MALAYSIA

PRODUCTIVITY REPORT 2012/2013

MPC


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20th PRODUCTIVITY REPORT

MALAYSIA PRODUCTIVITY CORPORATION

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STATUTORY REQUIREMENTS

In accordance with Section 7 of the Malaysia Productivity Council (Incorporation) (Amendment) Act 1991, Malaysia Productivity Corporation hereby publishes and submits to the Minister of International Trade and Industry the status of productivity in Malaysia.

MESSAGE FROM THE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY MALAYSIA

Malaysia has managed to maintain its dynamic growth amidst a fragile global environment, recording a GDP growth of 5.6% in 2012, which was driven largely by a double digit growth of 10.6% in domestic demand, and an investment growth of 19.9%. In tandem with this, the economy recorded a productivity growth of 2% to a productivity level of RM58, 874.

On the international front, Malaysia's labour productivity (2%) has surpassed South Korea (0.8%), Japan (0.5%), the United States (0.5%) and Singapore (0.03%). The source of growth comes from capital deepening as exemplified by a higher capital investment, new capital expenditure as well as the introduction of new technology. Nevertheless, it is in Malaysia's interest to emulate the good practices of other emerging economies such as China and India with productivity growth of 7.4% and 3.7% respectively. In the case of China, the country has benefited from its efforts at leveraging its resources through business restructuring and improved efficiency; including diverting its employment resources to the more productive firms. Whilst for India, its productivity was contributed by strong talent pool and labour competitiveness in the areas of science, technology and research.

The achievements of 2012 provide a springboard for Malaysia to emerge as a competitive force amidst a wavering global economic landscape. Major international reports have given recognition to our impressive standing, among which is the World Competitiveness Yearbook (WCY) 2012 of the Institute for Management Development (IMD) which has placed Malaysia at the 14th spot out of 59 countries. At the same time, the Global Competitiveness Report (GCR) 2012-2013 of the World Economic Forum (WEF) has ranked Malaysia 25th out of 144 countries which makes Malaysia among the top 20% of competitive

countries globally. In addition, Malaysia secured 12th position in the World Bank Doing Business 2013 Report, significant improvement over last year's 18th position and 23rd in 2010.

Malaysia is aspiring to transform its economy to one that is innovation-driven, characterised by a shift towards technology-driven, with high rates of innovation and commercialisation of new technologies by local firms. As such, the Government has placed strong emphasis on innovation-driven initiatives to further strengthen the competitiveness of the economy. Towards this end, more intense and effective collaboration between public and private sectors is essential to spur our economy to greater heights.

I hope that this Report will serve as a useful reference point for decision makers in their strategic planning for the nation and formulating of economic policies. Their efforts will ensure a broad, all-encompassing productivity growth and drive Malaysia to become a high income economy by 2020.

DATO' SRI MUSTAPA MOHAMED
Minister of International Trade and Industry
Malaysia

STATEMENT BY THE CHAIRMAN

This Productivity Report, the 20th publication in the series, provides a comprehensive analysis of Malaysia's productivity performance focusing on key economic sectors. The Report highlights productivity performance at macro and industry levels, and recommends the way forward in sharing best practices towards improving business regulation, enterprise innovation and business excellence.

The core focus of this Report is to be a catalyst for industries to grow with vigour and vitalise the development of our country. Besides analysis of productivity performance at the industry, sectoral, national and global levels, this Report also includes analysis on Entry Point Projects (EPPs) under the National Key Economic Areas (NKEAs) that have impact on the productivity performance of specific sectors.

Technological innovation is a key component in achieving sustainable competitive advantage and increased innovation capability will propel the economy towards becoming a high income nation. This Report also discusses Malaysia's performance at the transition stage of development after moving from the efficiency–driven stage, and is now in the process of migrating to an innovation–driven stage of development.

MPC's progress in productivity enhancement is the result of collaborative efforts between the private and public sectors. It also reflects the dedication and commitment of MPC's Board of Directors and Members of Consultative Panels and Taskforces.

At the international level, MPC continues to strengthen collaboration with international networking partners such as Asian Productivity Organisation (APO) (Malaysia is the Chairman for 2012/2013), Organisation for Economic Cooperation and Development (OECD), World Bank, World Economic Forum (WEF) and Institute for Management Development (IMD) in the areas of enhancing innovation, competitiveness and regulatory review.

I would like to record my appreciation to the various government ministries and agencies, particularly the Ministry of International Trade and Industry (MITI), for providing continuous support, guidance and assistance. My appreciation also goes to all who have contributed in one way or another to the successful publication of the Productivity Report 2012/2013.

TAN SRI AZMAN HASHIM
Chairman
Malaysia Productivity Coorporation

Vision, Mission & Objectives

Malaysia Productivity Corporation (MPC) was established to assume an important role in the enhancement of productivity and quality of the country towards achieving a higher national economic growth.

To realise the above, MPC has formulated a strategic operation based on the following vision, mission and objectives.

VISION

- The leading organisation in productivity enhancement for global competitiveness and innovation

MISSION

- To deliver high impact services towards achieving performance excellence through innovation for the betterment of life

OBJECTIVES

Our corporate objectives are:

- Providing value-added information on productivity, quality, competitiveness and best practices through research activities and databases;
- Developing human capital and organisational excellence for building a knowledge-based society through training, systems development and best practices; and
- Nurturing innovative and creative culture for productivity and competitiveness through partnership programmes.

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PRODUCTIVITY PERFORMANCE OF MALAYSIA
Malaysia's Productivity Performance

In 2012, Malaysia recorded a productivity growth of 2% while its productivity registered an increase from RM57,737 in 2011 to RM58,875 in 2012. The construction sector experienced high productivity growth of 15.5%, with the manufacturing sector trailing behind at 4.5%, and the services sector registering a 1.8% growth in the same year.

Capital intensity and quality of labour are important factors in driving productivity growth. Capital intensity and employment registered a growth rate of 1.7% and 3.6% respectively in 2012. Quality of labour is measured as a percentage of employment of those with tertiary level education. In terms of the education level of the labour force, only 25.6% of the total employed possessed tertiary level education as compare with South Korea, Japan, USA, Canada and Australia where more than 40% of the labour force possessed tertiary level education.

International Productivity Performance

Malaysia recorded a higher productivity growth than most advanced countries, such as South Korea (0.8%), Japan (0.5%), the United States (0.5%), Singapore (0.03%) and Finland (0.2%). However, Malaysia's productivity growth is lower compared with emerging countries like China (7.4%), Thailand (4.9%), Indonesia (4.2%) and India (3.7%).

Malaysia has maintained its 14th position in the group of 59 highly competitive economies as assessed by the IMD World Competitiveness Yearbook (WCY) 2012. The World Bank places Malaysia at 12th position in its Doing Business Report 2013; the Global Competitiveness Report (GCR) 2012-2013 by the World Economic Forum (WEF), ranked Malaysia 25th among 144 economies. The report also rated Malaysia number 25 in the area of innovation, based on criteria which measure a country's potential to develop innovative products and services. However, it was reported that Malaysia did not perform well when assessed against the Technological Readiness pillar that measures the agility with which an economy adopts existing technologies to enhance the productivity of its industries, earning a humble ranking at number 51.

Sources of Growth

With the Malaysian economy aspiring to become a high-income one by 2020, the focus of growth is increasingly leaning towards an innovation-driven growth strategy. This strategy emphasises the creation of high value-added activities, of which one of the key ingredients is Total Factor Productivity (TFP). Growth of TFP is expected to raise per capita income and living standards for the long term.

Malaysia grew by an average of 5.1% over the last 12 years (2000-2012). During this period, domestic economic growth was being supported mainly by growth in capital (2%), followed by TFP (1.6%) and labour (1.5%). In terms of contribution to economic growth, capital contributed 39.3%, followed by TFP at 31.5% and labour at 29.1%.

Malaysia's TFP contribution of 17.8% to its economic growth still lags behind other countries such as Hong Kong (78.9%), South Korea (39.4%) and Japan (37%). Nevertheless, Malaysia's TFP is still higher than Thailand (14.5%), Indonesia (9.1%) and Singapore (7.5%). The contributing factors of higher TFP for Malaysia is brought about by quantity of labour as well as capital that is non-ICT.

Boosting Productivity

What drives productivity growth? What are the key success factors for productivity? Part of the answer lies in the utilisation of cutting-edge technology. However, even advanced technology on its own without societal innovation or change in the mindset of the people will not result in a quantum leap in productivity. Having a clear understanding of the need for growth and how to navigate growth lifecycle, companies must now undertake efforts to reinvigorate their business processes and explore new growth opportunities. In this, the role of the Government is to establish conditions that can support industries to rejuvenate.

Companies' enterprise innovation must factor in both technological and non-technological innovations and in this, MPC's role lies in promoting non-technological enterprise innovation. Among innovations identified for the management process and organisational practice of companies are the tools of lean management, green productivity, and material cost saving, together with the acquisition of certification and standards, the establishment of innovative HR practices and the achievement of team excellence. To compete vigorously for market share in the global market and to secure long-term growth and profitability, organisations need to raise their customer satisfaction levels by incorporating an extensive and holistic approach towards service excellence. Service excellence can be achieved by using the Customer Satisfaction Index (CSI) as a measurement tool to gauge customer satisfaction levels and following through with the Customer-Centric Initiative (CCI) programme.

In achieving a friendly and productivity-oriented business environment in Malaysia, MPC has been tasked to lead a comprehensive review of business regulations and improve processes and procedures to enhance the productivity and competitiveness of the various economic sectors. This can be achieved through the modernisation of business licensing and regulations, and inculcating Good Regulatory Practices (GRP) through the application of the Quality Regulatory Management System (QRMS).

Outlook for 2013

The Malaysian economy is anticipated to achieve a productivity growth of 3 - 4% for 2013. This forecast is supported by current performance of the economic sectors. In 2013, the construction sector is expected to register a productivity growth of 13% together with an output growth of 15%. This growth will be supported by construction activities in the sub-sectors of oil and gas, and transport and utilities.

The manufacturing sector is expected to register a productivity growth of 3% and an output growth of 5%. The industries in this sector are expected to make a shift towards more capital intensive and advanced technology operations. The services sector is expected to register a productivity and output growth of 3% and 6% respectively.

MPC's study on business challenges reveals that the five main challenges faced by Malaysian business leaders in achieving higher productivity are in the areas of Customer Relationship, Human Capital, Sustainability, Operational Excellence and Corporate Brand and Reputation. However, against the current global economic scenario, it is human capital, operational excellence and innovation that must remain the top priority.

Chapter 1

Productivity Performance of Malaysia

PRODUCTIVITY PERFORMANCE OF MALAYSIA

OVERVIEW

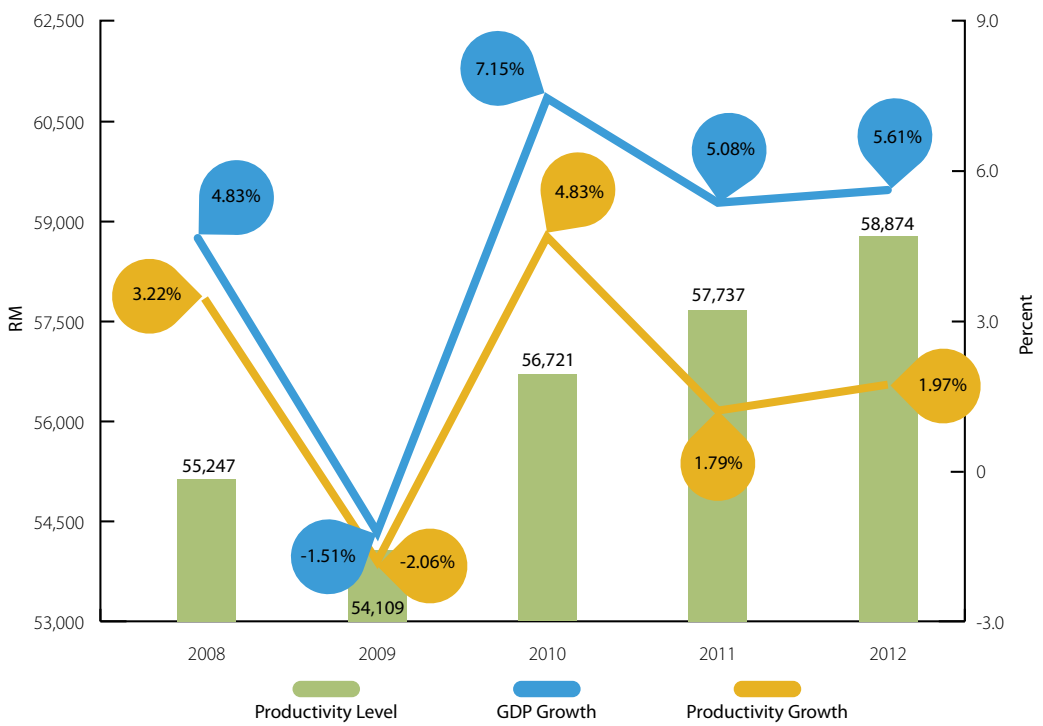
In 2012, Malaysia recorded a GDP growth of 5.6%, supported mainly by domestic demand which registered a double digit growth of 10.6% amounting to RM199.7 billion. Domestic demand was a result of both private (58%) and public (42%), chiefly driven by a domestic-oriented manufacturing sector, derived mainly from consumer-related services sub-sectors. These are the telecommunications, real estate and aviation subsectors, but domestic growth was also the result of the implementation of projects in the oil and gas industry.

Malaysia's productivity growth in 2012 was 2% to a level of RM58,874

Growth in investment was in part due to capacity expansion in several new growth areas one of which is medical and communications equipment. The improvement of output over input allowed labour productivity to grow at the rate of 1.6% over the period 2008 to 2012. Malaysia's productivity growth in 2012 was 2% amounting to RM58,874 (Figure 1.1).

The labour market continues to improve, reflected by an increase in labour force participation rising from 62.6% in 2008 to 65.6% in 2012. This healthy trend was supported by an encouraging unemployment trend, which fell from 3.3% in 2008 to 3.0% in 2012. At the same time, employment recorded an increase (from 10.7 million employees in 2008 to and 12.7 million in 2012). In terms of the education level of the labour force, it was reported that only 25.6% of the total employed possessed tertiary level education while in developed economies such as South Korea, Japan, USA, Canada and Australia, more than 40% of the labour force possessed tertiary level education.

Figure 1.1: Malaysia's Productivity and GDP Growth



Source: Department of Statistics, Malaysia

*Note:
1. Beginning 2010, employment and labour force data was based on new population estimates and cannot be directly compared to data in previous reports.
2. Beginning 2012, real GDP has been re-based to 2005 prices, from 2000 prices previously.

ENHANCED LABOUR PRODUCTIVITY GROWTH

Capital deepening, or increase in capital per worker, plays an important role in driving productivity growth. A rise in capital investment with capital deepening will add directly to productivity provided the capital is used to improve workers' efficiency and to assist in the creation of higher added-value products and services. Higher capital investment provide workers with more capital to work with, and new capital, coupled with the introduction of new technology, will enable workers to raise their level of productivity.

The increase in capital input in 2012 was driven by a strong investment in domestic-oriented manufacturing and consumer related services, namely, telecommunications, real estate and aviation as well as projects being implemented currently in the oil and gas. Investment was also supported by capacity expansion in primary-related manufacturing (chemicals and chemical products, petroleum products, rubber products and off estate processing) aided by capital spending in new growth areas such as medical and communications equipment. The private sector led investment which contributed 58% of total investment amounting to RM199,668 million.

Capital per worker (capital intensity or capital deepening) registered a growth rate of 1.7% in 2012. Capital intensity increased from RM114,167 in 2011 to RM116,053 in 2012 (Figure 1.2).

This increase was supported mainly by investment in Machinery and Equipment (M&E) which recorded a double-digit growth of 15.6% in 2012 (from RM 77.8 billion in 2011 to RM 89.9 billion in 2012).

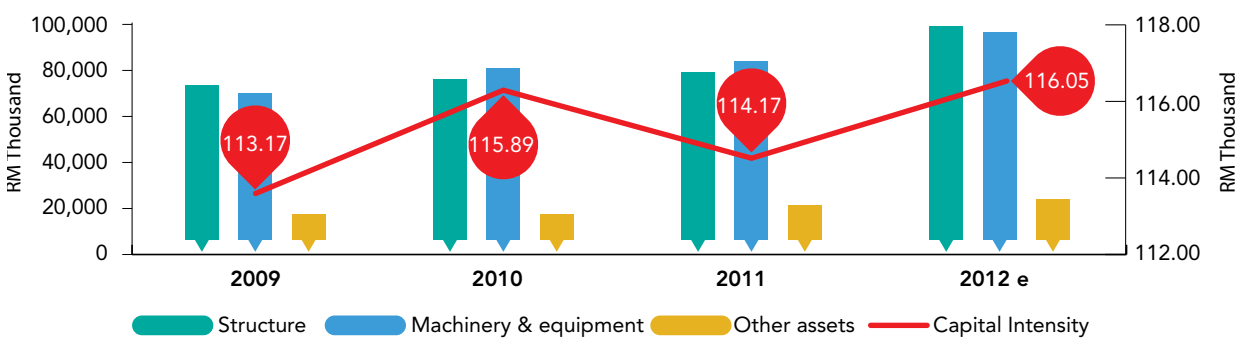
SECTORAL PRODUCTIVITY PERFORMANCE

The implementation of mega projects and various initiatives under the Government Transformation Programme (GTP) and the Economic Transformation Programme (ETP) support the productivity performance of the economic sectors.

Productivity growth is highest in the construction sector (15.5%) followed by manufacturing (4.5%) and services (1.8%). Sectors that exhibit a decline in productivity are agriculture (-11.2%) and mining (-4.4%) (Figure 1.3).

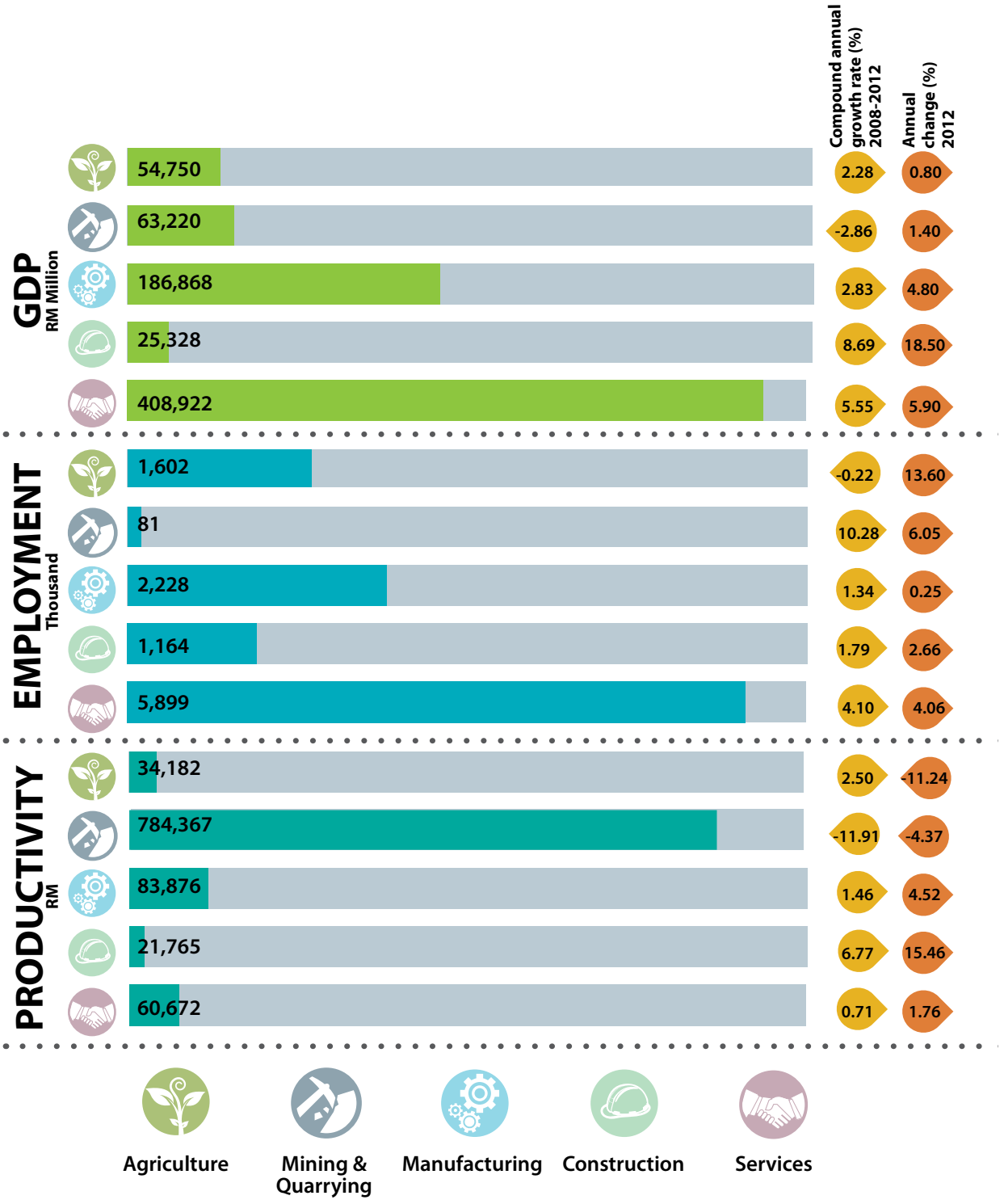
The construction sector registered a productivity growth of 15.5% valued at RM21,765 due to the continuous adoption of new designs such as green technology, the Industrialised Building System (IBS) and the modifications made in a number of rules and regulations in the construction industry. Supporting

Figure 1.2: Capital Intensity and Investment by Type, 2009-2012



Source: Department of Statistics, Malaysia
Note: e - Estimate

Figure 1.3 Labour Productivity Growth of Malaysia and Major Economic Sectors, 2012



Computed from: Department of Statistics, Malaysia

the high productivity growth in construction is the implementation of mega projects under the Government Transformation Programme (GTP) and the Economic Transformation Programme (ETP) as well as the strong demand that has arisen in the non-residential properties segment.

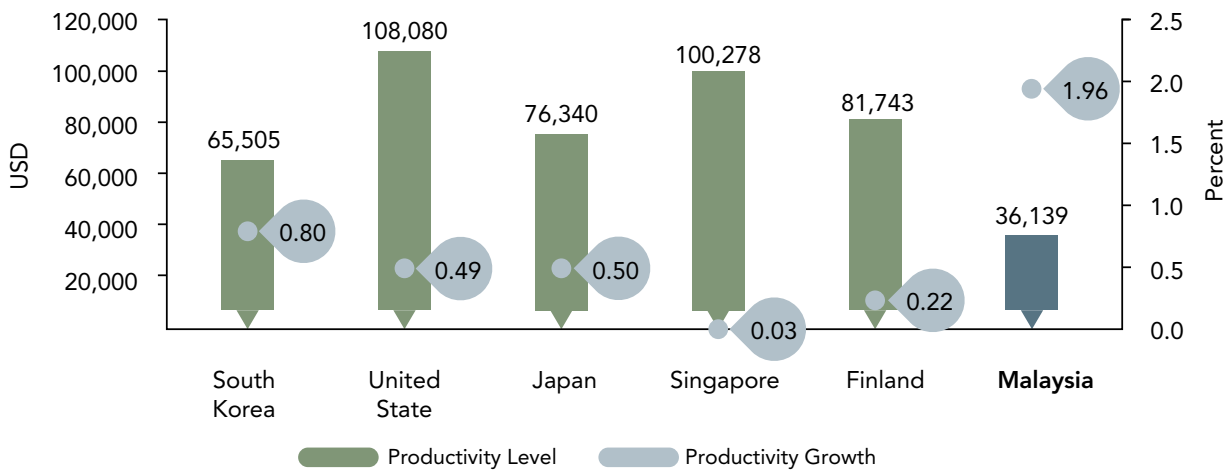
With regard to the manufacturing sector, productivity grew by 4.5% in 2012 on the back of a broad-based expansion of the sector. All the clusters under this sector registered better growth, reaping the benefits accrued from the continued expansion of both domestic and external demand. Sub-sectors that recorded high productivity growth are refined petroleum products (15.5%), electrical and electronics products (9.9%) and wood and products of wood (8.9%). This growth was accomplished inspite of a marginal rate of increase in employment (0.25%). High productivity growth in the manufacturing sub-sectors is due to initiatives taken to address labour shortages by various well-thought-out measures which include switching to labour-saving designs and equipment, and introducing measures in management, moving towards leaner organisations.

Productivity in the services sector grew by 1.8% amounting to RM60,672 in 2012. The sub-sectors showing the highest productivity are information and communications (8.3%), real estate (8.2%), finance and insurance (6.1%), accommodation and food services (3.8%) and transport and storage (1.8%).

Productivity in the mining sector is showing signs of recovery. This is reflected by a smaller decline in productivity, contracting from 29.1% in 2011 to 4.4% in 2012. However, in terms of productivity level, this sector surpassed other economic sectors to record a value of RM784,367. Improved productivity growth is due to a combination of factors, namely, the higher production of natural gas and crude oil, discovery of new oil fields, revival of matured oil fields, continual technological improvement, skills enhancement, as well as increase in scale and character of capital inputs, specifically in the extraction process of oil. Compared to other sectors, the mining sector is more capital intensive, and accounted for a significant share of aggregate investment during the first nine months of 2012. This is reflected by a total inflow of Foreign Direct Investment (FDI) valued at RM8 billion (2011: RM7.4 billion).

The agriculture sector registered a decline in productivity growth recorded at 11.2%. The cause of the decline came from a fall (12%) in external demand for palm oil and palm oil based products from RM83.3 billion in 2011 to RM73.3 billion in 2012. Other contributory factors that added to

Figure 1.4: Level** and Growth of Productivity of Malaysia and Selected Developed Countries, 2012



** Labor productivity per person employed in 2012 US$ (converted to 2012 price level with updated 2005 EKS PPPs

Source: Department of Statistics, Malaysia;
Total Economy Database, The Conference Board

poor productivity performance in agriculture are reduction in size of farms, poor rate of uptake of new technologies and rate of technological discoveries (dependent on institutional R&D efforts or farmers' own experimentation), market forces and unpredictable climate change.

INTERNATIONAL PRODUCTIVITY COMPARISONS

A slowdown in global economic growth will affect a country's productivity performance because the lower investment climate will result in a slower global growth. According to The Conference Board (TCB) report, global productivity growth declined in 2012 at 1.8% compared to 2.3% in 2011.

MALAYSIA'S PRODUCTIVITY AND PRODUCTIVITY OF SELECTED ECONOMIES

Productivity growth of advanced economies like the United States, the European Union and Japan almost stalled in 2012 due to uncertainties that curtailed investment in new products and services. However Malaysia's labour productivity grew at the rate of 2% to a value of USD36,139 in 2012 better in comparison to South Korea at only 0.8% (USD65,505), and Japan at 0.5% (USD76,340). Similarly, the United States registered a labour productivity growth of 0.5% (USD108,080) while Singapore reported a marginal growth of 0.03% (USD100,278) (Figure 1.4).

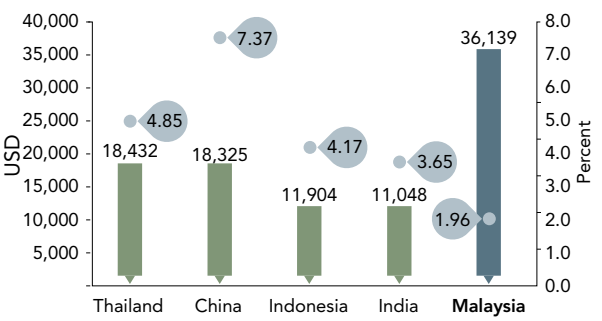
China's high productivity growth of 7.4% in 2012 was the result of strong government investment in manufacturing and innovation, a good supplier network and improved efficiency of firms

China, one of the fastest growing economies, registered the highest productivity growth at 7.4% to the value of USD18,325 in 2012 (2000-2010: 10.9%). The growth was primarily due to its labour and material cost advantage, strong government investment in manufacturing and innovation, and a well-established supplier network. China's business environment was further supported by the improved efficiency recorded by industrial firms that resulted from the restructuring of their operations. Furthermore, employment was diverted from unproductive industries to more productive industries leading to an increase in concentration of employment in more productive firms.

India's productivity growth was 3.7% contributed by its strong talent pool and labour competitiveness in the areas of science, technology and research

India's productivity growth was 3.7% at a value of USD11,048 in 2012. This was partly due to a strong talent pool and labour competitiveness in the areas of science, technology and research. India's workforce skills and cost advantages, improved policies and regulations and its significant investment helped boost its competitive advantage and maintain the country's position as a strong contender on the global manufacturing front.

Figure 1.5: Level and Growth of Productivity of Malaysia and Selected Asian Countries, 2012



Source: Department of Statistic, Malaysia
Total Economy Database, The Conference Board

Thailand's productivity grew by 4.9% to a value of USD18,432 while Indonesia's productivity grew by 4.2% at USD11,904 in 2012. Thailand improved productivity growth was supported by their favourable macroeconomic and financial policy environment.

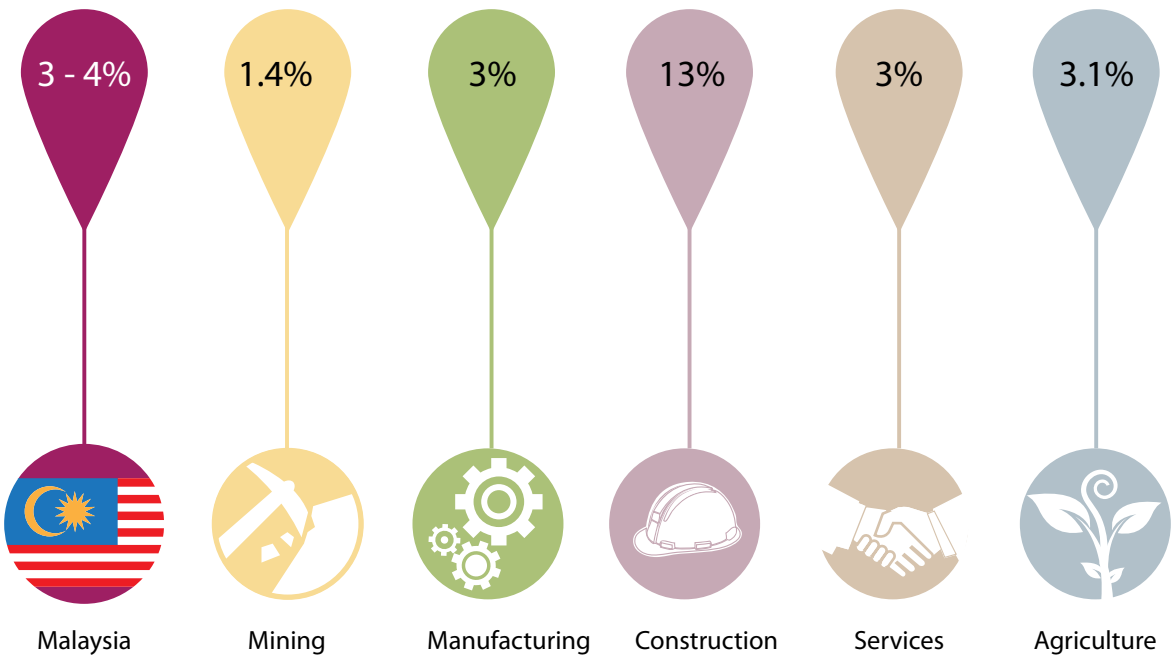
OUTLOOK 2013, MALAYSIA

Based on current forecasts and estimates, the Malaysian economy is expected to achieve a productivity growth of 3 - 4 for 2013. This forecast is supported by the current performance shown by its economic sectors. For the year 2013, the construction sector is expected to register a productivity growth of 13% and an output growth of 15%. This growth will be supported by construction activities in the sub-sectors of oil and gas, transport and utilities.

The manufacturing sector is expected to register a productivity growth of 3% and an output growth of 5%. The industries in this sector are expected to make a shift towards more capital intensive and advanced technology operations.

The services sector is expected to register a productivity and output growth of 3% and 5% respectively. The agriculture sector is expected to experience a good year in terms of its output for 2013. The productivity of the sector is expected to expand by 3.1% and output to grow by 5.5 %. The mining sector is expected to register a productivity growth of 1.4% and an output growth of 5%.

Figure 1.6: Productivity Growth, 2013[f]



Source: Department of Statistic, Malaysia
Note: f - Forecast

GLOBAL OUTLOOK 2013

Based on available current forecasts and estimates, average global labour productivity growth is projected at 1.9% as compared to 1.8% in 2012. Among mature economies such as the United States, productivity is expected to see a moderate improvement of 0.6% in 2013 compared to 0.2% in 2012. Japan will see flat productivity growth for another year in 2013, as both output and input factors are projected to improve only moderately from 0.6% to 0.8%. Emerging and developing economies may see a moderate continuation of a softening productivity growth as some of the largest and most dynamic economies come under pressure.

MALAYSIAN BUSINESS LEADERS CHALLENGES AND STRATEGIES

Malaysian businesses are more concerned with managing customer relations while global businesses have moved forward to direct their focus on innovation

Based on a survey conducted by MPC in which Malaysian business leaders were asked to rank their business challenges, utilising a ranking of one to ten (Table1.1). The feedback received showed that Malaysian businesses leaders are more concerned with customer relationship while global business leaders placed innovations as one of the top three challenges. The five main challenges identified by Malaysian business leaders in achieving higher productivity are Customer Relationship, Human Capital, Sustainability, Operational Excellence and Corporate Brand and Reputation. Results of the survey with regard to these five challenges are given below.

Table 1.1: Malaysian Business Leaders - Survey on Challenges and Strategies

2013 Challanges	Global (N=729)	Malaysia (N=27)	Services Sector	Manufacturing Sector	Agriculture Sector	Construction Sector
Human Capital	1	2	2	6	1	10
Operational Excellence	2	4	4	5	4	3
Innovation	3	9	9	8	3	4
Customer Relationships	4	1	1	3	8	5
Global Political/ Economic Risk	5	7	7	7	7	1
Government Regulation	6	6	6	9	5	2
Global Expansion	7	8	10	2	6	7
Corporate Brand and Reputation	8	5	5	1	9	6
Sustainability	9	3	3	4	2	8
Trust In Business	10	10	8	10	10	9

CUSTOMER RELATIONSHIPS

Although customer relationships received only 4th ranking globally, it was cited as the most important challenge by Malaysian CEOs who took part in the survey. Malaysian business leaders felt that slowing growth and stagnant markets were creating intense competition for them in maintaining existing customers and markets. Malaysian CEOs in the services and construction sectors felt that customer relationships is very important in securing markets and they suggested five main strategies to improve customer relationships, namely, enhancing the quality of products/services, engaging personally with key customers/clients, and using competitive intelligence to better understand customers/clients' needs.

HUMAN CAPITAL

Human capital is the second important challenge faced by Malaysian business leaders and this is closely linked to challenge number four which is operational excellence. Among the top strategies indentified by CEOs to tackle their human capital challenges lie in growing talent internally and enhancing the effectiveness of the senior management team.

SUSTAINABILITY

Sustainability was ranked as an important challenges by Malaysian CEOs. Contributing positively and demonstrably to the sustainability agenda in Malaysia is seen as an increasingly important component of the value position particularly with regard to MNCs operating in the country. Two strategies identified by CEOs to meet this challenge are to ensure that sustainability be part of corporate brand, identify and culture and to encourage improvements in sustainability performance on the part of suppliers and other business partners.

OPERATIONAL EXCELLENCE

Operational excellence is seen to be one of the top five challenges of four sectors i.e manufacturing, services, agriculture and construction. Operational excellence has more to do with organisational culture than procesess because to maintain excellence, performance accountability must be exercised through a system of recognitions and reward for those who outperform. The most important strategy to improve operational excellence as identified by the manufacturing sector is to improve speed to market. The agriculture sector identified continual improvement as the most important strategy and the services and construction sectors identified raising of employee's engagement and productivity as important.

CORPORATE BRAND AND REPUTATION

Corporate brand and reputation is seen to be an important growth strategy for Malaysia although it appears to be ranked low in global ranking at number eight. This is a clear reflection of growing competition among industries in Malaysia. The top three strategies in meeting corporate branding challenges are reported by Malaysian CEOs to be, one, taking steps to improve alignment of business practices/management behaviour with corporate values, and two, improving the quality of products and processes and enhancing the understanding of corporate brand awareness across different cultures.

TOP 5 STRATEGIES TO MEET THE TOP FIVE GLOBAL CHALLENGES

2013 Challenges	Strategies
Customer Relationships	1. Enhance quality of products/services 2. Engage personally with key customer/clients 3. Use competitive intelligence to better understand customer/client needs 4. Sharpen understanding of customer/ client needs 5. Broaden range of products/services
Human Capital	1. Provide employee training and development 2. Grow talent internally 3. Enhance effectiveness of the senior management team 4. Increase efforts to retain critical talent 5. Improve performance management processes and accountability
Sustainability	1. Ensure sustainability is part of the corporate brand, identify and culture of the organisation. 2. Encourage improvements in sustainability performance from suppliers and other business partners 3. Ensure sustainability measurement and reporting 4. Engage with local communities to enable sustainable growth and manage expectations 5. In corporate sustainability initiatives and results into corporate branding and communication strategies.
Operational Excellence	1. Raise employee engagement and productivity 2. Focus on reduction of baseline cost 3. Continual improvement (six sigma, total quality. etc.) 4. Seek better alignment between strategy, objectives and organization 5. capabilities Improve capital investment decision process
Corporate Brand and Reputation	1. Improve alignment of business practices/ management behavior with corporate values 2. Enhance quality of products and processes 3. Enhance corporate brand awareness and understanding across different cultures 4. Promote a ''green" or environmentally friendly image for corporation 5. Increase investment in corporate brand communication externally
Innovation	1. Find, engage and incentivise key talent for innovation 2. Apply new technologies (product, process, information, etc) 3. Engage in strategic alliences with customers, suppliers, and/or other business partners 4. Develop innovation skills for all employees 5. Seek Government support and funding for research and development

Chapter 2

Sources of Malaysia's Economic Growth

SOURCES OF MALAYSIA'S ECONOMIC GROWTH

OVERVIEW

With the Malaysian economy aspiring to become a high-income nation by 2020, the focus of growth is increasingly leaning towards innovation-driven growth strategy. This strategy emphasises on creating high value-add activities, to which one of the key ingredients is the Total Factor Productivity (TFP).

> New investment ideas for example R&D, physical capital like infrastructure, human capital such as education and training can generate positive spill-overs and drive both productivity and also the economic growth

Productivity gains are largely driven by the changes in endogenous factors. On that note, it is important to focus on TFP, since it is being influenced by innovation and incentives like competition; government assistance and regulation; flexibility of labour arrangements; regulations impacting on production decisions; capabilities like skill people and knowledge; and infrastructure.

TFP is a measure of efficiency in the utilisation of inputs and better quality inputs generate more outputs when these inputs are utilised effectively and efficiently. The high contribution of TFP to economic growth is a prerequisite for improving the standard of living of a country.

Given that the TFP growth trend is being determined by the development of new technologies and how efficiently resources are organised, these factors can govern the capacity of the economy to supply goods and services. Importantly, since inflationary pressures tend to influence the balance of supply and demand growth in the economy, the productivity growth trend is an important determinant of the pace at which the economy can grow over the medium term without generating inflationary pressures.

SOURCES OF ECONOMIC GROWTH

Malaysia grew on average by 5.1% over the last 12 years period (2000-2012). During this period, the domestic economic growth was being supported mainly by the growth in capital (2%), followed by TFP (1.6%) and labour (1.5%). In terms of contribution to economic growth, capital contributed 39.3% followed by TFP 31.6% and labour 29.1% (Table 2.1).

By demarcating the economic growth into two main sub-periods, which is from 2000-2007 and 2008-2012, it showed significant differences in terms of the magnitude of growth and input contribution. TFP was found to be the main contributor to the economic growth during the period 2000-2007, accounting for 38.1% of the economic growth. However, during the period 2008-2012, the contribution of TFP's growth eased to 17.8% (Table 2.1). The lower contribution of TFP during this period was due to the decline in output growth, and in particular the export performance. Malaysia's exports in 2009 shrank by 16.7%, affected by the global economic slowdown. As a result, the average economic growth and exports during this period was 4.2% and 3.7% respectively.

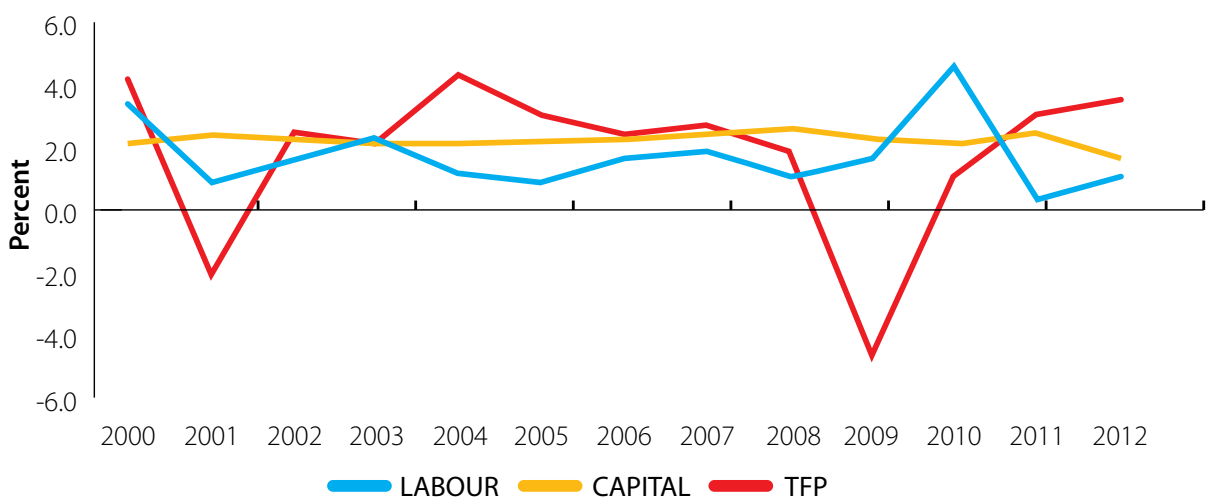
Table 2.1: Sources of GDP Growth

	2000-2007	2008-2012	2000-2012
Average Change (%)			
GDP	5.57	4.24	5.06
Labour	1.46	1.49	1.47
Labour Quality	0.19	0.18	0.19
Labour Quantity	1.27	1.31	1.29
Capital	1.99	2.00	1.99
Non-ICT Capital	1.09	1.04	1.07
ICT Capital	0.90	0.95	0.92
TFP	2.12	0.76	1.60
Contribution to GDP (%)			
GDP	100.00	100.00	100.00
Labour	26.27	35.08	29.11
Labour Quality	3.46	4.19	3.69
Labour Quantity	22.82	30.89	25.42
Capital	35.65	47.09	39.34
Non-ICT Capital	19.50	24.63	21.16
ICT Capital	16.14	22.46	18.18
TFP	38.08	17.83	31.55

Source: Department of Statistics, Malaysia
: Total Economy Database, The Conference Board

The domestic economic growth was affected from the 2008 global financial crisis that resulted to a global economic recession in 2009. Malaysia, being an open economy, is not scratch proof. The domestic economy contracted by 1.5% in 2009. In tandem with the disruption to the domestic economic growth in 2009, the overall performance of the TFP shrank. In 2009, the TFP growth shrank by 4.8%, the first contraction since 2001 (Figure 2.1).

Figure 2.1: TFP, Labour and Capital (annual change in %)

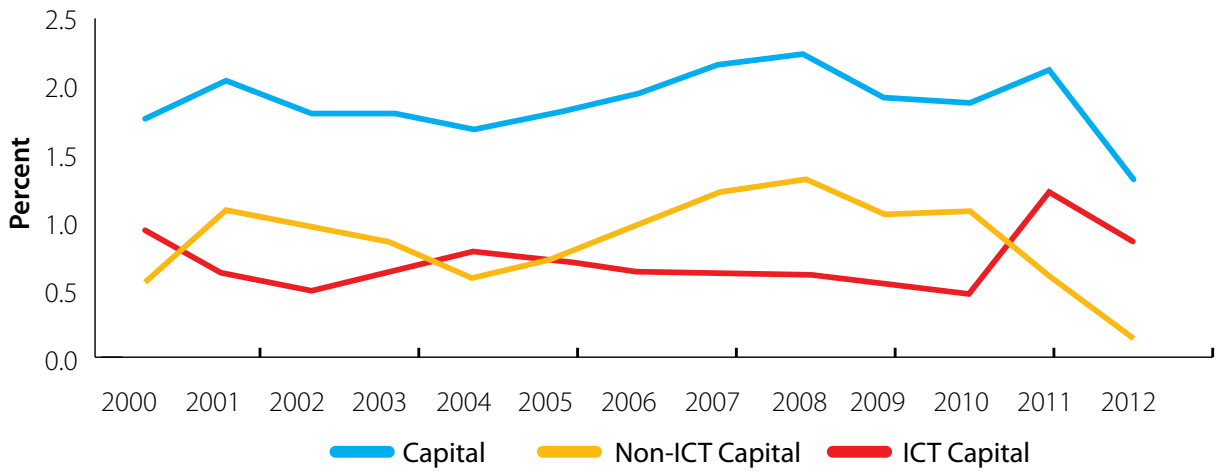


Source : Department of Statistics, Malaysia
: Total Economy Database, The Conference Board

Looking at the contribution to output, it showed capital input to the economic growth improved from 35.7% during the period 2000-2007 to 47.1% during the period 2008-2012. The higher contribution during the latter period was supported by investments in both non-ICT and ICT capital, which grew by 1.04% and 0.95% respectively, compared to 1.1% and 0.9% respectively during 2000-2007 (Table 2.1).

Investment in ICT grew from 0.8% in 2008 to 1.1% in 2012. Investment in ICT will bring about significant production gains

Figure 2.2: Capital Input, ICT Capital and Non-ICT Capital (annual change in %)



Source : Department of Statistics, Malaysia
: Total Economy Database, The Conference Board

Importantly, there has been a pick-up in the ICT growth from 0.8% in 2008 to 1.1% in 2012, compensating for the slower growth in non-ICT from 1.5% in 2008 to 0.4% in 2012 (Figure 2.2). Higher influence by ICT growth on capital input is viewed positively since it focuses on the changes in the flow of productive services provided by ICT assets such as computer hardware and equipment; telecommunication equipment; and computer software and services. Meanwhile, the non-ICT capital growth emphasises on the changes in the flow of productive services provided by non-ICT assets like transport equipment; plant, machinery and other non-ICT equipment; and construction, building and other structures.

