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EXPORT COMPETITIVENESS IN INDONESIA'S MANUFACTURING SECTOR

An assessment of export performance and determinations of competitiveness in Indonesia's manufacturing sector based on an analysis of the apparel, wood furniture and automotive components sectors

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An assessment of export performance and determinants of competitiveness in Indonesia's manufacturing sector based on an analysis of the apparel, wood furniture, and automotive components sectors

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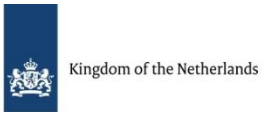

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EXECUTIVE SUMMARY

Despite buoyant economic growth in recent years, there are fears that Indonesia's manufacturing sector, which has stagnated since the Asian crisis, is in terminal decline, perhaps having reached a "middle income trap". If this is true, it could have significant long-term growth implications, given the critical importance of the sector for job creation, along with the risk that would come from leaving the Indonesian economy increasingly dependent on potentially volatile commodity sectors. In this context, this note analyzes three manufacturing subsectors – apparel, wood furniture, and automotive components – in order to assess the state of competitiveness in the Indonesian manufacturing sector and to identify policy options to improve competitiveness and quality upgrading of Indonesia's manufacturing product. The note uses Indonesia's export performance in these sectors as a lens through which to assess competitiveness more generally.

The three subsectors analyzed face quite different global dynamics and have performed very differently in the face of them. Overall, however, this note finds the conventional wisdom that Indonesia's manufacturing sector is in the midst of an inevitable process of stagnation and decline may actually be an incorrect starting point, at least looking at it from the context of early 2011. Despite declining performance in the sector particularly in the wake of the Asian crisis, and the clear leadership of natural resources based sectors in driving the economy over the past decade, there is recently an upswing in the prospects of the traditional manufacturing sector. Two major sources of advantage are driving the potential revival of the traditional manufacturing sector: 1) the very large, low wage labor force (wages are now one-third that of coastal China and among the lowest in the region); and 2) the potential for market access of production scale economies based on Indonesia's large and growing domestic market and the increasingly integrated regional market.

Few countries are fortunate to have such an opportunity to revive a critical labor-absorbing and technology-producing sector like manufacturing. Of course, this opening will not last forever (indeed, wage pressures are growing). It is therefore critical that the Indonesian government and private secvtor act now to take advantage of this opportunity:

- *In the short term:* ensuring it is able to exploit the existing wage gap with China, and extend this advantage for as long as possible – this will require attention to:
    - Raising productivity by addressing labor market rigidities and improving access to skills development and training, as well as improving the quality of management of firms.
    - Improving non-price competitiveness factors, in particular by addressing issues related to transport and trade facilitation.
    - Ensuring an environment that promotes investment and firm growth by lowering the barriers to accessing finance addressing regulatory barriers that prevent expansion.
    - Improving the transparency and predictability of the policy, regulatory, and governance environment in order to lower risk and facilitate private sector investment.
- *In the short and the medium term*: better leveraging the domestic market and the potential for integrating into regional value chains – this will require attention to:
    - Improving the business regulatory environment to promote a more sophisticated domestic market

    - Improving links between domestic firms and FDI (as well as other regional producers)
    - Facilitating inward investment but also promoting outward FDI
    - Facilitating greater collective action and coordination among firms

- *In the medium term*: preparing for the eventual erosion of price-based competitive advantage – this will require attention to:
    - Improving product quality to meet recognized global and market standards
    - Promoting greater focus on innovation, including through development of engineering and design skills and greater cooperation in research and development
    - Improving the firm-level sophistication, including addressing management quality

Several policy priorities derive from this analysis. Some of them have long been part of the discourse in analysis of the Indonesian economy, while others have perhaps had less attention:

1. Improving both hard and soft infrastructure to facilitate transport and trade
2. Facilitating access to finance to support investment in the manufacturing sector
3. Freeing up labor markets and incentivizing training
4. Promoting innovation and firm-level sophistication
5. Improving the standards regime
6. Promoting greater collective action and coordination by industry
7. Improving transparency and predictability in the governance and policy environment to encourage greater private sector investment
8. Using the SEZs as “bridgeheads to reform” rather than as spatial industrial projects

I. INTRODUCTION

1.1. Background to the study

Through a foundation of sound macroeconomic management and political stability, the Indonesian economy grew by an average of almost 6 percent annually between 2004 and 2008; and despite the global economic crisis, it maintained a 4.5 percent growth rate in 2009. While personal consumption has played a significant role in driving growth over the past decade, the investment-to-GDP ratio also rose to 25 percent in 2008, almost reaching its pre-Asian crisis level. Foreign investment (both FDI and portfolio investment) has increased rapidly in recent years. Key to growth has been the role of the export sector. Fuelled by agricultural and natural resource commodities, Indonesia's non-oil and gas exports grew 22.6 percent annually between 2004 and 2008, more than double their rate in the 2000-2004 period. This period of growth has contributed to significant job creation for the first time since the Asian crisis, with formal sector employment growing 2.2 percent annually in the 2004-2008 period.

In this story of growth, however, there are fears that the manufacturing sector – which fuelled Indonesia's export-led growth in the decade leading up to the Asian crisis and still contributes 28 percent of Indonesia's GDP – has been left behind. Real manufacturing GDP grew by an annual average 4.6 percent in 2004-07 compared with 10.5 percent in 1990-95. Many possible symptoms have been identified for Indonesia's relatively weak manufacturing sector performance over the past decade. One source of concern is the fact that, despite its rich natural resources, Indonesia has not made significant progress in transforming its exports of raw materials into processed products.[1] For example, Indonesia's exports of wood furniture have declined in recent years while export of plywood continues. Moreover, there is a concern that Indonesian manufacturers are experiencing some sort of "middle income trap": no longer able to compete on price with other low-cost Asian suppliers (e.g. China, Vietnam, Bangladesh) but not making sufficient progress in increasing the level of sophistication in its industrial products to compete on quality with suppliers from Malaysia, Thailand, and (increasingly) China. This weak competitive positioning is not only impacting Indonesian manufacturers in export markets but, as Indonesia has significantly opened its market and integrated its trade with East Asia region in the past decade, it is making it increasingly difficult for manufacturers to defend share against imports in the domestic market.

Stagnating growth in the manufacturing sector has significant implications on job creation in the Indonesian economy; indeed, the manufacturing sector is the second-largest source of employment after agriculture sector. Thus, in the absence of robust growth from the manufacturing sector, there is a concern that the country will be unable to generate enough jobs, even in this period of rapid growth, to absorb the huge number of Indonesians entering the labor force each year, forcing job seekers to look for informal jobs with lower value. Moreover, in the absence of a competitive, growing manufacturing sector, long-term economic growth is likely to become increasingly dependent upon global commodity markets over which Indonesia has little control. Finally, as trade in the manufacturing sector has traditionally played a critical role in facilitating access to technology and "learning by doing" for

[1] See "Boom and Bust and Up Again? Evolution, Drivers and Impact of Commodity Prices: Implications for Indonesia." The World Bank (2011)

Indonesian firms, stagnation in the growth and quality of manufacturing exports could have wider implications for the upgrading of Indonesia's economy.

1.2. Objectives

In this context, the World Bank office in Indonesia is conducting an Economic Sector Work (ESW) on "Initiating Evidence Based Policy Dialogue on Investment in Indonesia's Manufacturing Sector". The project aims to engage the government and private sector in policy dialogue to overhaul growth in manufacturing sector, by: 1) understanding microeconomic and structural dimensions of the business environment in Indonesia's manufacturing sector in the context of international comparisons; 2) identifying changes in constraints to, and supporting factors for private investment in manufacturing sector; and 3) strengthening private sector and local think-thank organizations in the ongoing process of policy dialogue to support institutional changes in policy-making, particularly for Indonesia's manufacturing sector.

As part of the wider project, this note is a background study to assess policy options to improve competitiveness and quality upgrading of Indonesia's manufacturing product. This background note studies three specific manufacturing sectors – apparel, wood furniture, and automotive components – and uses them as a basis to generalize about wider competitiveness issues in the Indonesian manufacturing sector.

The specific objectives of this background paper are the following:

- To give better understanding on overall level of export competitiveness and sophistication of Indonesia's manufacturing products in the context of regional comparisons.
- To identify key challenges for Indonesian manufacturers to invest in increasing their value of manufacturing output and competitiveness on global markets
- To strengthen the capacity of stakeholders i.e., Indonesia's government and private sector, to have an informed discussion on the feasible policy options

1.3. Framework and methodology

This note follows the Trade Competitiveness Diagnostics analytical framework developed by the International Trade Department of the World Bank[2], as illustrated in Figure 1.1 below. This involved an analysis of the Indonesia manufacturing sector, with a focus on three specific sectors (see below), with the following approach:

1. Conducting a desk-based, largely quantitative analysis (including comparisons against "peer" countries) of Indonesia's manufacturing sector trade performance against four determinants of trade competitiveness – the *intensive margin* (export levels, growth and market share); the *extensive margin* (diversification); the *quality margin* (sophistication and quality); and the *sustainability margin* (firm participation and export survival)
2. Conducting a desk-based analysis of Indonesia's performance across a range of factors that contribute to the observed trade competitiveness – specifically across three main categories:

[2] see World Bank (forthcoming) *Trade Competitiveness Diagnostic Toolkit*, Draft, March 2011; and Farole, Reis, and Waglé (2010) *Analyzing Trade Competitiveness: A Diagnostics Approach*, Policy Research Working Paper 5329, World Bank.

a. Market access**:** focusing on the external trade policy environment that may facilitate or constrain exporters from entering and maintaining competitiveness in markets, *including tariffs and quantitative restrictions, preferential agreements, and standards and other technical barriers*. Note that these same issues are covered in the macro-incentives section on trade policy – however, in that section the focus is on how it affects imports; here the focus is on exports.

b. Supply-side factors**:** covering a broad range of determinants in two sub-categories:

   i. The macro-incentive framework includes factors which establish the broad environment that influences private sector investment and participation in exports, including the *macro-fiscal environment, exchange rates, trade and investment policy, competition, and the governance and regulatory environment.*

   ii. Factor conditions impacting the cost and quality of production; these include: *access to finance, scale economies, labor regulations and skills, firm-level technical efficiency, land and infrastructure, intermediate inputs, services inputs, and trade facilitation & logistics*.

c. Trade promotion infrastructure covers the range of interventions by government to address market failures (coordination challenges, asymmetric information) and government failures that restrict export participation and performance, including *traditional export promotion and SEZs, industry coordination bodies, standards & certification, and innovation*.

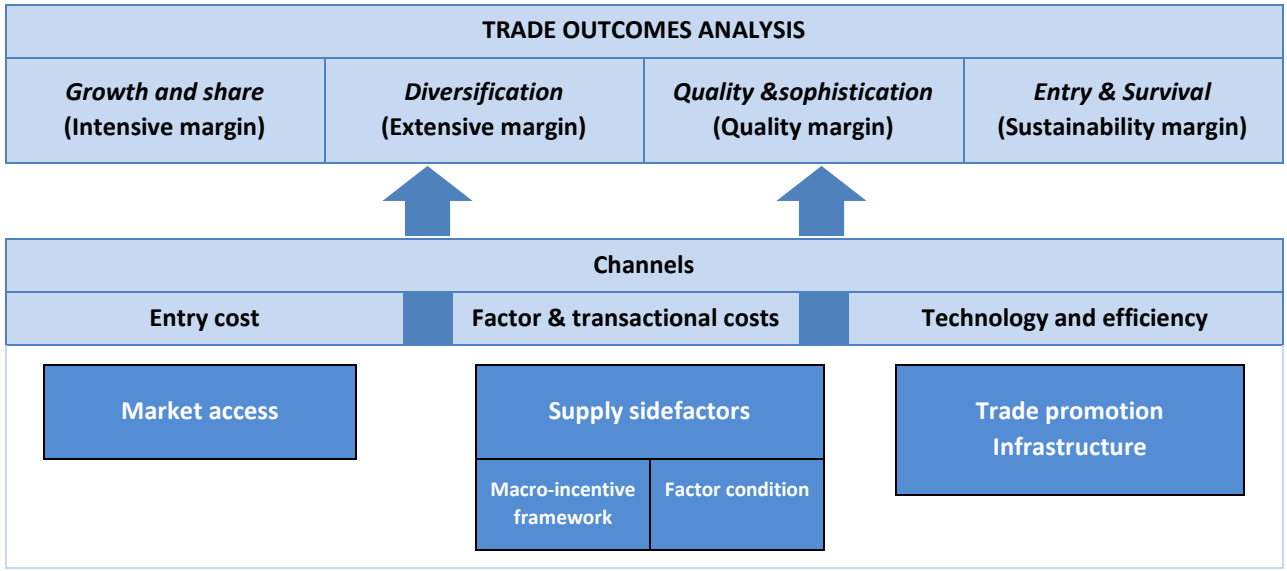
3. In-depth field interviews, including individual interviews and focus groups, with more than 30 public and private sector organizations during missions in February-March 2011 and October 2011. Interviews and focus group sessions were held in Jakarta, Bandung, Surabaya, Semarang, and Jepara.

As noted previously, the analysis in this note focuses on three specific manufacturing subsectors: apparel, wood furniture, and automotive components. The selection of these sectors was motivated by the desire to study:

- Two traditional labor intensive sectors which appear to have been stagnating or declining in the post-Asian crisis era – one of which is highly impacted by competition in global production networks (apparel) and another of which is natural resources intensive, and so faces issues of value addition (wood furniture)
- One sector which is medium technology intensive (but also fairly labor intensive) in which Indonesia's exports have been growing rapidly, albeit from a relatively small base (automotive components).

The selection of an "export success story" subsector in comparison with traditional sectors may highlight important structural and policy-induced factors which contribute to Indonesia's broader manufacturing competitiveness.

Figure I-1: Trade Competitiveness Diagnostics Framework



1.4. Structure of this note

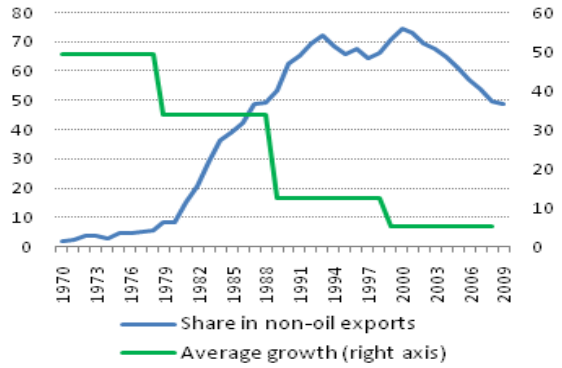
This note summarizes the main findings of the analysis. It is structured as follows: Section II of the report presents an analysis of Indonesia's overall manufacturing export performance across the four determinants of export competitiveness discussed above, followed by a specific analysis of each of the focus sectors; Section III then analyzes the factors that contribute to this observed performance, organized according to the Trade Competitiveness Diagnostics framework; Finally Section IV discusses policies that may be considered to address the opportunities and competitiveness gaps identified.

II. TRADE OUTCOMES ANALYSIS

2.1. Summary of broad manufacturing sector trends

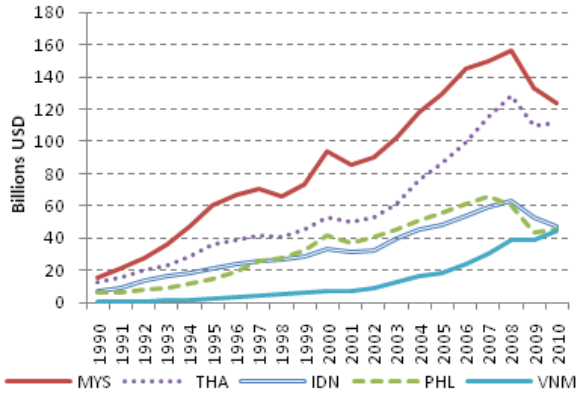
Indonesia's manufacturing sector was an important engine of growth for the economy from the 1970s well into the 1990s. However, in the decade following the Asia financial crisis[3], manufacturing growth has slowed dramatically while non-manufacturing exports (particularly commodities) have boomed. This "decline" in manufacturing is relative not absolute – in fact, manufacturing exports still grew 12% annually during the 1998-2008 period despite the growth *rate* of exports halving over this period. But as can be seen in Figures 2-1 and 2-2, it is relative in two regards. First, in comparison to non-manufacturing (non-oil) exports, growth has been relatively slow – manufacturing's share of Indonesian exports declined from 50% to 40% since the crisis. Second, it has fallen behind many of its regional peers, with manufacturing export levels now only half those of Malaysia and Thailand. Moreover, Vietnam, which only in 2007 had manufacturing exports only half the level of Indonesia's, has now caught up.

Figure 2-1: Growth and share of Indonesian manufacturing exports (1970-2009)



Source: calculated from BPS data

Figure 2.2: Manufacturing exports 1990-2010 (US$b)



Source: Comtrade

Within Indonesia's manufacturing sector, the dynamics of growth across subsectors varies significantly since the crisis. The top four export sectors[4] in 1996 – Cork and wood manufactures (-7.1%); Articles of apparel (4.3%); Textile yarns and fabrics (-0.6%); and Footwear (3.8%) – either grew modestly or declined. Meanwhile, more resource and capital intensive sectors like nonferrous metals (16.3%), rubber manufactures (15.4%), and Road vehicles (18.8%) posted much higher growth rates. As can be seen in Table 2-1, the implications are a significant shift in the composition of manufacturing exports over the decade. Indeed the top four sectors, which combined for over 53% of manufacturing exports in 1996, accounted for only 31% by 2008. It is hard to point at systematic differences in Indonesia's sectoral pattern of export growth compared with that of Thailand and Malaysia over the past 15 years. Other than nonferrous metals, the two sectors in which Indonesia has clearly outperformed both Malaysia and Thailand are apparel and footwear. In road vehicles, both Indonesia and Thailand have outperformed Malaysia.

[3] Throughout this note when we use the term "the crisis", we are referring to the Asian financial crisis of 1998-1999; reference to the global economic crisis of 2009-10 will be specifically referred to as such.
[4] SITC 2-digit level

Table 2-1: Indonesia's primary export manufacturing sectors[5] by SITC 2-digit code, 1996-2010

SITC Code	Product	% of Mfg. Exports 1996	% of Mfg. Exports 2010	CAGR 2000-2010		
				IDN	MYS	THA
84	Articles of apparel and clothing accessories	15.8%	15.7%	4.3%	0.9%	0.3%
77	Electrical machinery, apparatus and appliances	4.4%	11.0%	6.0%	5.1%	7.0%
76	Telecommunications and sound-recording equipment	7.8%	8.7%	3.9%	2.3%	9.6%
68	Non-ferrous metals	2.8%	8.4%	16.3%	5.8%	10.0%
65	Textile yarn, fabrics, made-up articles and related products	11.1%	6.1%	-0.6%	-2.9%	2.4%
85	Footwear	11.3%	6.0%	3.8%	-1.6%	-2.4%
89	Miscellaneous manufactured articles	4.9%	5.7%	6.8%	7.2%	5.7%
64	Paper, paperboard and articles of paper pulp	3.3%	5.7%	1.1%	3.8%	1.9%
75	Office machines and automatic data-processing machines	3.2%	5.1%	0.1%	-2.8%	7.0%
78	Road vehicles	0.9%	4.3%	18.8%	6.0%	20.6%
82	Furniture, and parts thereof	5.0%	3.9%	0.4%	2.6%	-0.6%
63	Cork and wood manufactures	18.8%	3.5%	-7.1%	-0.7%	-0.7%
62	Rubber manufactures nes	1.1%	3.4%	15.4%	16.1%	21.7%

Source: Calculated based on data from Comtrade

Looking further at the issue of relative growth of the manufacturing sector, we find that the SITC 2-digit sectors in which Indonesia gained significant world market share in the period 2005-2010[6] is apparel, footwear, road vehicle, non-ferrous metals, and rubber. This is perhaps telling of the changing structure of competitiveness problem in Indonesia's manufacturing sector over the decade. All the machinery and equipment sectors (in blue in Table 2-2) grew at significantly higher rates than world trade in the previous five years, but then (with the exception of automotive) declined sharply in the second half of the decade. The opposite situation appears in the light manufacturing sectors (textiles, apparel, and footwear), while natural resources linked sectors show mixed results.

Table 2-2: CAGR by main manufacturing sector: 2000-2005 and 2005-2010

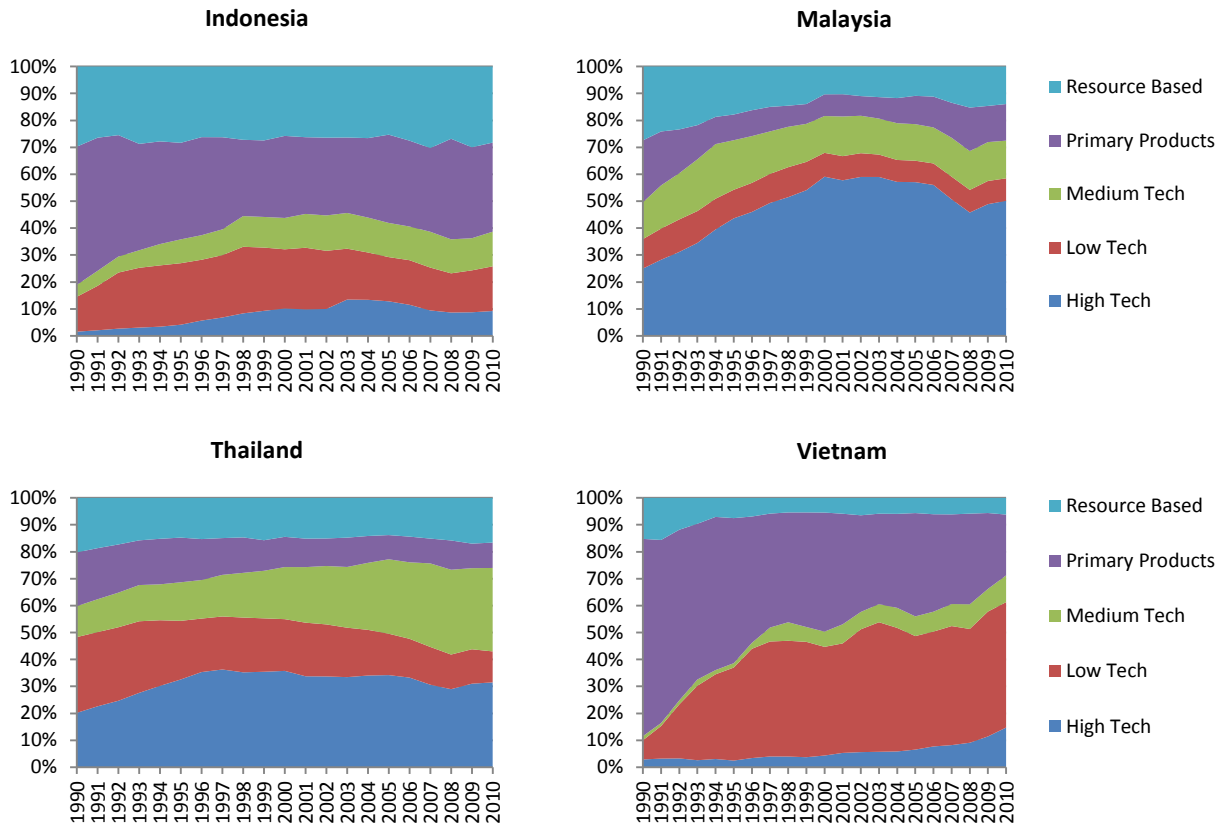
SITC Code	Product	CAGR, 2000-2005		CAGR, 2005-2010	
		Indonesia	World	Indonesia	World
75	Office machines and automatic data-processing machines	16.3%	4.8%	-13.9%	-1.4%
76	Telecommunications and sound-recording equipment	11.1%	9.9%	-2.8%	2.7%
77	Electrical machinery, apparatus and appliances	16.0%	6.4%	-3.2%	2.7%
78	Road vehicles	25.8%	9.4%	12.1%	-0.1%
65	Textile yarn, fabrics, made-up articles and related products	0.2%	4.5%	-1.2%	-1.7%
84	Articles of apparel and clothing accessories	3.2%	6.4%	5.5%	1.4%
85	Footwear	-1.4%	6.9%	9.4%	3.6%
63	Cork and wood manufactures	-3.0%	9.1%	-11.0%	-3.1%
64	Paper, paperboard and articles of paper pulp	0.3%	6.0%	2.0%	-0.6%
82	Furniture, and parts thereof	4.6%	10.3%	-3.7%	1.6%
62	Rubber manufactures nes	15.4%	10.7%	15.4%	5.2%
68	Non-ferrous metals	25.1%	8.1%	9.4%	6.1%
89	Miscellaneous manufactured articles	10.3%	8.6%	3.3%	3.1%

Source: Calculated based on data from Comtrade

[5] These 13 sectors accounted for over 90% of manufacturing exports in 1996.
[6] Although they gained marginally in 'footwear' and 'miscellaneous articles'

Figure 2-3, which maps manufacturing sector growth based on Lall's technological classification of exports[7], reinforces this picture, showing a relative decline in low technology manufacturing since the crisis, but evidence of a return since 2008; and, while medium and high tech manufactures continued to grow through the crisis, they too turned downward after 2003, with medium-tech exports returning again since 2008. By contrast, while the share of natural resources based exports fell to around 60% just before the Asian crisis, it expanded again after 2003, to reach almost 70% by 2008, before falling back again. A similar pattern can be observed in Malaysia, but the overall levels of natural resources based exports from Indonesia is dramatically larger, and the overall share of non-resources based exports from Indonesia is dramatically smaller than that of regional peers.

Figure 2-3: Share of exports by technological classification: 1990-2010



Source: Calculated based on data from Comtrade, using Lall (2000)

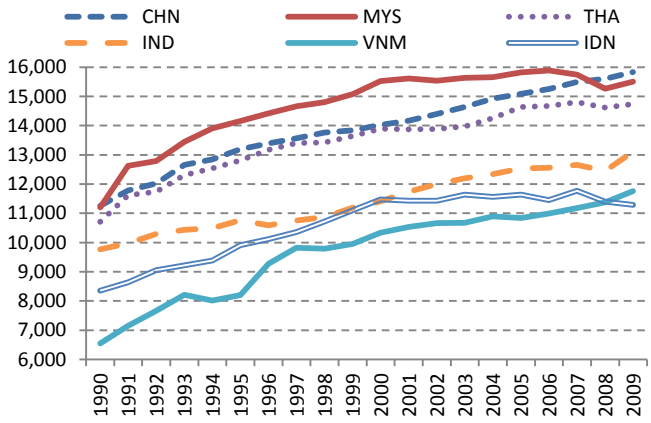
A comparison of relative export sophistication (EXPY)[8] provides evidence of this pattern of export evolution in Indonesia, showing growth and the prospect of convergence with regional peers up until the crisis, stagnation from the crisis until 2003, and then decline since. Indeed, relative to the five peer

[7] Lall, S. (2000) *The Technological Structure and Performance of Developing Country Manufactured Exports, 1985-1998*, Working Paper, Q. E. House, University of Oxford.

