北京大学新结构经济学研究中心
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SET SUPPORTING ECONOMIC TRANSFORMATION

ADJUSTING TO RISING COSTS IN CHINESE LIGHT MANUFACTURING

What opportunities for developing countries?

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EXECUTIVE SUMMARY

Accelerating real wage growth in China from the mid-2000s has raised the possibility of relocation of jobs from export-oriented labour-intensive light manufacturing (LILM) industries on China's east coast to low-income countries in Africa and other parts of Asia. We investigate through a large survey of firms in four sectors – home appliances, garments, footwear and toys – collectively employing about 16 million workers in China, and in which annual real wage rises ranged from 9% to 11% during 2005-2014.

Sample characteristics

We interviewed 640 firms, all 'above-scale' and exporting more than half of turnover. A cluster-based sampling strategy was used, since industrial clustering is crucial in Chinese manufacturing. The survey focussed on three cities (Guangzhou, Zhongshan and Dongguan) in the Pearl River Delta (PRD) and one (Ningbo) in the Yangtze River Delta (YRD). The survey sample is representative of all above-scale exporters in the four industries in the two regions: it included 13% of these firms, and one third of these firms in footwear and in toys and one fifth in home appliances, though only 7% in garments.

All 640 firms were privately owned but only 42% by domestic Chinese owners, while 52% were wholly owned foreign subsidiaries. Foreign ownership was especially high among firms in the PRD, and in footwear and toys, but relatively low in-home appliances.

Just over half the firms were small (fewer than 300 employees), and another third medium (300-1,000), with 15% large (above 1,000). Small firms were more prevalent in the YRD and in garments, but less common in footwear. Significantly, 91% of surveyed firms operated only a single plant. Two thirds of firms were original equipment manufacturers (OEM), 17% original design manufacturers (ODM) and 13% original brand manufacturers (OBM). OEM was much more common in garments, but in footwear ODM was more frequent and in-home appliances and toys OBM.

Annual real wage growth in the sample over 2014-2016 was very high, at 10.8%. Annual turnover growth during 2014-2016 averaged 6% for all firms, but was at only 0.1% in footwear versus 9.4% in home appliances. Nearly a third of footwear firms, and nearly a quarter of garment firms, had contracted their operations between 2014 and 2016.

Main challenges and responses in 2014-2016 according to sample firms

Rising wage costs were identified as the main challenge faced during 2014-2016 by 38% of firms, with another 40% rating it second or third. More than 40% of firms in garments, footwear and toys rated it top, but only 27% in home appliances, where 24% pointed to material input costs. A further 6% of all firms rated non-wage labour costs the top challenge, though this was at 13% in footwear, where 22% pointed to decreasing market demand as the top challenge.

'Technology upgrading' was firms' most common response to their challenges – 31% of firms ranking it top and 54% in their top three responses. Tighter cost control over inputs and in production was next (top for 27% of firms), and changing product lines or expanding markets was third most common (24%).

In contrast, only 6% (36 firms) identified relocation of operations as their top response, with half of these preferring relocation abroad rather than within China. However, 14% of all footwear firms opted for relocation abroad. Only 8% of foreign-owned firms preferred relocation, but they were four times more likely to go for this than domestic-owned firms. These modest proportions may have been affected by the survey inevitably excluding firms that had already relocated in their entirety (within China or abroad), and by non-

reporting of investment abroad undertaken by the parent company of the surveyed firm. Closing operations was the top response of 8% of all firms, but 17% of footwear firms.

Trends among firms that have invested or will invest abroad

We examined closely the 62 firms (10% of the sample) that indicated they had invested abroad in the past or planned to do so during the next three years. Findings on this small group should be treated with caution, but suggest outward investment is more likely if firms are large, foreign-owned, in footwear and located in the PRD. Southeast Asia remains a far more likely destination than Africa, where only three firms have invested to date (all in footwear in Ethiopia); only two indicated Africa was a preferred destination for planned foreign direct investment (FDI). Importantly, nearly three quarters of the firms first undertook FDI after 2010. For more than half of firms planning future FDI, low-cost labour was the primary factor in location choice, and for nearly half, major customers had the greatest influence over the location decision.

Conclusions and policy implications

In sum, Chinese LILM firms most often respond to the challenges of rising costs and tighter demand by means of adjustments in existing operations – upgrading technology, controlling costs, expanding markets or product ranges – rather than by establishing production operations in a new location. Large and foreign-owned firms are more likely to invest abroad: not surprisingly, they are more likely to have the necessary resources – management, business networks and finance – to bear the costs and demands of operating across multiple jurisdictions, while foreign-owned firms by definition already have experience of doing so. For small, single-plant OEM firms – the most common in LILM industries – establishing new production operations in a new location is a 'collective action problem', involving very substantial challenges unless other interdependent firms do the same, both large customers and small firms in the same cluster.

Footwear firms' responses were clearly distinct from other sectors. Mechanisation in footwear may be less possible than in toys, but the larger size of footwear firms and their stronger ODM capabilities enable independent internationalisation more easily than in garments, where a high share of firms are small OEM producers. The survey confirms that the footwear industry in China is stagnating, and firms' ongoing migration to Southeast Asia and to Africa.

The survey suggests a need for realism on the potential for jobs transfer to low-income host countries, though the higher rate of FDI more recently suggests the proportion of firms investing outwards or migrating could increase with continuing rapid wage growth in China.

Investment promotion by potential host countries or Chinese agencies should focus in the near term on large foreign-owned firms in the PRD, particularly in footwear. In the longer term, cluster-focused strategies are needed to support joint relocation by groups of firms. Large 'anchor' firms in clusters and global brand or retail corporations can facilitate the co-movement of groups of OEM suppliers, and promotion efforts with them are already beginning.

Greater emphasis should also be placed on attracting individual entrepreneurs who may close OEM operations in China, migrate and restart elsewhere. This group often faces significant personal and business barriers to entry in potential host countries. Though addressing large numbers of small potential entrants is burdensome for promotion agencies, mechanisms for economies of scale and scope within these agencies should be investigated.

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ACRONYMS

AGOA	African Growth and Opportunity Act
CAITEC	Chinese Academy of International Trade and Economic Cooperation
CHARLS	China Health and Retirement Longitudinal Study
CLIA	China Leather Industry Association
CNC	Computerised Numerical Control
CNSE	Center for New Structural Economics
DFQF	Duty-Free Quota-Free
DFID	Department of International Development
EBA	Everything but Arms
EU	European Union
FDI	Foreign Direct Investment
GSP	Generalised Scheme of Preferences
GVC	Global Value Chain
LILM	Labour-Intensive Light Manufacturing
NBSC	National Bureau of Statistics of China
NSY	National Statistical Yearbook
OBM	Original Brand Manufacturer
ODM	Original Design Manufacturer
OEM	Original Equipment Manufacturer
ODI	Overseas Development Institute
PRD	Pearl River Delta
R&D	Research and Development
RMB	Renminbi
SEZ	Special Economic Zone
UK	United Kingdom
US	United States
YRD	Yangtze River Delta

1. INTRODUCTION

Real wage growth in China accelerated from the mid-2000s, with significant production cost implications for Chinese manufacturing, especially the export-oriented labour-intensive light manufacturing (LILM) industries on China's east coast, which have made a major contribution to poverty reduction by creating large numbers of jobs over the past 25-plus years. The trends emerging in China raised the possibility of a wave of relocation of manufacturing jobs to low-income developing countries.

Optimists have maintained that the unparalleled scale of relocated Chinese manufacturing could foster economic structural transformation in Africa and parts of Asia at the same time as a growing youth population is entering the labour market. This inward foreign direct investment (FDI) could, it is argued, create large numbers of low-skill, low-wage jobs, drawing thousands of people out of low-productivity household enterprises in the agriculture and informal urban services sectors into higher-productivity manufacturing, driving a dynamic process of economic transformation and growth. Sceptics contend that secular trends will work against this, including stagnant global demand for manufactured consumer goods, declining labour absorption capacity in contemporary light-manufacturing sectors owing to automation and poor infrastructure in low-wage countries.

Observers draw on the 'flying geese' model, which argues, based on historical experience, that the spread of successful industrialisation follows a sequential catch-up process whereby industrial activities shift over time from economies on the technological frontier to late-comer economies as factor costs in the leading economies adjust in response to growth (Akamatsu, 1962; Lin, 2012a; Chandra et al., 2013). The latecomers thus have the advantage of 'backwardness' under certain conditions (Gerschenkron, 1962).

It is often argued that this pattern describes China's own development path since the 1980s. Following market liberalisation in 1978, scores of factories from more developed economies, especially in East Asia (including Hong Kong, China, and Taiwan, China), relocated to the east coast of mainland China to exploit its competitive advantage in low-cost, labour-intensive, export-oriented manufacturing. Today, it is argued, China faces the challenge of rising wage costs and industrial upgrading as its industries shift from labour-intensive to more capital-intensive – the country has reached the 'Lewis turning point' (Cai, 2010; Zhang et al., 2011). This is leading to a new round of 'flying geese' industrialisation as many enterprises producing labour-intensive commodities locate their production outside China so as to reduce labour costs.

A figure of '85 million low-skill jobs' has often been cited as the potential job migration out of China into lower-income countries, as China's manufacturing sector adjusts to higher wages and a stronger exchange rate (Lin, 2011, 2012b, 2016). Some Chinese firms have already established labour-intensive export-oriented product assembly operations in African or Asian countries. There are a number of very well-known examples: individual firms in Sub-Saharan Africa such as Huajian Shoes in Ethiopia, C&H Garments in Rwanda and HiSense TVs in South Africa, and in Southeast Asia such as Texhong Textiles in Vietnam and Evervan footwear producers in Cambodia and Indonesia. Also well-known is the Sihanoukville special economic zone (SEZ) in Cambodia, which has attracted a total of 94 Chinese firms, including more than 50 in textiles and other light industry, and where nearly 17,000 people are employed (CAITEC et al., 2017).

But a positive outcome for lower-income countries remains uncertain. Many other Chinese firms will have to replicate the investment and location decisions of those firms that have already set up operations abroad, adjusting to the changing economic environment in a

complex process going well beyond simple comparisons of wage levels, even when the latter are productivity-adjusted.

Several additional factors need to be taken into account. First, the competition to attract low-wage jobs is not only among African and Southeast and South Asian countries but also from locations within China itself. As discussed in Section 2 below, light manufacturing in China began to shift many years ago from the eastern region to the central and western regions (He and Wang, 2010), but as shown below, regional wage differentials within China remain substantial, even within the same sector.

Second, it is not only relative wages that matter for location choice, of course. Firms' choices – over both technology and location – depend on a range of cost factors in addition to wages, though the latter, adjusted for relative productivity, are naturally crucial for labour-intensive production. But even for labour-intensive industries, important factors include energy, water and communications infrastructure (reliability and cost), finance costs, and logistics and transport costs for international trade (including transaction times).[1] In background work for this project, a comparative analysis of location-specific cost factors suggested China's infrastructure and institutional performance is stronger on almost all indicators of these cost factors compared with a large group of low-income countries which are potential destinations for outward investment from China in LILM sectors (Gelb and Calabrese, 2017; Hou et al., 2017; and Calabrese et al., 2017).

Third, firms' operations are often interdependent with each other, which has a major influence on individual firms' investment decisions. Many Chinese light manufacturing firms are tied to major North American, European or Asian consumer brands, retailers or supply chain managers, who lead global value chains (GVCs) in which the Chinese firms produce components and/or assemble mass market consumer goods for export to global markets. These 'lead firms' often play an important role in the investment decisions, including location and technology choices, of product assemblers within 'their' value chains. In addition, Chinese component manufacturers and product assembly firms are often located together with related goods and service providers in dense industrial cluster networks, which economises on transactions costs.

Fourth, firms in China may choose not to relocate low-wage operations elsewhere in mainland China or abroad in response to rising real wages, but instead to upgrade and mechanise, moving away from labour-intensive production by investing in more capital-intensive technologies, automation technology being one such option as it increasingly becomes available.

Despite the significance of the possible opportunity that changing economic conditions in China may offer African and Asian low-income countries, little empirical research has been conducted to uncover firm decision-making processes and the potential empirical patterns based on rigorous social science surveys. The Center for New Structural Economics (CNSE) and the Overseas Development Institute (ODI) collaborated on the present research report, conducting a large survey of firms, complemented by a few in-depth firm-level case studies in an effort to find out how firms cope with rising labour costs, and when and where firms relocate their manufacturing capacity. The survey of LILM firms in East China was undertaken in July-August 2017, in four sub-sectors of manufacturing – home appliances,[2] clothing, footwear and toys – and in two regions – the Yangtze River Delta (YRD) and the

[1] Cost structures will vary somewhat by product and sector.

[2] This includes production of lighting equipment and of household electrical appliances, such as washing machines, fridges and stoves, as well as small appliances, such as kettles or irons.

Pearl River Delta (PRD), where firms offer the greatest potential for relocation to low-income countries.[3]

In Section 2, we use official data to discuss aggregate trends in wages and employment in China, and the shift of production and employment from the eastern to the central and western regions. We also discuss the cluster-based industrial structure in Chinese manufacturing, particularly as it affects the light manufacturing industries on which we focus in this report. In Section 3, we describe the survey sample and methodology, and discuss in detail the main characteristics of the surveyed firms. In Section 4, we discuss the major challenges identified by the firms and their primary responses to those challenges. In Section 5, we look closely at the relocation decisions of those firms that have done so. Section 6 concludes with some key policy recommendations.

2. INDUSTRIAL ORGANISATION IN CHINESE LIGHT MANUFACTURING

The objective of this project was to investigate the investment and location strategies of Chinese firms that were potentially part of the opportunity for low-skill low-wage job creation in Africa and Asia as a result of changing economic conditions in China, in order to better understand the prospects of fulfilling this opportunity. To achieve this objective, we imposed limitations on the scope of the research, using the fact that firms whose relocation would contribute to the job creation opportunity were likely to have three characteristics: they would be labour-intensive light manufacturers, export-oriented and above a minimum size threshold. First, we selected four specific LILM sub-sectors – garments, footwear, toys and home appliances – which have all been significant in the emergence and growth of Chinese manufacturing output and exports over the past 35 years. A major feature of the growth of these and other light manufacturing sectors in China has been firms' participation in GVCs, with goods assembled in China from imported or domestically produced intermediate components and then exported for sale, especially to large developed country markets in Europe, North America and Japan as well as other international markets. We discuss below the sub-sectors in more detail, and also the significance of industrial clusters in shaping their current spatial distribution in China as well as any future relocation decisions.

Second, we focus on 'above-scale' firms, a category in China's official statistics that refers to a minimum annual turnover[4] of 20 million RMB (just over $3 million at the current exchange rate). This particular threshold is convenient in allowing the use of existing databases to construct a sample, as discussed below. Third, we focus on export-oriented firms, interpreted as those that export at least 50% of their turnover.

Both the minimum turnover size and the minimum export share of turnover are important in relation to a firm's potential to undertake outward investment and to do so successfully. Outward investment requires a firm to enter a new host country, where it may not have business networks or be familiar with the business and regulatory environment, and where the 'cultural distance' from the firm's home country may be large. This all raises the risks of outward investment and makes demands on the firm's capabilities and on its capital. In addition, in standard forms of outward investment, the firm will be operating more than one plant in more than one country, which itself is demanding for small firms. If a firm is too small, it may not survive these demands. Similarly, there is considerable evidence that export-oriented firms are more likely to invest directly abroad as the firm will have had significant

[3] The PRD comprises the dense network of cities covering nine prefectures of Guangdong province. The YRD is a metropolitan region comprising Shanghai, southern Jiangsu province and northern Zhejiang province.

[4] Strictly speaking, 'revenue from their *principal* business' (emphasis added).

exposure to foreign markets and foreign firms, which will have enabled it to develop some of the capabilities needed to operate in a foreign country (see Dunning and Lundan, 2008).

Two further reasons are also important for restricting the focus here to export-oriented firms. First, if firms are already participating in GVCs, relocation to African or Asian countries allows outward investing firms to retain their existing markets and business networks – that is, to continue to participate in their current GVCs – while potentially also developing new markets and networks from their new location.

Second, there is an additional incentive for Chinese firms already supplying these developed country markets to locate operations in many African and Asian countries, through preferential tariff schemes favouring duty-free quota-free (DFQF) access to the US and EU markets for low-income developing countries. These schemes include the US African Growth and Opportunity Act (AGOA), which provides for duty-free garment imports from many Sub-Saharan African countries;[5] and the EU's Generalised Scheme of Preferences (GSP), which includes duty reductions for 111 countries, and Everything But Arms (EBA) for 49 least developed countries (LDCs), which gives DFQF access for all products except weapons.[6] This allows for substantial price advantages in the US or EU market for garments and footwear imported from these countries, as compared with imports directly from China. A few specific examples illustrate: non-silk knitted and crocheted headbands and ponytail holders (HTS No. 6117.80.85.00) are imported into the US at a free duty rate if coming from AGOA countries, as compared with a 14.60% duty rate from China; sports footwear with leather uppers (HTS No. 6404.11.20) is duty free from AGOA countries but carries a 10.50% rate if made in China; and footwear with a protective metal toe-cap (HTS No. 6401.10.00.00) avoids a 37.5% tariff.

2.1 Wage and employment trends in labour-intensive light manufacturing sectors

As noted, the research focuses on four selected light manufacturing sub-sectors, including garments, footwear, toys and home appliances, all of which are characterised by high labour intensity, and all of which have been significant in China's industrial transformation, especially in the coastal East region. In this section, we provide a broad overview of output and export growth, employment trends and wage rate shifts for each of the four LILM sectors.

All four LILM sectors have experienced rapid growth of output and exports in the past two decades, and comprise a significant share of manufacturing jobs in China. It is difficult to find consistent statistics across all four selected sectors but some data can provide a sense of the well-known rapid output and export growth in the four sectors. In home appliances, output has reached about $220 billion today, with exports of about $60 billion.[7] In 1995, exports of the industry were estimated at $17.5 billion (CUTS International, 2008). In the garment sector, China's output rose from 0.9 billion pieces in 1980 to 3.2 billion in 1990 to 28.5 billion in 2010. The share of global exports rose from 15.2% in 1995 to 33.2% in 2008. In 2000, export value was $32.6 billion, which rose to $121.1 billion in 2010 (Dinh et al., 2013). In footwear, output rose from 260 million pairs (cloth and leather) in 1980 to 1985 million pairs in 2000, and 4,190 million pairs (leather only, cloth not available) in 2010 (ibid.). In 2000, export value was $9.8 billion, which rose to $35.6 billion in 2010 (ibid.). In toys, exports in 2000 were $9.2 billion (Dinh et al., 2013). Today, they are an estimated $40 billion (China Daily, 2017).

[5] For 24 low-income countries, garments can be assembled from fabric imported from third countries, for example China.

[6] 'GSP+' provides for zero tariffs for 16 countries that have met certain human rights and labour rights standards.

[7] Calculated from reports of the China Household Electrical Appliances Association: www.en.cheaa.org

In recent years, there have been strong increases in both wages and employment, nationally and in the Eastern region (where the PRD and YRD are located), at the same time as shifts in employment shares away from the East to the Central and Western regions. The national context is that total employment in China was 772.4 million people in 2014, according to official statistics.[8] Of the employed labour force, secondary industry – manufacturing, construction, mining and utilities – employed 231 million people, 29.9% of total employment. Within secondary industry, manufacturing employed 103.2 million people, or 13.4% of total employment. The four selected light industries together employed 16.4 million, or 15.9% of manufacturing employment and just 2.1% of total national employment, as shown in Table 1, which provides further detail on the distribution of jobs across the four selected sectors and their growth in employment since 2005.

Table 1: Sectoral employment distribution, millions

	2005	2009	2014	Growth 2009-2014 (% pa)
All manufacturing	44.3*	73.3	103.2	7.1
Selected light manufacturing sectors	-	13.2	16.2	4.2
Household appliances	3.67	5.4	6.4	3.5
Toys	n/a	1.2	2.3	13.9
Clothing, footwear and hats	3.46	4.5	7.7	3.1**
Leather goods	n/a	2.1		

Notes: a. Sector definitions in the NSY of light manufacturing sectors go beyond the convenient labels used: Household appliances = Electrical machinery; Toys = Equipment for culture education and sport, including entertainment. b. From 2012, data for clothing, footwear and hats and for leather goods were combined. *Refers to urban employment only, including private enterprises. ** Growth rate is based on combined 2009 figure. Sources: Industrial Economic Statistical Yearbook 2006-2015; 2009 data for 'toys' and leather products: compiled from provincial Statistical Yearbooks.

Table 2 gives data for regional shares of national employment for the four LILM sub-sectors in 2005 and 2014 (garments and footwear combined). As is evident, the Eastern region strongly dominates employment in the four sub-sectors. Across all manufacturing sectors, its employment share was 63.5% in 2014 (65.5 million workers), having stayed constant since 2009. In the LILM sectors, the East has historically had a larger share of national employment, but this dropped quite steeply between 2005 and 2014, especially in garments and footwear. During this decade, the Central region's share of LILM employment increased, more than doubling in both sectors for which we have 2005 data.

