a broader range of skills; and providing incentives for work-place experience. Give special attention to expansion of secondary curriculum to include socio-behavioral skill and digital literacy; and extension services for managers.

(ii) *Develop learning modalities for a lifetime of learning* by recognizing and giving incentives to expand on-the-job training; strengthen, expand, and co-finance short course training; and curate information for adult-driven training.

(iii) *Transition from an education/training service toward a skills development system* by bringing employers into the process, implementing the higher education and training autonomy plans, shifting the public sector role to that of oversight (monitoring and evaluation) and financial incentives that reward outcomes.

(iv) *Develop a National Skills Development Strategy that is driven* by labor market skills demands, and designed to including a greater emphasis on modular learning, short courses to agilely respond to new labor market demands, and public-enterprise partnerships in the provision of services.

Second, get the right workers into the right jobs. As workforce growth slows down and firms need to be more competitive in the globalizing world, it becomes more important that the workers with the right skills are in the right jobs. But workers have little information about how to prepare for the job market and to find the right jobs for their interests and skills. The mechanisms, on both the worker and the employer side are insufficient and ineffective. Youth, older, and rural jobseeker are at a particular disadvantage. To address these shortcomings so that the labor market moves more fluidly,

(i) *Create a Labor Market Information System* by collecting special surveys to identify labor demand, and produce and disseminate user-oriented, regionally-specific, gender-disaggregated information;

(ii) *Design an integrated job search strategy* that builds on private initiatives, directing public resources to incentivizing private provision of services to hard-to-employ populations (older workers, women, ethnic minorities, migrants)

Third, provide auxiliary services to facilitate labor force participation and labor mobility. Even if people want to work, work in different jobs, or enhance skills, life may get in the way. The increasing dependency ratio due to aging may particularly affect women's opportunities to work or will result in working in lower quality jobs. The costs of labor mobility may trap workers in jobs that they are not well suited for. And workers may not have the time or financial resources to take time away from work to learn new skills. For the workforce to be agile and to stay ahead of changes that will be brought on from rapidly shifting jobs resulting from globalization and changing consumer trends, a range of non-labor related supports will be important:

(i) *Develop a comprehensive long-term care system* to assist in independent living well into the older years

(ii) *Provide services and incentives to encourage people to work longer* by modifying the health system to provide more primary care services and strengthening the quality of the health care workforce, and providing incentives to encourage people to stay engaged in the economy through providing job search services tailored to older workers, giving vouchers to employers who hire older workers, creating retraining schemes targeted to those whose education ended long ago, and increasing the retirement age, as has been done in most modern (and aging) countries.

(iii) *Facilitate labor mobility and skills upgrading* by expanding unemployment insurance, providing learning grants to adult learners, disseminating information about the relaxation of the ho khau law, and aligning severance pay laws with global norms.

Trade-offs and Institutional Considerations

The exact nature of jobs policies takes many forms. While the government plays the lead (or only) role in some policy areas, there may be a need for the government to do more. This will be the case in areas such as simplifying procedures to register a business, relaxing restrictions on land use, or expanding the unemployment insurance system. In others, areas, the government will need to shift its role to setting and enforcing "rules of the game" and letting market forces play a stronger role, such as reviewing the role of SOEs, re-branding Vietnam's product offerings, and turning over the design and provision of skills development services to education and training institutes. And in yet others, the state may need to retreat to functions more typical of a mature market economy.

The overall reform direction points to better jobs for (almost) all. The higher-level strategy is a win for all – greater engagement into local, regional, and global value chains and better integrating the sectors of Vietnam's economy will both expand the quantity of jobs in better-paid domestic and foreign firms and enhance productivity gains in more traditional family farming and household enterprises. It is also expected to scoop up those potentially left behind – young people entering the labor force (who, in fact, tend toward these kinds of jobs), women (who engage deeply in the FDI sector), and rural households (who are increasingly diversifying into non-farm jobs and who would benefit from aid to diversify crops) – with supplemental supports to ease the transition, particularly for the left behind (older workers, ethnic minorities).

The trade-offs emerge more clearly in the policy decisions. Trade-offs can be considered among different aspects of the jobs puzzle

- *By timeline.* Perhaps the biggest choice is whether to focus on improving jobs today or to focus on jobs for the future. Today's jobs would require upskilling a broad labor force who are largely out of school, supporting productivity enhancements in traditional household enterprises and family farms, and seeking FDI in low-skilled assembly jobs. Future jobs will require XXIst century skills, moving toward services and up value chains, preparing for automation, and forging new trade partnerships. However, by strengthening today's jobs, tomorrow's jobs and workers will be better able to take on the new challenge. For example, a more professional and productive household enterprise sector will be ready to integrate into future domestic value chains. This is not to suggest abandoning the future jobs market, but instead to find a balance between investments in today's and tomorrow's jobs.