[8] EXPY measures the income content of a country's export basket; Source: Hausmann, R., Rodrik, D. and J. Hwang (2006) *What You Export Matters*, NBER Working Paper 11905, Cambridge, MA. Note that EXPY does not explain competitiveness but is simply an indicator of the sophistication of a country's export basket. In Indonesia's case, it highlights that the country specializes in products that are produced (on average) by relatively poorer countries.

countries shown in Figure 2-4, by 2009 Indonesia had the lowest level of manufacturing export sophistication, virtually unchanged in a decade, below Vietnam, and far below Malaysia, Thailand, and China. Indeed, as Figure 2-4 shows EXPY for the manufacturing sector only, Indonesia's declining export sophistication is not explained simply by a growing share of natural resources exports, but also by declining quality of the export basket *within* the manufacturing sector. Specifically, the decline in EXPY appears to be driven by a decline in exports of some of the more sophisticated machinery exports, as can be seen in Table 2.2.

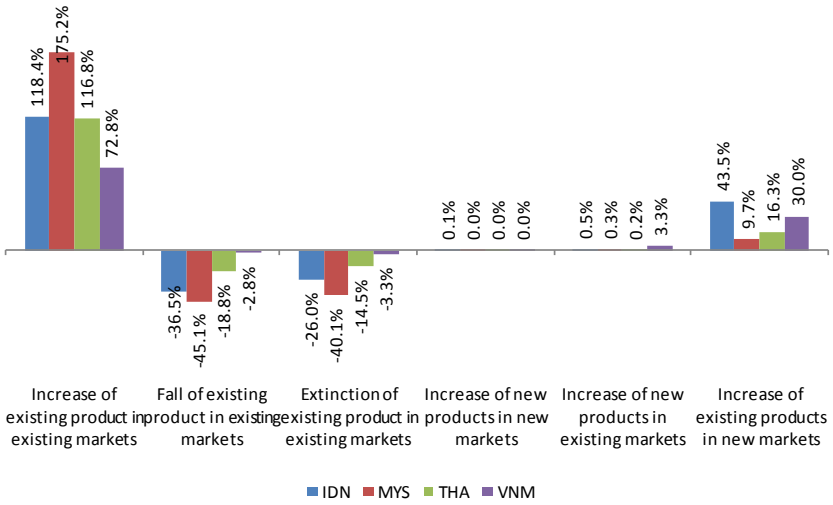
Figure 2-4: Manufacturing sector export sophistication (EXPY): 1990-2009



Source: Calculated based on Hausmann, Rodrik, and Hwang (2006)

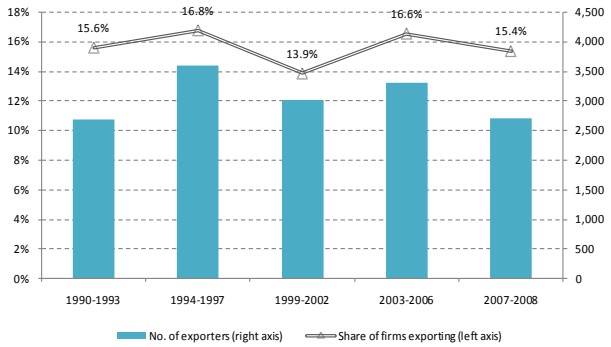
Figure 2-5 summarizes the past two decades' export performance by decomposing export growth of Indonesia relative to Malaysia, Thailand, and Vietnam. It suggests that, like Malaysia and Thailand, Indonesia is facing some competitive challenges in its traditional products and markets, with significant losses in the intensive margin, including extinction of product-market relationships. On the other hand, while Malaysia and Thailand's pattern of growth reflects that of "mature" exporters, Indonesia shows relatively high growth in the extensive margin – in selling existing products to new markets. This accounted for more than half of Indonesia's manufacturing export growth over the past decade. While Indonesia was already exporting to most markets at the beginning of this period, this extensive margin growth suggests a robust pattern of "cross-selling" products from one market to the next, perhaps taking advantage of the existing infrastructure and information networks established by other sectors and products that were already selling in these markets.

Figure 2-5: Decomposition of manufacturing export growth: 1990-2010



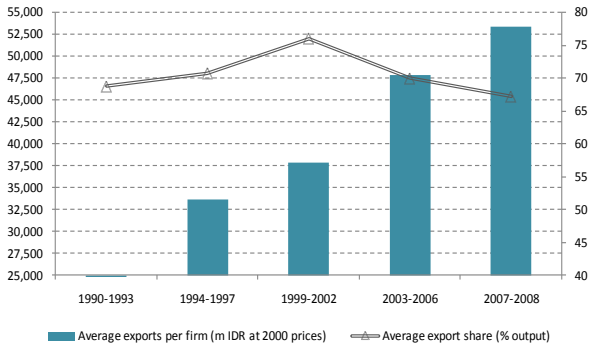
Source: Calculated based on data from Comtrade

Figure 2-6: Export participation in the manufacturing sector – 1990-2008



Source: Calculated based on data from Manufacturing Census

Figure 2-7: Export intensity of firms in the manufacturing sector – 1990-2008



Source: Calculated based on data from Manufacturing Census

Finally, before turning to analysis of specific sectors it is worth exploring briefly some firm-level dynamics for exporters to see if the patterns of export participation and survival shed any light on the trends we observe in manufacturing sector competitiveness. Figures 2-6 and 2-7 show a clear pattern of rapidly growing export participation and intensity leading up to the crisis – the number of exporting firms grew by more than one-third between the period 1990-93 and 1994-97, while the share of firms exporting grew from 15.6% to 16.8%. Both the number and share of exporting firms declined significantly with the crisis, however. And while export participation recovered quickly after the crisis, it never again reached pre-crisis levels. However, growing export share per firm after 2004 suggests that post-crisis period may have involved a process of significant consolidation of exporting firms. Interestingly, this growth in average real exports corresponds with a decline in the export share of firm output. This provides further evidence for consolidation in the manufacturing sector and may also indicate the growing importance of the domestic market for manufacturers.

At a broad level over the past decade, export survival does not appear to be a major problem in Indonesia (Figure 2-8). While export survival rates are far below those of China, they compare relatively well with regional peers, coming just below Malaysia and Thailand, and ahead of Philippines and especially Vietnam (which still has high levels of export death)[9]. The one year survival rate for Indonesia's manufacturing exports is 54%; the two year rate is 40%; and the five year rate is 24%.

But while Figure 2-8 analyzes export survival based on total export flows from the country, Figure 2-9 looks at export participation and survival from the perspective of individual firms. Here we see a more interesting pattern. Export entry rates[10] dropped dramatically during the crisis years; while they have improved since, they have remained below pre-crisis levels. Meanwhile, export death rates[11] increased significantly (from 35% to 43%) during the crisis and have actually increased further in the post-crisis

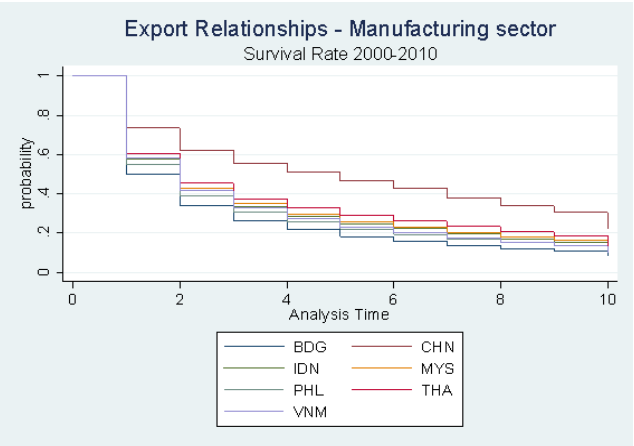
[9] Note that Figure 2-6 tracks survival rates of export flows at the product-market level for each country's exporters overall and not for individual exporters. This is important as one should expect countries with more firms to have higher survival rates, as only one individual firm would need to maintain exports for the country's product-market export pattern to register survival from one year to the next.

[10] An export entry is defined as a firm that was not exporting at the beginning of the period and starting exporting during the period (maintaining it through the period).

[11] An export death is defined as a firm that was exporting at the beginning of the period and stopped exporting during the period.

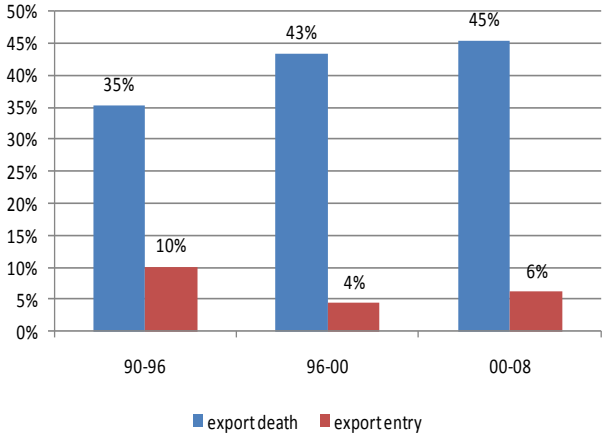
years. Overall, just over 16% of manufacturing firms (with greater than 20 employees) export – this is down somewhat from pre-crisis periods, but broadly in line with lower and middle income countries like South Africa, Brazil, and Russia. Patterns of export participation and survival vary significantly across sub-sectors, as will be discussed in the sections to follow.

Figure 2-8: Ten year export survival function



Source: Calculated based on data from Comtrade

Figure 2-9: Patterns of export firm entry and death in the manufacturing sector



Source: Calculated based on data from Manufacturing Census

Thus the analysis of export participation and survival seems to support the broad story of a manufacturing sector hit hard by the crisis, experiencing some restructuring and only very slowly re-emerging in recent years, but in a much more precarious competitive position.

In the sections that follow, we explore recent trade performance in three important manufacturing subsectors – apparel; wood furniture, and automotive components – in order to explore and test more specifically some of the broad trends that are suggested in the analysis of the overall manufacturing sector, and in order to get some perspective on how successes and struggles in specific sectors may guide decisions on policy for the manufacturing sector in the coming years.

2.2. Apparel

This section will focus on the apparel manufacturing subsector. While there will be some discussion of upstream parts of the textiles sector (including production of fabrics and yarns as well as spinning), the primary analysis covers only the production of apparel.

2.2.1. Intensive margin: levels, growth, and share

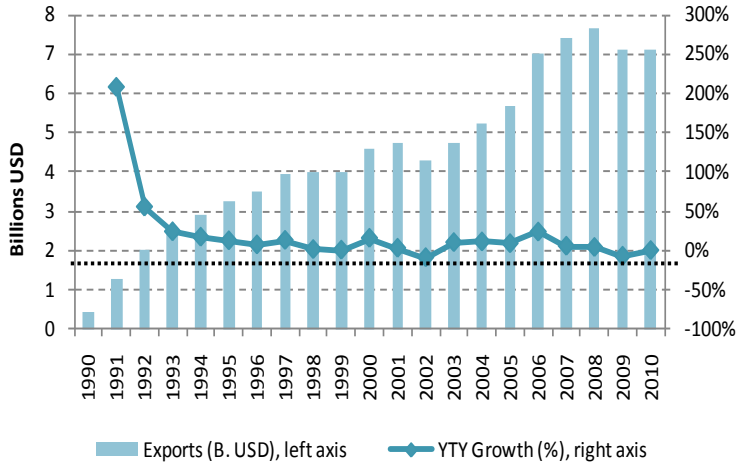
The export apparel manufacturing sector first developed significantly in Indonesia during the 1970s, around the same time that it began to develop elsewhere in the region, most notably China. Apparel manufacturing was, along with footwear, one of the most important "traditional" manufacturing sectors that drove Indonesia's export-led development in the 1980s and 1990s. It was, and remains, a critical employment-creating sector for the country – based on data from the Manufacturing Census, which excludes firms below 20 employees and the informal sector, around 400,000 workers are employed in the sector across more than 1,500 firms; more than 150,000 (39%) of these workers are in the exporting

firms (11% of all firms). Only 141 of these firms have foreign ownership, but they account for 35% of all exporting firms and two-third of exports by value.

By the early 1990s, Indonesia was beginning to lose out to China in competition for global markets. In fact, the growth of Indonesia's apparel exports had actually begun to slow significantly already as early as 1993. Exports were hit hard during the Asian crisis, and the rapid rise in wages in the post-crisis years may have significantly constrained reinvestment in the sector during the early 2000s. After the end of the Multi-Fibre Arrangement in 2005, not only did the challenge of Chinese competition become more acute, but Indonesian manufacturers had to deal with competition in key markets from rapidly emerging apparel manufacturing countries like Vietnam and Bangladesh. Moreover, as Indonesia's own trade regime has liberalized, apparel producers are facing increasing competition for the domestic market (see Box 2-1).

But while there has been much talk of the sector as a "sunset industry", apparel exports are continuing to grow; indeed, during the period 2003-08 they grew at almost 10% annually compared to a global growth of 8% (i.e. Indonesian gained world market share). This is well below the levels of growth enjoyed in the early 1990s (exports grew at a 15% annual rate in the period 1990-1996), but is still relatively robust. While exports declined with the global economic crisis in 2009, they did so at less than the global average in the sector.

Figure 2-10: Indonesia apparel exports (US$B) and annual growth (%)



Source: Calculated based on data from Comtrade

Box 2-1: Import penetration and competitiveness in the Indonesian domestic market

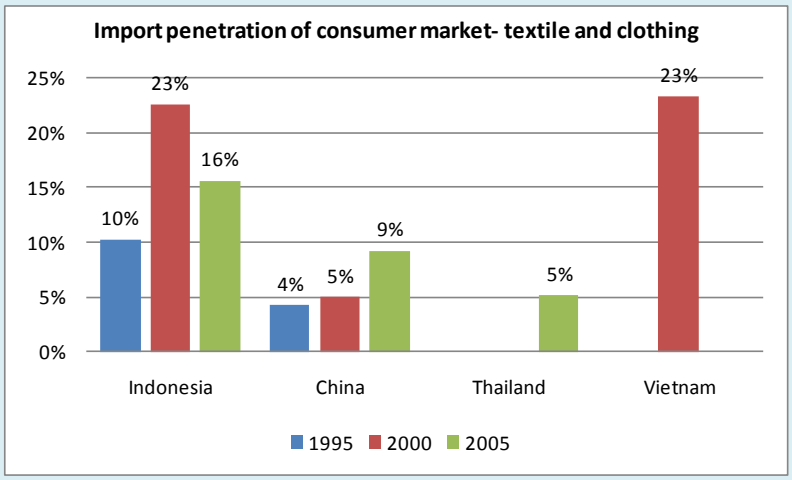
Even in the context of a highly export-oriented sector, most individual apparel firms remain focused on the domestic market. Evidence from Indonesia's manufacturing sector shows that more than 85% of apparel firms sell wholly to the domestic market[12]. For them, trade competitiveness is not a question of competing with China or Vietnam in export markets, but rather in the Indonesian market. Anecdotal evidence from the industry suggests that rising imports, mainly from China but also from second-hand (retail liquidations) clothing from EU and US markets, have been a major problem for Indonesian apparel producers, particularly those operating in the price-conscious segment of the market (which accounts for the large majority of the domestic market). Moreover, according to API[13], consumers in Indonesia tend to have a "foreign branded orientation", with little regard for the quality of products manufactured in Indonesia.

One way of assessing relative trade competitiveness is by looking at import penetration in the domestic market.

[12] As the Manufacturing Census covers only firms with 20 or more employees, in fact the share of total firms that are non-exporters is probably significantly higher (as smaller firms are less likely to export).

[13] Asosiasi Pertekstilen Indonesia (Indonesia Textiles Association)

Import penetration measures the share of the domestic market that is supplied by imports rather than by domestic producers. This is normally difficult to do as data on domestic market transactions is not normally readily available. In the figure below, we analyze input-output data from Indonesia and China, as well as more limited data from Thailand and Vietnam[14]. Unfortunately the data is available only aggregated at the level of the broad textiles sector, so we may be capturing dynamics that are happening outside of apparel. Indeed, significant growth of imports to Indonesia has taken place in the middle levels of the textiles value chain, particularly in terms of fabrics, where imports from China now dominate. The data suggests that there has indeed been an increase in import penetration in Indonesia's textiles sector since the pre-crisis level, and that the level of import penetration is higher than in some peer markets. On the other hand, it suggests that import penetration may have actually *declined* since 2000. Evidence from Comtrade seems to support this, reporting exports of apparel from all countries to Indonesia at 6,409m in 2002, declining steadily year by year to only US$ 4,100m by 2008. China too reports declining exports of apparel to Indonesia, from US$1,460m in 2002 to US$ 1,237m in 2008.



Source: Calculated based on data from OECD input-output tables

On the other hand, evidence from Indonesia's Manufacturing Census of *declining* real output in the apparel sector over the past decade (around 20%), with *rising* real exports (also around 20%) suggests that growth in import penetration has been substantial over the past decade, unless: 1) consumption is falling in the domestic market; or 2) smuggling is growing substantially.

Whatever the case, it is clear that the challenge for the Indonesian apparel sector is not simply one of export markets. For the majority of the sector, the trade competitiveness challenge is most acute in the domestic market. And while some exporters are thriving by finding niches where they can differentiate on delivery and quality, the domestic sector is more in survival mode, with competition based primarily on price, highlighting the critical importance of cost competitiveness.

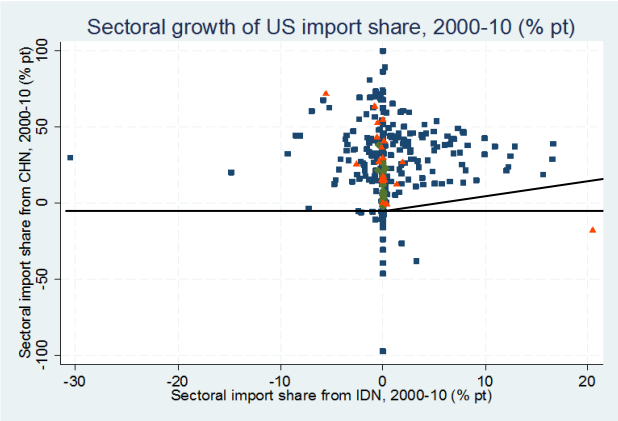
But while Indonesia is gaining global market share, an important question is how sustainable is this trend. Indonesia has been part of the shift of the apparel sector to "factory Asia", which has decimated traditional sourcing markets for the US and EU, particularly since the end of the MFA. For example, in the US market (which accounts for 25% of the global apparel imports), Mexico saw its market share decline from 14% to 5% in just a decade (1999-2009); in Europe, Italy's share declined from 9% to below 4%. Similarly suppliers from Central America and Sub-Saharan Africa (US), and from East Europe and North Africa (EU) have lost out to Asian producers in recent years.

But growth from displacement of these suppliers will reach its limits soon, so continued growth for Indonesia depends on its competitiveness relative to other Asian suppliers, including Vietnam, Bangladesh, and China. From this perspective, Indonesia apparel growth performance has been less impressive. For example in the US market – Indonesia's most important – its share grew from 3.1% to

[14] Source: OECD input-output tables; data on Thailand and Vietnam only available for one year (2005 and 2000 respectively)

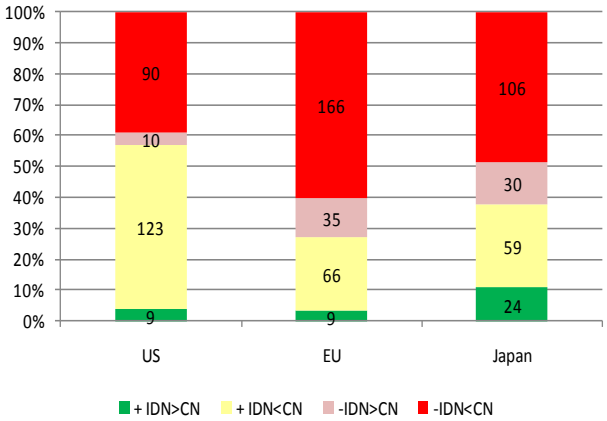
4.6% in the last decade, while Bangladesh grew from 3.0% to 5.3%; Vietnam from 0.1% to 7.8%; and China from 11% to 38%. In the EU, Indonesia actually lost share (from 2.2% to 1.6%), while shares of India and Bangladesh grew to from only 2.5% to reach nearly 6% and over 7% respectively; and China grew from 9% to 35%. The same trend holds in Japan, where Indonesia's share halved to 0.6%, while Vietnam's grew to over 4% and China consolidated its dominance with an 84% share. Thus, on a global basis, Indonesia's apparel exporters appear to be struggling to meet the challenge of competition from low cost Asian producers and, as a result, failing to take advantage of the huge geographical shifts in production in the sector. On the other hand, the overall positive performance in the US market gives some ground for hope that a competitive position can be carved out.

Figure 2-11: Analysis of market share growth by apparel product in US market – Indonesia v China[15]



Source: Calculated based on Comtrade data

Figure 2-12: Summary of product-level market share across three markets – Indonesia v China (2000-'10)[16]



Source: Calculated based on Comtrade data

Figures 2-11[17] and 2-12 shift the analysis of competitiveness to the product level in order to get a better sense of the dynamics of Indonesia's competitive position, taking China as the most relevant comparator. In Figure 2-11, two things become clear: first, that there is large variation in market share performance across products; and second, that even where Indonesia is performing well, there are few products in which it is actually gaining share relative to China over the decade 2000 to 2010.

Indeed, as summarized in Figure 2-11[18], while in Indonesia maintained or gained share over the period in 132 apparel product lines in the US (while losing share in 100 products), in only 9 of them did China actually lose share. Moreover, *in every single one of the other 123 products in which Indonesia grew its market share in the US during this decade, China gained market share at an even faster rate*. In the EU,

[15] Only products that fall to the right of "0" line in the x-axis and below the angled line represent actual gains for Indonesia relative to China (note that due to different scales used for China and Indonesia, the line is not on a 45 degree line but rather an 18 degree angle)

[16] +IDN>CN indicates products in which Indonesia gained market share over the decade at a faster rate than China (or where Indonesia gained and China lost share); +IDN<CN indicates market share gains for Indonesia but at a slower rate than the gains achieved by China; -IDN>CN indicates market share losses for Indonesia but at a slower decline than experienced by China; and –IDN<CN indicates market losses for Indonesia at a faster rate than the losses experienced by China

[17] Apparel products in Figures 2-11 and 2-12 are the dots represented in blue and are at 6-digit level based on HS1988-92 classification

[18] Note that in Figure 2-12 "+IDN>CN" refers to market share gains or no changes in market share; "-"refers to losses in market share. Where Indonesia recorded no exports in a product for both 2010 and 2000, the product is not included in the analysis.

the overall situation is less positive, with Indonesia having lost share in 201 of 276 apparel product lines, while China lost share in only 44. In the 75 lines in which Indonesia gained share, they only outperformed China in 9 of them. The same trend broadly holds in Japan, where Indonesian apparel exporters lost share in 60% of their product lines over the decade, outperforming China in only 24 of the 83 product lines in which they gained share.

A previous study on the Indonesian apparel industry in the immediate post-MFA environment[19] attributed the positive performance of exports to the US to a shift in focus to products in which Indonesia was not producing head-to-head with China, and to an increase in quality performance relative to China. Extending that analysis to 2008, however, we find little support for those initial findings. Indonesia's main apparel export products to the US have not changed much between 2002 and 2008 – only two of the top ten export products in 2008 were not in the top ten in 2002 (see Box 2-2). Moreover, four of Indonesia's top five exports products are also among China's top five export products. Indeed, Indonesia's exporters are competing head-to-head to with China's. And for the most part they are losing. For four of these five products, China has, on average, almost four times greater market share in the US than does Indonesia. Moreover, Chinese exporters are realizing a higher unit value for these products than Indonesia's.

Box 2-2: Cotton trousers: an Indonesian apparel success story?

HS 610462 – "women's' and girls' trousers, overalls, breeches and shorts, cotton, knit" – better known as cotton trousers was Indonesia's 50th most important clothing export to the US in 2002, accounting for only US$7m in total exports. Only six years later exports had risen almost 20-fold to US$137m, making it Indonesia's 8th most important apparel export product to the US. Perhaps more telling, of Indonesia's top 10 exports to the US it is the only one in which Indonesia had a higher market share than China in 2008.

The downside of this story is the nature of the product. Of Indonesia's top 10 apparel export products, cotton trousers have the lowest unit value and have experienced the lowest growth in unit value over this period. Thus, Indonesia's exporters are becoming competitive in a product where the margins are likely to be low and coming increasingly under pressure. On the other hand, it argues against the conventional wisdom that Indonesia can no longer compete with "low cost" producers at the low end of the market.

In summary, the Indonesian apparel sector has benefitted from the global shift toward Asian suppliers. But its competitive performance among these Asian producers does not appear to be particularly strong, raising doubts over how much further global trends can pull the sector.

2.2.2. Extensive margin: diversification

While Indonesian apparel producers are facing competitive challenges in their core product range, there appears to be no significant problem with lack of diversification. The downside of this, of course, is that Indonesian producers have relatively little scope to seek growth outside of their existing product-market relationships. Indonesia already provides one of the most diversified ranges of apparel exports among its regional peers. Despite the competitiveness challenges versus low-cost producers (note Vietnam's massive rise over this period), Indonesia does not appear to have been forced out of many products in

[19] World Bank (2007) *Indonesian Textile and Apparel: A New Dawn for a "Sunset Industry"?*, Financial & Private Sector Development Technical Note, Issue 4, September 2007

the apparel export basket, as has been the case in Malaysia. Indonesia's exports are somewhat more concentrated than China's – for example its top 5 products (of 215) account for 36% of exports to the US and its top 20 for 75% (compared to 25% and 55% respectively for China). But overall these do not reflect significant concentrations. In terms of markets, Indonesian apparel exports reach a fairly wide range of countries, but there is still scope for further market diversification. Its Index of Export Market Penetration (IEMP)[20] in knit products has grown relatively slowly over the past decade, but has reached a relatively strong 60% (non-knits shows the same trend and relative position).