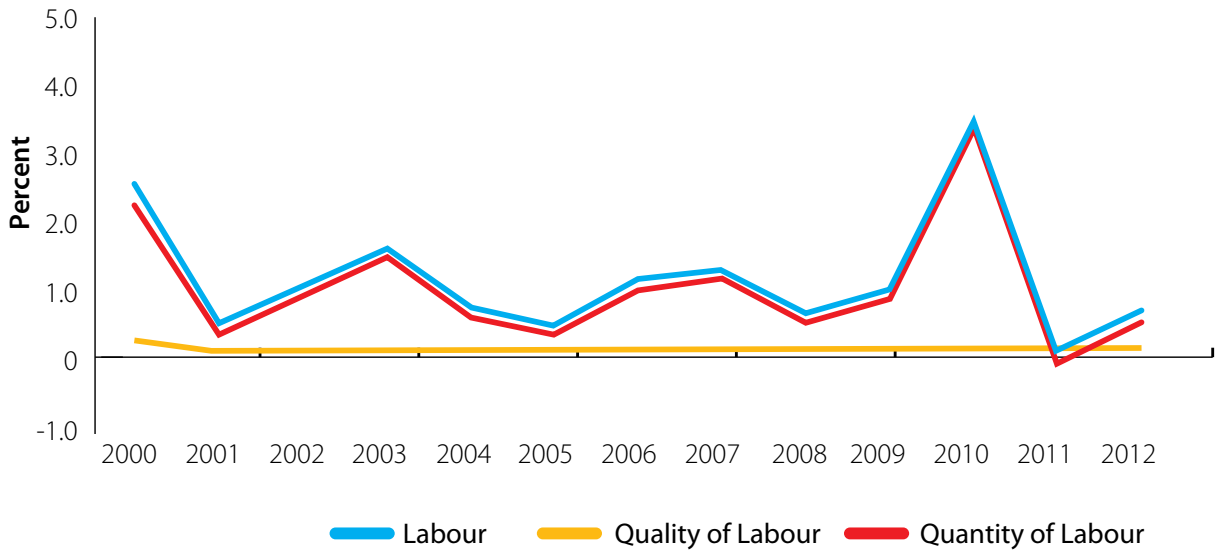
Investment in ICT capital is essential to IT technology. It can permeate the domestic economy and bring about significant production gains in sectors that traditionally have struggled with slow productivity growth. According to the Global Competitiveness Report 2012/2013, Malaysia's ICT infrastructure has improved to 33rd position in 2012 from 40th place in 2011, while the ranking of Government procurement of advanced technology products remained at 4th place.

Meanwhile, the contribution of labour input to economic growth improved to 35.1% during the period 2008-2012 from 26.3% during the period 2000-2007. The improved contribution during the latter period was due to the combination of labour quality and labour quantity, which grew by 0.18% and 1.31% respectively, compared to 0.19% and 1.27% respectively during 2000-2007 (Table 2.1).

Looking at the labour input growth trend, it showed an improvement in labour quality growth from 0.17% in 2008 to 0.21% in 2012. Labour quality growth measures the effective contribution of labour to output

growth. The measurements of labour quality are based on employment by gender, age and different skill-level groups such as low, medium and high skilled workers based on educational attainment. As for labour quantity, which is measured in terms of total employment, it grew by 0.67% in 2012 from 0.68% in 2008 (Figure 2.3).

Figure 2.3: Labour Input, Labour Quantity and Labour Quality (annual change in %)



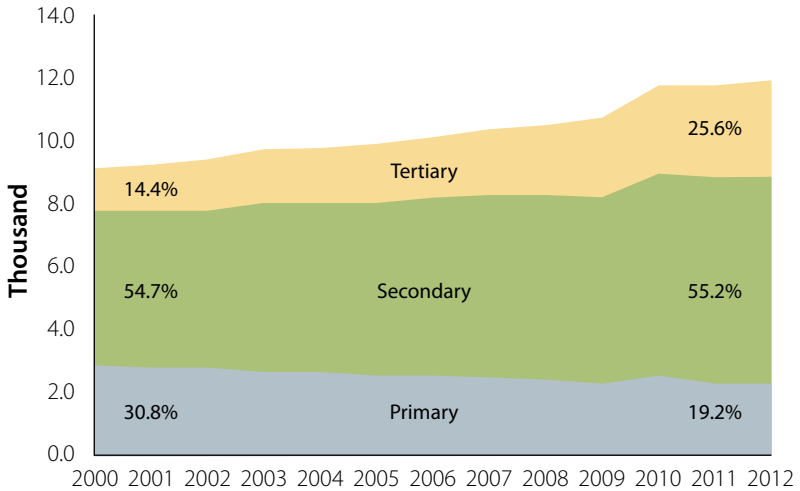
Source: Department of Statistics, Malaysia
: Total Economy Database, The Conference Board

Malaysia's labour composition over the period 2000-2012 showed total employment with secondary education remained high at 55%, although the total employment with tertiary education increased by 11.2% from 14.4% to 25.6%. Higher share of employment under the tertiary education was substituted by the drop in primary education from 30.8% to 19.2%. This partly explains on the improved labour quality contribution from 3.5% in 2000-2007 to 4.2% in 2008-2012. Nevertheless, total employment with secondary and primary education still remained the major employment group, constituting 74.4% of the total employment in 2012 (Figure 2.4).

Furthermore, the improved growth in labour quality over the period 2000-2012 was supported by the improved education attainment for those in the prime age group (30-49 years of age), which accounts for 50% of the total employment. Over the 12 year period, the share of employees with tertiary education rose by 10% from 16.4% to 26.4%, while the share of employees with the secondary education increased by 4.2% from 52.2% to 56.5%. Meanwhile, the share of employees with primary education fell from 31.4% in 2000 to 17.1% in year 2012 (Figure 2.5).

The contribution of labour input to economic growth improved to 35.1% during the period 2008-2012 from 26.3% during the period 2000-2007

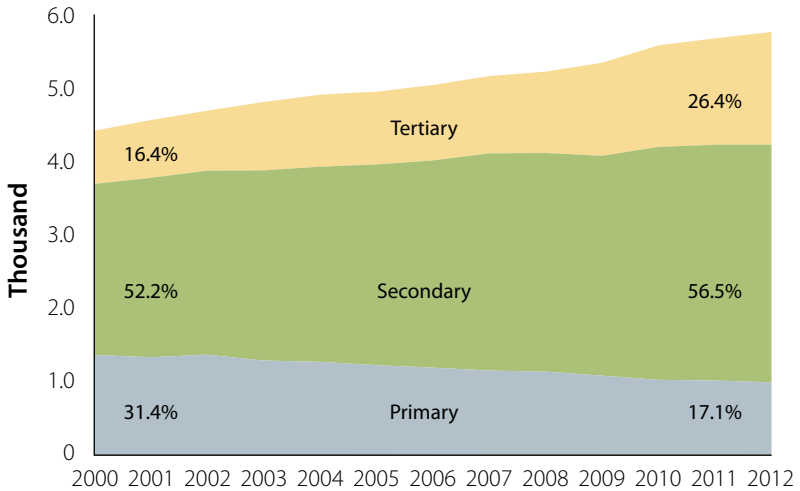
Figure 2.4: Employment and its Contribution, by Education Attainment



Computed from: Labour Force Survey, Department of Statistics, Malaysia.

Share of employees in employment age group 30-49 with tertiary education rose from 16.4% to 26.4% over the 12 year period

Figure 2.5: Employment (Aged 30-49) and its Contribution, by Education Attainment



Computed from: Labour Force Survey, Department Of Statistics, Malaysia.

TFP OF SELECTED ECONOMIC SECTORS

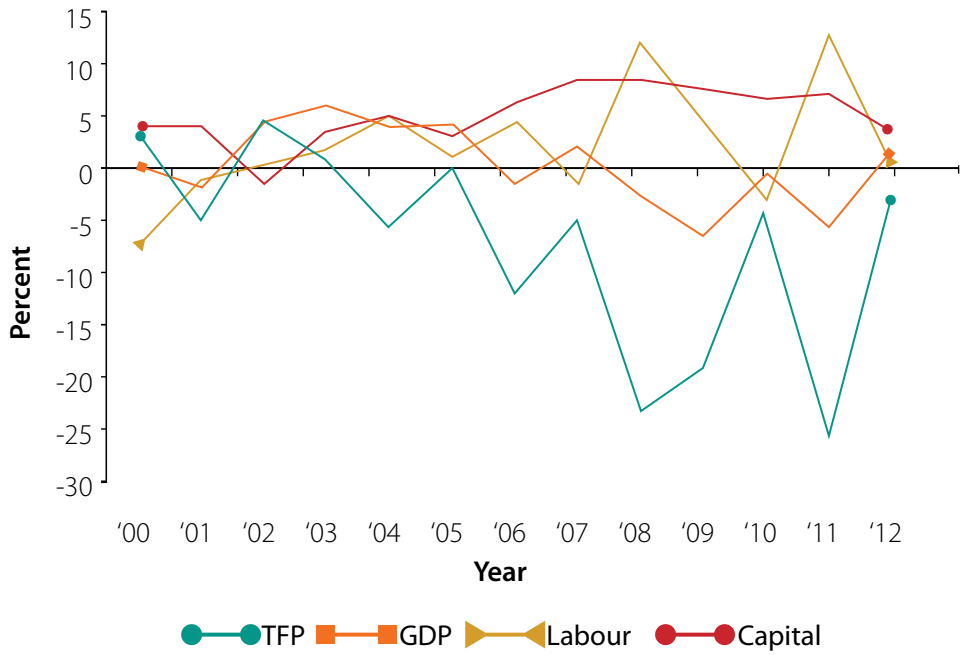
The slower TFP growth during the period 2008-2012 is widely recognised. Yet, there has been some debate about how broad based this has been across industries. The deterioration in TFP growth has been most pronounced in the mining sector as opposed to other economic sectors.

Table 2.2: TFP Growth of Economic Sectors, 2000-2012

	Average Change (%)		
	2000-2007	2008-2012	2000-2012
Agriculture			
TFP	2.13	0.37	1.46
Labour	0.17	-0.14	0.05
Capital	1.63	2.32	1.90
GDP	3.94	2.55	3.40
Mining			
TFP	-2.21	-14.92	-7.10
Labour	0.34	5.48	2.32
Capital	4.15	6.73	5.14
GDP	2.29	-2.71	0.37
Manufacturing			
TFP	3.21	1.41	2.52
Labour	0.67	0.12	0.46
Capital	2.86	0.99	2.14
GDP	6.74	2.52	5.12
Construction			
TFP	-1.91	3.39	0.13
Labour	2.51	1.48	2.11
Capital	1.22	2.47	1.70
GDP	1.82	7.33	3.94
Services			
TFP	1.09	3.53	2.03
Labour	2.92	1.16	2.24
Capital	2.50	1.57	2.14
GDP	6.50	6.26	6.41

Computed from: Department of Statistics, Malaysia.

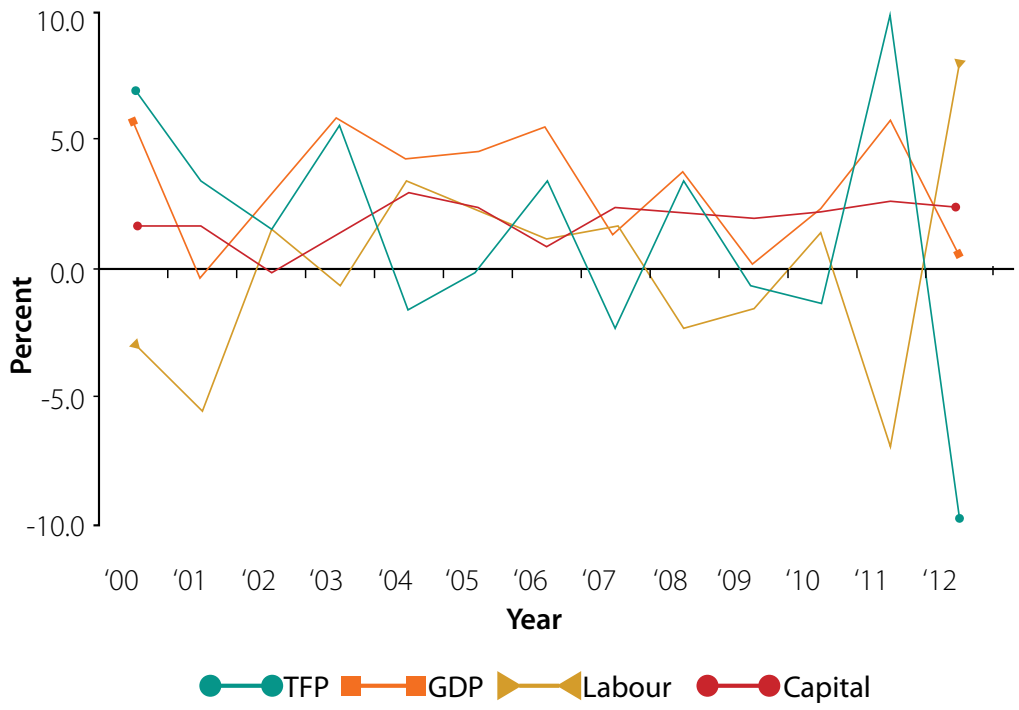
Figure 2.6: TFP Mining Sector (annual change in %)



Computed from: Department of Statistics, Malaysia.

In the case of the mining industry, TFP declined by 14.9% during the period 2008-2012, while capital and labour improved by 6.7% and 5.5% respectively. The contraction in TFP is partly due to the sharp increase in commodity prices. Higher commodity prices justified the difficulties and costlier extraction of previously undeveloped resources, which becomes necessary over time as developed deposits depletes. Also, the sharp gain in commodity prices justified an unprecedented increase in capital investment in the industry. This growth in measured capital inputs has detracted from measured productivity due to the lag (of some years) between the initial investments, the completion of projects and the utilisation of all the new capacity. In effect, the productivity developments in the mining industry are best characterised as a movement up the industry's supply curve, rather than an exogenous shift in the supply curve related to some fundamental change in underlying productivity.

Figure 2.7: TFP Agriculture Sector (annual change in %)



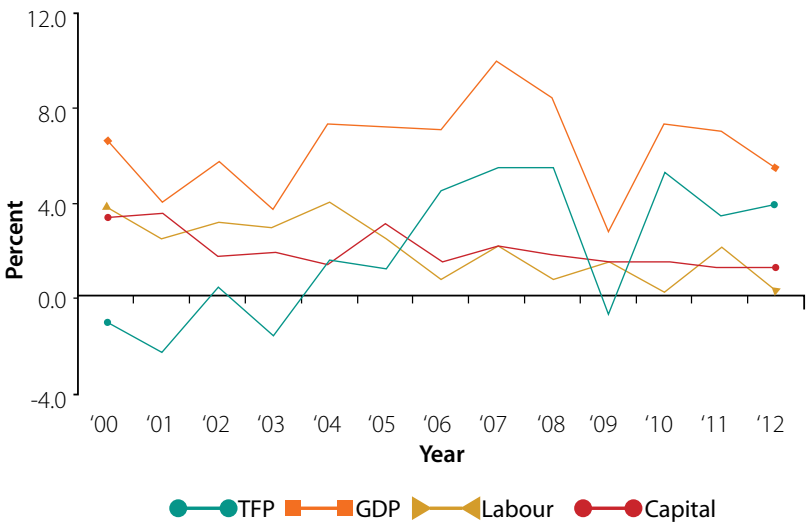
Computed from: Department of Statistics, Malaysia.

Meanwhile, the agriculture sector recorded a TFP growth of 0.4% during the period 2008-2012, while capital grew by 2.3%. Continuous adoption of new technologies such as biotechnology, better farm management, better agronomic practices, integrated farming and farm mechanisation has enhanced the TFP growth in the sector.

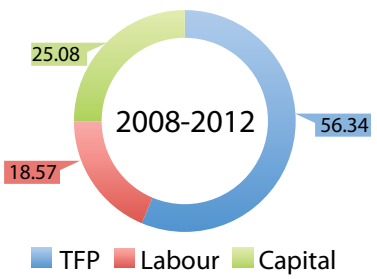
Continuous adoption of new technologies such as biotechnology, better farm management, better agronomic practices, integrated farming and farm mechanisation has enhanced the sector's TFP growth in the sector.

Positive TFP growth of services sector were due to better utilisation of ICT for business transactions, higher demand and improvement in business excellence

Figure 2.8: TFP Services Sector (annual change in %)



Contribution to GDP (%) for Services Sector

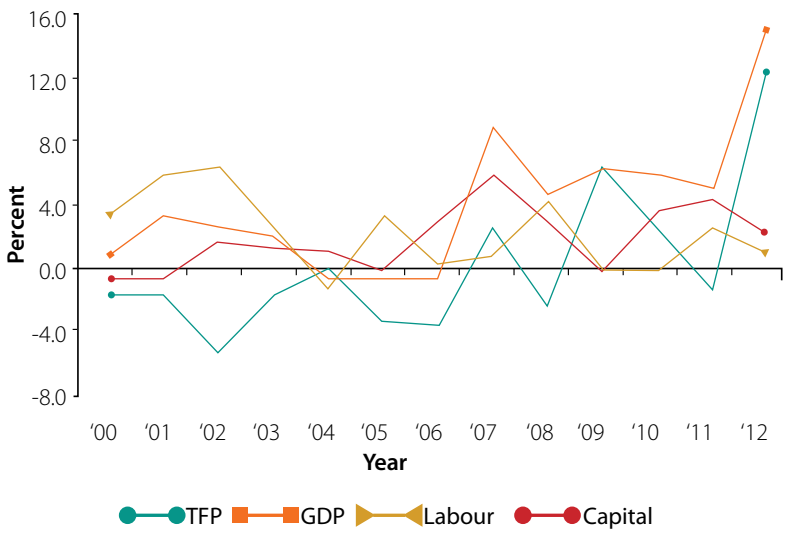


Computed from: Department of Statistics, Malaysia.

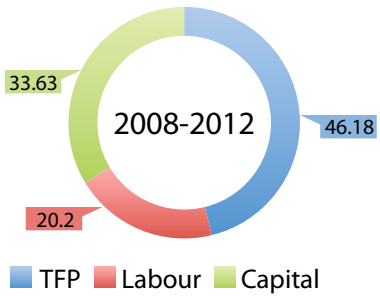
The services sector's TFP grew by 3.5% during the period 2008-2012, while capital and labour grew by 1.6% and 1.2% respectively. The positive TFP growth is due to better utilisation of ICT for business transactions, higher demand for consumer products and changing consumers' preferences. The performance were also attributed to the efficiency and effectiveness of services activities as well as initiatives undertaken such as improving excellent management practices, human capital development and talent building. Further efforts were directed at enhancing operational effectiveness and service delivery which resulted in favourable performance.

Increase in adoption of IBS, BIM and Green Building Technology help to enhance construction productivity and reduce over dependency on unskilled foreign labour

Figure 2.9: TFP Construction Sector (annual change in %)



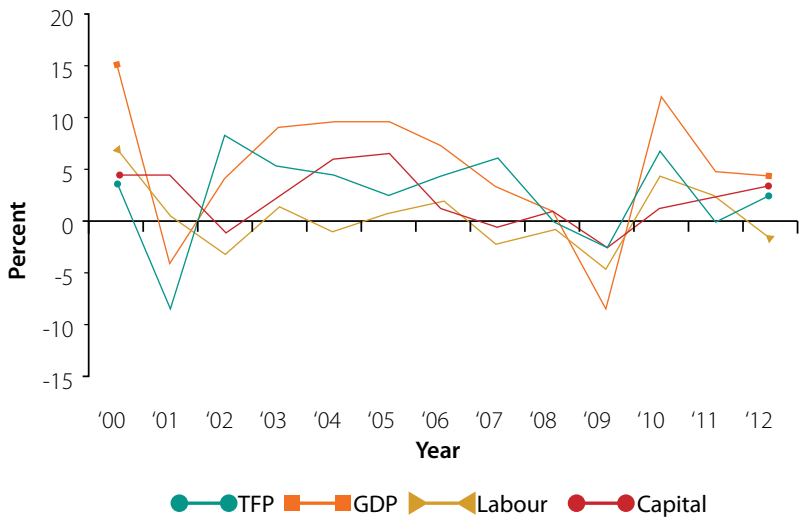
Contribution to GDP (%) for Construction Sector



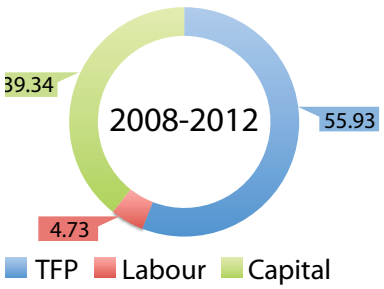
Computed from: Department of Statistics, Malaysia.

TFP growth in the construction sector during the period 2008-2012 rose by 3.4%. Improved level of efficiency and effectiveness in the business operations of construction activities are believe to be the main driving forces. Considerable efforts to increase in the application of Industrialised Building System (IBS), adoption of Building Information Management (BIM) and Green Building Technology had been implemented to enhance construction productivity and reduce over-dependency on unskilled foreign labour. Higher competitiveness is anticipated following favourable economic condition, dedicated Government support, enhancement in public service delivery system and on-going mega infrastructure activities.

Figure 2.10: TFP Manufacturing Sector (annual change in %)



Contribution to GDP (%) for Manufacturing Sector



Computed from: Department of Statistics, Malaysia.

Growth in the manufacturing TFP during the period 2008-2012 was 1.4%. Both capital and labour posted a slower growth by 1.0% and 0.1% respectively.

COMPARISON OF SOURCES OF ECONOMIC GROWTH WITH SELECTED ECONOMIES, 2000-2012

Malaysia's TFP growth of 2.1% during the period of 2000-2007 was higher than Indonesia (1.5%) and Japan (0.8%). At the same time, Malaysia's TFP was higher than the TFP growth of the United States (0.6%) and Australia (-0.2%) respectively. Looking at the period 2008-2012, Malaysia's TFP growth of 0.8% surpassed Indonesia (0.5%), Thailand (0.4%), Japan (0.1%), the United States (0.1%) and Australia (-1.1%) (Figure 2.12).

Focusing on the fast growing Asian economies like Japan, Hong Kong and South Korea, these countries enjoyed high TFP contribution to their economic growth during the period of 2000-2007. For instance, Hong Kong recorded the highest TFP contribution to the economic growth at 51.7%, followed by Japan (50.9%) and South Korea (41.1%). As for Malaysia, the TFP contribution to the economy was 38.1% which is lower than Singapore of 44.0%, Thailand (41.4%) and China (41.1%).

Focusing on the TFP contribution to the economic growth during the period 2008-2012, it somewhat changed. While Hong Kong and South Korea continued to enjoy high TFP contribution to the economic growth at 78.9% and 39.4% respectively, the same could not be said for Japan. In the case of Japan, the TFP contribution to the economic growth fell by 37.0%, dragged by the decline in labour quantity and non-ICT capital.

Malaysia's TFP contribution to the economic growth during this period was 17.8%, surpassing countries like Thailand (14.5%), Indonesia (9.1%) and Singapore (7.5%). Higher TFP contribution for Malaysia came from the quantity of labour as well as non-ICT capital.

To raise the TFP contribution to the economic growth, capital accumulation plays an important role. It is viewed as a necessary step and a prerequisite to drive the economic growth. Nevertheless, it is important to recognise that capital accumulation does not guarantee TFP growth. Much will depend on the ability and capability of the economy in trying to reap the benefits through capital assimilation. For instance, during the period 2008-2012, capital contribution to TFP benefitted countries like Hong Kong, Japan and South Korea.

Figure 2.11: Decomposition of Economic Growth Growth, 2000-2012 (%)

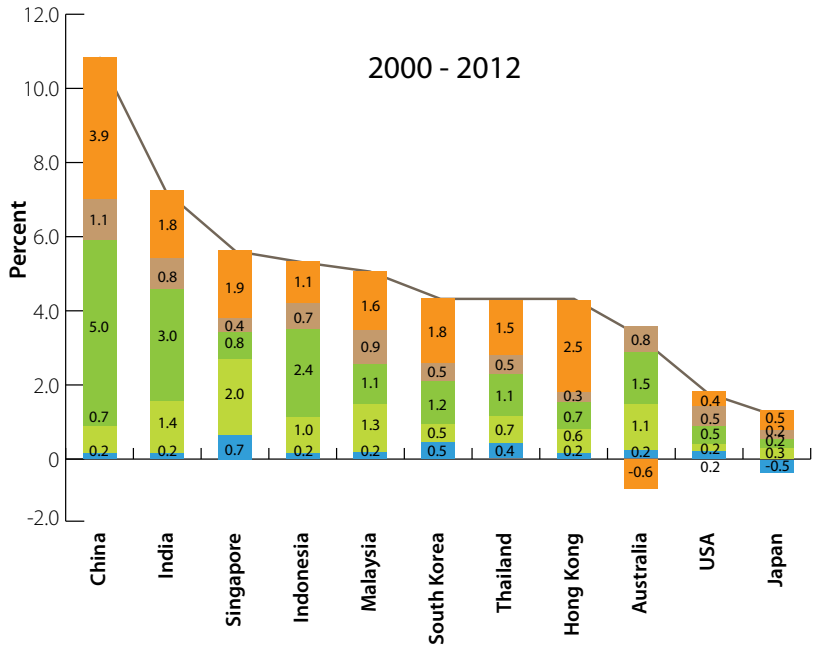
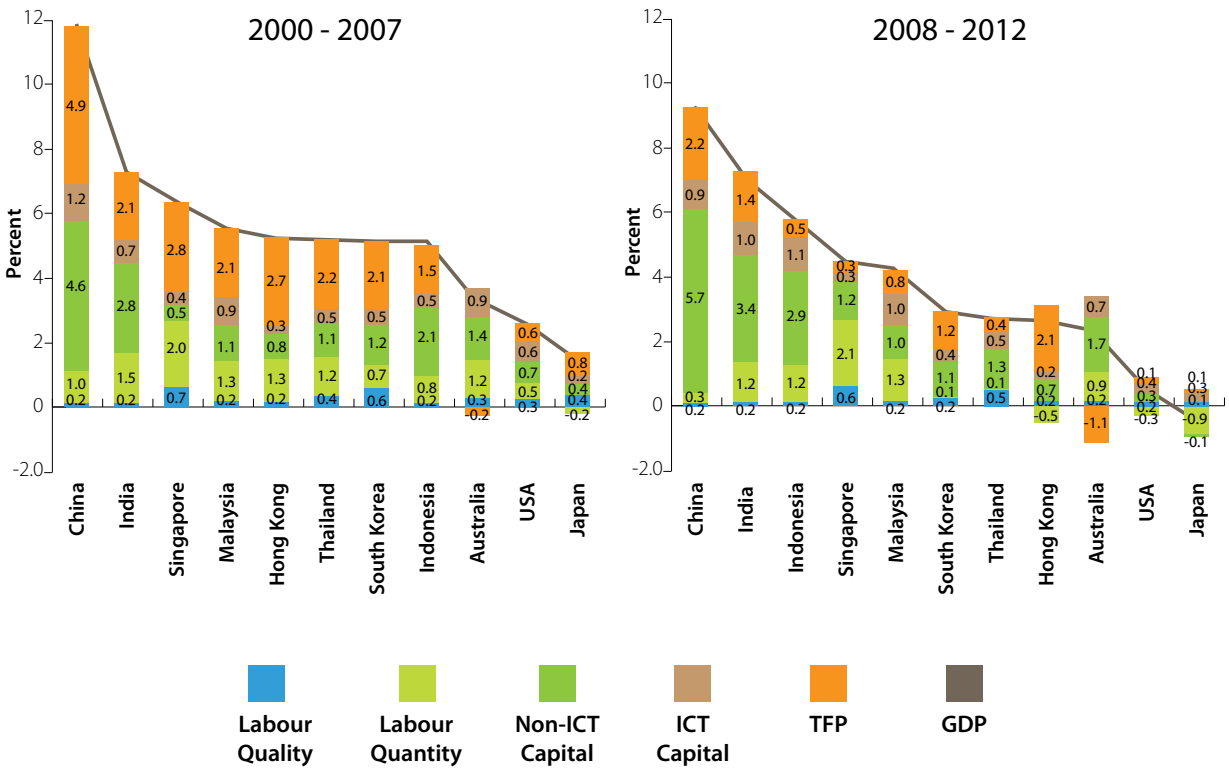


Figure 2.12: Decomposition of Economic Growth, 2000-2007 and 2008-2012 (%)



Source: Department of Statistics, Malaysia
: Total Economy Database, The Conference Board

To ensure the economy is able to maintain sustainable pace of growth, the focus will have to be on labour quality. Countries like the United States, Hong Kong and South Korea enjoyed from the significantly high contribution of labour quality during the period 2008-2012. It is not so in the case of Malaysia, where the contribution of labour quantity was much higher than labour quantity in improving TFP's contribution to the economic growth. This trend will have to change.

Apart from labour quality, it is important to focus on the contribution of ICT to capital productivity and TFP as opposed to non-ICT. For instance, the United States economy enjoyed higher contribution of ICT to capital and TFP during the period 2008-2012. Likewise, Malaysia too enjoyed a significant high contribution of ICT on capital and TFP.

STRATEGY AND OUTLOOK

Since the aim of Malaysia is to become a high-income nation by 2020, one of the important drivers to the economic growth is TFP and in particular technological improvements. The technological improvements can be acquired from abroad or developed domestically through innovation. In both the scenario, the economy needs to import new capital goods and knowledge, or undertake research and development. Through new knowledge, the economy will experience a technology driven improvement in TFP.

However, not all investments will necessarily lead to an improvement in TFP. In many cases, new investment involves increasing the capital stock based on existing technologies. While this capital deepening may improve labour productivity, it need not necessarily improve TFP. For instance, even if the economy invest in new capital goods that 'embody' technological refinements to existing technologies, these quality improvements which is defined as capital deepening need not necessarily improve TFP.

To drive the TFP, there is a need to create the 'spillover' effects that can generate more than the commensurate increase in output than to the increase in capital. The spillover effects on TFP can be referred to as 'disembodied' technical change. In practice, it will require the introduction of new technologies to be associated with some fundamental re-organisation of production processes. Alternatively, the development of new technology will be able to generate greater benefits than to the research costs of developing it.

For these reasons, the driver of TFP will be R&D, investment in human capital as well as investments in capital equipment that can fundamentally change the focus of the economy. This is where 'knowledge' has a direct effect on TFP. By raising knowledge, it will raise the level of 'critical thinking' and in turn improve the contribution of the quality of labour productivity.

It is through the higher contribution of the quality of labour can the economy create an effective innovation system which is important for the TFP growth. This is where R&D plays an important role. In the first phase of R&D, it is often linked with innovation. The second phase of R&D is to facilitate the understanding and imitation, which is related to the absorptive capacity and provides efficient technology transfer. R&D is likely to take place at firm or industry level, but will ultimately promote overall economic development through enhanced productivity. Hence, the sources of R&D come from domestic or generated from international spillovers.

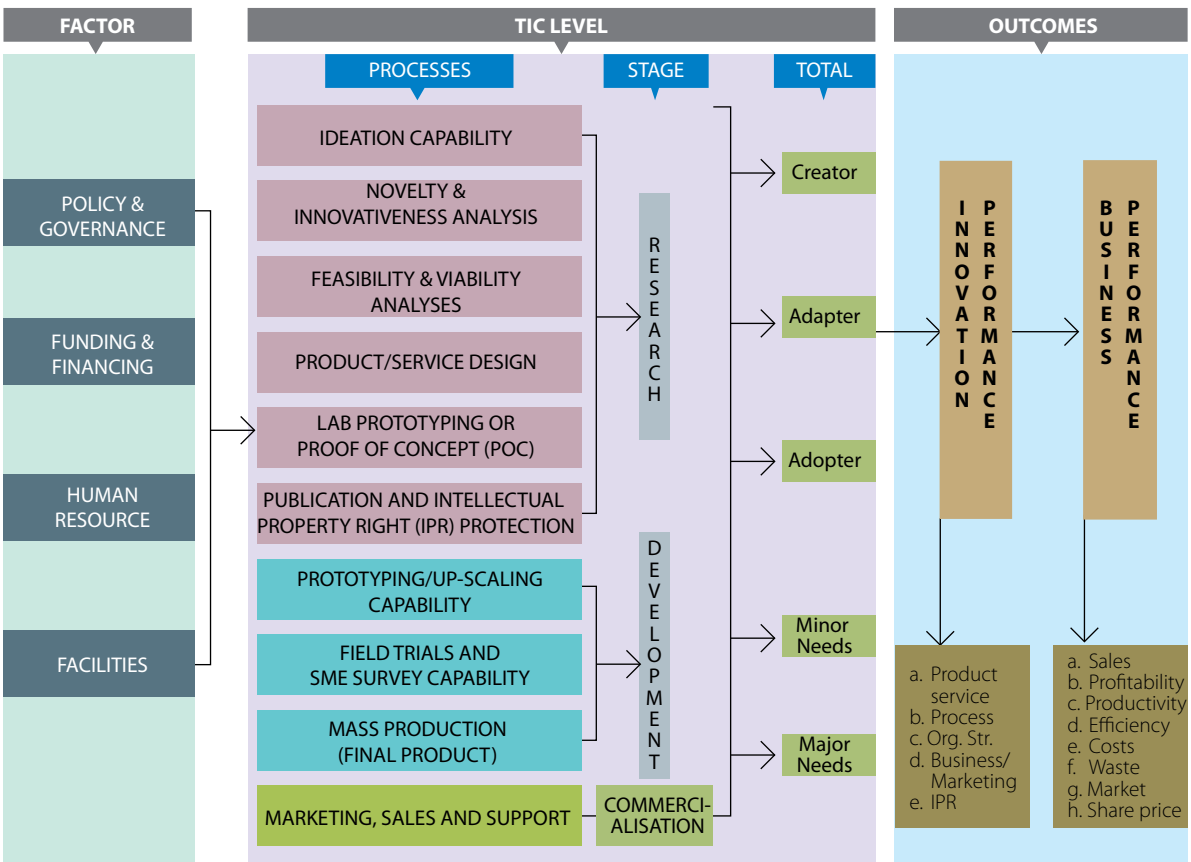
Going forward, in a move to raise the TFP growth and ensure sustainable pace of the economic growth, it is important for the economy to focus on raising the contribution of labour quality productivity. At the same, the investments should lean more on 'higher value-add' investments than to those non-ICT investments and investments that emphasis on labour quantity. By focusing on improving the contribution of labour quality as well as attracting higher value-add investments, the domestic economy will reduce the dependency on factor endowments as a means to drive the economic, which is successful in the short run, and focus on TFP growth which will ensure sustainable growth over the medium and long term.

BOX 2.1 TECHNOLOGICAL INNOVATION CAPABILITIES FRAMEWORK

Technological innovation is a key component that enables companies to become competitive. A company's capability to innovate will make it possible for them to create new high-value added products/processes. The capability to innovate will also enable companies to reduce wastage through the utilisation of better product/process designs and more efficient processes.

The Technological Innovation Capabilities (TIC) Framework was developed to study the capacity of Malaysian companies to undertake technological innovation. The TIC framework consists primarily of innovation factors and processes. These factors include the existence of policies and governance that promote innovation, the availability of funding and financing to support innovation activities, appropriate human resource capacity and capability and good research facilities.

In the TIC Framework, technological innovation consists of several processes beginning with idea generation and extending to marketing, sales and support. These processes form the Innovation Value Chain and each of the processes signify an increase in the value of the innovative idea. The value chain process consists of three stages, which are research, development and commercialisation (RDC).



The interaction of the innovation factors exerting influence on the processes will create an impact on innovation activities within the company. This in turn will determine the strength of a company's technological innovation capability.

There are three levels of technological capabilities in TIC. The three levels are Total TIC level, the RDC stage and Process TIC.

Total TIC level measures companies' overall level of innovation capability which covers the whole span of innovation processes from the initial conception of an idea right up to the final successful commercialisation of the idea. The TIC Framework assesses companies at Total TIC level and gives them their overall scores, whether Creator, Adapter, Adopter or Incapable (having Minor or Major Needs) as illustrated in Table 1 below:

Table 1: Category of Companies for Total TIC Level

TIC Score (%)	Category
0 - 20	Incapable – major needs
21 - 40	Incapable – minor needs
41 - 60	Adopter
61 - 80	Adapter
81 - 100	Creator

Once it is determined what category a particular company belongs to, further analysis of the score obtained at RDC level will provide insights as to which stage (research, developmental or commercialisation) the company is at. Subsequently, further analysis at Process TIC level will determine what specific process or processes the company will need to improve in order to be able to innovate.

The TIC Framework also enables companies to ascertain their score on Innovation Performance and Business Performance. Innovation performance is measured by number of Intellectual Property Rights or awards obtained, while indicators of business performance include sales, profitability, productivity, market share, etc.

Generally, a company that has innovation capability will have scored high on innovation performance (high Total TIC level), which consequently should lead to high business performance. However, this is not always the case as business performance can be influenced by various other factors.

Chapter 3

Malaysia and International Competitiveness

MALAYSIA AND INTERNATIONAL COMPETITIVENESS

OVERVIEW

Competitiveness is an important agenda in Malaysia's economic transformation programme towards achieving developed nation status. In 2012, Malaysia made significant strides in competitiveness at the international level earning good rankings in major international reports. It secured 14th place out of 59 countries in the Institute for Management Development's (IMD) World Competitiveness Yearbook (WCY) 2012. At the same time, Malaysia ranked 25th out of 144 countries in the World Economic Forum's (WEF) Global Competitiveness Report (GCR) 2012-2013, putting it in the top 20% in world ranking. Malaysia also managed to secure 12th position in the World Bank Doing Business Report 2013.

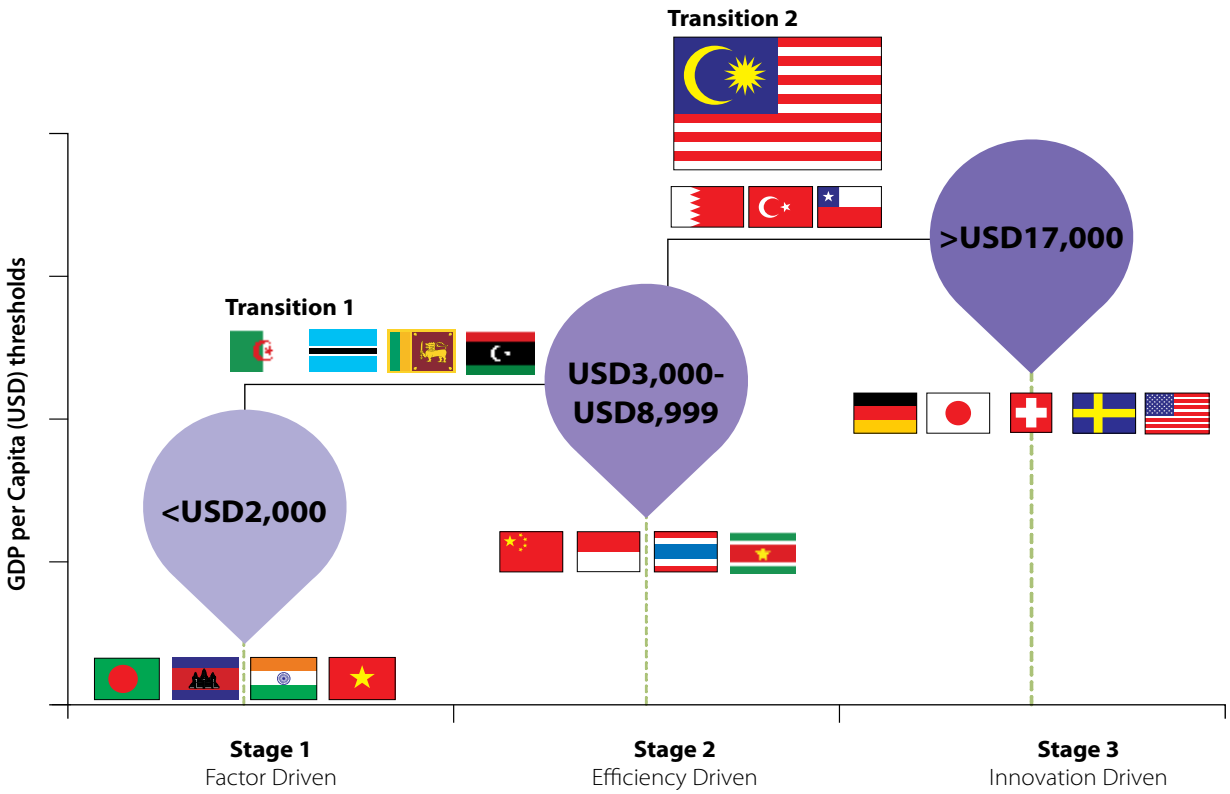
Malaysia is vigilantly monitoring these reports as they are the measures that investors refer to. They also provide comprehensive indicators in gauging Malaysia's competitiveness performance and identify areas needing improvement. Without attaching too great an importance to the rankings, they do however, provide strong indicators of the ideal business environment investors look for. The basic driving force in enhancing Malaysia's competitiveness is the fundamental aspiration to achieve a better quality of life for all citizens.

In line with Malaysia's goal to become an innovation-driven economy and thus achieve a high income, developed nation status by 2020, there is a need to continuously provide an enabling environment for businesses, an environment in which productivity, competitiveness and innovation can spur the nation's economy to greater heights.

TRANSFORMING MALAYSIA INTO AN INNOVATION-DRIVEN ECONOMY

The World Economic Forum (WEF) has upgraded Malaysia from the Efficiency-Driven Stage into the transition stage towards Innovation-Driven Development (Figure 3.1). Economies at the innovation-driven stage are those that have developed new local technologies and have ceased to rely on foreign technology solely. These economies would have gone on to generate high rates of innovation because they have the presence of highly skilled human resource, in addition to having flexible organisations, strong research institutions and the availability of venture capital. These are characteristics that can rapidly respond to the vagaries of a continually changing global environment. Developed countries which are innovation-driven include Switzerland, Germany, Finland, Sweden, the United States (USA), the United Kingdom (UK) and Japan.

Figure 3.1: Stages of Development



Stage 1 Factor Driven	Transition from stage 1 to stage 2	**Stage 2** Efficiency Driven	Transition from stage 2 to stage 3	**Stage 3** Innovation Driven
<USD2,000	USD2,000 - USD2,999	USD3,000 - USD9,000	USD9,000 - USD17,000	>USD17,000
Bangladesh	Algeria	China	Malaysia	Germany
Cambodia	Botswana	Indonesia	Bahrain	Japan
India	Libya	Thailand	Turkey	Switzerland
Vietnam	Sri Lanka	Suriname	Chile	Sweden
				USA

Source: Global Competitiveness Report 2012-2013
Note: * For economies with high dependencies on mineral resources, GDP per capita is not the sole criterion for determining stage of development.

Another characteristic of innovation-driven economies is their resilience to external shocks and the ability of their businesses to produce new and unique products and services. Such economies can produce innovative products and services at the cutting-edge technology which represents the dominant source of their competitive advantage. Those countries with cutting edge technological capabilities, such as USA, Germany, Japan, UK, Finland and Denmark, are regarded as leaders at the edge of the global technological frontier and are often the wealthiest nations. Within the Asian region, Korea, Taiwan, and Singapore are countries recognised as being at the innovation-driven stage at par with advanced industrialised countries of the world.

The impact of innovation results in quantum leaps of value creation. Developed countries tend to leverage on the strategic role of innovation as a means of generating new business ideas that will enhance their

competitiveness in the long term and ultimately lead to increase in standard of living. Evidence shows that countries at the innovation-driven stage record higher GDP per capita in comparison to Malaysia, such as USA (USD47,572), Switzerland (USD46,739) and Sweden (USD40,267) - three times higher than Malaysia (USD15,168). These countries possess high innovative capacities for generating new products and services, and thus are ranked among the top 5 most progressive countries.

Malaysia is currently placing emphasis on innovation so as to further strengthen the competitiveness of its economy as it moves forward on its journey towards becoming an innovation-driven economy. At this present transition stage, Malaysia's capacity to focus on technological and non-technological innovation becomes even more imperative.

REVIEW OF MALAYSIA'S INTERNATIONAL RANKING IN INNOVATION

In the area of innovation, Malaysia's performance has been reported and highlighted in various international reports such as the World Competitiveness Yearbook (WCY), Global Competitiveness Report (GCR), Global Innovation Index (GII), Global Information Technology Report (GITR), and a few others. Each report highlights innovation from different perspectives in terms of concept, scope and methodology. Drawing on these reports, Malaysia's performance in comparison with selected countries is reviewed with the aim of giving readers better insights into Malaysia's current achievements. Gaps in Malaysia's performance are analysed in comparison with top performing countries.

With regard to Infrastructure, the WCY 2012 discussed aspects of innovation under both sub-factors of Scientific Infrastructure and Technological Infrastructure. The GCR 2012-2013, on the other hand, focused on two pillars, namely, Innovation and Technological Readiness. The GII 2012 measured innovation using Innovation Input and Output Sub-indexes to determine the Innovation Efficiency Index. The Network Readiness Index (NRI) of the GITR 2012, presented an overview of the current state of ICT readiness in the world. The NRI has four sub-indexes for ICT, namely, environment, readiness, usage and impact. Since ICT interacts closely with other sectors, it is noted that ICT helps innovations to thrive and thus influence the overall productivity and competitiveness of a country.

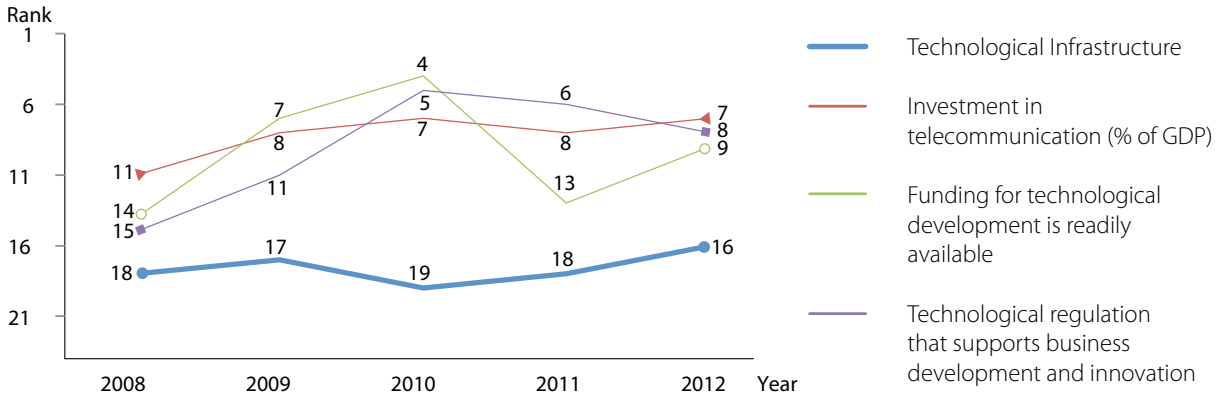
The following section aims to highlight Malaysia's trends over the past few years in terms of innovation indicators as published in the four international competitiveness reports mentioned above and compares Malaysia's performance with the topmost performer (1st) and other Asian counterparts.

IMD WORLD COMPETITIVENESS YEARBOOK (WCY) 2012

The World Competitiveness Yearbook (WCY) measures competitiveness of a nation based on four competitiveness input factors, namely, Economic Performance, Government Efficiency, Business Efficiency and Infrastructure. Under the Infrastructure factor, areas of innovation are divided into two sub-factors, namely, Technological Infrastructure and Scientific Infrastructure.

In terms of Technological Infrastructure, which measures telecommunications infrastructure (mobile and fixed telephone lines, broadband, internet bandwidth speed, investment in telecommunications, ICT skills and connectivity), Malaysia was ranked at 16th position out of 59 most competitive economies. Among the factors that have contributed to this ranking are investment in telecommunications (7th); availability of funding for technological development (9th); and technological regulations that support business development and innovations (8th). Technological Infrastructure trends for the past five years and related indicators are shown in Figure 3.2.