[8] The total labour force was 796.9 million, and the population as a whole 1.37 billion. The primary sector (including subsistence and peasant agriculture) accounted for 228 million (29.5%), and the tertiary sector for the remaining 331.6 million (40.6%). All data here are from the National Statistical Yearbook (NSY) produced by the National Bureau of Statistics of China (NBSC).

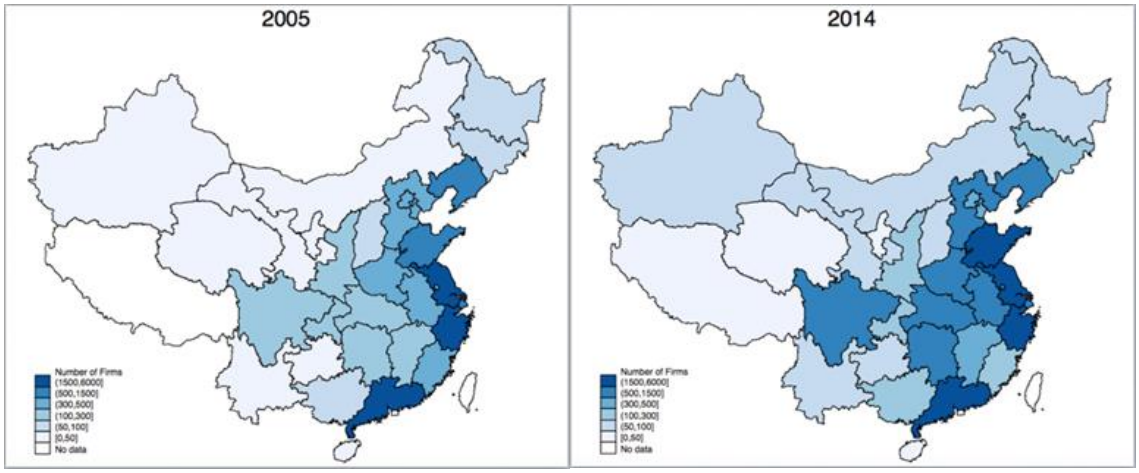
Table 2: Employment in light manufacturing – regional shares of national total

	National total (millions)		East (% of national)		Central (% of national)	
	2005	**2014**	**2005**	**2014**	**2005**	**2014**
Home appliances	3.67	6.4	82.3	74.1	8.3	16.1
Toys	n/a	2.3	n/a	80.2	n/a	14.0
Clothing, footwear, hats	3.46	4.6	88.8	75.9	6.7	18.2

Source: NSY 2006-2015. From 2012, data for clothing, footwear and hats and for leather goods were presented as a single number. 2005 data have therefore been summed for these sectors.

Building on this picture of changing regional distribution of employment and economic activity, the maps below in Figures 1, 2 and 3 show the changing distribution of firms in the LILM sectors, for 2005 to 2014 for home appliances and garments and footwear and for 2009 to 2014 for toys. In home appliances, the Eastern provinces of Guangdong and Zhejiang both experienced absolute employment declines between 2011 and 2014, but employment in Anhui province in the Central region rose. The number of firms increased in two Eastern provinces, Hebei and Shandong, but dropped in a third, Fujian, while they rose in five Central provinces (Anhui, Henan, Hunan, Hubei and Jiangxi) and in Sichuan in the West.

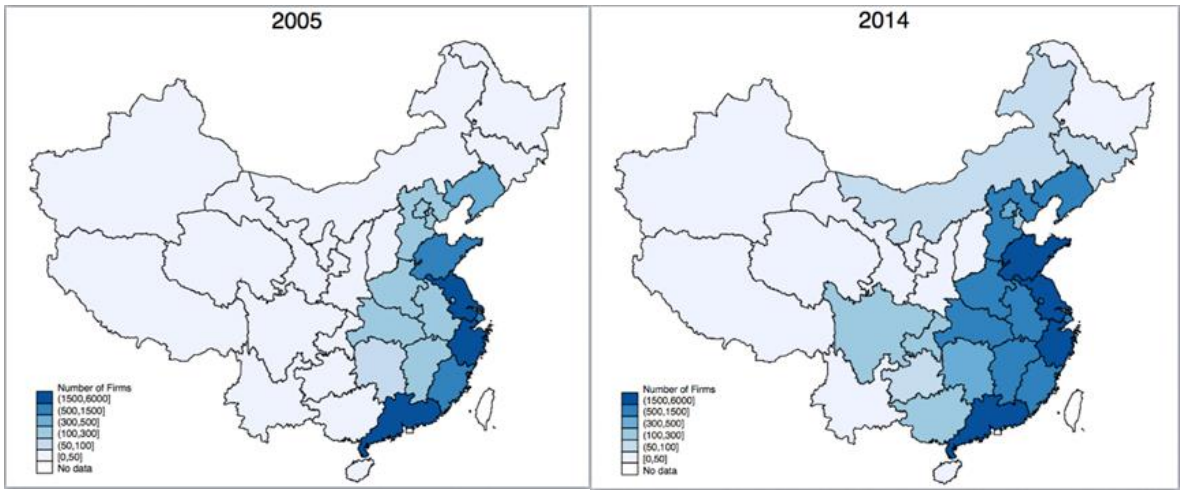
Figure 1: Home appliances – distribution of firms by province (number of firms)



Source: Map drawn using data from Industrial Economic Statistical Yearbook 2006 and 2015 (original data from NBSC).

In garments and footwear (including hats), the employment total rose from 3.5 million in 2005 to a peak of 4.6 million in 2008, and then dropped to 3.8 million in 2011. The sector was redefined to include leather products in 2012, and employment in the combined category rose from 7.5 million in 2013 to 7.7 million in 2014. But in the Eastern region, where about four-fifths of jobs were located, the number of jobs dropped in absolute terms between 2009 and 2011 and again in 2014. The Eastern region provided 92.2% of exports in 2005, but this dropped to 86.3% in 2014. The number of firms rose in two Eastern provinces (Hebei and Shandong) and in Liaoning in the Northeast region; five Central provinces saw significant increases in firm numbers.

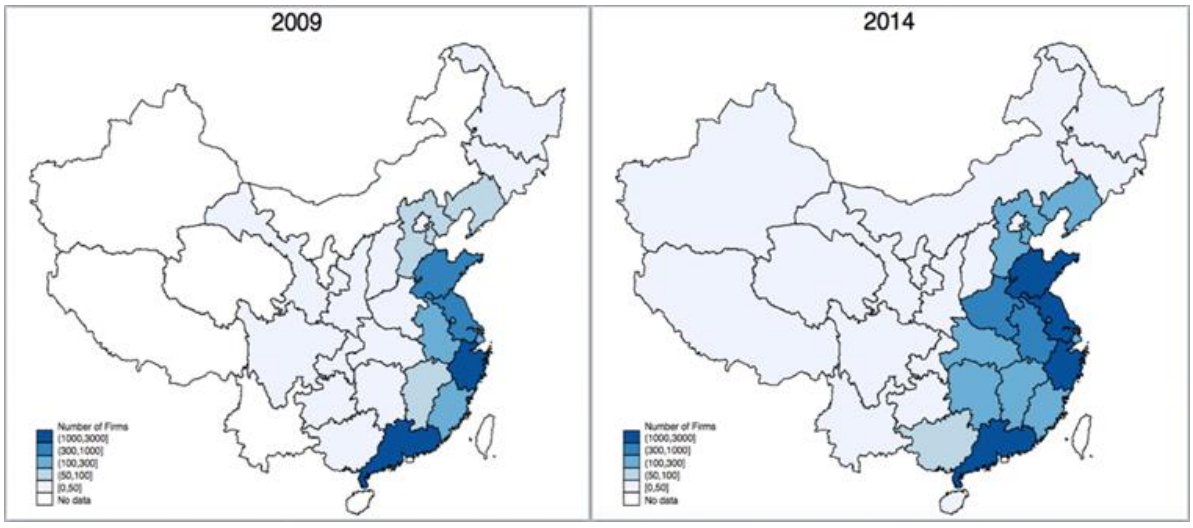
Figure 2: Clothing, footwear and hats – distribution of firms by province (number of firms)



Source: Map drawn using data from Industrial Economic Statistical Yearbook 2006 and 2015 (original data from NBSC).

In the toys sector, in 2014 Guangdong province alone had about one-third of total employment, while five Eastern provinces together had 1.83 million of a total 2.28 million workers (80.3%). In this sub-sector, there was only a minor shift of jobs to the Central region. Firm numbers grew significantly from 2009 in three Eastern provinces (Shandong, Hebei and Jiangsu) and five Central provinces.

Figure 3: Toys – distribution of firms by province (number of firms)



Note: Left hand chart is 2009.Source: Map drawn using data from Industrial Economic Statistical Yearbook 2006 and 2015 (original data from NBSC).

Turning now to wages, they are highest in the Eastern region, and grew more strongly there between 2009 and 2014 than in the country as a whole, though all regions experienced strong wage growth. Table 3 below presents real wages in the LILM sectors for 'urban' enterprises – that is, excluding private enterprises for 2005 and 2014. Consumer electronics is included for reference. Over the decade, the wage gap with consumer electronics narrowed considerably for household appliances and toys while remaining relatively constant with clothing. Wages grew much faster in the Central region than in the East, and there has been considerable 'catch-up' in Central region wages, from around 60-65% of Eastern region wages in 2005 to around 75-80% in 2014. A continuation of the trend would eliminate the

wage gap between the Eastern and Central regions by 2024. There appears still to be considerable room for both employment growth and wage increases within China.

The regional shift within China of light manufacturing industries from the eastern to central and western regions, reflected in the data above, has been underway for some time, as widely discussed (He and Wang, 2010; Qu et al., 2012; Hu and Sun, 2014; Yang and Zhou, 2013). Rapid rises in labour costs are seen as the major reason for the eastern region's loss of competitiveness, though the continuing wage gap suggests there is still considerable room for LILM firms to transfer existing production operations within China, or establish new ones, in response to rising wages, as an alternative to doing so abroad. Wu (2013) argues that the shift to the central and western regions still depends in part on government incentives, and the central government has of course made efforts since 2000 to accelerate development in the country's West region, with mixed success. The Belt and Road strategy will likely boost the central and western regions' competitiveness: as it links China with developing regions in South East Asia, Central Asia and South Asia as well as with Europe, it will also lead to improvements in infrastructure, at least energy transport and logistics, in central and western China.

Table 3: Urban real wages, light manufacturing, 2005 and 2014

	National* (RMB '000s)			Eastern (RMB '000s)			Central (RMB '000s)		
	2005	**2014**	**Growth % pa**	**2005**	**2014**	**Growth % pa**	**2005**	**2014**	**Growth % pa**
Consumer electronics	21.07	46.89	9.30	21.72	50.22	9.76	13.41	38.02	12.27
Home appliances	16.82	42.82	10.94	17.68	45.36	11.04	11.80	35.07	12.87
Garments, footwear	12.42	27.45	9.21	13.03	28.75	9.19	7.53	22.57	12.97
Toys	10.42	31.15	12.94	13.51	34.24	10.89	8.36	26.32	13.59

Note: The regional averages are based on based on all enterprises, irrespective of size. The national wage is average of regional wages, weighted by regions' share of the sector labour force. 2005 price deflator.
Data source: Labour Statistical Yearbook 2006-2015, NBSC.

2.2 Clusters and location of light manufacturing firms

The location of LILM firms in China is closely tied to their spatial distribution in industrial clusters that emerged 'from below' (Zheng, 2011) as China's manufacturing sector grew during the 1980s and 1990s, and that contain almost all LILM firms in the sectors of interest here. Local governments and other institutions supported clusters in a range of ways (research, training and skills development).[9] Several hundred clusters emerged, each specialising in specific products and together covering all the export-oriented LILM sectors,

[9] See Zheng (2011), Ruan et al. (2014) and Huang and Long (2016). Note that clusters are a different institutional mechanism from the SEZs set up by the national government.

among others. Until recently, such clusters were concentrated in the Eastern region.[10] The clusters and their proximity to the coast made the very high export volumes of mass consumer goods possible. Clusters comprise several hundred highly specialised firms, many of them small by Chinese standards. A single cluster spans multiple segments of a product value chain, including brokers and distributors, with a specialised market part of the cluster or nearby.

Specialisation and proximity to other firms lowers financial and technological entry barriers for new firms, which increases competition among firms but also increases the degree of interdependence among them, in that each firm's activities and profitability depend on many other firms within its cluster.[11] In addition, clustering supports the extension of trade credit amongst forms, while close community ties provide an institutional substitute for court enforcement of contractual relationships between borrowers and lenders and between outsourcing firms and their subcontractors (Fleisher et al., 2009). Interdependence amongst firms extends to their location decisions: shifting location, whether to another part of China or to another country, is a collective action problem, rather a set of separate disaggregated decisions. Furthermore, a large proportion of firms within a cluster are too small to relocate on their own. This is especially applicable to international relocation, given its high financial cost (and risk), and the substantial demands on management time for a small management team. Within China, firms may relocate within the same province or to a neighbouring one, reducing transition costs.

The PRD and the YRD regions each have dozens of clusters. In Zhejiang province in the YRD, there were 106 clusters in 2006 specialising in different product groups, comprising an estimated 300,000 enterprises and 25,000 specialised markets (Li and Fung, 2006b). Zhejiang included two clusters in household appliances, six garment clusters, two in footwear and one in toys. In one of our fieldwork sites alone, Ningbo city, there are 15 clusters. Two of these, in household appliances and stationery, featured in a Top 100 Clusters list published by the Chinese Academy of Science in 2009 (Li and Fung, 2010). In the PRD, a 2006 list indicates over 70 'specialised towns' containing clusters, which include 14 garment clusters and 3 each in the other 3 LILM sectors. The city of Dongguan has 18 clusters, Guangzhou has 15 and Zhongshan has 11 (Li and Fung, 2006a).

In the home appliance sector, there are four major production bases including Guangdong especially the Pearl River Delta, the Bohai Sea Ring (around Beijing), Zhejiang province particularly the Yangtze River Delta, and Anhui Province. The Pearl River Delta has a long history of producing home appliances. It accounts for 60% of number of enterprises in China and more than 50% of sales. The Yangtze River Delta accounts for 33% of sector sales.

In garments, most clusters are in the eastern coastal provinces, mainly Zhejiang, Jiangsu, Fujian, Guangdong and Shandong provinces. In both the PRD and YRD regions, there are many towns that specialise in producing specific categories of garments, such as 'Haipai' style clothes in Shanghai, female clothing in Humen in Guangdong, sportswear in Zhongshan, underwear in Foshan and denim in Xintang.

Ningbo provides a good example of the effect of clustering. Factories producing in all segments of the garment value chain are found, covering yarn, synthetic, cotton and wool textiles; printing and dyeing; knitted, silk and linen clothing; industrial and home textiles; and textile and garment machinery. According to the Ningbo Textile and Apparel Industrial Development Report 2016, the total output of large-scale enterprises in the textile and garment industry was 118 billion RMB in 2015, accounting for 8.6% of Ningbo's total

[10] Especially in four provinces, Zhejiang, Guangdong, Fujian and Jiangsu.

[11] See Zheng (2011) and Ruan and Zhang (2009).

industrial output value, and employing 232,000 people (16.3% of the city's employment). The industry has grown since the 1990s as a result of its geographical location on the sea as well as a very long history of light manufacturing, going back to the 19th century. From the 1990s many enterprises – such as Younger, Shanshan and Romon – began to create their own brands, aiming for the domestic Chinese market, and with support from the local government. In 1997, the Ningbo municipal government held the first Ningbo International Fashion Festival, as the city lacked reputable international brands. A large number of enterprises in Ningbo – including almost all original brand manufacturer (OBM) firms – still continue original equipment manufacturer (OEM) processing for international brands, relying on low labour costs (Ningbo Textile and Apparel Industry Development Report 2016). Some firms have begun to transfer operations to the interior or Southeast Asia, such as Shenzhou International and Bros Eastern. Other Ningbo garment enterprises have diversified their activities to mitigate risk, such as Younger Group's entry into real estate development, Shanshan Group into high-tech industries and FIOCCO into logistics and distribution. Small and medium-sized garment firms in Ningbo rely on the bigger firms to leverage the advantages of industrial clusters and a deeper division of labour, for example in the textile and garment industrial parks of Dongqianhu town and Fenghua Jiangkou town.

Footwear clusters are divided along quality lines: clusters in Guangdong in the PRD (including Guangzhou and Dongguan) specialise in high-end shoes while those in Zhejiang (including in Wenzhou and Taizhou) focus on mass market shoes.

The toy sector also displays significant regional differences. Guangdong province is China's largest toy production and export base, with the relatively mature Shantou City cluster comprising all segments of the value chain, and firms within it having well-developed technological innovation capabilities and higher technology content in their products.

3. BASIC CHARACTERISTICS OF SURVEYED FIRMS

3.1 Sample selection and survey methodology

Although household surveys are well developed in China, such as the China Health and Retirement Longitudinal Study (CHARLS), firm surveys, especially of above-scale firms, are less common. The survey of export-oriented light manufacturing firms faced several challenges, especially relating to access to the firms and to quality control. We adopted a cluster-based sampling strategy, and relied on support from local coordinators to gain access to firms. Our response rate of over 40% was much higher than initially expected.

The large-scale firm-level survey based on a structured questionnaire was carried out after in-depth interviews at two firms in the garment sector, one each in the YRD and the PRD. The survey benefited from these case studies in that the survey questionnaire was modified in light of the interviews, specifically in relation to their strategies in response to rising cost pressures, and in relation to factors weighed up in relocation decisions, including the collective action nature of relocation decisions for firms operating in a cluster context. The latter also affected the survey sampling strategy.

The sampling frame used in the project is the NBSC database of above-scale industrial firms from 2013. The enterprise survey has been widely used in other studies (Brandt et al., 2014; Xu and Hubbard, forthcoming 2018). It provides detailed financial information from the enterprises' financial accounts, including total wages, assets, revenue, profit and ownership, as well as data on their industrial sector and location. It is restricted to 'above-scale' industrial enterprises – that is, firms with revenue from their principal business above 20 million RMB ($3 million). Data in the database come mainly from the quarterly and annual summary reports of companies submitted to their local Bureau of Statistics. The database includes basic information such as address and phone number, industry, type of ownership, affiliation

and year of starting operation. It also includes economic and financial information, such as number of employees, balance sheet, turnover and operating costs (including labour and intermediate input costs), profits earned and taxes paid and exports. We focus on export-oriented firms whose export value accounts for over 50% in the total annual output.

Although above-scale firms represent only 10-15% of all manufacturing firms, as would be expected they represent a much larger share of significant economic variables in manufacturing.[12] As Tables 4a and 4b report, for key economic and financial indicators, the above-scale firms account for the majority in all four light manufacturing sectors on which we focus.

Table 4a: Share of above-scale firms in four sectors, Zhejiang province (%)

Sector	No. of firms	Total assets	Revenue from principal business	No. of employees
Garments (18)	14.85	76.08	82.14	64.38
Footwear (19)	17.46	81.43	81.00	77.22
Toys (24)	19.44	79.81	86.88	80.22
Home appliances (38)	16.58	95.24	96.54	86.51

Table 4b: Share of above-scale firms in four sectors, Guangdong province (%)

Sector	No. of firms	Total assets	Revenue from principal business	No. of employees
Garments	9.68	69.33	68.22	54.23
Footwear	11.58	72.49	63.83	53.64
Toys	8.11	61.17	67.19	50.41
Home appliances	10.59	79.44	85.18	71.32

Note: The percentage is the indicator for above-scale industrial firms divided by the indicator for all the industrial firms.
Source: Data from *Zhejiang Economic Census Yearbook 2013*. *Guangdong Economic Census Yearbook 2013*, hereafter similar

Based on preliminary analysis of the database, an initial decision was taken to focus only on Guangdong province in the PRD and Zhejiang province in the YRD. Above-scale firms contribute 59%, 69% and 70%, respectively, of manufacturing employment in Zhejiang province, Guangdong province and China nationally.[13] Figures 4 and 5 show that on both a regional basis and a sectoral basis, above-scale firms provide the substantial share of total employment.

[12] See the Economic Census Yearbook.

[13] Strictly speaking, the garment industry; leather, fur, feathers and footwear products; the culture, education, engineering, sports and toy products industry; and the electrical machinery and equipment industry.