Export growth can take place at the *intensive margin* (selling existing products to existing markets) or at the *extensive margin* (selling existing products to new markets, new products to new markets, and new products to existing markets). In the context of diversification, drawing on Hummels and Klenow (2005) [21], it is possible to infer, (i) how big a player a country is in what it exports (intensive margin- IM), and (ii) how important is what it exports to the world (extensive margin – EM)? This approach improves on the method of simply counting how many new export items or countries have been introduced by weighing the new products or markets by their share in world trade. So, adding carrots to the export portfolio is not the same as adding cars; adding Comoros is not the same as adding China[22]. In Figures 2-13 and 2-14, the IM and EM are plotted jointly (y and x axis, respectively) for Indonesia relative to peer countries in apparel exports for the years 1998 and 2008. Where the arrow connecting the points to the right it indicates a growth in the breadth of the export portfolio (of products or markets), while a left-ward pointing arrow reflects a decline in product or market breadth. Where the arrow points upward it indicates a relative growth in the importance of the country as a global exporter (i.e. it has a larger relative share in the products or markets in which it sells).

Figure 2-13, shows that in terms of products Indonesia sits in the middle between Vietnam and China, on the one hand, who are extending their range and consolidating share in this range, and Malaysia and Thailand, who are both consolidating their range and losing share. While Indonesia is experiencing the same general trend as Malaysia and Thailand, its global share loss is significantly less. In terms of market diversification, all countries appear to be consolidating, but while Vietnam, Bangladesh, and China are becoming significantly more important players in the markets they serve, Indonesia, Malaysia, Thailand, and Philippines are becoming slightly smaller players (again, Indonesia less so than the others).

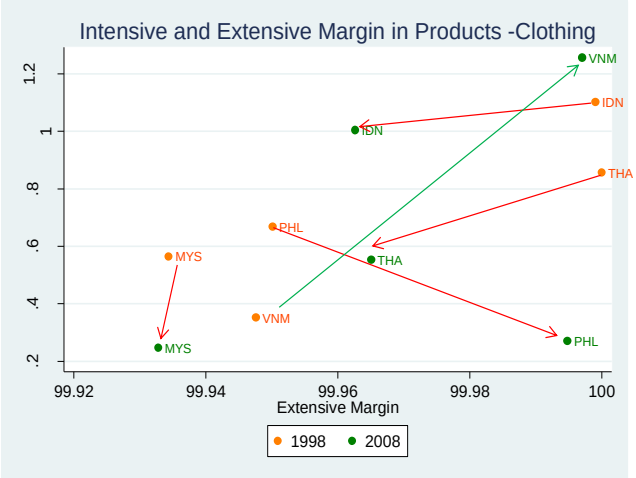
[20] IEMP calculates a country's total number of exports, and the number of markets that each of those products reach. Then, the number of countries in the rest of the world that import each of those products is counted. Pairing products and countries this way, we obtain the maximum potential number of export relationships that a country can establish given its export portfolio.

[21] See Hummels, D. and P. Klenow (2005) "The Variety and Quality of a Nation's Exports." *American Economic Review*, Vol. 95:3

[22] Specifically: If K^i is the set of products exported by country *i*, X_k^i the dollar value of *i*'s exports of product *k* to the world, and X_k^w the dollar value of world exports of product *k*, the intensive margin (IM) below calculates a country's share in its representative products. The extensive margin (EM) calculates the *breadth* of one's export portfolio relative to all exports that exist in the world.

$$IM_i = \frac{\sum_{k^i} X_k^i}{\sum_{k^i} X_k^w} \qquad EM_i = \frac{\sum_{k^i} X_k^w}{\sum_{k^w} X_k^w}$$

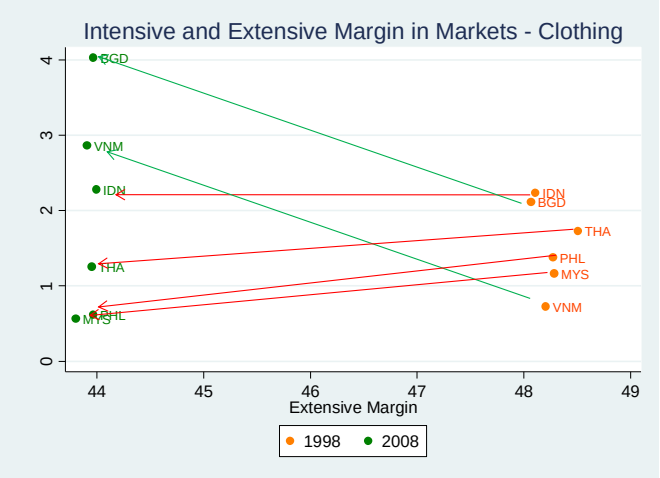
Figure 2-13: Hummels-Klenow intensive and extensive margin – apparel products



Source: Calculated based on Comtrade data

Note: China excluded as its intensive margin is too large to allow for perspective of the other countries

Figure 2-14: Hummels-Klenow intensive and extensive margin – apparel markets



Source: Calculated based on Comtrade data

Note: China excluded as its intensive margin is too large to allow for perspective of the other countries

Over the past decade, Indonesia has achieved relatively significant growth in exports from entering new markets (See Figure 2-19). Looking forward, one might consider the possibility of further extensive margin growth through penetrating the ASEAN market. However, it is unclear how much scope there is for this. The big market, of course, is China. Evidence to date shows that Indonesian apparel exporters have made little headway in that market, despite strong gains in the upstream textiles sector. In both 2008 and 2009, for example, Indonesian apparel exports to China were on the order of only US$25m, less than a tenth of Indonesia's apparel imports from China. However, given rising wages in China (as will be discussed later in this report) and the implementation of the ASEAN-China FTA, there may be further potential to exploit this opportunity in the coming years.

2.2.3. Quality margin: sophistication and quality

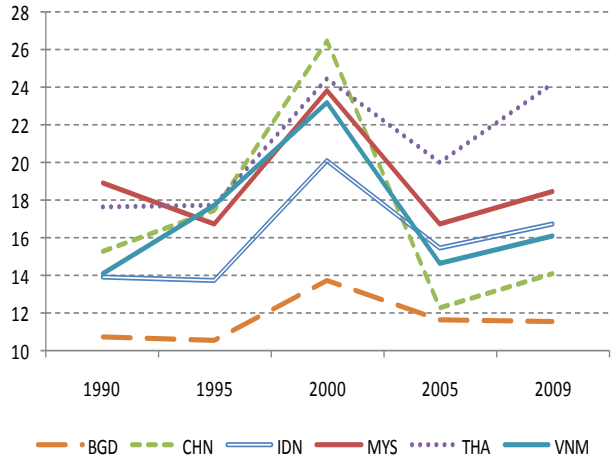
One of the big questions for Indonesian apparel exports is whether they are getting caught in the middle, between low cost and high quality (i.e. higher value per unit), unable to compete effectively in either domain. Evidence from growth in unit value of apparel exports to the EU[23] suggests this may be the case. Average unit prices for Indonesian exporters are below that of Thailand (and on par with China), but above Bangladesh and (just slightly) Vietnam. Moreover, Indonesia (along with Thailand and Vietnam) experienced overall growth of average unit values over the period 1988-2009, while China, Bangladesh and (surprisingly) Malaysia experienced declines. It is difficult, however, to draw conclusions from this. For one, these dynamics could reflect Indonesia increasing quality competitiveness *or* decreasing cost competitiveness – or indeed both, depending on the product in question. Therefore, in Figures 2-15 and 2-16 we move down to the product level to assess Indonesia's quality performance in like-for-like products. Figure 2-15 shows that unit prices in Indonesia top five export products do, in fact,

[23] Note that a robust unit value database is available for the EU market only based on a database recently developed by the World Bank's International Trade Department; while a similar database exists for imports to the US market, the data runs only up to 1990 and is thus insufficient for this analysis.

sit in the middle relative to regional peers, well below Malaysia and Thailand (and rising at a slower rate) significantly above China, Vietnam, and Bangladesh, to whom they are losing share in these products.

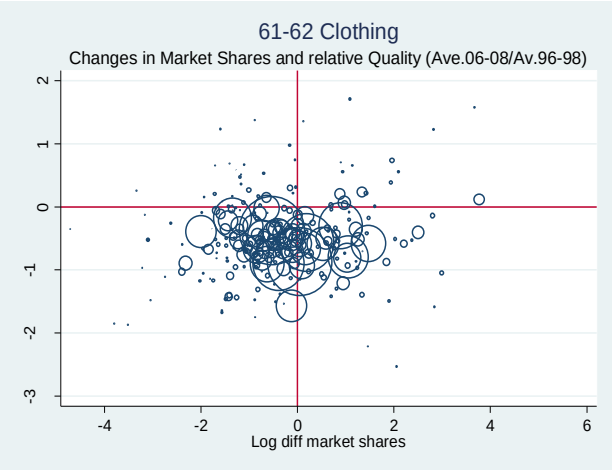
Figure 2-16 assess changes in relative quality (see Box 2-3) along with changes in market share performance in apparel exports to the EU. Each bubble represents a product, defined by an 8-digit Combined Nomenclature code. The x-axis shows the growth rate of market share (log difference of market shares) between 1996-08 and 2006-08. The y-axis represents the growth rate of the average quality measure between the same periods of time. The size of each bubble is the importance of each product within Indonesia's apparel exports. It shows that in most products (and in all the largest export products), Indonesia experienced declining relative quality over the decade. For the majority of them, declining quality also came with declining market share, although in a number of important products market share increased over this period. In fact, Indonesia has lost market share in the EU in all five of the products shown in Figure 2-15 between 2000 and 2008, with China gaining share in all of them. In the US, by contrast, Indonesia as grown share moderately in four of these five (while China has grown share significantly in all five) – unfortunately in the absence of data on unit prices for the US market over this period, we are unable to assess how quality relates to this market share performance.

Figure 2-15: Average unit prices (US$) of Indonesia's top 5 export apparel products to the EU (1988-2009)[24]



Source: PRMTR unit price database

Figure 2-16: Changes in market share and relative quality of apparel exports to the EU



Source: Calculated based on data from PRMTR unit price database

[24] Unit price data is based on imports of apparel products into the European Union (specifically here we look at Indonesia's five largest volume apparel export products to the EU) during the period 1998-2008. Average annual unit price are computed based on data from a dataset developed by the International Trade Department of the World Bank.

Box 2-3: Measuring the relative quality of exports using disaggregated trade data

We rely on the COMEXT database from EUROSTAT to characterize the relative unit values of imports in each EU member country. As in Schott (2004), unit values were calculated simply as the quotient of general imports values and quantities. Within any product (8-digit Combined Nomenclature code) for any given year, we then have a distribution of unit values of imports from the different source countries. For each good i and exporting country c, in time year t, we generate a measure of relative quality R as:

$$R_{itc} = \frac{uv_{itc}}{uv_{it}^{90}}$$

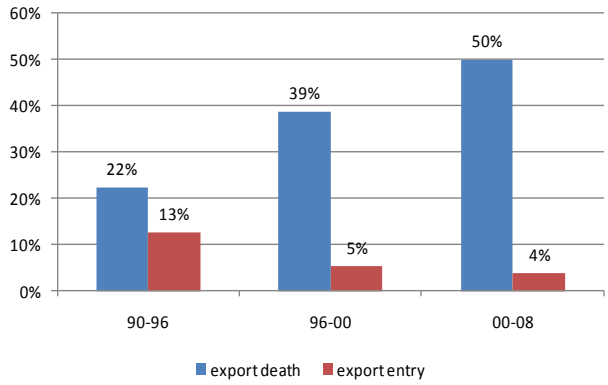
Where u_{itc} denotes de unit value of the good and u_{it}^{90} denotes the value at the 90th percentile of the unit value distribution across countries for that product. R_{itc} denotes the relative quality of the country's export of that good, i.e., quality relative to other countries exporting the same good.

It is important to note that this analysis measures *relative* and not absolute quality. So declining relative quality does not necessarily mean declining unit prices. Unit prices may be rising but at a slower rate than average for the importing country; similarly rising relative quality may reflect unit values actually declining, but at a slower rate than the average.

2.2.4. Sustainability margin: export participation and survival

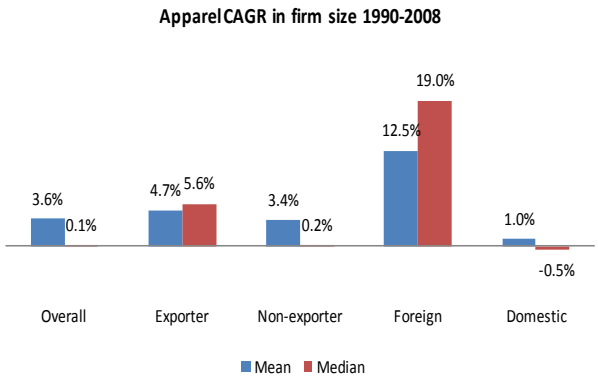
Indonesia's apparel export sector has undergone a significant transformation over the past decade. Prior to the Asian crisis, there was a rapid rise in the number of firms entering export markets. But the number of exporters collapsed in the Asian crisis and has not recovered. Evidence from Indonesia Manufacturing Census indicates that since the crisis, both export participation and survival has declined. In the period 1990-1996, 13% of non-export firms began exporting; however, this collapsed to 5% in the crisis years and fell even further in the 2000-2008 period. Meanwhile export deaths (firms that exported at the beginning of the period and stopped exporting during the period) rose substantially throughout, suggesting an increasingly risky export market. Overall, less than 15% of all apparel firms (with more than 20 employees) were exporting in 2008; this is down 40% since the pre-crisis period and even down 30% since 2000.

Figure 2-17: Export participation and survival



Source: Manufacturing Census

Figure 2-18: Firm size dynamics



Source: Manufacturing Census

Output remains above pre-crisis levels, however, which suggests substantial consolidation in the export sector – i.e. there are now fewer, larger exporters, reflecting actual mergers and/or the growth of productive firms and the exit of unproductive ones. The driver of this consolidation appears to be a major expansion in foreign-owned firms, which increasingly dominate the export sector (see Figure 2-18). The median apparel exporter in 2008 has 518 employees while non-exporters had only 34; but foreign exporters were particularly large, with 920 employees. This indicates on the one hand that the export sector is consolidating around large, foreign-owned players, which should be relatively competitive. On the other hand, it also means that barriers to entering export markets are growing. Thus smaller domestic players are likely to increasingly depend on the highly price competitive domestic market for survival. In either case – export or domestic focus – the market dynamics highlight the critical importance of Indonesian exporters improving their productivity.

2.2.5. Conclusion: apparel sector

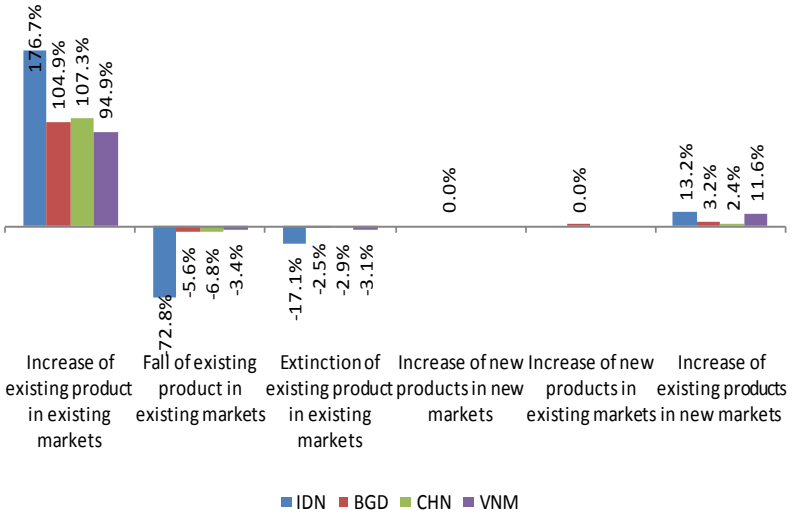
The analysis of Indonesia's performance in the apparel sector over the past decade does not depict a sector in serious decline. On the other hand, the data suggests cause for concern over its future prospects, as it appears to have very much been buoyed by the rising tide of Asian production in the sector. Yet it has failed to take significant advantage of these trends and faces a threat of decline if it is not able to raise its competitiveness relative to the other Asian producers. Figure 2-19 summarizes the situation, with a decomposition of export growth in the apparel sector over the past decade. What stands out most is that, relative to the emerging competitors in the region, Indonesia appears to be experiencing much greater churn in the intensive margin, with the highest levels of growth from existing products in existing markets, but also the highest levels of decline. This suggests some sort of structural change within the sector. Indonesia has also had relatively good performance in finding new markets – but as noted, there are limits to how much further market diversification can take the sector.

There is also some evidence that Indonesia's prospects in the apparel sector may be more sanguine than is suggested by its recent performance. Anecdotal evidence from interviews point to a "tipping point" in China's rising manufacturing wages, supported by the post-global financial crisis shift in economic strategy toward greater domestic consumption, which may be pushing investment back into Indonesia's apparel sector. While this specific investment trend does not show up in the FDI data from BKPM, where China's FDI in Indonesia's manufacturing sector overall is virtually non-existent, it is possible that the trend is too recent (this data reflects *realized* investments) or that it may not be picked up in the FDI data for some reason. Finally, the significant growth in FDI from countries like Singapore, Korea, the US, and Japan may well reflect shifts of existing or marginal investment away from China. Other measures of FDI in the wider textiles sector do give some indication of a possible resurgence in the sector. For example, imports of textile machinery grew by 120% since 2005 – more than all regional peers, with the exception of Vietnam[25]. Moreover, realized FDI in the textile sector grew substantially from 2007 through 2009 from around US$150m to US$250m annually. Domestic realized investment showed an even stronger upward trend.

[25] China grew only 20%; Malaysia 4%; Philippines and Thailand declined by 60% and 20% respectively; Bangladesh grew more than 25%; Vietnam doubled

Should this initial evidence of FDI returning to the sector be borne out, it may have significant implications on the assessment of Indonesia's prospects in apparel exports going forward. With such a large wage arbitrage opportunity vis-à-vis China and wage rates beginning to converge with Vietnam and Bangladesh (who are experiencing significant upward pressure on wages), Indonesia may have once again emerged as a low cost location for garment production, and significant growth may ensue. Of course, the opportunity would likely be for only a limited time as Indonesia is also experiencing wage pressures that are likely to grow in the coming years. So while the short term opportunity exists to use the labor cost advantage to establish a new foundation for the sector, maintaining competitiveness in the medium term will require a focus on productivity and quality.

Figure 2-19: Decomposition of apparel sector export growth (1999-2009)



Source: Calculated from Comtrade

Finally, in considering Indonesia's prospects for growth in the apparel sector, it is important to take into consideration the nature of the global value chains in which the industry operates. These "buyer driven" chains are controlled by brands, retailers, and increasingly by full-service designer-manufacturer intermediaries. This makes it increasingly difficult for exporters to gain control within the value chain, raising challenges for upgrading. Moreover, particularly since the global economic crisis, global buyers are consolidating their production networks both in terms of suppliers and sourcing markets. Increasing competitiveness will, therefore, be critical to ensuring the long-term future of the sector.

2.3. Wood furniture

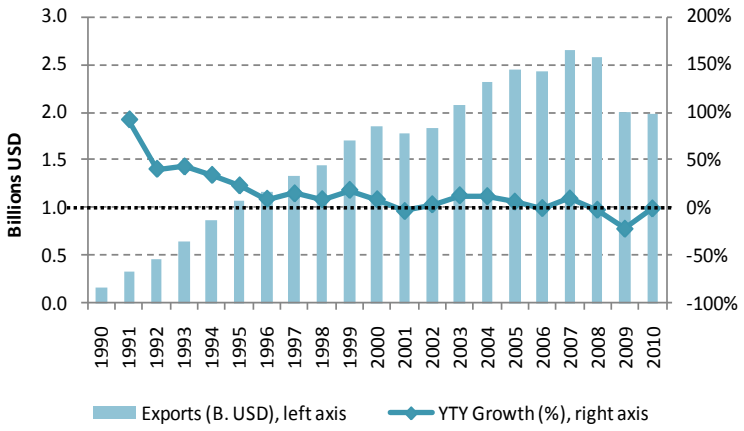
2.3.1. Intensive margin: levels, growth, and share

For a country with extensive forestry resources, furniture and wood products have always represented an important craft and manufacturing sector, responsible for large scale employment in many parts of the country. While only 125,000 workers are employed in formal sector firms with greater than 20 staff (half of which are exporters), it is estimated by ASMINDO[26] that 80% of firms in the sector are micro and small firms, including many individual contractors in the many furniture clusters around Jepara and elsewhere in Central and Eastern Java. Jepara alone is said to be home to some 4,000 firms organized through an extensive network of subcontracting.

[26] Indonesia Furniture Industry and Handicraft Association

In 1998, furniture was Indonesia's sixth most important manufacturing export sector, accounting for some 4.6% of manufacturing exports. Despite growing at just below 6% annually over that period (in US$ terms), it has declined significantly in its importance within the manufacturing export basket, now placing only 11th. As shown in Figure 2-20, exports grew rapidly from a small base through the 1990s, were erratic through the crisis years, and returned to a steady but much slower rate of growth from 2001. Exports dropped off substantially in the global economic crisis, dropping over 22% in 2009. Losses have stabilized in 2010, but exports still declined slightly further in the year. And while the domestic market is significant and import penetration has traditionally been much less an issue than in the apparel sector (although it is increasingly becoming one[27]), growth in the formal furniture sector depends much more strongly on export markets than in sectors like automotive and apparel. Indeed, stagnating export performance is reflected in total output in the sector, which has declined by one-third in real terms since the end of the crisis, after doubling in the five years running up to the crisis.

Figure 2-20: Indonesia furniture exports (US$b) and annual growth (%)



Source: Calculated based on data from Comtrade

Like in the apparel sector, the major shifts in global market share have been away from regional suppliers like Canada, Denmark, and Italy, and dramatically toward Asia[28]. And, even more so than in apparel, Indonesia has failed to benefit. Indonesia's slow growth in furniture exports is reflected in steadily declining global market share, from 4.9% in 1999 to 4.4% in 2009. Furniture is one of the few manufacturing sectors in which Indonesia's growth trailed the global average both in the immediate post-crisis years and the period 2005-2010. At the same time, China's share in world markets grew from 12% to 29% in one decade, while Vietnam grew from less than 1% in 1999 to 7% by 2009. Figure 2-21 shows that Indonesia lost modest share in all major markets over this period. The product-level analysis in Figure 2-22 shows that in the US and EU Indonesian exports have gained share in just under half the product lines. Although relative to China, Indonesia has actually only gained share in two product lines in the US (rattan and wooden bedroom furniture) and Japan (rattan and wooden kitchen furniture), and it has lost share to China in all product lines in the EU.

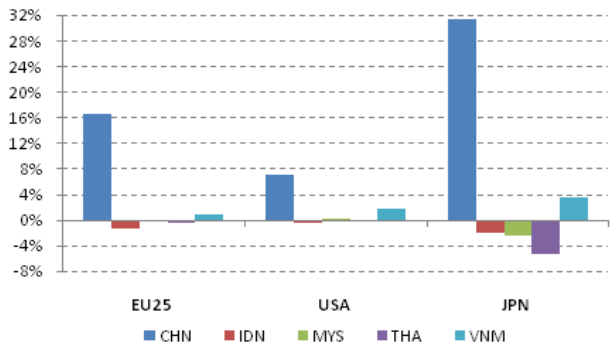
According to ASMINDO much of the Indonesian furniture sector does not compete head-on with China in export markets, as much of Indonesia's export sector is in the labor-intensive handmade furniture sector, while China specializes in the large volume, mechanized sector. On the other hand, ASMINDO does consider both Vietnam and Malaysia to be important competitors. Vietnam has dramatically

[27] Data from input-output tables indicates import penetration in the wood products sector accounts for only 3.3% of the market as of 2005; however, this share has tripled since 1995.

[28] The one exception being Poland, which grew its global market share from 3.5% to 5.4%

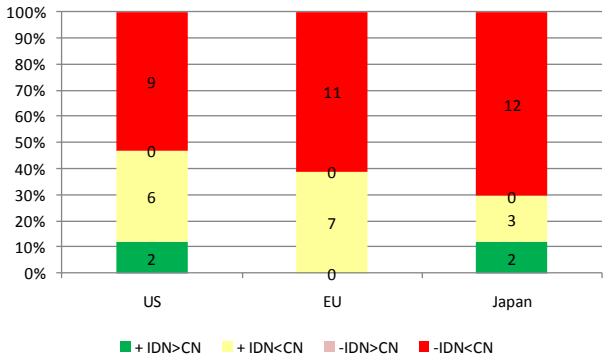
outperformed Indonesia in export markets. Against Malaysia it has had a mixed performance (gaining share in the US and losing it Japan) in terms of market share but competes poorly on quality.

Figure 2-21: Analysis of market share growth (absolute) by wood furniture market – 2000-2010



Source: Calculated based on Comtrade data

Figure 2-22: Summary of product-level market share across three markets – Indonesia v China (2000-'10)



Source: Calculated based on Comtrade data

Box 2-4: Leveraging a unique and sustainable resource for competitive exports: rattan seats

HS 940150 – seats of cane, osier, bamboo or similar materials – which in Indonesia's case is rattan. Rattan furniture is exported to more than 200 markets worldwide, and accounts for around US$200m in exports. It is not only one of Indonesia's largest furniture export products, but also its fastest growing. Exports of rattan seats to the US grew by 15% annually between 2000 and 2008. It is one of only two furniture product lines in which Indonesia has actually taken share from China in any of its major global markets over the past decade.

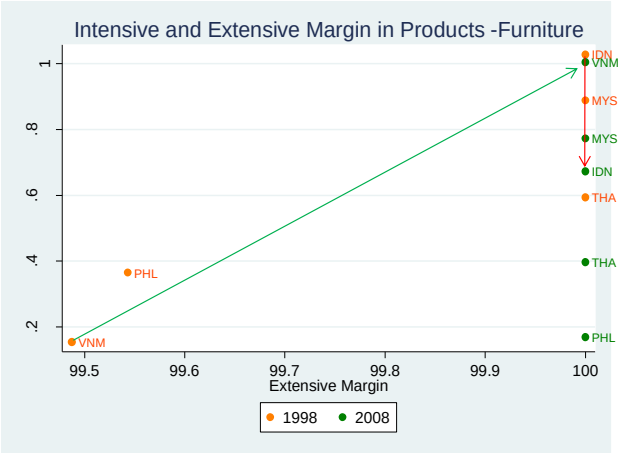
The success of Indonesian rattan exports is a good example of the country adding value to a unique natural resource. At least 70% of the world's rattan – a plant with some similarity to bamboo – grows in Indonesia. Perhaps most critically, the fast-growing nature of rattan makes it a sustainable alternative to tropical timber as a source material for furniture, making rattan a particularly valuable asset in an industry struggling with the challenges of remaining competitive while meeting increasingly stringent sustainability requirements.