Figure 3.2: Malaysia's Performance in Technological Infrastructure Sub-Factor and Related Indicators, 2008 - 2012

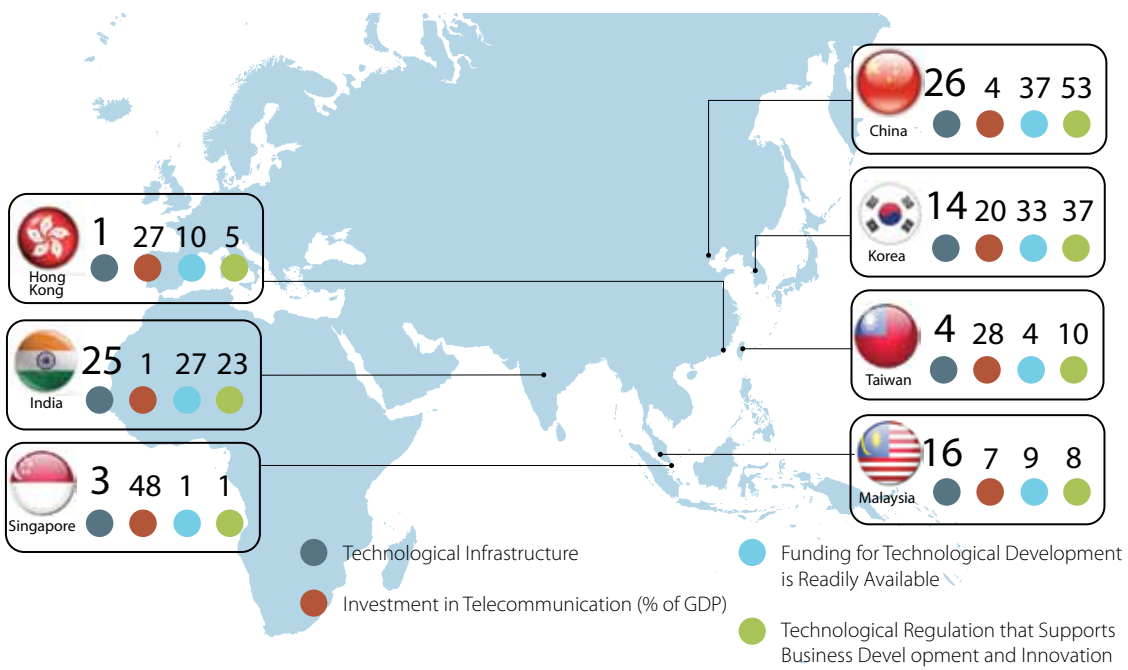


Source: World Competitiveness Yearbook, various issues

The comparison between Malaysia with the top performing country and other selected countries in Technological Infrastructure is shown in Figure 3.3. In 2012, Hong Kong was the best performing country (1st position) in terms of technological infrastructure with its outstanding quality of telephony infrastructure, excellent internet bandwidth speed (832 kbs), low charges for mobile telephones and fixed telephone tariffs. Hong Kong registered the biggest number of mobile telephone subscribers (1,890 subscribers per 1000 inhabitants).

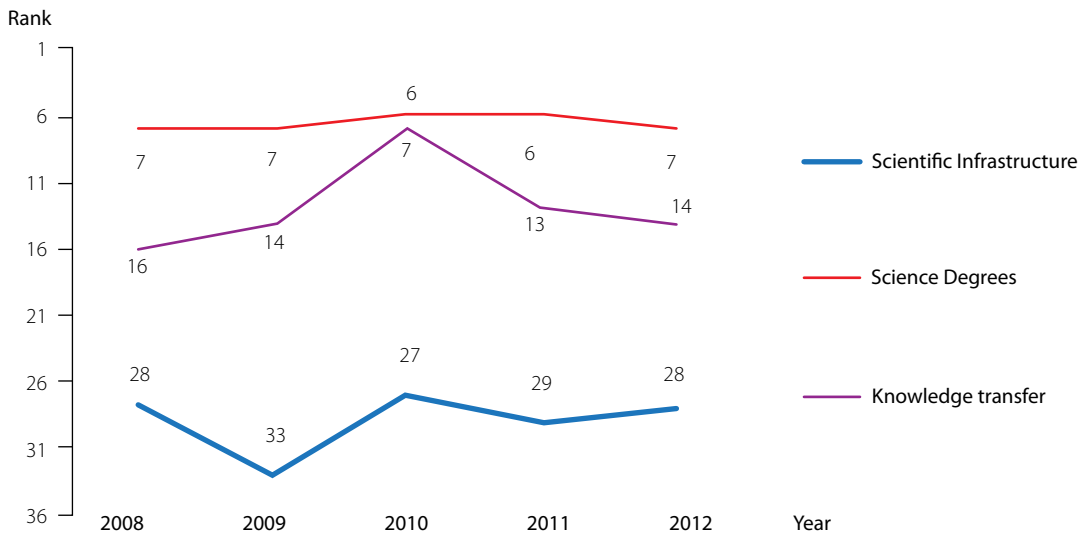
In the area of funding and technological regulations supporting business and innovations, Singapore took the lead. With regard to investment in telecommunications, India ranked 1st and China, 4th with an estimated total GDP of 5.5% and 1.1% respectively. Malaysia ranked 7th with a total investment in telecommunications at 0.8% of total GDP in 2010.

Figure 3.3: Malaysia's Ranking Compared with Top Performer and Selected Countries - Technological Infrastructure



In WCY 2012, Malaysia's ranking was 28th in the Scientific Infrastructure sub-sector, focused mainly on R&D, patents and knowledge transfer. Malaysia's performance in Scientific Infrastructure and related indicators over the past five years is shown in Figure 3.4.

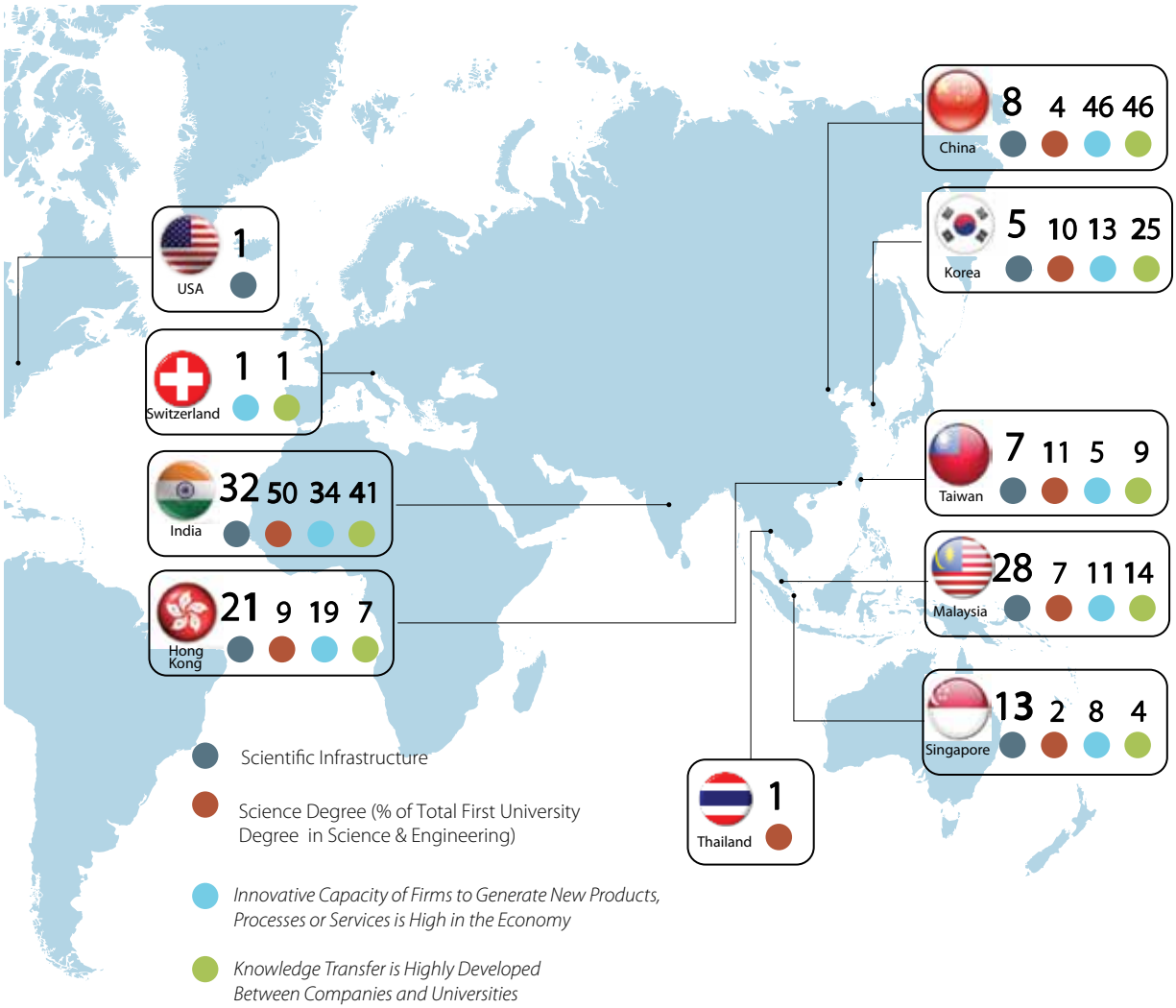
Figure 3.4: Malaysia's Performance in Scientific Infrastructure Sub-Factor and Related Indicators, 2008 - 2012



Source: World Competitiveness Yearbook, various issues

Malaysia charted good performance in the area of Scientific Infrastructure (with its high percentage of science degree holders at the bachelor's level) placing it at 7th position. Knowledge Transfer appeared to be fairly well developed between companies and universities thus causing Malaysia to rank 14th (Figure 3.5). With regard to the Innovative Capacity of firms to generate new products, processes or services for the economy, Malaysia ranked at 11th position.

Figure 3.5: Malaysia's Ranking Compared with Top Performer and Selected Countries - Scientific Infrastructure



Source: World Competitiveness Yearbook 2012.
Note: Statements in Italics indicate survey data

R&D spending is important in further stimulating an innovation-driven economy. In the case of Malaysia, R&D expenditure of both public and private sectors needs to be increased as this would serve to accelerate the innovation capability of the country. In 2012, countries that registered high spending on R&D as a percentage of total GDP were Finland (3.9%), Korea (3.7%), Sweden (3.4%), Japan (3.4%) and USA (2.9%). In 2010, Malaysia's spending on R&D as a percentage of total GDP was 0.8%, equivalent to USD1,885 million. The private sector is responsible for 0.56% of total R&D spending. Among the factors that would help Malaysia boost innovation capacity and strengthen its innovation eco-system include the establishment of a strong foundation in Scientific Infrastructure together with increments in total R&D expenditure, R&D personnel and number of patents.

Malaysia registered total R&D personnel of 22,300 in full-time work equivalent (FTE) nationwide. China had the highest number of R&D personnel (2,553,800) followed by Japan (878,400) and Russia (840,000). In terms

of number of patents in force, based on 100,000 inhabitants, the top five economies were Luxembourg (4,252), UAE (2,021), Ireland (1,767.8), Switzerland (1,564) and Taiwan (1,403) while Malaysia registered 58.1 (34th position). Malaysia's R&D capabilities, funding and personnel need to be further strengthened. One of the initiatives undertaken by the Government to further enhance R&D and innovation capabilities was an allocation of RM100 million to SMEs to fund their design and commercialisation efforts.

The best performing country for Scientific Infrastructure was the USA, earning top position (1st) for the four indicators. In 2010, the USA registered the highest patent applications at 490,226 with accompanied by total number of scientific articles of 208,601. It also recorded a huge R&D business expenditure, at US$282,393 million. From 1950 to date, the USA achieved the highest number of Nobel prizes (266) in physics, chemistry, medicine and economics.

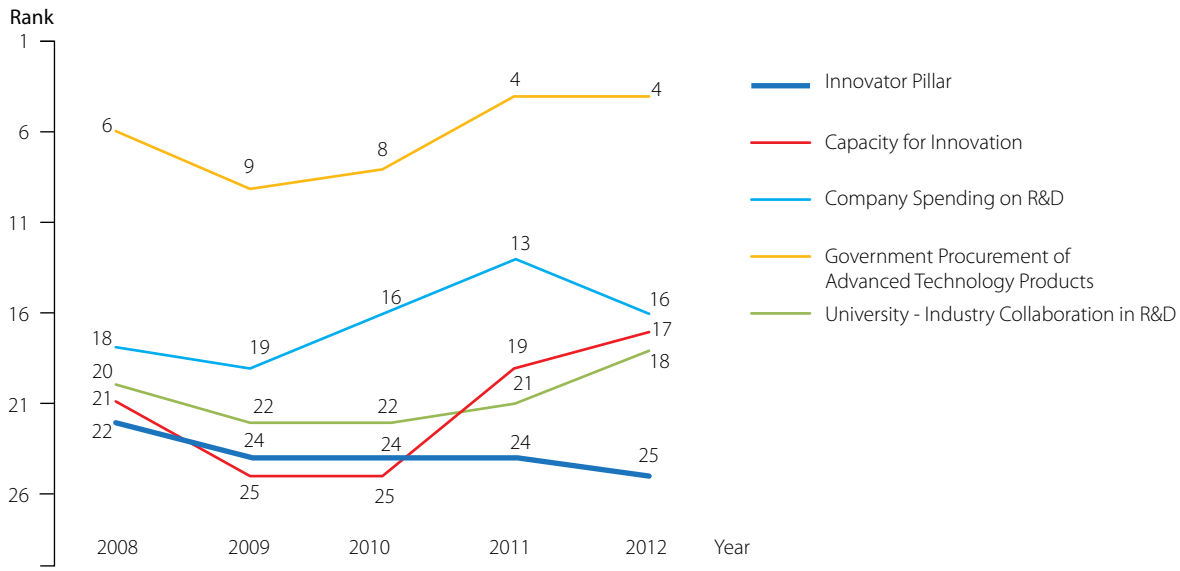
GLOBAL COMPETITIVENESS REPORT (GCR) 2012-2013

The competitiveness assessment of a nation by the World Economic Forum in their Global Competitiveness Report (GCR) is based on a total of 12 pillars comprising 3 categories of sub-indices, namely, Basic Requirement, Efficiency Enhancers and Business Sophistication and Innovation. At each stage of economic development, the sub-index concerned reflects the changing priorities and focuses of a country at that identified stage of development. For example, at the factor-driven stage, the priorities of basic requirements are those of infrastructure, macroeconomic environment, health and primary education, whereas at the final, innovation-driven stage, the main focus is business sophistication and innovation.

The Global Competitiveness Report (GCR) 2012-2013 ranked Malaysia 25th out of 144 economies. Although Malaysia has slipped by four positions, nevertheless, the WEF has upgraded Malaysia's stage of development to that of "transition into innovation" up from its previous "efficiency-driven" stage.

One of the 12 pillars mentioned above is the Innovation pillar which measures national potential to generate entirely new products and services, for which Malaysia ranked 25th. Among the criteria within the innovation pillar that has had positive impact on Malaysia's achievement in developing innovations is its high capacity to incorporate innovation, which is ranked at 17th position; company spending on R&D ranked 16th; and R&D collaboration between university and industry ranked 18th. What is encouraging is that Malaysian businesses have a positive perception towards government decisions with regard to procurement of advanced technology innovation, ranking 4th for this criteria.

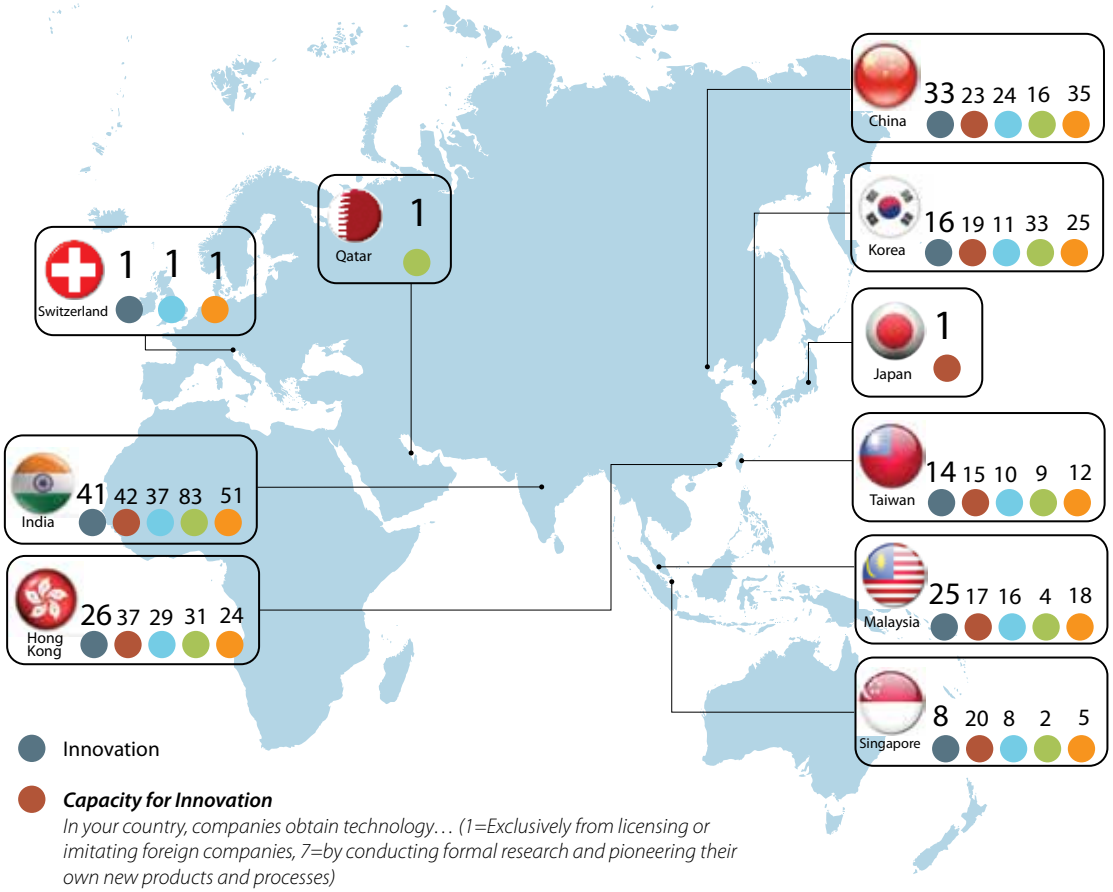
Figure 3.6: Malaysia's Innovation Pillar and Related Indicators, 2008 - 2012



Source: Global Competitiveness Report, various issues

Malaysia's performance in the Innovation pillar has been in the top 25 range for the past five years. Based on innovation related indicators over the five year period as shown in Figure 3.6, an upward trend is observed with regard to Malaysia's performance in all related indicators, such as capacity for innovation, university-industry collaboration in R&D and government procurement of advanced technology products, but with the exception of company spending on R&D which had declined from 13th to 16th position in 2012.

Figure 3.7: Malaysia's Ranking Compared with Top Performer and Selected Countries - Innovation



Source: Global Competitiveness Report 2012-2013
Note: Statements in Italics indicate survey data

Figure 3.7 shows that Switzerland ranked topmost with regard to Innovation and this remarkable performance (1st) is mainly due Swiss companies' heavy spending on R&D and, also the extensive collaboration that exists between industry and academia. Among the Asian countries, Singapore ranked 8th and Taiwan 14th for innovation. Switzerland serves as a benchmark for an innovation-driven economy, given its excellent capacity for innovation, its sophisticated business culture, the strong collaboration between the academic and the business sector and high spending on R&D, as well as world class scientific research institutions.

GCR 2012-2013 ranked Malaysia 51st in the Technological Readiness pillar that measures the agility with which an economy adopts existing technologies to enhance the productivity of its industries. Malaysia's

performance in this pillar does not augur well for its competitiveness ranking. Despite an 81% national broadband penetration rate in populated areas, internet availability in rural areas needs to be further improved. Initiatives are ongoing to ensure that the digital divide between urban and rural locations is narrowed. Lowering the cost of broadband services for rural areas and increasing coverage via the use of WiFi should further push upwards the rate of internet and broadband penetration. It is to be noted that FDI and technology transfer in Malaysia appears encouraging, ranking 16th among 144 countries.

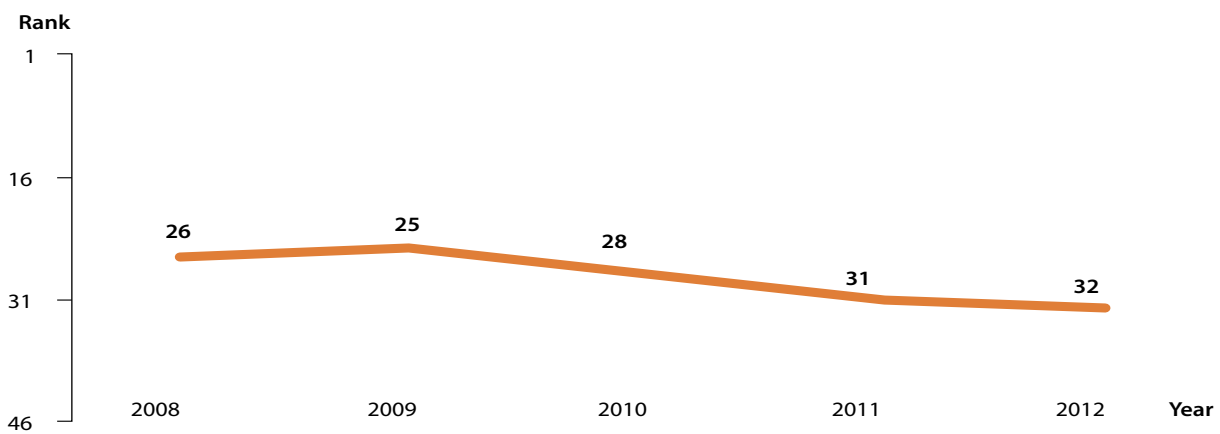
Government procurement of advanced technology products is maintained at 4th position and Malaysia's ICT infrastructure has improved, ranking 33rd from 40th position last year. However, Malaysia's technological readiness, at 51st position, is still perceived to be low.

Greater broadband penetration will come about with the launch and implementation of the "1Malaysia Affordable Broadband Package" effective from 16th September 2012, covering the states of Pahang, Kelantan, Terengganu, Sabah and Sarawak. Among the areas needing improvement in Technological Readiness are expansion in International Internet bandwidth services (currently ranked 83rd), broadband Internet subscriptions (68th) and mobile broadband subscriptions (64th).

GLOBAL INNOVATION INDEX 2012

The Global Innovation Index (GII) published by INSEAD and the World Intellectual Property Organisation (WIPO), ranks countries in terms of their innovation capabilities. Malaysia was ranked 32nd among 141 countries but ranked first among the upper-middle-income economies in Asia with a GDP (PPP) per capita of more than USD15,000.

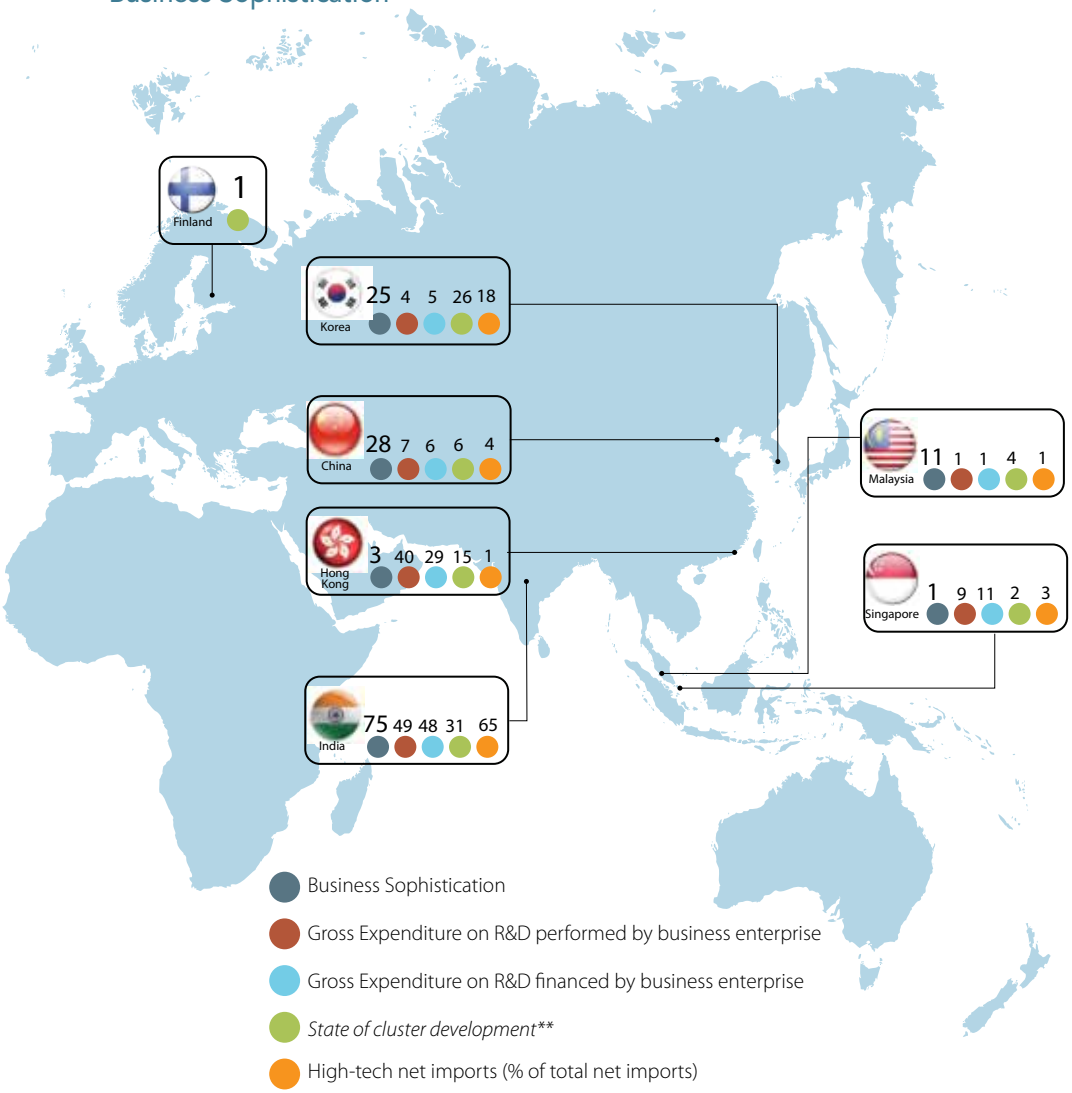
Figure 3.8: Malaysia's Trends in the Global Innovation Index, 2008 - 2012



Source: Global Innovation Index, various issues

Malaysia's performance in the GII over the past 5 years is shown in Figure 3.8. The country's major strengths lie in its Business Sophistication sub-index, which was ranked 11th and details of this are elaborated in Figure 3.9 below.

Figure 3.9: Malaysia's Ranking Compared with Top Performer and Selected Countries - Business Sophistication



Source : Global Innovation Index 2012

Note: Statements in Italics indicate survey data

** Mean of average responses of three survey questions on the role of clusters in the economy. Clusters are defined as geographic concentrations of firms, suppliers, producers of related products and services, and specialised institutions in particular fields (e.g. Financial services in New York, leather and footwear in Italy, consumer electronics in Japan). The questions are (1) In your country's economy how prevalent are well-developed and deep clusters? 1= nonexistent, 7=widespread in many fields. (2) In your country, how extensive is collaboration among firms, suppliers, partners, and associated institutions within clusters? 1= collaboration is nonexistent, 7= collaboration is existent (3). In your country what is the state of formal policies supporting cluster development? 1= nonexistent, 7= extensive and covers many clusters and regions.

In terms of research and development, the business sector in Malaysia recorded higher R&D expenditure with more than 80% of total R&D expenditure. This indicates that most R&D activities in Malaysia are performed and financed by the business sector. Malaysia ranked topmost (1st) in each indicator for the Business Sophistication sub-index, as shown in Figure 3.9.

Added to that, Malaysia also performed well under the Market Sophistication sub-index, securing 14th position which was driven by improvement in many indicators related to doing business such as being topmost in ease of getting credit (1st), and ease of protecting investors (4th). Malaysia also recorded a

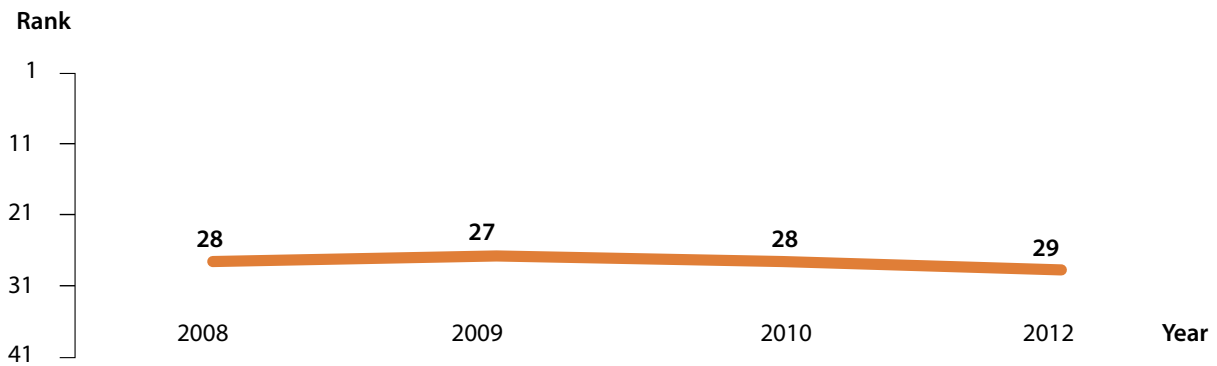
higher percentage in the export of goods and services with 97.3% out of total GDP as well as higher market capitalisation with 172.6% of total GDP, ranking 5th out of 141 countries. It is to be noted that Malaysia is also good at adopting the latest technologies, as reflected by its 6th position in the knowledge absorption indicator, which was in turn driven by high-tech imports which ranked 1st (Figure 3.9).

GLOBAL INFORMATION TECHNOLOGY REPORT (GITR) 2012

The Global Information Technology Report 2012 published by the World Economic Forum (WEF) in collaboration with INSEAD introduces a new set of impact-oriented metrics to measure network readiness with regard to countries' competitiveness. The report aims at measuring the degree to which economies across the world leverage on ICT for enhanced competitiveness through its Network Readiness Index (NRI), mentioned earlier.

Malaysia ranked 29th out of 142 countries in overall ranking with an index score of 4.8 out of a maximum score of 7.0. Malaysia is placed among the top quartile of the world's most networked economies. Malaysia's performance as reported by GITR over the past 5 years is shown in Figure 3.10.

Figure 3.10: Malaysia's Trends in the Global Information Technology Report (2008 - 2012)

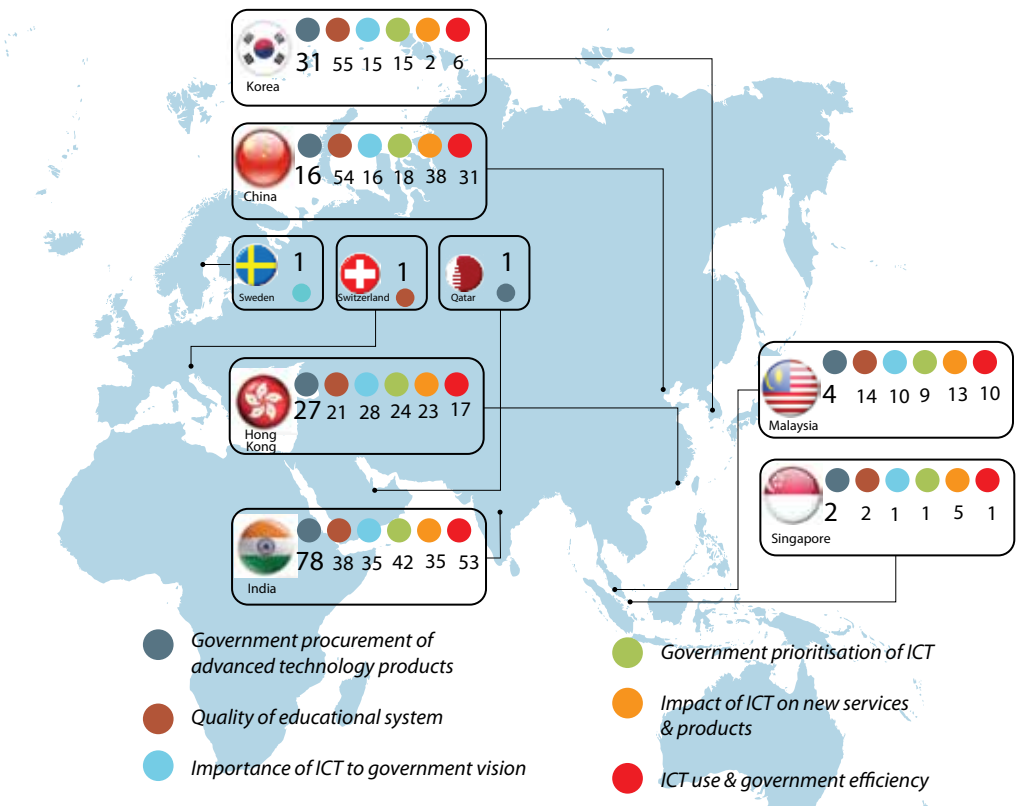


Source: Global Information Technology Report, various issues

GITR 2012 is well aware that the Malaysian government has been pursuing a long-term plan to achieve high-income economy status with ICT playing a critical and important role in enabling the economy to transform.

Most government-related indicators reflect this commitment to ICT for various criteria, as shown in Figure 3.11, such as the Government's prioritisation of ICT (9th), importance of ICT to government vision (10th), Government prioritisation of ICT (9th), impact of ICT on new services & products (13th), and ICT use & government efficiency (10th).

Figure 3.11: Malaysia's Ranking Compared with Top Performer and Selected Countries - ICT Related Indicators



Source: Global Information Technology Report 2012

Note: Statements in Italics indicate survey data

Figure 3.11 shows that Singapore is among the top three committed to ICT, ranking first (1st) in terms of Government prioritisation of ICT and ICT use and government efficiency, and second (2nd) for education, The country's strong focus on education has translated into an excellent education system that effectively equips the workforce with the skill sets needed for a rapidly changing global economy.

THE WAY FORWARD

Cognisant of the fact that innovation is a game changer, the Malaysian Government has put in place policies and incentives to drive innovation in the country. Collective efforts by both the public and private sectors are imperative towards enhancing the innovation capacity and capability of the nation. This will enable it to move ahead and realise high economic growth by means of more innovative-driven activities. It is also important for the public and private sectors as well as academia to further leverage on the Government's innovation initiatives and make innovation a priority.

Expanding an organisational culture that is willing to allow fresh and divergent ideas to take root is imperative towards enhancing the nation's competitiveness and to continuously strive to sustain it. This is particularly important in the context of achieving high income economy status by 2020.

In its effort to continuously strive to sustain competitiveness, Malaysia should address challenges and forge ahead to improve economic growth. At the same time, Malaysia should take steps to create modern added-value jobs to boost productivity growth and ensure a conducive environment for businesses to thrive and grow as well as nurture and retain first-class skills required for a high-income economy and additionally, enhance the commercialisation of R&D products and services.

Infrastructure to encourage competitiveness such as policies to promote innovation as well as incentives to drive innovation activities in the country is imperative towards creating innovation ecosystems that can lead to sustainable growth of the nation over the long term.

BOX 3.1 COMMITTED TO ENHANCING COMPETITIVENESS

MOVING UP THE LADDER

Competitiveness is a set of institutions, factors and policies that influences a country's performance internationally. Quantitative and qualitative factors are the determinants of performance and these are further quantified into rankings which serve as inputs for industries, investors, policy makers, and the public in general to determine a country's competitive edge. However, ranking alone is not enough, and as in any form of analysis, a country should look beyond its ranking to improve its economy.

HOW DO WE FAIR INTERNATIONALLY?

Malaysia has moved up the competitiveness ladder in many international reports. Most notable is Malaysia's new enviable ranking of 12th position in the International Financial Corporation and World Bank's Ease of Doing Business Report 2013. Last year's climb by six notches represents the country's biggest leap in competitiveness rankings and has placed Malaysia ahead of Sweden, Taiwan, Germany, Japan and Switzerland, and our target of being in the top 10 league, is within reach.

Strategic reform initiatives introduced by the government will enable Malaysia to be the destination of choice for both domestic and foreign investments. In the World Competitiveness Yearbook 2012, the Institute of Management Development (IMD) ranked Malaysia at 14th position among 59 economies, an improvement of two positions (Figure 1). It also made Malaysia the other third Asian economy to improve its rankings during the period of economic turmoil.

Additionally, Malaysia was ranked 25th among 144 countries surveyed in the World Economic Forum (WEF) 2012-2013, Global Competitiveness Report making it among the top 20% of the most competitive economies globally. The most significant progress is in Malaysia's efficient and competitive market for goods and services and a supportive and strong financial sector.

Figure 1: Malaysia's Performance Internationally, 2008-2013

WHAT DO THESE RANKINGS INDICATE?

Malaysia must have been doing something right to increase the appeal of the country globally. The bold and innovative initiatives through the implementation of the Economic Transformation Programme (ETP) and the Government Transformation Programme (ETP) have finally come to fruition. Apart from stimulating economic activity and creating more job opportunities, it has also enabled the private sector to take on a more proactive role as a major player towards enhancing economic growth.

The World Bank's findings further affirm Malaysia's competitive edge as an economy, and reflect the successful implementation by the Government to improve the business environment and make it conducive for sustained economic growth. The findings has also recognised the Government's reform

agenda driven by the Special Taskforce to Facilitate Business (PEMUDAH) and the Performance Management Delivery Unit (PEMANDU).

HOW RELEVANT ARE RANKINGS?

It is a known fact that most rankings are based on perception which could distort the accuracy of the index. Nevertheless, they serve to provide a good barometer to gauge performance as most international reports are supported by hard data. More and more international reports are being published, ranging from the light hearted ones such as "where to be born in", to more comprehensive reports by reputable organisations such as the IMD, WEF and the World Bank. In this regard, Swiss-based WEF has several other indices which have been gaining popularity. These include The Global Information Technology Report, The Global Enabling Trade Report, The Travel & Tourism Competitiveness Report and The Global Gender Gap Report. With the increasing role services now play in economies, more investors are also studying A.T Kearney's Global Services Location Index which studies financial attractiveness, people skills and availability and the Global Innovation Index by WIPO and INSEAD.

In between these are those that capture a more micro picture of sub-topics and these include the, Grant Thornton International Business Report, Foreign Direct Investment (FDI) Confidence Index, the Global Risks Report, Asia Business Outlook Survey (ABOS), Economic Freedom of the World Annual Report and a host of other reports that provide insights into every facet of business, economic and environmental trends.

To be in a high income nation category by 2020, it is vital for Malaysia to study the existing qualities and values of top ranking countries and imbibe them. We cannot afford to remain complacent with any high scores achieved as other competing nations would also be striving to do their best. Forward looking indices such as The Country Brand Index and the Global Liveability Survey, are good to monitor. The Country Brand Index assesses a country's value system, quality of life, business environment, heritage, culture and tourism while the Global Liveability Index analyses indicators on similar lines.

BOX 3.2 KUALA LUMPUR TOWARDS A WORLD CLASS CITY

Cities are a source of modern living and people flock to cities to take advantage of their unique economic, social and cultural opportunities. It is therefore not unusual that the dramatic rise of cities and urban living around the world relates directly to the rapid pace of economic development and improvement in the standard of living.

Kuala Lumpur is no exception. The Economic Transformation Programme identified under the 12 National Key Economic Areas (NKEAs) is about transforming Greater Kuala Lumpur/Klang Valley (GKL/KV) into an urban metropolis. In this regard Kuala Lumpur is set to become among the top 20 liveable cities in the world by 2020.

There are various international reports by the Economist Intelligence Unit (EIU) that rate cities in terms of liveability, competitiveness and environmental performance and Kuala Lumpur's performance is gauged and compared with other world cities in these reports.

GLOBAL LIVEABILITY SURVEY

This report assesses140 cities around the world and is released twice yearly by EIU. Among the factors analysed are stability, healthcare, culture and environment, education, and infrastructure. Out of 140 cities that were rated, Kuala Lumpur ranked 78th in 2012 (2011: 78th, 2010: 79th) with an overall liveability rating of 74 out of 100 for the past three years. At the same time, Kuala Lumpur has maintained consistent ratings for three years in the areas of stability, healthcare, culture and environment, education and infrastructure (Table 1).

Table 1: Kuala Lumpur's Performance in Five Major Categories

Kuala Lumpur	Liveability Rating (100=Ideal)		
	2012	2011	2010
Overall (78th out of 140 cities) (2011: 78th/140, 2010: 79th/140)	74	74	74
Stability	80	80	80
Healthcare	63	63	63
Culture & Environment	68	68	68
Education	92	92	92
Infrastructure	77	77	77

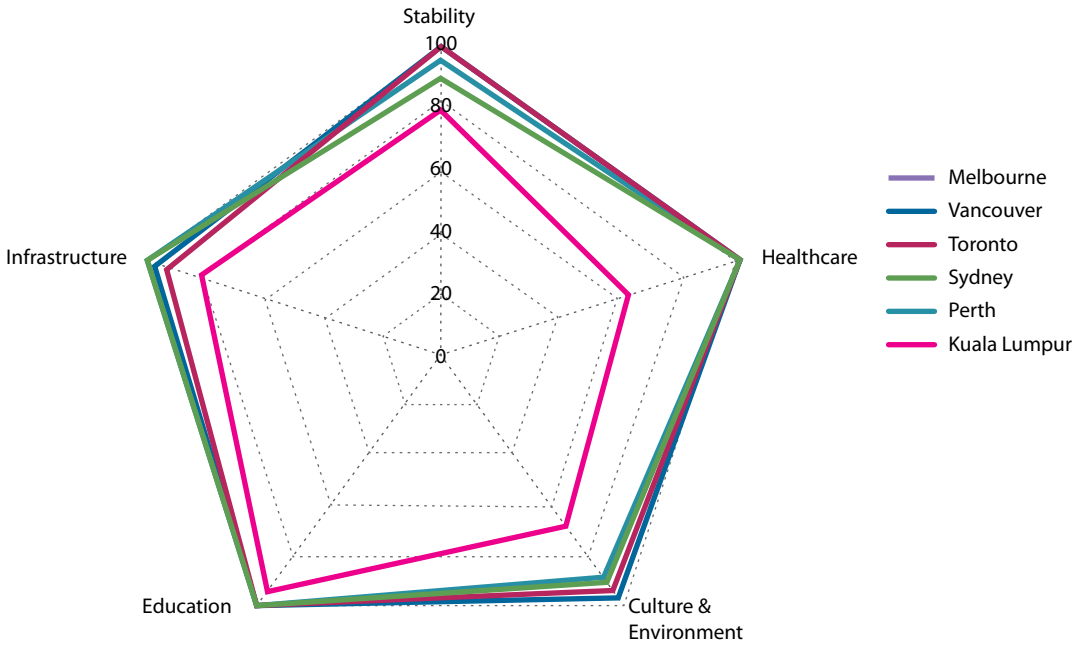
Source: EIU Global Liveability Survey, various issues

Among the top ten most liveable cities in 2012, Melbourne was first followed by Vienna and Vancouver. For the criteria on liveability, Kuala Lumpur performed well in stability and education while the top performing countries performed well in all the criteria (Figure 1).

Although Kuala Lumpur was not in the top league, it scored plus points among ASEAN nations, ranking 2nd after Singapore, and ahead of Bandar Seri Begawan, Bangkok, Manila, Jakarta, Hanoi, Ho Chi Minh City and Phnom Penh (Table 2). Among the 39 cities in the Asia-Pacific region, Kuala Lumpur

attained 17th position; tailing close behind cities in Australia, New Zealand, Japan, China, Singapore and South Korea.

Figure 1: EIU Global Liveability Survey (Rating 0 - 100)



Source: EIU Global Liveability Survey 2012

Table 2: The Global Liveability Survey 2012 Rankings for ASEAN Countries

Country	City	Rank	Rating
Singapore	Singapore	1	89
Malaysia	Kuala Lumpur	2	74
Brunei Darussalam	Bandar Seri Begawan	3	65
Thailand	Bangkok	4	65
Philippines	Manila	5	62
Indonesia	Jakarta	6	55
Vietnam	Hanoi	7	54
Vietnam	Ho Chi Minh City	8	52
Cambodia	Phnom Penh	9	51

Source: EIU Global Liveability Survey 2012

Chapter 4

Productivity Performance of the Services Sector

PRODUCTIVITY PERFORMANCE OF THE SERVICES SECTOR

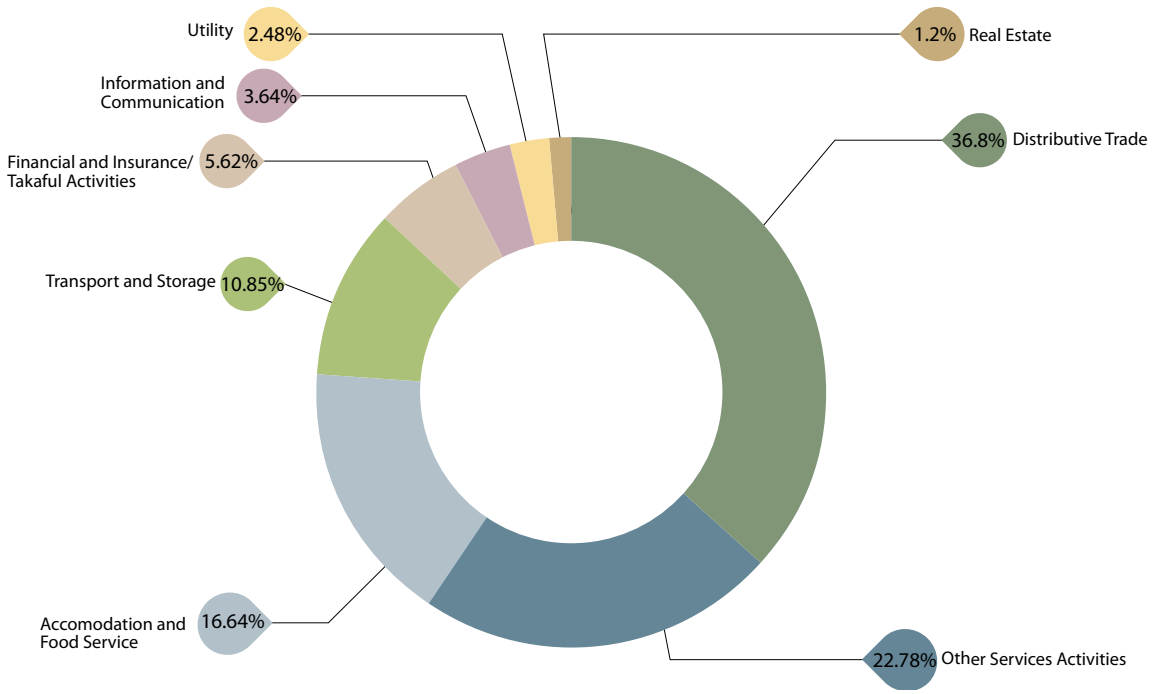
OVERVIEW

The services sector serves to sustain the economic growth of the country and is recognised as having the potential to propel the Malaysian economy forwards. The sector promotes employment and domestic growth and complements growth of other sectors, in particular, manufacturing, agriculture and construction. It provides strong multiplier effects through its backward and forward linkages especially where manufacturing is concerned.