Figure 4: Number of employees, above-scale manufacturing, by province ('000s)

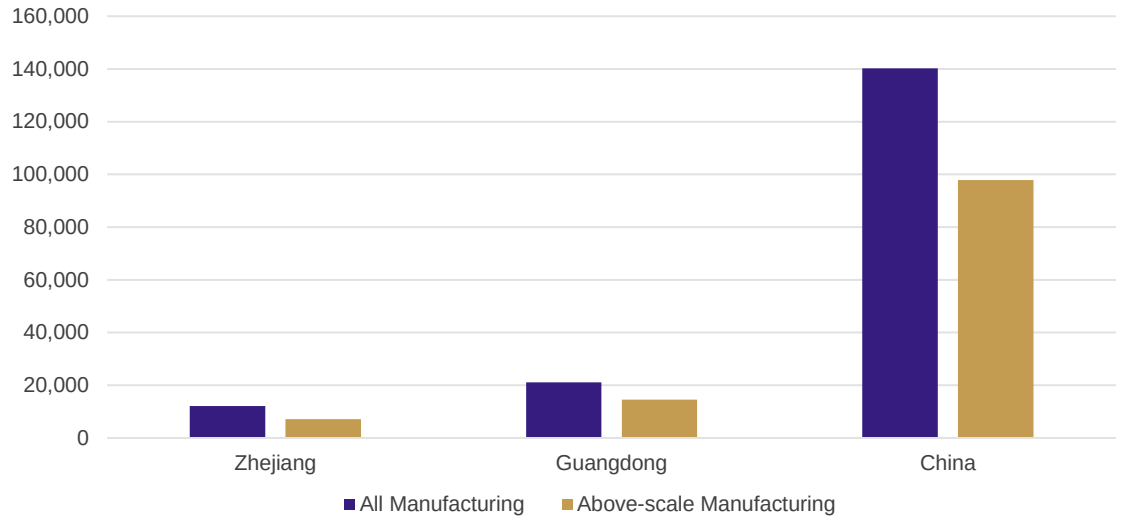
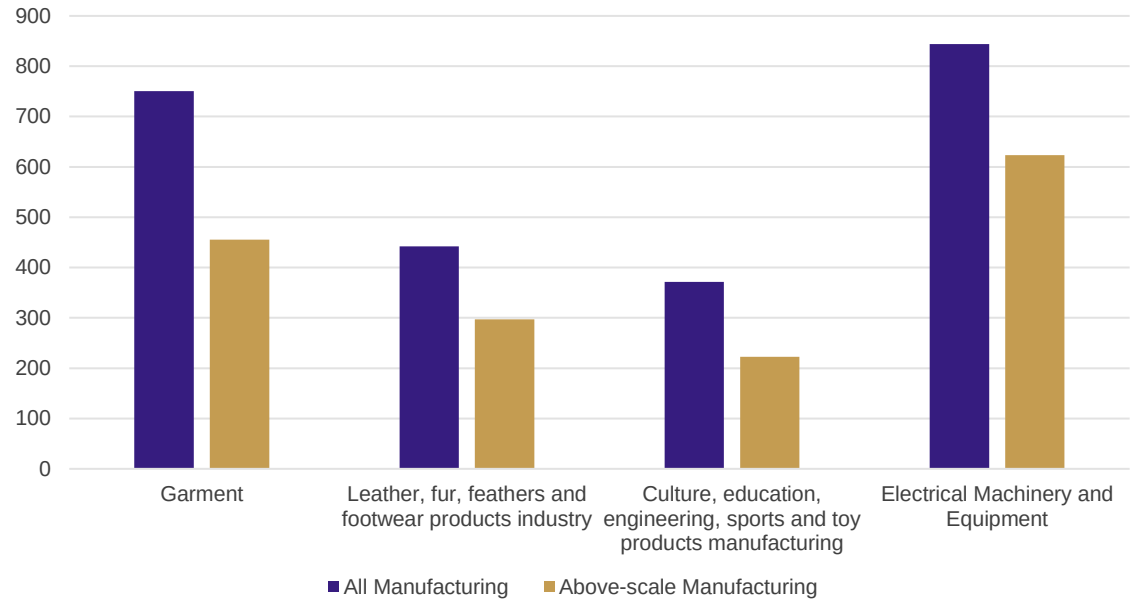


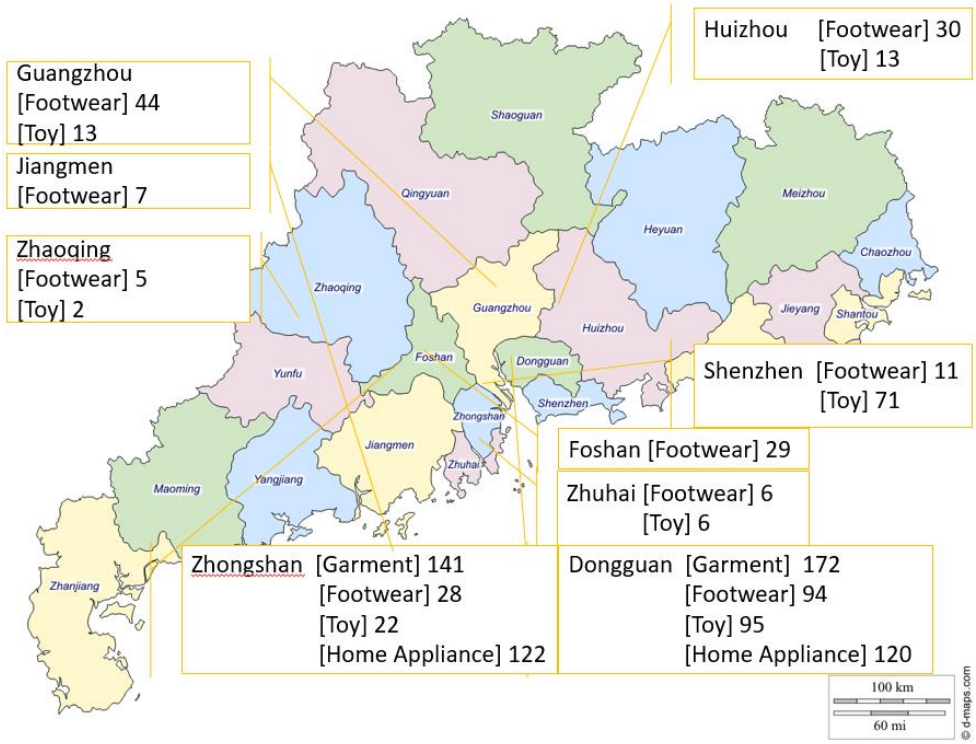
Figure 5: Number of employees, above-scale manufacturing, by sector ('000s)



In line with the official definition of the YRD and PRD, the following cities were selected: nine cities in the PRD – Guangzhou, Shenzhen, Zhuhai, Foshan, Jiangmen, Dongguan, Zhongshan, Huizhou and Zhaoqing; and twelve cities in the YRD – Shanghai, Nanjing, Hangzhou, Ningbo, Zhoushan, Shaoxing, Huzhou, Jiaxing, Suzhou, Wuxi, Changzhou and Nantong. Given the resource constraints of the research project – time, money and personnel – it was necessary to survey firms within specific cities (i.e., within clusters) rather than randomly distributed across the two provinces. At the same time, it was essential to maintain representivity of the final survey relative to the sample frame. To achieve this, counties/districts within the two selected provinces, Guangdong and Zhejiang, were ranked in terms of the number of firms within each selected sector, and then a 'short list' was constructed of counties/districts that cumulatively accounted for 30% of the total number of firms in each sector in each province. The two maps in Figures 6 and 7 show the geographic distribution of these 'short-listed' counties/districts and the numbers of firms per sector in the PRD and YRD, respectively, from which counties/districts were selected for the final sample.

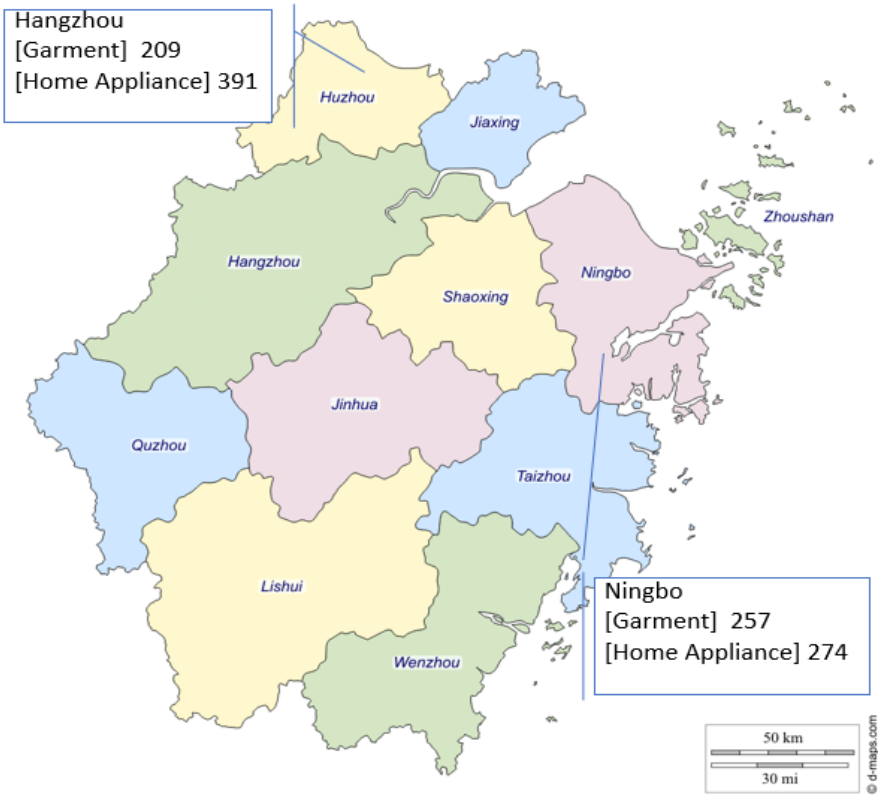
As is evident from the maps, export-oriented light manufacturing firms tend to cluster in specific townships.

Figure 6: Geographic distribution of selected sample firms in the Pearl River Delta



Source: d-maps.com.

Figure 7: Geographic distribution of selected sample firms in the Yangtze River Delta



Source: d-maps.com.

Based on this listing, and given project resources and time frames, the final list of selected firms for the survey was drawn from three cities – Dongguan, Zhongshan and Guangzhou – in Guangdong province, PRD, and from one city – Ningbo – in Zhejiang province, YRD.[14] Firms in the footwear and toy sectors were selected only in the PRD. Project fieldworkers ultimately interviewed firms in eight districts in Guangzhou city, all twenty-four towns in Zhongshan city, all thirty-two towns in Dongguan city and four counties in Ningbo city. In each county/township, the aim was to interview all firms in the four industries of interest.

This sampling strategy ultimately yielded responses from 640 firms,[15] well above the initial target of a minimum of 240 firms. In addition, the distribution of surveyed firms (shown in Table 2) greatly exceeded the original sub-targets, for both regions (two thirds in the PRD, one third in the YRD) and for sectors (minimum 60 in each of the four sectors). The 640 surveyed firms represent 45% of the 1,423 sampled firms – that is, the 1,423 above-scale firms in the four industries in the four counties/districts selected for survey fieldwork – and 13% of the total number of the sample frame of 4,889 firms, comprising all above-scale exporting firms in the four industries in the two delta regions. The 1,423 sampled firms in turn represent 29.1% of the sample frame of 4,889 firms.

Combining the two regions, the 640 surveyed firms comprise 19.3% of all home appliance firms, 6.6% of all garment firms, 33.2% of all footwear firms and 33.8% of all toy firms. The small share of garment firms in the sample frame should be noted as a potential problem for representivity.[16]

Table 5: Valid surveyed firms as share of all above-scale exporting firms by region

	Yangtze River Delta		Pearl River Delta				Total
	Home appliances	Garments	Home appliances	Garments	Footwear	Toys	All sectors
Valid surveyed firms	146 (18)	75 (3)	129 (21)	121 (17)	89 (33)	80 (34)	640 (13)
Sampled firms	274 (33)	257 (12)	247 (41)	324 (45)	188 (70)	133 (56)	1,423 (29)
Above-scale exporting firms	824	2,232	603	725	268	237	4,889

Note: Brackets are (rounded) percentages of 'All a-s [above scale] firms' in column.

The research team effectively relied on local coordinators to gain access to firms. The municipal bureaus of commerce in the PRD and that of statistics in the YRD also provided excellent support by contacting local targeted firms. They helped convene meetings, either at the premises of the firm or at a meeting venue (typically the township government office) at which targeted firms' managers appeared. Staff of chambers of commerce, industrial park committees, industrial associations and township governments also assisted. Strict quality control of survey responses was maintained throughout, via direct supervision of interviews

[14] All four are very large cities: Dongguan's population is about 8 million, Zhongshan's about 3 million, Guangzhou's about 13 million and Ningbo's about 7.5 million in the urban and satellite rural counties.

[15] 669 firms were interviewed but 29 were found to have invalid responses for various reasons and are thus excluded from the survey results.

[16] There was a high rate of refusal by firms in Yinzhou district, Ningbo city, where only 12.3% of the 163 garment firms in the sample agreed to be interviewed.

as well as daily meetings between fieldworkers and supervisors during the fieldwork period in July and August 2017.

3.2 The surveyed firms: basic characteristics[17]

As noted, the total number of surveyed firms is 640, distributed among the four sectors and two regions as shown in Table 6. Note that we did not survey toy or footwear firms in the YRD, where only Ningbo city was included.

Table 6 provides the sectoral and location details for firms in the survey and the overall sample. In the selected locations – Ningbo in the YRD and Guangzhou, Zhongshan and Dongguan in the PRD – there were a total of 1,423 firms in the sample, and (valid) responses were obtained from 640 firms, a response rate of 45%. Note that all sampled and surveyed firms were both above-scale, with turnover larger than 20 million RMB (about $3 million) and also export-oriented, with exports at more than 50% of turnover.

Table 6: Details of enterprises by sector and region

	Surveyed firms			**Sampled firms**		
	YRD	**PRD**	**Total**	**YRD**	**PRD**	**Total**
Home appliances	146 (23)	129 (20)	275 (43)	274 (19)	247 (17)	521 (37)
Garments	75 (12)	121 (19)	196 (31)	257 (18)	324 (23)	581 (41)
Footwear	0	89 (14)	89 (14)	0	188 (13)	188 (13)
Toys	0	80 (13)	80 (13)	0	133 (9)	133 (9)
Total	**221 (35)**	**419 (65)**	**640 (100)**	**531 (37)**	**892 (63)**	**1,423 (100)**

Note: Brackets are percentages of total survey (640) in 'Surveyed Firms' column, or total sample (1,423) in 'Sampled Firms' column.

Manufacturing activities. The surveyed firms included original equipment manufacturers (OEM), original design manufacturers (ODM) and original brand manufacturers (ODM), with some firms combining these activities, as Table 7 shows. OEM firms assemble components supplied by the customer, according to the customer's design and specification, and products are sold under the purchaser's brand name. ODM firms design and assemble products using components sourced themselves, with the product branded by their customer, often a retail chain. OBM firms design and assemble their own products, which are sold in the retail market with their own brand. OBM firms are responsible for most of the value chain, including product design and development, sourcing components, assembly, supply chain management, product distribution and marketing. Many enterprises (237 of 640 surveyed firms, or 37%) engage in a mix of manufacturing activities. Here, we classify their main activity according to two criteria: the largest share of sales from the activity is greater than 50% and the difference between the largest and second largest shares is greater than 10% of sales. Firms that do not meet both these criteria are classified as 'mixed'.

[17] Throughout the report, 'sampled firms' refers to those that were selected out of the total population of above-scale exporters in the four industries and two regions, while 'surveyed firms' refers to those sampled firms which completed the questionnaire.

Table 7: Main manufacturing types in four sectors

Type Sector	Home appliances	Garments	Footwear	Toys	Total
OEM	163 (60)	148 (79)	58 (69)	51 (65)	420 (67)
ODM	31 (11)	27 (14)	18 (21)	4 (5)	80 (13)
OBM	66 (24)	12 (6)	8 (10)	19 (24)	105 (17)
Mixed	11 (4)	3 (2)	0 (0)	5 (6)	19 (3)
Total	**145 (100)**	**190 (100)**	**84 (100)**	**79 (100)**	**624 (100)**

Note: Numbers in brackets are sector (row) percentages. Nine enterprises operated outsourcing businesses, contracting out all their existing internal activity to other manufacturing factories, and seven firms failed to provide data.

The majority of the surveyed firms – two thirds – are OEM, with the percentage particularly high in garments. ODM in footwear is relatively high. OBM is higher in home appliances and toys than in the other two sectors: in footwear, the majority of OBM firms are in the YRD (Ningbo); in toys, most OBM firms are in the PRD. It is also worth noting that 184 firms (28.75%) indicated that they had their own brand(s), nearly the same number as are classified either OBM or ODM in Table 7. It is also worth noting that, of 635 firms providing data, 580 (91.3%) are single-plant enterprises in China – that is, they have only one factory in China; 34 firms (5.4%) have two plants; and only 21 firms (3.3%) have more than two plants. Though a range of arrangements is possible, 'standard' foreign direct investments are by definition multi-plant operations.

Firm age. Table 8 shows firm age distribution. The earliest year of operation in surveyed enterprises was 1983, with the latest year being 2016. It is worth noting that 183 (28.6%) firms starting operation activities in the 1990s, and about half of surveyed firms (375, 58.6%) conducted their first business activities at a point between 2000 and 2009.

Table 8: First year of operation in China, by region and sector

	YRD	PRD	Home appliances	Garments	Footwear	Toys	Total
1983-1989	5 (2)	15 (4)	7 (3)	5 (3)	2 (2)	6 (8)	**20** **(3)**
1990-1999	53 (24)	130 (31)	76 (28)	43 (22)	36 (40)	28 (35)	**183** **(29)**
2000-2009	142 (64)	233 (56)	169 (61)	127 (65)	43 (48)	36 (45)	**375** **(59)**
2010-2016	21 (10)	41 (10)	23 (8)	21 (11)	8 (9)	10 (13)	**62** **(10)**
Total	221	419	275	196	89	80	**640**

Note: Numbers in brackets are sector (column) percentages.

Ownership structure. Table 9 presents surveyed firms' ownership structure, by regional location and sector. None of the 640 firms is a state-owned enterprise, whether central state, provincial or municipal government, and only six enterprises (excluded) are collectively owned. About two in five firms (41.5%) are 100% owned by Chinese domestic private

owners, and about half (51.6%) are wholly owned subsidiaries of foreign firms. Forty-four enterprises (6.9%) are Chinese–foreign joint ventures, with at least 25% foreign ownership.[18]

Table 9: Ownership structure, by region and by sector

	YRD	PRD	Home appliances	Garments	Footwear	Toys	Total
Domestic private ownership	169 (77.2)	94 (22.7)	168 (61.3)	74 (38.1)	10 (11.5)	11 (13.9)	**263** (41.5)
Foreign ownership*	23 (10.5)	304 (73.2)	84 (30.7)	103 (53.1)	74 (85.1)	66 (83.5)	**327** (51.6)
Joint venture*	27 (12.3)	17 (4.1)	22 (8.0)	17 (8.8)	3 (3.4)	2 (2.5)	**44** (6.9)
Total	**219 (100)**	**415 (100)**	**274 (100)**	**194 (100)**	**87 (100)**	**79 (100)**	**634 (100)**

Note: Figures in brackets are ownership type (column) percentages. *Foreign ownership refers to 100% wholly-owned subsidiaries. Joint venture refers to foreign ownership between 25% and 99%. 6 collectively owned firms are excluded.

Table 9 shows a significant difference in ownership structure across the two regions. In the YRD, around three quarters of surveyed firms are domestically owned, whereas in the PRD about three quarters are foreign-owned, and less than one quarter fully domestically owned. There are also significant differences across the four sectors, with three fifths of home appliance firms domestically owned but only two fifths in garments and very small percentages in both footwear and toys. In the latter two sectors, foreign ownership is overwhelmingly predominant.

Firm size. In this report, we use number of employees to represent firm size, shown in Table 10. The share of small firms – fewer than 300 employees – is much larger in the YRD than in the PRD, and is much larger in-home appliances and garments than in the other two sectors, where all firms are located in the PRD. About 15% (95) of the firms are classified as large, with more than 1,000 employees. Of these large firms, about two fifths employ between 2,000 and 5,000 people, and only about 10% more than 5,000. As Table 10 shows, the four sectors have roughly the same share of large firms, but footwear and toys – where there is also more inward FDI into China, and firms in the survey are located only in the PRD – have a much higher proportion of medium-sized than small firms.

Table 10: Firm size, by region and by sector (number of employees in China)

	YRD	PRD	Home appliances	Garments	Footwear	Toys	Total
20-299 (small)	147 (66.5)	176 (42.0)	151 (54.9)	107 (54.6)	32 (36.0)	33 (41.3)	**323** (50.5)
300-999 (medium)	52 (23.5)	170 (40.6)	85 (30.9)	59 (30.1)	43 (48.3)	35 (43.8)	**222** (34.7)
>=1,000 (large)	22 (10)	73 (17.4)	39 (14.2)	30 (15.3)	14 (15.7)	12 (15.9)	**95** (14.8)
Total	**221 (100)**	**419 (100)**	**275 (100)**	**196 (100)**	**89 (100)**	**80 (100)**	**640 (100)**

Note: Firm size classification is based on the size standard by NBSC. Figures in brackets are firm size (column) percentages.