2.3.2. Extensive margin: diversification

Similarly to the situation in apparel, Indonesia's furniture exports are present across all product lines. Most of the expansion of product range took place in the 1990s; since the crisis, the range has remained largely static. However, exports are relatively concentrated in a narrow range – more than two-thirds of exports are in "other wooden furniture", mainly dining room furniture (seats and lounges). The top five products (at a six digit HS level) account for around 80% of exports.

As illustrated in Figure 2-23, the Indonesian furniture export sector is participating in virtually all products, but its share has declined quite substantially across these products over the past decade. Similar but somewhat less dramatic declines are observed in Malaysia and Thailand, while the Philippines and Vietnam dramatically expanded the extensive margin of their furniture exports (with opposite experiences in the intensive margin).

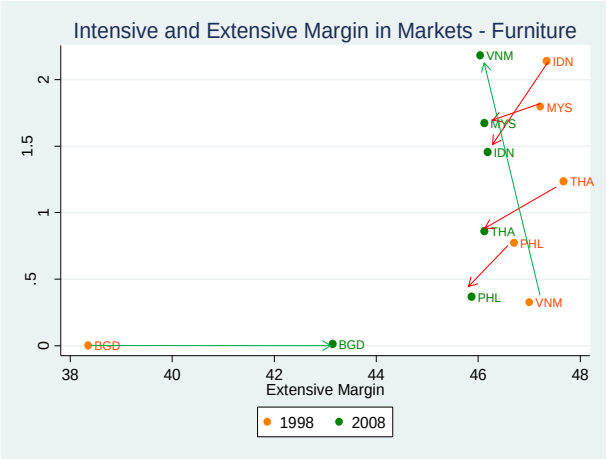
Figure 2-23: Hummels-Klenow intensive and extensive margin – furniture products



Source: Calculated based on Comtrade data

Note: China excluded as its intensive margin is too large to allow for perspective of the other countries

Figure 2-24: Hummels-Klenow intensive and extensive margin – furniture markets



Source: Calculated based on Comtrade data

Note: China excluded as its intensive margin is too large to allow for perspective of the other countries

From a market perspective, however, there is scope both to diversify to as-yet-untapped markets as well as to reduce the degree to which exports remain concentrated in just a few major markets. This is despite already strong performance in diversification over the past decade. Indonesia's IEMP in furniture almost doubled from 20% to nearly 40% between 1999 and 2008, a level significantly above that of Thailand and Vietnam but still far behind Malaysia (near 60%) and China (80%). Moreover, exports remain concentrated almost fully in the US, EU, and Japan. The US market, which has been the slowest growing among developed country markets over the past decade accounts for more than one-third of all Indonesia's exports (down from nearly 40% in 1999). Figure 2-24 shows that, as in the apparel sector, Indonesia and its regional peers are reducing their market coverage in furniture (e.g. by consolidating exports to fewer markets). But again, this is not resulting in market share gains in those countries where Indonesia remains active. Instead, like Malaysia and Thailand, Indonesia is becoming "a smaller fish in a smaller pond". By contrast China also consolidated somewhat the markets it serves, but it went from a 13.8% share in these markets to a 31.6% during this decade.

2.3.3. Quality margin: sophistication and quality

The furniture sector overall has experienced a decade of declining unit prices, driven by the growth of the mechanized, lower quality sector. From an overall perspective, Indonesia sits in the middle of regional peers, with moderate price levels: on par with China, above Vietnam and (surprisingly) Malaysia, and well below Thailand; its average unit price across all products has essentially remained static (only Thailand achieved unit price growth over the period). Focusing on Indonesia's top five export products[29], however, Figure 2-25 shows that Indonesia's unit prices in like-for-like products have risen above all its regional peers. This could reflect growth in quality or an inability to maintain price competitiveness. It is unclear from the data, which of these is actually the case. On the one hand, Indonesia's market share has declined slightly in most of these products. But again, this could reflect that its price point is no longer viable relative to quality, or that the overall market has shifted more

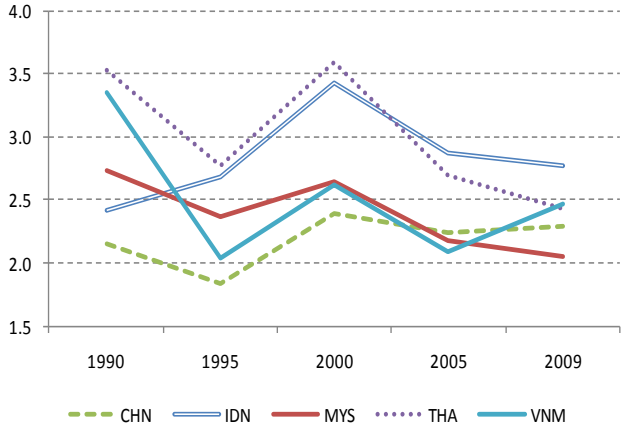
[29] To the EU25, based on data available from the PRMTR unit price database

toward lower quality products. On the other hand, even if quality is increasing, Indonesian exporters are still participating at the low end of the European market, with relative quality in its top five export products at only around 40% of the average quality of imports to Europe.

Figure 2-26 plots the relative quality and market share performance of Indonesia's wood furniture exports to the EU (see Box 2-3 for a description of the methodology for calculating relative quality). Its largest export products to the EU are all in the category of wooden bedroom furniture. Performance here is generally mixed, with relative quality generally being maintained or declining slightly, and market share mixed, but slightly negative for most of the larger products.

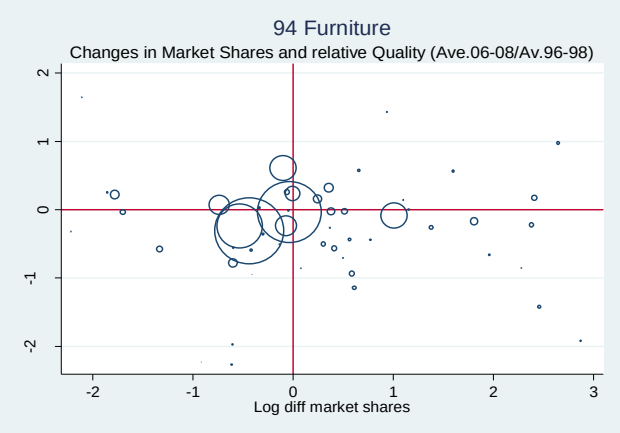
Relative to specific competitors, Vietnam has gained significant share along with declining relative quality, suggesting the market may be valuing price over quality. On the other hand, Malaysia has extended its quality premium over Indonesia, without the loss of market share. This is supported by anecdotal evidence from interviews, which indicate that Malaysia has developed a strong reputation for quality and delivery reliability, which has allowed them to capture a significant premium relative to Indonesia. In fact, Malaysian producers are said to buy a significant volume of semi-finished Indonesian furniture, finish it in Malaysia and sell it to Europe at a significant premium as Malaysian product.

Figure 2-25: Average unit prices (US$) of Indonesia's top 5 export furniture products to the EU (1988-2009)



Source: PRMTR unit price database

Figure 2-26: Changes in market share and relative quality of wood furniture exports to the EU

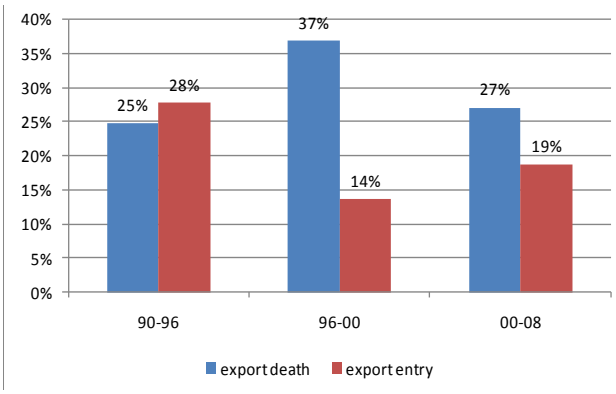


Source: Calculated based on data from PRMTR unit price database

2.3.4. Sustainability margin: export participation and survival

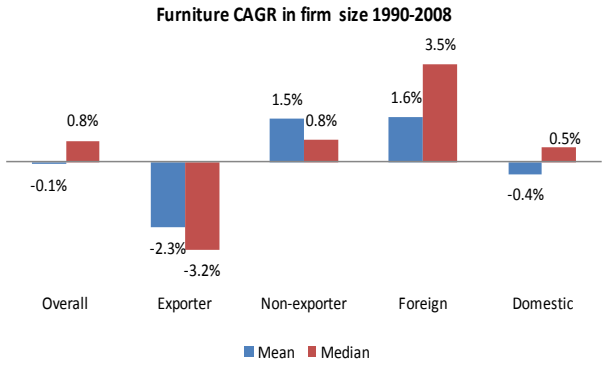
The furniture sector's response to the crisis differed significantly from the apparel sector (see Figure 2-27). Prior to the crisis, export entry and propensity (outside the small and micro end of the sector) was even greater than in the apparel sector. And while export death rates increased significantly during the crisis, they never reached the levels experienced in the apparel sector, nor was export entry as significantly constrained. Moreover, export entry appears to have returned relatively quickly. This pattern is supported by data from the Manufacturing Census, which shows that few exporters exited during the crisis (although most stopped exporting in 1998); in fact, the share of firms exporting declined only to just below 40% in 2000, from 45% in 1996. However, output per firm declined substantially and has not since recovered. Only from 2006 is there any evidence of firms beginning to exit the market. This is also reflected in a different picture of firm size dynamics (Figure 2-28).

Figure 2-27: Export participation and survival



Source: Manufacturing Census

Figure 2-28: Firm size dynamics



Source: Manufacturing Census

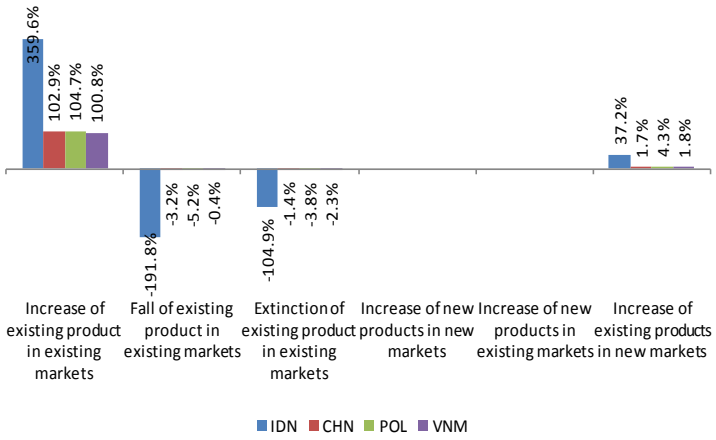
Opposite to the situation in apparel, exporters actually experienced a decline in median firm size over the period (as opposed to non-exporters who experienced small growth). And while foreign firms are again larger and more dynamic, there is less evidence of foreign firms buying up and consolidating existing local manufacturers or knocking them out of the market than has been the case in the apparel sector. This is confirmed by the BKPM data on FDI in the wood products sector, which shows significant decline both in absolute and relative (to the manufacturing sector overall) realization since 2007.

Finally, it is important to note that the nature of exporting varies substantially for large versus small firms in the sector. Large, mechanized exporters tend to produce to order based on designs supplied by brand owners such as Da Vinci (domestic), Walmart or Target. Small firms sell typically export indirectly, through a series of middlemen in provincial capitals and Jakarta.

2.3.5. Conclusion: wood furniture sector

In comparison to the picture in the apparel sector, the analysis of Indonesia's performance in the furniture sector over the past decade suggests a more serious problem; this is a sector which lacks substantial dynamism on a global level to support continued growth in the absence of competitiveness. Figure 2-29 summarizes the situation against the major international competitors. It shows a similar pattern of high dynamism as shown in the apparel, with even more dramatic evidence of churning. On Indonesian furniture exporters also appear to have had some success in market diversification in recent years. Given the increasing pressures on raw material prices (see Section 3 of this report) growth in Indonesia's furniture export sector is likely to rely on achieving significant improvements in its quality position, while

Figure 2-29: Decomposition of furniture sector export growth (1990-2010)



Source: Calculated based on Comtrade data

continuing to exploit opportunities to extend the market reach of competitive products like rattan. Doing so may require either structural change in the sector or, perhaps better, finding a way to more effectively exploit the potential its existing clusters. Part of the answer for the sector clearly lies in the sector adopting international quality standards and achieving international recognition for its certification program with regard to the quality and sustainability of forestry inputs.

2.4. Automotive components

2.4.1. Intensive margin: levels, growth, and share

Indonesia's automotive sector has been much documented, from its high levels of protection designed to establish full local manufacturing capacity in the 1980s, to its experiments with developing a national car, and ultimately, to the post-1998 liberalization of the sector. While the sector employs only about 80,000 across some 250 firms (only around 50 of which export) in Indonesia, it is in many countries at the heart of the industrial sector, responsible for significant spillovers of technology. As such, it represents a strategically important sector for Indonesia.

Exports in the sector have grown dramatically over the past two decades, pausing only during the Asian crisis and the 2009 global economic crisis. And while this growth started off a small base, this is no longer the case. To put the scale of the sector's growth into perspective, in 1996 exports of automotive products were only one-sixth that of furniture and only one-sixteenth that of apparel. By 2008, automotive exports were nearly twice as much as apparel and three times as furniture[30].

Three inter-related drivers are behind this rapid growth. First and foremost is the large and growing domestic market. Indonesia is by far the largest ASEAN market and is one of the world's largest and fastest growing automotive (including motorcycle) markets. Second, Indonesia's liberalizations have opened up the market to greater investment by foreign principles. Finally, linked to this, the ASEAN free trade agreement catalyzed regional production strategies by the (mainly Japanese) principles, creating a highly integrated regional production network and allowing Indonesia, with the large domestic market noted previously, to take advantage of its scale potential to become a regional manufacturing hub for light commercial vehicles and certain components linked to this platform.

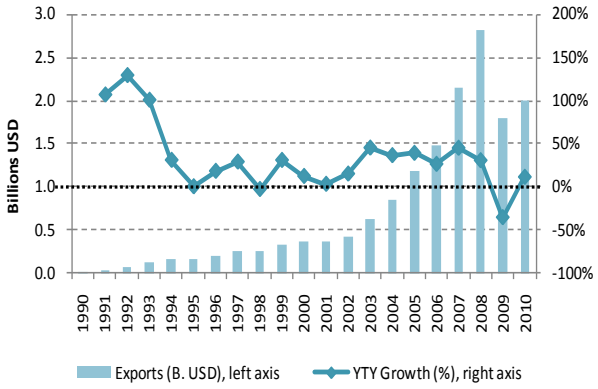
Indonesia's growth performance in the sector is also well above global trends – exports have grown at more than three times the world rate both in the period 1998-2003 and 2003-2008. Its growth of 27.6% between 1998 and 2008 is also nearly three times the rate of Malaysia's, although it was actually slower than Thailand's, which grew at 31.5% annually over this period.

While the dynamics of competitiveness in the automotive components sector do not lend themselves as readily as in apparel and furniture to a comparison of market share performance relative to China in major global markets (due to nature of principal production network strategies and the more regional nature of competition), it may still be a useful guide to competitiveness. Figure 2-31 shows that Indonesia is gaining market share in just over half of automotive component products in which it competes, across its main markets (which in this case includes ASEAN and Japan, and to a lesser degree the US). However, as is the case in apparel and furniture, performance relative to China is weak. For

[30] Data is based on the Manufacturing Census with export values deflated so that comparisons are on a real basis

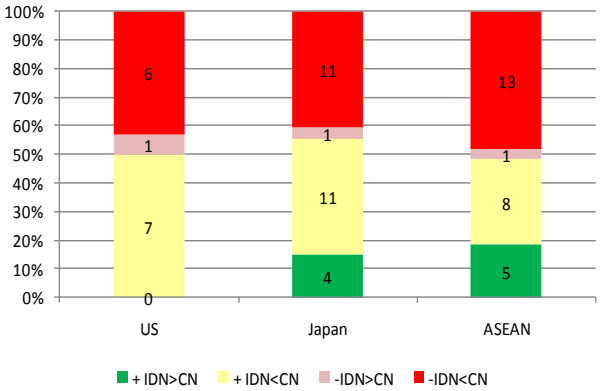
example in Japan, the market in which Indonesia is most competitive, it is growing share relative to China in only 5 of 27 product lines in which they compete; similarly in ASEAN Indonesia outcompetes China in only 6 of 27 product lines.

Figure 2-30: Indonesia automotive exports (US$B) and annual growth (%)



Source: Calculated based on Comtrade data

Figure 2-31: Summary of product-level market share across three markets – Indonesia v China (2000-'10)



Source: Calculated based on Comtrade data

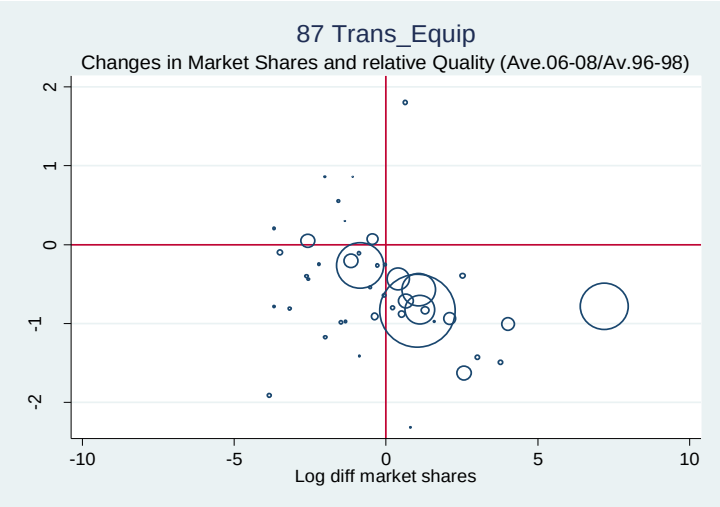
2.4.2. Extensive margin: diversification

Unlike the situation in apparel and furniture, automotive components exports are less likely to be characterized by the development of certain products that are exported on a global basis. The components sold to the European market are likely to vary significantly from what is sold to the US or Japanese markets. Within each market, Indonesia exports a relatively narrow range of automotive components products. For example, in the EU it sells less than 60 (8-digit) components products compared to more than 150 for China and 90 for Thailand. Overall, however, Indonesia's top 5 products (at six-digit HS classification) account for less than 50% of motor vehicle (HS 87) exports. Markets for automotive exports are also relatively diversified. In 2008, there were 66 markets to which Indonesia exported more than US$1 million in automotive products; of these the top five markets – Japan, Thailand, Saudi Arabia, Philippines, and Malaysia – account for just over 50% of exports. Six of Indonesia's top 10 automotive export markets are in ASEAN, highlighting the tight regional production networks that exist in the sector.

2.4.3. Quality margin: sophistication and quality

Indonesia appears to be competing at the low end of the quality spectrum. Relative to regional peers, Indonesia average unit price for global automotive components exports is below Malaysia, Thailand, and Vietnam, although substantially higher than China. Its growth in unit value over the past decade trails all peers. Figure 2-32 plots relative quality performance against relative market share performance for Indonesia's transport equipment exports to the EU. While almost all the main products have experienced declining relative quality, market share performance has been mixed, with some important products growing share. The two largest automotive parts exports are transmission gears and alloy wheel covers[31] – while both experienced quality declines, the former experienced a significant growth in market share. Across products, Indonesia is a mid-ranked quality supplier to the EU. China meanwhile remained one of the lowest quality suppliers and failed to raise its quality levels; on the other hand it has a much larger share of the market than Indonesia. Malaysia, meanwhile, achieved a much more dramatic growth in quality than did Indonesia over this period.

Figure 2-32: Changes in market share and relative quality of transport equipment exports to the EU



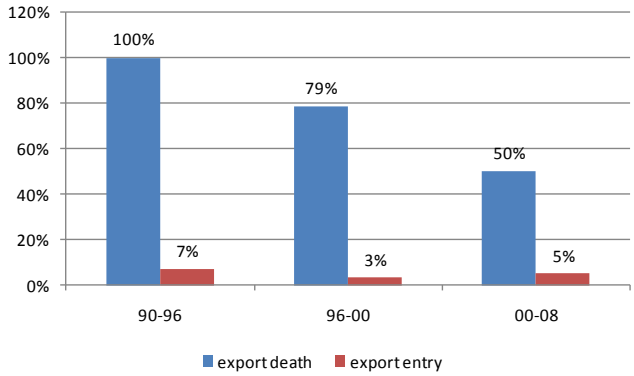
Source: Calculated based on data from PRMTR unit price database

2.4.4. Sustainability margin: export participation and survival

Firm dynamics in the automotive sector also differ significantly from what is observed in apparel and furniture. This is due to the much more concentrated nature of the sector (i.e. there are many fewer exporters) and the fact that the export sector remains in a nascent stage. In 1990, only two of 127 firms in the sector participated in export markets, and both of these exited the export market by 1996. However, by 2000, fourteen firms (seven each foreign and domestic) were exporting; this grew steadily to 22 firms (fourteen of which were foreign) by 2008. While the growth of export entry has been steady and survival rates have improved correspondingly, in comparison to apparel and furniture, export propensity of firms in the automotive sector remains very low. This is most likely driven by the higher barriers to export entry in the automotive sector, and the tiering system which relegates most export-ready producers to become contractors and thus export only on an indirect basis.

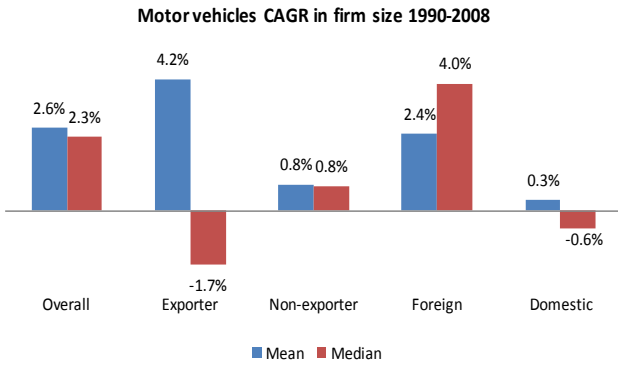
[31] The largest bubble in Figure 2-32 is actually not for an automotive product but rather for bicycles (specifically mountain bikes)

Figure 2-33: Export participation and survival



Source: Manufacturing Census

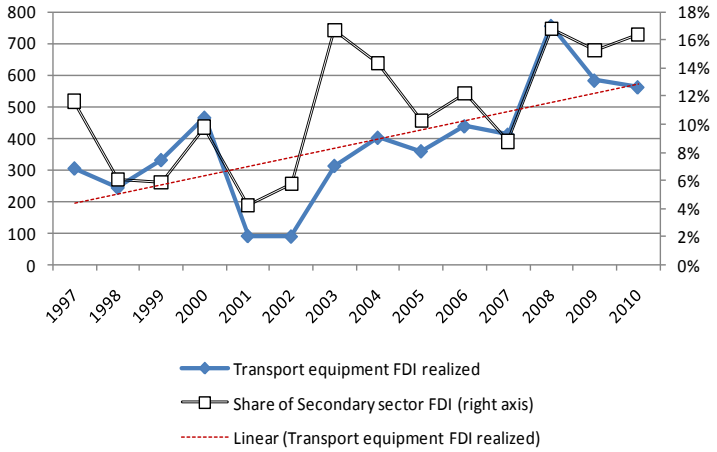
Figure 2-34: Firm size dynamics



Source: Manufacturing Census

Even more so than in the apparel sector, exports are dominated foreign-owned firms. Indeed, 29 of the 45 exporting firms in the automotive sector in 2008 were foreign owned, and these accounted for 85% of exports by value. This share has been more or less the same since the market was opened to greater foreign participation in 1998. Domestic firms have had very limited success in breaking into export markets. And, as Figure 2-35 illustrates, foreign investment continues to pour into the subsector, at a level still far about its output and export share of the manufacturing sector.

Figure 2-35: Trends in realized FDI in the transport equipment sector: 1997-2010



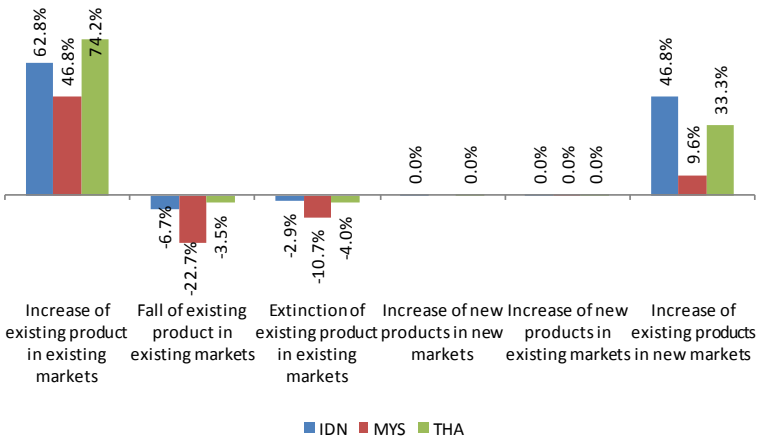
Source: BKPM

2.4.5. Conclusion

Indonesia's automotive sector has experienced a decade of boom. This is likely to continue for some time. The dynamics which drive this sector are, however, dramatically different than in apparel and furniture. The automotive components sector should be able to count on the huge and rapidly growing domestic market to drive growth in the coming years. Moreover, the nature of global production networks in the sector means that the massive scale economies that are possible from production for the local market should open up significant opportunities for exports as well. The decomposition of recent export performance shown in Figure 2-36 depicts a sector still in its very early days of growth, with little decline at the intensive margin and substantial growth at the extensive margin.