- *By size of the jobs market.* By definition, higher productivity should occur by reducing the number of workers. A good job from the firm perspective is not necessarily so from the worker's point of view, who may lose her job. However, the current experience in Vietnam shows that productivity enhancements, particularly in domestic firms, are crowding in jobs, rather than forcing a choice between productivity and jobs. The data suggest that

this may not be the case once firms reach higher levels of productivity, but in the short run, both sides of the market benefit.

- *By sector.* With value chains, there will need to be support and generate linkages between sectors – where the agriculture sector become more tightly tied to manufacturing and services in domestic and international value chains. Thus, choosing between sectors would be a losing strategy: balancing support to all three is more jobs friendly and economically justified.

- *By firm ownership.* The preferential conditions for access to land, credit, electricity, and other inputs that have been enjoyed by the SOE and FDI enterprises may have been necessary to attract investment to Vietnam, particularly when the domestic sector was too immature to efficiently utilize these inputs. But the domestic sector is strong, indeed, being the main source of contract wage labor in Vietnam and creating jobs more rapidly than the other sectors. Thus, it may be time to reconsider the current preferential treatment by leveling the playing field.

- *By region.* The sectoral integration also requires a choice between urban and rural. Though trade-offs start to emerge more clearly: to encourage investment in secondary cities for the manufacturing and services associated with agro-value chains or to invest in transport and logistics so these processes can be done more efficiently in urban areas, as is largely the structure today. This report argues for the former – to invest in secondary cities – since more labor will be available with automation of agriculture, since production capacity is increasing in these zones as rural household are already moving into off-farm jobs, and for equity reasons

- *By demographic group.* The policy trade-offs are perhaps the starkest when it comes to who will receive the preferential policy treatment. Should public resources be spent to educate the young through a stronger education system or to educate older workers through short VET courses and adult learning? Should a priority be given to teaching ethnic minorities Vietnamese language – so they have access to a world of learning and work – or focus on XXIst century skills for the high achievers integrating into modern firms? Should preference be given to guiding women on a greater range of career choices or improving job-search tools for the population at-large? The answers are not clear, but a range of actors can help. First, let the private sector do what it can do, saving public resources for supervision and to fill holes created by market failures. For example, long-term care services for the elderly and higher education and training institution autonomy can be handled by the private sector. Second, firms can be incentivized to play a role that may have been costly to government, such as vouchers for hiring older workers rather than public money spent to retrain them. Third, some less expensive public action – provision of information, small nudges through financial or other incentives – can be more cost-effective than government programs.

Perhaps the biggest challenge is to define the exact actions that need to be taken and to turn these priority reform areas into reality. The current jobs strategy - that better jobs will emerge from solid economic and sectoral development strategies – has had success. This report argues that greater gains are possible through a deliberate jobs strategy that focuses on our eight policy reform areas. The report only proposed reform areas, not specific reforms. To achieve the strategies proposed in this report, it will be necessary to (i) undertake a detailed analysis of existing legislation and practices within each policy area to identify successes, gaps, and implementation failures, (ii) craft new legislation and new processes, together with a system to monitor implementation and success, and (iii) intense political debate and negotiation to implement the specific policy reforms.

This process will only be successful if the jobs reform agenda is led by a strong champion within government. Unlike sector-specific reforms, a successful jobs agenda requires the engagement of a wide range of government and non-governmental actors. The leadership for this agenda needs to operate above the sectoral ministerial level, in the form of a supra-ministerial coordinating. It would champion the issue across government and across society; lead the development of a shared vision for better jobs, together with quantifiable targets for future jobs and monitoring progress toward them; engage and hold accountable a range of government and private sector actors; and lead the whole process toward a shared future jobs vision.

In closing, Vietnam's jobs future is bright. It can continue its current path and reap jobs rewards from the current system, but this will diminish as global trends erode some of Vietnam's comparative advantage and certain groups remain left behind. It can reform on the margin in an effort to keep up with changing global trends, though this will be difficult as the global economy becomes increasingly crowded by new entrants. Or Vietnam can make some big investments now – in its domestic firms, its labor force, regional and global trade networks, and even in integrating its own economy – to leap forward to higher economic status and better jobs for all its citizens regardless of age, gender, or ethnicity.