[18] According to the Chinese Foreign Joint Ventures Law, the share of foreign ownership in a foreign-invested enterprise should be no less than 25%.

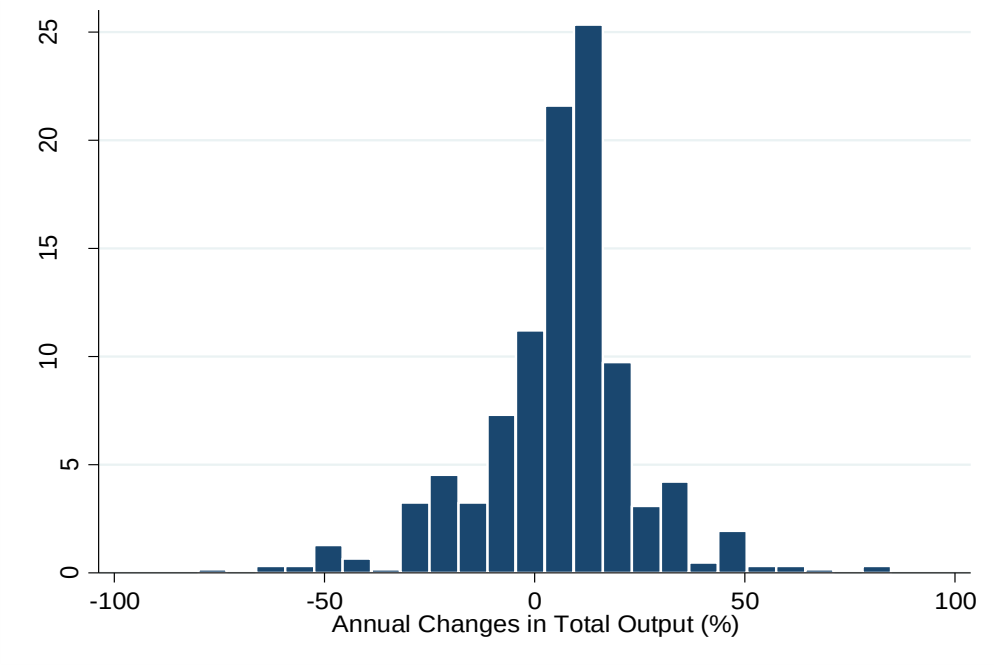
Growth of firms' output and expansion of operations. Table 11 and Figures 8-10 provide information on surveyed firms' average growth in turnover over the past three years (2014-2016). There is a marked difference in the mean between the two regions, with firms in the PRD experiencing lower turnover growth than those in the YRD. The median change in annual turnover is 8% for each region and surveyed firms as a whole. Table 11 also shows marked differences in means among sectors, with the home appliance sector experiencing higher turnover growth than the other three sectors. In contrast, firms in footwear experienced a small change in turnover, with a mean of only 0.1%, but there is a significant variance with the highest standard deviation.

Table 11: Descriptive statistics – annual change in turnover, 2014-2016 (%)

	Obs.	Mean	Median	Std. Dev.
All surveyed firms	623	6.0	8	22.3
YRD	212	8.4	8	20.1
PRD	411	4.8	8	23.2
Home appliances	267	9.4	9	20.7
Garments	191	4.3	6	23.7
Footwear	86	0.1	8.4	25.7
Toys	79	5.4	6	17.9

The three figures below illustrate the distribution of annual percentage change in total output for the surveyed sample as a whole, by region and by sector, respectively.[19] A total of 23% (143 of 623) of surveyed firms experienced a reduction in annual total output from 2014 to 2016, 48% (302) indicated their total output had increased by 10% or less per year and the turnover value of another 28.5% (178) grew by more than 10% per year.

Figure 8: Distribution of annual turnover change, all firms, 2014-2016 (% of firms)



[19] The top and bottom 1% of outliers have been dropped in these figures.

Figure 9: Distribution of annual turnover change 2014-2016 by region, (% of firms)

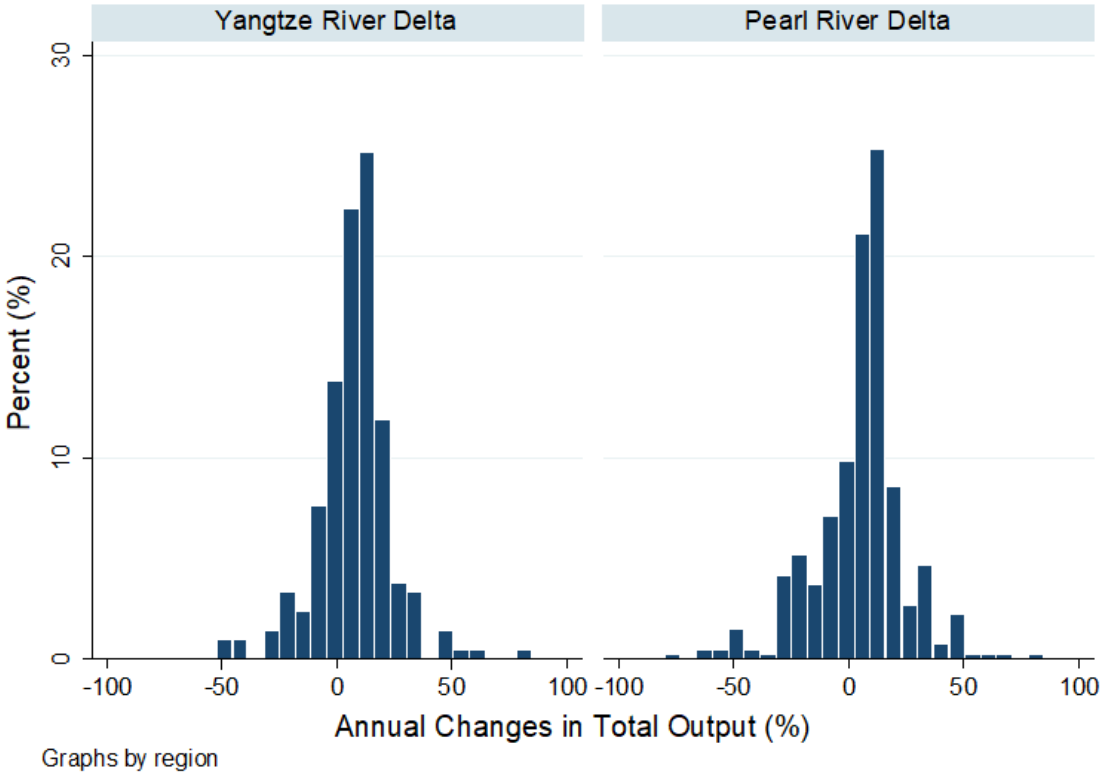
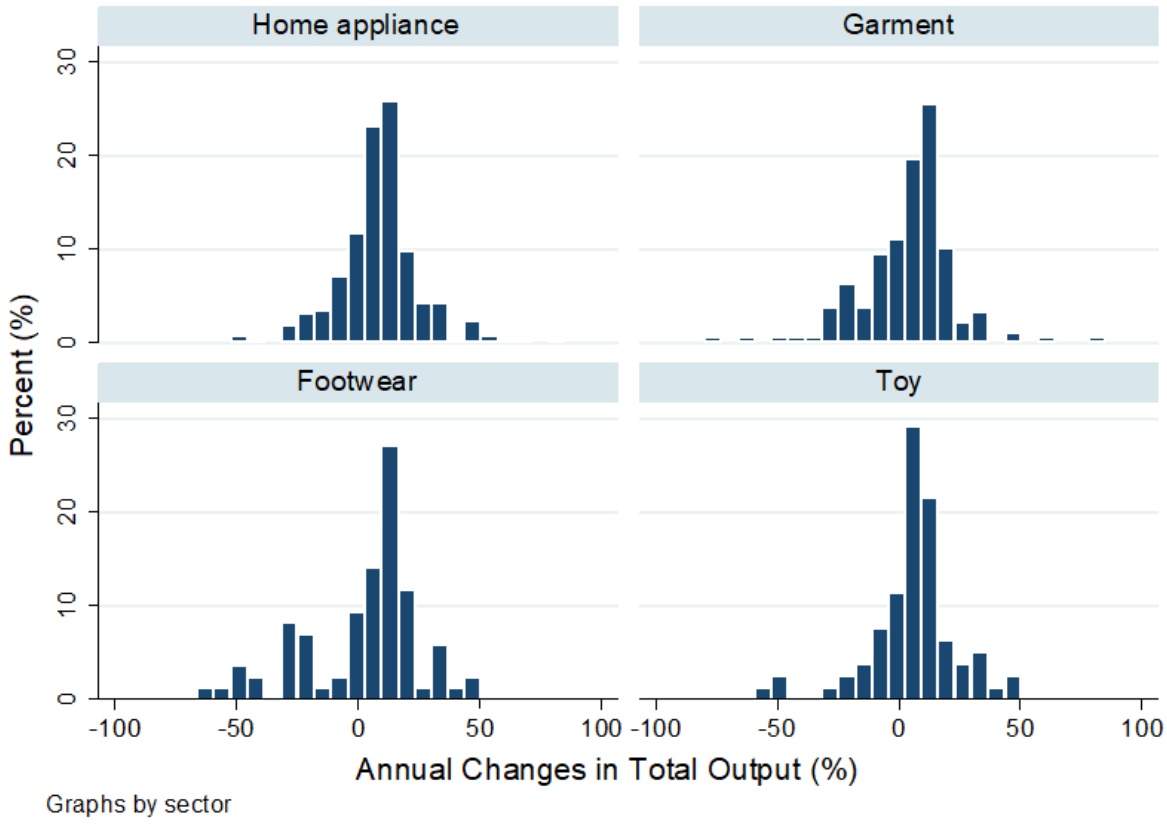


Figure 10: Distribution of annual turnover change 2014-2016 by sector (% of firms)



Firms were asked in the survey whether they had expanded or contracted their operations in China during the three years 2014-2016; the results are reported in Table 12, which suggests overall expansion in home appliances and overall contraction in footwear. About a third of all firms (207 of 640) had expanded their factories, with the bulk of these in the home appliance sector, where half the firms had done so. In the other three sectors, only one in five firms had expanded. In contrast, 120 firms, or 19%, had contracted operations, with the largest proportion in footwear, where close to a third had contracted, significantly more than had expanded in that sector. In home appliances, only about a quarter as many firms had contracted as had expanded. In garments and toys, about the same number of firms had expanded operations as had contracted. Reinforcing these tentative conclusions, 10 firms had acquired or opened new factories in China – 6 in home appliances and 2 each in garments and toys – while 22 firms had closed or sold factories in China, of which 9 were in footwear, and 5 each in garments and toys.

Table 12: Expansion or contraction of operations in China, 2014-2016

	Expansion of factory	Contraction of factory	Total surveyed firms in sector
Home appliances	134 (48.7)	34 (12.4)	275
Garments	42 (21.4)	45 (23.0)	196
Footwear	16 (18.0)	28 (31.5)	89
Toys	15 (18.8)	13 (16.3)	80
Total	**207 (32.3)**	**120 (18.8)**	**640**

Note: Figures in brackets are percentages of surveyed firms in sector (in column 3). Figures in columns 1 and 2 do NOT add to column 3.

Growth of wages. Table 13 reports surveyed firms' average growth in wages over 2014-2016. There is no marked difference in the mean between the two regions. Mean annual wage growth among surveyed firms was 10.8%, and ranged from 9.3% in toys to 12.2% in footwear. This is consistent with official data presented above in Table 3.

Table 13: Descriptive statistics, annual wage growth, 2014-2016 (%)

Variable	Obs.	Mean	Median	Std. Dev.
All surveyed firms	629	10.8	10	7.69
YRD	217	10.3	10	7.25
PRD	412	11.0	10	7.90
Home appliances	273	10.4	10	7.55
Garments	191	11.1	10	7.90
Footwear	87	12.2	10	8.27
Toys	78	9.3	8	6.70

Figures 11-13 provide the frequency distributions for all firms in the survey, for firms in the two regions and for firms in the four sectors, respectively.[20]

[20] The 1% of top and bottom outliers have been dropped in the percentage figures.

Figure 11: Distribution of annual wage growth, all firms, 2014-2016 (% of firms)

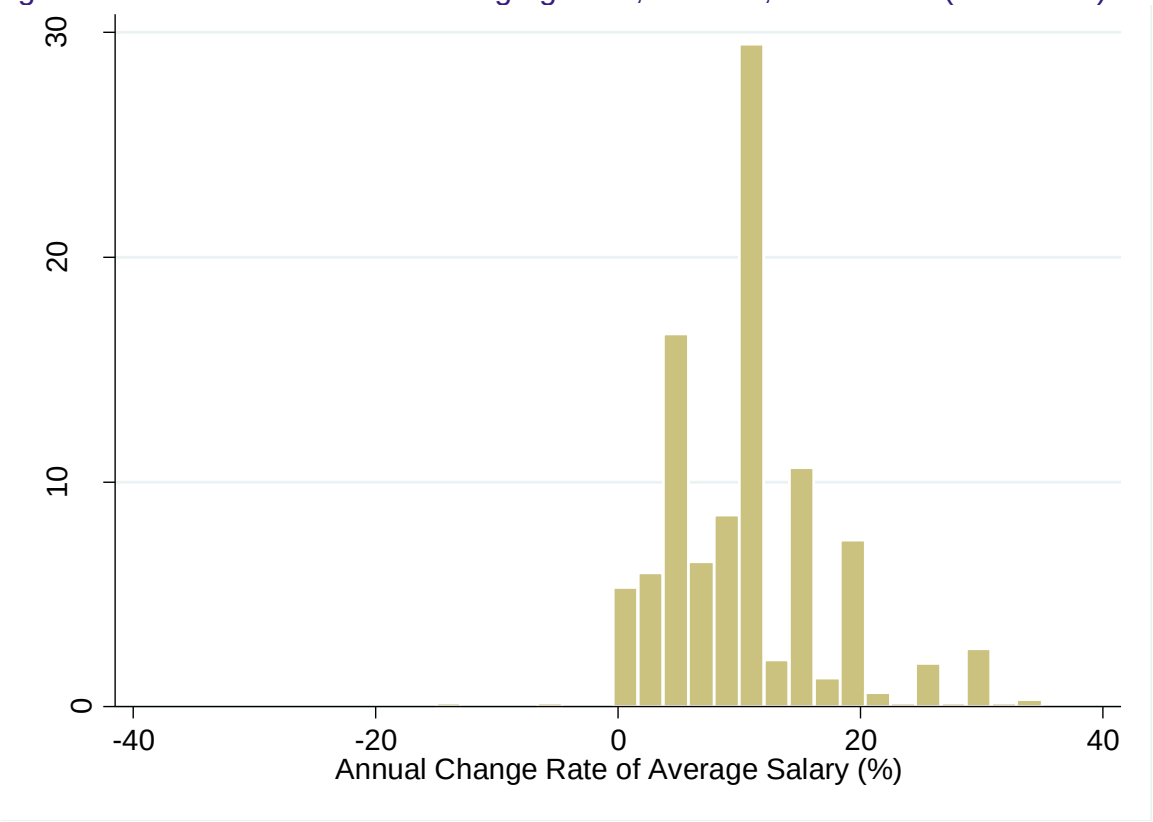


Figure 12: Distribution of annual wage growth, by region, 2014-2016 (% of firms)

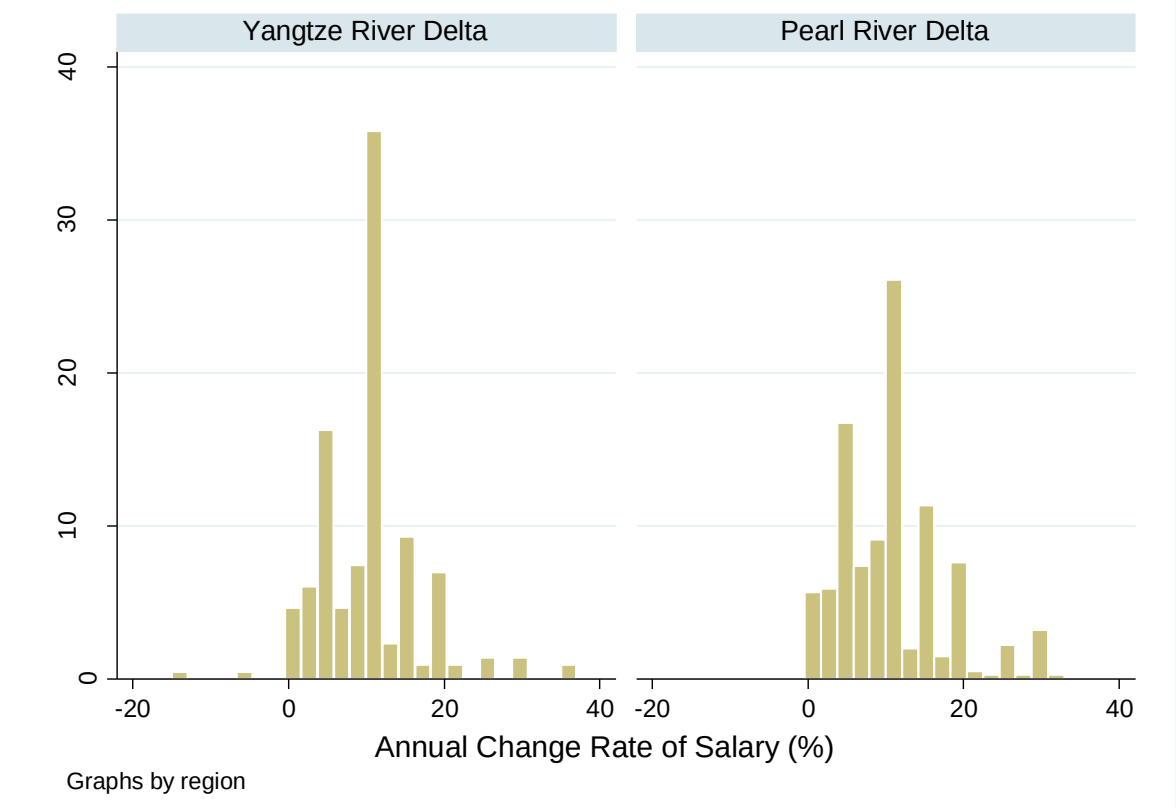
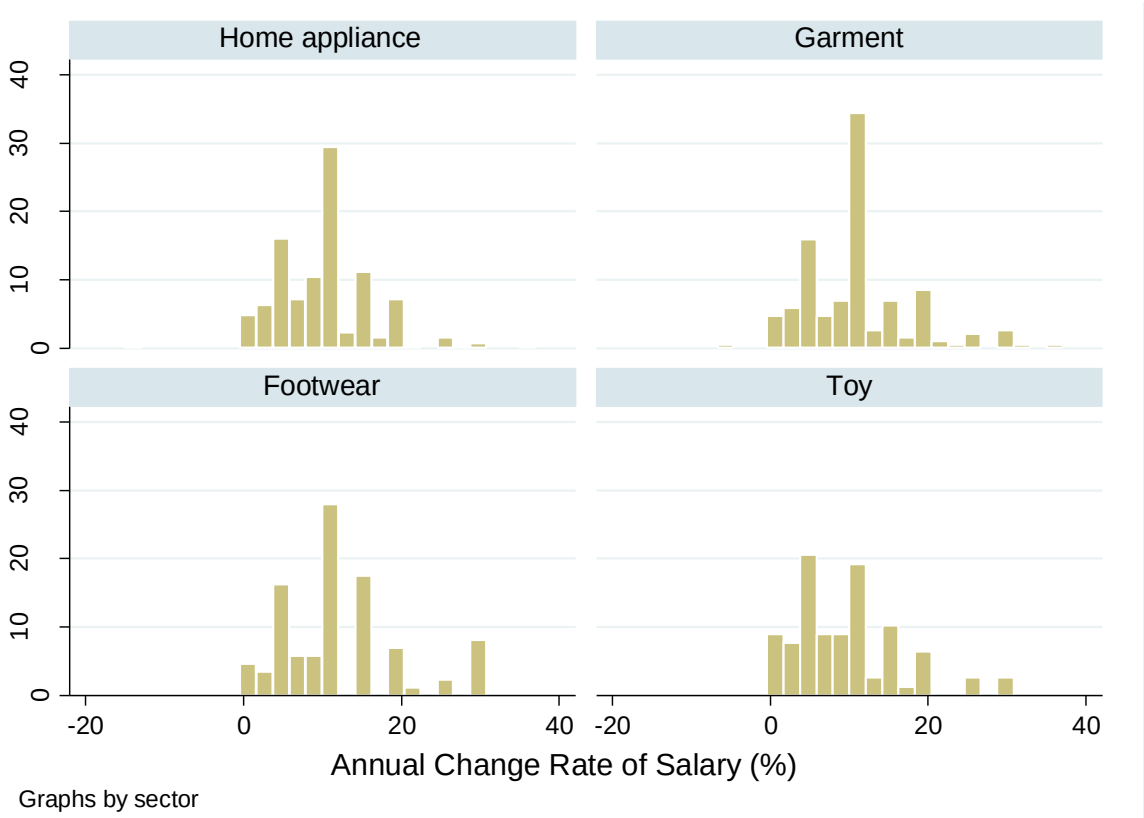


Figure 13: Distribution of annual wage growth, by sector, 2014-2016 (% of firms)



In all three figures, the largest percentage of firms are concentrated around 10% wage growth.