Under the Economic Transformation Programme (ETP), seven of the services sub-sectors namely, financial services, wholesale and retail trade, tourism, business services, communication content and infrastructure, education and healthcare have been identified as NKEAs. These sub-sectors have been selected based on their prospective contributions to GNI in 2020 and their potential roles in assisting Malaysia to achieve high-income status.

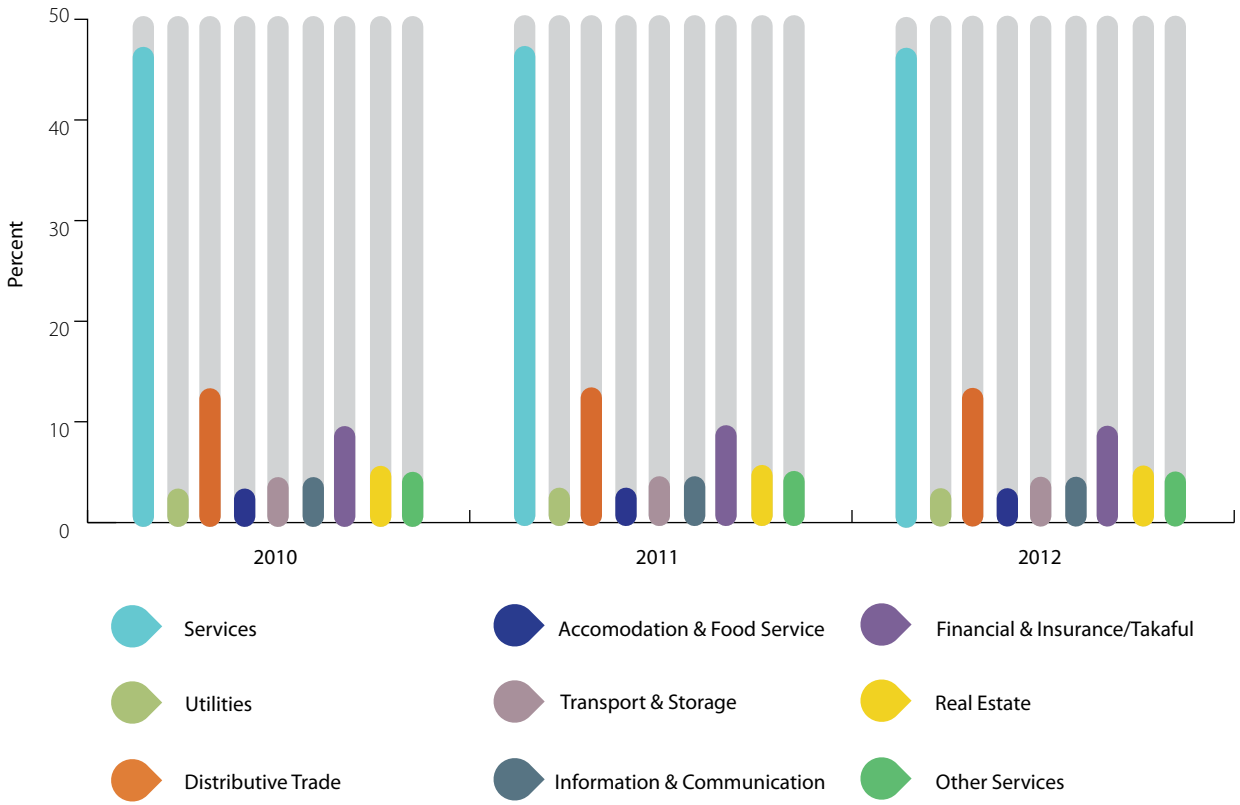
In 2012, the services sector (excluding government services) comprised 45.2% of total employment with 5.8 million employees. Among the services sub-sectors, distributive trade accounts for the highest percentage of employment at 36.8% with two million employees (Figure 4.1).

Figure 4.1: Distribution of Employment of the Services Sector, 2012



Source: Department of Statistics, Malaysia

Figure 4.2: Contribution of Services Sector to GDP, 2010-2012

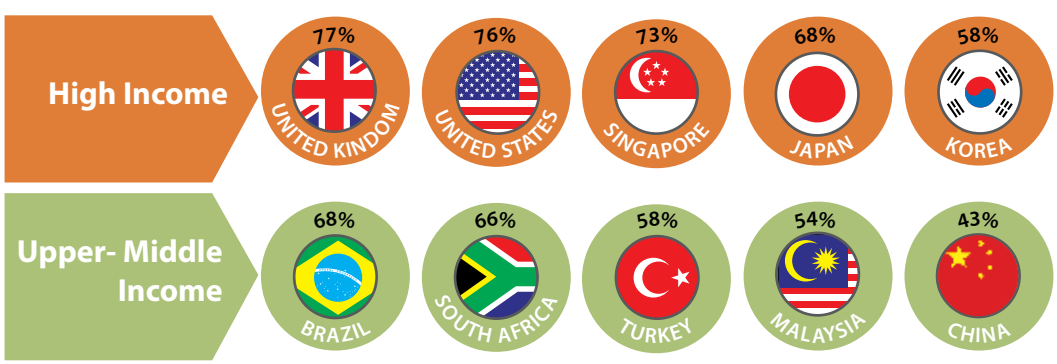


Source: Department of Statistics, Malaysia

In 2012, being the largest sector of the economy, the services sector share of GDP accounted for 46.6%. In the period, 2010-2012, the GDP share of services was fairly stable, ranging from 46% to 46.6% (Figure 4.2). In order to move towards a high income economy, Malaysia needs to expand its GDP share of the services sector as it is lower when compared to GDP share of services of other world economies as Figure 4.3 shows.

In 2012, share of GDP of the services sector was 46.6%

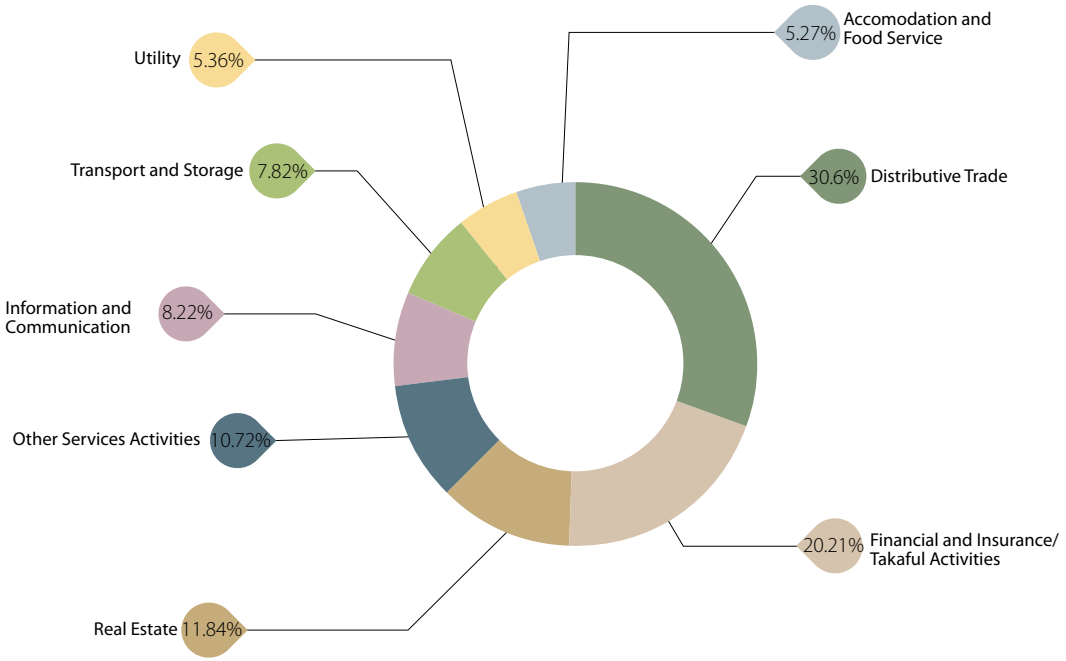
Figure 4.3: Percentage of Services Sector Share of GDP by Economies, 2011



Source: IMD World Competitiveness Yearbook 2012

Within the services sector, distributive trade (wholesale and retail trade; repair of motor vehicles and motorcycles) accounted for the largest share which is 30.6% of output for the overall services sector. Finance and insurance/takaful remained as the second largest contributor with a share of 20.2% to the overall services output in 2012 (Figure 4.4).

Figure 4.4: Output Contribution of Sub-Sectors to Services Sector, 2012



Source: Department of Statistics, Malaysia

In terms of growth, in 2012 the services sector demonstrated moderate growth, with growth in output recorded at 5.9% as compared to 6.1% in 2011. The information and communications sub-sector showed significant improvement in output growth in the same year with a growth of 9.1% followed by financial insurance/takaful activities with growth recorded at 7.9% and real estate activities at 7.1% (Table 4.1). The output growth recorded by the services sub-sectors was largely facilitated by the implementation of identified EPPs and several business opportunities initiatives by the Government. By the end of 2012, 75 of the initiatives related to the services sector showed an output growth of 6% for the period 2010-2012.

Services sector output growth was 5.9% with significant output growth in information and communication, financial and insurance/takaful activities and real estate

Table 4.1: Output Growth of the Services Sector, 2010-2012

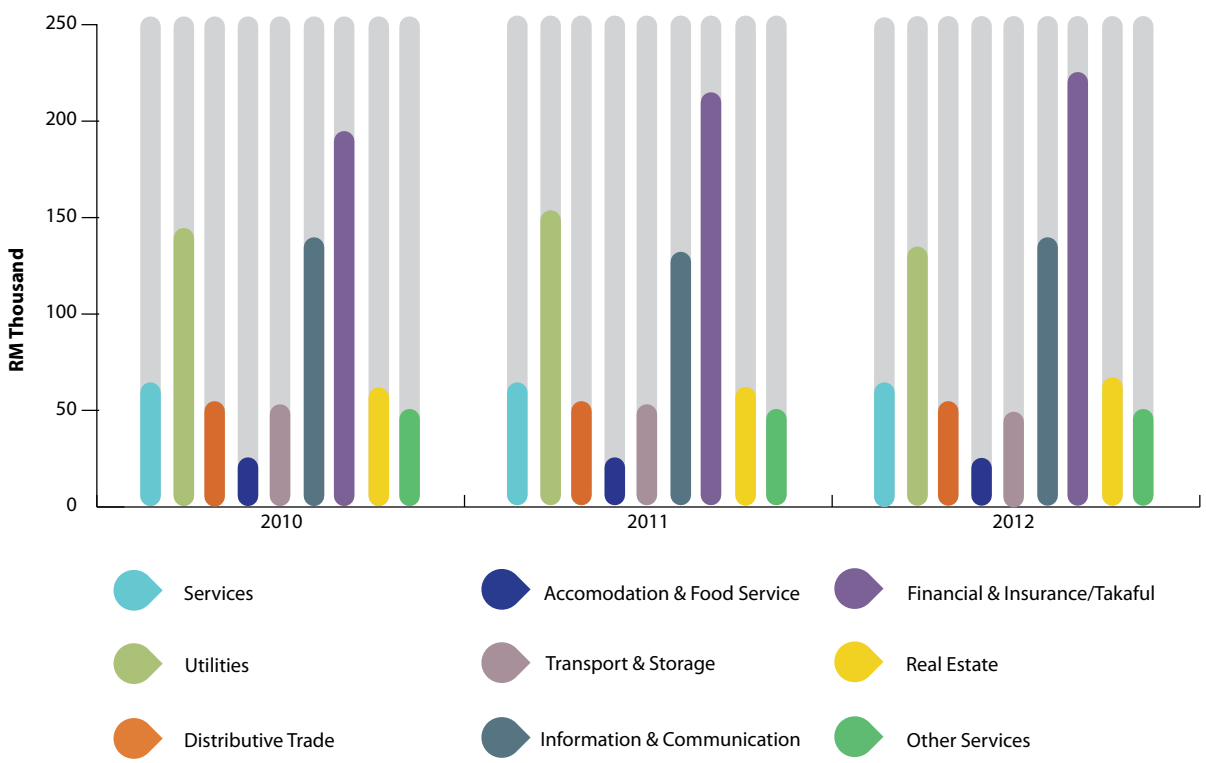
Sub-Sectors of Services	2011 (%)	2012 (%)	2010 - 2012 (%)
Services	6.13	5.89	6.01
Distributive trade	7.08	4.63	5.85
Accommodation & food service	5.95	5.40	5.67
Transport & storage	5.35	4.91	5.13
Information and communication	7.61	9.13	8.36
Financial & insurance/takaful	6.48	7.88	7.18
Real estate	5.45	7.13	6.29
Other Services	4.70	3.91	4.31

Computed from: Department of Statistics, Malaysia

PRODUCTIVITY PERFORMANCE

Despite growing challenges brought about by global economic conditions, the services sector has remained fairly resilient due mainly to domestic demand and travel-related activities. The sector registered a productivity growth of 1.8% at a value of RM60,672 in 2012 from that of RM59,623 in 2011 (Figure 4.5 & Table 4. 2).

Figure 4.5: Productivity Level of the Services Sector, 2010-2012



Computed from: Department of Statistics, Malaysia

Table 4.2: Productivity Growth of the Services Sector, 2010-2012

Sub-Sectors	2011 (%)	2012 (%)	2010 - 2012 (%)
Services	-0.34	1.76	0.71
Distributive trade	1.10	-1.13	-0.02
Accommodation & food service	-3.66	3.77	-0.02
Transport & storage	-3.44	1.75	-0.88
Information and communication	-7.27	8.29	0.21
Financial & insurance/takaful	8.42	6.11	7.26
Real estate	-0.88	8.23	3.58
Other Services	1.64	-3.20	-0.81

Computed from: Department of Statistics, Malaysia

Services sector productivity growth in 2012 was 1.8% at a value of RM60,672

Productivity growth tends to vary between the various services sub-sectors due to several reasons. Higher productivity growth for selected sub-sectors are detailed below.

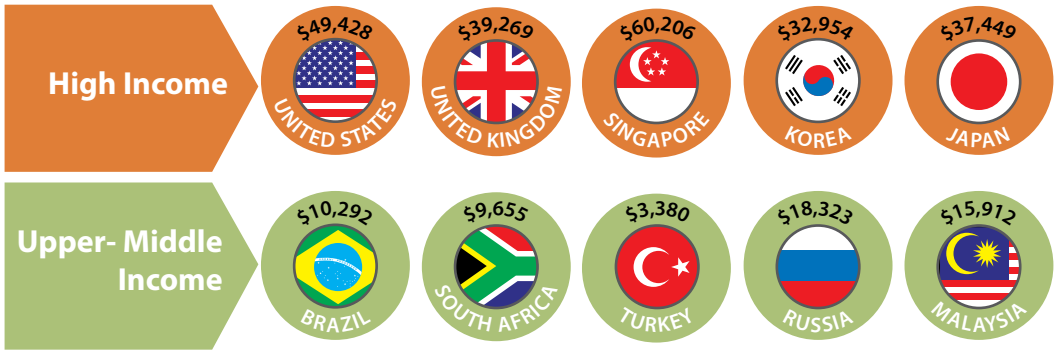
The information and communication sub-sector registered the highest productivity growth of 8.3% at a value of RM137,118 in 2012. This growth was above the overall growth of 1.8% of the services sector, with the second highest being real estate activities with an 8.2% growth at RM63,178 followed by finance and insurance/takaful with a 6.1% growth at RM218,340 (Table 4.2).

High productivity growth was registered by the information and communication sub-sector. This was attributed to the continuous expansion of the ICT industry, specifically in the cellular, broadband and third-generation (3G) segments. Growth of the broadband segment was largely driven by increase in the utilisation of social network sites such as Facebook, Twitter, LinkedIn and YouTube, which in turn spurred demand for broadband services. The broadcasting industry also contributed to productivity growth, due to rising demand for satellite television, which had introduced attractive new services such as high-definition (HD) channels and various programmes that can be accessed via smartphones, tablets, laptops and personal computers having internet connection.

High productivity was also recorded for real estate services, attributed to strong capital market-related activities which supported demand for residential and commercial properties that had arisen as a result of increase in population. Productivity growth of the financial and insurance sub-sector was due to lending activities, in particular, loans given out for the purchase of residential properties, and working capital loans for businesses. Growth in Islamic banking activities was also responsible for high productivity of the financial and insurance sub-sector with the introduction of Islamic life insurance and motor insurance policies.

Viewing current productivity performance of the services sector, it would appear that a significant improvement in services is required for Malaysia to be at par with high-income economies. The Government has set its target of achieving a GDP per capita of USD15,000 in 2020. However, it is to be noted that this target is well below the level enjoyed by high-income economies such as Korea ($32,959), as shown in Figure 4.6.

Figure 4.6: GDP Per Capita, 2012 (USD)



Source: Total Economy Database, The Conference Board

THE WAY FORWARD

The Government has given special attention to the services sector as it is recognised to be a catalyst that can spur the economy onto a faster growth track and thus help it achieve high income economy status by 2020. Moving forward, five main challenges have been identified to be facing business leaders in this sector in their attempt to achieve a higher level of business growth. These challenges exist in the areas of customer relationships, human capital, sustainability, operational excellence and corporate branding and reputation.

Business leaders of the services sector cited customer relationships as the most important challenge they faced. Several strategies have been identified to improve customer relationships, such as enhancing the quality of products/services, engaging personally with key customers, using competitive intelligence to better understand customers' needs and also broadening their companies' range of products/services.

In the section that follows, analyses are made of the productivity performance of the services sub-sectors, which comprise wholesale and retail trade services, tourism services, logistics services, information and communication services, business services, private education services and healthcare services.

Strategies to Address Business Challenges for Services Sector

1. Enhance quality of products / services
2. Engage personally with key customer / clients
3. Sharpen understanding of customer / client needs
4. Use competitive intelligence to better understand customer / client needs
5. Broaden range of products / services

1. Provide employee training and development
2. Raise employee engagement
3. Enhance effectiveness of the senior management team
4. Improve effectiveness of front-line supervisors and managers
5. Improve performance management processes and accountability

1. Ensure sustainability is part of the corporate brand, identify and culture of the organisation
2. Ensure sustainability measurement and reporting.
3. In corporate sustainability initiatives and results into corporate branding and communication strategies
4. Engage with local communities to enable sustainable growth and manage expectations
5. Encourage improvements in sustainability performance from suppliers and other business partners.

1. Raise employee engagement and productivity
2. Continual improvement (six sigma, total quality, etc.)
3. Focus on reduction of baseline cost
4. Seek better alignment between strategy, objectives and organisation capabilities
5. Improve capital investment decision process

1. Enhance corporate brand awareness and understanding across different cultures
2. Improve alignment of business practices / management behavior with corporate values
3. Increase investment in corporate brand communication externally
4. Increase investment in corporate brand communication internally
5. Enhance quality of products and processes

WHOLESALE AND RETAIL TRADE SERVICES

OVERVIEW

Distributive trade consists of wholesale and retail trades and repair of motor vehicles and motorcycles. This report limits discussion to focus on the productivity performance of the wholesale and retail trades.

In 2012, there were 54,462 wholesale establishments and 231,159 retail establishments, which, when combined, amounted to a total of 285,621 establishments accounting for 80.9% of the distributive trade sub-sector.

The structure of the distributive sub-sector continues to be dominated by wholesalers with regard to their transactions and economic contribution. On the other hand, retailers play a significant role as employers even if the added value of the retail segment amounts to less than half of the sub-sector's total added value.

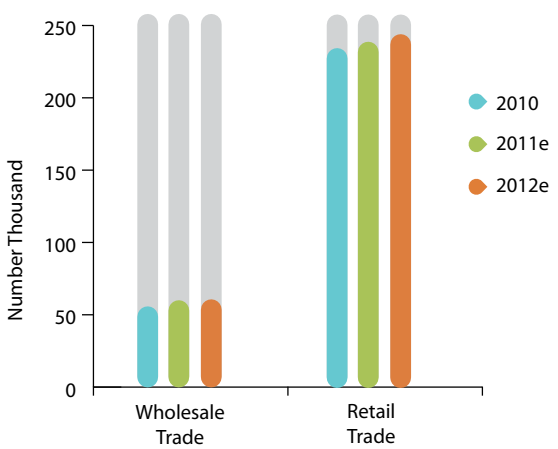
Generally, wholesalers are the larger businesses with more efficient management, utilising more mechanisation and IT tools. Nevertheless, the bigger retailers such as large supermarkets, superstores, hypermarkets and department stores and some larger specialty stores have begun to invest in the newer technologies, and logistics and management systems.

Thirty per cent of employees of the distributive trade sub-sector are in the wholesale trade which accounts for a 44.3% share of the sub-sector's salary and wages. On average, in 2012, a retail employee is expected to earn RM13,435 compared to RM24,758, nearly twice as much, for wholesale work.

The retail landscape in Malaysia is mixture of small retailers and franchises, with retailers occupying rural and suburban areas, while franchises and international players are concentrated in the urban areas

INDUSTRY SNAPSHOT

Figure 4.7: Number of Establishments in the Wholesale and Retail Trade, 2010-2012

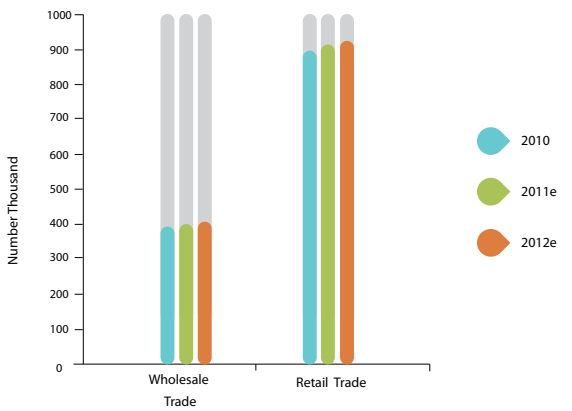


Computed from:
- Census of Distributive Trade, various years, Department of Statistics, Malaysia
- Quarterly Distributive Trade Statistics, Department of Statistics Malaysia

Note: e - Estimate

- Although the number of wholesale establishments is increasing annually, the rate of increase is declining, registering 9.1% in 2010, and dropping to 8.2% in 2011 and 7.3% in 2012.
- A number of grocery and foodstuff and general merchandise wholesale businesses are increasingly being displaced by super large, low-price high-volume businesses such as superstores and hypermarkets, which often also provide retail services to final consumers.
- A large number of traditional retail grocery and sundry shops have been transformed into modernised convenience stores.

Figure 4.8: Employment in the Wholesale and Retail Trade, 2010-2012

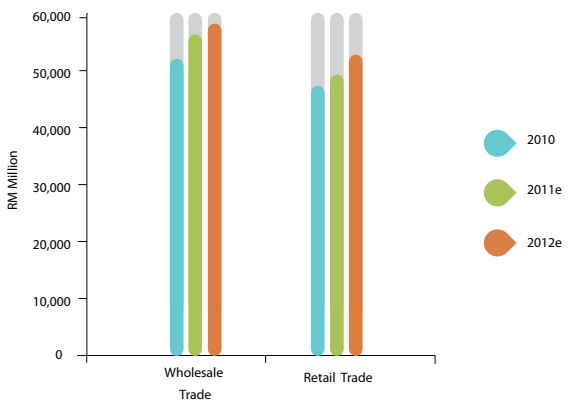


Computed from:
- Census of Distributive Trade, various years, Department of Statistics, Malaysia
- Quarterly Distributive Trade Statistics, Department of Statistics Malaysia

Note: e - Estimate

- In 2012, employment in whole and retail grew at only 1.5%, lower than the growth of 2.3% the year before. Employment growth in wholesale was weaker than retail in 2011 and 2012. This was due to the more tedious nature of work in retail, particularly at large specialty stores.
- Lower investment growth in retail trade is due to the fact that the investment is used mainly to acquire labour saving devices in view of the labour shortage, while less investment is made in the acquisition of high-tech systems.

Figure 4.9: Added Value Level of the Wholesale and Retail Trade, 2010-2012



Computed from:
- Census of Distributive Trade, various years, Department of Statistics, Malaysia
- Quarterly Distributive Trade Statistics, Department of Statistics Malaysia

Note: e - Estimate

- Both wholesale and retail trades have experienced an increase in added value level for the past three years.
- The increase in added value growth for both wholesale and retail trades is due their having recovered from the economic crisis. This growth has, however, been quite low since 2010, except for added value growth in retail in 2012.
- The lower rate of growth is due to an increase in production costs due to higher costs of material and labour, resulting in a smaller profit margin.

PRODUCTIVITY PERFORMANCE

The wholesale and retail trade sub-sector registered a productivity growth of 4.4% at RM84,377 in 2012 from RM80,799 in 2011. Added value grew relatively fast at 6% while employment grew at only 1.5% and this has resulted in high productivity of the sub-sector. Encouraging productivity growth in wholesale and retail was due to strong domestic consumption, supported by Government initiatives under the 2012

BR1M, BB1M, Cash Assistance for school children, KR1M, Menu 1 Malaysia are Government initiatives that spur the retail trade activities

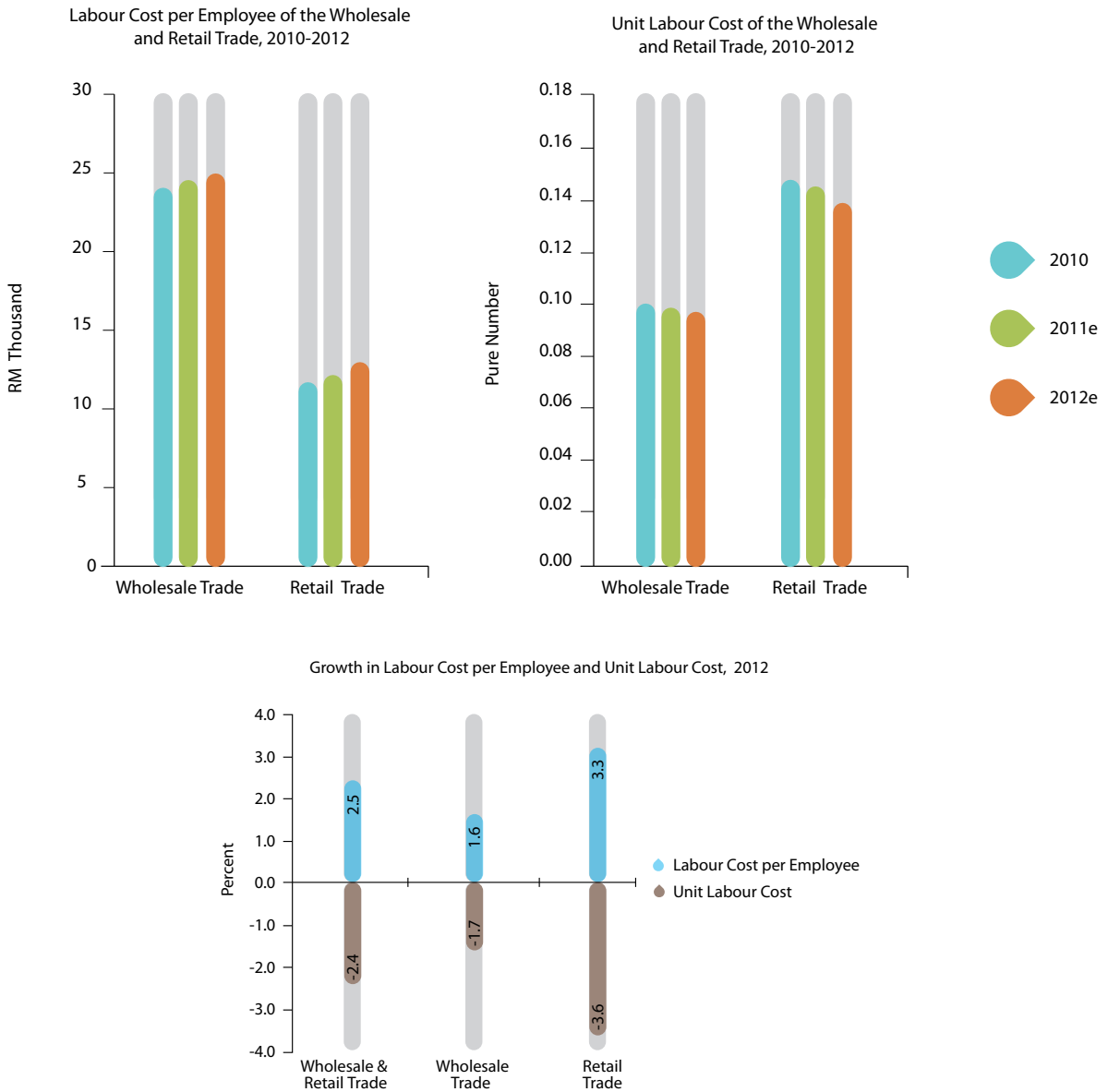
Budget, such as BR1M, BB1M, and RM100 cash assistance for all primary and secondary school students. Productivity value of the wholesale trade was RM147,388, which was higher than that of retail trade registering RM57,282, even though wholesale was growing at a slower rate of 3% as compared to retail at 6.2% (Figure 4.10). The slower expansion of labour productivity of the wholesale trade was due to the fewer policy measures initiated by Government as compared to Government's wide ranging initiatives to improve retail capacity. Wholesale businesses are generally larger operations with better management and systems compared to retail establishments, hence, are expected to be less dependent on direct government support.

Figure 4.10: Productivity Level of Wholesale and Retail Trade, 2010-2012

Computed from: - Census of Distributive Trade, various years, Department of Statistics, Malaysia
- Quarterly Distributive Trade Statistics, Department of Statistics Malaysia
Note: e - Estimate

In 2012, the labour cost of the wholesale and retail sub-sector remained competitive as productivity grew by 4.4%. Productivity growth was higher than growth in wages, which remained low at 2.5%. At the same time, there was a decline in unit labour cost recorded as 2.4% in 2012. The healthy labour cost competitiveness of wholesale and retail was due to the increasing use of IT based processes, backed by a stronger emphasis on staff training.

Figure 4.11: Labour Cost Competitiveness of the Wholesale and Retail Trade, 2010-2012

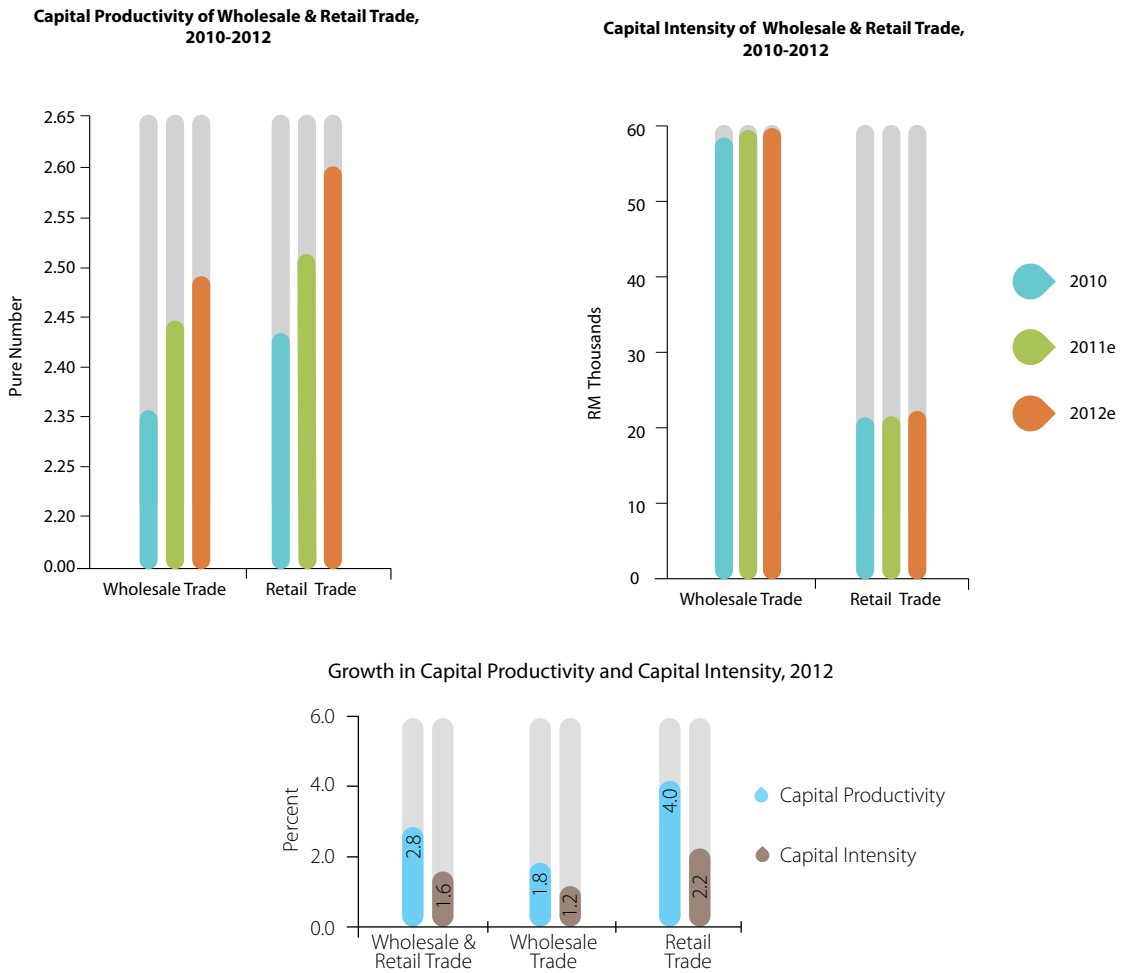


Computed from:
- Census of Distributive Trade, various years, Department of Statistics, Malaysia
- Quarterly Distributive Trade Statistics, Department of Statistics Malaysia

Note: e - Estimate

Retail trade was more labour competitive than wholesale and recorded a productivity growth of 6.2%. This was higher than growth in retail wage rate (3.3%) with a decline in unit labour cost (3.6%). The wholesale trade registered a productivity growth of 3%, a wage rate growth of 1.6% and a decline in unit labour cost of 1.7% (Figure 4.11). The use of more capital intensive and labour saving technologies and business processes resulted in a significant decline in the share of labour cost for each unit of services of the sub-sector.

Figure 4.12: Capital Productivity and Capital Intensity of Wholesale and Retail Trade, 2010-2012



Computed from: - Census of Distributive Trade, various years, Department of Statistics, Malaysia
- Quarterly Distributive Trade Statistics, Department of Statistics Malaysia
Note: e - Estimate

For the period 2010–2012, wholesale and retail recorded a 3.1% rise in capital productivity. Retail outlets registered the highest growth of capital productivity at 3.5% (Figure 4.12). The implementation of ETP programmes in the retail trade has resulted in an increase in added value generation of 7.2% as a result of capital investment during the period.

Wholesale and retail is still dependent on manual labour to carry out many of its operations, as reflected by the capital intensity of this sub-sector, which has only grown at a marginal rate of 1.6% to a value of RM33,219 in 2012.

ISSUES AND CHALLENGES

Shortages of labour and personnel with certain skills continue to pose problems for wholesale and retail as well as other services. The rise in labour cost per employee reflects the difficulty of sourcing for suitable workers, especially in IT, engineering and certain financial areas, such as accounting. The larger companies are already conducting training for their general and some semi-skilled workers; however, smaller firms usually cannot afford to invest in skill upgrading programmes. Undoubtedly, continuous efforts in providing skills training will serve to enhance service delivery and result in higher customer satisfaction.

Another issue is related to the fact that land usage falls under the jurisdiction of state governments, while policies involving the various economic sub-sectors such as wholesale and retail, are under the purview of the Federal government. Coordination between the two can pose a problem such as in the area of regulations concerning goods distribution. The problem lies with regard to locations permitted for storage and warehousing, the hours of operation allowed specifically for trucking traffic, and approval with regard to use of promotional tools at the level of execution. These issues will need to be addressed soon. Better collaboration between Government and local authorities will doubtless spur the productivity performance of the wholesale and retail sub-sector.

Malaysia's rich cultural diversity has benefited wholesale and retail greatly as this diversity has enriched the food and fashion retail businesses. The variety of choice available has led to the development and expansion of these segments into new markets within and beyond the ASEAN region.

TOURISM SERVICES

OVERVIEW

Tourism services comprise a wide spectrum of activities ranging from accommodation services, food and beverages, shopping, entertainment, cultural activities, sports, recreation and transportation. This report limits discussion to the productivity performance of certain services only, which are accommodation, food and beverages, and travel agencies and tour operators.

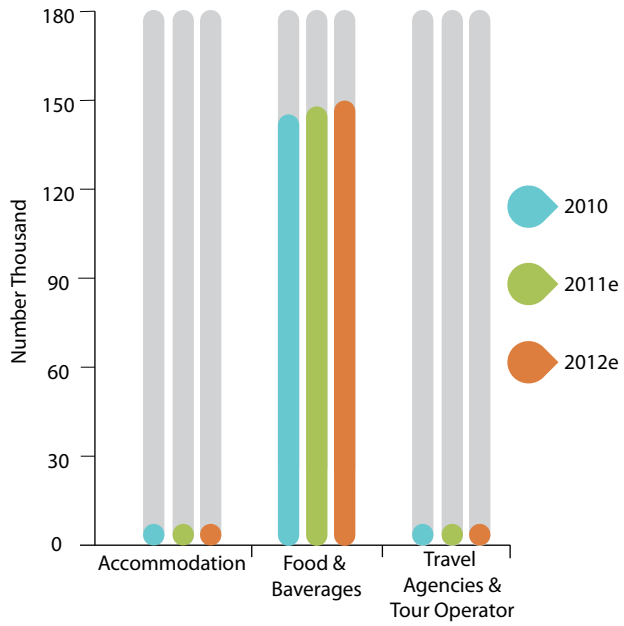
Tourism is one of the 12 NKEAs identified to develop the Malaysian economy towards achieving its goal of becoming a developed nation by 2020. NKEAs serve to drive the development of high impact projects, which enjoy policy support and incentives by the Government, from which tourism services has reaped benefits.

Malaysia recorded tourist arrivals of 25 million in 2012, earning a total of RM60.6 billion. Tourist arrivals are made up of five main nationalities - Singaporeans, Indonesians, Chinese, Thais and Bruneians. Significant growth in tourist arrivals has been recorded for the following countries: Iraq (61.7%), Nepal (50.6%), Philippines (40.5%), Bangladesh (31.8%) and South Africa (24.8%).

Malaysia recorded tourist arrivals of 25 million in 2012, earning a total of RM60.6 billion

Average hotel occupancy rate is recorded to have increased by 1.8% to 62.4% in 2012 from 60.6% in 2011. Total hotel guests increased by 4.3% to record 56.1 million in 2012, from 53.8 million in 2011. Domestic tourists largely contribute to the increase in hotel guests, making up 29.9 million of hotel guests in 2012, as compared to 27.7 million in 2011, an increase of 7.8%. Foreign guests has increased marginally by 0.6%, totalling 26.2 million in 2012, from 26 million in 2011.

Figure 4.13: Number of Establishments in the Tourism Services, 2010-2012

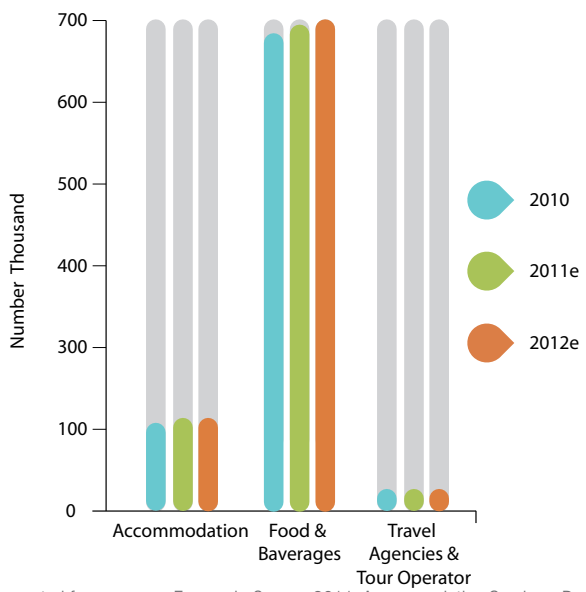


- The number of tourism services establishments has increased by 2.1% totalling 155,087 in 2012 from 151,902 in 2011.
- Accommodation establishments experienced the highest growth (6.0%), followed by travel agencies and tour operator services (3.8%) while food and beverages increased by 2.0%. The increase in accommodation is the result of strong increase in domestic tourism. Sabah, Putrajaya and Perlis recorded the highest growth in accommodation establishments.

Computed from:
- Economic Census 2011, Accommodation Services, Department of Statistics, Malaysia
- Economic Census 2011, Food and Beverage Services, Department of Statistics Malaysia

Note: e - Estimate

Figure 4.14: Employment in the Tourism Services, 2010-2012

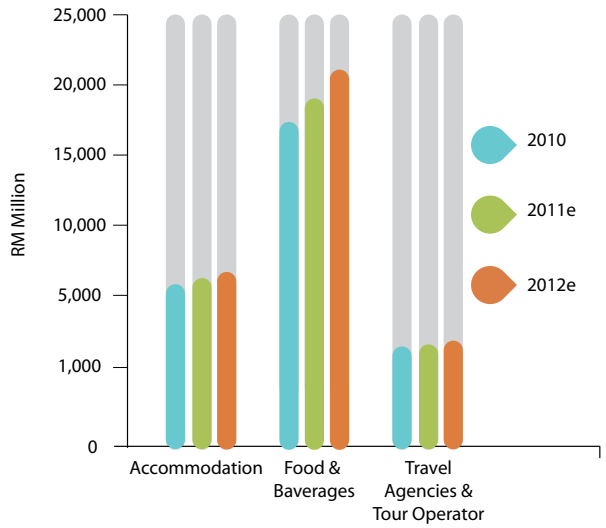


- Tourism services registered an employment growth of 1.8% to record 838,074 employees. Highest growth was recorded for food and beverages (2%), followed by travel agencies and tour operators services (1.3%) and accommodation (1%).
- The marginal increase in employment growth for this sub-sector was due to the recruitment of a more skilled and experienced workforce and the increasing use of technology in service delivery.

Computed from:
- Economic Census 2011, Accommodation Services, Department of Statistics, Malaysia
- Economic Census 2011, Food and Beverage Services, Department of Statistics Malaysia

Note: e - Estimate

Figure 4.15: Added Value Level of the Tourism Services, 2010-2012



- Tourism services registered an added value growth of 7.9% at RM28.5 billion in 2012, from RM26.4 billion in 2011.
- The highest added value growth was recorded by food and beverages (9.3%) followed by travel agencies and tour operator services (5.9%) and accommodation services (4.1%).
- The increase in disposable income of most households has enabled them to eat out more often and this has resulted in a bigger number of dining establishments ranging from fine dining to fast food and hawker stalls.

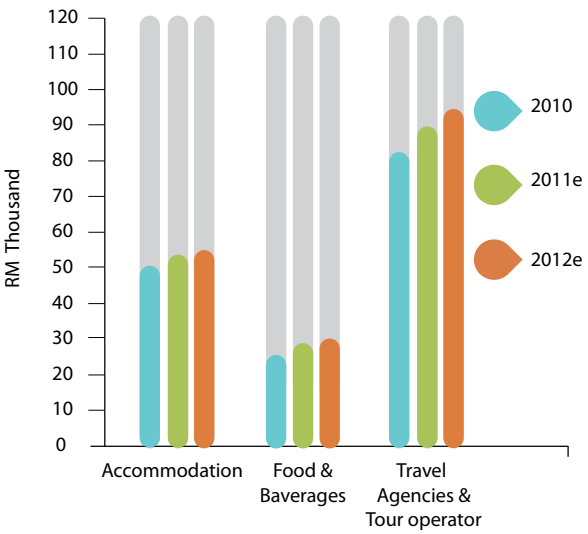
Computed from: - Economic Census 2011, Accommodation Services, Department of Statistics, Malaysia
- Economic Census 2011, Food and Beverage Services, Department of Statistics Malaysia
Note: e - Estimate

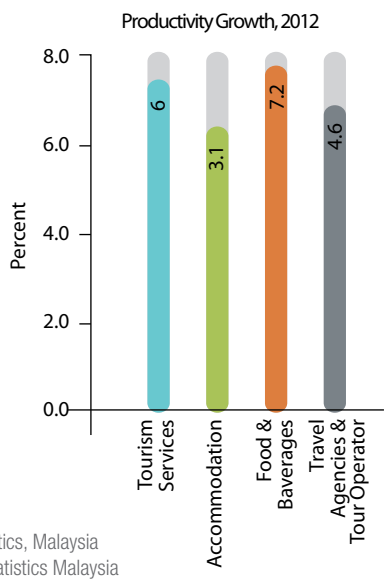
PRODUCTIVITY PERFORMANCE

Productivity of tourism services has increased by 6% to record RM33,977 in 2012, from RM 32,052 in 2011. Travel agencies and tour operators recorded a high productivity level of RM93,482, the highest, compared to accommodation recorded at RM53,990 and food and beverages at RM29,031 (Figure 4.16).

The high productivity level achieved by travel agencies and tour operators is due to more efficient utilisation of input resources as well as an increase in the utilisation of ICT in their daily operations.