SUMMARY OF POLICY DIRECTIONS

	Policy Reform areas	Selected Policy Actions		Long-term goal (by 2035)
		Short-term (within the current five-year plan)	Medium-term (in future five-year plans)	
Creating More Good Jobs in the Modern Sector	Lower the barriers to growth of domestic small and medium enterprises.	Put together a task force to develop an action plan to level the playing field for private domestic firms vis-à-vis SOEs and foreign firms. The plan should be designed to build the political will to implement the necessary reforms to make this happen. Give relevant information on quality standards to local suppliers with the potential to provide services or goods to MNCs. Also, expand the accreditation system on quality standards into key sectors with the potential to expand exports.	Investments in logistics, finance, marketing, and other professional services to support manufacturing expansion. Establish structures to enable effective dialogue between large public sector firms and SMEs within specific sectors to link SMEs with larger firms, especially MNCs or exporters.	Job growth in domestic SMEs exceeds 5 percent per decade, underpinned by strong links between a dynamic private sector and MNCs.
	Encouraging enterprises to move into knowledge-intensive segments in regional and global value chains	Streamline the regulatory environment for logistics and upgrade domestic infrastructure to foster the creation of logistics services companies. Support linkages between exporting firms and firms producing domestic inputs.	Broaden the Law on High Technologies to encompass a broader range of knowledge-intensive, exportable services. Lift all remaining formal restrictions on service trades such as foreign equity limitations and caps.	More and higher value-added jobs in the exports sector through doubling services as a share of total exports and shifting toward commercial services export industries.
	Facilitating the development of the agro-food system	Upgrade food market infrastructure (such as wholesale and urban wet markets) through public or PPP investments. Strengthen public food safety measures and support the adoption by private companies of HAACP, traceability, and other food system management processes.	Provide incentives for the food industry to encourage them to invest in provincial cities that are closer to the agricultural production base and areas with underemployment. Support labeling, certifying, and other control systems that will make it possible to rebrand Vietnamese agriculture as a sustainable source of global and regional supply.	Better paid and safer jobs in agro-food processing.
Improving the Quality of Existing Jobs in the Traditional Sectors	Encouraging the agricultural sector to diversify into high value-added crops	Adopt policies and programs to accelerate shifts in agricultural land use, especially from mono-crop rice to mixed farming or high-value crop production. Strengthen existing cooperatives to realize economies of scale among small and medium-sized farms.	Support the development of a broad range of private technical, advisory, financial, and other demand-led services for Vietnamese agriculture, including agro-entrepreneurship. Support the professionalization of farmer cooperatives and their provision of a broader range of commercial services.	More well-paid and safer jobs in in primary agriculture and less seasonal variability in these job opportunities. More entrepreneurial youths staying in agriculture.
	Facilitating business links between household enterprises and SMEs	Provide SMEs with information on industry standards, quality standards, and the importance of timely delivery as well as credit options. Introduce market-based and community-based information campaigns and registration platforms. Encourage development and adoption of technology to link household enterprises with the larger economy.	Open one-stop (virtual) shops where household enterprises can go for registration, information, and technical assistance. Provide extension services to the most promising household enterprises.	Household enterprises that buy from and sell to domestic SMEs, thereby increasing profits and reducing risk.

	Policy Reform areas	Selected Policy Actions		Long-term goal (by 2035)
		Short-term (within the current five-year plan)	Medium-term (in future five-year plans)	
Connecting Qualified Workers to the Right Jobs	Building worker skills for today's and tomorrow's jobs through radical reforms to the education and training systems.	Develop a plan with financial incentives to encourage the private sector to provide, guide, and advocate for a more appropriate skills development sector. Integrate a broader range of skills into the primary, secondary, and tertiary curricula.	Define a new role for MOET and MOLISA in overseeing M&E and providing financial incentives to the private sector to encourage the delivery of demand-driven education and training services. Develop a system of continuous learning through demand-driven short courses and skills upgrading for adults.	A demand-driven, flexible, market-based skills development system.
	Providing the information needed to place the right workers into the right jobs	Design, produce, and disseminate labor market information tailored to different users. Assess the current job search system, including the effectiveness of the Employment Support Centers.	Design and implement a Labor Market Information System (LMIS) for systematic data analysis and managing dissemination platforms. Design a job search assistance strategy that includes private sector services supplemented by public Employment Support Centers with an expanded remit to serve the needs of vulnerable populations.	Comprehensive and widely accessible LMIS. A private sector-driven job search system that is widely accessible, with public sector support targeted to excluded groups.
	Providing auxiliary services to facilitate labor force participation and mobility	Develop a plan for a long-term care system for the aging population. Design and implement a voluntary component of the unemployment insurance program for workers without contracts.	Allocate financing to incentivize the creation of markets for long-term care. Finance individual learning and job transfer accounts to facilitate labor mobility over a worker's career.	Fewer barriers to effective preparation for and integration into the labor market.

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