4. CHALLENGES IDENTIFIED BY FIRMS AND STRATEGIES FOR COPING

In this section, we analyse the main challenges between 2014 and 2016 identified by surveyed firms, and their responses to these.

4.1 Main challenges facing light manufacturing enterprises

Each firm was requested to select the top three challenges from a designated list of 17 possibilities. Figure 14 shows the distribution of firms' choices among the 17 options, in the order in which they were presented to respondents. Of the 17, four clearly stand out: rising wage costs, rising non-wage labour costs, rising input costs (materials and components) and decreasing market demand. Taxes, lack of skilled workers and market competition and perhaps land (availability and/or cost) were in a second group, some way short of the first group of four. Rising costs for infrastructure inputs (electricity, water, transport and logistics) and for research and development (R&D) were not among the top four challenges, or in the second group.

Figure 14: Top three challenges identified by surveyed firms (number of firms)

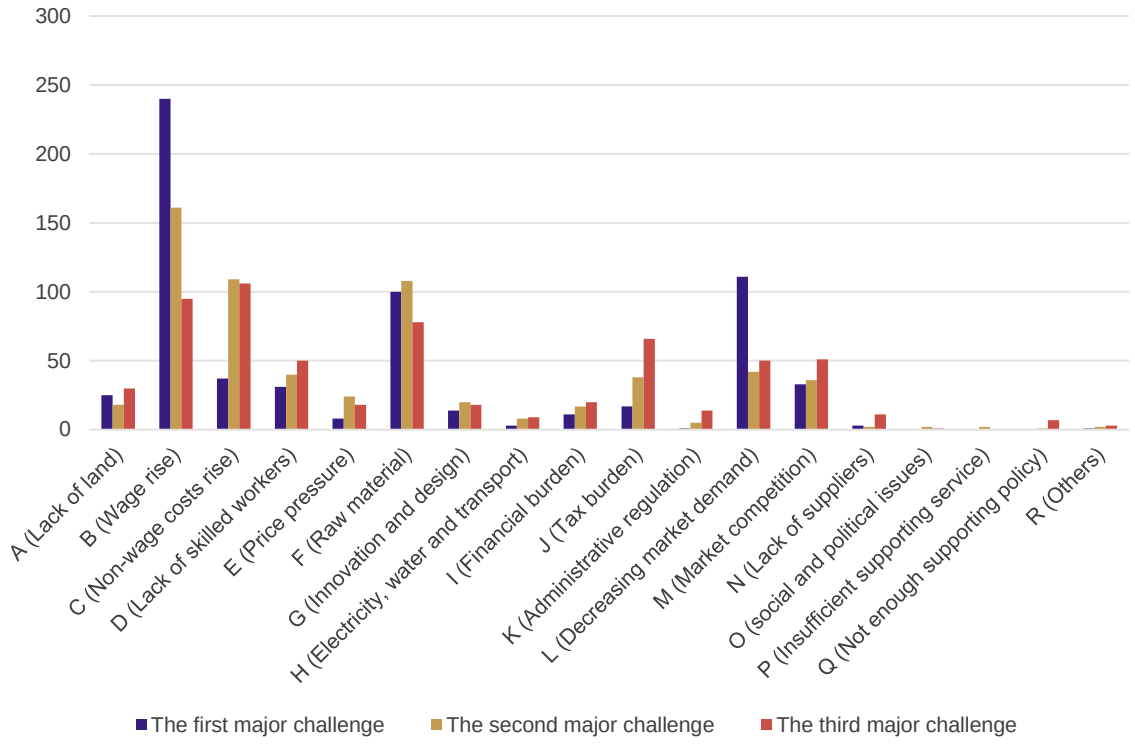


Table 14 looks more closely at both the top challenge (T1) and the top three challenges (T3) identified by firms in the two regions and the four sectors. The table presents only the four most commonly identified challenges (in the rows), which together accounted for 77% of firms' choice of their main challenge. Close to half the firms included material input costs in their top three challenges, and about one third pointed to decreasing market demand. But labour costs stand out as the foremost issue here.

As shown in the last pair of columns in the table, 240 enterprises (37.5% of surveyed firms) indicated that rising wage costs were their most severe challenge, whereas 496 (77.5%) included it among their top three challenges (161 enterprises (25.16%) chose wage increases as their second most severe challenge, and another 95 (14.84%) as their third choice). These percentages were broadly similar across the two locations, but there were differences at the sectoral level. A smaller share of home appliance firms were concerned about wage costs (and non-wage labour costs) than in the other three sectors. Though only 6% of firms listed non-wage labour costs as their primary challenge, 40% listed it among their top three, including nearly half the firms in the PRD, and about half in garments, footwear and toys (but a much smaller share in home appliances). Raw material and component input costs were the main concern for about a quarter of firms in home appliances, but for smaller shares in the other three sectors, while decreasing market demand is a greater concern for footwear enterprises, and to some extent garments as well.

Of the 111 firms that identified 'decreasing market demand' as their top challenge, 106 were small (below 300 employees). One garment enterprise manager in the PRD referred to the Sun Yat-sen University cloth material market in Haizhu district as one of the 'most famous' garment industry distribution centres. Several years ago, dozens of textile and garment factories in neighbouring Kangle and Lujiang villages were often ablaze with light, working overtime as late as midnight. Today, a number of factories have suspended operations or even closed down. His own 2016 orders were only half their 2014 level with a significant reduction of foreign orders being the main reason.

Table 14: Firms' top three challenges, by region and sector

	PRD		YRD		Home appliance		Garments		Footwear		Toys		All firms	
	T1	T3	T1	T3	T1	T3	T1	T3	T1	T3	T1	T3	T1	T3
Wages	161 (38)	324 (77)	69 (32)	162 (75)	73 (27)	186 (68)	90 (46)	172 (88)	38 (43)	67 (76)	39 (49)	71 (89)	240 (38)	496 (78)
Non-wage labour costs	29 (7)	193 (46)	8 (4)	59 (27)	7 (3)	71 (26)	15 (8)	92 (47)	11 (13)	47 (53)	4 (5)	42 (53)	37 (6)	252 (40)
Material input costs	59 (14)	190 (45)	41 (19)	96 (44)	66 (24)	139 (51)	15 (8)	65 (33)	10 (11)	38 (43)	9 (11)	44 (55)	100 (16)	286 (45)
Decreasing market demand	81 (19)	152 (36)	30 (14)	51 (24)	35 (13)	69 (25)	43 (22)	72 (37)	18 (20)	36 (41)	15 (19)	26 (33)	111 (17)	203 (32)
Total firms in category	418	418	217	217	272	272	195	195	88	88	80	80	635	635

Note: Figures in brackets are (rounded) percentages of the number of respondent firms in the category for that column, shown in the last row.

In another example, an export manager from the toy industry who had attended the Canton Fair annually since 2005 told our interviewer that there had been a significant drop in European and US customers at the Fair in recent years. Europe and the US had accounted for 80% of her export orders in the past, but now market demand is sluggish. Overseas buyers are further encouraged to adopt a 'wait-and-see' strategy, because the homogeneity of the industry's plush toy and other products can easily lead to price wars. The upshot is that firms have to make more effort than they used to, to develop new sales channels and new customers.

Table 15 presents descriptive statistics for responses to the question: 'How serious have the following costs pressure been in China over the past three years?' A comparison across the eight cost factors is strictly speaking not appropriate, but it is worth noting that the mean and median of wage costs (3.656 and 4, respectively) are the highest, following by costs on raw materials and on non-wage labour costs, while the mean for financing costs is the lowest. More than 150 firms rated wage costs as 5, 'very serious', and more than 200 as 4, 'relatively serious'. In addition, over 150 firms rated non-wage labour costs as 'very' or 'relatively' serious. These findings are consistent with the argument that labour costs are the major challenge for the majority of surveyed firms.

Table 15: Degree of severity of cost pressures (n = 640 firms)

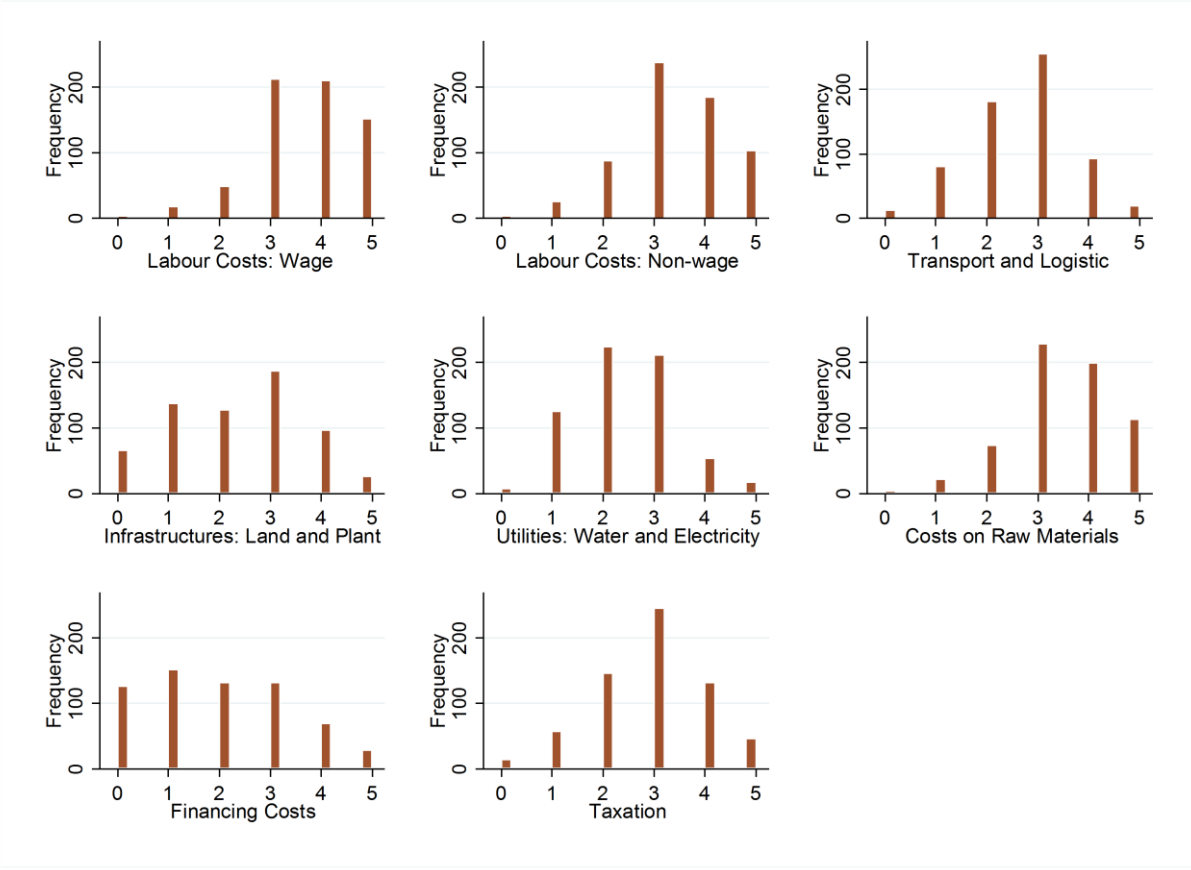
Cost	Mean	Median	Std. dev.
Labour costs: wage	3.656	4	1.032
Labour costs: non-wage	3.380	3	1.061
Transport and logistics	2.616	3	1.034
Infrastructure: land and plant	2.297	2	1.344
Utilities: water and electricity	2.363	2	1.018
Materials and component costs	3.461	3	1.056
Financing costs	1.927	2	1.438
Taxation	2.878	3	1.123

Note: Severity rating: No concern at all = 1, Not serious = 2, Normal = 3, Relatively serious = 4, Very serious = 5.

There were clear differences among the sectors in how they rated the severity of wage costs: the means for home appliance firms was 3.50 and for garments 3.76, for footwear 3.91 and for toys 3.81. A t-test was used to examine whether these differences were statistically significant: it turned out that there are significant differences (at 5%) between the home appliance and other sectors in their responses both on wage costs – where a mean of 3.50 indicates that wages are a less serious concern in the home appliance sector than in the three other sectors where the combined mean was 3.81 – and on non-wage costs – where the home appliance sector's mean of 3.19 is below (less serious than) that for the other three sectors (3.55). Testing for a significant difference between the mean of garments and that of the other three sectors showed garment firms' responses on wage costs were no different. The footwear sector saw non-wage costs as more serious in a statistically significant sense than did the three other sectors. These points reinforcing the picture derive from Table 14. Large firms (above 500 employees in this case) see wages as a more serious concern than small firms (below 500), with the respective means – 3.92 vs. 3.58 – being significantly different (at 5%).

Figure 15 reinforces the finding that rising labour costs are the most severe challenge faced by the surveyed firms.

Figure 15: Severity rating of the listed challenges



It is not surprising that firms overall see wages as their most serious concern. As discussed in the introduction, manufacturing wages in China have increased rapidly, particularly in recent years. Average real manufacturing wages grew 11.4% annually between 2009 and 2014 in China overall, and 11.8% in the Eastern region, where all the surveyed firms are located. There is much debate about the causes, including whether China has reached its 'Lewis turning point' (Cai, 2010, 2015), and the impact of labour regulations, as minimum wage levels have risen across the country. In 2016, the average growth of minimum wages

was 14.5% (slightly down from 17% in 2015), but the upward trend will continue. The 2016 minimum wage standards of Shanghai (2,190 RMB/month) and Zhejiang province (1,860 RMB/month) in the YRD, and of Shenzhen (2,030 RMB/month) and other cities in Guangdong province (1,895 RMB/month) in the PRD are all among the highest nationally. Furthermore, higher minimum wages do not take into account non-wage costs partially paid by employers, such as social insurance premia, pensions and housing provident fund costs.

4.2 Strategies adopted by light manufacturing enterprises to cope with rising labour costs

Following identification of the major challenges they had faced between 2014 and 2016, firms were asked to indicate how they had responded to the challenges during this period. In this section, we analyse the top three responses in terms of 'degree of effectiveness', selected from a list of nine alternatives. Figure 16 presents these responses, with the number of firms on the vertical axis.

Firms in the survey remain most likely to transform their production process by replacing workers with machines in response to rising wages. Other strategies to control costs and to expand sales, including by introducing more product lines or activities, are also more common than is relocating. More than half of the surveyed firms, 342 out of 635 (54%), indicated that they had adopted 'technology upgrading: using machinery or digitalisation to replace workers' as one of their three primary methods to address the challenges, including rising labour costs. In addition, 533 firms (84%) had adopted cost controls over inputs plus standardising production, whereas 279 (44%) had undertaken market expansion (such as searching for new sales and distribution channels).

Figure 16: Strategies adopted by firms to address their primary challenges

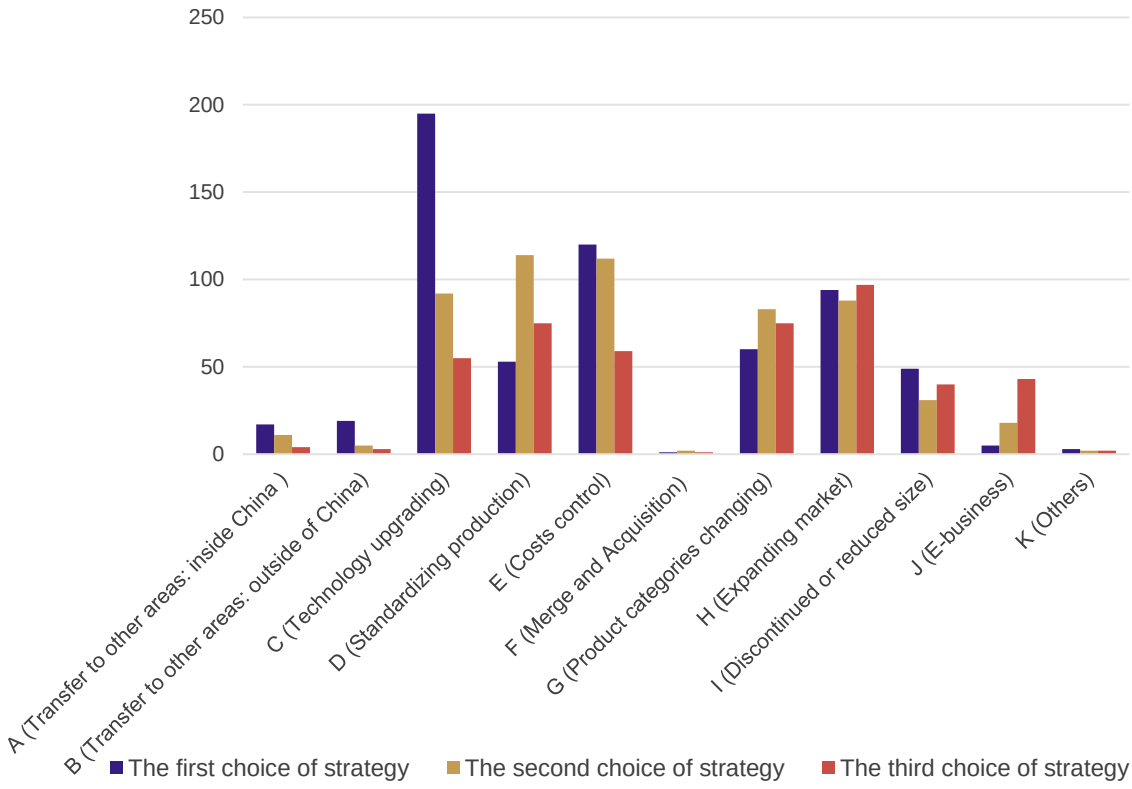


Table 16: Firms' top three responsive strategies, by region and sector

	Home appliances		Garments		Footwear		Toys		All firms	
	T1	T3	T1	T3	T1	T3	T1	T3	T1	T3
Transfer to new location*	3 (1)	4 (2)	12 (6)	20 (10)	18 (21)	34 (39)	3 (4)	4 (5)	36 (6)	62 (10)
Technology upgrade: machines or digitalisation	98 (36)	171 (63)	49 (25)	81 (42)	14 (16)	34 (39)	34 (43)	56 (70)	195 (31)	342 (54)
Tighter cost control over inputs or standardised production	53 (20)	219 (81)	71 (36)	169 (87)	24 (27)	71 (81)	25 (31)	74 (93)	173 (27)	533 (84)
Changing product lines or diversifying activities within value chain	50 (18)	141 (52)	3 (2)	35 (18)	5 (6)	19 (22)	2 (3)	23 (29)	60 (9)	218 (34)
Expanding markets	52 (19)	153 (56)	26 (13)	78 (40)	6 (7)	16 (18)	10 (13)	32 (40)	94 (15)	279 (44)
Closing operation	8 (3)	17 (6)	19 (10)	57 (29)	17 (19)	37 (42)	5 (6)	9 (11)	49 (8)	120 (19)
Total firms in category	272	272	195	195	88	88	80	80	635	635

Note: Figures in brackets are (rounded) percentages of the number of respondent firms in the category for that column, shown in the last row. *New locations include both inside and outside Mainland China.

Table 16 shows the variation of responsive strategies by sector, reporting both the top response (T1) and the top three responses (T3), with cells showing the number of firms adopting the strategy and the percentage of surveyed firms in the relevant sector. The table shows that just under a third of firms upgraded their technology and replaced workers as their primary strategy, and just over half did so as one their top three strategies. But there appear to be significant sectoral differences on this strategy: it is much less common among the footwear firms, and to some extent the garment firms too. Cost control is the primary strategy for about a quarter of the firms across all sectors, but is predictably a common second or third choice. Changing product lines (either upgrading or scrapping existing products, or diversifying into new products) is much more common in-home appliances than other sectors, where firms are clearly more specialised. Footwear firms are less able than others to expand their market through adding sales or distribution channels but much more willing to shut operations.

The first row in Table 16 underlines that relocation of production capacity either within or outside Mainland China is currently a strategy for a very small minority of surveyed firms, except in the footwear sector. The table shows that only 36 firms (just under 6% of the sample) identified relocation of their operation as their primary strategic response to their challenges, and only 62 (10%) as one of their top three strategies. Relocation refers here to both inside and outside Mainland China, and in fact only 19 firms (3%) identified a move out of China as the top choice, and 34 (5.3%) as among their top three responses. Footwear firms are an important exception to this: firms in this sector are far more likely to choose this strategy than firms in other sectors, and in fact 12 footwear firms (13.6% of the footwear sample) identified moving out of China as a top response, and 21 firms (23.8% of all footwear firms) pointed to this as being among their top three responses.