The challenge for Indonesia is to take advantage of this opportunity to improve quality, to deliver greater value added[32], and to capture more control along the value chain. Moreover, significant efforts should be made to improve the capabilities of local firms in order to facilitate greater participation in export value chains. In the absence of significant improvements in design, engineering, and innovation capabilities (see Section III), Indonesia is likely to continue to see export growth in automotive components for some time to come. However, it will come with limited value added and only moderate employment creation. The real value in the automotive sector comes from its potential to deliver spillovers to the wider manufacturing sector, and it is to this end that efforts to improve competitiveness in the sector should turn.

Figure 2-36: Decomposition of automotive sector export growth (1990-2010)



Source: Calculation based on data from Comtrade

2.5. Summary of main findings

The three sectors discussed in this section face quite different global dynamics and have performed very differently in the face of them. However, there are in fact some competitiveness issues that are consistent across them. Table 2-3 provides a broad summary of each subsector's performance against the four components of trade competitiveness used in this assessment. What stands out is that all three sectors appear to have significant challenges in terms of quality, with secondary issues related to export participation and survival, particularly for smaller, domestically-owned firms. *Thus the problem is very much in the realm of products rather than markets as well as the general environment for exporters.*

Table 2-3: Summary of key competitiveness issues based on trade performance assessment

	Growth and share (intensive margin)	Diversification (extensive margin)	Quality (quality margin)	Entry and survival (sustainability margin)
Apparel	X	--	XX	XX
Furniture	XX	X	XX	X
Automotive	--	--	XX	X

-- no issues or minor issues
X some competitiveness issues
XX significant competitiveness issues

[32] Note that when we refer to increasing value added we do not necessarily measure this in terms of "value added share of output". While in the furniture sector, adding greater value to the local raw materials would indeed be one of the aims, in apparel and automotive components, for example, the point is more about increasing the quality (relative unit value) of activities being carried out in Indonesia rather than necessarily capturing a larger share of the value chain per se, although this may also be an objective.

While the apparel sector no longer enjoys the boom times it did in the 1980s and early 1990s, some parts of the sector remain relatively buoyant and competitive in international markets. These firms face the challenge of raising quality and improving reliability. Smaller and domestically oriented firms, however, face a greater challenge for survival, operating in markets where price competiveness is the main determinant of success. While the potential for significant FDI from China, however, opens up the possibility of a resurgence of the export sector (even potentially on the basis of price rather than quality in the short term), this may well add further pressure to producers reliant on the domestic market as they face the potential of added competition from globally competitive foreign investors. In the furniture sector, a somewhat similar bifurcation holds, with exporting firms needing to address quality and reliability to maintain competitiveness, while domestically oriented firms face substantial price-oriented competition. The challenges in this sector are, however, more acute both for domestic and export-oriented producers, as performance has been in decline for some time and raw materials constraints are likely to add further pressure going forward. Finally, while the automotive components sector is likely to continue its export boom, extra value and sustainability from the sector will depend on improving quality and facilitating greater participation by domestic firms.

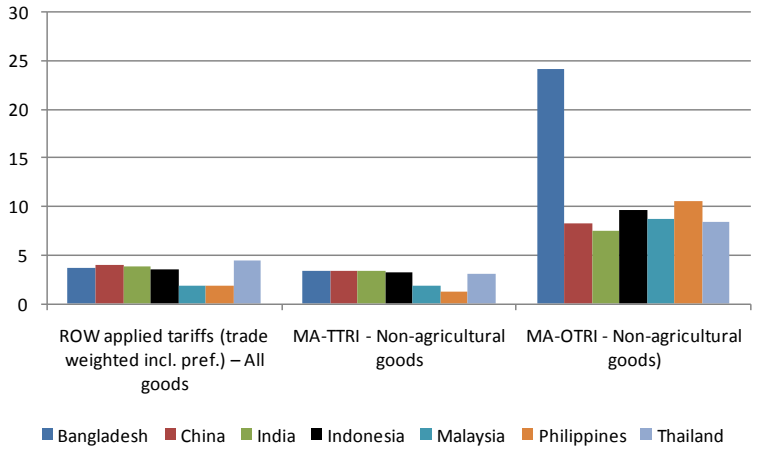
Across all three sectors, Indonesia's manufacturing exporters are operating in positions of the global value chain in which they have little control, and subsequently capture little value. Where they are integrated into regional or global value chains, most of Indonesia's exporters are simply producing to buyer specifications. And where they operate in more traditional export markets, as with some of the artisanal furniture exporters, they often rely on middlemen to connect them to buyers, both for sales and transmission of market knowledge. In both cases, most of the value is captured outside the Indonesian manufacturing sector. Taking greater share of this value will require a significant and long term effort to improve the sophistication of firms, including production efficiency, quality and design capacity, and commercial knowledge and capabilities.

III. COMPETITIVENESS DIAGNOSTICS

3.1. Market Access

At a macro level, market access is not a major problem for Indonesian exporters. Figure 3-1 shows that Indonesia faces relatively similar levels of market access in comparison to its regional peers, with weighted average applied tariffs faced by exporters below 4% (only Philippines and Malaysia face lower applied tariffs).

Figure 3-1: Comparative measures of market access



Source: World Trade Indicators

At a sector level, however, the picture varies considerably. Where duties matter most is in the apparel sector, where Indonesia still faces higher tariffs than key competitors in its most important export markets – for example Bangladesh has duty-free access to the EU and African and Latin American exporters have duty-free access to the US, while Indonesia faces duties of 10-14% in these markets. Given the price sensitivity of the apparel sector and Indonesia's already high cost of reaching markets (due to its location and transport costs), such tariffs have a significant impact on competitiveness across many product ranges. The furniture sector, by contrast faces low tariff barriers to enter most global markets. And in automotive components, where the market is more regional, the ASEAN FTA ensures duty-free access to key markets.

Indonesian exporters face bigger challenges to market access in the form of non-tariff barriers, which is reflected in its relatively worse competitive position in the MA-OTRI versus the MA-TTRI[33] in Figure 3-1. In the apparel sector, for example, exporters complain of the strict requirements for chemical certification in the EU, which forces them either to undertake certification processes or to shift to already-certified EU-based suppliers for key inputs – either way raising costs. The furniture sector is increasingly facing significant technical barriers in the form of requirements to certify that wood comes from sustainable sources (see Section 3.3.2). While at the moment this is not preventing access (although it may do so in the future), it is allowing buyers to put downward pressure on prices in the absence of certification.

[33] MA-OTRI is the Market Access Overall Trade Restrictiveness Index; MA-TTRI is the Market Access Tariff Trade Restrictiveness Index

3.2. Supply side: Incentive framework for trade

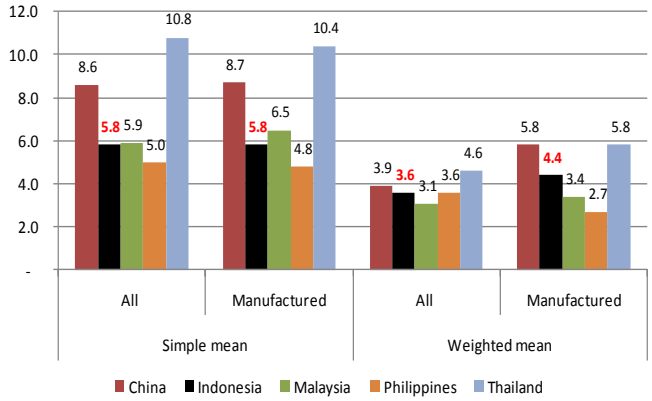
Despite a large domestic market, Indonesian manufacturing firms are relatively export oriented; however, the share of output that is exported has declined somewhat in recent years as the domestic market has grown. For the manufacturing sector overall, output devoted to exports ranges in the 20-26% range, somewhat above the levels of the early 1990s but below the pre-crisis peak. The apparel and furniture sectors are particularly export intensive, with up to 50% of output going into export markets. The automotive sector, meanwhile, remains more focused on domestic markets, but with rapidly growing export intensity, reaching 25% in 2008 from virtually nothing prior to the crisis. As a whole, Indonesia's policy framework is relatively conducive to exports. However, a potential major constraint for manufacturing firms is the access and cost of finance, which appears to be a factor contributing to under-investment in the sector. In addition, the business regulatory environment not only raises the costs of doing business for firms (and more so for exporters) but creates an environment of uncertainty. This not only impacts the competitiveness of firms, but creates an incentive environment that biases against investment and expansion (if not exporting per se). This environment is particularly acute in the manufacturing sector, where risk perceptions are already high and return horizons short. This section reviews briefly the policies that shape the incentive framework of firms, covering market access, trade and investment policy, and the business regulatory environment.

3.2.1. Trade and investment policy

Indonesia's own trade and investment policy environment impacts exporters by determining the degree to which they can access quality inputs at competitive prices, and by establishing the competitive environment in the domestic market, which in turn shapes firm-level competitiveness and the incentives to export versus serving the domestic market alone. The liberalization of Indonesia's trade regime over the past decade or more has been well documented, with even historically highly protected industries like the automotive sector now open to international trade and investment (see Box 3-1). Indonesia is now seen as one of the most open in the region and globally. As illustrated in Figures 3-2 and 3-3, Indonesia applied tariffs compare favorably with regional peers, and tariff dispersion and escalation is low. This is true not only at an overall level, but also for the three focus sectors. Weighted average tariffs in 2009 for furniture (4.5%), apparel (6.9%), and motor vehicles (10.3%) is lowest among all peers[34] (see Figure 3-4). Finally, measures of the effective rate of protection (ERP) across key input sectors show low levels of protection in the three target sectors.

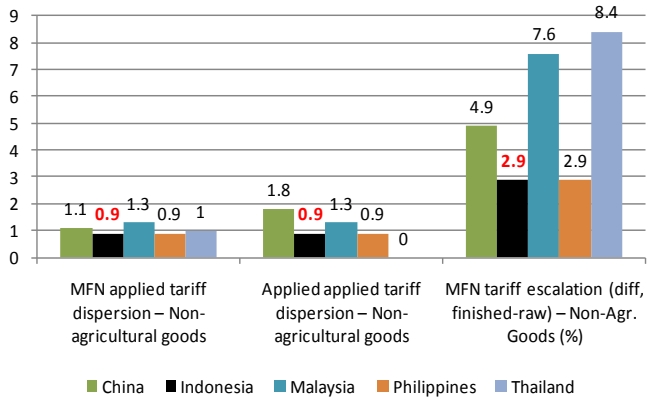
[34] With the exception of Malaysia's tariff on furniture imports

Figure 3-2: Applied tariff rates



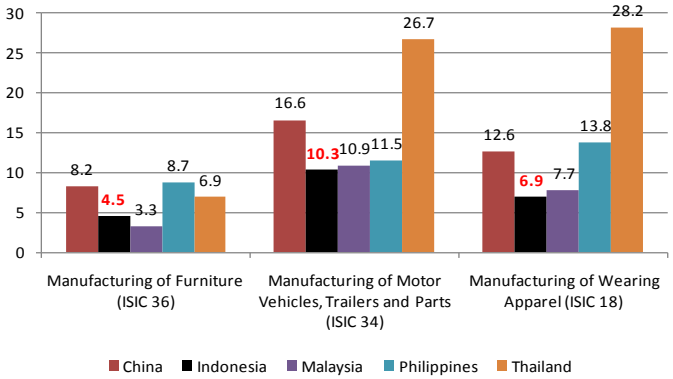
Source: World Trade Indicators

Figure 3-3: Tariff dispersion and escalation



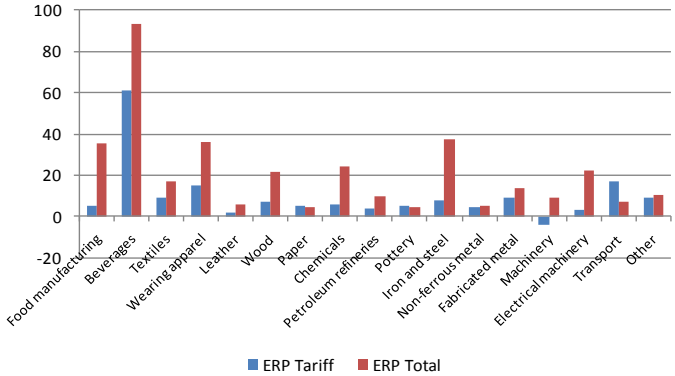
Source: World Trade Indicators

Figure 3-4: Applied tariff rates in selected sectors



Source: WITS (TRAINS database)

Figure 3-5: Effective rates of protection



Source: Gourdon (2010)[35] based on data from WITS (TRAINS)

Box 3-1: From the national car to an open platform (and back again?)

From the 1970s through the mid 1990s, the industrial policy objective of developing a domestic automotive industry was put in place through a complex program of tariff policies, trade restrictions, and tax incentives to encourage the use of locally produced parts. While this program certainly contributed to greater production in Indonesia, its costs and its distorting effects on competition and competitiveness in the sector are widely acknowledged. It has been suggested that by the 1990s, the auto sector attracted "…more rent seeking activity than any other major manufacturing activity in the country"[36]. As the pressures for liberalization were already beginning to show by the mid-1990s, a final push came through the launch of a "national car" program – the "Timor" – led by Tommy Suharto. This project, to be carried out in cooperation with Korea's Kia motors, collapsed after just a year following financial and political difficulties, opposition from other producers, and challenges at the WTO[37].

Subsequent liberalizations in the sector after 1998 have contributed to facilitate a much more competitive sector that, despite many remaining weaknesses, continues to grow production and export, driven by growth the domestic

[35] Gourdan, J. (2010) *Effective rate of Protection to Estimate of the Effects of NTMs*, Mimeo, International Trade Department, World Bank.

[36] Aswicahyono, H., and Feridhanusetyawan, T. (2004) *The Evolution and Upgrading of Indonesia's Industry*, Jakarta: CSIS, Economics Working Paper Series.

[37] Doner, R.,F.; Noble, G.W., and Ravenhill, J. (2006) *Industrial Competitiveness of the Auto Parts Industries in Four Large Asian Countries: The Role of Government Policy in a Challenging International Environment*, Policy Research Working Paper 4106, World Bank.

market and increasing regional integration. But as in most countries, the sector remains at the heart of industrial policy concerns. In this context, the newest national project has emerged with the competition for the development of "green car". These efforts to develop the green car give insight into both what has changed and what remains in the same in automotive sector industrial policy in Indonesia.

The green car project aims to attract one or more major car manufacturers to establish Indonesia as its base for regional and global production of a fuel efficient (biodiesel) car model. Abandoned in this new approach are dreams to develop an "Indonesian brand", as well as the more simplistic ideas of having full production (parts, subcomponents, assembly) in the country. Perhaps most importantly, there is no mention of using trade policy protections as a lever through which to encourage this investment. In this sense, the project represents a much more modern approach to industrial policy. On the other hand, the project envisages offering an extensive package of incentives to attract investment, pointing out the competition (e.g. Thailand) has already agreed a detailed and attractive investment package. Moreover, the very idea that future development of the sector should be built around a "project" that it somewhat technology and market-specific suggests the tendency to "pick winners" and back them with targeted policies is very much alive.

However, while Indonesia's exporters are facing growing non-tariff barriers in export markets, so too is Indonesia raising such barriers to imports. By 2007, non-tariff measures (NTMs) – generally standards and other technical requirements – reached 353 and covered 60 of 79 2-digit HS categories[38]. This not only raises the costs of importing but in many ways is worse than tariffs, due to the lack of predictability regarding when and how they will be applied. One of the factors behind the rise of NTMs is institutional fragmentation. According to a recent study[39], at least 15 government agencies are responsible for different aspects of trade policy in Indonesia; such fragmentation provides scope for individual agencies to impose NTMs without taking fully into account the potential impact such measures will have on the private sector. The growth of NTMs is, however, concentrated in agriculture and other natural resources-based sectors. While it is likely to impact certain manufacturing sectors significantly (e.g. food and beverages), indications from interviews suggest they are not a major barrier to competitiveness in the three focus sectors.

Export restrictions have reduced considerably over the past decade following major reforms in 1998. According to the WTO's last Trade Policy Review for Indonesia[40]: "*Licensed businesses may now export without restriction almost every product from Indonesia, except for rice, protected wildlife species, and sand*." However, like NTMs, this is another area in which trade policy interventions have re-emerged in recent years, particularly in natural resources related sectors. Among the three focus sectors, this primarily impacts the wood furniture sector (see Box 3-2).

[38] USAID (2009)*Export-oriented Investment in Indonesia*, Indonesia Trade Assistance Project, August 2009
[39] European Commission (2010) *Indonesia Export Quality Infrastructure*, Terms of Reference for Study.
[40] WTO (2007) *Trade Policy Review: Indonesia*, Geneva: World Trade Organization.

Box 3-2: Export restrictions on wood: are they helping the furniture sector?

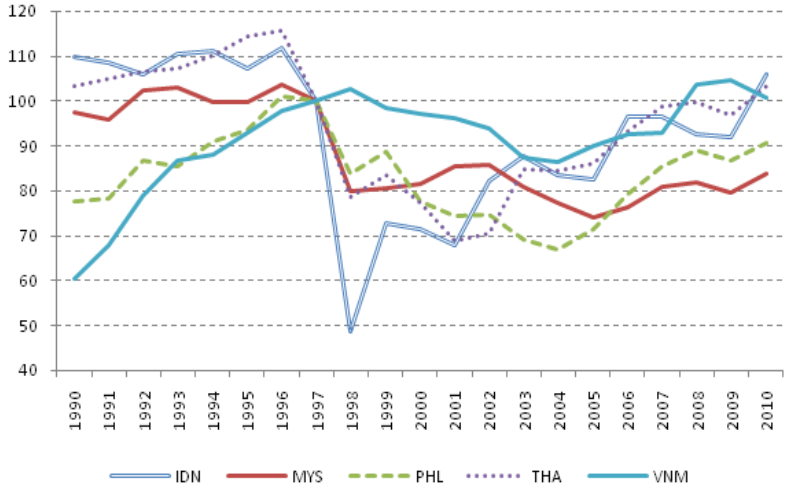
As part of Indonesia's post-1998 trade reforms, the export ban[41] that existed on logs under the Suharto regime was lifted. However, under the pressure of massive deforestation of a key natural resource due to illegal logging and huge growth in the pulp and paper sector, the GoI reintroduced the export ban in 2001.

For the furniture sector, an export ban on raw wood should help ensure the availability of cost effective raw materials. Yet, interviews with the sector suggest that instead it is facing a crisis in the access to cost effective supplies. Indeed, most furniture exporters point to raw materials as the single biggest constraint they face to maintaining competitiveness. Part of the problem lies with enforcement of the export ban. Illegal logging remains rife and huge volumes are unprocessed wood continues to leave the country in defiance of the ban. For example, ASMINDO estimates that the value of illegal log exports to Malaysia could be as much as ten times the reported value of log exports. Thus the key benefit that a log export ban is expected to confer on domestic wood using industries – the price wedge between domestic products and the world price –is not realized in practice.

Beyond this, the export ban creates additional regulatory barriers that have unintended impacts on the sector. For example, the degree of processing required for a wood product to be considered eligible for export is not always clear, open up scope for interpretation in the customs and border processes. Many furniture producers who export semi-finished products face significant delays and costs (including administrative and informal payments) as a result of consignments being interpreted as unfinished.

The exchange rate is another critical aspect of trade policy that can have a significant impact on the incentive framework of the private sector. Indonesia's currency has strengthened considerably in real terms since its collapse during the crisis. The real effective exchange rate, a measure that includes changes in the nominal exchange rates and inflation between Indonesia and its main trade partners, appreciated by almost 50% between 2000 and 2010 (Figure 3-6). This compares to 34% for Thailand, 16% for Philippines, and only 3 to 4% for Vietnam and Malaysia. Yet it seems to have had only limited impact on the decisions of exporters, at least directly. Most exporters interviewed across the three focus sectors indicated no significant issues related to the exchange rate. Moreover, surprisingly, the appreciation of the exchange rate does not appear to be associated with greater use of imported inputs. Indeed, data from the Manufacturing Census shows the use of imported inputs remaining flat or actually declining somewhat in apparel, automotive, and electrical machinery as the value of the Rupiah rose. This is partly explained by the fact that exporters tend to operate in US dollars for both selling and buying imported inputs, and also obtain working capital loans in dollars.

Figure 3-6: Real Effective Exchange Rate (CPI-based), 1990-2010

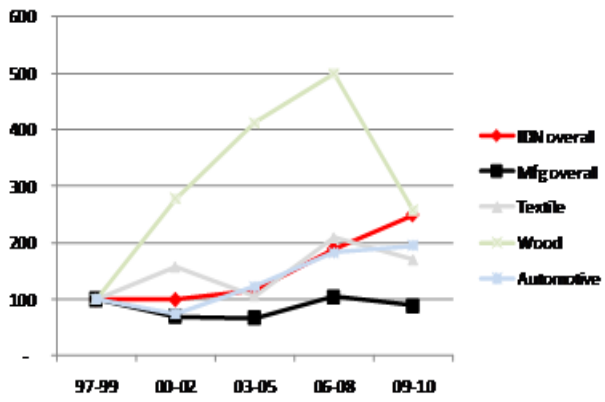


Source: Economist Intelligence Unit

[41] An export ban existed from 1980 to 1992; this was replaced in 1992 by a prohibitive export tariff.

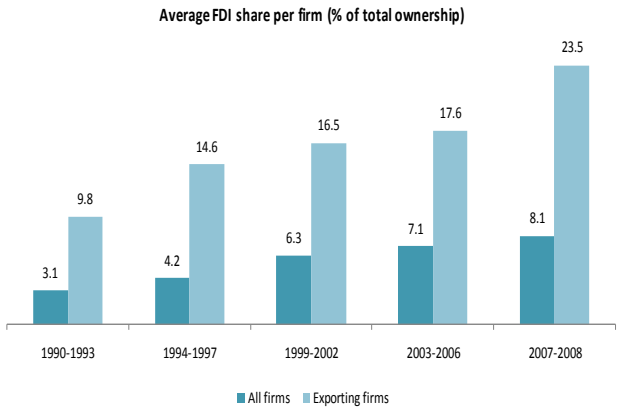
Finally, recent research on the Indonesian manufacturing sector[42] highlights that growth in exports and employment has been overwhelmingly driven by FDI. Indeed, while realized FDI in the manufacturing sector overall has been weak during and after the crisis, it has grown considerably since the mid-2000s, particularly in key sectors like automotive and textiles (Figure 3-8). Moreover, much of the FDI has come through takeovers and equity investments in existing manufacturing firms. This has significantly increased the level of foreign participation in manufacturing firms, particularly in the export sector where foreign-investment now accounts for an average of almost 25% of firms (Figure 3-9).

Figure 3-8: Evolution of realized FDI (3 year average) - index (1997-1999=100)



Source: BKPM

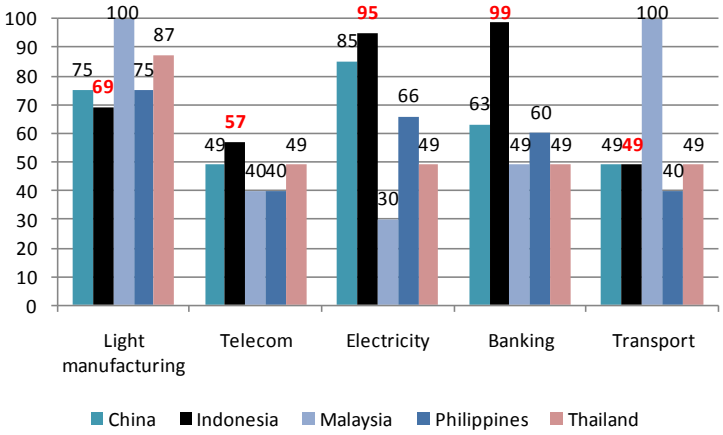
Figure 3-9: FDI share of manufacturing firms



Source: Manufacturing Census

In this context, it is therefore important to assess briefly the policy regime that governs foreign investment. The 2007 Investment Law is the basis for policy with regard to FDI. This law provided improved transparency on the investment process and reduced the restrictions to investment in several sectors, most importantly by establishing a "negative list" of restricted investments. However, this negative list is still significant in number. Moreover, it has been argued that many exceptions, grandfathering and loopholes in the policy create a situation of significant uncertainty for investors – indeed, the negative list has been reviewed and revised on a number of occasions from the time it was first introduced[43], with the latest version (apparently much more transparent)

Figure 3-7: Openness to FDI (100= fully open; 0= fully restricted)



Source: World Bank – Investing Across Borders

[42] See Lipsey, R.E. and Sjoholm, F. (2010) *FDI and Growth in East Asia: Lessons for Indonesia*, IFN Working Paper Number 852, Research Institute of Industrial Economics, Stockholm, Sweden; Lipsey, R.E., Sjoholm, F., and Sun, J. (2010) *Foreign Ownership and Employment Growth in Indonesian Manufacturing*, NBER Working Paper 15936, Cambridge, MA: National Bureau of Economic Research.

[43] USAID (2009) *Export-oriented Investment in Indonesia*, Indonesia Trade Assistance Project, August 2009.

introduced in 2010. Figure 3-7 provides a comparative assessment of Indonesia's openness to FDI across key sectors of the economy, based in the World Bank's *Investing Across Borders* (IAB) project. Even after the implementation of the 2007 Investment Law, the majority of the 33 industry sectors covered by the IAB indicators are subject to overt statutory ownership restrictions in Indonesia. In the manufacturing sector, Indonesia rates as the least open market for FDI relative to its regional peers. However, the restrictions in manufacturing are actually limited only to the pharmaceuticals and publishing sectors only; the three sectors under analysis in this report are fully open in Indonesia.

Despite the relative openness in the target manufacturing sectors, however, certain aspects of the FDI regime place constraints on investors. One is the limited time period of the investment license – foreign investors are given a license to operate for only 30 years, with possibilities of being granted an extension after 30 years and 60 years. For most light manufacturing investments this is not a significant constraint (it may be more an issue for large-scale investments). A second issue is the requirement to apply to BKPM to be granted a license for any expansions of investment of 25% or more. While some firms indicate that this is a bureaucratic hassle, there is little evidence to suggest that it is actually blocking investment (although some firms say it gives them the incentive to make more incremental investments in order to avoid hitting the 25% license threshold).

3.2.2. Business regulatory environment

The business regulatory environment rates as one of the biggest constraints to exporters and firms overall in Indonesia, and was the second most commonly cited constraint (after infrastructure) in interviews with companies in the three target sectors. As is clear from Table 3-1, Indonesia has one of the worst investment climates in the region across virtually all measures (the one exception being protection of investors, where it ranks in the middle of the peer countries). Malaysia and Thailand – increasingly important competitors as Indonesia seeks to move its manufacturing sector into higher quality territory – rank in the top fifth of economies worldwide for "ease of doing business", while Indonesia ranks in the bottom third. Even relative to its main low-cost rivals for manufacturing trade investment, Indonesia compares unfavorably.