Figure 4.16: Productivity Level of Tourism Services, 2010-2012



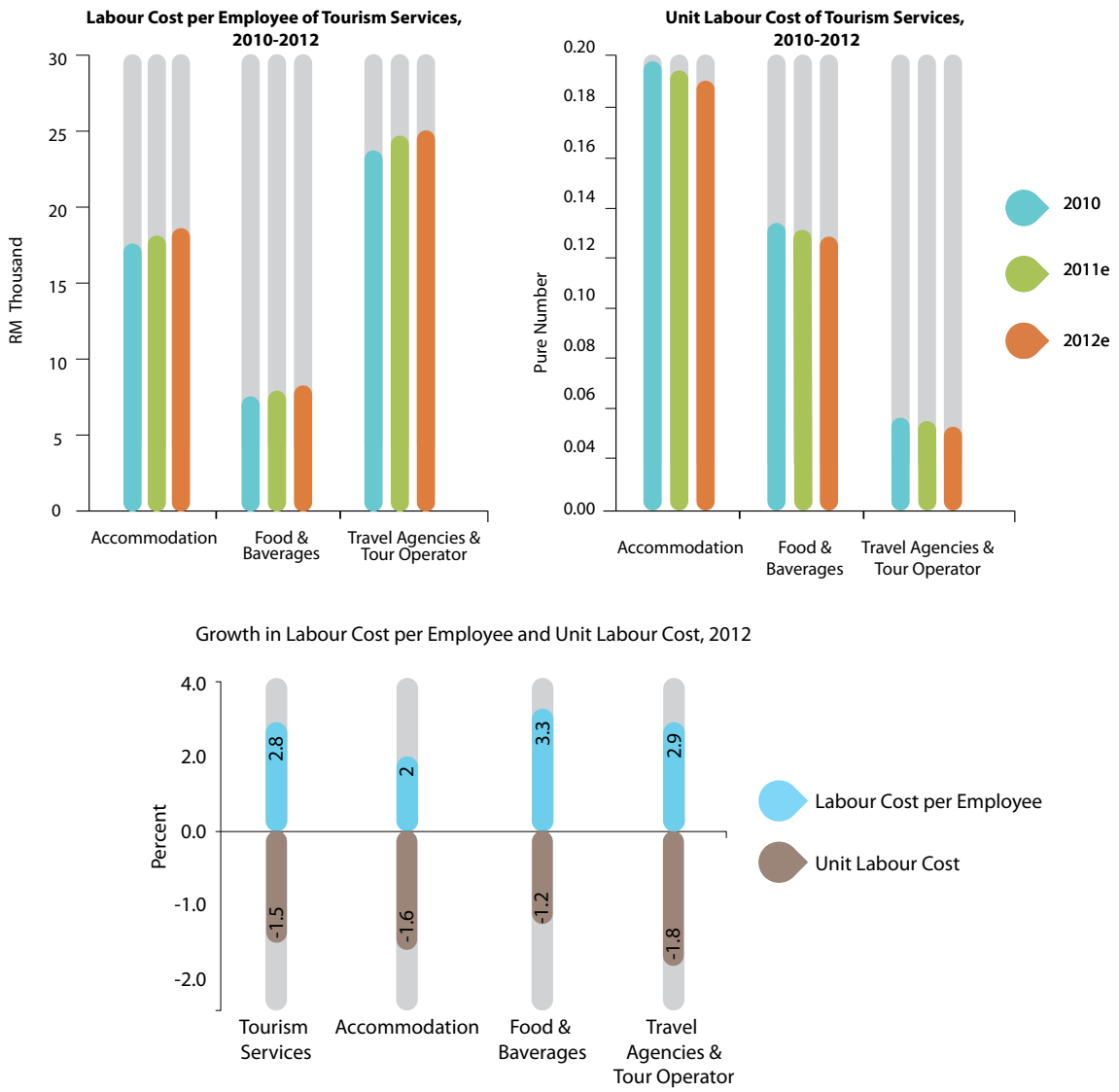


Computed from: - Economic Census 2011, Accommodation Services, Department of Statistics, Malaysia
- Economic Census 2011, Food and Beverage Services, Department of Statistics Malaysia
Note: e - Estimate

Tourism services sustained its labour cost competitiveness as reflected by a productivity growth of 6%, while the wage rate increased to 2.8%, complemented by a decline in unit labour cost of 1.5% (Figure 4.17).

On average, travel agencies and tour operators employees receive the highest remuneration at RM2,082 per month, followed by accommodation at RM1,522 and food and beverages at RM663. This is to be expected as travel agencies and tour operators employ more skilled and experienced workers. Personnel of travel agencies and tour operators need to be certified by the tourism authorities as being equipped with required standards before they are eligible for employment, in order to ensure service quality.

Figure 4.17: Labour Cost Competitiveness of Tourism Services, 2010-2012

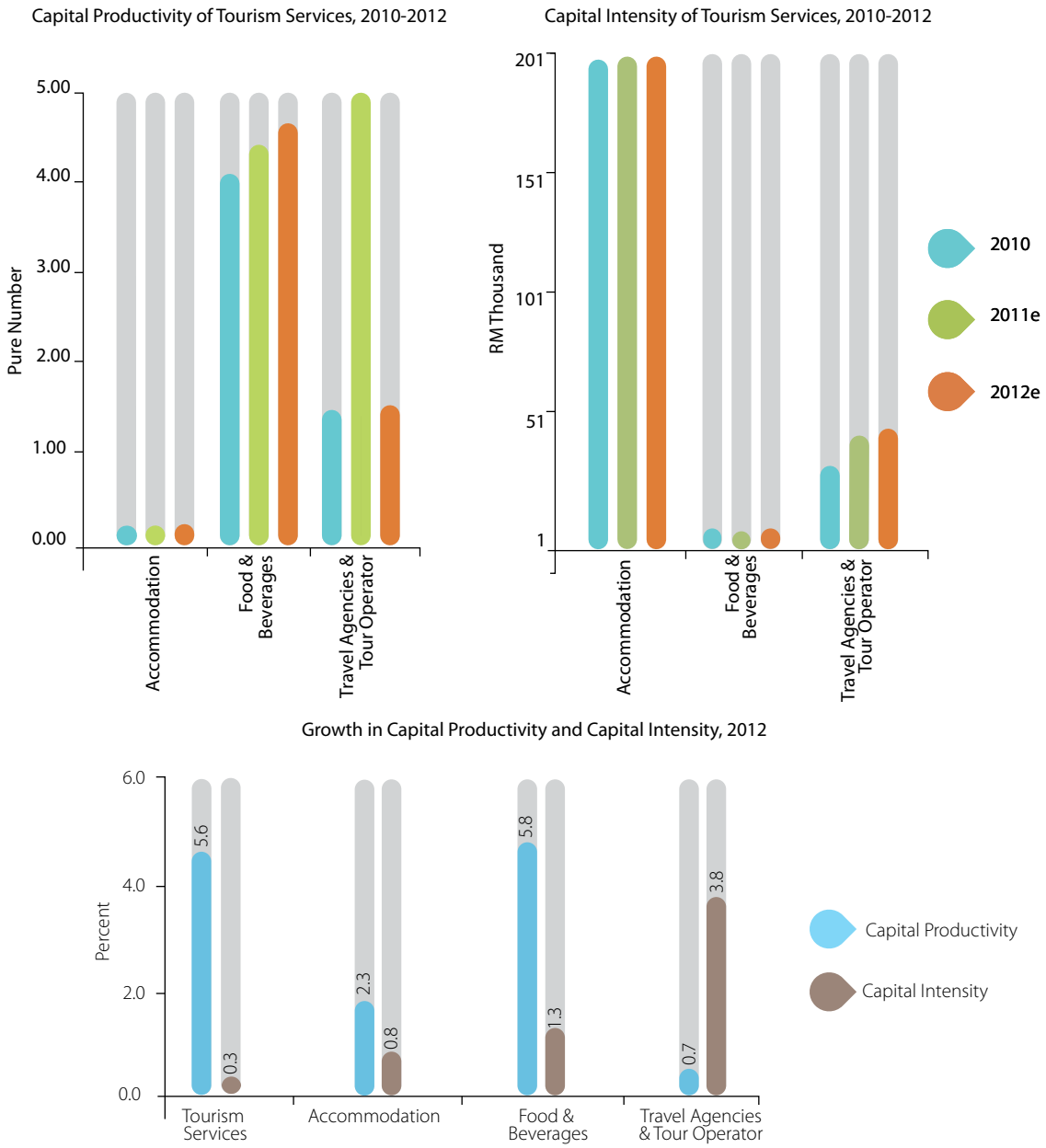


Computed from:
- Economic Census 2011, Accommodation Services, Department of Statistics, Malaysia
- Economic Census 2011, Food and Beverage Services, Department of Statistics Malaysia

Note: e - Estimate

In 2012, tourism services recorded a capital productivity increase of 5.6% while its capital intensity grew at 0.3%. The highest capital productivity growth of 5.8% was achieved by the food and beverages services, followed by accommodation at 2.3% and travel agencies and tour operators services at 0.7% (Figure 4.18). The high growth of capital productivity for food and beverages indicates a higher volume of business transactions resulting in marked improvement in the collection of receivables. Tourism services still remains a labour intensive industry as evidenced by the marginal growth (0.3%) in capital intensity.

Figure 4.18: Capital Productivity and Capital Intensity of Tourism Services, 2010-2012



Computed from: - Economic Census 2011, Accommodation Services, Department of Statistics, Malaysia
- Economic Census 2011, Food and Beverage Services, Department of Statistics Malaysia
Note: e - Estimate

ISSUES AND CHALLENGES

Malaysia receives more tourists compared to other countries of ASEAN, second only to China in Asia; however, the revenue generated from the industry is relatively small. Inbound tourists to Malaysia are made up largely of regional budget tourists who tend to opt for short stays and limiting their spending.

The future development of tourism lies in giving a greater emphasis to business tourism that would encourage international activities, specifically, official and business-related Meetings, Incentives, and Conventions and Exhibitions (MICE). High-end MICE visitors would normally not only require luxury accommodation but would also patronise exclusive service and entertainment packages resulting in longer stays and higher spending.

Although Malaysia is a country renowned for its first class world infrastructure and facilities, our public transport system does not adequately address tourist needs. Improvement in the public transport is badly needed, particularly, integration between different modes of transport and the enhancement of connectivity. Access for pedestrians and the disabled as well as the aged should be extended beyond the capital city.

Malaysia's 'My Second Home' programme has made remarkable strides in attracting foreigners to reside in the country. Nevertheless, this programme can be improved further to make Malaysia even more attractive, especially as a retirement destination. In order to ascertain what would attract foreign retirees to reside in Malaysia, research would need to be conducted and used towards developing products and services to entice this group of people.

LOGISTIC SERVICES

OVERVIEW

Logistic services comprises transportation and storage, land transport, water transport, warehousing and support services, and post and courier services.

Malaysia's established infrastructure of road network, highways and ports is a major strength in its logistics services as compared to other ASEAN countries. This transportation infrastructure strongly facilitates the efficient movement of goods. The ease of transportation of goods is attractive to Multinational Companies (MNC) that want to use Malaysia as their regional distribution hub.

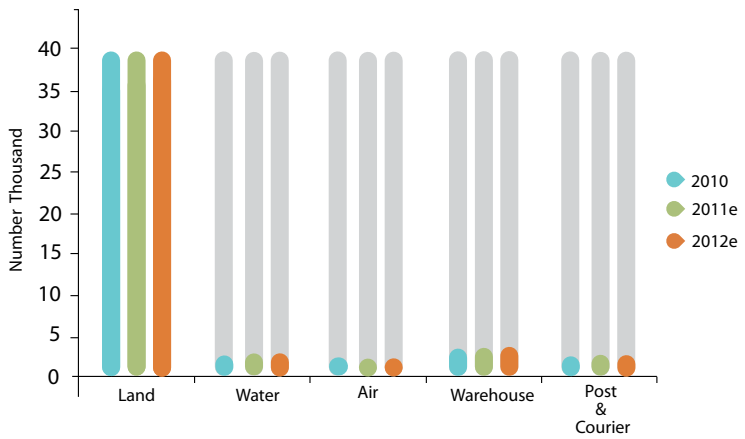
Logistics services is an important link in the supply chain as its efficiency will enable an organisation to reduce its operation costs, improve its delivery performance and increase customer satisfaction. This will make the organisation more competitive in terms of cost, quality, delivery and flexibility.

In terms of productivity performance, the logistics services registered productivity growth of 4.9% at RM111,555 with an added value growth of 5.9% amounting to RM35.6 billion. There are 42,115 establishments in the logistics services, employing a total of 318,842 employees in 2012.

Efficiency of logistics services enables organisation to reduce its operation costs, improve its delivery system and enhance customer satisfaction

INDUSTRY SNAPSHOT

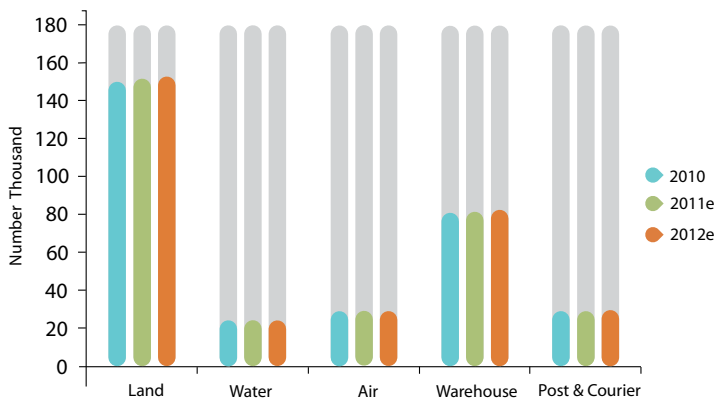
Figure 4.19: Number of Establishments in the Logistics Services, 2010-2012



Computed from: - Economic Census 2011, Transportation and Storage Services, Department of Statistics, Malaysia
Note: e - Estimate

- In the period 2010 – 2012, logistics services recorded a 1.9% growth with total number of establishments increasing from 40,599 in 2010 to 42,115 in 2012.
- The highest number of establishments belong to land transport services, followed by warehousing and support activities. Land transport establishments are in the majority as they are made up of two segments, namely, passenger and freight services.

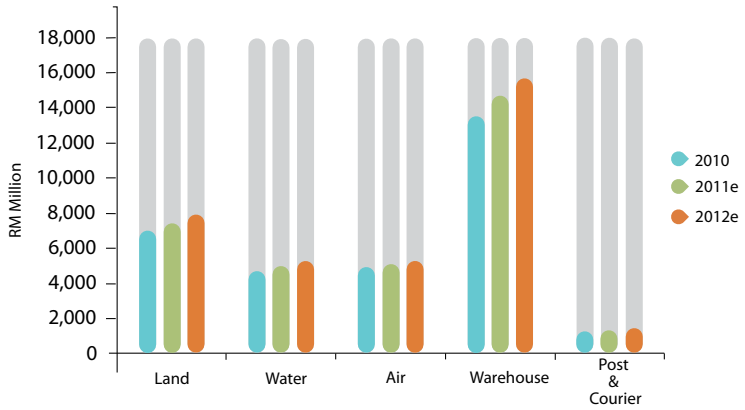
Figure 4.20: Employment Level in the Logistics Services, 2010-2012



- In the period 2010–2012, logistics services registered a 0.9% growth in employment.
- In 2012, warehousing and support activities registered the highest employment growth at 1.3%, employing 82,695 employees.
- The liberalisation of the logistics industry has attracted more investment in warehousing and support activities leading to the increase of employment rate.

Computed from: - Economic Census 2011, Transportation and Storage Services, Department of Statistics, Malaysia
Note: e - Estimate

Figure 4.21: Added Value Level of the Logistics Services, 2010-2012



- In the period of 2010–2012, logistics services recorded an added value growth of 6.4% .
- In 2012, warehousing and support activities recorded an added value growth of 6.9%, reflecting the efficient management of network distribution among logistics players, and the minimisation of operation costs.

Computed from: - Economic Census 2011, Transportation and Storage Services, Department of Statistics, Malaysia
Note: e - Estimate

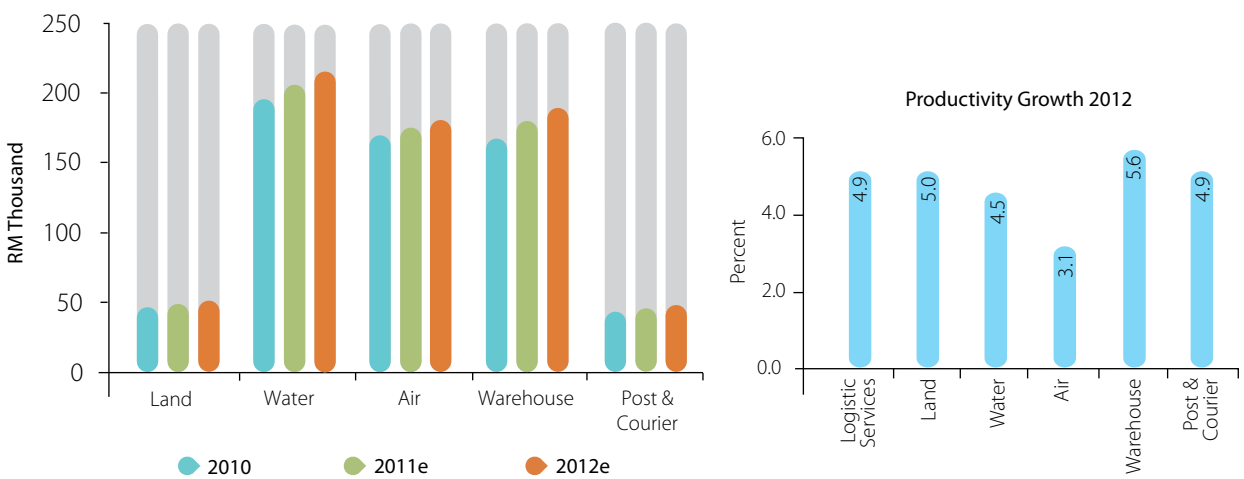
PRODUCTIVITY PERFORMANCE

Logistics services demonstrated a productivity growth of 4.9% amounting to RM111,555 in 2012 as compared to RM106,296 in 2011 (Figure 4.22). Highest productivity growth (5.6%) was recorded for warehousing and support activities.

Malaysia's established logistics infrastructure has positioned it as the preferred logistics hub of all the ASEAN countries, attracting more MNC establishments. Additionally, the availability of gigantic distribution centres/warehousing has contributed to the growth of these industries.

Where water transport is concerned, the segment recorded a productivity value of RM215,293 in 2012, the highest to date. The high performance is attributed to the effective use of IT systems, in addition to shorter vessel turnaround times and efficient delivery and pick up of containers

Figure 4.22: Productivity Level of Logistics Services, 2010-2012

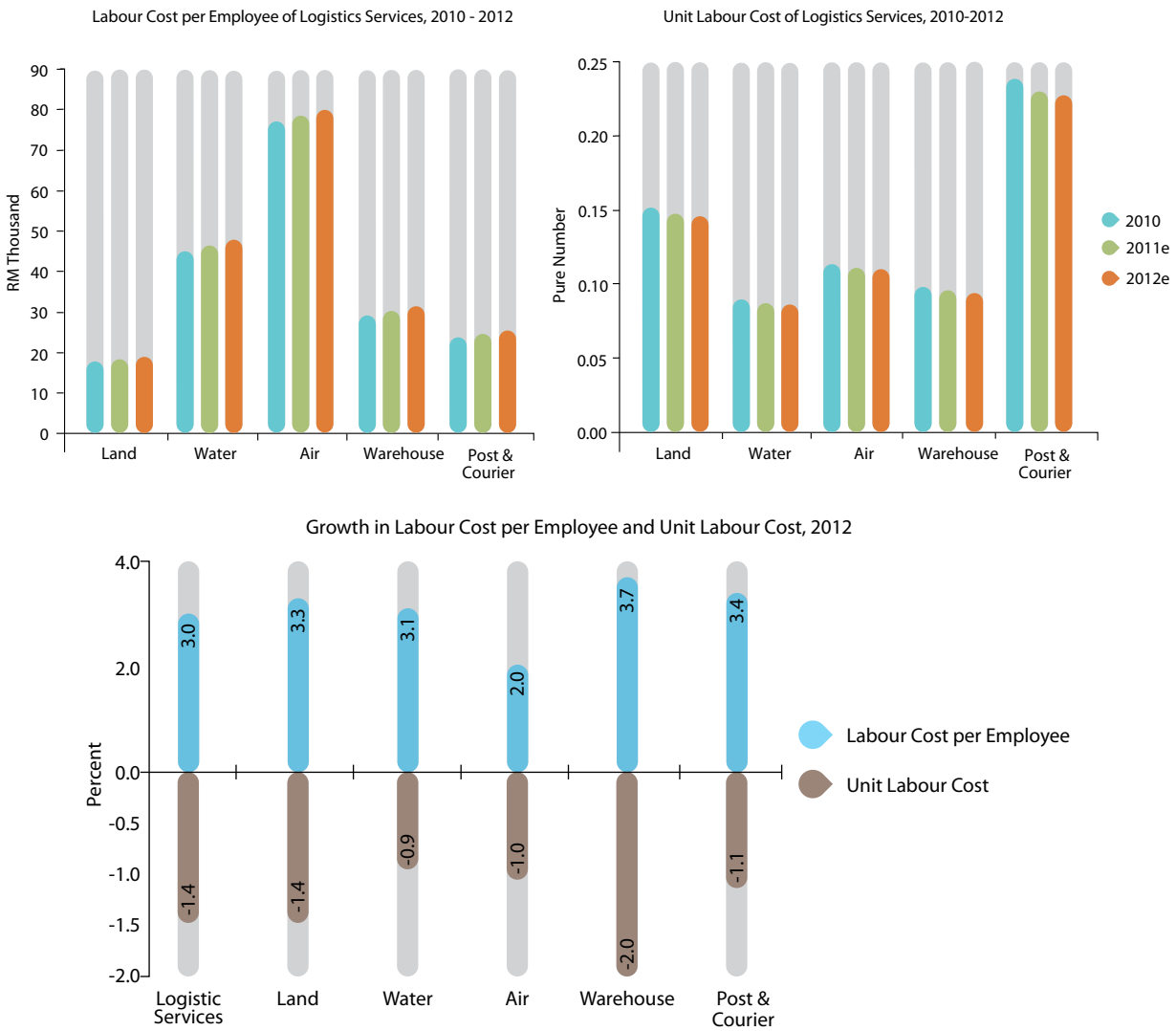


Computed from: - Economic Census 2011, Transportation and Storage Services, Department of Statistics, Malaysia
Note: e - Estimate

In 2012, labour cost competitiveness of logistics services improved. Its productivity growth (4.9%) was higher than growth in labour cost per employee (3.0%), and supported by a decline in unit labour cost (1.4%) (Figure 4.23).

Growth in technology adoption such as track and trace, and the development of various warehouse systems, have reduced the number of workers and increased the rate of operational efficiency.

Figure 4.23: Labour Cost Competitiveness of Logistics Services, 2010-2012



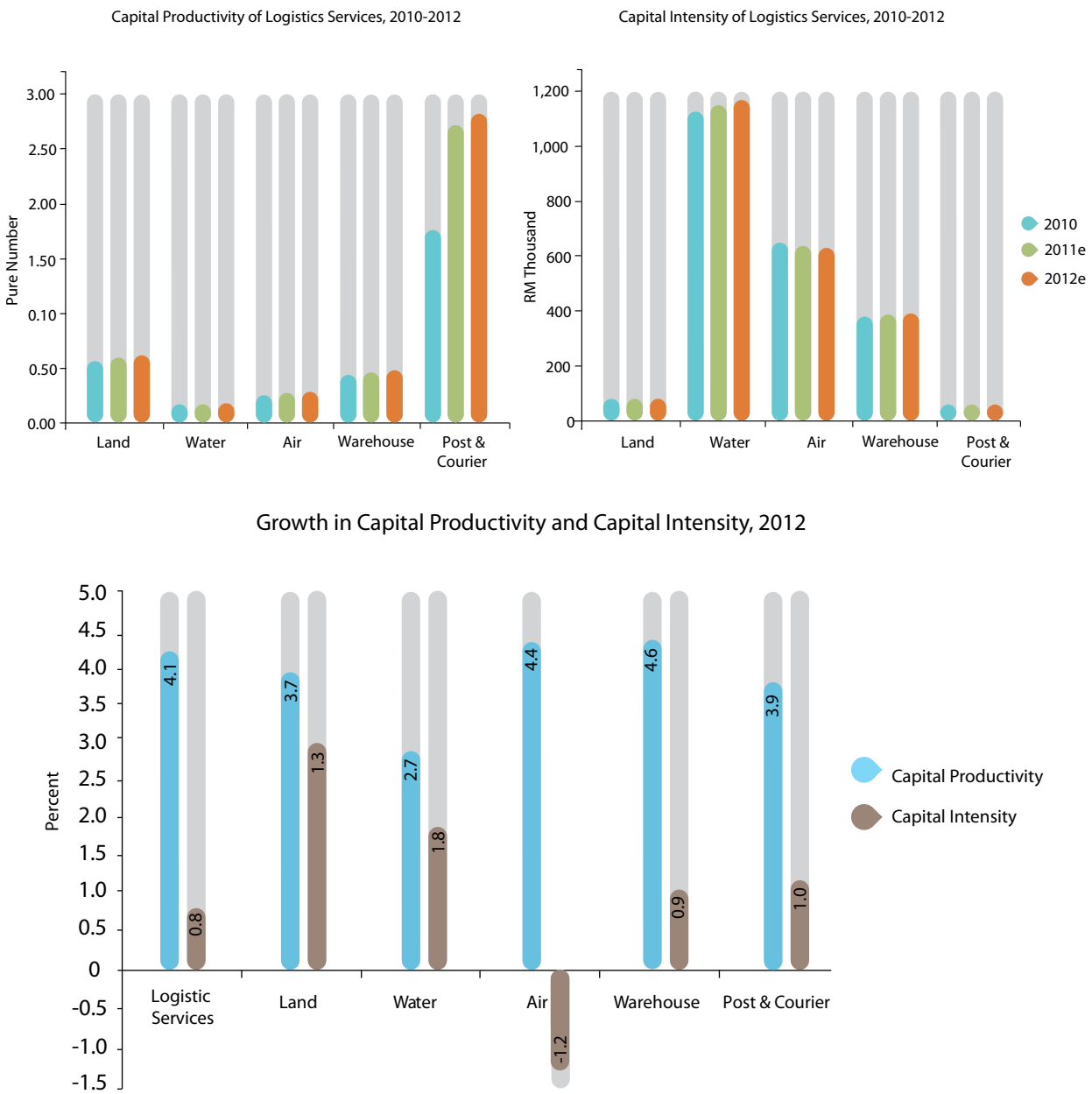
Computed from: - Economic Census 2011, Transportation and Storage Services, Department of Statistics, Malaysia

Note: e - Estimate

In 2012, logistics services recorded growth in capital productivity (4.1%) with a minimal growth in capital intensity (0.8%). Highest capital productivity growth (4.6%) was recorded for warehousing and support activities followed by air transport (4.4%). In terms of capital productivity level, post and courier services recorded the highest capital productivity ratio (2.8) in 2012 (Figure 4.24). The success of post and courier services was due to its rebranding efforts in which the types as well as the scale of business operations were widened.

In terms of capital intensity, water transport registered the highest capital intensity growth of 1.8% amounting to RM1.2 million in 2012 (Figure 4.24). The reason for this is the increase in capital investment despite the recent economic recession. Additionally, the nature of the services, which requires heavy investment in capital assets such as vessels, warehouses, and material handlings, has also contributed to its high capital intensity.

Figure 4.24: Capital Productivity and Capital Intensity of Logistics Services, 2010-2012



Computed from: - Economic Census 2011, Transportation and Storage Services, Department of Statistics, Malaysia

Note: e - Estimate

ISSUES AND CHALLENGES

As logistics becomes more competitive, the profit margin gained by Logistics Service Providers (LSPs) is getting smaller. The opening up of international trade through service liberalisation has opened up more business opportunities, especially for small local logistics companies which function as sub-contractors to MNCs. Without this source of business, local companies will have to cease operations.

In terms of freight rates, the Malaysian logistics markets can support customers by giving them very competitive freight rates. Taking the road haulage industry as an example, we find that even though official freight rates have been fixed, LSPs are at liberty to give discounts to customers. This situation has led to a healthy competition among the LSPs in attracting customers, giving customers a decided advantage by offering a variety of options in freight rates.

Continuous efforts have been made to further enhance labour cost competitiveness through the projected setting up of logistics information network systems which will enable both Government and LSPs to access logistics-related statistics, in addition to providing services for applications of approvals online, data retrieval and other information-related services.

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) SERVICES

OVERVIEW

The Information and Communication Technologies (ICT) services comprises publishing, motion picture, video and television programmes, programming and broadcasting, telecommunications, computer programming, consultancy and related services, and various information services.

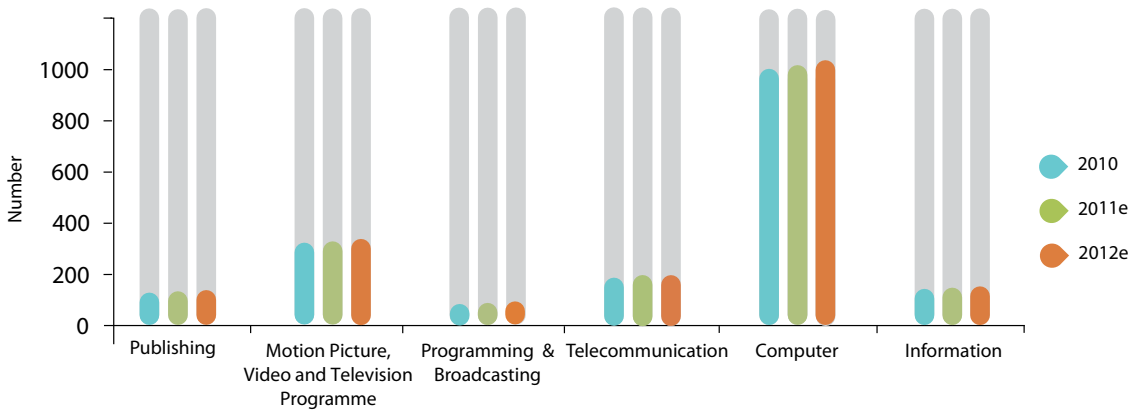
ICT services comprises 1,884 establishments employing 112,017 employees. In 2012, a productivity growth of 8% amounting to RM387,376 was recorded, compared to RM358,653 in 2011.

The added value of the ICT sub-sector was recorded at RM43.4 billion. Telecommunication services sub-sector was the highest contributor in 2012 with an added value share of 70.1% amounting to RM30.4 billion.

EPPs have exerted a strong impact on the productivity performance of the ICT services sub-sector. Contributing significantly to this favourable growth are exports generated under the 'My Creative Content' initiative. 'My Creative Content' comes under creative industry which has generated revenues of RM12 billion in 2012 compared to RM11 billion in 2011. Overall, the impact of EPPs was reflected in the Global IT Report 2012 in which Malaysia was ranked 6th in the area of Government utilisation of ICT. The impact of ICT use in transforming the economy was ranked 31st and impact of the use of ICT on society at large was ranked 15th.

INDUSTRY SNAPSHOT

Figure 4.25: Number of Establishments in the ICT Services, 2010-2012

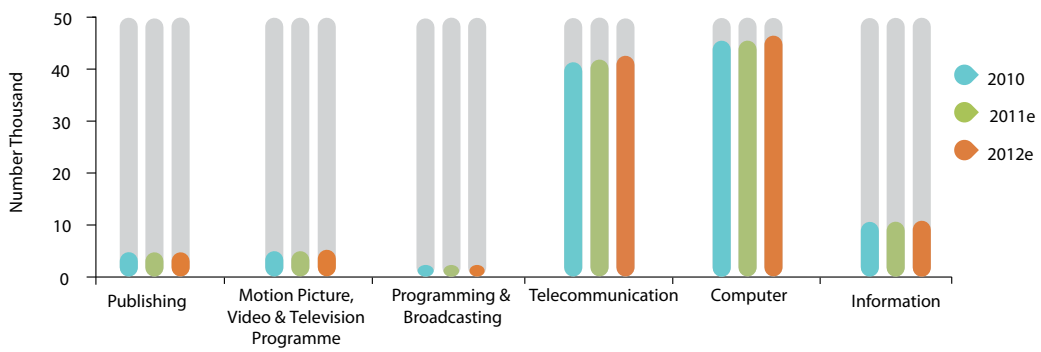


Computed from: - Economic Census 2011, Information and Communication Services, Department of Statistics, Malaysia
Note: e - Estimate

- In 2012, the number of establishments in the ICT services sub-sector demonstrated a growth of 2.5%, from a total of 1,837 in 2011 to 1,884 in 2012. Growth was attributed to the successful development of projects under the Multimedia Super Corridor (MSC) initiative, mainly through the continued growth of the incubator programme and the Digital Malaysia project which in turn created an additional 25 sub projects.

- In 2012, Computer services establishments made up the largest share (55%) of the ICT sub-sector. The large share was due to several factors, namely, ICT diffusion to other sectors, the rising adoption of smart phones, the convergence of multiple communication technologies and the emergence of new and innovative technology in the services sector.

Figure 4.26: Employment in the ICT Services, 2010-2012



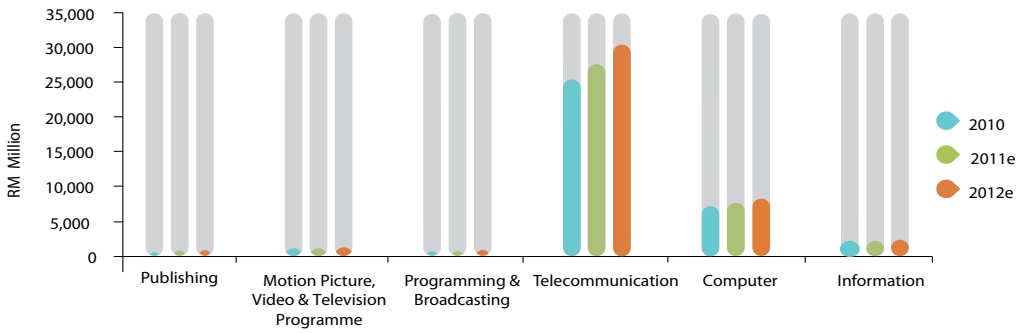
Computed from: - Economic Census 2011, Information and Communication Services, Department of Statistics, Malaysia
Note: e - Estimate

- ICT services employed 112,017 employees in 2012. The employment growth was 1.6% in 2012.

- ICT has changed from playing a basic role to that of being a technology enabler. The diffusion of ICT into other sectors has created a demand for more IT professionals. For one, the creative animation field has opened up a range of employment opportunities.

- In 2012, computer services was the biggest employer, followed by telecommunications. Employment growth in computer services sees a corresponding growth in number of establishments. The emergence of a growing number of network service providers has also contributed to increase in employment.

Figure 4.27: Added Value Level of the ICT Services, 2010-2012



Computed from: - Economic Census 2011, Information and Communication Services, Department of Statistics, Malaysia

Note: e - Estimate

ICT services registered added value growth of 9.8% amounting to RM43.4 billion in 2012. The consumerisation of ICT in the business and consumer sectors has led to a rising demand for localised content, sales and other services, including demand for peripheral devices and data storage. This has contributed to the added-value of the ICT services sub-sector.

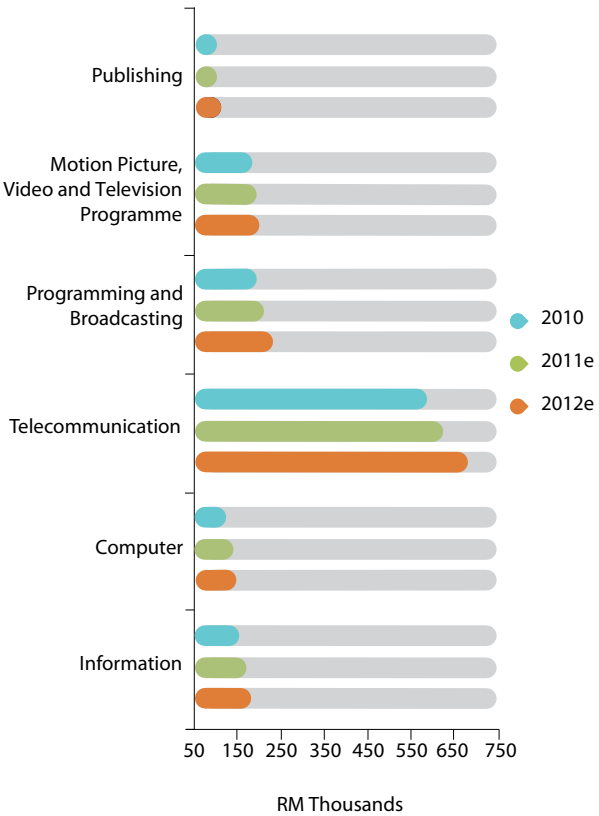
In 2012, telecommunication services recorded a double-digit growth of 10.5% amounting to RM30.4 billion. The high penetration of broadband services, cloud computing and data volume have broadened the market for telecommunication services. Additionally, the demand for data warehouse facilities and new applications have led to a favourable growth in telecommunication and computer services.

The lowest added value level was recorded by publishing and programming and broadcasting services at RM550,114 and RM631,755 respectively. Printed matter and traditional broadcast technology has given way to digital media platform.

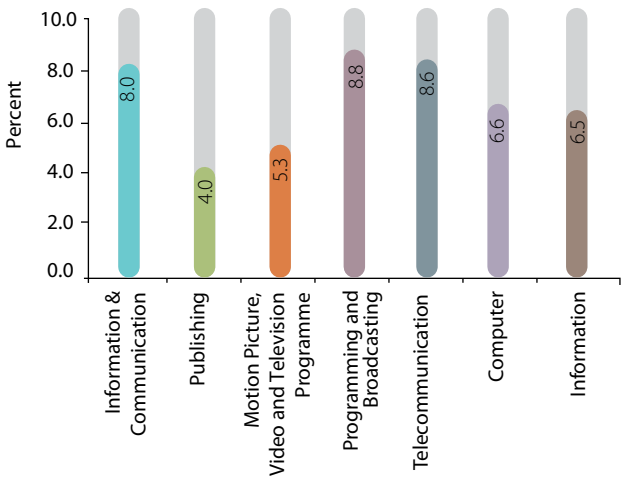
PRODUCTIVITY PERFORMANCE

ICT services sub-sector recorded a productivity growth of 8% amounting to RM387,376 in 2012 as compared to RM358,653 in 2011. In 2012, the highest productivity growth was recorded by the programming and broadcasting services (8.8%) followed by telecommunication services (8.6%) (Figure 4.28). Broadcasting service companies such as Astro, Media Prima, TV Alhijrah have expanded their local programmes which has given rise to the the establishment of an increasing number of production houses, thus contributing to the favourable performance.

Figure 4.28: Productivity Level of Information and Communication (ICT) Services, 2010-2012



Productivity Growth of Information and Communication (ICT) Services, 2012



Computed from: - Economic Census 2011, Information and Communication Services, Department of Statistics, Malaysia

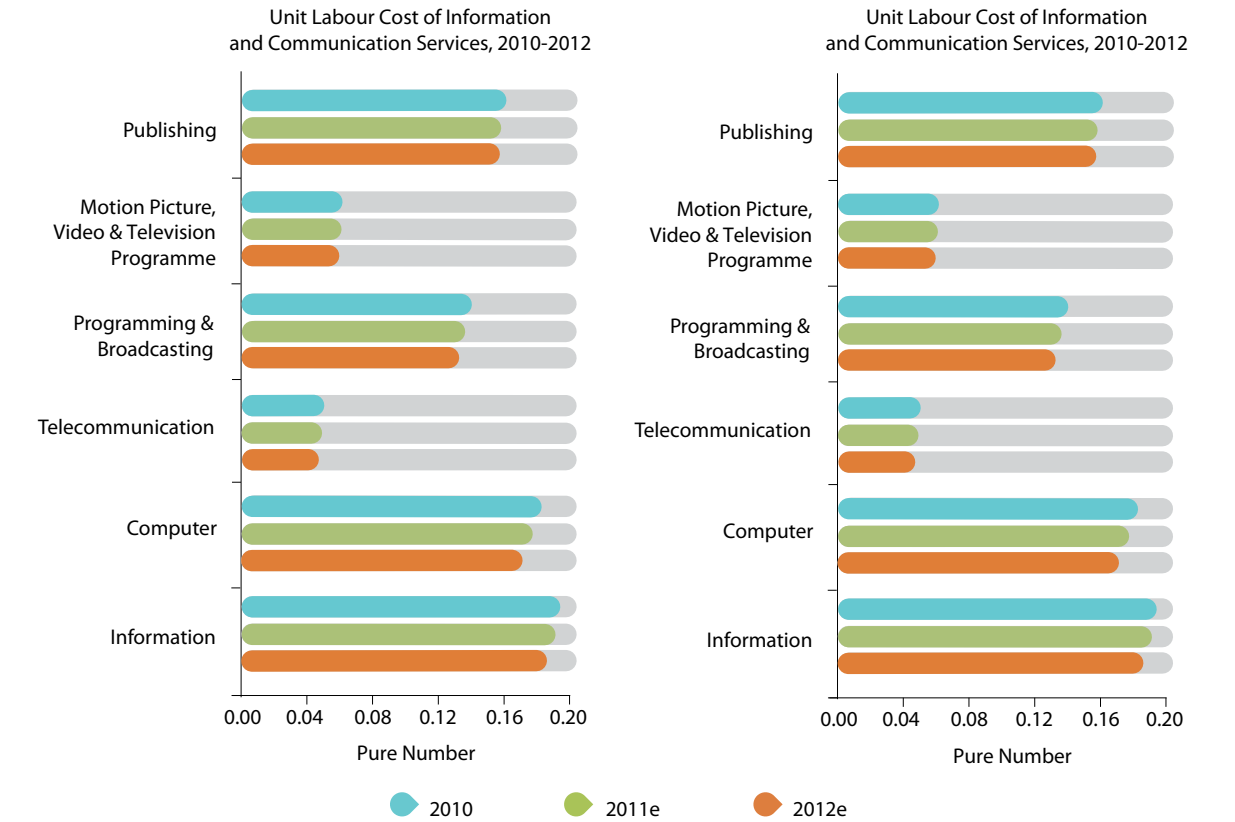
Note: e - Estimate

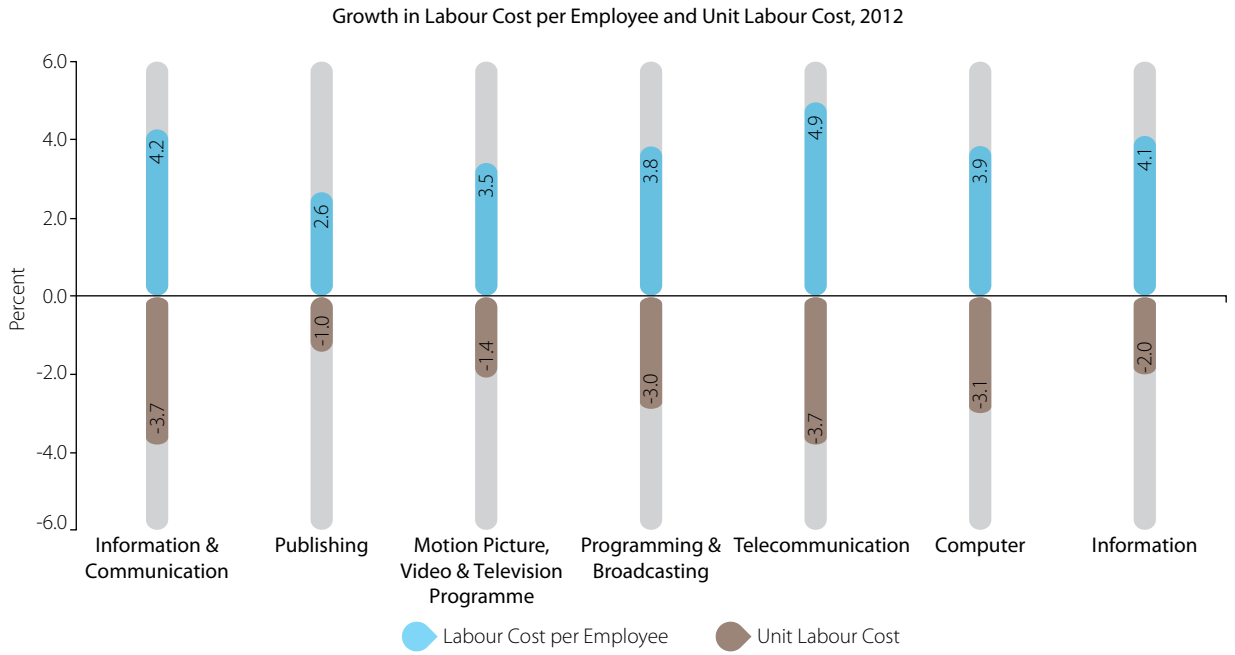
Demand for higher speed internet connectivity has resulted in the growth of broadband services and contributed to the significant growth of the telecommunication services. High household broadband penetration (63.9%), and high cellular phone coverage in populated areas (95%) have also contributed to this growth.

Labour cost competitiveness of the ICT services improved in 2012 as shown by a productivity growth of 8%. This growth was higher than growth in labour cost per employee at 4.2% and supported by a decline in unit labour cost of 3.7% (Figure 4.29). Structural changes in ICT focused more on services which led to an increasing demand for qualified computer professionals in the ICT workforce.

Telecommunication services is the most labour competitive industry. This industry registered a decline in unit labour cost of 3.7% in 2012 with a minimal wage rate growth of 4.9% in 2012. Rapid advancement in the telecommunication infrastructure landscape, chiefly cloud computing, and other advancements such as Internet Procotol IPv6, together with the presence of IT professionals equipped with new skill sets, support this labour cost competitiveness.

Figure 4.29: Labour Cost per Employee of Information and Communication Services, 2010-2012





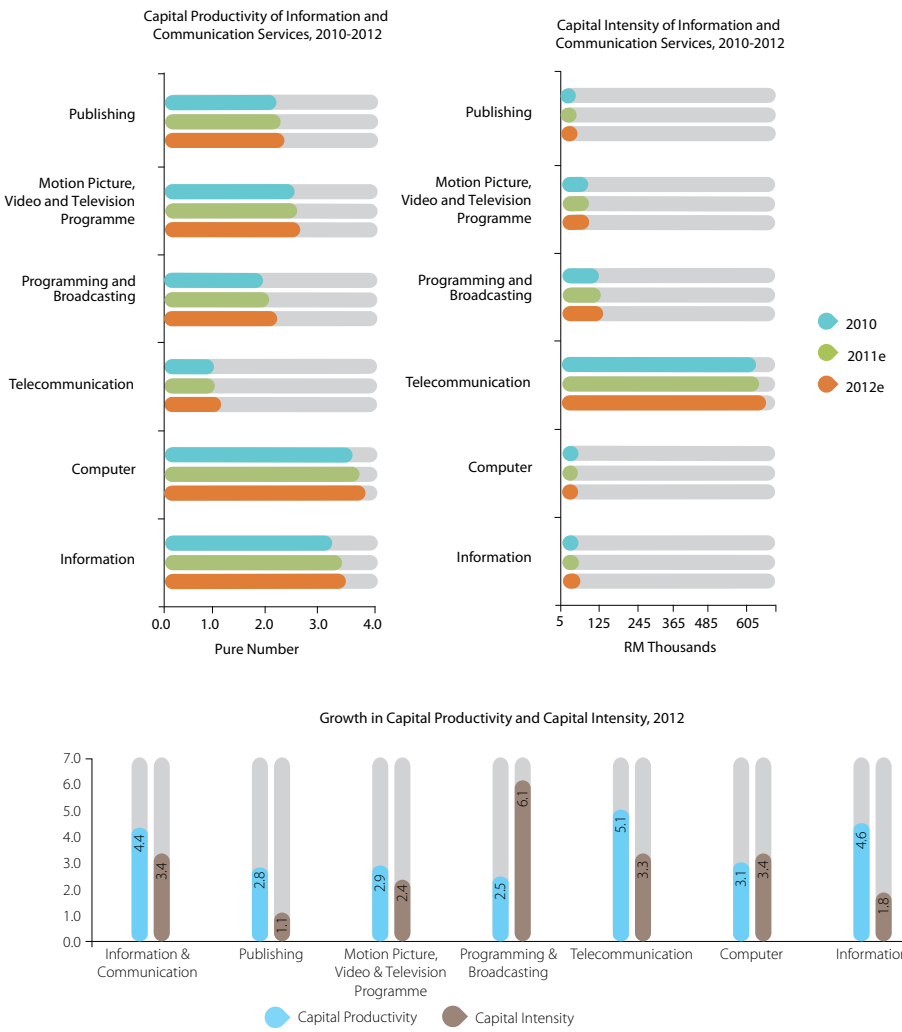
Computed from: - Economic Census 2011, Information and Communication Services, Department of Statistics, Malaysia

Note: e - Estimate

The ICT services sub-sector witnessed a 4.4% annual growth rate in capital productivity ratio, at 1.3 in 2012, because of the expansion of e-services in both Government and private sectors.