Table 17 presents the top responsive strategy by sector but only for those firms which identified wages or non-wage labour costs as their top challenge. What is evident is that home appliance and toy forms opted for technology upgrade in much higher proportions than firms in garments of footwear, suggesting that increasing mechanisation is much easier in the former two sectors than in the latter two. Garment and footwear firms focussed more strongly on tighter cost controls than other strategies. It is also noteworthy that the average spend on new machinery of those firms who upgraded technology was 7.37 million RMB, or about US$1.1 million, which is rather low.

Table 17: Firms' top responsive strategy to wage and non-wage labour costs, by region and sector

	Home appliances	**Garments**	**Footwear**	**Toys**	**All firms**
	T1	T1	T1	T1	T1
Transfer to new location*	3 (1)	10 (6)	16 (22)	3 (4)	32 (6)
Technology upgrade: machines or digitalisation	79 (37)	47 (27)	12 (16)	33 (43)	171 (33)
Tighter cost control over inputs or standardised production	49 (23)	66 (39)	23 (32)	24 (32)	152 (28)
Changing product lines or diversifying activities within value chain	31 (14)	2 (1)	4 (5)	2 (3)	39 (7)
Expanding markets	41 (19)	23 (13)	5 (7)	10 (13)	79 (15)
Closing operation	6 (3)	18 (11)	10 (14)	3 (4)	38 (8)
Total firms in category	216	171	73	76	536

Note: Figures in brackets are (rounded) percentages of the number of respondent firms in the category for that column, shown in the last row. *New locations include both inside and outside Mainland China.

Large firms (above 1,000 employees) tended to be more concerned about non-wage labour costs and material input costs than about wages or decreasing market demand, as compared with small and medium size firms.[21] Consequently, large firms tended to adopt strategies to upgrade technology in greater proportions, while acting less frequently to expand their markets or their range of products or activities within value chains.

[21] Size categories as used in the survey, where *all* firms are 'above-scale' in terms of turnover, that is more than 20 million RMB (about US$3 million), and so relatively large within each industry in China, where many thousands of even smaller firms operate.

Box 1: Firms adopt multi-pronged strategies to address rising costs

One Ningbo-based entrepreneur described how his firm had been established through the introduction of Taiwan's advanced production technology in the early 1990s. The initial business was in producing and exporting socks. After two decades, the firm gradually diversified into a wide range of other garments and activities. On the one hand, it has grown its business as a specialised OEM for global sportswear brands like Adidas, Reebok, etc. On the other hand, to address rising labour costs and reduction in orders, the company has shifted from a focus on OEM export assembly by adding the creation of its own brands for the high-end female fashion market since 2006, as well as diversifying into the international logistics market and equity investment in 2013. In addition, it established a new production plant in Jiangxi province, about 600 km by road from Ningbo, and later also established a plant in Cambodia, together with another Chinese firm.

The entrepreneur indicated that the firm would focus on raising margins through promoting its brand rather than further moves of production capacity to lower-cost regions. The firm has invested in a professional branding team, including design, technology and marketing functions. As part of this strategy, it has gradually outsourced simple processing orders to smaller firms around Ningbo, though it continues to source these orders as they provide cashflow for investing in the brand.

In terms of ownership, foreign-owned firms tended to identify wages as the main challenge more frequently than domestic firms, with 43% of the former seeing this as their top challenge compared with 33% of the latter. Foreign firms were also somewhat more concerned than domestic firms about decreasing market demand. However, there appeared to be little significant difference between the two groups on their response to the challenges, though we note that while 8% of foreign-owned firms indicated that relocation was their main strategic response, only 2% of domestic firms did so (12% versus 3% for relocation as one of the top three responses). Domestic firms were more focussed than foreign ones on expanding markets and diversifying product lines or value chain activities.

The survey results reflect China's move away from labour-intensive manufacturing processes towards more technology-intensive production. It should be emphasised, however, that technology upgrading does not necessarily mean automation per se: automation is only one possibility among others to upgrade technology. Robots are increasingly used in China: according to the International Federation of Robotics, factories in China bought 68,000 industrial robots in 2015, 20% more than in the year before, and more than all European

Box 2: Investing in automation by small- and medium-sized enterprises

In one of our interviews, the manager of a wool factory in Guangzhou told us that the Computerised Numerical Control (CNC) knitting machines currently on the market were still very expensive for his firm. The price of cheaper machines is tens of thousands of RMB, while some more advanced machines are priced at several hundreds of thousands RMB. Two years ago, he used instalment finance to buy a few CNC machines, which had a mechanism to lock automatically if he were unable to repay the loan instalment – so he could not produce anything until he had made the monthly payment. He decided to resell these machines at a much lower price and continue to use manual designs.

To resolve such financial difficulties facing small and medium enterprises in purchasing advanced equipment, local governments in both the PRD and the YRD have launched a number of subsidies for industrial transformation and upgrading. One manager told us that the Dongguan government could provide subsidies of 3,000 RMB per imported machine and 2,000 RMB for a domestic machine. However, he argued that this support was still too limited for many small and medium enterprises to afford machines.

countries combined. It is expected that in 2017 China will become the economy with the largest number of industrial robots in the world, more than either the EU or the US. In fact, local governments in PRD cities are encouraging enterprises to introduce advanced equipment, according to several interviewees in this survey. For example, the Dongguan municipal government will establish a 1 billion RMB fund to support processing technology transformation and upgrading.

However, automation has limitations, especially in relation to adoption in light manufacturing sectors. First, the investment required for automated equipment is still very large for most enterprises, especially small and medium firms, so automation is likely to be a long-term outcome. Second, many manufacturing procedures in specific sectors, such as garments or footwear, are difficult to automate; for example, cutting, sewing, buttoning, ironing and garment inspection cannot be entirely replaced by machines. Third, automation also has maintenance costs and technical personnel requirements.

Despite the restrictions of robots and their limited diffusion in light manufacturing sectors currently, the dominant strategy in response to rising wages for firms in the survey remains transforming their production process by introducing more machinery (not necessarily robots), to replace workers with machines. Other strategies to control costs and to expand sales, including by introducing more product lines or activities, are also more common than is relocating operations. The footwear sector is a significant exception to these summary conclusions.

Box 3: Limitations on the adoption of standardised automatic production processes

One footwear factory engineer explained that robots could not currently be widely applied in their production lines because of limitations in its fine motor movements. The generalised industrial robot is a versatile combination that can achieve automated control and reprogrammable multifunctional manipulators, and has three or more freely programmable motion axes that look like a human upper limb. But, compared with the human hand, a robot still has far below the flexibility of human fingers. He also mentioned that, over the past five years, he had attended many trade fairs, and had closely observed robots' operation. He believed those robots at the exhibition could do only simple and standardised work, and certainly could not conduct operations with a high degree of complexity. Final products from standardised processing lines are still far from meeting the personalised requirements of customers of well-known global brands.

5. ESTABLISHMENT OF OPERATIONS IN NEW LOCATIONS

In this section, we focus on firms' which have established, or plan to establish, operations in new locations, either other regions within Mainland China or in other countries. Of the 640 surveyed firms:

- 41 firms (6.4%) had invested outside China at some time in the past;
- 33 firms (5%) had transferred operations to other parts of China during the past three years, 2014-2016; and
- 39 firms (6.1%) planned to invest outside China in the next three years, to 2020, of which 18 firms were among those that already had international operations.

We discuss the relocation of these three groups below. Before turning to that, though, it is important to note that these firms represent a small proportion of those surveyed, and to consider some factors that may explain their small number, which is in apparent contradiction

to research in Southeast Asian and African countries investigating Chinese inward investment. A recent report from McKinsey, for example (Sun et al., 2017), claimed there were 10,000 Chinese firms on the African continent. This number apparently includes very small Chinese-owned family businesses such as restaurants and corner stores, as well as small factories. Other work also suggests large numbers of Chinese manufacturing firms have invested abroad (Salidjanova, 2011; Xu and Hubbard, 2018; McKinsey, 2017).

There are two reasons the sample may have underestimated the number of firms that have established operations abroad or in other parts of China in response to rising wages and other changes in their environment. The first, and probably by far the more important, is that many single-plant firms may have moved their operations entirely to a different location either within China or abroad, as a result of which they are no longer present in the industrial clusters and regions where the survey took place.[22] To assess the extent of this movement would require research in host (destination) countries or in regions within China, rather than in eastern China.

Box 4: How much Chinese LILM entrepreneurial FDI is there in Africa?

The number of Chinese firms in Africa, in LILM sectors and overall, is a matter for considerable debate. In their recent report, McKinsey suggest there are about 10 000 Chinese firms on the continent, of which about one-third are in manufacturing, mostly focussed on the domestic markets of host countries. Their 'manufacturing' category is not further disaggregated, and it is not made entirely clear how they arrived at this estimate. They do not discuss the distribution of enterprises between 'standard' FDI firms, where the enterprise in Africa has an equity investor and head office in China, and 'entrepreneurial' FDI, where the enterprise and the entrepreneur have migrated in their entirety from China to the African host country. The latter class of investment creates output, jobs and possibly exports in the host countries to which they migrate, but have a different set of ongoing economic ties to their home country (or country of origin) after their migration, and therefore a different set of spillovers to the host country, and impact on the latter's long-term growth. A Brookings Institution study two years earlier used official Chinese data – company registrations of their outward investment plans with the Ministry of Commerce (MOFCOM) – to estimate there were about 2000 Chinese enterprises in Africa (Chen et al., 2015). Of these, the authors suggest that about 1170 firms are in a category they label 'agricultural and manufacturing'. Of these, about 250 firms are in LILM-linked sectors. The Brookings study's method provides a closer approximation to 'standard' FDI since firms are much more likely to have registered their outward investment with MOFCOM if they continue to operate in China after establishing operations in Africa.

The second reason is that parent companies, especially foreign parent companies, of the surveyed firms may have made a relevant investment in a third (host) country rather than the Chinese affiliate doing so itself, but the latter did not report this in response to the survey. This may be interpreted as being not a relocation of productive capacity from China to the third country, but rather a location choice by the parent company – the third country instead of China – in response to changing economic conditions in China, but it nonetheless indicates at a macroeconomic level the shift that we explore here. Note that the impact on the industry in China and on the third country does not depend on whether the parent company is Chinese or non-Chinese. Although some 11 firms pointed to their non-Chinese shareholders as an important influence in foreign investment location decisions, we also found at least one instance in our survey of the Chinese subsidiary of a large Chinese company did not report its parent's well-known investment in Ethiopia.

Notwithstanding these qualifications, the number of firms in our survey which are already engaged in outward investment from China or which are considering that strategy, is very

[22] In earlier work, one of the present authors labelled such firms which migrate abroad in their entirety 'entrepreneurial FDI' (Gelb, 2014).

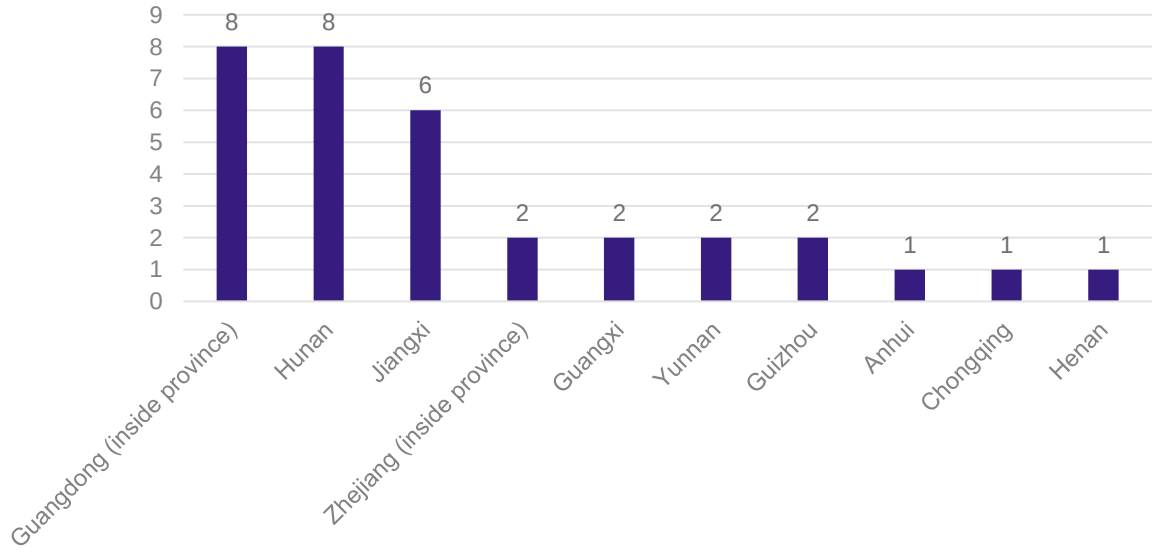
small. Only 62 firms, or just below 10% of the surveyed firms, are in this group, of which, as noted above, 18 are already investing out and are considering further investments, 23 are investing out but are not considering further investments, and 21 are considering investing out of China for the first time. In this group of 62 firms, 14 (22.5%) are home appliance firms, 17 (27%) are garments, 27 (43.5%) are footwear firms and only four (6%) are toy firms. Perhaps of most significance is that the footwear firms comprise 30% of the 89 surveyed firms in that sector. It is also important to note that 52 of the 62 firms are OEM (84%), eight are ODM (13%) and only one is OBM (the last being a mixed activity firm). In terms of size, we can report that about a third of the group, 21 firms, had more than 500 employees.

In the rest of this section, we look closely at the existing foreign investments undertaken by firms in this group, and the motivations and influencing factors of those who plan to invest outside of China in the future.

5.1 Relocation within China

Figure 17 shows the distribution of the 33 enterprises that partially or completely transferred to other parts of China between 2014 and 2016. Ten of these firms relocated entirely within the same province (and thus stayed within the Eastern region) – eight PRD firms to neighbouring towns inside Guangzhou province and two in the YRD moved to other cities in Zhejiang province. Their relocation perhaps enabled them to build and own their own premises. Another 23 firms, all bar one from the PRD, partially transferred their production base to eight inland provinces. 16 of these firms transferred to Central region provinces, including Hunan and Jiangxi,[23] while only seven transferred to the Western region.

Figure 17: Relocation to other provinces in China



One possible reason for firms' location choices when moving within Mainland China is that a majority of migrant workers in the PRD come from provinces such as Guangxi, Hunan, Jiangxi, Guizhou and Sichuan (Sun and Yong, 2009). Relocating to these areas facilitates both retention of existing labour as well as recruitment of new labour. For these reasons, one of the firms interviewed as part of the case study work for the project, FIOCCO International, a Ningbo-based garment firm, had set up a new factory in Fuzhou city, Jiangxi province, in 2004. Several factory managers told us during the survey that they visited these provinces for labour recruitment annually and through this process had built solid connections with

[23] This included a single YRD firm, which established a new operation in neighbouring Anhui province.

Box 5: Key factors in PRD firms' choice of relocation

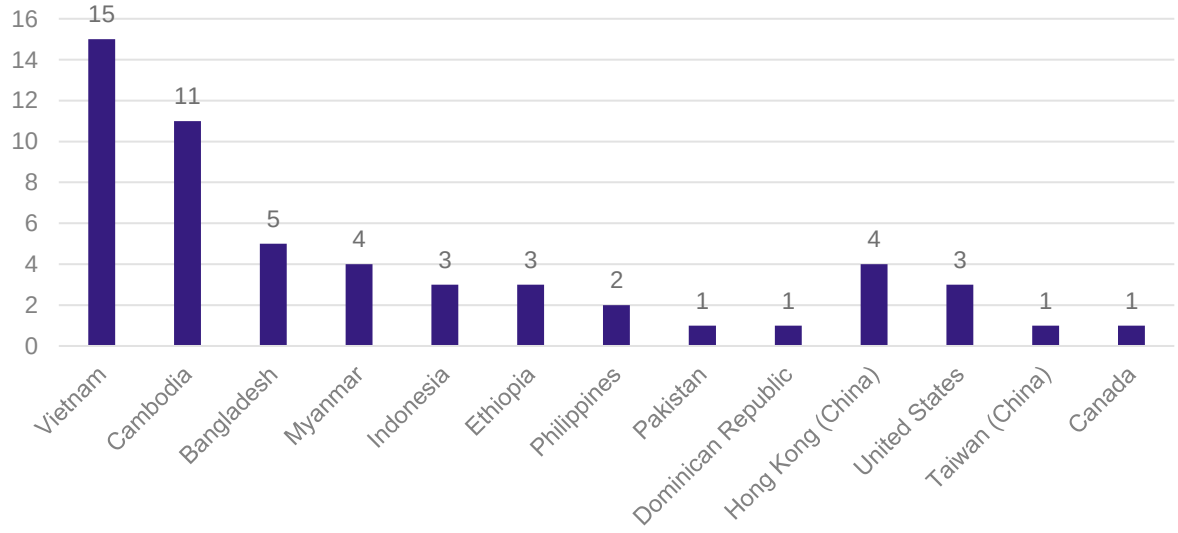
One entrepreneur ready to transfer his production bases to Jiangxi indicated that solving skilled labour shortages was an important consideration. In recent years, many garment entrepreneurs have gone to traditional labour-exporting provinces such as Hunan and Jiangxi after the Spring Festival holiday to recruit skilled workers. Some entrepreneurs even use local television channels and technical schools to advertise for recruits. For skilled workers with several years' experience, many companies are willing to offer attractive salaries and benefits. However, workers, especially those who are middle-aged and experienced, prefer to stay in their home town and find a new job in local factories, based on their children and family situation. The entrepreneur understood this, and explained that, though wages in Jiangxi might be lower for those workers, living costs would also be much lower for them than in the PRD. He is thus planning to move several production lines to Ganzhou city, Jiangxi province, next year (2018), a city that is known as the "south gate" of Jiangxi and is close to Guangdong, with good transport links via the Guangdong–Jiangxi Expressway. A large number of Guangdong enterprises have moved, attracted also by good infrastructure. The main road of the Ganzhou City Economic and Technological Development Zone, which the entrepreneur has visited many times, is directly connected to the Expressway.

many local technical schools. Distance is another reason: Hunan and Jiangxi are close to Guangdong, and this, together with good transport links, has increased the convenience of managing at a distance. Policy inducements from the governments of Hunan and Jiangxi to attract direct investment from Guangdong also play a role.

5.2 Past outward investment from China

As noted above, 41 firms (6.4%) are outward investors, having established operations outside China at some point in the past. Of these, 36 have invested in low-income countries and 5 have expanded to developed economies (including Hong Kong, the US, Taiwan and Canada) for market expansion reasons and to access technology. A total of 11 of the 36 enterprises in low-income countries have more than one overseas factory, adding up to 45 investments in these countries; their distribution is shown in Figure 18.

Figure 18: Destination countries of outward investors from China



The concentration in Southeast Asia is strongly evident in Figure 18 – 35 investments in Southeast Asia, 6 in South Asia and only 3 in Africa (all in Ethiopia). Vietnam and Cambodia are becoming preferred destinations for China's light industries', owing to their low wages, young and skilled labour forces and proximity to China.

Box 6: The host government's role in investment location choice: footwear in Ethiopia

According to a footwear manager in the survey, the firm developed a new plant with much support from the Ethiopian government. After the Guangdong government introduced his firm to Ethiopia's visiting prime minister, it took only three months to investigate the market, set up a factory and start producing shoes in 2012. Three years later, the company developed a new factory park, which started production in August 2016 and will be fully on-stream in 2018. The Ethiopian government has provided effective facilitation in meeting the challenges the firm faced, providing support for human resource mobilisation and worker recruitment, familiarisation with the local culture and legal system and favourable trade and tax policies (duty-free and income tax-free). The firm has now trained many local managers, and is comfortable engaging with government, the courts and local firms. It claims a profit rate of about 10% compared with an average 2-3% in China, the differential owing mainly to concessional market access to EU and US markets, via AGOA and EBA GSP preferences. It will develop a new Light Industry Park, which could become a platform for Chinese firms entering Ethiopia in the future, especially beneficial for smaller firms that are interested in Ethiopia after seeing this firm's success but that may struggle to deal alone with entry challenges.

In 2017, the highest monthly wage for the industry in Vietnam and Cambodia is only 60-80% of that found in Ningbo. According to the General Statistics Office of Vietnam, Vietnamese manufacturing and processing sectors grew by 10.2% in the first six months of 2017. Vietnamese minimum wages have risen steadily since 2010, including 12.4% in 2016 and 7.3% since January 2017. Nonetheless, the minimum wage in Hanoi and Ho Chi Minh City is still only about $166 per month, well below the level in Eastern China of about US$280,[24] while productivity differentials are small.[25]

Cambodia also has relatively low labour and land costs, though some surveyed firms complained of strikes, and minimum wages are rising in garments, from $140 to $153 per month in 2016 (Khuon and Zsombor, 2016). Garments is Cambodia's main manufacturing activity and provides more than 70% of exports, 70% of which go to the US and the EU (where Cambodia has DFQF access under the GSP scheme).[26]

Of the 640 surveyed firms, only three had established production bases in Africa, all in Ethiopia, and all in footwear. They justified this by pointing to Ethiopia's strong recent growth, its cheap labour and preferential policies for Chinese enterprises. The government has actively promoted agro-processing to provide raw materials for garments and footwear, as well as industrial parks to house manufacturing FDI.