Table 3-1: Ease of Doing Business rankings (2011)

	IDN	MYS	THA	CHN	PHL	VNM	BGD
Starting a business	**155**	113	95	151	156	100	79
Registering a property	**98**	60	19	38	102	43	172
Getting credit	**116**	1	72	65	128	15	72
Protecting investors	**44**	4	12	93	132	173	20
Paying taxes	**130**	23	91	114	124	124	93
Enforcing contracts	**154**	59	25	15	118	31	179
Closing a business	**142**	55	46	68	153	124	101
Best two							
Worst two							

Source: World Bank, Doing Business Indicators

Investors interviewed highlight in particular the lack of transparency in the regulatory regime as being the biggest constraint they face. This appears to have become worse in recent years and is attributed to the process of decentralization, which has led to problems of overlapping and often contradictory national and local regulations. A representative of the footwear industry association pointed to some

2,000 regional regulations that were not in line with national regulations. Investors point to the preponderance of "nuisance" regulations at the local level – examples of special charges for employing foreigners, taxes on street lighting for firms that use generators, and fees for parking within a firm's own plant area[44]. The main impact on firms is in predictability. Interviews suggest that this may play a role in dampening investment and in preventing firms from growing, particularly in sectors that are dominated by small and medium firms like furniture and apparel. The burden of regulations gives firms the incentive to remain below the threshold at which they are legally obligated to comply (often 50 staff). And their unpredictability adds a further risk factor to investment decisions.

Finally, the onerous regulatory environment is linked also with concerns over corruption. While the World Bank's Enterprise Surveys in Indonesia suggest that few firms view corruption as a main constraint to doing business, anecdotal evidence from interviews indicates the problem is perhaps more serious. This is supported by data from the MICI[45] survey of manufacturers, which marked "corruption in local government" as the third biggest obstacle to doing business in 2007 (after macroeconomic instability and transportation). Most firms indicate that the processes involved in complying with government regulations, whether through licensing regimes or customs, gives rise to corruption. At this level, however, it is considered a general "cost of doing business" – it hurts firm competitiveness by raising costs, but on the whole it is considered predictable. Where firms, particularly foreign investors, appear to face more unpredictable problems is in relation to the legal system, where there is a sense that personal connections and corrupt relationships determine the results of legal disputes. This not only makes contract enforcement difficult (confirmed by Indonesia's ranking of 154 in the Doing Business Indicator for "Enforcing Contracts"), but opens firms up to serious risks of abuse by suppliers, business partners, and in some cases even employees.

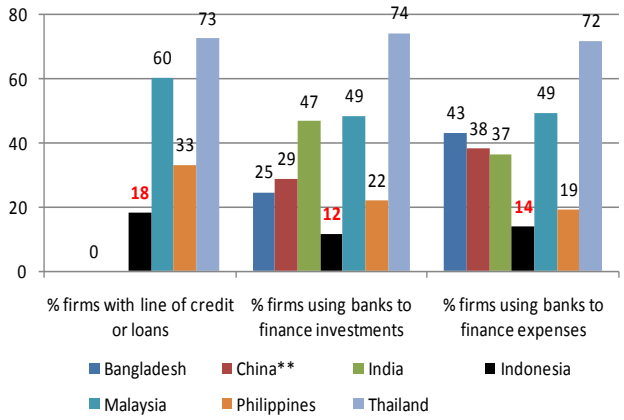
3.2.3. Access to finance

Whether or not firms take the decision to invest depends in part of course on access to finance. As in most countries, Indonesia manufacturers perceive access to finance as being one of the biggest constraints they face. Evidence from international surveys suggests that Indonesian manufacturers on the whole make significantly less use of formal, bank-intermediated financing than regional peers (Figure 3-8), with only 18% of firms having a line of credit or loan with banks.

[44] IFC (2006) *Improving Indonesia's Competitiveness – Case Study of Textile and Farmed Shrimp Industries*, International Finance Corporation, September 2006.

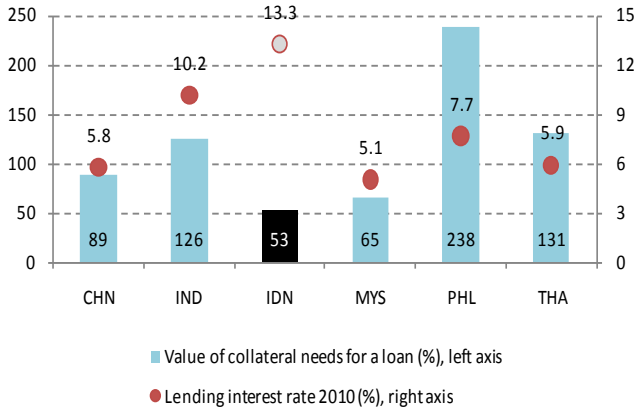
[45] Monitoring the Investment Climate in Indonesia

Figure 3-8: Use of bank-intermediated financing



Source: World Bank Enterprise Surveys (China from 2003)

Figure 3-9: Interest and collateral requirements



Source: World Bank Enterprise Surveys (China from 2003); Economist Intelligence Unit

It is well known that, despite the banking sector returning to health after post-crisis restructuring, its lending to the corporate sector has remained considerably restrained. This reflects in part a general view of the traditional labor-intensive manufacturing sectors as a "sunset industry" (see Box 3-3), with limited long-term prospects and relatively high firm-level risk. Thus, firms in the apparel and furniture sector, particularly small firms, face interest rates and collateral requirements considerably higher than the average reported in Figure 3-20. For example, exporters in the Jepara furniture cluster report facing interest rates of 16% for loans, and as high as 5% per month for working capital financing. Again, large exporters, particularly foreign-owned are often able to avoid these constraints, in this case by accessing loans and credit lines in US dollars or by accessing credit aboard, which is critical to allow them to compete in international markets against firms in China, for example, who can access capital at less than 5% annually.

Box 3.3: The "sunset industries" label – a self-fulfilling prophecy?

A "sunset" industry described an industry in decline, where growth and profitability are not expected to remain at the levels they have been in the past. This contrasts with a "sunrise" industry, which is seen as a major growth opportunity and is often linked with emerging technologies. However, while the concept of "sunrise" and "sunset" sectors can be useful shorthand, in Indonesia the label is also linked to official government policies.

Despite being a key growth engine for Indonesia during the 1980s and 1990s, already by the early 1990s the GoI's industrial strategy (under the strong influence of former President Habibie, then the Minister of State for Research and Technology), labor intensive manufacturing sectors were deemed to be "sunset" industries that could not be relied on for future growth. This designation has influenced industrial policy directly and, through the influence of the Central Bank, commercial lending to sectors like textiles and apparel. Firms in sectors that are considered "sunset" tend to face systematically higher interest rates and collateral requirements. The implication is that both investment and working capital is constrained, restricting modernization of factories and equipment and making it more difficult for firms to take commercial decisions to expand. This in turn leads to slower growth and declining productivity, reinforcing the decisions of the banking sector to remain risk-averse in manufacturing lending.

Many in the manufacturing sector and in the GoI argue against the label of "sunset industry", pointing to the importance of assessing risk at the firm rather than sector level. But in the absence of effective credit bureau this can be difficult. The recent establishment of Exim Bank, with 50% of its portfolio dedicated to manufacturing, may help in overcoming the self-reinforcing effects of the "sunset industries" label.

Whether or not the banking sector has a systemic bias against the manufacturing sector, the reality in Indonesia (and indeed in most countries) is that sectors dominated by small firms do tend to have higher levels of default, and that risk is compounded where sectors are low in margin and open to intense international competition, like apparel and furniture. The low level of sophistication among many of Indonesia's manufacturers discussed previously contributes significantly to the financing constraint, by raising the risk profile of the sector. Research in small-firm export clusters like Jepara highlights herd-like investment behavior and significant weaknesses in financial management across the sector.

3.3. Factor inputs, productivity, and trade costs

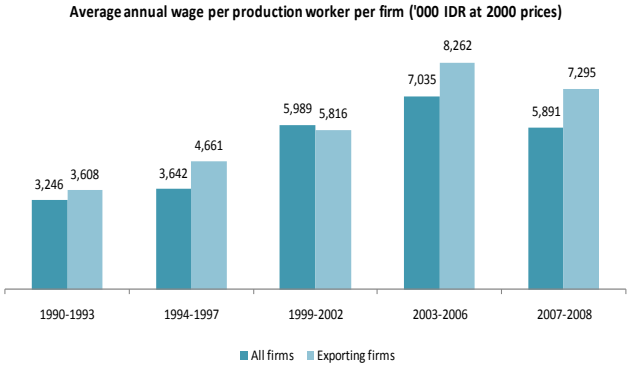
Indonesia's manufacturing competitiveness is constrained across the board by issues relating to productivity and trade costs. While access to most material inputs is relatively unproblematic, infrastructure shortfalls and policy contribute to relatively high costs of services inputs (with the exception of facilities); moreover access to finance is problematic, particularly in the manufacturing sector. The transport and logistics environment remains a critical source of competitive weakness for the manufacturing sector. But perhaps the most important factor undermining Indonesian competitiveness is productivity at factory gate, including aspects related to labor markets, skills and, perhaps most importantly, technical efficiency.

This section reviews briefly the factors that contribute to firm-level productivity and trade costs in the Indonesian manufacturing sector.

3.3.1. Labor markets, skills, and firm-level technical efficiency

The Indonesian manufacturing sector has an important potential source of competitive advantage in having a large pool of labor available at low wages. Despite major increases in the minimum wage in the initial post-crisis years, wage growth has been seriously restrained since, with real wages in decline since 2003 (Figure 3-10). In fact, hourly labor costs in the manufacturing sector are now less than one-third that in Malaysia and Thailand, two-thirds that in the Philippines, and on par with Vietnam. This may have significant implications on the development of Indonesia's manufacturing sector going forward, particularly in labor intensive sectors like apparel, footwear, and possibly furniture. Figure 3-11 highlights the extent of the wage gap that has now opened up between Indonesia and China. In 2003, China's wages were around 50% higher than Indonesia's; they have since risen to reach more than three times the Indonesian wage, with most of this rise taking place only since 2006. Moreover, the turnover of labor is said to be relatively low in Indonesian manufacturing firms. Anecdotal evidence from Indonesia's exporters, particularly in the apparel and footwear sectors, indicates that this wage gap is beginning to result in a shift of orders from international buyers toward Indonesia over China, as well as a rise in investment from Chinese companies looking at Indonesia as a site for offshoring.

Figure 3-10: Average production worker wages ('000 IDR at 2000 prices)



Source: Manufacturing Census

Figure 3-11: Indonesia v China manufacturing wages

Source: Economist Intelligence Unit

Box 3-4: Indonesia's apparel sector – a case of bad timing?

The timing and pattern of wage growth may be critical in understanding the trends in competitiveness of sectors like apparel. Just as investment was reentering the sector in the region following the collapse during the crisis, Indonesia dramatically raised production wages[46]. This is likely to have diverted FDI and prevented local firms from undertaking investments to upgrade or expand in the crucial period when apparel sector production networks were becoming increasingly globalized and before the end of the MFA. Thus, Indonesian may have missed out on the reorganization of apparel sector production networks in the first half of the 2000s.

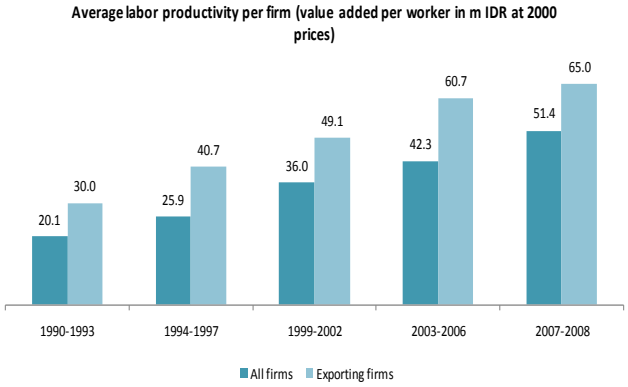
With the latest global financial crisis, however, global apparel buyers are once again reshaping their production networks. Now, however, the timing may be more fortuitous, as the combination of long-term wage restraint in Indonesia and rapid growth in wages in China (along with increasing wage pressures in countries like Vietnam and Bangladesh) is turning the attention of investors back to Indonesia.

But the opportunities for Indonesia's labor intensive sectors to exploit of this wage cost advantage are partly undermined by stagnating productivity. Relative to wages, Indonesia's productivity levels remain relatively high. However, annual labor productivity growth in the manufacturing sector during the period 2002-2008 was down 40% from the pre-crisis period (1990-1997). In the apparel sector, labor productivity has virtually stalled since the crisis (Figure 3-13), while in the furniture sector the decline in productivity growth is in line with the manufacturing sector average. It is worth noting that while exporting firms maintain a significant productivity advantage over non-exporters, this has declined in the post-crisis period, from an advantage of around 50% to only 30% in 2007-2008 (Figure 3-12).

While Indonesia's huge labor force – each year more than 3.3 million youths leave the formal education system to enter the labor market[47] – is likely to continue to restrain wage growth, inflationary pressures are already beginning to force up wages, so relying on the wage gap beyond the short-term is ill-advised. But it does offer the potential to catalyze greater investment in the manufacturing sector. From this platform, addressing the productivity gap must then take center stage.

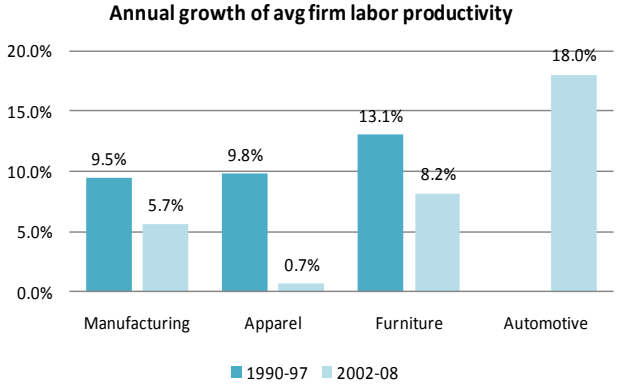
[46] It is said that the impact of wage rises was as much as a tripling of unit labor costs.
[47] World Bank (2010) *Education, Training, and Labor Market Outcomes for Youth in Indonesia*, August, 2010.

Figure 3-12: Manufacturing sector labor productivity



Source: Manufacturing Census

Figure 3-13: Labor productivity growth of exporters in targeted manufacturing subsectors



Source: Manufacturing Census

Box 3-5: FDI and productivity in the Indonesian manufacturing sector

The recent trade literature focusing on firm heterogeneity has shown clearly that exporters tend to be more productive than non-exporters[48], in part because most productive firms can overcome the sunk entry costs involved in exporting. Evidence from the Manufacturing Census strongly confirms this relationship for Indonesian manufacturers. But the Manufacturing Census data also highlights that beyond the distinction between exporter and non-exporter, the type of exporter matters. Specifically, foreign-owned firms (FDI) show consistently higher rates of employment creation, capital intensity, and total factor productivity (TFP). This is discussed in detail in two recent papers on FDI in the Indonesian manufacturing sector[49].

According to the Solow growth decomposition, a firm's linearly homogeneous production function can be subdivided into the growth rates of the input factors and the growth rate of some unexplained residual, called TFP. However, econometric estimates often suffer from simultaneity since productivity is known to firms when they choose their profit-maximizing input levels. In order to estimate the production function parameters and, thus, TFP consistently, we apply the methodology of Levinsohn and Petrin (2003)[50] who use intermediate inputs as a proxy for unobservable productivity shocks (see Petrin, Poi, and Levinsohn 2004)[51]. This is a modified version of the estimator developed by Olley and Pakes (1996)[52] which uses investment as a proxy for productivity shocks.

The figures below show trends in TFP for FDI and domestically-owned exporters across the three sectors of apparel, furniture and automotive. Outside the crisis years, FDI exporters maintained a significant productivity gap over domestically-owned exporters. Interestingly, however, the gap in TFP between FDI and domestic firms has closed considerably in all sectors over recent years, although it remains significant. In the apparel sector the TFP premium for FDI exporters declined from twice that of domestically-owned exporters in 2000 to less than 20% by

[48] See, for example, Melitz, M. (2003) "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity," *Econometrica*, Econometric Society, vol. 71(6):1695-1725.

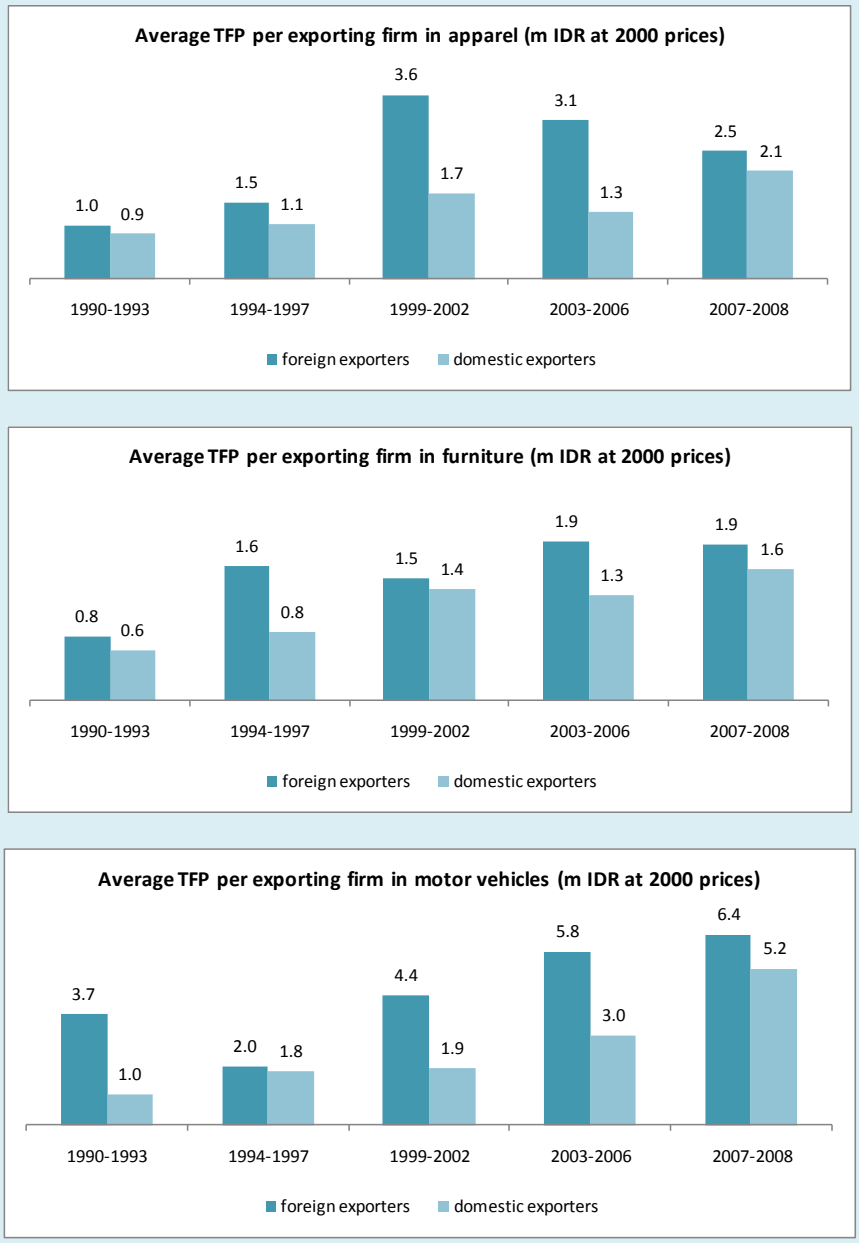
[49] Lipsey, R.E. and Sjoholm, F. (2010) *FDI and Growth in East Asia: Lessons for Indonesia*, IFN Working Paper Number 852, Research Institute of Industrial Economics, Stockholm, Sweden; Lipsey, R.E., Sjoholm, F., and Sun, J. (2010) *Foreign Ownership and Employment Growth in Indonesian Manufacturing*, NBER Working Paper 15936, Cambridge, MA: National Bureau of Economic Research

[50] Levinsohn, J. and A. Petrin (2003) "Estimating production functions using inputs to control for unobservables", *Review of Economic Studies*, Vol. 70 (2): 317-342.

[51] Petrin, A., B. Poi, and J. Levinsohn (2004) "Production function estimation in Stata using inputs to control for unobservables", *The Stata Journal*, Vol. 4 (2): 113-123.

[52] Olley, G. and A. Pakes (1996) "The dynamics of productivity in the telecommunications equipment industry", *Econometrica*, Vol. 64 (6): 1263-1297.

2008; in the furniture sector it declined from 60% to 20%; and in the automotive sector from 400% to 80%. This may be partly explained by differences in investment levels (and therefore capital stock) between foreign and domestic firms. Especially in apparel and furniture, foreign-owned firms invested heavily prior to the crisis and have run down capital stocks since then; domestically-owned firms followed a similar pattern but appear to have begun to increase capital intensity again since 2006.



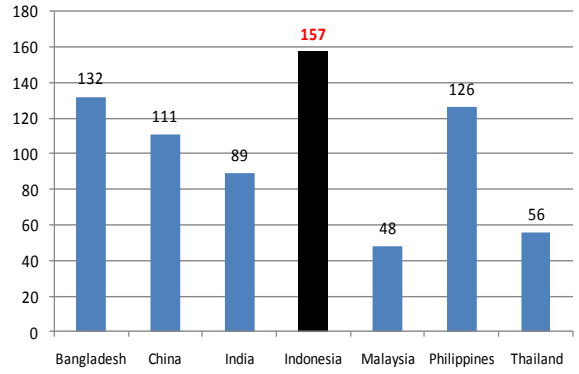
Source: Calculated from data in Manufacturing Census

Manufacturers point to labor regulations as one of the main factors contributing to poor competitiveness, and constraining investment in the sector. In fact, Indonesia is ranked as having the most rigid labor market among its regional peers, according to the *Doing Business* rankings (Figure 3-14). Law Number 13 (2003), also known as the 2003 Manpower Law has long been a source of consternation for manufacturers. Among the components of the law are provisions for a 40 hour work week and statutory overtime pay proportional to the extra hours worked. According to the apparel sector, Indonesia is the only country among the main Asian textile industry producers to require these labor

provisions[53]. Moreover, manufacturers complain of large rises in minimum wages unrelated to productivity.

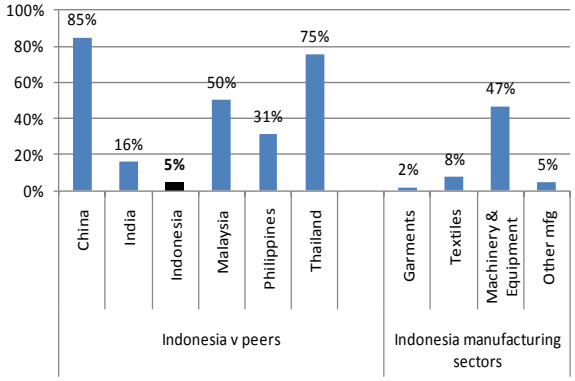
But the biggest source of concern for manufacturers is the provisions on severance payments, which are to be among the highest worldwide. Under the provisions of the law, workers are entitled to a minimum of 23 months of severance (increasing based on service) if they are dismissed for any reason; this severance requirement comes into effect as soon as workers have been with a firm for 9 months. One study found that the severance costs resulting from the law are equivalent to a "hiring tax" of about 4.1 monthly wages per employee or 34 percent of a worker's annual wage[54]. Put another way, this "hiring tax" has the same effect as if the government imposed a tax of 4 months wages on employers for every new employee they hire. Firms have responded to the labor regulations by hiring labor on a contract basis, to avoid taking on workers that can make severance claims. In labor intensive sectors like apparel and furniture, virtually no new workers are brought in on permanent contracts and up to 40% workers are now on temporary contracts. It is also reported that many firms fail to comply with the regulations.

Figure 3-14: Rigidity of Employment Index



Source: World Bank Doing Business Indicators

Figure 3-15: Share of firms offering formal training



Source: World Bank Enterprise Surveys

The regulations, and firm responses to them, create a number of distortions which contribute to negatively impact productivity and competitiveness in the manufacturing sector. These include:

- *Making labor markets rigid and constraining knowledge flow across firms*: Firms are less likely to let go of older, more knowledgeable workers because the tenure based formula makes retrenching them more costly; similarly the system creates a disincentive for workers a to leave. This system may also impact the stock sector knowledge and experience in the long term as few young workers are brought into firms as permanent staff.
- *Discouraging growth and keeping firms small*: Compliance with the labor law is required for firms with 50 or more employees. Firms indicate that it creates as significant disincentive to growing beyond 50 staff, and that many firms take active measures to remain below the threshold.
- *Raising the cost of financing and discouraging investment*: Firms must hold the value of

[53] IFC (2006) *Improving Indonesia's Competitiveness – Case Study of Textile and Farmed Shrimp Industries*, September 2006.

[54] USAID (2004), *Indonesia's Employment Protection Legislation: Swimming Against the Tide?*, GIAT project, November 29, 2004.

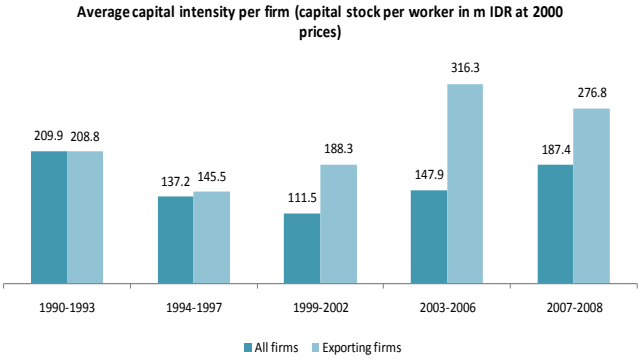
potential severance claims (contingency) as a liability on their books. This raises their risk profile and can contribute to higher borrowing costs. Ironically, this may prevent firms from investing in replacing labor with capital, which would be the expected response to costly labor regulations.

- *Lowering productivity by reducing the incentives to train:* Firms tend to invest less in training of temporary (contract) workers than they do with permanent staff, as these workers tend to be less stable and their tenure is limited by statute. As firms make increasingly greater use of temporary staff, this training deficit may be contributing to declining productivity.