As ICT is a capital intensive industry, the sub-sector recorded a capital intensity growth of 3.4% amounting to RM288,136 in 2012 (Figure 4.30). Increase in the value of capital intensity was attributed to telecommunication services which recorded a fixed assets contribution of 88%. Leveraging on the telecommunications infrastructure for enhanced accessibility, this segment contributed to the favourable capital intensity growth of ICT services.

Figure 4.30: Capital Productivity and Capital Intensity of the Information and Communication (ICT) Services, 2010-2012



Computed from: - Economic Census 2011, Information and Communication Services, Department of Statistics, Malaysia

Note: e - Estimate

ISSUES AND CHALLENGES

Malaysia aims to create an ecosystem which can promote strong information and communication technologies. The establishment of MSC Malaysia Cybercities and Cybercentres is aimed at providing a physical location and a centre to help nurture and support the growth of ICT-enabled industries and to extend the benefits accrued to the local community. Currently, there are 26 Cybercities and Cybercentres, the latest of the cybercentres being Jaya 33 in Petaling Jaya, the Financial and Corporate Centre in Puchong and the Menara Worldwide in Bukit Bintang. These Cybercities and Cybercentres which are industry cluster-based have companies within the same technology field located in the same geographical area, having similar, shared objectives. This arrangement will help fuel economic growth by raising the level of innovation and development of the industry, and by promoting specialised competencies, both at the national and regional level.

ICT innovation in Malaysia has not developed as it should, due to the absence of regulations governing intellectual property protection. Such a protection can be provided under a Critical Infrastructure Protection (CIP) framework. The absence of a well-publicised Critical Infrastructure Protection (CIP) framework and a lack of trained professionals in this area are among the factors that have resulted in weak intellectual property protection laws. Industries most affected are business software applications, software content and creative multimedia arts. A unique certification programme is being designed to guide participants to a higher level of security of CIP in line with the requirement of the National Cyber Security Policy (NCSP) to increase the country's information security professionals.

With regard to technological readiness, Malaysia was ranked 25th out of 142 countries, up from 21st placing in 2011. The low level of technological readiness and the slower rate of ICT adoption contributes to the modest ranking. Malaysia needs to improve its ranking in three areas, namely, international internet bandwidth (ranked 83rd), broadband internet subscriptions (68th) and mobile broadband subscriptions (64th) in order to improve Malaysia's ranking in overall technological readiness.

New technologies, such as 4G Long-Term-Evolution (LTE) technology, can help improve the speed and efficiency of business transactions, thus reducing operation costs tremendously. This opens up opportunities for local businesses, especially SMEs, to fully tap into the convergence of ICT.

The growth of smart mobile devices such as smartphones, tablets and eReaders are expected to grow by 20 per cent in 2013 and generate nearly 57% of the industry's overall growth. The use of social networks and mobile applications provide a good platform for businesses to stay connected.

Currently, the rate of high broadband subscription in urban areas is 60%, in contrast with 25% in the suburban areas, 20% in rural areas and 15% in remote areas. Only 20% of SMEs have adopted ICT and a higher percentage of them are in the urban areas. Given that the adoption of e-commerce is useful for all SMEs, broadband penetration is very important for growth of SMEs especially those located in rural and remote areas.

Although Malaysia enjoys a wide coverage of broadband penetration, broadband price in Malaysia is still high compared to other countries. Internet protocol (IP) transit costs are higher than other markets such as Hong Kong, Japan and Singapore. As such, there is need for price monitoring and control of the cost of international bandwidth, given the high volume of traffic in and out of the country, especially for data storage and retrieval purposes.

BUSINESS SERVICES

OVERVIEW

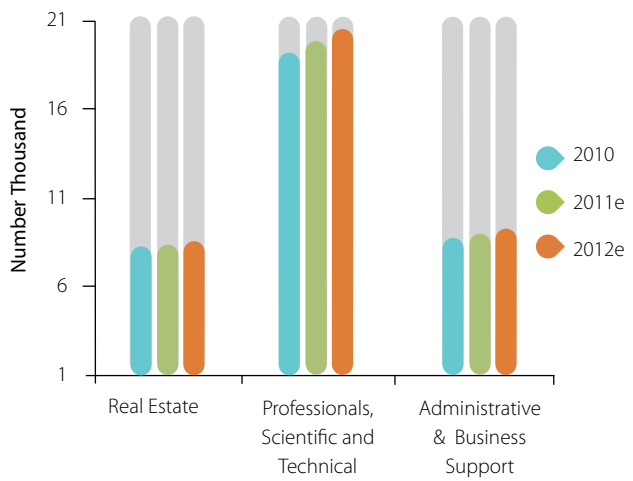
Business services cover three categories, the first being professional, scientific and technical services (management consultancy, market research, veterinary, legal, accounting, architecture, engineering, surveying and advertising). The other two categories are real estate services (own or fee/contract properties) and administrative and support services (rental/leasing, employment, security/investigation, services to building/landscape activities and office administrative/business support activities).

In 2012, added value for business services was recorded at RM31.7 billion with a growth of 8.9%. There was better performance in labour cost competitiveness showing marked productivity growth as well as favourable capital efficiency. The business services sub-sector is seen to be shifting towards capital intensive operations.

Business services is one of the 12 NKEAs having seven EPPs under it. This sub-sector has reaped benefits not only from EPPs, but also from the rapid improvement in ICT infrastructure. Various services in this sub-sector are also part of other major industries related to manufacturing, agriculture, mining and construction sectors.

INDUSTRY SNAPSHOT

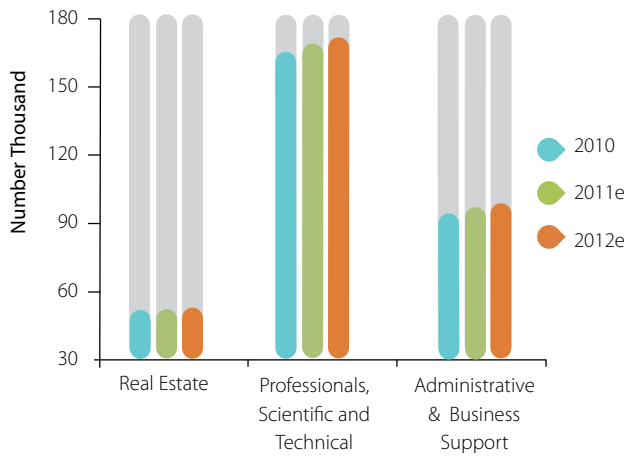
Figure 4.31: Number of Establishments in the Business Services, 2010-2012



- For the period 2010–2012, the number of business services establishments increased from 36,322 to 38,418 with a growth of 2.8%.
- In 2012, professional, scientific and technical services recorded the biggest number of establishments amounting to 20,565, followed by administrative and support services with 9,260 establishments.
- Scientific and technical services has a high number of establishments because of its nine specialisations.

Computed from: - Economic Census 2011, Business Services, Department of Statistics, Malaysia
Note: e - Estimate

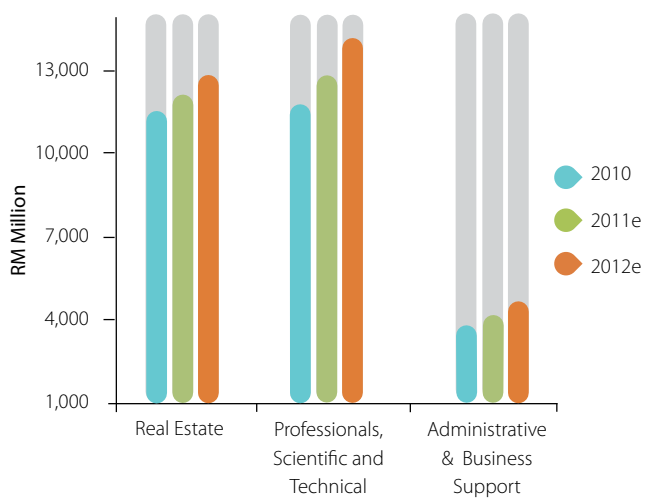
Figure 4.32: Employment in the Business Services, 2010-2012



- The business services sub-sector employed 323,946 employees in 2012 compared to 311,063 employees in 2010 with a growth of 2.1% for the period 2010 – 2012.
- Consistent with the large number of establishments, in 2012, professional, scientific and technical services employed the highest number of employees amounting to 171,828. This segment also recorded the highest growth at 2% (2010-2012). At the end of 2012, EPP2: Building Globally Competitive Outsourcers was responsible for the creation of 9,512 new jobs while EPP4: Jump-Starting a Vibrant Green Technology Industry, generated 7,696 jobs.

Computed from: - Economic Census 2011, Business Services, Department of Statistics, Malaysia
Note: e - Estimate

Figure 4.33: Added Value Level Business Services, 2010-2012



- For the period 2010-2012 the business services sub-sector recorded an added value growth of 8% rising from RM27.1 billion to RM31.7 billion.
- In 2012, business services registered an added value growth of 8.9% compared to 7.2% in 2011. This was attributed to the slower increase in the value of purchases of materials and the lower cost in outsourcing services while there was a corresponding increase in the added value of components such as personnel cost, profits, and management cost.
- The ETP related to ICT has placed great emphasis on broadband penetration and data centres which has resulted in internal efficiency and enabled companies to purchase inputs at competitive prices

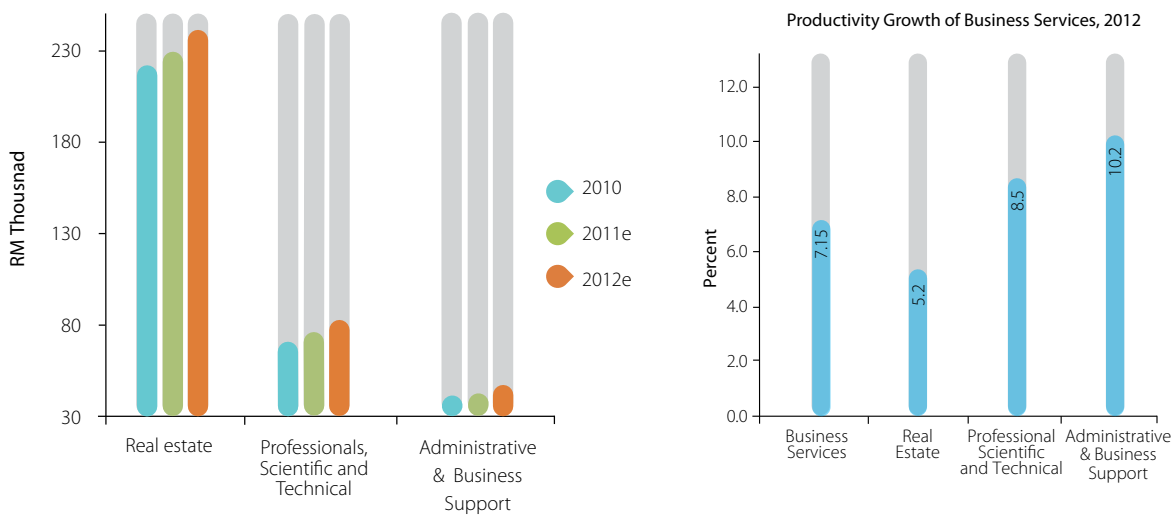
Computed from: - Economic Census 2011, Business Services, Department of Statistics, Malaysia
Note: e - Estimate

PRODUCTIVITY PERFORMANCE

The business services sub-sector recorded a productivity growth of 7.2% amounting to RM97,744 in 2012 compared to 4.6% growth in 2011 (Figure 4.34). Various EPPs concentrating on niche services such as green technology, large pure play engineering services and aerospace allow industry specialists to charge premium prices, resulting in higher profits and wages, leading to greater increase in added value of the industry.

In terms of productivity level, over a 3 year period, the real estate industry has continuously outperformed other business services due to the increase in real estate transactions and supported by the ease of obtaining loans for property purchases.

Figure 4.34: Productivity Level of Business Services 2010-2012

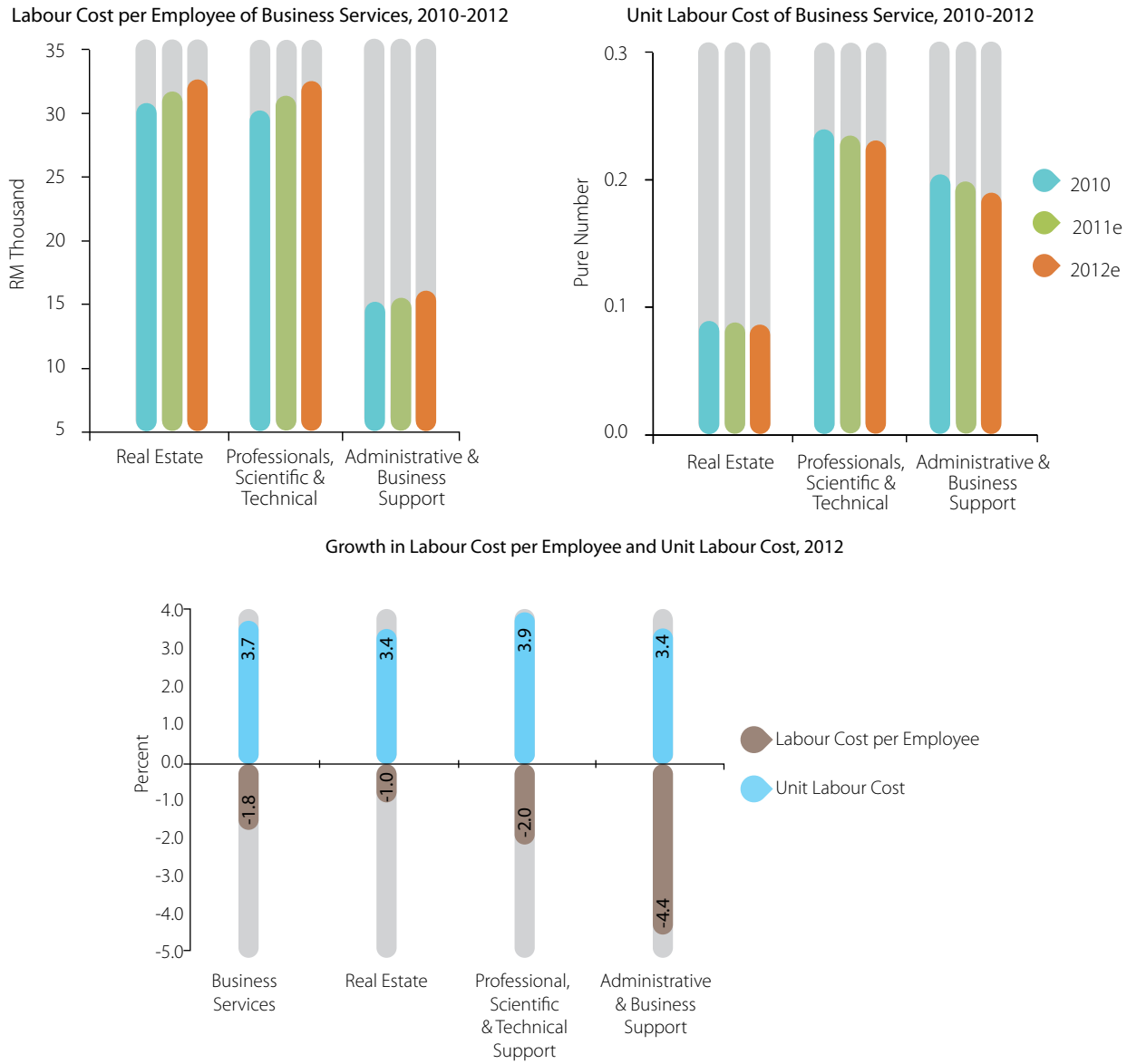


Computed from: - Economic Census 2011, Business Services, Department of Statistics, Malaysia
Note: e - Estimate

In 2012, business services maintained its labour cost competitiveness showing a productivity growth of 7.2%, while labour cost per employee grew at 3.7%, and unit labour cost declined at 1.8% (Figure 4.35).

Of all the business services, administrative and support services was the most labour competitive in 2012. It registered a productivity growth of 10.2% and a 3.4% growth in labour cost per employee. There was a drop of 4.4% in unit labour cost. Administrative and support services benefited from the adoption of ICT. The multitude of tasks associated with administrative work is greatly assisted by ICT, resulting in greater labour competitiveness.

Figure 4.35: Labour Cost Competitiveness of Business Services, 2010-2012



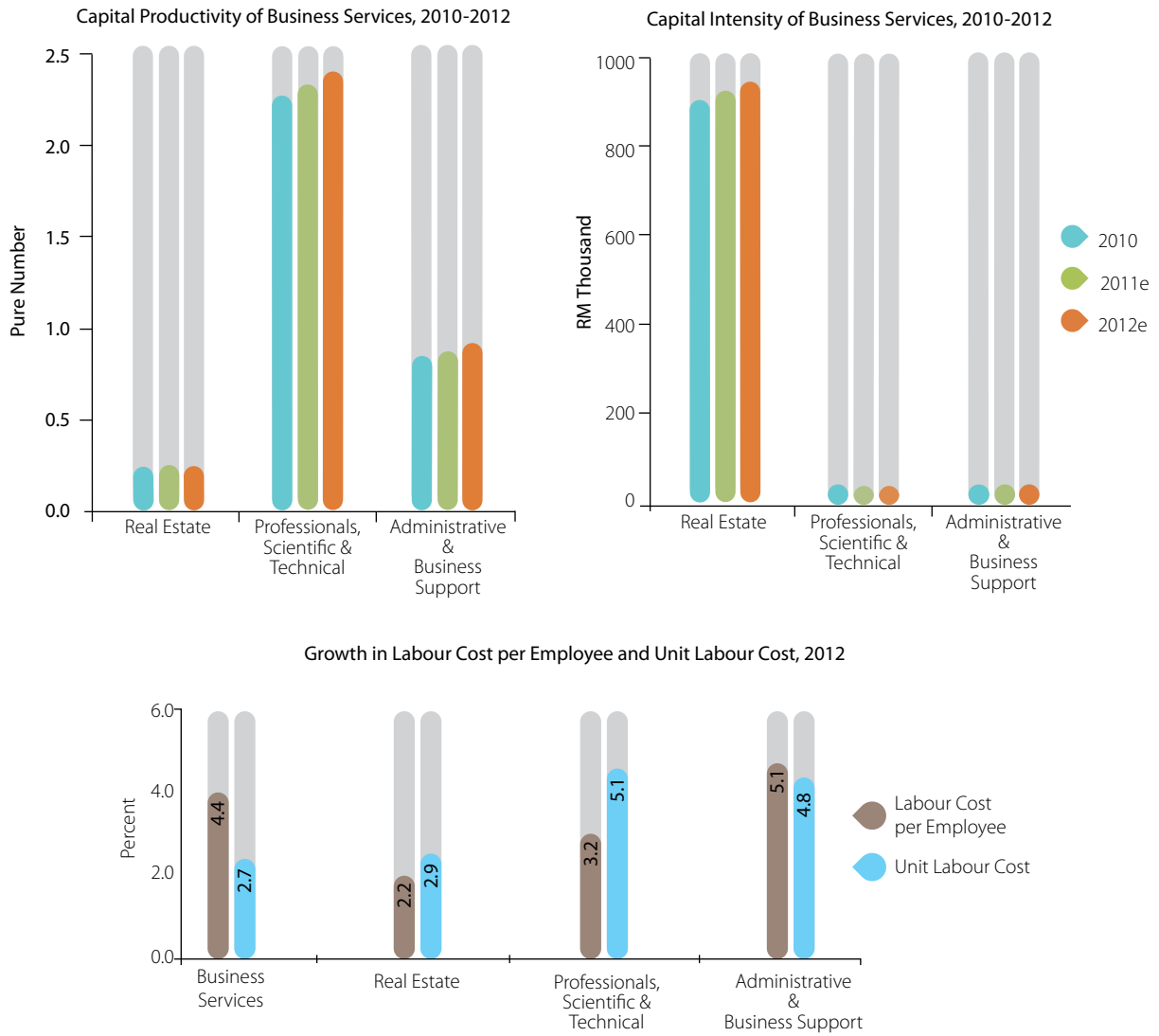
Computed from: - Economic Census 2011, Business Services, Department of Statistics, Malaysia

Note: e - Estimate

In 2012, the business services sub-sector recorded a 4.4% growth in capital productivity as compared to 2.7% growth in 2011. This indicates the efficiency of assets utilisation of the business services sub-sector. In addition, technological capability has made inroads in this sub-sector, highlighted by high capital productivity growth in the administrative and support segments. Furthermore, focus on high technology niche areas brought about by the implementation of a number of EPPs allowed for a significant increase in capital productivity in 2012.

The sub-sector registered capital intensity growth of 2.7% in 2012 as compared to 1.8% in 2011 (Figure 4.36). Of all the business services sub-sector, real estate registered the highest value in capital intensity at RM949,369. This value is derived from the fixed assets of the real estate industry, which are either self-owned or leased.

Figure 4.36: Capital Productivity and Capital Intensity of Business Services, 2010-2012



Computed from: - Economic Census 2011, Business Services, Department of Statistics, Malaysia

Note: e - Estimate

ISSUES AND CHALLENGES

The business services sub-sector has gained experience through its involvement in numerous world class development initiatives and construction projects. The experience gained have helped Malaysian firms to export their services internationally, as the projects concerned have served to train a high number of professionals.

Export of services by Malaysian firms is observed to be highest in the legal, consultancy, accounting, architectural, and engineering activities. However, most of the firms providing services overseas, although highly-specialised, are relatively small and are are not able to reap economies of scale.

The risk of escalating costs is likely in ETP focus areas such as aeronautics, automotive, ship building/repair, data centres and green technologies due to the high import content of the industries. The industries

concerned should concentrate on utilising more local products as well as support more research and product development initiatives in the interest of enhancing business efficiency.

Malaysia's strength in the business services sub-sector lies in the production of soft products such as computer software and applications as Malaysia is not known for its hardware products. While it may be difficult to compete with established brand names, it is crucial for the industry to concentrate in a few niche hardware solutions to minimise dependence on imported hardware. This dependence is evident with regard to data centres, for example, which are highly dependent on imported hardware such as servers, network links and telecommunications hardware.

PRIVATE EDUCATION SERVICES

OVERVIEW

The private education services sub-sector, which has expanded rapidly, is important in complementing public education in the country. Private education comprises private universities and colleges, education training centres, international schools, private schools, private teacher training centres, and quasi-private training centers (centres associated with Government-linked companies).

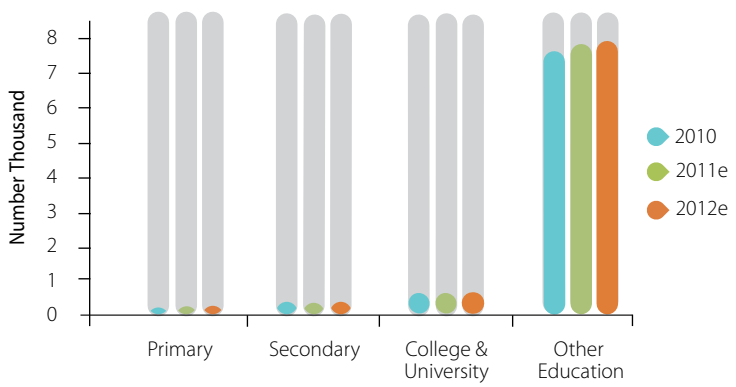
In 2012, private education services registered an added value growth of 8.7% amounting to RM7.5 billion. This sub-sector consists of 8,530 establishments employing 111,739 employees while the other education segment, which consists of tuition centres and early childhood development centres, accounts for 7,756 establishments, and universities and colleges 431 establishments.

Malaysia's education system is given priority under the NKEAs. Several EPPs have been initiated since 2010, and to-date, 72 projects have been launched which are expected to generate RM106.4 billion in investments and RM153.83 billion in GNI, in addition to creating 300,000 new jobs.

Recognising the importance of education in human capital development, Malaysia's education system, both public and private, also supports lifelong learning. The NKEAs focus on education is aimed at strengthening private education services. This will provide more opportunities for lifelong learning, subsequently increasing private investments. Private education also has the capability of exporting Malaysian education services overseas.

INDUSTRY SNAPSHOT

Figure 4.37: Number of Establishment in the Private Education Services, 2010-2012



Computed from: - Economic Census 2011, Education Services, Department of Statistics, Malaysia

Note: e - Estimate

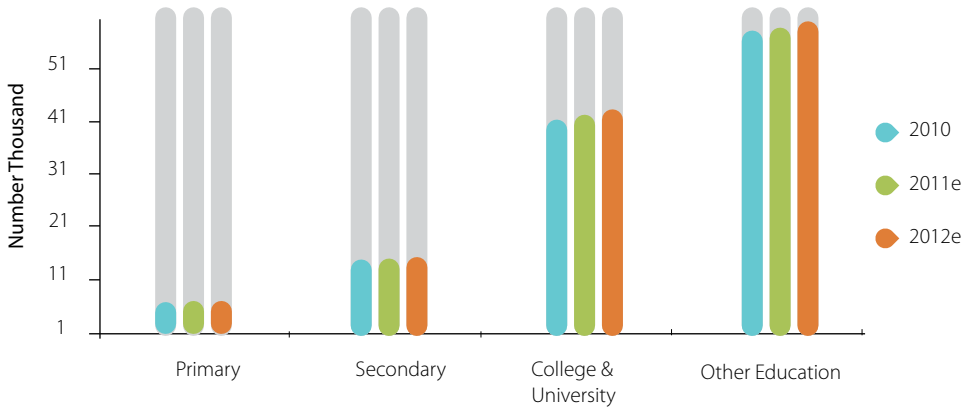
- In 2012, there were 8,530 establishments providing private education in Malaysia. Majority of establishments are new private universities and colleges, that are currently facing challenges in attracting international students on a large scale.

- In response to the Government's policy of promoting the training of skilled technical and vocational workers in the country, the growth of technical and vocational education establishments at the secondary level registered highest (2.5%) compared to other institutions,

- In 2012, there were 32 private universities and 18 private university-colleges that have been accredited to award their own degrees and diplomas. There were 8 branch campuses of foreign universities in the same year.

- Total enrolment of international students recorded was more than 90,000, with the majority of them from Indonesia, China, Iran, Nigeria and Yemen.

Figure 4.38: Employment in the Private Education Services, 2010-2012



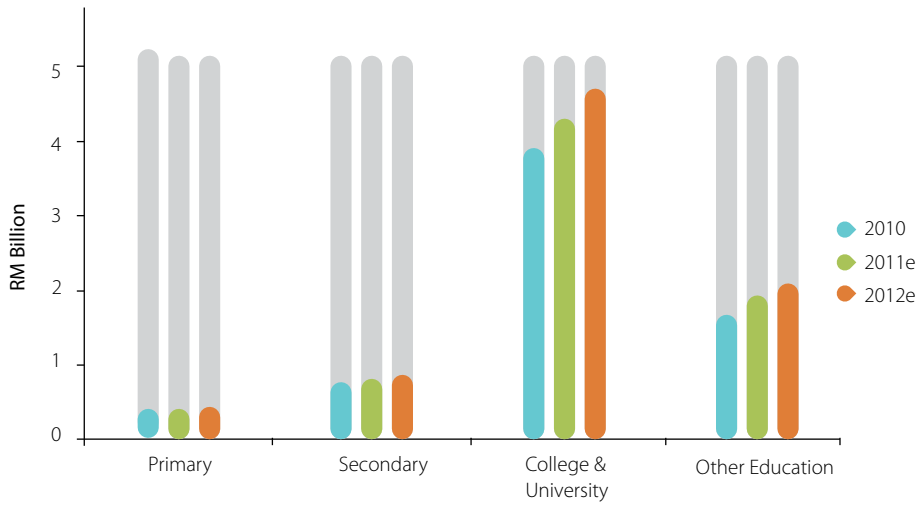
Computed from: - Economic Census 2011, Education Services, Department of Statistics, Malaysia

Note: e - Estimate

- In 2012, education services recorded a 2.7% growth with employment registered at 111,739. Majority of employees (51%) were in other education services, with college & university employment at 36%.

- It should be noted that the opening of the new education hub, Iskandar Malaysia EduCity, will serve as a catalyst to attract high caliber international students and will increase the need for academic staff.

Figure 4.39: Added Value Level of the Private Education Services, 2010-2012



Computed from: - Economic Census 2011, Education Services, Department of Statistics, Malaysia
Note: e - Estimate

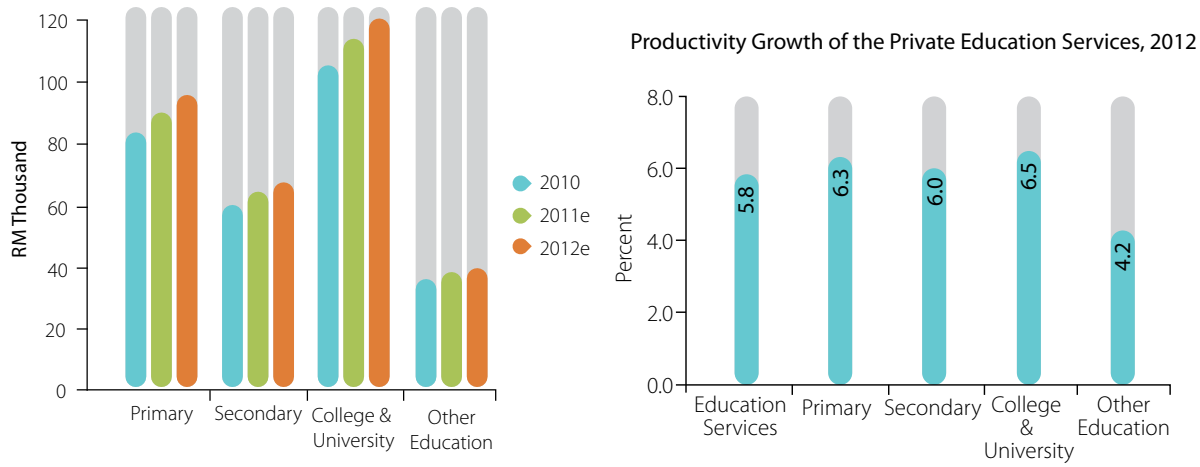
- In 2012, added value of education services grew at the rate of 8.7% amounting to RM7.5 billion (2011:9.2%).
- Private universities and colleges recorded the highest added value growth at 9.6%. This was followed by a growth of 7.8% in primary and secondary education.
- Promoting and championing international education brands has resulted in a big number of international students enrolled at Malaysian private schools which offer quality education at affordable prices.

PRODUCTIVITY PERFORMANCE

In 2012, the private education services sub-sector experienced a lower productivity growth of 5.8% (2011: 8.3%) amounting to RM67,310 (Figure 4.40). Even if lower than previous years, there is still significant growth in productivity due to the value creation achieved. This is largely attributed the enhancement skills of academic staff through training as well as the hiring of more academically qualified workforce.

Other initiatives contributing to productivity growth include attracting foreign stakeholders to invest in branch campuses of well-known foreign universities. Another is the 'transnationalisation' strategy aimed at opening up Malaysian university branch campuses overseas. These efforts have helped to create more business opportunities which has supported the productivity performance of private education services.

Figure 4.40: Productivity Level of the Private Education Services, 2010-2012

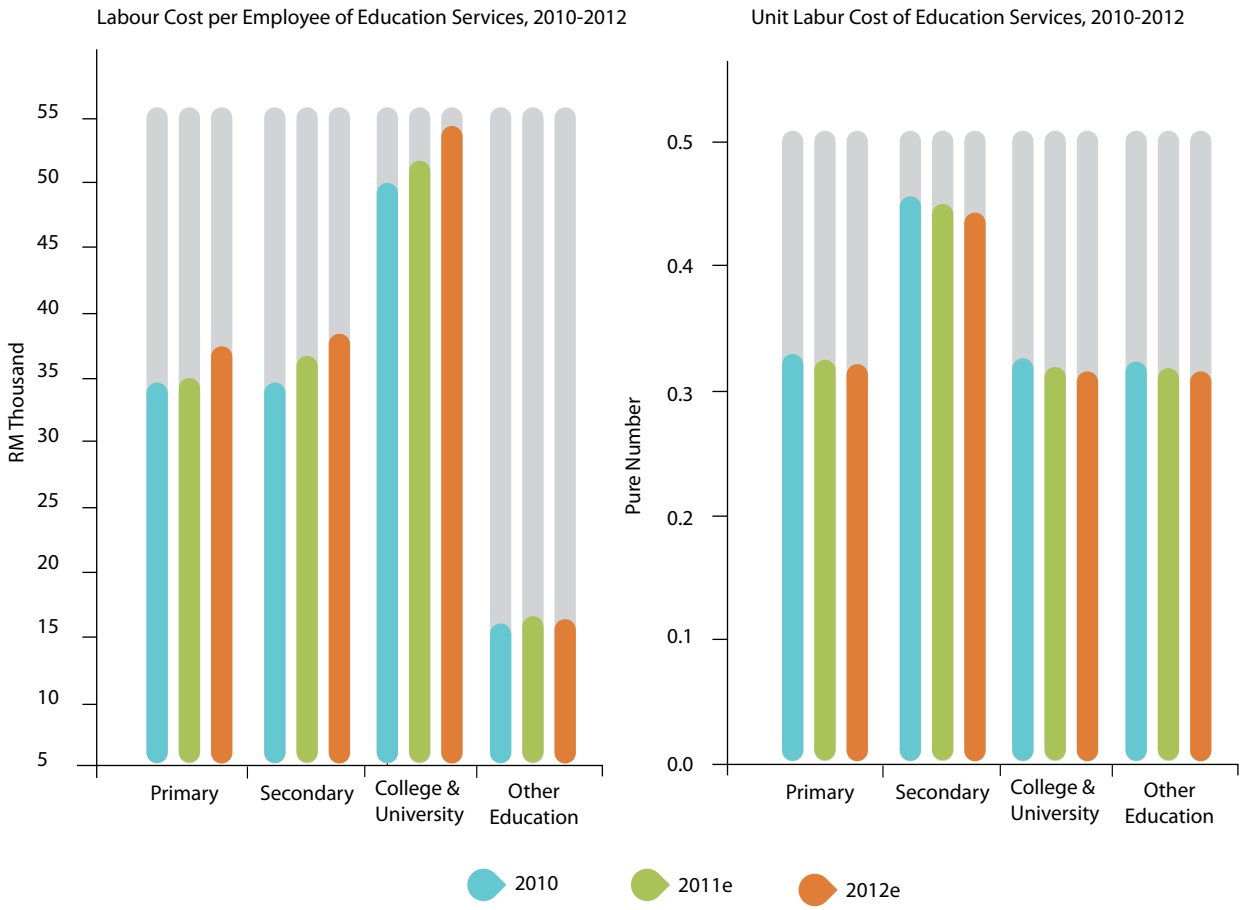


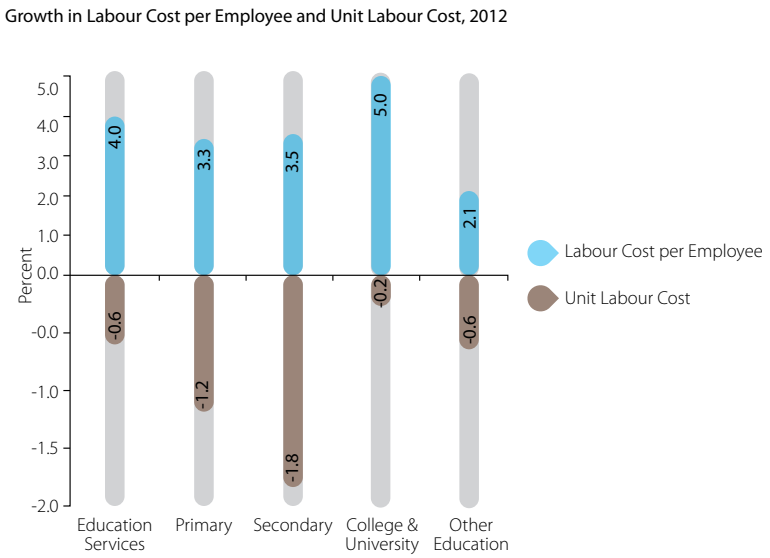
Computed from: - Economic Census 2011, Education Services, Department of Statistics, Malaysia

Note: e - Estimate

The education services maintained its labour cost competitiveness as reflected by a productivity growth of 5.8%, higher than wage rate growth at 4% and with a decline in unit labour cost of 0.6% in 2012 (Figure 4.41). Among the education services segments, private secondary education registered the highest labour competitiveness. The reason for this is the Government's assistance of a number of local private secondary schools. The liberalisation of international schools and the presence of tax incentives has also contributed to private education's labour cost competitiveness.

Figure 4.41: Labour Cost Competitiveness of Private Education Services, 2010-2012



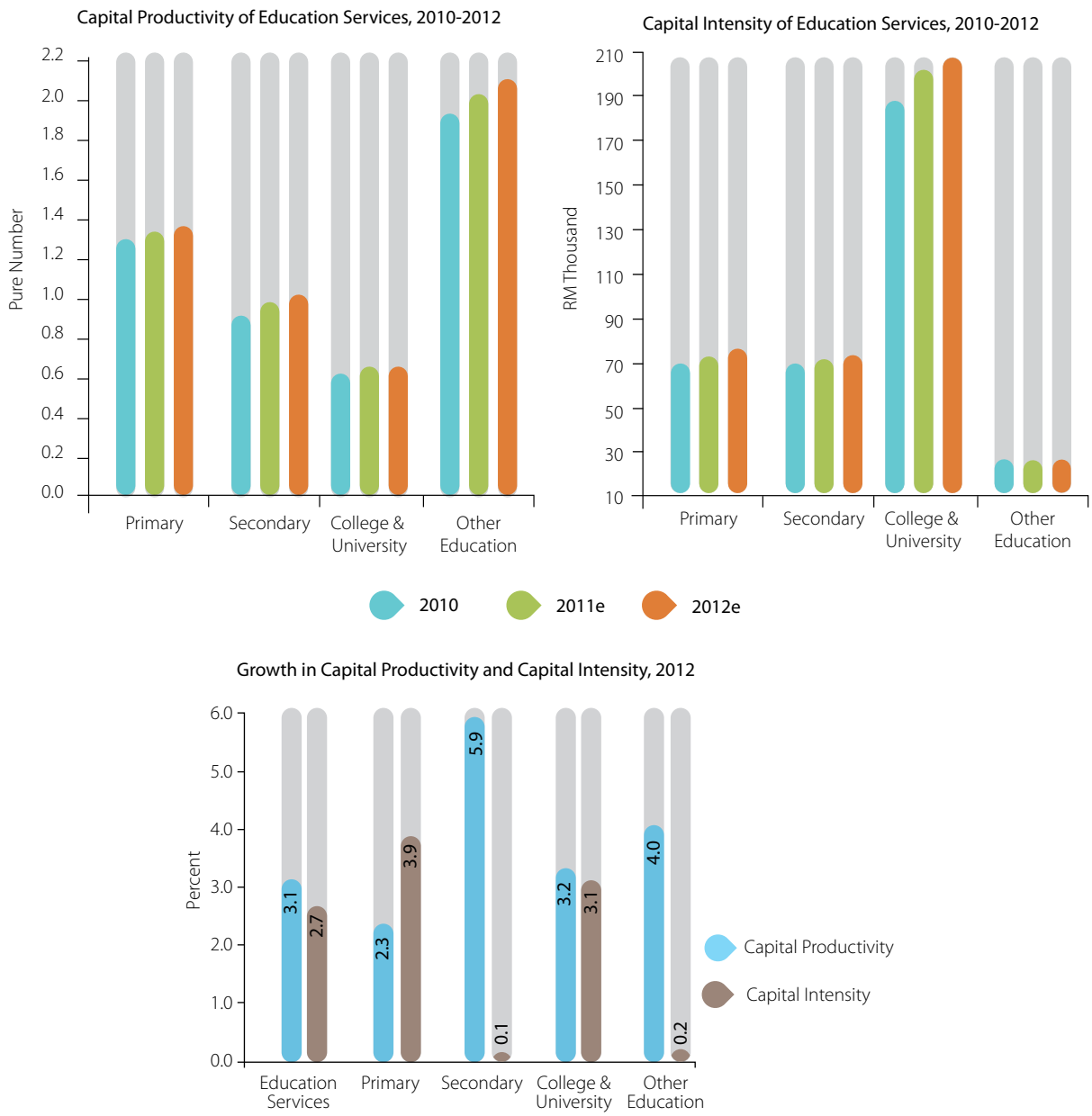


Computed from: - Economic Census 2011, Education Services, Department of Statistics, Malaysia

Note: e - Estimate

Private education services recorded a 3.1% growth in capital productivity while its capital intensity grew by 2.7% to register RM89,340 in 2012 (Figure 4.42). Private secondary education recorded the highest capital productivity growth of 5.9% followed by other education (4%). This was due to the expansion of more international secondary to cater to the needs of expatriates and local secondary private schools to cater to the Malaysian upper-middle income group.

Figure 4.42: Capital Productivity and Capital Intensity of Private Education Services, 2010-2012



Computed from: - Economic Census 2011, Education Services, Department of Statistics, Malaysi
Note: e - Estimate

ISSUES AND CHALLENGES

A critical factor in deciding choice of tertiary education institution is the accreditation obtained by the university/college in question. Currently, private education institutions in Malaysia need to meet certain quality standards in order to be endorsed by the Malaysian Qualification Agency (MQA) which is responsible for quality assurance of higher education institutions for both the public and private sectors. However, a good number of the private education institutions find it difficult to meet the requirements imposed by the MQA because of limited resources and facilities.

As a strategy to improve corporate branding and reputation, many private education institutions in Malaysia are seeking to enhance their image by paying a lot of attention to campus ambience as a form of branding. As a result of this, a number of universities have started giving weight to landscape and environment, in addition to architectural structure of the campus buildings to appeal to potential students.

The shortage of specialised lecturers for certain fields at tertiary level has caused students with excellent grades to be denied the opportunity of pursuing certain critical courses (such as medicine, pharmacy, health science, aeronautical engineering, and forensics). The education industry in Malaysia is still facing a shortage of specialist teachers at the secondary school level, particularly in certain critical subjects/fields such as Science, Technology, Engineering and Mathematics (STEM).

The current trend of delivering courses online, by capitalising ICT infrastructure and capabilities, certainly has it merits. However, the process of education does involve coaching and the nurturing of skills and attitudes on the part of teachers which would require a close relationship between them and students. Certain quarters have also questioned the quality of the education or training delivered online.

HEALTHCARE SERVICES

OVERVIEW

The healthcare services sub-sector comprises both public and the private segments. Public healthcare is responsible for 70% of healthcare services in Malaysia while the remaining 30% is supplied by private healthcare institutions. Public healthcare is heavily subsidised by the Government and requires patients to pay only a nominal fee for the medical care. Private healthcare has to be paid by the patients themselves, their employers or their insurance companies.

Private healthcare services comprises private hospitals, maternity homes, specialised medical service and dental services. Private hospitals and maternity homes are the largest healthcare providers followed by medical and dental services. In 2012, private healthcare services nationwide is provided by 201 hospitals, 20 maternity homes, 3,825 general medical services and 658 specialised medical services.

Public hospitals or public healthcare centres are still the preferred healthcare choice because of their low charges and better facilities. Among these are a number of new hospitals and the 1Malaysia Clinics. In total, there are 138 Government hospitals, 985 health clinics, 1,864 community clinics and 109 "1Malaysia Clinics".

Healthcare services has been identified as one of the 12 NKEAs and the three services which have been identified as the key drivers of growth are medical services, pharmaceutical and medical technology products. Healthcare services is estimated to contribute RM35.3 billion in incremental GNI between 2010 and 2020.

There are six EPPs which have been identified as the key engines of growth namely, private health insurance for foreign workers, improvements in clinical research, the export of generic medicines, health

tourism, telemedicine, bio-science, and healthcare services for senior citizens apart from the manufacture of medical technology products such as in-vitro diagnostics and related equipment.

Healthcare services experienced rapid changes due to demographic factors and a rising demand for better quality and more efficient healthcare services. The average life expectancy in Malaysia has increased to over 73 years, higher than the average age for a developing country, while infant mortality rate has decreased significantly from more than 10 per 1,000 of life births at the beginning of 1990 to less than 6 in 2012.

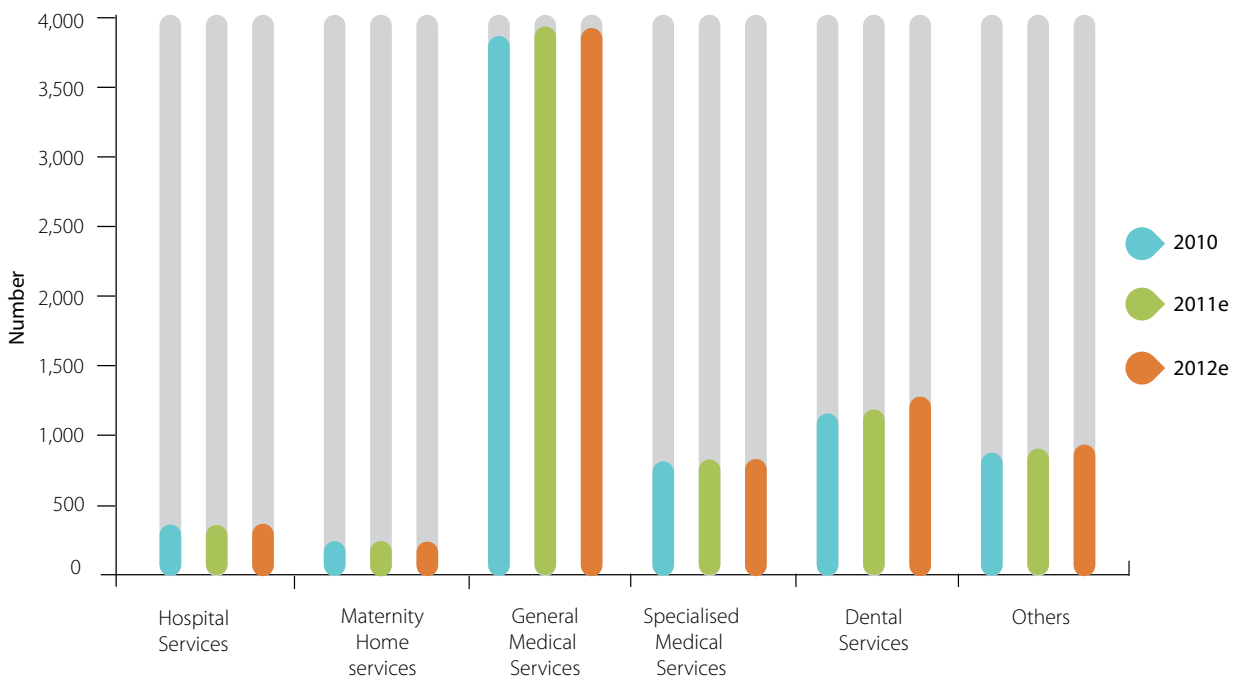
Healthcare services has experienced improvements in productivity, added value, employment, capital productivity apart from a declining unit labour cost. However, there have been obstacles in several areas, namely, intense competition between establishments and rising wage costs.

Health tourism has been identified to be one of the fastest growing segments with a growth of over 25% per year since 2008. In recent years, more than 400,000 foreigners have sought medical treatment in Malaysia, contributing more than RM350 millions in revenue. There is an increasing number of health tourists seeking specialist medical treatments and they come from Indonesia, Singapore and the Middle East. This is due to the lower medical care costs as well as various value added services. In addition, Malaysia's status as a Muslim country has attracted a niche clientele, particularly from the Middle East.