5.3 Characteristics of firms likely to establish operations abroad

Although only 41 firms indicated they were already investing outside China, analysis of their characteristics reveals some interesting trends (see Table 18 below).

[24] The minimum wage in Zhejiang was 1860 RMB and in Guangdong 1895 RMB, with average exchange rate for 2016 US$1 = RMB6.64.

[25] According to the Vietnamese Ministry of Labour, the minimum wage in 'first-tier' areas will increase to 4.8 million VND (about $213) by 2020.

[26] Cambodian merchandise exports grew 17.9% to $10.1 billion in 2016, and garment exports by 8%. See http://wits.worldbank.org/CountryProfile/en/KHM

Table 18: Characteristics of relocated firms

	No. of relocated firms	Freq. (in total relocated firms)	Number of total firms with same category	Proportion of relocated firms to total firms with same category	Freq. (total firms with same category in whole valid samples)
Region					
Pearl River Delta	37	90.2%	419	8.8%	65.5%
Yangtze River Delta	4	9.8%	221	1.8%	34.5%
Sector					
Home appliances	5	12.2%	275	1.8%	43.0%
Textile and Apparel	11	26.8%	196	5.6%	30.6%
Footwear	24	58.5%	89	27.0%	13.9%
Toys	1	2.4%	80	1.3%	12.5%
Manufacturing type					
OEM	25	61.0%	420	6.0%	65.6%
ODM	11	26.8%	80	13.8%	12.5%
OBM	4	9.8%	105	3.8%	16.4%
Mixed	1	2.4%	19	5.3%	3.0%
Ownership structure					
Collective ownership	1	2.4%	6	16.7%	0.9%
Private ownership (domestic funded)	6	14.6%	263	2.3%	41.1%
Private ownership (foreign funded)	33	80.5%	327	10.1%	51.1%
Sino-foreign joint venture	1	2.4%	44	2.3%	6.9%
Firm size					
20-299 (Small)	14	34.1%	323	4.3%	50.5%
300-999 (Medium)	16	39.0%	222	7.2%	34.7%
1000 and above (Large)	11	26.8%	95	11.6%	14.8%
First year of relocation					
Before 2000	5	12.2%	-	-	-
2000-2010	10	24.4%	-	-	-
After 2010	26	63.4%	-	-	-

First, 37 of the 41 firms are located in the PRD, where the presence of foreign-owned firms – that is, inward investment into China – is much stronger than it is in the YRD. Indeed, 8.8% of PRD firms are outward investors compared with only 1.8% of YRD firms, suggesting foreign firms are more willing to invest out of China than fully domestically owned firms. This is not surprising, since the foreign-owned firms have already relocated production abroad – that is, into China – and have relatively more experience in cross-border business than most domestic Chinese firms. In fact, 33 of the 41 outward investor firms are wholly owned foreign subsidiaries, equivalent to 10.1% of these firms within the sample, whereas only 2.3% of domestically owned and joint venture firms have established production outside China.

Box 7: Relocation by a very large textile and garment manufacturer (Shenzhou International Co.)

Shenzhou International is a very large integrated textile and garment manufacturer in Ningbo and is listed on the Hong Kong Stock Exchange. Its 2015 turnover was 12.6 billion RMB and it is a major OEM supplier to global brands such as Nike, Adidas and Uniqlo. In order to cope with rising labour costs, Shenzhou International established a garment factory in 2005 in Cambodia, and further factories in 2008 in Quzhou, Zhejiang province, and Anqing, Anhui province. These were supplied by its fabric plant, which stayed in Ningbo, but in 2013 the company established a second fabric plant in Vietnam, presumably instead of expanding the Ningbo plant, given rising domestic wages. This supplied fabric to the Cambodia garment operation, and in 2014 a new garment assembly factory was set up in Vietnam. In 2016, Shenzhou International had sales of 15.1 billion RMB and a profit of 2.95 billion RMB with 74,600 employees, of whom 11,125 were in Cambodia and 11,880 in Vietnam. Given its size, its vertical integration, its OEM focus (rather than domestic OBM) and its likely greater independence of action from its customers than is the case for smaller firms, Shenzhou has considerable resilience to risk, making expansion outside China to benefit from lower labour costs very attractive.

Looking at the different sectors, 24 of the 41 outward investing firms are in footwear, equivalent to 27% of all footwear firms in the survey. In striking comparison, only 5.6% of garment firms (11 firms) are outward investors, with much smaller shares in home appliances (1.8%) and toys (1.3%). In terms of activities, 13.8% of ODM firms (11 of 80) are investing out, compared with only 6% of OEM firms (25 of 420) and 3.8% of OBM firms (four firms). The reason for the lower rate of outward investment by OBM firms is unclear, but a possible explanation is that their own brands are mainly focused on the Chinese market,[27] a possibility reinforced by the fact that almost all these firms are single-plant firms despite being OBM firms. As a result, savings on labour costs as a result of relocation would be offset by higher transport and logistics costs as well as greater management time and cost necessary to run foreign operations. Alternatively, these firms may have greater flexibility than OEM firms in developing strategies to adjust existing operations to respond to rising costs. This point requires further investigation of survey findings.

In terms of size, there is some bias towards large firms investing abroad – 11.6% of the large firms (more than 1,000 employees) are among the 41, compared with only 4.3% of small firms (below 300) and 7.2% of medium firms (300-1,000). Nine of the eleven large outward investing firms are 100% OEM firms, for which diversifying location may be a fairly straightforward strategic option in response to rising wages.

An important finding is that the ‘flying geese’ may be gaining pace: firms have been much more likely to invest abroad in recent years – 29 of the 41 firms have first invested abroad since 2010. This may be explained either by rising wages and other costs in China or by

[27] All surveyed firms export more than half their output, but it is possible that the OBM firms are exporting mainly non-OBM output.

competitive pressure from declining market demand for products in export markets, given slower growth in European and US markets – or both. There is perhaps some significant difference in the age of outward investing firms, with about 10% of firms established in China before 2000 investing out, compared with only 4.8% of firms established since 2000.

5.4 Future outward foreign direct investment plans

This section looks more closely at those 39 surveyed firms, 6.1% of the surveyed sample, that reported plans to enter new countries or expand existing foreign production activities during the next three years. The discussion should be taken as indicative only, since it is based on a very small number of firms. Of the 39 firms, 24 were already investing abroad while 18 would be investing abroad for the first time. Of the 39 firms, 34 are located in the PRD and 5 in the YRD, accounting for 8.11% and 2.26% of the surveyed firms in the two regions, respectively. In terms of industrial sector, footwear firms are again the most common, with 14 firms, or 15.7% of all footwear firms – a smaller percentage than those already investing out, it should be noted. As far as the other sectors are concerned, 11 home appliance firms (4%), 11 garment firms (5.6%) and just 3 toy firms (3.75%) plan to go abroad.

Only about half the firms with foreign investment intentions during the next three years had developed a 'short list' of preferred locations, an interesting finding in itself. Of the small number of firms that did share their short lists, low-income countries in Southeast Asia were predominant, with only two firms mentioning African countries. A total of 70% of the firms indicated they planned to sell their output in third countries, rather than either the host market (indicated by 25%) or China.

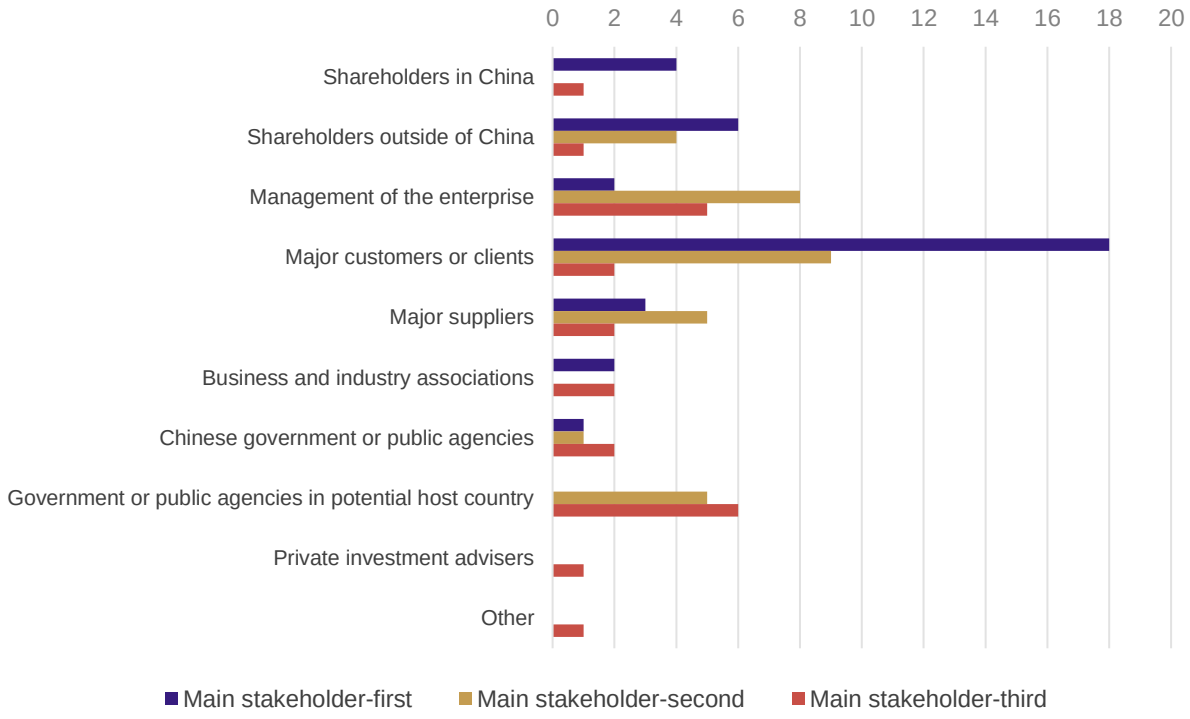
Figure 19 reports on firms' motivations for FDI, with low-cost labour abroad by far the most significant: 14 firms indicated it was the most important and 23 of 39 included it in their top three reasons. But if the benefits of a presence in host country markets, in terms of either lowering transaction costs or increasing market expansion, are taken together, nearly the same number of firms pointed to this as to lower labour costs. About half as many firms as those emphasising lower labour costs reported the influence of major customers as a significant influence in their decision to invest outside China. As discussed below, however, major customers were much more significant in firms' choice of *where* to invest abroad – location choice – than in the 'prior' decision of *whether* to invest abroad. The responses on motivations for outward investment are consistent with the main challenges facing firms in recent years, reported in Section 3, where rising wages were the most important, followed by shrinking markets and rising input costs. Home appliance firms emphasised expanding sales to third countries, while footwear and toy firms pointed to low-cost labour in host countries.

The main factor influencing outward FDI location choice was low labour costs relative to China, which was identified twice as often as any other factor, both as most important and as among the three most important. Other factors identified by significant percentages of the firms (only 39 in total) were maintaining existing customers, host country tax, investment and trade policies and opportunities for supplying new customers and markets. Some firms mentioned low-cost and reliable energy and water infrastructure.

Figure 20 illustrates that major customers are regarded as the most important stakeholders influencing firms' location decisions, with nearly half – 18 of 39 – the firms signalling that customers were the most important, and 29 firms including this reason among their top three. Firms' own management was reported as the next most important influence, with 15 firms including it in their top three, while non-Chinese shareholders (presumably parent companies of foreign-owned firms) were the third most influential group, to which 11 firms pointed.

Figure 19: Main factors motivating outward investment

Figure 20: Most important influence on location choice



5.5 The main challenges of outward FDI

In discussion with interviewees in the process of completing the questionnaire, they identified a number of issues as significant challenges to investing out of China, and these are worth reporting here, roughly in order of significance for those who talked about them.

The first is the cultural gap between operating at home (in China) and abroad. This relates to both the lives of expatriate managers (and their families) outside the workplace, as well as communication with local employees for effective human resource management. Two garment firms which have been operating factories in south east Asia expressed concerns about the diligence and discipline of local workers and about the strength of the labour unions. A second concern was policy risk in host countries, in particular the lack of protection of foreign investors' property rights and unpredictable changes in policies.

Managers expressed concerns, thirdly, about the sparseness of firms within supply chains in potential host countries, as well as ancillary infrastructure and service suppliers. They acknowledged the difficulty of transferring entire supply chains from China, but the scarcity of industrial clusters, especially in Africa, places a major burden on firms, especially early movers. Financial regulation (especially on profit remittances) and volatile exchange rates were a fourth point raised, seen to be exacerbated by perceived limited access to domestic finance in host countries, especially for foreign firms.

Some firms – those that considered moving their operations abroad as an alternative to continuing production in China, and not as additional to the latter – pointed to the continuing benefits of their location in China, both substantial markets (within China) and support from governments in the form of land, tax and transport policies. These firms also sought greater clarity and assurance on what financial support might be available from the Chinese government for outward investment, over and above what host country governments might provide. This was reinforced by the firms planning outward investment identifying low-cost financial support as the most significant asset which would enable them to undertake their planned FDI. Next came marketing, sales and distribution capabilities, and third was past international experience (exporting, importing or FDI). Already noted earlier in this section is the importance of customers – global value chain 'lead firms' – both in influencing investment location choice and in enabling successful entry into host countries, because existing lead-firm networks in a host country provide access for entering supplier firms on that value chain and enable them to establish their own business presence.

6. CONCLUSION: SUMMARY AND POLICY IMPLICATIONS

Accelerating real wage growth in China from the mid-2000s has had significant cost implications for export-oriented LILM industries on China's east coast, and raised the possibility of a wave of relocation of manufacturing jobs to low-income countries in Africa and other parts of Asia. ODI and CNSE carried out a survey in four LILM sectors – home appliances, garments, footwear and toys – of 640 firms. Sample selection took account of the spatial distribution of Chinese manufacturing firms within industrial clusters, by focusing on a small number of cities: three (Guangzhou, Zhongshan and Dongguan) in the PRD and one (Ningbo) in the YRD. The sample also took account of firms' realistic potential for outward investment, by restricting inclusion to 'above-scale' firms exporting more than half of their turnover. The survey sample is representative of all above-scale export-oriented firms in the four industries.

All firms in the sample were privately owned, but only 42% were owned by domestic Chinese owners, with 52% wholly-owned foreign subsidiaries. Just over half were small and one-third

were medium, with only 15% being large. Two-thirds of firms were OEM, 17% ODM and 13% OBM. Annual wage growth in the sample during 2014-2016 was 10.8%, while annual turnover growth was 6%, but turnover grew only 0.1% per annum in footwear versus 9.4% in home appliances. Nearly one-third of footwear firms and nearly a quarter of garment firms reported that their operations in China had contracted, while just below half of home appliance firms reported expansion.

6.1 Challenges and responses for firms in the four LILM sectors

Key questions in the survey asked firms to identify the top three challenges they had faced during 2014-2016, and their top three responses to these. **The largest group of firms – 38% – identified rising wage costs as their top challenge**, with 78% rating it second or third. Wage costs were the largest group for each sector also: more than 40% of firms in garments, footwear and toys. But only 27% of home appliance firms were most concerned about wages, with material input costs a close second at 24%. The perception of wage costs as less severe in this sector was statistically significant. A further 6% of all firms rated non-wage labour costs as their top challenge, though as many as 13% in footwear did so – also statistically significant. Across the sample, materials inputs costs were rated top by 16% of firms, and decreasing market demand by 17% (22% in footwear).

Turning to responses, **'technology upgrading: machines or digitalisation' was the most common response**, from 31% of firms, with 54% ranking it in their top three. Cost control over inputs and production was next largest, rated most important by 27%, and changing product lines or expanding markets was ranked the top response by 24%.

The differences between these three factors as the top response are not necessarily significant, but all three were much more common than **relocation of operations**, either elsewhere in China or abroad. This **was far less common as a primary response**: only 6% (36 firms) identified this as their top response and only 10% (62) in their top three. Of these, around half – 19 and 34, respectively – indicated that they preferred relocation abroad rather than within China. But footwear was quite distinct: 12 of the 19 and 21 of the 34 who saw relocation abroad as an option were footwear firms (14% and 24% of the footwear firms surveyed). Though only 8% of foreign-owned firms preferred relocation, they were four times more likely to do so than domestic-owned firms.

The proportion of firms pointing to relocation may have been reduced by the inability to sample firms that had relocated in their entirety (migrated within China or abroad) and by the non-reporting of instances where investment abroad (or to a new location within China) was undertaken not by the surveyed firm itself but by its parent or another associated firm. Even with these qualifications, however, the proportion of firms interested in relocating was very low. Finally, 8% of all firms indicated that closing down was their top option in response, and again many of these were footwear firms – 17% of this sector's firms in the survey.

6.2 Trends for firms that have invested or will invest abroad

We looked closely at the 62 firms that indicated they had invested abroad in the past or planned to do so during the next three years. This was admittedly a small group, so findings should be treated with caution. Nonetheless, there are some interesting patterns. Forty-one firms have undertaken FDI in the past – 35 of their 45 projects are in Southeast Asia and 6 in South Asia. Only three projects are in Africa – all footwear investments in Ethiopia. The 41 firms are again quite concentrated: 33 are foreign-owned, 24 are footwear firms (27% of the footwear sample) and 11 are large firms. Firms in the PRD are eight times more likely than firms in the YRD to be outward investors. Importantly, 29 of the 41 firms undertook FDI for the first time after 2010.

A total of 39 firms were planning outward FDI in the next three years – 18 of the 41 existing investors – and 21 planning were their first FDI. These were also concentrated: 14 in footwear (16% of all footwear firms) and 34 in the PRD proportion of the PRD sample). Most indicated Southeast Asia as their preferred destination, with only two referring to Africa. Of the 39, 14 indicated low cost labour was the primary factor in location choice; for another 9, it was the second or third factor. Nearly half – 18 of 39 – said major customers had more influence than other stakeholders over their location decision, with their own management and non-Chinese shareholders (presumably parent companies of foreign-owned firms) also significant.

In sum, the survey suggests **outward investment is most likely by firms that have some or all of the following characteristics: large, foreign-owned, in footwear and located in the PRD**. Southeast Asia remains a much more likely destination for outward investment than does Africa. However, Chinese LILM firms still most commonly adopt the standard responses to challenges of rising costs and tighter demand, such as upgrading technology, tighter controls over other costs and expanding markets and product range, as opposed to relocating production elsewhere in China or abroad. The low proportion of firms adopting the latter strategy probably also reflects the weight of small, single-plant OEM firms in the survey – there are few incentives for these firms to relocate unless other firms, with which they are interdependent, do the same This includes both large firms that are major customers and other small firms in their cluster. In this sense, relocation is a collective action problem.

It is not surprising that large and foreign-owned firms are more likely to invest abroad, since large firms are more likely to be have the management capabilities, business networks and financial resources to carry the additional costs and demands of operating across multiple jurisdictions, while foreign-owned firms by definition already have experience of doing so.

Footwear firms differed from other sectors in several responses as well as in their interest in relocation. It is significant they reported stagnant turnover; moreover, they were less interested in upgrading technology in response to rising wages but more concerned about non-wage labour costs and more willing to relocate or to close their operation. These responses may reflect their particular ownership pattern – high foreign ownership – together with their particular activity mix – a high share of ODM.

Compared with footwear, toy firms had similarly high foreign ownership, but more were OBM than ODM, and they had no significant interest in investing abroad, preferring to improve technology, as mechanisation is more possible in toys than in footwear production. Footwear may be closer to garment production in this respect, but a high share of garment firms are small OEM producers, less able or likely to internationalise independently. The survey supports the view that sector growth has slowed in China, reflected also in aggregate data showing a steep 12.5% decline in footwear exports in 2016, even though the country remains the global leader, with 69% of output and 59% of exports (World Footwear, 2016, citing statistics from the China Leather Industry Association (CLIA)).

The survey also confirms the growing migration of the footwear industry to Southeast Asia and to Ethiopia, and underlines the view of the CLIA president earlier in 2017:

> The footwear industry has always been experiencing industrial transfer in recent years, whether to Southeast Asian countries or central and western China. The relocation can be divided into two groups. For those companies owned by Taiwan and Hong Kong entrepreneurs, which are oriented towards overseas markets, the relocation destinations are both inland China and other countries. Most of these manufactures are in the supply chain of big brands… For companies established in China and owned by mainland China entrepreneurs, most of them are upgrading their productivity at their existing locations, and some of them, especially the big players of them, choose to set up new plants in inland provinces in China. We have seen the choice of coastal provinces has been declining and that of inland provinces has been going upward… few

of the mainland footwear manufactures choose to set up new facilities overseas' (Tannery Magazine, 2017).