In fact, the evidence from Enterprise Surveys shows that Indonesian manufacturers invest far less in training their workforce than regional peers (Figure 3-15). While the labor regulations may contribute to this gap, it is, however, unlikely to be the only factor. One factor is clearly the nature of firms in the manufacturing sector. Relative to peers like Malaysia and Thailand, Indonesia's firms tend to operate in labor intensive, low technology activities. In sectors like apparel and furniture, for example, it is common in many firms to train workers on the machinery when they first begin the job, but not again during their career. In addition, Indonesia's firms tend to be smaller than their comparators in China, Malaysia, and Thailand, a factor which tends also to be associated with lower levels of formal training.

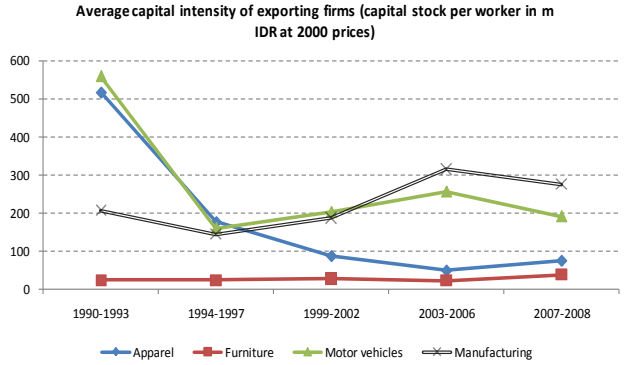
Data from the Manufacturing Census confirms the low levels of training reported in the Enterprise Surveys. Disaggregating the data by the nature of firms, we see consistent evidence that exporting firms invest substantial more in training, with relative expenditure on training ten times higher for manufacturing exporters than for manufacturing firms overall (in our target sectors, the ratio is eight times in apparel, nine times in automotive, and three times in furniture). Interestingly, while FDI exporters tend to invest more than domestic investors in training in the manufacturing sector overall (2.5 times greater investment, on average), in the apparel and furniture sectors, locally owned exporters spend more on training than FDI exporters (1.6 and 1.7 times more, respectively); while in the automotive sector, FDI exporters spent five times more on training than their locally-owned counterparts.

Figure 3-16: Average capital intensity per firm



Source: Manufacturing Census

Figure 3-17: Average capital intensity of exporting firms [55]



Source: Manufacturing Census

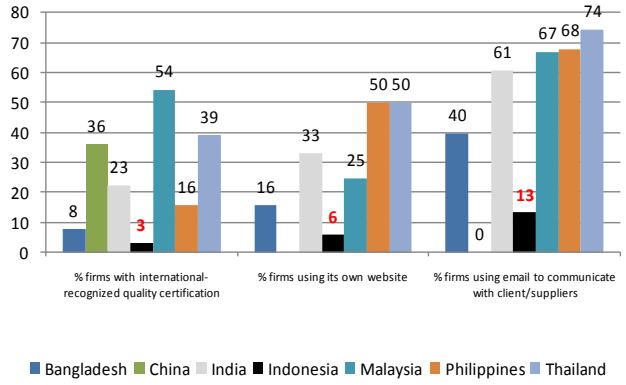
[55] In Figure 3-17, we cut the y axis at R500m in order to allow for perspective on the trends in apparel and furniture over the past decade. In motor vehicles, capital stock per worker peaked at 1,900m in 1993 and 1,300m in 1998

But despite the concerns over labor regulations and the reticence to invest in training, firms in the manufacturing sector show low levels of investment in capital equipment. This may indicate that, despite the regulatory constraints, wage levels are sufficiently low to prevent a factor shift toward capital. More fundamentally, it reflects at lack of belief on the part of firms and banks on the risk-return prospects in the sector (See Box 3-3). Recent incentives offered by the Ministry of Industry to upgrade equipment in the manufacturing sector appear to be facilitating some investment, but it is unclear what impact this will have given its necessarily limited scale. In the textile sector, for example it is reaching only 600 firms in the country (and the apparel subsector – the focus of this report – is not a target of this intervention).

Regardless of factors behind it, this lack of investment is clearly one of the factors contributing to low productivity growth in the sector. While capital stock per worker rose 3.6% per year for the manufacturing export sector overall between 1996 and 2008, it has declined steadily in the apparel sector since the mid 1990s (although there is some evidence of increased investment since 2008) and, since around 2000, in the automotive sector. In the furniture sector, capital intensity also declined from around 1993 through the crisis years, but it has picked up strongly again since around 2003. Again, we find a difference depending on the nature of firms, with exporters 60% more capital intensive than the manufacturing sector as whole.

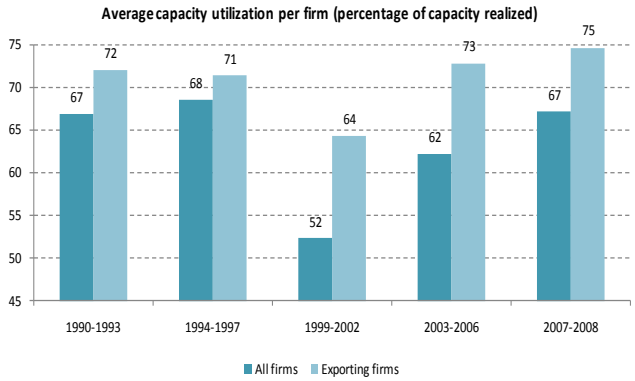
An additional factor to consider in assessing the links between labor and productivity is technical efficiency – i.e. the efficiency by which firms utilize their production inputs. While we do not have any direct evidence on the link between firm capabilities and productivity, anecdotal evidence from interviews as well as data from the World Bank's Enterprise Surveys indicate that low levels of sophistication of Indonesian manufacturing firms may well be a constraint on competitiveness. As Figure 3-18 illustrates starkly, Indonesian manufacturers score lower than all regional peers on basic measures of firm sophistication, like having international quality certification and use of ICT. This may contribute to their struggling to compete on any basis beyond cost. It may also contribute to relatively inefficient production, and thus low levels of productivity.

Figure 3-18: Comparative measures of firm sophistication based on surveys of manufacturers



Source: World Bank Enterprise Surveys

Figure 3-19: Average capacity utilization per firm (percentage of capacity realized)



Source: Manufacturing Census

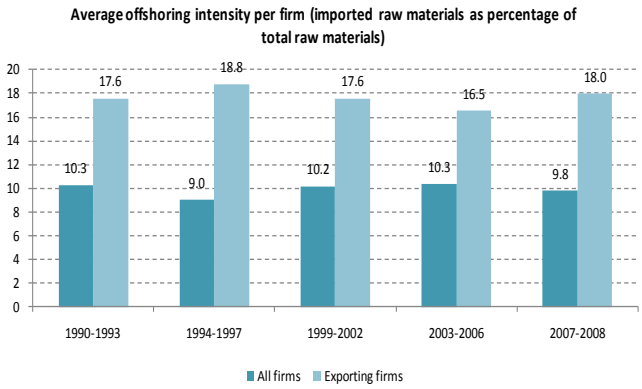
One typical symptom of poor technical efficiency is low levels of capacity utilization. However, Figure 3-19 shows that capacity utilization in Indonesia's manufacturing firms now stands between 70% and 75%,

which is relatively high. Clearly, capacity utilization was hit hard by the crisis, dramatically so for non-exporters. Indeed, it has taken Indonesia's manufacturers a decade to reach the levels of capacity utilization they achieved prior to the crisis. In fact, low capacity utilization may be one of the main explanations for the lack of investment in the manufacturing sector over the past decade. If this is true, the sector may have reached a threshold in 2008, and (2009 global economic crisis aside) should therefore expect the sector to shift to higher levels of annual investment in the years to come. This should be further supported by the rising wage gap with China and the growth of the domestic market.

3.3.2. Intermediate inputs and backbone services

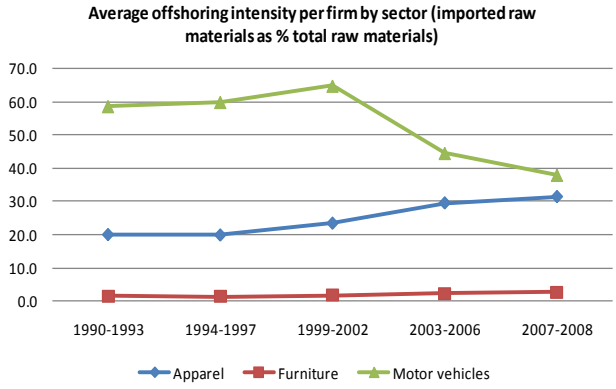
This section will focus on the competitive environment for Indonesian manufacturers in accessing intermediate inputs (domestic and imported) to the manufacturing process, land and facilities, utilities, and key services inputs. Indonesian manufacturers benefit by having access to a large domestic market, and therefore a wide range of relatively competitive suppliers for most material inputs. And thanks to the introduction of a liberalized trade regime over the past decade, they now have significant access to imported inputs, particularly from ASEAN and China. But Indonesian manufacturers on the whole still make relatively limited use of imported inputs (around 10% of total materials inputs). And, surprisingly, data from the Manufacturing Census shows that the use of imported inputs by exporters has actually declined slightly since before the crisis, in spite of an appreciating currency – only 18% of materials inputs are imported (Figure 3-20). For exporters, the share has increased from a low of 16% in 2004.

Figure 3-20: Imported materials as percentage of total materials inputs



Source: Manufacturing Census

Figure 3-21: Imported materials as percentage of total materials inputs by sector



Source: Manufacturing Census

This masks, however, considerable variance in levels across sectors (Figure 3-21). The domestic apparel sector has experienced significant growth in use of imported materials, from around 20% before the crisis to around 30% now. One factor behind this is the declining competitiveness of Indonesia's domestic fabrics sector. Interviews with the apparel sector indicate that many firms are increasingly sourcing their fabric from China as domestic firms can not often compete with the price of Chinese product. Second, as the export sector tends to be highly buyer-driven (most Indonesian exporters are simply in the "cut-make-trim" segment of the sector), raw material sourcing decisions are usually taken not by Indonesian manufacturers but by their customers. Finally, the increasing dominance of FDI in the export sector is driving higher use of imported materials. Data from the Manufacturing Census shows that FDI exporters are twice as reliant on imported materials as domestic exporters, with some 50% of

raw materials imported. Interestingly, however, while domestic apparel exporters have doubled their use of imported materials in the last decade from 10% to 20%, FDI have reduced imports from 60% to 50%. This general pattern of slow convergence in the sourcing strategies of domestic and foreign-owned exporters holds also in furniture and automotive sectors.

In contrast to the apparel sector, furniture is virtually all based on local materials, with only about 2.5% of supplies imported, although this too has risen significantly in the past decade. While there appears to be no significant difference in the sourcing strategies of firms serving export versus domestic markets, there is again a dramatic difference in the use of imported inputs between FDI and locally-owned exporters, with FDI exporters importing 7-9% of inputs in recent years versus less than 2% for locally-owned exporters. Access to raw materials, whether of local or foreign origin, is an increasing constraint to competitiveness in the sector. Global concerns over sustainable forestry and the subsequent requirements for certification along with competing demands for land (e.g. food, biofuels) has led to a significant increase in prices for legal wood.

According to the furniture sector, this situation is aggravated by the structure of the domestic supply market, where the SOE supplier (PERHUTANI) controls the majority of the market and determines pricing[56]. Overall, the rising price of raw materials is putting significant pressure on the competitiveness of furniture exporters, who claim to have been unable, to date, to pass on these price increases to their customers[57]. While the firm-level response to these challenges has been muted, government in conjunction with the industry associations is aiming to address it in the medium to long term by developing the potential to make use of alternative sources of wood supply, such as rattan and palm. In the short term the Ministry of Industry in collaboration with ASMINDO has initiated the development of two wood terminals in Sulawesi Utara and Jawa Timur and two rattan terminals in Aceh and Kalimantan Tenggah. These terminals are targeted mainly to SMEs to ensure the legality and quality of wood supply. The terminals also offer the use of drying kilns to ensure quality. According to the private sector and industry associations, however, these terminals are not yet operational as of March 2011.

The motor vehicle sector experienced a major rise in outsourced share (up to 80%) by exporters leading into the crisis but has since declined significantly to below 30%. This partly reflects the development of greater local supply. Like in apparel, there are significant differences in sourcing strategies between exporters and non-exporters (38% imported versus 23% in 2008) and between FDI exporters and domestically-owned ones (45% versus 25% in 2008).

What can these supply decisions tell us about the competitiveness in these sectors? Despite many complaints by exporters over the procedures and processes involved in importing, few seem to feel there are significant benefits from accessing suppliers locally[58]. For example, one apparel firm interviewed indicated that although they are part of an integrated textile conglomerate and were established originally with the intention of integrating a local supply chain, they no longer buy anything from within the group. Presumably this situation is now common in Indonesia's apparel sector. This obviously has implications wider economic spillovers from the export sector, but it seems clear that the

[56] According to ISWA, 70% of its members sources their raw materials from PERHUTANI

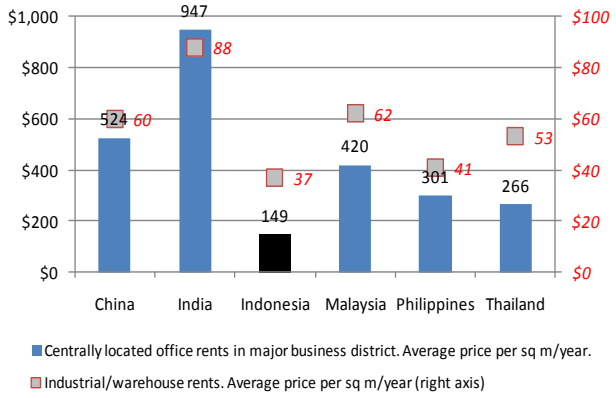
[57] The furniture sector is known to have a high price elasticity of demand

[58] Which is not to say they would not prefer to buy locally if price and quality matched what was available internationally.

competitiveness of Indonesian firms benefits from being able to access quality international inputs at world prices. This makes it all the more important to have efficient process of importing. For example, exporters in the apparel sector note the increasing importance of being able to meet tight delivery schedules from international buyers. Purchasing materials from foreign suppliers adds further pressure to these lead times. While exporters can live with the extra week it takes to get materials from China, they cannot live with the further week it takes to clear the goods from customs (See section 3.3.3)

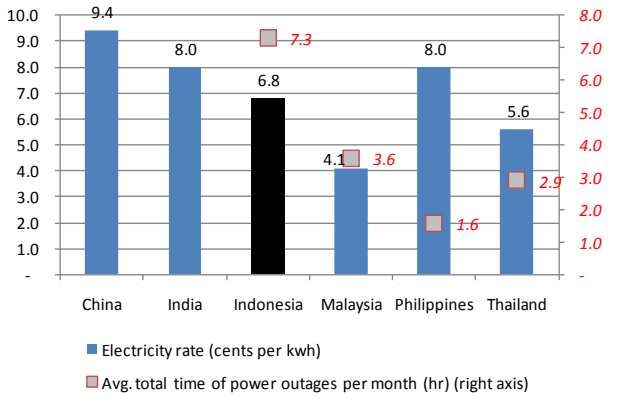
Finally, as Indonesian firms seek to move to the higher levels of quality and value added in these sectors, limited quality of local suppliers may prove to be a constraint. According to rankings from the World Economic Forum's Global Competitiveness Index[59], local supplier quality in Indonesia is perceived to be better than Philippines and at about the same level as India, but below that of China and far below Thailand and Malaysia. While the importance of this is mitigated by access to international suppliers (as discussed above), many of the key inputs required to facilitate higher quality competitiveness rely on technology and business services that are typically sourced locally. For example in the apparel sector, the quality of local design services and technologies like CAD. In both the apparel and furniture sectors, access to high quality marketing services is critical to adding value and building brands. And in all sectors, business services like consulting and accounting are critical to improve the operating efficiency of firms. Moreover, the effectiveness of local clusters is dependent on the quality of local suppliers. Where quality is poor or uneven across local firms, lead firms in value chains are unlikely to be willing to outsource inputs or subcontract work within the cluster, undermining a potential source of competitiveness.

Figure 3-22: Facility costs



Source: Economist Intelligence Unit (EIU City Data)

Figure 3-23: Electricity cost and quality



Source: Economist Intelligence Unit and World Bank Enterprise Survey

In terms of land and facilities, Indonesian firms have access to some of the lowest cost office and factory rents in the region (Figure 3-22), with industrial facility rents some 30-40% below its regional competitors. However, while significant improvements have been made both with respect to policy and processes in recent years, accessing land, particularly for greenfield foreign investments, remains a constraint. This is a function of inconsistencies in procedures in different jurisdictions, lack of fair and independent mechanism for valuation, and the absence of land records[60]. This issue is likely to impact firms across all three sectors as the government increasingly aims to shift investment away from

[59] World Economic Forum (2010) *Global Competitiveness Report 2010*, Geneva: World Economic Forum

[60] USAID (2009)*Export-oriented Investment in Indonesia*, Indonesia Trade Assistance Project, August 2009

congested areas, for example around Jakarta and Bandung, into other locations. Indeed, one of the factors constraining investment and growth in the apparel sector may well be physical constraints to growth, as many firms are based in locations where further expansion is limited and thus, increasing capacity would require a much bigger investment decision over whether and where to relocate the entire operation.

The gap in infrastructure investment in Indonesia since the crisis has been well documented[61]. While infrastructure shortfalls exist across the board, the two that affect manufacturing sector competitiveness most directly are transport (see Section 3.3.3) and energy (specifically, electricity). As illustrated in Figure 3-23, Indonesia electricity costs are in the middle of regional peers, though much higher than in Malaysia and Thailand. Rates have increased recently and many exporters complain of ad hoc applications of tariff rates and differential treatment of new versus existing customers[62]. The practice of negotiating rates adds to the lack of transparency in the energy market. In some of the manufacturing sectors (e.g. textiles) electricity costs are aggravated by the use of obsolete equipment which operates at low levels of energy efficiency. The important gap, however, is not with cost but quality, where Indonesian manufacturers report lower reliability than their regional peers, forcing manufacturers to invest in expensive diesel generating capacity. Interviews with exporters indicate that the situation has improved considerably since the second half of 2010[63], particularly around Jakarta and Bandung. However, reliability still appears to vary considerably depending on location. All three sectors are similarly affected by electricity shortfalls, but none can be said to be extremely energy intensive (as is the case with the upstream textiles activities) and so the relative overall impact on competitiveness is not severe.

Telecommunications costs and quality also fare relatively poorly in global surveys and increasingly restrictive policies in the sector – for example, allowable foreign equity in fixed line and mobile telephony was reduced in the 2007 Investment Law – may aggravate competitive weaknesses in ICT. For focus sectors in this report, gaps in ICT policy and infrastructure have only a minimal impact on competitiveness at the moment. However, moving further upstream to higher value added segments of these sectors is likely to rely increasingly on technologies and input sectors which will be closely impacted by the ICT environment.

3.3.3. Transport and trade facilitation

Surveys point consistently to transport and trade facilitation issues as one of the biggest constraints to exporters in Indonesia, and interviews conducted for this report confirmed it. Given Indonesia's relatively peripheral location and its unique geography, it is not surprising that logistics costs are high. A

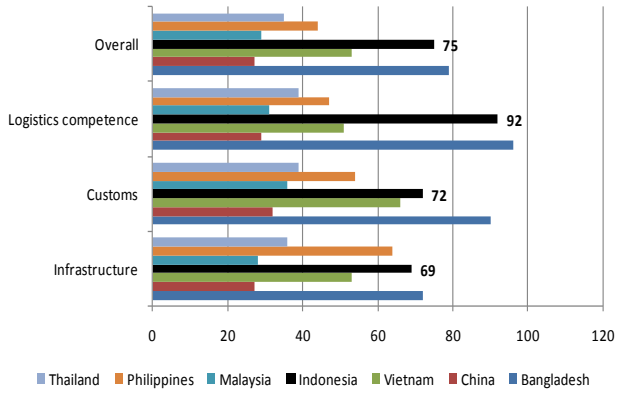
[61] During the 1970s and 1980s, investment in infrastructure in Indonesia was 10% of GDP. While this fell during the 1990s it was still as high as 7% prior to the crisis, led at this point by the private sector. After the crisis, however, private sector investment collapsed and the gap was not filled by government. Total infrastructure investment fell to just over 2%. More recently, it is has risen to 3.6% (2009) and the GoI plans to grow this to 7-8%, mainly by encouraging PPPs. Sources: USAID (2009)*Export-oriented Investment in Indonesia*, Indonesia Trade Assistance Project, August 2009; OECD (2010) *Investment Policy Reviews: Indonesia*, Paris: OECD.

[62] It has been reported that newer customers are being charged rates of around 10 US cents per kwh while existing customers remain on rates as low as 4.5 US cents. There is a plan to harmonize rates at around 7 US cents.

[63] The GoI is in the middle of a significant increase in investment, with plans to add 30GW of generating capacity between 2010 and 2014 – Source: OECD (2010) *Investment Policy Reviews: Indonesia*, Paris: OECD.

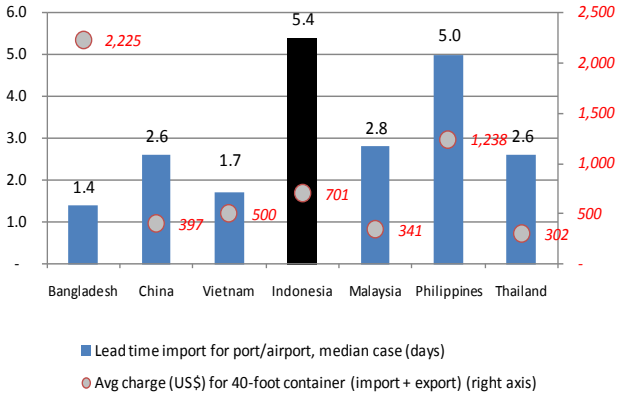
recent study estimated logistics costs are as high as 14% in Indonesia, versus only 5% in Japan[64]. In fact, Indonesia compares poorly in the region on measures and transport and logistics cost, efficiency, and quality (Figures 3-24 and 3-25). Among regional peers, Indonesia ranks worse (other than Bangladesh) on all key measures of the World Bank's Logistics Performance Index, including infrastructure, customs, and the competence of the logistics industry. For exporters, this is reflected in higher costs, longer lead times, and greater uncertainty.

Figure 3-24: Rankings of global logistics performance



Source: Logistics Performance Index

Figure 3-25: Cost and speed of logistics



Source: Logistics Performance Index

The lack of direct shipping lines to Indonesia (most go via Singapore) adds significant time and moderate cost to exports. According to a recent study, maritime transport costs for 20 foot container from Tanjung Priok to Yokohoma, Japan are almost 50% higher than from Manila, 20% than from Malaysia, 10% than from Singapore. Shipping time to Europe or US time is normally 50% longer than in Malaysia, Singapore, and Vietnam and double that from South China or Philippines[65]. Perhaps more importantly, this raises the risks for exporters. As an apparel exporter pointed out, if they miss a planned shipping date for any reason, they may have to wait three to five days to pick up the next connection. This has serious implications in sectors like apparel and automotive components that operate with tight delivery schedules, whether to international buyers or in production networks.

This competitiveness gap is compounded by weaknesses in infrastructure, policy, and practice. Underinvestment in ports and roads infrastructure has contributed to serious congestion problems. On the ports side, this is also linked to the historical state monopoly in ports operations. One of the results of this is that terminal handling charges are the highest in the region – said to be about 2.5 times that of ports in Thailand, 1.6 times Malaysia and almost 1.5 times Singapore[66]. Recent government initiatives – including the 2008 Shipping Law which should introduce private sector participation in ports operation and the rationalization of ports that handle foreign trade – should improve the situation going forward.

Exporters also complain of onerous customs and border management processes and, more importantly, the ongoing changes in rules and their interpretation that makes the process unpredictable. The problems most commonly manifest themselves in delayed inbound clearance, but problems can also

[64] OECD (2008) *Indonesia: Economic Assessment*, Paris: OECD Economic Surveys.
[65] USAID (2009) *Export-oriented Investment in Indonesia*, Indonesia Trade Assistance Project, August 2009
[66] IFC (2006) *Improving Indonesia's Competitiveness – Case Study of Textile and Farmed Shrimp Industries*, International Finance Corporation, September 2006.

arise outbound, particular where there are certain export restrictions or certification requirements in place. This is a particular problem in the furniture sector, where prohibitions on the export of unfinished wood results in many semi-finished exports being stopped by customs, causing exporters significant delays and costs to prove they are in compliance, and opening up the opportunities for corruption.

As might be expected, the trade facilitation problems appear to have a particularly negative impact on the competitiveness of smaller exporters and so hit the apparel and especially the furniture sector hardest. For example, already-slow clearance times are extended considerably for import consignments that are less than full container loads (LCL) – one apparel exporter noted that they have to factor in a 14-day clearance time on fabric imports, doubling the total amount of time it takes to receive the goods from their supplier in China. This of course, has significant working capital implications for smaller firms and makes it difficult for them to meet tight delivery schedules demanded by international buyers. In the furniture sector, customs procedures can make it difficult to import samples, which are critical for SMEs who do not do their own design[67], resulting in time delays and irregular levies that can add up to US$600 for a single piece of imported furniture[68]. While some of the larger exporters in the apparel sector operate in customs bonded facilities, which appears to be effective in helping them to avoid many of the border management inefficiencies, customs bonded facilities are said to be rather expensive and so only a serious option for larger firms and those that are exclusively export-oriented. As such few firms in the furniture sector, for example, benefit from this instrument.

Exporters acknowledge that the introduction of the National Single Window (NSW) has improved the situation in many respects. On the other hand, many exporters indicate that despite the single window they are often forced to work with a paper-based system in parallel. This appears to be particularly prevalent in ports outside Tanjung Priok, and so may impact the furniture sector most acutely. As another example, according to one apparel company, they are required to present the master import license to customs in order to deduct the import quantities from the quota denoted in the import license; however, they are often importing from Tanjung Priok and Semarang at the same time, causing delays in clearance of their goods at one of the ports.

Finally it is important to note that the competitiveness gaps in trade facilitation and logistics go beyond the main seaports. Apparel exporters complained that while there have been some improvements at Tanjung Priok, the situation remains completely unreformed at the airports, where some imports arrive and on which they rely for urgent exports. And for exporters based outside the main manufacturing agglomerations in Java, particularly in the outer islands, trucking and port costs are a major constraint to competitiveness. Per kilometer trucking costs in Indonesia are said to be 50% higher than the Asian average, driven primarily by legal and illegal levies such as transit fees, weight station fees, and bribes[69].