In addition, there has also been an increasing number of medical tourists from Australia and Japan seeking treatments such as cardiology, cosmetics, ophthalmology, dentistry, diagnostic services (MRI and CT scans) and orthopaedics.

INDUSTRY SNAPSHOT

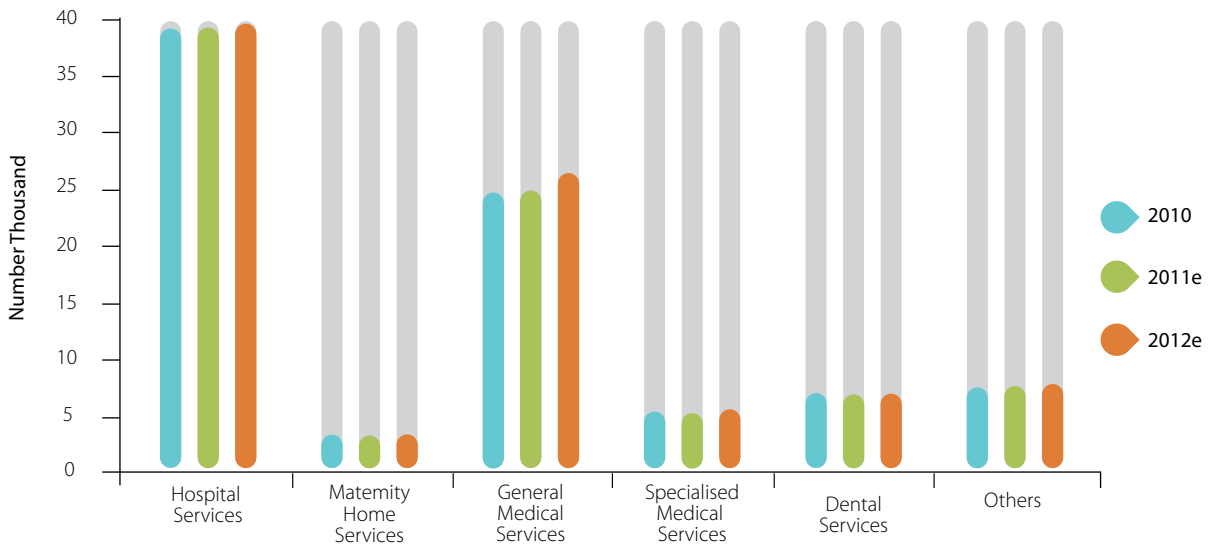
Figure 4.43: Number of Establishments in the Healthcare Services, 2010-2012



Computed from: - Economic Census 2011, Health and Social Work Services, Department of Statistics, Malaysia
Note: e - Estimate

- The number of establishments in healthcare services increased from 6,739 in 2010 to 6,858 in 2012 with a growth of 0.9%.
- In 2012, there were 3,835 general medical services establishments, the largest number, followed by dental services with 1,158 establishments.
- The higher demand for medical and dental services was the result of several factors such as increase in disposable income among the middle class population, better awareness of the need for medical and dental care and increased purchased of healthcare insurance especially among the younger population.
- The rise in chronic or lifestyle diseases such as diabetes, cardiovascular disease and cancer has led to higher demand for general and specialised medical care.

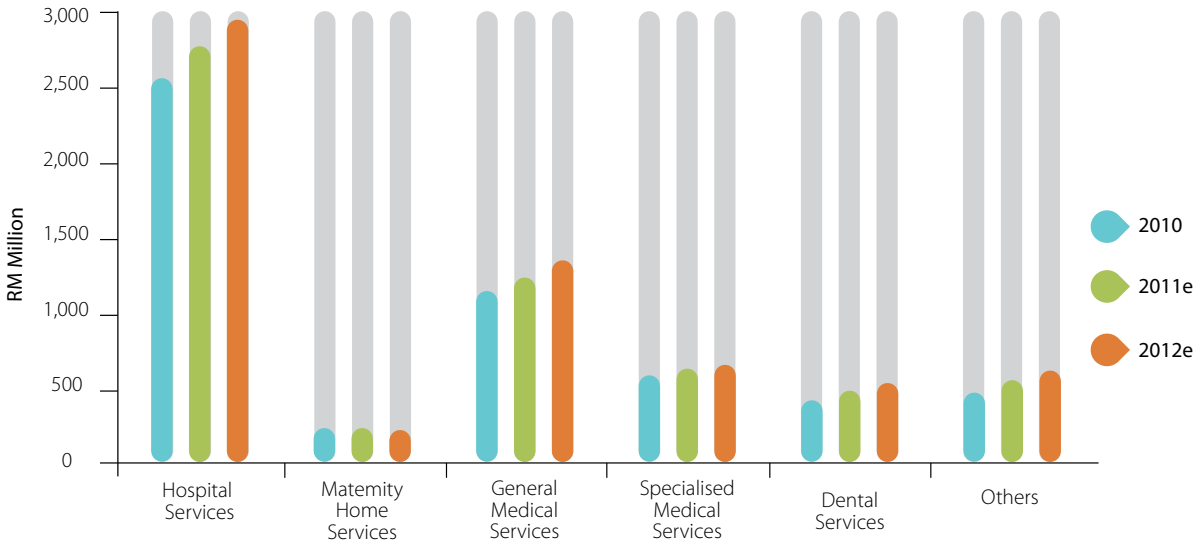
Figure 4.44: Employment in the Healthcare Services, 2010-2012



Computed from: - Economic Census 2011, Health and Social Work Services, Department of Statistics, Malaysia
Note: e - Estimate

- In 2012, healthcare services registered an employment growth of 1.6% with a total of 79,691 employees.
- Hospital services was the main contributor of employment.
- The highest employment growth was recorded by maternity home services (2%), followed by general medical services (1.9%), and dental services (1.8%).

Figure 4.45: Added Value Level of the Healthcare Services, 2010-2012



Computed from: - Economic Census 2011, Health and Social Work Services, Department of Statistics, Malaysia
Note: e - Estimate

- In 2012, healthcare services achieved a growth of 6.8% with RM5.3 billion in added value.
- Over the period 2010-2012, specialised medical services recorded the highest growth at 8.4%, followed by hospital services at 7.9%.
- Higher growth in added value of specialised medical services and hospital services was due to the rising number of the middle class population as well as a rising aging population.
- The affluent middle class are generally well educated, have higher incomes and tend to patronise health centres with more comfortable accommodation and more personalised services.
- In addition, the relatively lower cost of medical and dental care in Malaysia has also attracted a high clientele foreign patients.

PRODUCTIVITY PERFORMANCE

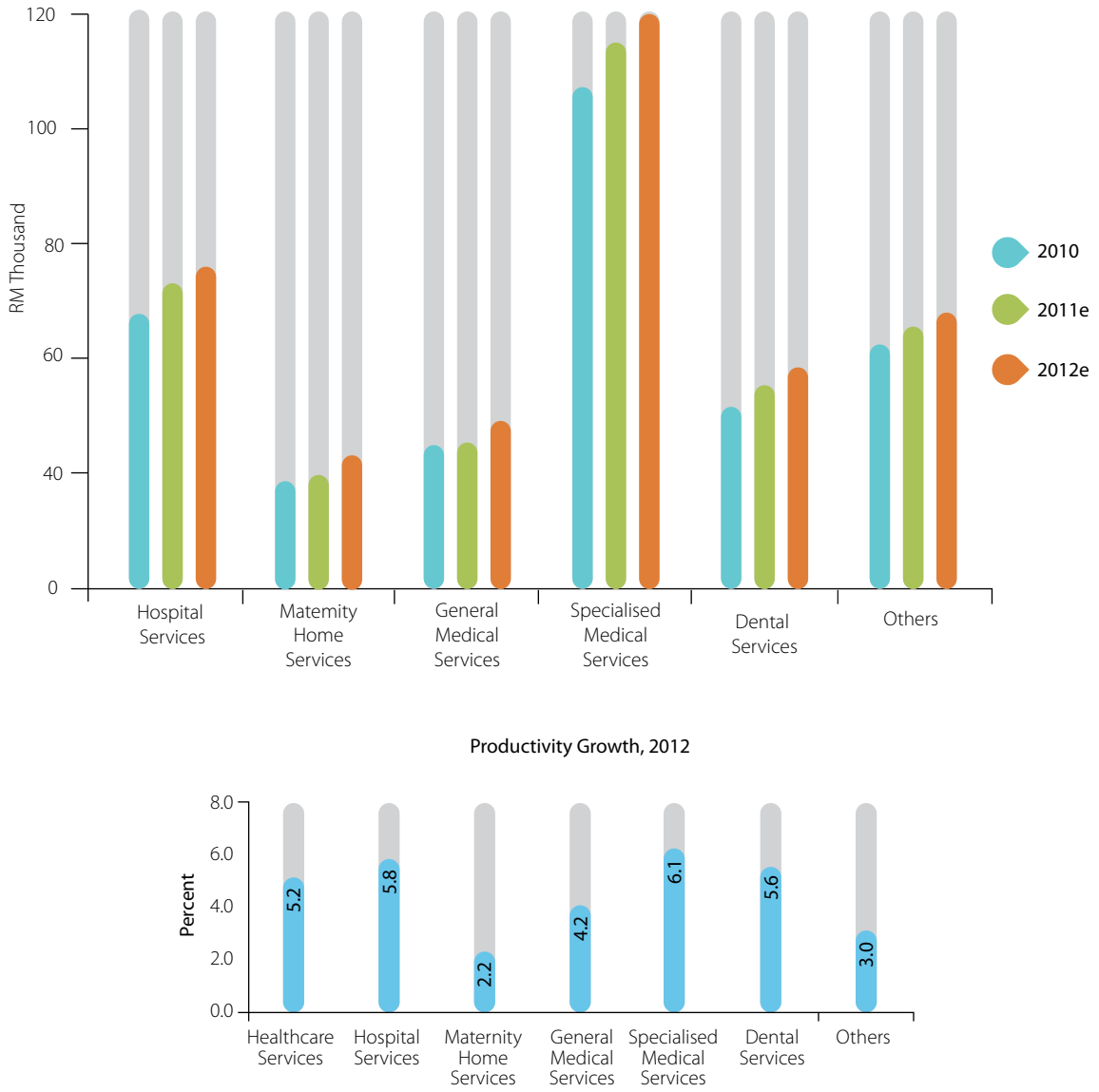
Healthcare services has been identified as one the key transformation areas for economic growth under the ETP. Healthcare services is continuing to expand, fuelled by an increasingly aging population, growing consumer awareness of the need for wellness programmes, better access to the services, increasing affluence and increased incidence of chronic diseases.

In addition, the relatively lower cost of healthcare services in Malaysia has seen an increasing number of foreign tourists seeking medical and dental care in this country. The increasing demand for healthcare services has created a huge opportunity for expansion in the public as well as private healthcare services.

Private healthcare services registered a productivity growth of 5.2% valued at RM66,556 in 2012 from that of RM63,277 in 2011. In 2012, specialised medical services recorded the highest productivity growth (6.1%), followed by hospital services (5.8%) (Figure 4.46). The growing demand for private healthcare services from domestic as well as foreign consumers has been the main driver of growth. The rise in domestic demand is the result of the higher purchasing power of the middle class, improved awareness of medical

care, increased life expectancy, increased ownership of healthcare insurance policies, and people's unwillingness to be placed on long waiting lists when seeking treatment at Government hospitals. The implementation of the six EPPs has also contributed to productivity growth of private healthcare services.

Figure 4.46: Productivity Level of Healthcare Services, 2010-2012

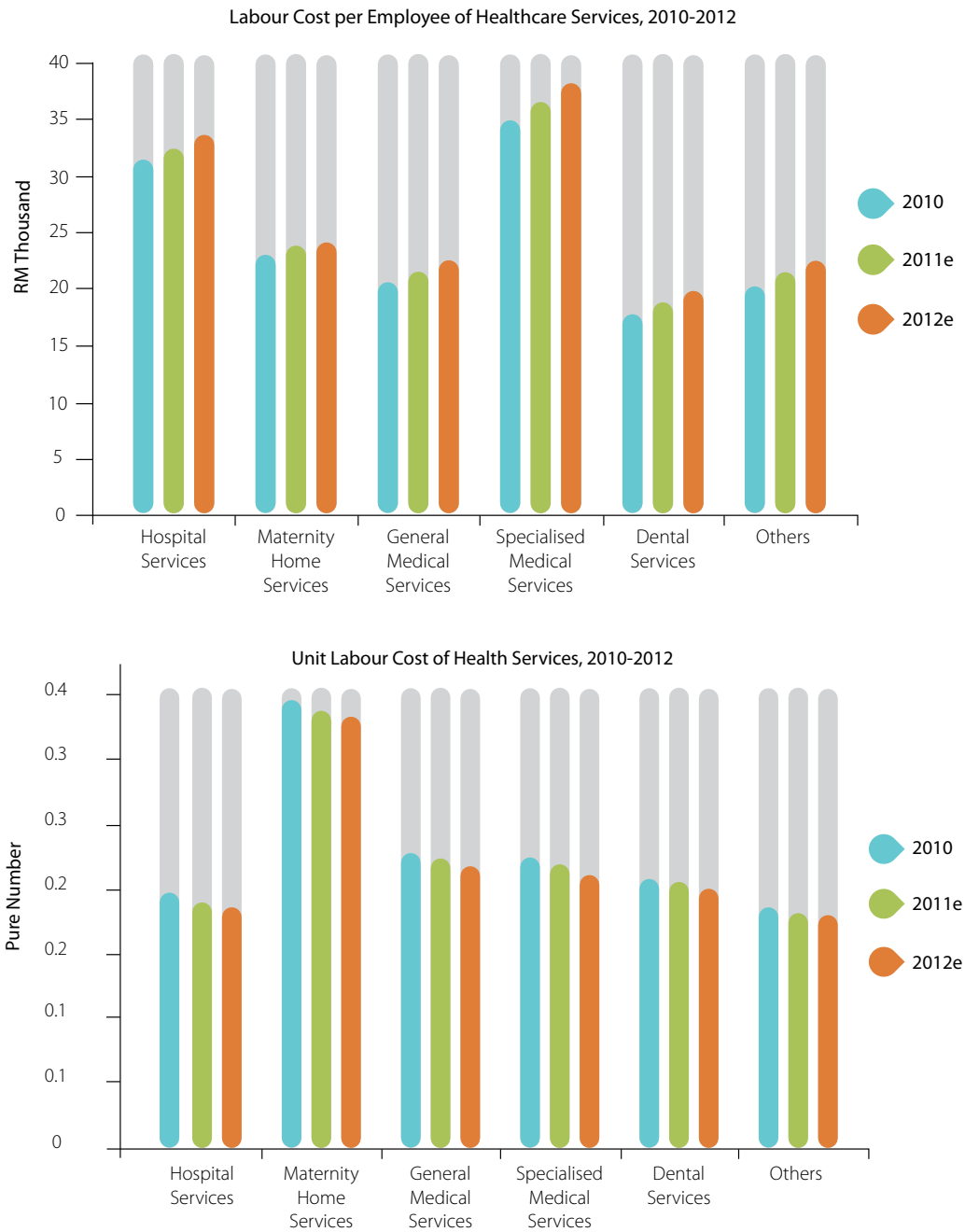


Computed from: - Economic Census 2011, Health and Social Work Services, Department of Statistics, Malaysia
Note: e - Estimate

In 2012, healthcare services registered an improvement in labour cost competitiveness. This was evident by a productivity growth of 5.2% which was higher than growth in labour cost per employee at 3.5% and complemented by a decline of 1.6% in unit labour cost (Figure 4.47). The decline in unit labour cost was due to improved efficiency which was the result of the adoption of the latest technologies in patient care and patient management as well as cost improvement through economies of scale that enhanced service delivery and business processes.

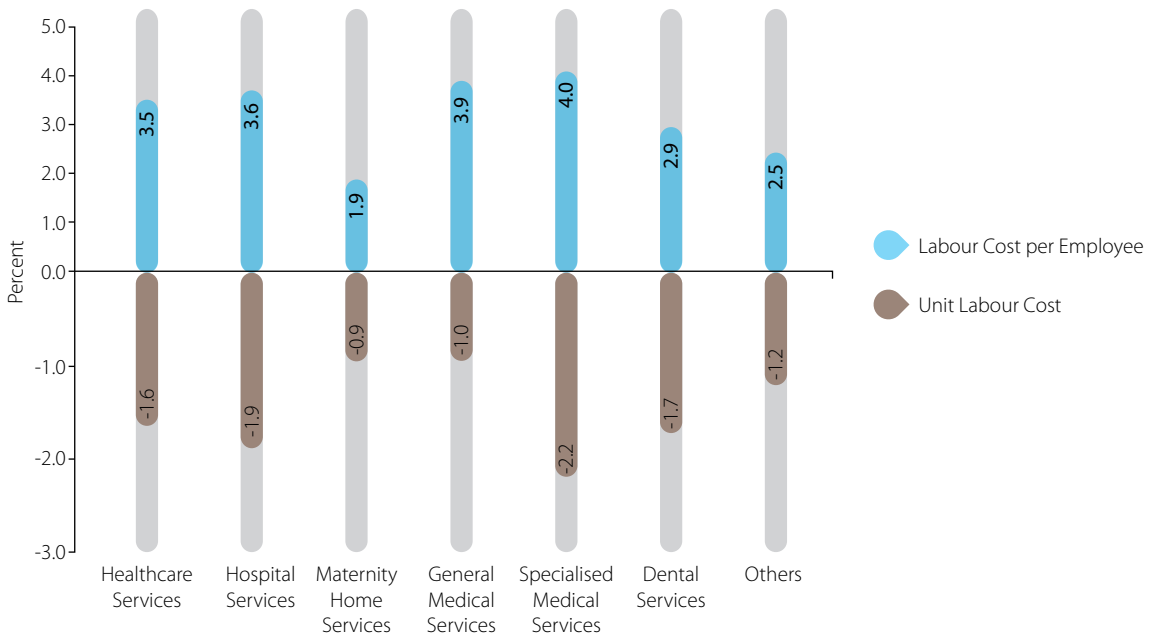
Labour management is a challenging issue as labour cost represents almost 35% of operational costs. Hence, attracting and retaining the right personnel is critical. Among the initiatives taken by the industry towards this end are instituting competitive pay schemes and remuneration, profit sharing schemes, empowerment in decision making and the promise of appropriate long-term career planning.

Figure 4.47: Labour Cost Competitiveness of Healthcare Services, 2010-2012



Computed from: - Economic Census 2011, Health and Social Work Services, Department of Statistics, Malaysia
Note: e - Estimate

Growth in Labour Cost per Employee and Unit Labour Cost, 2012



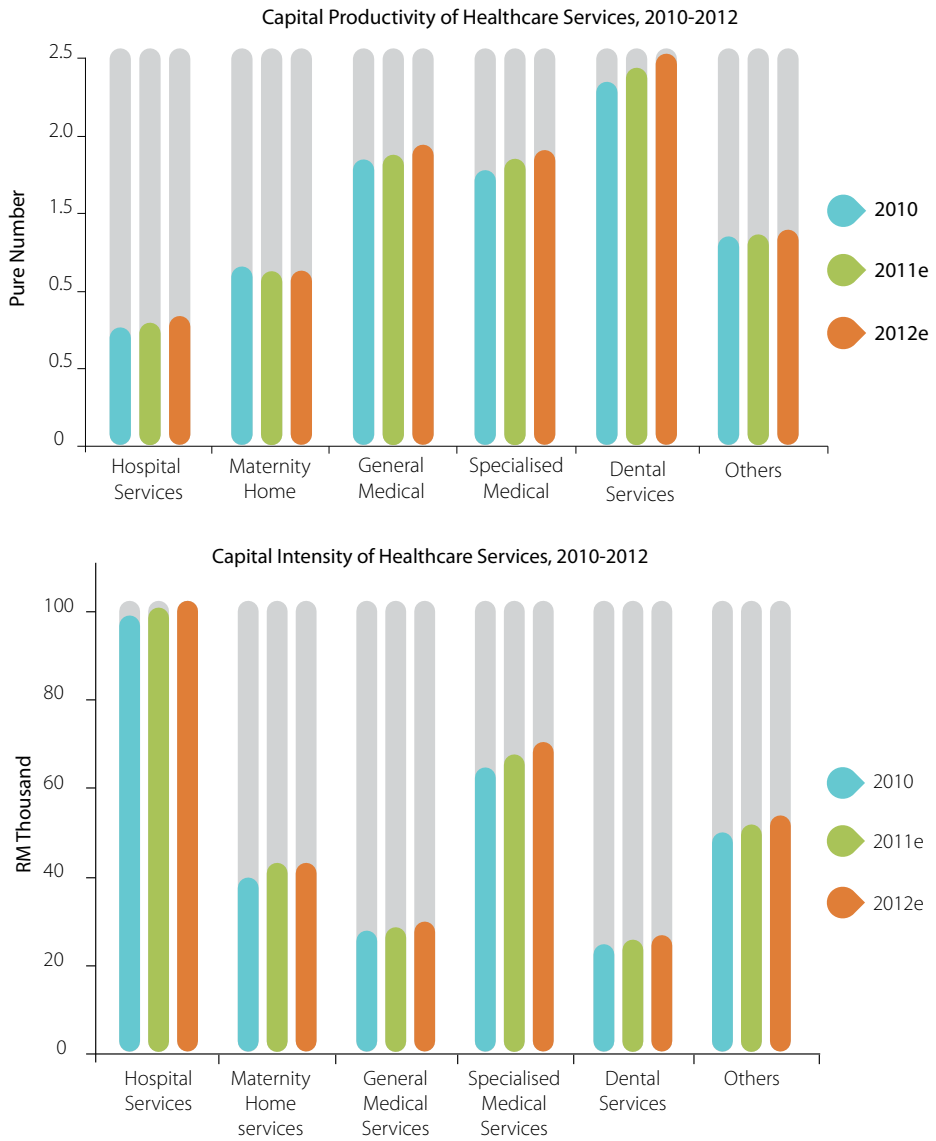
Computed from: - Economic Census 2011, Health and Social Work Services, Department of Statistics, Malaysia
Note: e - Estimate

For the period 2010-2012, healthcare services recorded a 3.1% growth in capital productivity. This was due to very high capital investment in the most advanced medical equipment and machines. Healthcare services is very competitive as it requires huge capital investment, but has a very low profit margin which is less than 10%.

In order to sustain their operations, private healthcare providers have to continuously innovate to improve operational efficiency through automation in patient record management, effective deployment of staff, training of staff, bulk purchases of medical supplies and outsourcing of non-core services such as laundry and waste management.

In 2012, hospital services registered the highest level of capital intensity recorded at 3.9% followed by specialised medical services at 2.9% (Figure 4.48) In addition, frequent changes in technology have led to a shorter useful life of technology acquired, creating additional financial pressure on hospital management.

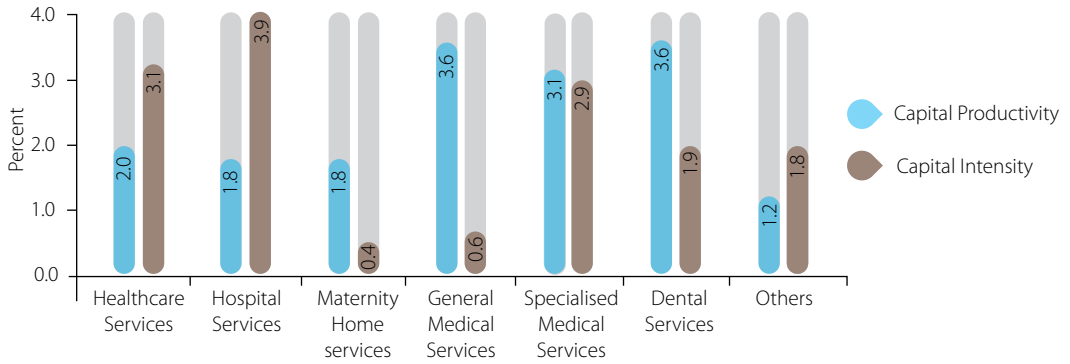
Figure 4.48: Capital Productivity and Capital Intensity of Healthcare Services, 2010-2012



Computed from: - Economic Census 2011, Health and Social Work Services, Department of Statistics, Malaysia

Note: e - Estimate

Growth in Capital Productivity and Capital Intensity, 2012



ISSUES AND CHALLENGES

Malaysia is also positioning itself as a regional hub for herbal and traditional medicine as well as cosmetic surgery and beauty care related services. Hence the direction of future growth of healthcare services should take serious account of these three areas.

Medical tourism has opened up new investment opportunities in the hospitality industry whereby hotels are built near hospitals to cater for the patient's family members. It is recognised that to advance in health tourism services, smart partnerships with major airlines, travel and tour agencies and hotels with the aim of offering attractive health tourism packages is the way forward. The packages could include the cost of travel, hotel accommodation and medical treatment. In addition, recreational tour packages can be offered as one of the options.

Attracting more medical tourists would not be a problem for Malaysia as it has an attractive currency exchange rate and is a country where English is widely spoken. The Government is supporting the promotion of health tourism by providing tax incentives for hospitals some of which have set up International Patients Units as well as other incentives such as visa on arrival and extended visas.

Private healthcare providers are continuously improving their services in order to offer high quality care and high value health experiences for their customers. They do this by upgrading service capacity and quality through the construction of facilities that are equipped with cutting-edge technologies that meet international standards. Standards or accreditation are those set by the Joint Commission International (JCI) and the Malaysian Society for Quality in Health (MSQH). Private healthcare providers also have highly trained consultants and staff.

The Government has also provided several incentives to encourage investment in facilities upgrading including a 100% tax exemption for qualifying capital expenditure incurred within a period of five years for the building of new hospitals or for the expansion, modernisation, or refurbishment of existing hospitals.

Private healthcare providers are also engaged in innovative management practices such as empowering employees to take necessary steps that can enhance customer experience or solve any problems that arise during their visit to the hospital.

The rising life expectancy of Malaysians (an average of 73 years) has seen the Malaysian population becoming an aging society. This opens the way for the establishment of more healthcare establishments for the elderly such as retirement homes or retirement villages. Retirement care services has developed a new way of caring for the elderly which will require investment in improving existing old folks and nursing

homes to enhance patient care management. Other innovative measures include premium wards equipped with exclusive furnishings and facilities to give maximum comfort to patients and family members.

Malaysia's status as a Muslim country has resulted in an increasing demand for healthcare services from foreign Muslim patients coming from Indonesia and Middle Eastern countries.

The higher demand for private healthcare services is due to the increase in disposable income among the middle class population. A better awareness of healthcare has also led to a rise in the purchase of healthcare insurance policies especially among the younger population. To cater to their insurance needs, various types of medical insurance products and services are now offered on the market.

Advancements in ICT have led to improvements in efficiency in service delivery and the management of healthcare services through the use of electronic health records and physician office systems. This is supported by internet services which facilitates wider access to information on diseases or health-related issues in addition to information on services offered by healthcare providers.

Institutions of higher learning are now offering more courses on healthcare services which are complemented by higher student enrolments in these programmes. These programmes have led to the rise of a new breed of nursing professionals who are well trained both academically and professionally.

Another segment of growth is medical health spa services which is mainly targeted at the higher income bracket of customers. Medical spa or wellness centres which offer wellness and preventive healthcare as well as cosmetic procedures provide facilities for total relaxation for stressed executives in addition to rejuvenation for the older clientele. The availability of such high quality care and high value health experiences will enable Malaysia to position itself competitively in this niche industry.

A number of private healthcare providers have also introduced value added services such as waiting lounges for fee paying members, a concept similar to the 'golden lounge' provided for premium airline passengers. While waiting for their appointments and prescriptions, patients can relax in the lounge which is equipped with various facilities including facilities for payment of bills. A drop-off service for elderly patients is also provided. These services can reduce the discomfort and inconvenience of waiting times, a factor which is difficult to control by the providers, and enhance service quality. The provision of such luxuries can result in a multiplier effect when customers refer friends to the centres through word-of-mouth recommendations.

Private healthcare providers are encouraged to obtain accreditation with the Joint Commission International (JCI) to ensure a high level of clinical and service excellence in order to remain competitive. The accreditation will provide brand trust and customer loyalty especially where international patients are concerned.

Chapter 5

Productivity Performance of the Manufacturing Sector

PRODUCTIVITY PERFORMANCE OF THE MANUFACTURING SECTOR

OVERVIEW

The manufacturing sector continued to contribute to the Malaysian economy in 2012, with a GDP growth of 4.8 % amounting to RM186.9 billion. This performance was supported by a productivity growth of 4.5% totalling RM97, 408. In terms of total output, the manufacturing sector recorded RM896.9 billion earnings and made up 24.9% share of GDP. Certainly, this impressive performance will assist Malaysia to become a high income economy by 2020.

Impressive productivity growth of 4.5 % totalling RM97,408

The productivity growth recorded by the manufacturing sector in 2012 reflects higher output generated, with greater profitability through improved efficiency. The ability of the sector to produce more output in the last few years even with the same resources is particularly commendable in view of a highly constrained labour market and a shortage of skilled labour.

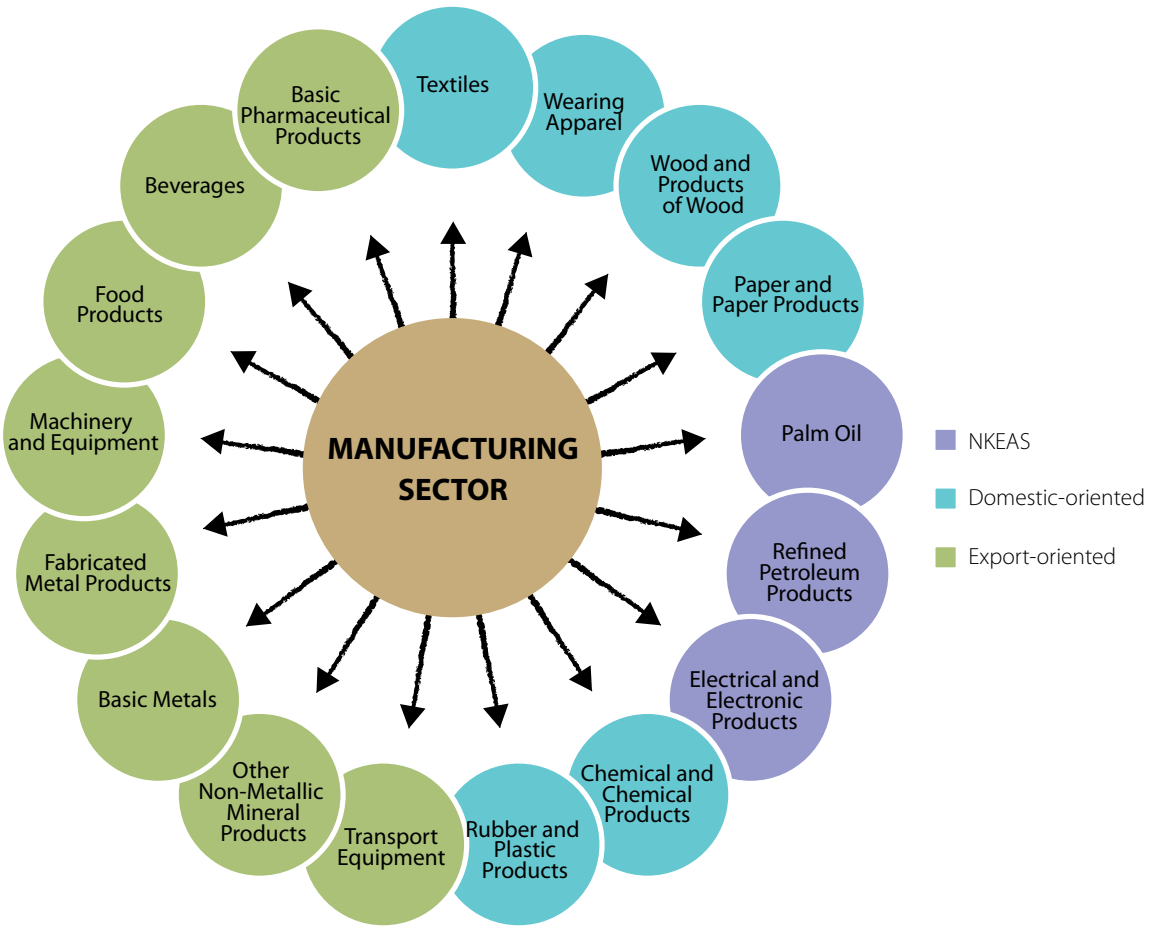
The manufacturing sector employs 2.2 million employees, taking up a 17.5% share of total employment. However, even with a growth of 0.3% in employment in 2012, employment growth in manufacturing has in fact declined from 5.4% in 2011. It is in response to the lower growth, particularly the shortage of skilled labour, that the manufacturing sector is practising job enlargement and job enrichment measures to carry out the same volume of work in production processes.

In 2012, out of a total investment of RM162.4 billion, RM41 billion was allocated to the manufacturing sector. Several manufacturing sub-sectors dominate investment in-flow and these are transport equipment sub-sector (RM7.8 billion), chemicals and chemical products (RM6.4 billion), refined petroleum products (RM6 billion) and electrical and electronics (RM4 billion).

INDUSTRY SNAPSHOT

A short overview of the manufacturing sector for the year 2012 is given below focusing on composition and type of industries as a background to the discussion that follows.

Figure 5.1: Malaysia's Manufacturing Sub-sectors

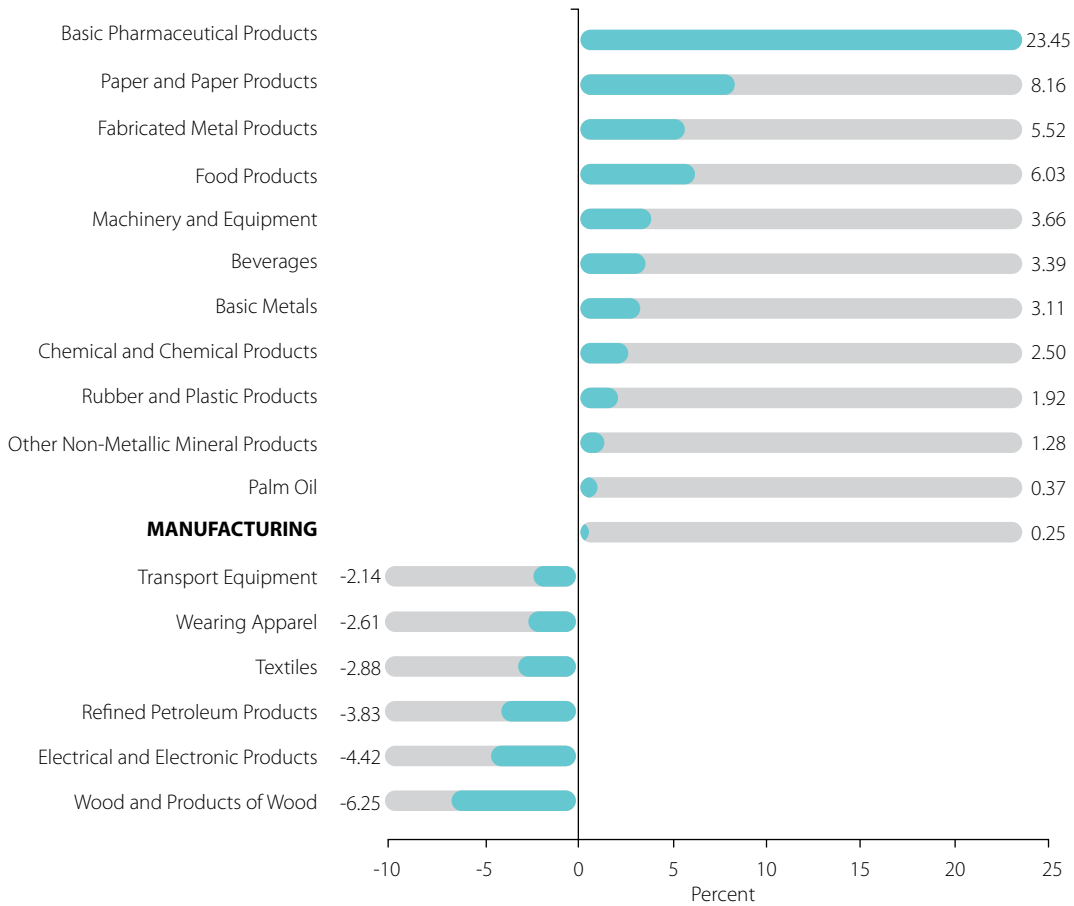


- The manufacturing sector in Malaysia comprises 17 sub-sectors (Figure 5.1). Three of the sub-sectors, namely, refined petroleum products, electrical and electronics, and palm oil products have been identified as NKEAs.

- Manufacturing in Malaysia consists of export-oriented and domestic-oriented industries. Export-oriented industries include electrical and electronic products, chemicals and chemical products, petroleum products, wood and wood products, rubber products, paper products, textiles, and wearing apparel.

- Domestic-oriented industries consist of non-metallic mineral products, fabricated metal products, basic metals, transport equipment, food products, beverages, machinery and equipment, and palm oil.

Figure 5.2: Employment Growth of the Selected Manufacturing Sub-sectors 2012

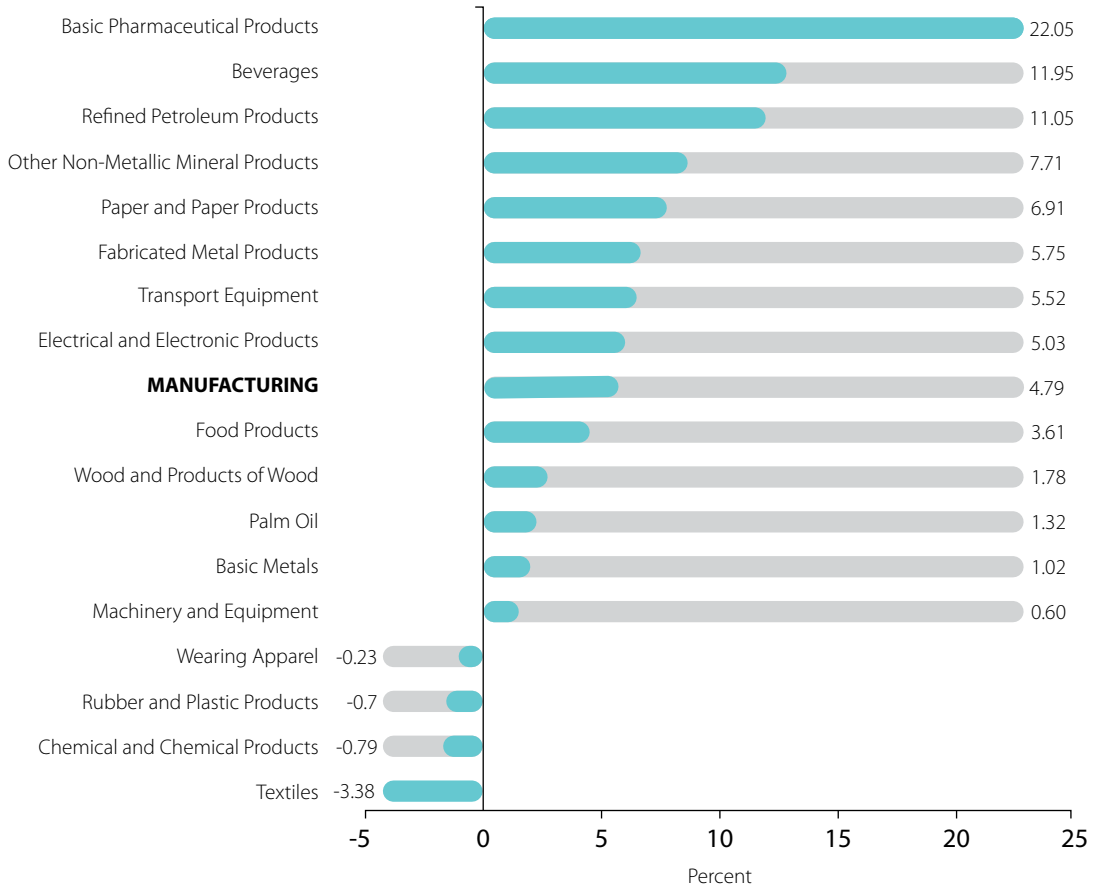


Computed from: 1) Economic Census 2011, Manufacturing Sector, Department of Statistics, Malaysia.
2) Annual Survey of Manufacturing Industries, various years, Department of Statistics, Malaysia.

- In terms of employment growth in the manufacturing sector, a marginal increase of 0.3% was recorded in 2012.
- Employment growth dropped in six manufacturing sub-sectors . Out of the six, two of are NKEAS. The two NKEAS, electrical and electronic products (E&E) dropped by -4.4% and refined petroleum products dropped by -3.8%.
- The E&E sub-sector has been transformed into a high added-value industry, thereby creating a market for highly skilled workers.
- It is to be noted that refined petroleum products sub-sector is a capital intensive industry.
- Both E&E and petroleum continue to invest in new technology to stimulate product development enabling movement up the value chain.

E&E sub-sectors low employment growth contributed by the sector's transformation to high-value added industries demanding high skilled workers

Figure 5.3: Added Value Growth of the Selected Manufacturing Sub-sectors 2012

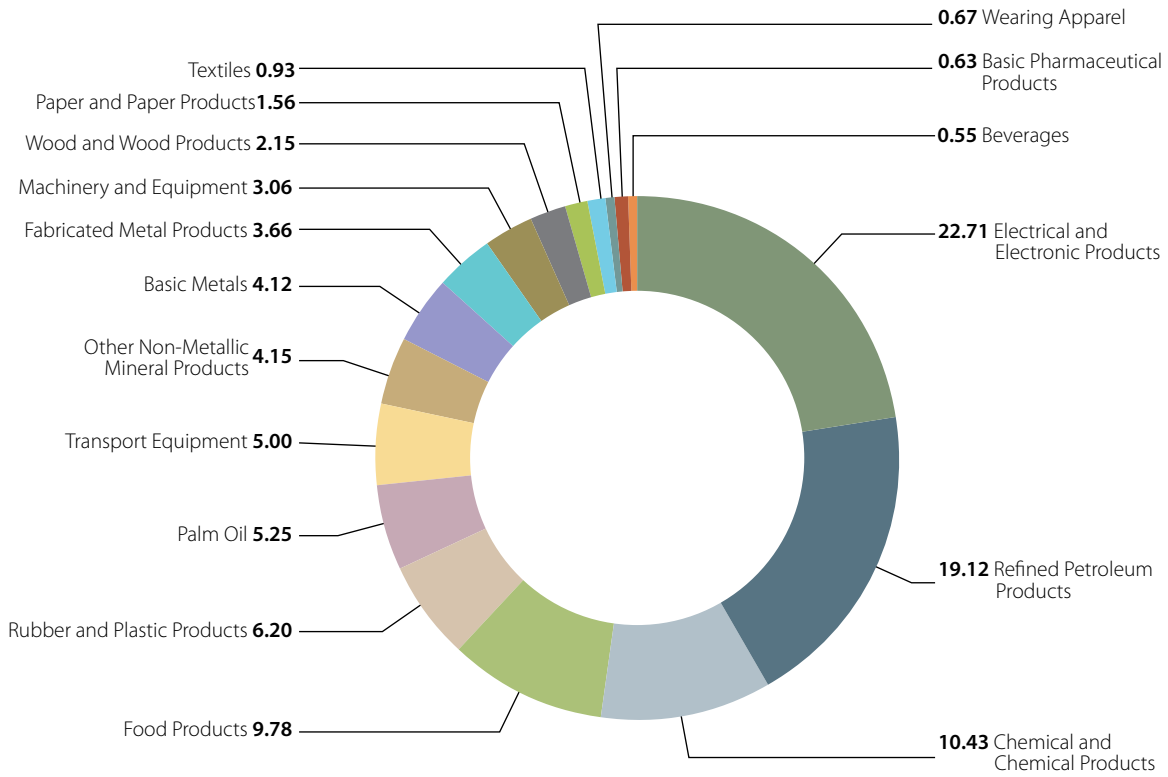


Computed from: 1) Economic Census 2011, Manufacturing Sector, Department of Statistics, Malaysia.
2) Annual Survey of Manufacturing Industries, various years, Department of Statistics, Malaysia.

- With regard to added-value growth, the manufacturing sector recorded added-value growth of 4.8% in 2012. Pharmaceuticals, beverages and refined petroleum products recorded double digit growth.
- Pharmaceuticals benefited from competitive operating costs and availability of skilled workers. Domestic investment dominates this sub-sector which is focused mainly on the production of generic drugs in all dosage forms.

Pharmaceutical, beverages and refined petroleum products recorded double digit growth in added-value

Figure 5.4 Added Value Contribution of the Manufacturing Sub-sectors, 2012



Computed from: 1) Economic Census 2011, Manufacturing Sector, Department of Statistics, Malaysia.
2) Annual Survey of Manufacturing Industries, various years, Department of Statistics, Malaysia.

- In terms of value-added contribution in the manufacturing sector, sub-sectors registering double digit growth are E&E products, refined petroleum products and chemical and chemicals products and these are export-oriented.

- The high degree of contribution of the E&E sub-sector was due to increased demand for exports as well as increased domestic demand.

- Similarly, refined petroleum products recorded strong added-value contribution due to extensive investment and a strong domestic demand for transportation-related products.

PRODUCTIVITY PERFORMANCE

The manufacturing sector continues to drive productivity growth of the country. Foreign and domestic investors continue to invest in new growth areas of manufacturing and in high added-value industries. This investment amounted to RM41 billion in 2012.

The two sub-sectors in the manufacturing sector are E&E and refined petroleum products remained the leading sub-sectors in terms of added-value contribution and also lead in productivity growth in 2012. In particular, refined petroleum products have the highest productivity level of RM6,004,016 (Table 5.1).

Other than the above sub-sectors, refined petroleum products, E&E, wood and wood products, beverages, transport equipment, and non-metallic mineral products recorded a productivity growth (from 6.4% to 15.5%) above that of the manufacturing sector as a whole (4.5%). The favourable performance was due to better usage of labour and more efficient management of capital and labour. The double-digit growth of refined petroleum as a manufactured product for export, valued at RM 51.4 billion in 2012, contributed to this high growth in productivity.

Of the three NKEAs (petroleum products, E&E and palm oil), palm oil recorded a smaller productivity growth (1%) in 2012. This was mainly due to a fall in price and a smaller percentage (13.3%). That notwithstanding, the productivity level of the palm oil industry remained high at RM185,183, which is considerably higher than the productivity level of the manufacturing sector as a whole at RM97,048.

High productivity growth in selected manufacturing sub-sectors is due to initiatives taken by various well thought initiatives which include switching to labour savings equipment and introducing measures in management towards leaner organisation

Table 5.1: Productivity Level for Selected Manufacturing Sub-sectors, 2011 & 2012

	2011 (RM '000)	2012 (RM '000)
MANUFACTURING	**92.8**	**97.1**
Refined Petroleum Products	5,199.7	6,004
Chemical and Chemical Products	235.1	227.5
Palm Oil	183.4	185.2
Transport Equipment	148.9	159.2
Electrical & Electronic Products	91.1	100.1
Basic Metals	102	99.9
Basic Pharmaceutical Products	85.9	84.9
Food Products	84.8	83.2
Non- Metallic Mineral Products	83.7	88.9
Beverages	64.9	70.2
Machinery and Equipment	64.4	62.5
Textiles	55.6	55.3
Fabricated Metal Products	54.9	54.8
Rubber and Plastic Products	53.8	52.5
Paper and Paper Products	44.6	44.1
Wood and Wood Products	35.6	38.8
Wearing Apparel	25.1	25.7

Computed from: 1) Economic Census 2011, Manufacturing Sector, Department of Statistics, Malaysia.
2) Annual Survey of Manufacturing Industries, various years, Department of Statistics, Malaysia.