6.3 Policy implications

Policy implications follow directly for potential host country governments as well as the Chinese government agencies that promote outward investment. The first, and most important, is **the need for realism about the overall potential for jobs transfer** – the numbers of 'outbound' jobs are not large, even though their in-migration could bring a significant boost into host countries with a low base of manufacturing jobs. The rapid rise in wages in China can be expected to continue and, even though there is still considerable scope for firms to establish operations within China in the Central and Western provinces, changing costs with China will likely result in an increase over time in the proportion, and numbers, of firms investing outwards or migrating abroad. That said, it is essential for potential host countries hoping to benefit from inward investment to actively address the challenges – infrastructure, institutions and labour supply quality – to lowering their location-specific costs, while at the same time engaging directly with Chinese firms in LILM sectors.

Second, **investment promotion efforts should in the near term focus on large foreign-owned firms in the PRD, particularly in the footwear sector**. However, more important in the longer term would be to focus on developing investment promotion strategies focused on clusters – that is, on enabling collective relocation by groups of firms. One way into this would be to work first with large 'anchor' firms, themselves manufacturers that are potential outward investors and that would take OEM suppliers with them, and second with global brand or retail corporations. These will not necessarily be large (in financial terms) inward investors into low-income host countries, but could as GVC lead firms enable and facilitate the co-movement of groups of their OEM suppliers. This is already beginning to be done with some lead firms.

Third, there is a need to **focus greater promotion effort on individual entrepreneurs who may be interested themselves in migrating**, closing their (OEM) firms in China and restarting in a host low-income country. This group often faces significant personal and business barriers to entry into possible host countries, including difficulties in resettling family, raising business finance, negotiating regulatory, licensing and trade facilitation hurdles, establishing business networks and recruiting local managers and labour. Investment agencies can facilitate all of these but do not always do so for these small firms, given the resulting resource burden. Mechanisms for achieving economies of scale and scope in agencies might be investigated.

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APPENDIX: SURVEY QUESTIONNAIRE

SET China 'Manufacturing Employment Relocation' Survey Questionnaire
(For managing director of labour-intensive light manufacturing companies)

About this survey

This questionnaire asks for information relating to Chinese Labour-intensive Light Manufacturing Enterprises' changing cost pressure and foreign direct investment (FDI) activities or potentials during the three-year period 2014 to 2016 inclusive.

Overseas Development Institute (ODI) works in strong collaboration with the Peking University and China Council for the Promotion of International Trade (CCPIT), which are the lead local partners, to perform this survey as part of the Supporting Economic Transformation (SET) Project.

Confidentiality

All information gathered by this survey will be held in strictest confidence. Under no circumstances will ODI, Peking University, or the SET project publish, release, or disclose any information on, or identifiable with, individual persons or enterprises.

Scope

The statistical unit for the survey is **enterprise**. An enterprise refers to a unit that has autonomy in decision making regarding FDI and can range from a very small concern with only one or two employees to a much larger and more formal business or enterprise.
Currency unit for the survey is Chinese Yuan, unless otherwise defined.

Part 1. General information

Company ID	
Enumerator ID	
Company name	
Interviewee's position	
1.1 Province	(See code)
1.2 City	(See code)
1.3 Other City	**(Conditional on 1.2 = 99)**
1.4 Sector	(See code)
1.5.1Main activity: Subcontract	A.Yes B. No (Go to 1.5.2)
1.5.1.1 if 1.5.1 == Yes	A. end consumer products B. Components C. Both A and B
1.5.1.2 if 1.5.1 == Yes, % of the annual sales	%
1.5.2 Main activity: Manufacturing	A. Yes B. No (Go to 1.5.3)
1.5.2.1 if 1.5.2 ==Yes	A. end consumer products B. Components C. Both A and B
1.5.3 Main activity: (% of the annual sales)	A. OEM B. ODM C. OBM D. Other_____
OEM	%
1.5.3.2 ODM	%
1.5.3.3 OBM	%
1.5.3.4 Other	
1.6 Three main products (descending order by the annual sales)	1._____ 2._____ 3._____
1.7 Number of factories in mainland China owned by the enterprise? (including single venture and joint venture)	

Note: 'Main activity' refers to those activities whose revenue account for more than 50% of the total sales value. 'Subcontract' refers to the production of products entrusted to other external manufacturers.

1.8 When was the enterprise established in mainland China?	YYYY

1.9 What is the ownership structure of your enterprise? Answer in %	
1. Central State ownership _____%	2. Provincial ownership _____%
3. Municipal ownership _____%	4. Collective ownership _____%
5. Private Chinese ownership _____%	6. Foreign ownership _____%
7. Other ownership _____%	**(add to 100)**

Province		**City**		**Sector**	
Jiangsu	1	Shanghai	1	ICT	10
Zhejiang	2	Guangzhou	2	Electrical machinery	11
Guangdong	3	Shenzhen	3	Textile clothing, cap and leather	12
Shanghai	4	Dongguan	4	Footwear	13
Other	5	Zhongshan	5	Toys (cultural, sports and entertainment)	14
		Foshan	6	Other	99
		Nanjing	7		
		Suzhou	8		
		Hangzhou	9		
		Ningbo	10		

Other	99

Part 2. Current Challenges

Note: All questions in this section refer to the three years 2014 to 2016. “Domestic” refers to mainland China.

	Yes (1)	No (0)
2.1 Has the enterprise expanded this operation/factories?	☐	☐
2.2 Has the enterprise contracted this operation/factories?	☐	☐
2.3 Has the enterprise opened/acquired a new operation/factories in China?	☐	☐
2.4 Has the enterprise closed/sold any operation/factories in China?	☐	☐
2.5 Has the enterprise cultivated its own brand?	☐	☐

2.6 What are the main challenges your enterprise has faced between 2014 and 2016?	Please rank the top 3 practices
A. Land: lack of access or cost	
B. Rising wages	
C. Rising non-wage labour costs (e.g. social insurance, staff welfare)	
D. Insufficient supply of suitably skilled workers	
E. Price pressures from customer	
F. Rising input costs: materials and components	
G. Rising input costs: research and design	
H. Rising input costs: electricity, water, transport and logistics	
I. Finance: lack of access or cost	
J. Tax burden	
K. Business regulation pressure (e.g. environmental protection, credit insurance, quality inspection, safety supervision)	
L. Diminishing market demand and decreasing business orders	
M. Intensified competition and lower market share	
N. Insufficient presence of suppliers of inputs	
O. Social and political problems (crime, labour conflict)	
P. Lack of affiliated service alongside the industrial chain.	
Q. Lack of favourable policies compared with other sectors.	
R. Other, please specify_____	

2.7 How serious for your enterprise have the following cost pressures in China been over	Degree of pressure (Insignificant=1, Crucial = 5)

past three years ?	1	2	3	4	5	N.A
A. Labour costs: wages	☐	☐	☐	☐	☐	☐
B. Labour costs: non-wage costs (e.g. social insurance, staff welfare)	☐	☐	☐	☐	☐	☐
C. Transportation and logistics costs	☐	☐	☐	☐	☐	☐
D. Infrastructure costs including land, buildings, rent, local taxes etc.	☐	☐	☐	☐	☐	☐
E. Utility costs e.g. electricity, water	☐	☐	☐	☐	☐	☐
F. Material and component costs	☐	☐	☐	☐	☐	☐
G. Finance costs (interest, mortgage, agent fees etc.)	☐	☐	☐	☐	☐	☐
H. Taxes and Fees: Company income tax and others	☐	☐	☐	☐	☐	☐
I. Other costs, please specify_____	☐	☐	☐	☐	☐	☐

2.8 In response to the cost pressures and challenges identified in 2.6 and 2.7, what practices has your enterprise adopted? Please rank the top 3 practices in terms of degree of effectiveness.	Top 3 practices
A. Moving this operation to a lower cost location *in China*	
AA. Province in China _____ AB. Part of this operation, or the whole operation _____	
B. Relocating this operation to a lower cost location *abroad*	
BA. Country/-ies _____ BB. Part of this operation, or the whole operation _____	
C. Technological upgrade: Using machinery or digitalization to replace workers	
D. Standardizing production etc.	
E. Controlling input costs more tightly	
EA. Input/s _____	
F. M&A activity	
FA. Type of activities: A. Acquisition of another company by this enterprise B. Acquisition of this enterprise by another company	
G. Changing products or activities: scrapping/adding/diversifying	
GA. Type of activities: A. Upgrading existing products B. Scrapping of products/activities (contraction) C. Adding of products/activities (expansion)	
H. Expanding marketing and distribution channels	
I. Closing this operation and downsizing (including closing the factory)	
J. Purchase materials and components and sell products via E-commerce.	
K. Other, please specify_____	
L. N.A.	

2.9 If your firm replaced labour by investing new machines in 2016	Yes (1) ☐	No (0) ☐ [Go to3.1]
2.9.1 Where did your main fund come from?		

2.9.2 How much did it cost (10 thousand RMB)?	

Part 3. Existing overseas trade, investment and operations

Note: All questions in this section refer to the three years 2014 to 2016. “Export” and “and tes includes Hong Kong, Macao, Taiwan.

3.1 Does your enterprise engage in export activities?	Yes ☐	No ☐ Go to 3.6
3.2 Please list the top three export countries (incl. HK, TW)	1_____ 2_____ 3_____	
3.3 Please list the top three export products	1_____ 2_____ 3_____	
3.4 In 2016, what was the share of (1. processing trade/2. self-owned brand /3. others) in total turnover?	1 Processing trade_____ 2 Self-owned brand _____ 3 Others _____	
3.5 In 2016, what was the share of exports in total sales?	%	
3.6 Does your enterprise engage in import activities	Yes ☐	No ☐ Go to 3.10
3.7 Please list the top three import countries	1_____ 2_____ 3_____	
3.8 In 2016, what was the share of imports in total sales?	%	
3.9 What is the usage of your imports?	1. Sales 2. Production processing 3. Other _____	

	Yes (1)	No (0)
3.10 Did your enterprise undertake FDI by producing goods or services abroad before the end of 2016?	☐	☐
(Explain the definition of FDI if necessary)	If no, go to 4.1	

3.11 When did your enterprise first produce abroad?	YYYY
3.12 Why did your enterprise first produce abroad?	A. Market Seeking B. Source Seeking C. Labour Seeking D. Tech Seeking E. Other_____
3.13 In which foreign country (outside mainland China) did your enterprise first produce?	
3.14 At the end of 2016, in how many countries was your enterprise producing?	
3.15 What is your main purpose if your enterprise has expanded production recently?	A. Expand mainly domestic sales, B. Expand mainly foreign sales C. N.A.

3.16 Please list the three *foreign* countries where your enterprise has the largest FDI, in terms of labour force at end-2016, starting with the biggest (including Hong Kong, Macao, Taiwan)
1._____ 2._____ 3._____

For your FDI in each of the three destinations in 3.11, please answer:	**3.17** Destination 1	**3.18** Destination 2	**3.19** Destination 3
A. year of entry	Year	Year	Year
B. share of the enterprise’s total FDI stock value at end-2016	%	%	%
C. main activities A: Subcontract; B: OEM; C: ODM; D: OBM			
D. number of employees at end-2016			
E. ratio of non-Chinese to Chinese employees	( ):( )	( ):( )	( ):( )

During the past three years 2014-2016, has your enterprise received any support - from the following *for its FDI operations*?	Yes (1)	No (0)
3.20 . Central government, China	☐	☐
3.20.1. Please indicate which types of support: A. Provision of finance; B. Reduction of costs or taxes; C. Provision of Information D. Other_____		
3.21 . Provincial or municipal government, China	☐	☐
3.21.1.Please indicate which types of support: A. Provision of finance; B. Reduction of costs or taxes; C. Provision of Information D. Other_____		
3.22 . Host country government (national or provincial)	☐	☐
3.22.1. Please indicate which types of support: A. Provision of finance; B. Reduction of costs or taxes; C. Provision of Information D. Other_____		
3.22.2. Please indicate which host country/-ies _____		
3.23 . Any other organisation, e.g. customer, supplier or financier	☐	☐
3.23.1. Please indicate which types of support: A. Provision of Finance; B. Reduction of costs or taxes; C. Provision of Information D. Other_____		
3.23.2. please indicate your enterprise's relationship with the private organization: A. Customer of your enterprise; B. Supplier to your enterprise; C. Financial investor/lender D. Other_____		

3.24 Has investing abroad helped your enterprise gain or improve the following capabilities? Please indicate the degree of impact	Degree of impact (Insignificant=1 , Crucial = 5)					
	1	2	3	4	5	N.A
A. Marketing and brand development	☐	☐	☐	☐	☐	☐
B. Technological capability	☐	☐	☐	☐	☐	☐
C. Production efficiency: use of materials/labour	☐	☐	☐	☐	☐	☐
D. Management effectiveness	☐	☐	☐	☐	☐	☐
E. Business network construction	☐	☐	☐	☐	☐	☐
F. Other, please specify**:_____.**	☐	☐	☐	☐	☐	☐

	Yes (1)	No (0)
3.25 During 2014-2016, has your enterprise ever withdrawn FDI from any country?	☐	☐

Part 4. Future plans for foreign direct investment (FDI)

	Yes (1)	No (0)
4.1 Does your enterprise have any plans to enter new countries or expand existing FDI (foreign production activities) during the next three years?	☐	☐
	If no and 3.10 = 'No', go to Part 7	

4.2 **What are the three main factors that are motivating your enterprise to undertake FDI?**	**Top 3 factors**
A. Expand sales in the host country market (or markets in its region)	
B. Expand sales to third countries/global markets/existing customers	
C. Pressure to relocate from significant customer/client	
D. Avoid overcapacity and market competition in China, incl. risk diversification	
E. Gain first mover advantage in host country market (or markets in its region)	
F. Avoid international tariff or trade barriers in host country market	
G. Avoid international tariff or trade barriers in third country markets	
H. Reduce transactions/production costs by presence in host country market	
I. Benefit from low-cost labour in host country	
J. Benefit from high-skill labour in host country	
K. Acquire technological or management capabilities from host country	
L. Policy guidance from Chinese government: 'Going out' or 'Belt and Road'	
M. FDI incentives given by host country	
N. Bilateral trade or investment agreement between China and host country	
O. Promote brand awareness	
P. Other, please specify: _____…	

	Yes (1)	No (0)
4.3 Has your enterprise developed a 'short list' of possible investment destination countries for its next FDI?	☐	☐
4.3.1 please list the top three countries in order of significance 1.____ 2._____ 3._____		
4.4 **Where will be the top sales destinations for this FDI?**		
A. Host country and its region; B. China; C. If third country, provide name (or N.A.)_____.		

4.5 What are the top three factors in affecting your foreign direct investment location choice?	**Top 3 factors**
A. Maintaining existing customers who influence location choice	
B. Developing new customers and markets	
C. Stable macroeconomic environment in host country: exchange rate, inflation, etc.	
D. Host country tariff, tax and investment policy	
E. Suitable business partners in host country	
F. Host country social and political environment: incl. absence of corruption, political conflict	
G. Presence of key suppliers of inputs	
H. Supply of suitably skilled workers	
I. Relatively low labour costs: wages, non-wage costs	
J. Relatively low transport and logistics costs and efficiency	

K. Low infrastructure (energy/water) cost and high reliability	
L. Limited cultural differences and language barriers	
M. Stable legal and regulatory environment for business in host country	
N. Safety of, and facilities for, Chinese employees and families (incl. availability of housing, hospitals, schools)	
O. Other, please specify_____	

	Yes (1)	No (0)
4.6 As part of your FDI decision, do you plan to enter into an investment partnership with an enterprise in the host country?	☐	☐ [Go to 4.8]

4.7 If YES, what are the top 3 factors which determine your investment partner choice?	**Top 3 factors**
A. Trust and commitment previous customers clients or supplier;	
B. Trust and commitment;	
C. Complementary business activities	
D. Past business success	
E. Availability of capital	
F. Stability of business	
G. Partners' networks in host country	
H. Existing personal links (family, friendship)	
I . N.A.	

4.8 Please list the three most important stakeholders who influence your FDI location decisions?	**Top 3 stakeholders**
A. Customers in China	
B. Customers outside of China	
C. Management of the enterprise (other than owners)	
D. Major customers or clients	
E. Major suppliers	
F. Business and industry associations	
G. Chinese government or public agencies	
H. Government or public agencies in potential host country	
I. Private investment advisers or consultants	
J. Experts and Scholars	
K. Other, please specify_____…….	
L. N.A.	

4.9 (1) Among the following possible forms of assistance, what are the three most important to your FDI location choice? **(2) Why does not your enterprise enter new countries?**	Top three forms of assistance
A. Subsidies for fixed or operational costs (including land or utility costs)	
B. Tax breaks	
C. Interest-free or low-interest loans	
D. Free or low-cost insurance	
E. Market information on suppliers and/or customers in host country	
F. Legal advice	
G. Language training	
H. Relocation assistance for employees and their families (visa, transport costs)	
I. Other, please specify_____	
J. N.A.	

4.10 Please list the three most important assets or capabilities that enable your enterprise to undertake OFDI?	Top three assets or capabilities
A. Efficient production systems	
B. Technological and innovation capabilities	
C. Skilled technical personnel	
D. Managerial capabilities	
E. Marketing/sales/distribution capabilities	
F. Low-cost capital	
G. Past international experience, incl. exporting, importing or FDI	
H. Business networks	
I. Government assistance	
J. Other, please specify_____	
K. N.A.	

Part 5. Innovation capabilities

During the three years 2014 to 2016,	Yes (1)		No (0)
5.1 did your enterprise introduce new or significantly improved goods or services?	☐	percentage of 2016 sales due to this innovation?	☐
5.2 did your enterprise introduce any process innovation?			
5.2.1 **did your enterprise import any facility?**	☐	percentage of 2016 sales due to this innovation?	☐
5.2.2 **did your enterprise conduct any self-innovation?**	☐	percentage of 2016 sales due to this innovation?	☐
5.2.3 **other**_____	☐	percentage of 2016 sales due to this innovation?	☐
5.3 did your enterprise introduce organisational or	☐	percentage of 2016 sales	☐

marketing innovations?		due to this innovation?	
5.4 did your enterprise expand business into other fields?	☐	percentage of 2016 sales due to this business expand?	☐

(new products or services refer to 'new to the firm')

Part 6. Performance

At the end of 2016, what was your enterprise's

6.1 Number of employees in China	
6.2 Number of employees abroad	
6.3 What is the percentage of employees in your enterprise in China who have completed a university degree	**%**
6.4 What is the percentage of employees in your enterprise in China who have completed vocational and technical education	**%**
6.5 What is the percentage of the employees in your enterprise abroad who have completed a university degree	**%**
6.6 What is the percentage of employees in your enterprise abroad who have completed vocational and technical education	**%**
6.7 During 2014-2016, what was the annual average change of total output?	**%**
6.8 During 2014-2016, what was the annual average wage increase for production workers in China?	**%**
6.9 Percentage of advertising spending in total sales in 2016	**%**
6.10 At the end of 2016, what is the ratio of FDI stock/total assets	**%**
6.11 Percentage of R&D spending in total sales in 2016	**%**
6.12 Please give the share of annual sales for the following customers	
Top 1 customer:_____%; Top 2 Customer: _____%; Top three customer: _____%	
6.13 Annual turnover in the year of 2016 (10 thousand RMB)	
6.14 Average monthly wage level for production workers in 2016 (RMB)	
6.15 Proportion of skilled workforce in domestic companies	**%**
6.16 Proportion of skilled workforce in overseas companies	**%**

Part 7. Complementary questions (FDI plan of Group)

During the next three years,	Yes (1)	No (0)	N.A.
7.1. Does the group of your enterprise have any plans to enter new countries or expand existing FDI (foreign production activities) during the next three years as you suppose?	☐	☐	☐
		[Go to 7.3]	
7.2 Please list the top three possible investment destination in order of significance			
1._____ 2._____ 3._____			
7.3 What are the three main factors that are motivating your		**Top 3 factors**	

enterprise to undertake FDI?	
A. Expand sales in the host country market (or markets in its region)	☐
B. Expand sales to third countries/global markets/existing customers	☐
C. Maintaining existing customers who influence location choice	☐
D. Presence of key suppliers of inputs	☐
F. Avoid overcapacity and market competition in China, incl. risk diversification	☐
G. Avoid international tariff or trade barriers in host country market	☐
H. Avoid international tariff or trade barriers in third country markets	☐
I. Relatively low transport and logistics costs and efficiency in host country	☐
J. Relatively low labour costs: wages, non-wage costs in host country	☐
K. Supply of suitably skilled workers	☐
L. Technology and management in host country	☐
M. Channel of financing in host country	☐
N. Infrastructure in host country	☐
O. Industry chain and services in host country	☐
P. Business law and regulation in host country	☐
Q. Bilateral trade or investment agreement between China and host country	☐
R. Cultural difference between China and host country	☐
S. Other, please specify: _____	☐