[67] International buyers often send a sample piece of furniture to a manufacturer which they are expected to use as a basis to produce for the order.

[68] Ministry of Industry, Furniture Sector (Powerpoint Presentation), Mimeo.

[69] Source: USAID (2009) *Export-oriented Investment in Indonesia*, Indonesia Trade Assistance Project, August 2009

3.4. Proactive measures to promote trade

The main constraint in Indonesia's export and investment promotion environment is in the area of product standards and certification. While there is much that can be done to improve this from an institutional perspective, much of the problem lies in Indonesia's poor firm-level sophistication, which in turn is linked to one of the fundamental competitiveness challenges Indonesia's manufacturing sector faces: innovation. This section will review how innovation, standards, and other instruments of proactive export and investment promotion impact manufacturing competitiveness.

3.3.1. Innovation

Section 2 of this report highlighted the importance of manufacturers increasing quality and value added[70] in order to maintain competitiveness in the medium term – this is true across all three sectors. Achieving this is dependent on the innovative capacity of the sectors. However, the evidence suggests that this is precisely where Indonesian manufacturing is weakest. Figures 3-26 and 3-27 highlight major gaps in Indonesia's innovation capacity, both nationally and at the firm level.

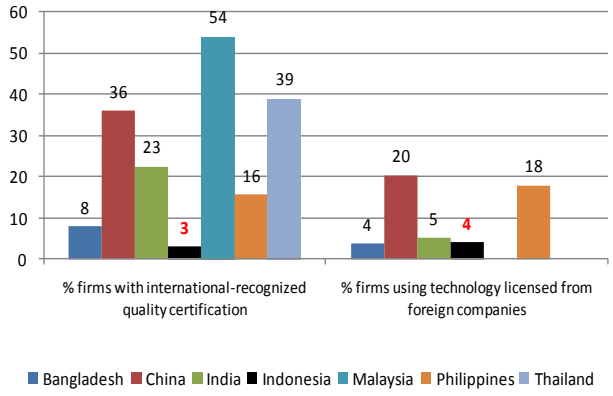
Across all three sectors, Indonesia's exporters remain almost fully reliant on foreign buyers to specify design and engineering requirements. The manufacturing sector describes itself effective at "copying" or producing to specification. Such a positioning severely limits the potential of the sector to capture the value chain. Moreover, there appear to be limits even to this self-proclaimed strength in replication. In sectors like automotive components, where precision engineering requirements are strict and tolerances narrowly defined, many Indonesian manufacturers fail to meet the standards required by international OEMs. In the furniture sector, failure of many smaller firms to invest in kiln drying[71] has impacted the quality reputation of Indonesian suppliers.

The lack of attention to quality and design is linked closely to the low levels of sophistication of firms discussed earlier in this report. In the apparel and furniture sectors, where many of the exporters have been operating since the early to mid 1990s, serving the same markets and the same buyers, the conservatism of the mainly family-owned businesses is also a factor – successful exporters are generally comfortable and do not feel it is worth risking to push on the design side of the business. According to API, there is some evidence that this is beginning to change at least in the apparel sector, where the second generation of family firms is beginning to look at design, fashion, and other value added activities in a bid to move their firms to a different level.

[70] Note that when we refer to value added we are not necessarily

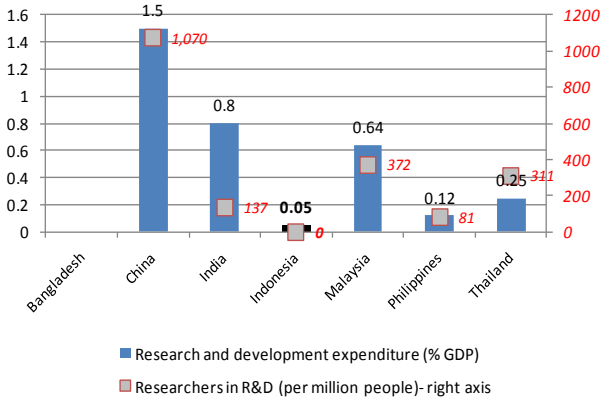
[71] Because of the humidity levels in Indonesia, if wood is not dried before being used in manufacturing and is subsequently exported to dryer climates it risks shrinking and cracking.

Figure 3-26: Measures of firm-level innovation and quality



Source: World Bank Investment Climate Surveys

Figure 3-27: Measures of national innovation capacity



Source: World Development Indicators

Across all three sectors, there is virtually no investment in R&D at the firm-level, and sector-wide facilities to support research, decision, and precision engineering are sorely lacking. Moreover, institutions to support the development of engineering and design skills in the sector remain weak. The apparel sector at least has a vocational training center in Bandung, as well as a number of private institutions that focus increasingly on the fashion-end of the industry. In the furniture sector, there is only one school providing skilled labor for (PIKI in Semarang); the JICA-initiated skills development center in Jepara has stagnated. This is a function both of weak government institutional support for innovation as well as poor industry-level collective action. Despite the recent initiatives in the furniture sector (on alternative sources such as palm and rattan), government support for research and engineering remains limited in these sectors.

Exporters in the automotive sector complain that, in contrast to the situation in Thailand and Japan, the Indonesian government provides no incentives for Japanese manufacturers to shift any research and design capabilities to Indonesia. The Manufacturing Industry Development Center (MIDEC) program was launched in 2008 as part of the Indonesia-Japan Economic Partnership Agreement –MIDEC was to provide R&D, engineering, and training centers. However, disagreement over the funding mechanisms and responsibilities has significantly restricted implementation of this program.

3.3.2. Standards and certification

Being able to deliver on international standards (and have the certifications to prove it) is a key barrier to improving quality competitiveness for Indonesia's manufacturers. According to the data in Figure 3-26, only 3% of Indonesian firms hold international quality certifications. While this is symptomatic of the quality competitiveness of Indonesian manufacturers, in sectors like apparel and automotive, most of the important standards are imposed by the international buyers and so it can be argued that exporters de facto meet these standards, which are in any case base level conditions for being awarded contracts.

But some of the main challenges to maintaining competitiveness in manufacturing exports relate to technical standards imposed by trading partners. While all three sectors face some national or international standards (e.g. EU chemical certification requirements on the apparel sector), the challenge is most acute in the furniture sector, where firms face increasing pressure to prove that raw

materials are sourced from sustainable forestry. Certificates of sustainable sourcing, including requirements for industry wide traceability, are increasingly being required by customers in the US and EU. While not a requirement at the moment, in 2012 the EU will introduce binding Forest Law Enforcement Governance and Trade (FLEGT) standards.

This raises two issues for Indonesia's furniture exporters. First is the cost of certification and its implications on competitiveness. Estimates from the industry indicate that certification increases costs by up to 30%; at the moment exporters take a major risk to decide to invest in certification, and for most of them this is a cost that they are unable to pass on in the market. The second issue (that is also linked with the first) is the process of certification – the efficiency and effectiveness through which Indonesia can deliver on it. This challenge highlights some of the important weaknesses in Indonesia's standards infrastructure. Despite having a National Accreditation Committee (KAN) and a National Standardisation Centre (BSN) operating under it, with both reporting to the Presidency, coordination between the agencies is said to be poor, and Indonesia has failed to obtain international recognition for many of its assessment labs, most importantly BPMBEI for the wood sector. This not only impacts the certification process for FLEGT but any other standards required by international buyers – e.g. some buyers require safety testing. Government is trying to develop an Indonesian national certification program, known as SVLK (Letter of Legal Log Verification). However, this is not yet effective, and no Voluntary Partnership Agreement has been made with the EU that would allow for mutual recognition of certification programs. Failure to put in place a verification process recognized by the EU by 2012 could threaten one of Indonesia's most important furniture export markets.

Finally, aside from international standards, the competitiveness of Indonesian exporters is also impacted by the national standards regime. In both the furniture and apparel sectors, it has been argued that a weak standards regime, along with poor monitoring and enforcement, has contributed to low quality competition in the domestic market. Certainly there is evidence that poor enforcement of logging bans and lack of control of cross-border movement of illegally obtained wood has resulted in a situation in which Indonesian furniture manufacturers often face higher costs to obtain (legal) wood than their international competitors, thus undermining the country's comparative advantage in forestry resources. Beyond this, lack of industry standardization in the production of parts restricts the scope of subcontracting (see Box 3.8) in the sector and contributes to lower quality output.

3.3.3. Spatial and industrial policy: Clusters, collective action, and special economic zones

All three sectors appear to have relatively strong agglomeration dynamics[72] (even though apparel and especially furniture is present across the country). But it is unclear whether this translates into competitiveness benefits for exporters.

Interviews in the apparel sector suggest that while the smallest companies see some benefits from acquiring inputs through local suppliers, few exporting firms have any strong links with local supply chains around Bandung and Subong. Subcontracting, while it does exist, is relatively limited in scope (see Box 3-6). Moreover, the potential to benefit from deep pools of specialized labor is perhaps

[72] As agglomeration is the subject of a separate study, we will not go into details here on the location and structure of these agglomerations.

undermined by the existing labor regulations; in any case, few firms recognize access to labor as a major advantage for locating in the existing agglomerations.

Box 3-6: Subcontracting in apparel and furniture

Subcontracting is used relatively extensively in both the apparel and artisanal furniture export sectors in Indonesia. As a production strategy, it offers valuable flexibility that is critical to manage irregular production flows and enable firms to remain cost competitive through flexibility. However, in the absence of effective industry standards and of a depth of sophisticated small firms, it may come at the expense of quality.

In the apparel sector, subcontracting is normally limited to basic activities and the outputs of subcontracted activities tend to feed back into the main contractor who then carries out the more complex production steps before delivering to the customer. This allows the lead contractor to maintain control over the quality of the final product delivered to the customer.

In the furniture sector, however, quality control of the subcontracting process is more problematic. First, the majority of subcontracting is for full units rather than pieces. In this case, firms in the Jepara cluster complain that controlling subcontractors is difficult – many will fail to use drying kilns in an effort to reduce costs or speed the process, others will fail to meet agreed deadlines, etc. And in cases where parts of furniture are subcontracted, the lack of agreed industry standards has been noted as a major constraint to delivering a quality end product.

Thus, subcontracting is clearly a double-edged sword for Indonesian manufacturers. One the one hand it is critical to enable small-firm sectors to participate and manage risks in export markets, but the failure of the subcontract system to deliver quality as well as flexibility may also undermine the long-term competitiveness of sector.

The furniture sector, by contrast, has a much stronger history of clustering and interdependence among firms, particularly in the artisanal segment of the sector in which the Jepara cluster is situated. Here, subcontracting is rife and the local industry depends on a highly specialized labor pool as its source of competitive advantage.

Finally, the automotive sector does appear to be developing active clusters (e.g. around Pulo Gadung and Bekasi). These differ significantly, however, from those in apparel and furniture as each cluster tends to be established based on the manufacturing operations of a specific principal (e.g. Suzuki in Bekasi), which then attracts suppliers and supporting industries.

Perhaps most importantly, however, industry-level collective action appears to be relatively weak across the manufacturing sectors studied. Cooperation at the firm-level is limited and while all three sectors have relatively prominent industry associations, their role tends to lean toward the traditional activities of lobbying government and providing information to their members rather than facilitating collective action on issues that have industry-wide implications such as training, design and engineering capabilities, and standards. This is not to say they are not involved to some degree in these activities; indeed, ASMINDO has played a critical role in catalyzing key initiatives in the furniture sector like development of the development of standards and the establishment of wood terminals. But even in the furniture sector, there appear to be limits to the ability of collective initiatives to be sustained. One example of this is the JICA-funded craft and design school in Jepara – this was supported for a year by government and then another year by JICA, but it dropped off dramatically when outside funding ended, despite a clearly recognized need by the industry. And while a common complaint across the sector is

the need for facilities for kiln drying, there have been no industry-level initiatives to address this until their inclusion in the recent plans for developing wood terminals.

There are a number of potential reasons for the lack of more aggressive industry-level collective action. One is the structure of the sectors. In the automotive sector, control of the industry by a small set of Japanese principals (who tend to do everything in-house) is a powerful barrier to cooperation. By contrast, in the furniture sector and (less so) in the apparel sector, the preponderance of SMEs raises significant free rider problems to coordination, and to funding of collective initiatives. Finally, limited government funding and support for industry wide initiatives may be partly to blame.

Finally, the GoI has targeted the development of Special Economic Zones (SEZs) as an instrument to attract investment and promote export-oriented manufacturing. While export processing zones (EPZs) were established as early as 1986 in Jakarta and then Batam (see Box 3-8). A number of smaller EPZs and bonded zones were developed across the country, but the program remained relatively limited in scope until recently. Indeed, arguably the development of customs bonded zones has had a significantly greater impact on the competitiveness of manufacturing exporters than have any larger-scale zone initiatives.

In 2009, the Law on Special Economic Zones (39/2009) was passed, allowing for the developing large-scale, multi-use economic zones. While export promotion remains an important aim under the new law, the objectives of the SEZs are much broader, including facilitating infrastructure development, expanding PPP investment, and promoting regional development. In fact, the export requirement on investors has been eliminated under the new SEZ law. Among the non-fiscal incentives to be made available in the SEZs are simplified administrative procedures, relaxed regulations (e.g. on immigration), and exemption from the negative list for foreign investments. As such, they have the potential to be highly attractive for export-oriented investors, particularly FDI. That said, implementation remains relatively far off, and certain aspects of the zone law and regulations – particularly the lack of clarity and / or duplication of authority between local and national government – may well be a significant stumbling block.

Box 3.8: The Batam EPZ – a slow road to success and challenges remain

Indonesia's efforts to use special economic zones (SEZs) as an instrument of trade and investment started in the mid-1980s with the establishment of the first export processing zone (EPZ) outside Jakarta, with a focus on the export apparel sector. The second EPZ was established in Batam Island as a joint project between the governments of Indonesia and Singapore. it was designed to leverage the strategic location of Batam and its low cost environment relative to Singapore. A range of fiscal incentives was offered (including corporate tax holidays and duty free imports and exports), along with the promise of a more attractive investment climate, including relaxed regulations on firm ownership, land leases, and company licensing.

Despite this the EPZ struggled to develop and, like the rest of Indonesia, suffered significant decline in investment in the post-crisis decade. In the past few years, however, investment in Batam has increased significantly, attributed by the zone to be driven partly by the shift of production away from China. More than 20 industrial parks now operate across Batam, with total employment at over 250,000.

Yet, despite the special environment of the zone, many of the same complaints about the operating environment for exporters are repeated by firms and developers inside Batam. For example, concerns are raised about the lack of coordination between ministries leading to an unpredictable operating environment and increasing

bureaucracy. Similar problems with Customs are also echoed in Batam – for example, despite the conversion of the customs bonded environment of the industrial parks into free zones, developers complain that customs officials continue to apply the old rules.

As Indonesia considers a much wider roll-out of the SEZ program across the country, it would be wise to bear in mind the lessons of Batam. First, that the designation of an SEZ is not enough to attract investors. Building an effective investment environment and a clear proposition is critical; and building a successful zone takes time. Second, effective coordination across ministries and agencies (horizontal and vertical) is critical to the success of SEZs. The promise of an attractive investment climate is just paper if it cannot be delivered in practice.

3.3.4. Export promotion

Indonesian has invested significant resources in attracting and coordinating investment. At a central level, BKPM has been the designated investment promotion agency (IPA) since the 1970s. It is a powerful body, with strong links both to private sector and within government – it reports directly to the President and its Chairman holds a position equivalent to Minister[73]. There also exists numerous local level IPAs. BKPM maintains relatively strong dialogue with the manufacturing sector and has established a cooperation agreement with the national chamber of commerce (KADIN). The government has long maintained an extensive set of incentives designed to attract investment into specific sectors and regions.

Yet export promotion has not received similar attention. There exists no autonomous agency for export promotion – the role of export promotion is handled by the Directorate General for National Export Development within the Ministry of Trade. And while the National Team on Export and Investment Promotion (PEPI) promised to give important policy focus on export promotion, the body appears to have been sidelined recently. A limited set of incentives exists to promote exports. This mainly consists of access to materials and capital equipment on a duty free basis after initial set up or expansion, and the recent Ministry of Industry initiatives to promote modernization investments in certain manufacturing subsectors. In the area of trade finance, an official Export Guarantee Agency has been set up through the establishment of a national EXIMBANK, which has a mandate to provide working capital, guarantees, and insurance for exporting firms. Of its US$1,500m portfolio, 50% is allocated to the manufacturing sector.

Overall, however, export promotion appears to be largely reliant on industry associations, which provide access to international market information and facilitate participation in foreign trade fairs. Beyond this, however, exporters appear to have little support. This may have significant implications on the ability of new exporters to enter export markets, and to survive in the initial years.

[73] OECD (2010) *OECD Investment Policy Reviews: Indonesia*, Paris: OECD.

3.5. Summary of conclusions from Competitiveness Diagnostics

Table 3-2 summarizes the findings from the Diagnostic exercise, highlighting those issues that appear to be most binding to firms in each manufacturing sector. Note that the emphasis here is on *exporting* firms, but for the most part the constraints identified are relevant also for firms participating only in the domestic market. Of course, like in any country, there are aspects of each of the areas below that should be improved in Indonesia. However, the intention in this section is to avoid having too much of a "laundry list" of policy issues that need to be addressed.

Table 3-2: Summary of Diagnostics results

Sector		Apparel	Wood furniture	Automotive components
Trade competitiveness challenges	*Primary*	• Quality and sophistication • Participation and survival	• Intensive margin • Quality and sophistication	• Quality and sophistication
	Secondary	• Intensive margin	• Extensive margin	• Participation and survival
Incentive framework for trade	External trade policy environment	XX	--	+
	Trade, tax & competition policy	--	--	--
	Regulatory environment & governance	X*	X*	X*
	Access to finance	XX	XX	X
Factor inputs, productivity, and trade costs	Intermediates & backbone services	X	XX	X(+)
	Labor markets, skills & technical efficiency	XX	XX	X
	Transport & trade facilitation	XX	XX	XX
Proactive policies to promote trade	Innovation	XX	X	XX
	Standards & certification	--	XX	--
	Export & investment promotion	--	--	--
	SEZs, clusters, & industrial policy	--	X(+)	+

+ positive impact on competitiveness of sector
-- no major impact on competitiveness of sector
X some negative impact on competitiveness of sector
XX significant negative impact on competitiveness of sector
* Significant impact through other channels – in particular finance and investment and transport & trade facilitation

Typical areas of focus based on primary trade competitiveness challenges

Typical areas of focus based on secondary trade competitiveness challenges

IV. CONCLUSIONS AND POLICY IMPLICATIONS

4.1. Summary of main conclusions

The conventional wisdom that Indonesia's manufacturing sector is in the midst of an inevitable process of stagnation and decline may actually be an incorrect starting point for assessing the sector, at least looking at it from the context of early 2011. Despite declining performance in the sector particularly in the wake of the Asian crisis, and the clear leadership of natural resources based sectors in driving the economy over the past decade, there is recently an upswing in the prospects of the traditional manufacturing sector. This "revival" can be attributed to one of Indonesia's primary sources of comparative advantage – *its deep and cheap labor force*.

At the same time, the success of the automotive components sector over the past decade points to two other critical sources of competitive advantage for Indonesia, that may be leveraged for growth in some manufacturing sectors – specifically, *the huge domestic market and the power of regional integration*[74], *both of which offer significant potential to take advantage of home market effects and scale economies in production*.

So Indonesia may be facing a "second chance" in the manufacturing sector. The first manufacturing sector boom collapsed with the Asian crisis, but the seeds of its rebirth may have borne fruit as a consequence of the latest global financial crisis and the resulting pressures for rebalancing. Structural economic change tends to move in only one direction, and so few countries are fortunate to have such an opportunity to revive a critical labor-absorbing and technology-producing sector like manufacturing. Of course, this opening will not last forever (indeed, wage pressures are growing).

It is therefore critical that Indonesia take policy actions now to take advantage of this opportunity:

- *In the short term:* ensuring it is able to exploit the existing wage gap with China, and extend this advantage for as long as possible – this will require attention to:
    - Raising productivity by addressing labor market rigidities and improving access to skills development and training, as well as improving the quality of management of firms.
    - Improving non-price competitiveness factors, in particular by addressing issues related to infrastructure and trade facilitation.
    - Ensuring an environment that promotes investment and firm growth by lowering the barriers to accessing finance addressing regulatory barriers that prevent expansion.
    - Improving the transparency and predictability of the policy, regulatory, and governance environment in order to lower risk and facilitate private sector investment.
- *In the short and the medium term*: better leveraging the domestic market and the potential for integrating into regional value chains – this will require attention to:
    - Improving the business regulatory environment to promote a more sophisticated domestic market
    - Improving links between domestic firms and FDI (as well as other regional producers)
    - Facilitating inward investment as well as promoting outward FDI
    - Facilitating greater collective action and coordination among firms

[74] In this context, Indonesia's open trade policies can be seen as an important source of competitiveness

- *In the medium term*: preparing for the eventual erosion of price-based competitive advantage – this will require attention to:
    - Improving product quality to meet recognized global and market standards
    - Promoting greater focus on innovation, including through development of engineering and design skills and greater cooperation in research and development
    - Improving the firm-level sophistication, including addressing management quality

4.2. Policy priorities

Based on the discussion above, a number of priority policy issues are proposed to address the key constraints in the manufacturing sector. Several of these have long been part of the discourse in analysis of the Indonesian economy, while others have perhaps had less attention in recent years.

1. ***Addressing constraints in the transport and logistics environment***: Significant attention is already put on transport infrastructure, including both hard infrastructure such as road and port development, and soft infrastructure including the implementation of the National Single Window (NSW) and the 24/7 port initiative. Despite this, problems remain both in terms of the physical infrastructure and the management of the trade facilitation process. For exporters in sectors that require tight delivery schedules (like garments and automotive components) the trade facilitation environment is critical. Many exporters are already benefiting from customs bonded zones. This successful tool could perhaps be expanded, taking advantage of the new SEZ law, to focus on developing export-oriented zones that leverage key trade gateway infrastructure (ports and airports). Ongoing implementation of the NSW should improve the facilitation environment more broadly for manufacturers, but greater attention to reform of border processes will help maximize the benefit of the NSW. Beyond this, there is clearly a need to prioritize critical infrastructure investments at the main ports and along key transport corridors.

2. ***Facilitating access to finance to support investment in the manufacturing sector:*** The emphasis here should be on support SME manufacturers and first-time exporters; established exporters, particularly those operating within regional and global value chains, typically have better access to finance extended through supply chains. Improving the situation on financial access can partly be achieved by policy statements by GoI supporting the development of the manufacturing sector and explicitly removing the label of "sunset industry". The formal establishment of EXIMBANK provides a channel for giving targeted support for financial access in export-oriented sectors. Given that many of the labor intensive manufacturing firms have limited assets, promoting the use of factoring and other instruments that can reduce the collateral requirements to obtain loans may be explored.

3. ***Freeing up labor markets and incentivizing training***: The direct impacts of current labor regulations are well understood; their distorting effects on skills development, investment, and productivity are perhaps less discussed but probably more debilitating for competitiveness in the manufacturing sector. Clearly, there is a need to address the current regulations around severance – what is required is political will. As part of the compromise to get there, the government should consider what additional incentives can be provided to facilitate greater on-the-job and formal vocational training. This will not only contribute to improving productivity, but will also provide workers with portable skills.

4. ***Innovation and firm-level sophistication***: The lack of investment in innovation by Indonesia firms is a function of a number of factors, but a critical one is the low levels of sophistication of Indonesian firms. Improving management quality and practices and promoting adoption of international standards (e.g. ISO) should be a critical priority for the manufacturing sector, both for improving quality and productivity. In addition, government and industry-level interventions to support the development and operation of design and engineering capacity (vocational training programs, research and testing facilities, etc.) should be a major priority.

5. ***Improving the standards regime***: Failure to meet international standards is a significant barrier to exporting in some sectors. Significant work is already underway, for example through the EU Trade Support program, to improve the national standards and certification regime. Among the main priorities here should be gaining international recognition for domestic certification processes and laboratories.

6. ***Promoting greater collective action and coordination by industry***: The small size of many Indonesian manufacturers is aggravated by relatively poor inter-firm cooperation. While industry associations are active, they have had limited impact in promoting collective action. There may be some deeper issues of trust and social capital at play, but international experience (for example *Fundacion Chile* and the Malaysian Palm Oil Board) shows that governments can play a role in facilitating collective (through industry associations and clusters). This often requires funding and projects around which industry can coordinate – government co-funding with well-established and capacitated industry bodies can be used to target many of the policy issues noted above, including improving vocational training, management skills, and standards, as well as facilitating research and innovation.

7. ***Improving transparency and predictability in the governance and policy environment***: Many of the problems discussed in this report (from lack of investment for growth, to low levels of sophistication in the domestic market to poor inter-firm cooperation, and much in between) can be traced back to a regulatory environment that lacks predictability. In an environment where firms cannot predict how macro policy will look in two years time or who face a legal environment with little certainty over contract enforcement, it is difficult to expect investment in growth, in exporting, in quality and innovation, and in training of workers. Perhaps the biggest concern here for investors relates to the impact of the "big bang" decentralization on the policy environment. While there are no simple policy solutions to this, efforts can be made to improve coordination between national local agencies and to promote positive competition with respect to the business regulatory environment across provinces (for example, using the Bank's *Subnational Doing Business* indicators as a basis). On the latter issue, the League of Cities of the Philippines conducts an annual benchmarking of the business climate across its members cities – this has become a powerful source of highlighting good practices and stimulating reforms.

8. ***Using the SEZs as "bridgeheads to reform"***: Internationally, the SEZ programs that are held up as the most remarkable success stories – most notably China but also Mauritius—used their economic zones *expressly* as a vehicle for broader economic reform, rather than simply as tools to attract. Indonesia's new SEZ law offers the prospect of addressing some of the competitiveness constraints identified in this report in a more politically palatable environment. A province that wishes to be seen as a progressive reformer may decide to use the development of an SEZ as an opportunity to

test reforms, for example freeing up labor markets and reducing regulatory burdens as was done in the economic zones in China and Vietnam. It may also look to promote externalities within the zones, for example by facilitating collective goods (public or club goods) such as vocational training, engineering and design centers. This is an innovative approach that has been adopted in Ghana's free zone program.

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