Figure 5.5: Productivity Growth of the Selected Manufacturing Sub-sectors 2011-2012

Computed from: 1) Economic Census 2011, Manufacturing Sector, Department of Statistics, Malaysia.
2) Annual Survey of Manufacturing Industries, various years, Department of Statistics, Malaysia.

Labour remuneration in the manufacturing sector, as indicated by labour cost per employee, increased by 5.5% in 2012 compared to a contraction of 1.3% in 2011. Most of the manufacturing sub-sectors experienced an increase in labour remuneration, inspite of lower productivity growth. Sub-sectors which experienced higher labour remuneration, above that of the manufacturing sector as a whole, were refined petroleum products, wood and wood products, E&E, and non-metallic mineral products (Figure 5.5).

In 2012, the manufacturing sector experienced a decline in labour cost competitiveness. This was reflected in the productivity growth of 4.5% which was lower than the 5.5% growth in labour cost per employee and

a minimal growth of 0.8% in unit labour cost. On the whole, majority of the manufacturing sub-sectors recorded a decline in labour cost competitiveness, among them are refined petroleum products, E&E, wood products and palm oil. Uncertainties in the global market and the fact that these sub-sectors are mainly export-oriented further challenge labour cost competitiveness and therefore it is recommended that manufacturers take pro-active measures to manage resources more effectively and efficiently.

Figure 5.6 Labour Cost per Employee Growth of the Selected Manufacturing Sub-sectors, 2011-2012

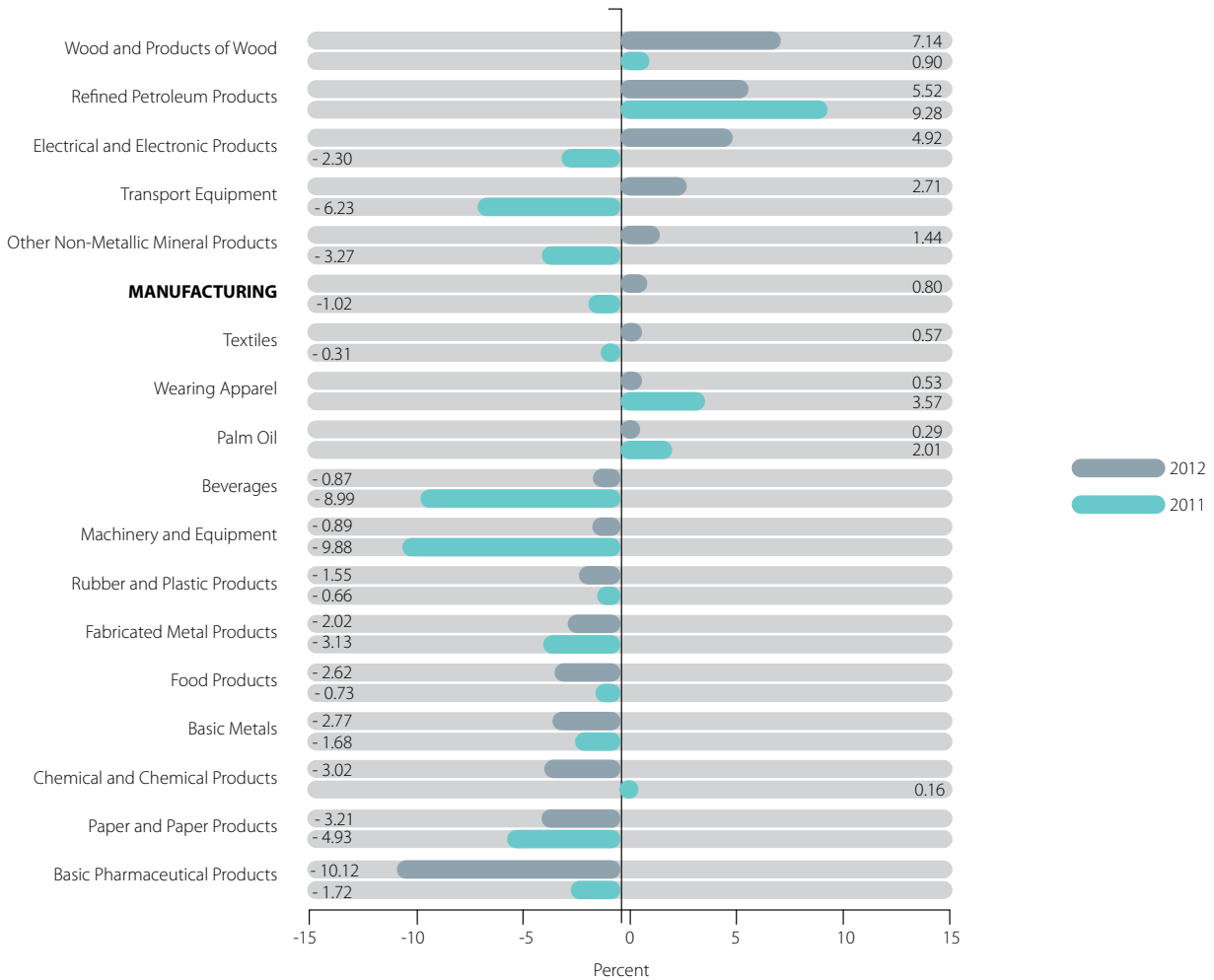
Computed from: 1) Economic Census 2011, Manufacturing Sector, Department of Statistics, Malaysia.
2) Annual Survey of Manufacturing Industries, various years, Department of Statistics, Malaysia.

Figure 5.7 Unit Labour Cost Growth of the Selected Manufacturing Sub-sectors, 2011-2012

Computed from: 1) Economic Census 2011, Manufacturing Sector, Department of Statistics, Malaysia.
2) Annual Survey of Manufacturing Industries, various years, Department of Statistics, Malaysia.

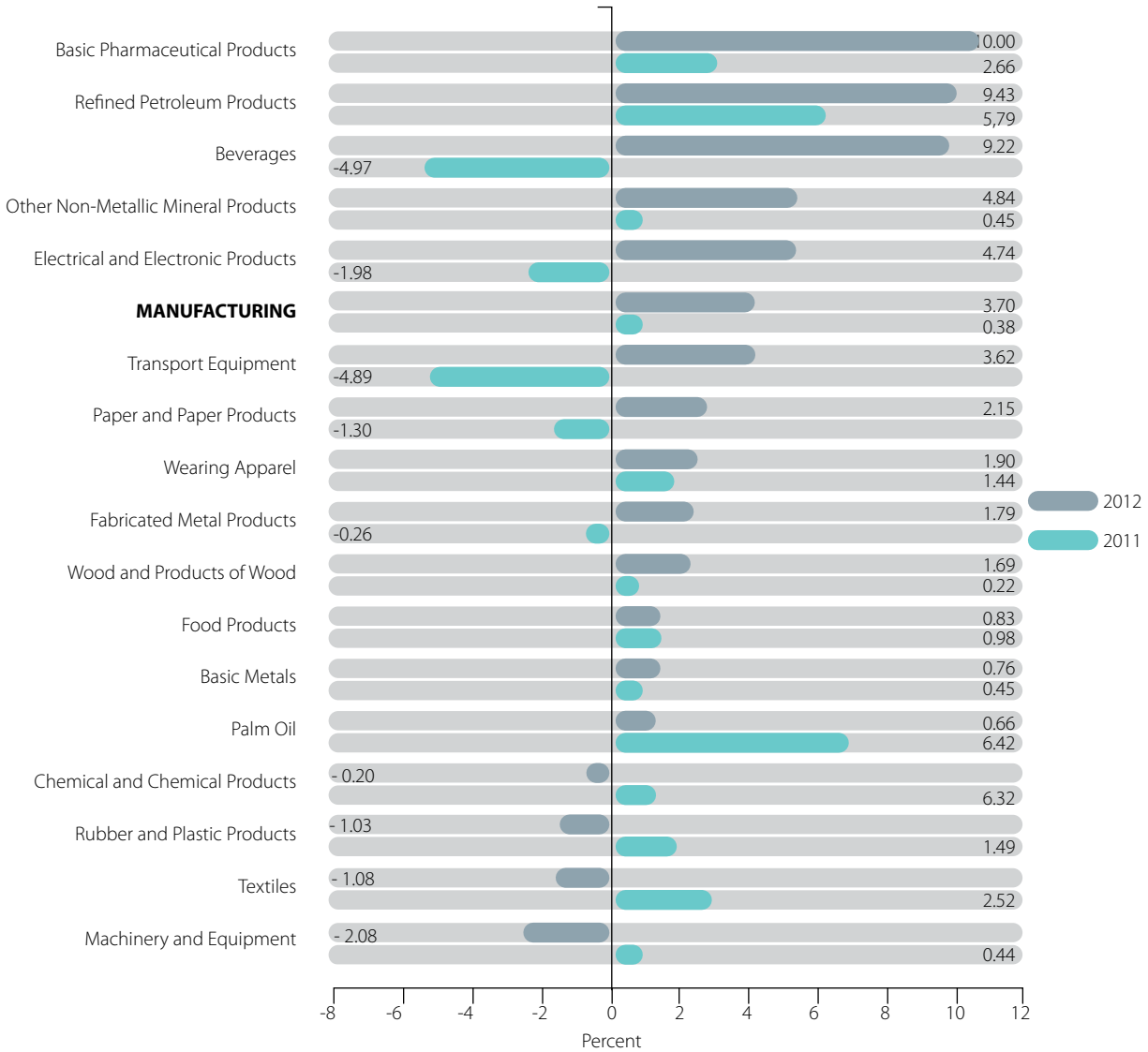
However, three sub-sectors are the exception, recording increase in labour cost competitiveness, namely, beverages, non-metallic mineral products and transport equipment. These three were able to strengthen their labour cost competitiveness as reflected in their higher productivity growth as compared to workers' remuneration and this has resulted in a decline in unit labour cost. Of the three, the beverages and transport equipment sub-sectors were able to achieve favourable labour cost competitiveness due to the adoption of the latest technologies, increased automation processes, and efficient management of labour and material.Higher investment in capital was recorded in sub-sectors such as wood products, refined petroleum products, E&E products, transport equipment and other non-metallic mineral products. This in line with the general trend in manufacturing that is seen to be more capital intensive with high added-value.

Figure 5.8: Capital Intensity Growth of the Selected Manufacturing Sub-sectors, 2011-2012



Computed from: 1) Economic Census 2011, Manufacturing Sector, Department of Statistics, Malaysia.
2) Annual Survey of Manufacturing Industries, various years, Department of Statistics, Malaysia.

Figure 5.9: Capital Productivity Growth of the Selected Manufacturing Sub-sectors, 2011-2012



Computed from: 1) Economic Census 2011, Manufacturing Sector, Department of Statistics, Malaysia.
2) Annual Survey of Manufacturing Industries, various years, Department of Statistics, Malaysia.

Looking at capital productivity growth, manufacturing registered a growth of 3.7% in 2012. Most sub-sectors increased output in response to increased demand for their products while utilising the same machinery, equipment and technology. This was particularly apparent in the domestic-oriented manufacturing sub-sectors, namely, pharmaceutical products and beverages.

STRATEGY AND OUTLOOK

The manufacturing sector is expected to continue to adopt more capital intensive and high technology operations. Manufacturing is expected to register a productivity growth of 3% in 2013, and an output growth of 4.9%. The main sub-sectors contributing to the growth is projected to be fabricated metal products, E&E, machinery & equipment, industrial chemicals, plastics, and food manufacturing products.

A rise in labour cost higher than a rise in labour productivity may become a threat to our nation's competitiveness if other costs are not adjusted accordingly. One solution is to strengthen labour cost competitiveness by introducing labour-saving techniques such as job enlargement and job enrichment which is expected to lead to an increase in labour productivity. Additionally, according to MPC's survey among Malaysian business leaders, the manufacturers need to reconcile their manufacturing strategies with existing business challlenges, namely, corporate brand and reputation, global expansion, customer relationships, sustainability and operational excellence (Figure 5.10).

As manufacturing moves to adopt more capital intensive and high technology operations, technical education and vocational training are crucial to building up a highly skilled workforce. As 99% of manufacturing in Malaysia consists of SMEs, this trained and skilled workforce graduating from technical and vocational institutions will be able to fill up the skill requirements needed by the growing SMEs.

The expectation is for SMEs to build vertical linkages with larger multinational manufacturing and service industries to leverage on increased market access, enhanced investment flows, and advancements in skills development and technology. Examples of such linkages include the supply of equipment, materials, parts and components, and dedicated services such as contract design, burn-in testing, failure analysis and rapid prototyping. Local industries serve to provide support to bigger manufacturing concerns. Supporting SME industries focus on activities such as the manufacture of moulds, tools and dies, metal stamping, surface treatment, plastic injection moulding and mechanical and electrical equipment. SME participation has been actively encouraged by the government through the provision of financial support and better access to research and new technologies as well as improvements in infrastructure.

At the same time, Malaysian manufacturers should adopt the current global trend for green productivity. This involves minimising waste and pollution, producing non-hazardous products, enforcing energy savings, and promoting use of renewable energy in our attempts to meet world standards for green manufacturing.

Figure 5.10: Strategies to Address Business Challenges for the Manufacturing Sector

1. Promote a "green" or environmentally friendly image for corporation
2. Improve alignment of business practices / management behaviour with corporate values
3. Enhance quality of products and processes
4. Strengthen compliance with regulatory requirements
5. Enhance corporate brand awareness and understanding across different cultures

1. Acquire companies in target geographic markets
2. Enter new geographic markets with existing products/services
3. Introduce new "localised" products / services for customer / clients in new geographic markets
4. Expand and diversify supply chain geographically
5. Transfer labour- intensive operations to low-wage cost locations

1. Increase speed of products and services to market
2. Engage personally with key customer / clients
3. Broaden range of products / services
4. Use competitive intelligence to better understand customer/client needs
5. Enhance quality of products/services

1. Improve speed to market
2. Focus on reduction of baseline cost
3. Raise employee engagement and productivity
4. Secure lowers cost for materials and other input resources
5. Ensure supply chain integrity

1. Encourage improvements in sustainability performance from suppliers and other business partners
2. Engage with local communities to enable sustainable growth and manage expectations
3. In corporate sustainability initiatives and results into corporate branding and communication strategies.
4. Ensure sustainability is part of the corporate brand, identify and culture of the organisation
5. Reduce consumption of energy, water and other scarce resources

Chapter 6

Productivity Performance of the Agriculture Sector

PRODUCTIVITY PERFORMANCE OF THE AGRICULTURE SECTOR

OVERVIEW

The agriculture sector has been identified as the third engine of growth after manufacturing and service sectors. In line with this, strong institutional support has been provided in research and development (R&D), and extension and marketing to provide the impetus to Government programmes in transforming the rural and poverty afflicted agriculture sector into one that is modern, market-oriented, and commercially viable, yielding high returns.

Under the ETP, a number of EPPs have been identified as the high impact industries that can drive the economic growth of the agriculture sector. These include nine EPPs under the Palm Oil and Rubber NKEA and 16 EPPs under the Agriculture NKEA (herbs, food crops, livestock and fisheries).

The agriculture sector experienced a moderate growth of 0.8% in 2012 in which the Gross Domestic Product (GDP) increased from RM54.3 billion in 2011 to RM54.8 billion. However, the contribution of the sector to national GDP declined slightly from 7.7% in 2011 to 7.3% in 2012.

Palm oil is the main commodity in the agriculture sector. With Crude Palm Oil (CPO) production of 18.8 million tonnes, the palm oil industry contributed 35.7% to GDP in 2012. Other agriculture including paddy, fruits, vegetables, coconut, tobacco, tea, flowers, pepper, cocoa and pineapple recorded a contribution of 18.2% in 2012. The fisheries and livestock sub-sectors contributed 14.2% and 11.7% respectively. Rubber production constituted about 8.7% of total agriculture output in 2012.

The value of production of the livestock sub-sector registered a growth of 12.8% in 2012, from RM11.7 billion in 2011 to RM13.2 billion in 2012. The poultry, meat and eggs industries mainly contributed to this growth (Table 6.1). The aquaculture industry recorded a growth of 28% from RM2.3 billion in 2011 to RM3.1 billion in 2012. There was a marginal growth of 1.6% in the crops sub-sector.

Agriculture sector experienced a moderate growth performance of 0.8% in 2012 in which the Gross Domestic Product (GDP) increased from RM54.3 billion in 2011 to RM54.8 billion

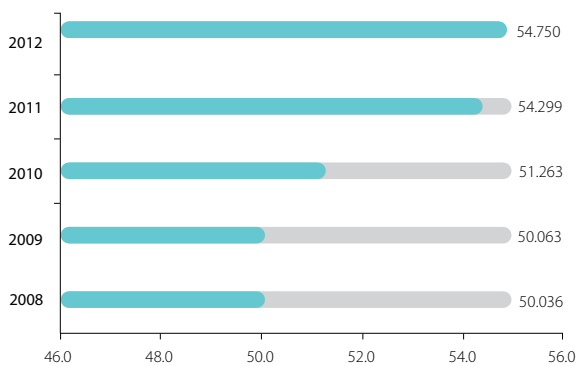
Table 6.1: Food and Floriculture Production (Quantity and Value)

	2011		2012		% Change	
	Quantity ('000 metric ton)	Value (RM million)	Quantity ('000 metric ton)	Value (RM million)	Quantity (%)	Value (%)
FISHERIES						
Aquaculture	288.0	2,385.6	413.0	3,053.6	43.4	28.0
Marine fisheries	1,373.0	6,939.5	1,448.0	7,361.8	5.5	6.1
Sub-total	1,661.0	9,325.1	1,861.0	10,415.4	12.0	11.7
LIVESTOCK						
Cattle and buffalo meat	48.8	889.5	51.3	916.0	5.0	3.0
Mutton (goat and sheep)	2.7	77.8	3.2	15.0	18.5	6.8
Pork	231.0	2,047.0	233.2	2,053.6	0.9	0.3
Poultry meat (chicken and ducks)	1,344.5	5,949.5	1,374.5	6,866.3	2.2	15.4
Eggs (chicken and ducks ('000 eggs))	621.5	2,614.4	643.0	3,143.4	3.5	20.2
Milk (million liter)	70.9	134.7	75.0	150.0	5.8	11.4
Sub-total		11,712.8		13,212.4		12.8
CROPS						
Paddy	2,576.0	1,932.0	2,750.0	2,062.8	6.8	6.8
Fruits	1,623.5	4,876.0	1,658.3	5,011.2	2.1	2.8
Vegetables	937.7	2,600.0	879.0	2,467.7	-6.3	-5.1
Coconut	562.6	281.3	606.5	303.3	7.8	7.8
Floriculture ('000 cuttings/pots/plants)	417.1	333.7	419.2	335.3	0.5	0.5
Sub-total		**10,023.0**		**10,180.3**		**1.6**
TOTAL		**31,060.94**		**33,808.08**		**8.8**

Source: Veterinary Services Department

INDUSTRY SNAPSHOT

Figure 6.1: GDP Performance of Agriculture Sector, 2008 – 2012



Source: Department of Statistics

- GDP of the agriculture sector registered a marginal growth of 0.8% in 2012 from RM54.3 billion in 2011 to RM54.75 billion.
- The sector accounted for 7.3% of national GDP in 2012.

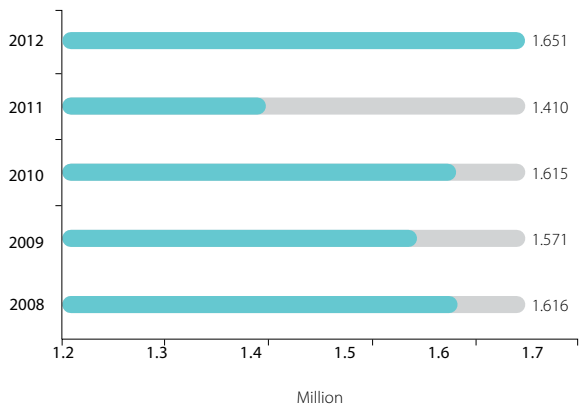
Table 6.2: Added-Value in the Agriculture Sector, 2011-2012 (at constant 2005 prices)

Sub-sectors	Share of Agriculture (%)	
Agriculture	2011	2012
	100.0	100.0
Oil palm	37.0	35.7
Other agriculture	17.2	18.3
Fisheries	14.4	14.2
Livestock	10.8	11.7
Forestry and logging	8.8	11.5
Rubber	8.8	8.7

- Oil palm was the main contributor to the agriculture sector GDP at 35.7% in 2012
- Other agriculture and fisheries recorded contributions of 18.3% and 14.2% respectively.
- The livestock sub-sector contributed 11.7% share of the total agriculture added-value in 2012.

Source: Economic Report 2012/2013

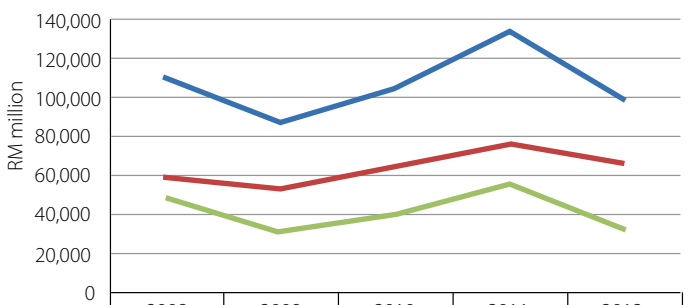
Figure 6.2: Employment Level of Agriculture Sector, 2008 – 2012



- The agriculture sector provided employment to 1.7 million workers in 2012, accounting for 13.2% of national employment.
- Employment in the sector expanded by 17.1% in 2012 over 2011.
- The increase in employment level in 2012 was attributed to the lifting of the freeze on intake of foreign workers imposed in 2007.

Source: Department of Statistics

Figure 6.3: External Trade for Agriculture Sector, 2008 – 2012



	2008	2009	2010	2011	2012
Exports	108,686	86,858	106,099	133,872	100,017
Imports	58,996	54,190	64,580	77,573	66,545
Balance of Trade	49,690	32,668	41,519	56,229	33,472

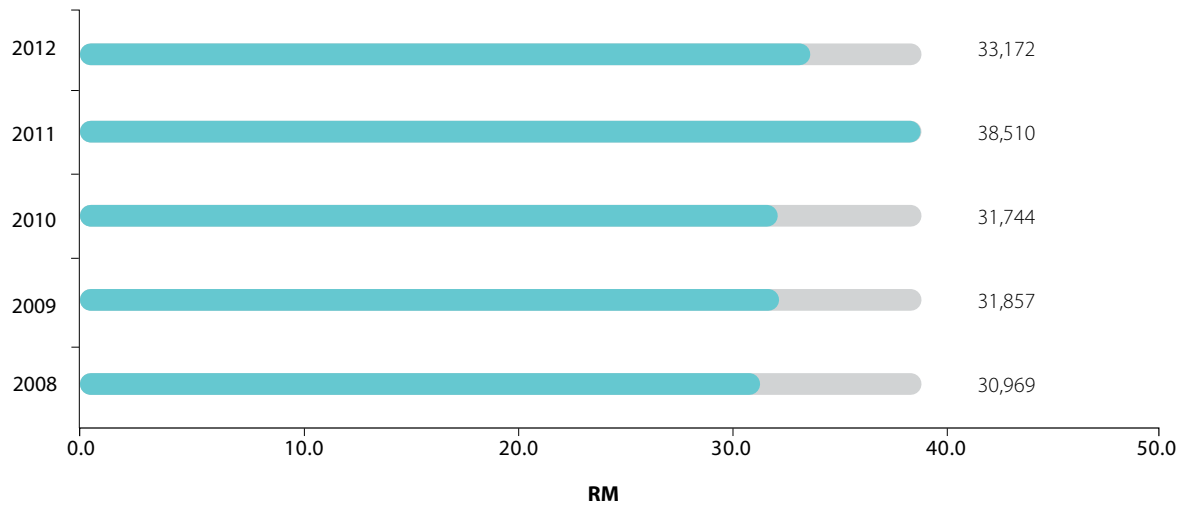
- Total exports of the agriculture sector declined by 25.3% to RM100 billion in 2012 from RM133.9 billion in 2011.
- Total imports of the sector in 2012 reduced by 14.2% from RM77.6 billion in 2011 to RM66.5 billion.
- Balance of trade for the agriculture sector declined by 40.5% to RM33.5 billion in 2012 from RM56.3 billion in 2011.The value of exports declined due to lower CPO prices.

PRODUCTIVITY PERFORMANCE

Labour Productivity

The agriculture sector registered a negative productivity growth of 13.9% in 2012, from RM38,510 in 2011 to RM33,172 in 2012. Productivity of the sector was largely affected by lower output and prices experienced by the plantation industry, particularly in the case of oil palm, coupled with the sharp rise of 17.1% in employment as a result of the lifting of the freeze on the intake of foreign workers.

Figure 6.4: Productivity Level of the Agriculture Sector, 2008 – 2012



Computed from: Ministry of Agriculture and Agro-Based Industry

The lower average Fresh Fruit Bunch (FFB) yield of 18.89 tonnes/ha in 2012 from the yield of 19.69 tonnes/ha in 2011, led to a contraction of 3.6% in FFB production which was 137 million tonnes in 2012 and 132 million tonnes in 2011 (Table 6.3). Additionally, the average price of FFB fell to RM615 per tonne in 2012 from RM738 per tonne in the previous year. CPO production experienced a marginal contraction of 0.7% from 18.9 million tonnes in 2011 to 18.8 million tonnes in 2012. Rubber production also contracted by 7.5%, from 996,210 tonnes in 2011 to 921,978 tonnes in 2012.

Table 6.3: FFB Production and Prices, 2011-2012

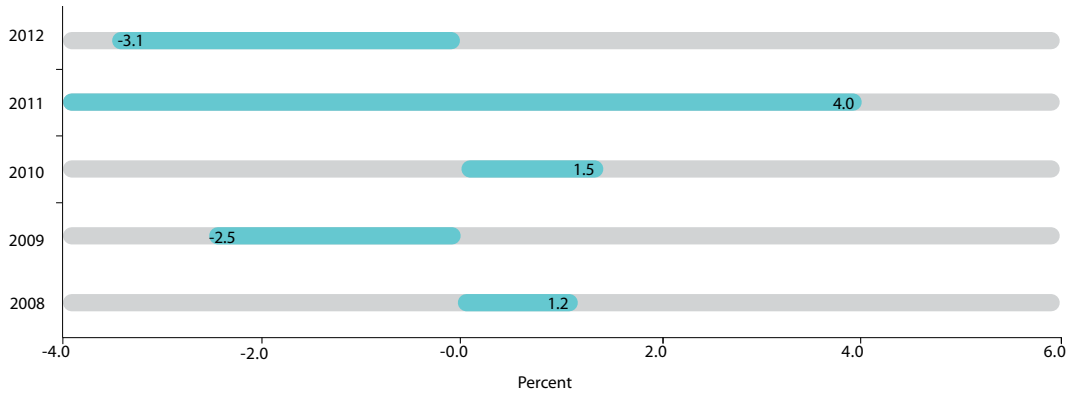
FFB Received by Mills		2011	2012	Change (%)
Jan- June	'000 tonnes	43,150.00	38,831.94	-10.0%
July - December	'000 tonnes	93,815.37	93,265.09	-0.6%
Total 2012	'000 tonnes	136,965.38	132,097.03	-3.6%
Price of FFB (mill gate)	RM/tonne	738	615	-16.7%

Source: MPOB, Overview of the Malaysian Oil Palm Industry 2012

Capital Productivity

Capital productivity in the agriculture sector was -3.1% in 2012 compared with 4% in 2011 (Figure 6.5). The increase of 12% in capital expenditure in 2012 was attributed mainly to infrastructure costs incurred by anchor companies in the crops, livestock and fisheries sub-sectors and output in these sub-sectors increased by 8.8%. Output from the plantation sub-sector was lower in 2012.

Figure 6.5: Capital Productivity of Agriculture Sector, 2008 – 2012

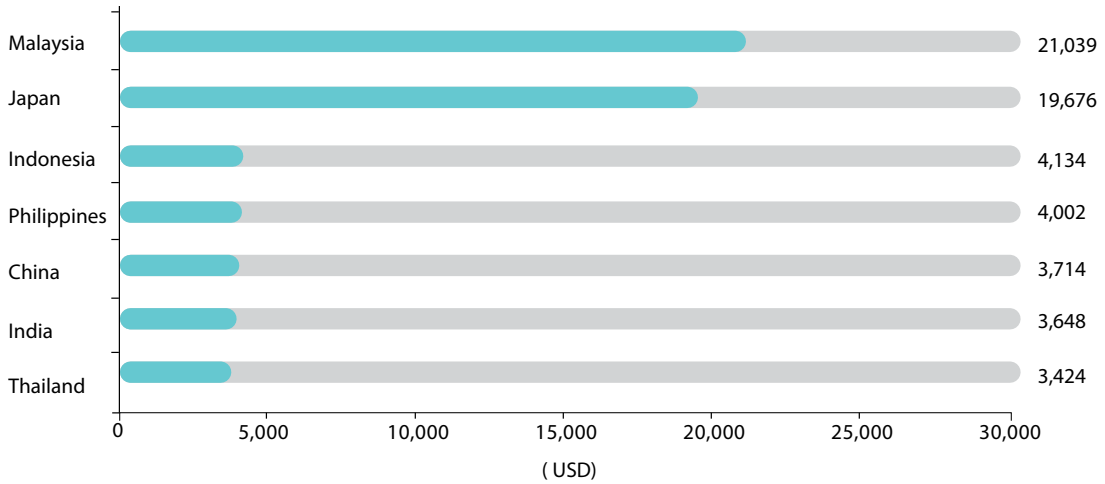


Computed from: Ministry of Agriculture and Agro-Based Industry

INTERNATIONAL AGRICULTURAL PRODUCTIVITY COMPARISON

Malaysian agricultural productivity recorded a growth of 8.2% from USD19,448 in 2010 to USD21,039 in 2011, and moved its ranking from the 4th to the 3rd position among Asian countries. Taiwan and Korea continued to maintain their lead positions with productivity levels at USD27,221 and USD25,808 respectively. Productivity of Malaysian agriculture workers continued to surpass other ASEAN agriculture-based countries (Figure 6.6).

Figure 6.6: International Agricultural Productivity Comparison, 2011



Source: World Competitiveness Yearbook (WCY) by IMD

AGRICULTURE SECTOR PRODUCTIVITY DRIVERS

Oil Palm

The oil palm industry is targeted to deliver RM 178 billion in GNI by 2020. This is to be achieved through sustainability and productivity improvements in upstream activities. In line with the Government's efforts to increase FFB yields to 26.2 tonnes per hectare by 2020, around 117,800 hectares of low-yielding oil palm have been identified for replanting. At the end of June 2012, 26% of the low-yielding oil palm areas have been replanted.

To improve FFB yields in smallholdings, the Malaysian Palm Oil Board (MPOB) has deployed additional TUNAS (Tunjuk, Ajar dan Nasihat) extension personnel to administer planting/replanting grants[1], assist smallholders to improve their agricultural practices, and set up cooperatives to achieve better economies of scale. To date, 15 smallholder cooperatives have been formed.[2] MPOB enforcement officers are also stationed at the mills to ensure that only good quality crops are processed.

Other Government incentives include a RM1000 discount scheme to encourage the use of Cantas™ (motorised sickle) and diamond blade sharpeners. The use of Cantas™ has resulted in higher worker productivity. In 2012, 1,527 units of Cantas™ and 4,683 units of blade sharpeners were acquired by plantation companies and smallholders.

BOX 6.1 PROGRESS OF SOME OF THE EPPS UNDER THE PALM OIL NKEA

- Development of biogas trapping facilities at oil palm mills (EPP5). Methane captured will be turned into an electricity source for the mills' consumption, while the excess can be fed into the national power grid. In 2012, biogas facilities were installed in nine mills bringing the total up to 57 biogas plants nationwide. Two biogas plants, in Perak and Sabah, are connected to the national power grid.

- Commercialisation of second generation biofuels (EPP7) from oil palm biomass will be fast-tracked after diminished interest in the controversial first generation biofuels.

- Under EPP8: To expedite growth in the food and health-based segment, 10 research grants have been awarded to international research institutions to carry out clinical trials on palm oil phytonutrients. In 2012, a two-year clinical trial on the effect of gamma-delta tocotrieniols in delaying disease progression of Castration Resistant Prostate Cancer (CRPC) commenced; this clinical trial is conducted in collaboration with UMMC[3] and HKL[4].

Rubber

The focus on the rubber industry is to capitalise on its downstream strength and potential to increase market share especially in latex gloves and new rubber products. With a target growth set at 6% per annum to stem the gradual decline of rubber production (2.63% per annum over the last 10 years), the rubber industry is targeted to deliver RM31.1 billion in incremental GNI by 2020. This is to be achieved through sustainable growth in rubber production, productivity improvements in the upstream sector and commercialisation of new products downstream.

1 Grants of RM7,500 per hectare in Peninsular Malaysia and RM 9,000n per hectare in Sabah and Sarawak will be provided for the clearing of land the supply of high quality seedlings and agricultural inputs. Smallholders with less than 2.5 hectares will also receive farm maintenance assistance of RM500 per month for two years.

2 Perak Selangor, Malacca, Johor, Sabah and Sarawak.

3 University Malaya Medical Centre

4 Hospital Kuala Lumpur.

Four EPPs have been identified under the Rubber NKEA. In 2012, there was an increase of 14,000 hectares of smallholdings mainly in Sabah and Sarawak. The problem of low productivity is currently addressed by aggressive replanting with new clones and the provision of increased replanting grants to smallholders[5]. The introduction of automation and mechanisation in latex harvesting would also eventually reduce dependency on foreign labour.

In the rubber industry, initiatives are taken to reposition natural rubber as a premium raw material with low carbon footprint. In October 2012, agreements were signed with two companies to commercialise the new generation of latex grade specialty rubbers viz. epoxidised natural rubber (Ekoprena) and deproteinised natural rubber (Pureprena), as raw material to support high-end rubber product industries especially for eco-friendly green tyre manufacturing. These initiatives are undertaken to project Malaysia into specialty rubber-based markets overseas.

Crops, Livestock and Fisheries

To further improve the delivery system, KorTani groups have been established in all nine agencies and three departments under the Ministry of Agriculture and Agro-based Industry (MOA) since 2011. These voluntary groups, comprising farmers, marketers, and entrepreneurs between the ages of 18-40, are trained to explain Government policies/projects/ incentives pertaining to the agriculture sector. Besides developing networks, these KorTani groups are also responsible for disseminating information on new technologies in their respective crop/livestock/fishery sub-sectors to other farmers/marketers/ entrepreneurs in their areas. Up to the end of 2012, a total of 6,600 volunteers have joined the Kor Tani groups.

The agriculture sector is dominated by large number of small and scattered smallholdings with low productivity levels. These smallholdings comprise 37.9% of the estimated 2.6 million hectares of oil palm, rubber, rice, vegetables and fruits, and are operated by independent smallholdings as family units.

5 Replanting grants at RM9,230 in Peninsular Malaysia, RM 13,000 in Sarawak and RM14,000 in Sabah.

BOX 6.2 PRODUCTIVITY INITIATIVES AT THE FARM LEVEL THROUGH EPPS

To address this problem of low productivity of smallholdings, the Government has introduced programmes under the ETP to transform them into dynamic modern commercial entities by technology upgrading and investment in new innovations. The appointment of anchor companies from the private sector to support the implementation of the EPPs is one such strategy to modernise smallholdings.

Sub-sector	EPP	Role of anchor companies
Nutraceuticals	EPP1: High Value Herbal products	Pre-clinical & clinical trials, certification, marketing and branding of nutraceuticals
Crops	EPP 7: Premium Fruits and Vegetables	Assist farmers obtain GAP certification and market access.
Rice	EPP 9: Fragrant rice varieties in non-irrigated areas	Planting and commercialisation of fragrant rice varieties
Fisheries	EPP 3: Mini-estate farming for seaweed	Provision of downstream processing infrastructure • Adoption of an integrated approach for large scale production through the entire value chain – from hatchery operations to processing and marketing. • Provision of training to contract farmers. • Drawing up SOPs and guidelines for contract farmers.
	EPP4: Integrated cage farming	• Adoption of an integrated approach for large scale production through the entire value chain – from hatchery operations to processing and marketing. • Provision of training for contract farmers.
	EPP 6: Integrated Zone for Aquaculture (IZAQ) for Premium Shrimp	Adoption of an integrated approach for large scale production through the entire value chain from hatchery operations to processing and marketing. Contract farming or profit-sharing arrangements with farmers.
Livestock	EPP 2: Edible bird's nest swiftlet farming	Setting up processing plants to improve the quality of processed bird's nests.
	EPP13: Integrated dairy clusters	Manage dairy cluster operations from production to marketing.
Processed food	EPP 8: Food Park	Product certification, packaging, branding, marketing and management of suppliers.

HUMAN CAPITAL DEVELOPMENT

Strengthening human resource management by upskilling and upgrading the workforce is one of the six Strategic Reform Initiatives (SRI) to boost competitiveness in this sector.

To fulfill the manpower requirement for skilled agricultural workforce for both the Government and private sectors, the National Agriculture Training Centre (NATC) conducts the Malaysia Skills Certification (Sijil Kemahiran Malaysia[6] or SKM) programme for the agriculture sector covering various topics such as food crops, plantation crops, livestock, fisheries and agro-food processing. Four programmes are available, varying in duration from six months (Levels 1 and 2) to 12 months (Levels 3 and 4[7]). These courses are conducted at designated department/agency specialist training institutes under the Ministry of Agriculture and Agro-based Industry.

The seven Agriculture Institutes (AI) have also produced 9,629[8] skilled Certificate-level graduates for both the private and public sectors. The Agriculture Youth Entrepreneur Incubation Programme (Inkubator Usahawan Belia Tani or IUBT) is also available to rural youths who have been selected as Taman Kekal Pengeluaran Makanan (TKPM) participants. Short-term agro-processing courses for rural youth are also conducted at various Pusat Bimbingan Usahawan.

IMPROVED FARM EFFICIENCY

The aim of improving farm efficiency is to ultimately reduce unit production cost. In the palm oil industry, the key agro-management issues include improved planting materials, nutrition, soil/water conservation, disease management, pollination and fertility issues, and harvesting and crop recovery problems. Increasing worker productivity and hence labour efficiency, lies in solving problems related to the strategic area of harvesting and crop recovery. The MPOB Farm Mechanisation Group on Harvesting and Evacuation Technology are working on developing mechanical harvesters, field evacuation machinery for FFB, and a machine for the collection of loose fruits.

A number of programmes have been initiated to develop second echelon farmers as agro-entrepreneurs. Incentives are provided through DOA Entrepreneur Development programmes.

IMPROVED VALUE CHAIN OF THE AGRO-BASED INDUSTRY

There are growing opportunities for downstream processing to value-add agri-products into niche products, e.g. the increasing demand for frozen durian by China. However, presently the agro-processing industry is constrained by poor supply chain management within the agriculture sector. To address this constraint, concerted efforts must be made to further strengthen Value Chain Management by linking upstream primary production and downstream processing. This would provide processors access to a reliable and consistent supply of agricultural products, while creating markets for primary producers and enhancing value to agriculture products.

The Rural Transformation Centres (RTC) in Gopeng, Perak and Kota Bharu, Kelantan have been designated as food parks under EPP8, and function as centres for collection, distribution and marketing of processed ready-to-eat and packaged food produced by SMEs. Selected anchor companies will be responsible for product certification, branding, packaging and marketing of these processed foods, and provide local SMEs with access to local markets, and a springboard into international markets. In 2012, one participating company secured an agreement with a retail outlet in China for its durian-based products. Three other participating companies were involved in the marketing of local SME processed products such as shrimp-based products and chicken-based products.

6 SKM is awarded by Department of Skills Development, Ministry of Human Resources
7 Includes industry attachment of 3 months.
8 From 1966 to the present

The Community Market programme or Pasar Komuniti (PAKAR) was included as the 17th EPP in 2012 to integrate local markets such as Pasar Tani, Pasar Malam, Pasar Minggu and Pasar Tamu into larger community markets fitted with amenities to facilitate cleanliness, and to help increase traders' incomes. The first PAKAR in Manjung, opened on September 2012, involved 80 traders and farmers. Plans are afoot to establish six more PAKARs in Johor, Sabah, Negeri Sembilan and Pahang in 2013. This EPP is aimed at creating 140,950 entrepreneurs and aimed to contribute RM8.8 billion to GNI.

BOX 6.3 HIGHLIGHTS OF EPP ACHIEVEMENTS IN 2012

- Under EPP1, clinical trials have commenced on two (2) herbal products, namely, Misai Kuching (Orthosiphon stamineus) and Dukung Anak (Phyllanthus niruri), and pre-clinical trials on eight naturally sourced products. In 2012, a total of 74 contract farms in the East Coast Economic Region (ECER) were engaged in the production of herbs. Another major development is that SIRIM, Institute for Medical Research (IMR), and the Melaka Biotech Corporation, have applied for the OECD Mutual Acceptance Data (MAD) status for Good Laboratory Practice (GLP) Compliance, which will enable them to carry out pre-clinical trials.

- Six anchor companies have been selected to produce fruits and vegetables for the premium export market. The scope of this EPP has also been widened to include durians and mangoes in the prescribed list of fruits. Additionally, anchor companies have also included TKPM participants as their contract farmers.

- Programme under EPP6: Replication of Integrated Zone for Aquaculture (iZAQ), one of the anchor companies appointed in 2011, has begun operations in Selinsing, Perak. The other nine anchor companies are in various stages of establishments in carrying out these iZAQs .

- Programme under EPP4: Integrated Cage Farming, a joint-venture company with a US-based restaurant giant, was appointed anchor company to produce live lobsters in Semporna which will see an injection of RM 2 billion in private investment. Six other anchor companies have been appointed under this EPP in 2012. The 20 participants in the Synergy Farming project (started in 2011) are now selling their products under a buy-back guarantee agreement with the anchor company. In 2012, a sum of RM 8.1 million was allocated for the development of Integrated Fish Farming in the Northern Corridor Economic Region (NCER).

- Sabah takes the lead in EPP13: Establishment of dairy clusters: In 2012, the state had 90 livestock breeders, and will expand downstream for the production of butter, yoghurt and ice cream.

- The EPPs to improve paddy productivity in MADA (EPP10) saw 3,028 farmers agreeing to participate in the centralised farm management scheme. Under EPP11 which involves increasing paddy productivity in other granaries, 1,250 hectares in five other granaries (IADAs), 5,100 ha in Batang Lupar (Sarawak) and 5,000 ha in Kota Belud (Sabah) have been identified for the land amalgamation scheme.

- Programme under EPP 14: Seed Industry Development, the Centre for Marker Discovery and Validation (CMDV) in MARDI continued to screen paddy seeds produced under the Clearfield Production System[9] (CL1 and CL2) to ascertain their purity before field planting. The services of CMDV have also been extended to the private sector. In 2012, CMDV validated 3,625 seed samples representing 15,593 tonnes of agriculture output. Nine types of certified seeds have been produced through MAS.

9. For the control of weedy rice in direct seeding

- In the EBN industry (EPP 2), the 8-month moratorium on the export of EBN to China ceased in September 2012 with the signing of the export protocol between the Ministry of Agriculture and Agro-based Industry and the Government of China. Following this, the Certification and Accreditation Administration of China (CNCA) will proceed to audit the 15 bird's nest processing factories in 2013. In 2012, one company was awarded the Veterinary Health Mark (VHM) certification for its processing plant, thus bringing the total to 10 VHM-certified processing plants. In 2012, an entrepreneur successfully marketed beauty care products containing bird's nest.

Source: ETP Annual Report 2012, The Star, & interviews with MOA officers

STRATEGY AND OUTLOOK

The outlook for oil palm and rubber looks good, buoyed by the relatively high international prices and increasing demand. As such, returns to producers from these crops are relatively high. Malaysia's strength lies in the downstream development of crops into manufactured products. Hence both the estates and Felda have important manufacturing interests, which require imports of palm oil and rubber produced in neighbouring countries. The Palm Oil and Rubber NKEA emphasises the importance of sustainability in terms of acreage and production to support downstream activities.

One of the strengths of the Malaysian oil palm and rubber industries is the research and development (R&D) activities undertaken by the Government and plantation companies. The stream of vital new innovations which has resulted in productivity increases (e.g. increases in Oil Extraction Rate (OER)) and cost savings, can be readily applied by estates and land development schemes with their centralised management structure and access to capital, but for independent smallholdings, the research uptake is slower. The latter is addressed by MPOB TUNAS extension workers tasked to organise and group smallholders into Sustainable Oil Palm Clusters (SPOC) to facilitate the dissemination of technical knowledge including new technologies.

ENHANCED DOWNSTREAM ACTIVITIES

R & D in oil palm and rubber will continue, although the emphasis has shifted to downstream aspects that will enable Malaysia to compete effectively in international markets.

IMPROVED LABOUR EFFICIENCY

The labour market should be "modernised", to enable a shift to be made from manual and routine tasks to automation, higher technology and higher value creation, as these are prerequisites to greater productivity and competitiveness. In this respect, there should be a paradigm shift from cost competitiveness to skills and productivity.

The oil palm and rubber industries will need scientists (agronomists, breeders) and engineers to be future plantation leaders to ensure the industries' continued sustainability. Managers with organisational skills are required to realise the highest productivity and efficiency from workers and other resources.

IMPROVED MARKET ACCESS

In order to improve market access for farmer's produce, Malaysia has initiated various voluntary certification protocols for farm produce. Some of the certification schemes are the Malaysian Farm Certification Scheme or SALM for fruits and vegetables, the Malaysian Organic Scheme or SOM for organic produce, Livestock Farm Accreditation Scheme or SALT for livestock, Malaysian Aquaculture Farm Certification Scheme or SPLAM for aquaculture, and Malaysia Best branding currently implemented by the MOA. These schemes aim to improve market access for farmers' produce with increasing recognition of country-specific certification schemes in the ASEAN region. There is also an initiative to harmonise these farm certification schemes under ASEAN GAP. Besides the traditional markets (Singapore, China, and Hong Kong), new

markets for Malaysian fruits and vegetables include Korea (durians), Eastern Europe (papayas), Dubai (carambola), and Saudi Arabia (Pineapple MD2, N36 varieties). In 2012, there were 292 SALM-certified farms, and 86 SOM-certified organic farms, 386 SALT-approved livestock farms (compared to 371 in 2011).

With increasing global Muslim population and increasing economic growth of Muslim nations, there is a growing demand for Halal products which are safe, hygienic and wholesome, including agri-food products. The global Muslim population is increasing at the rate of 1.9% per annum. In 2011, the Muslim population was estimated at 1.987 billion, representing 28.4% of global population. The Halal food market is projected at USD779 billion in 2020. This presents an opportunity for Malaysian agri-food producers to tap the growing Halal market with the Malaysian Halal JAKIM Standard certification which is widely recognised and accepted in most Muslim markets.

THE WAY FORWARD

The main challenges faced by business leaders in this sector include Human Capital, Sustainability, Innovation, Operational Excellence and Government Regulations.

HUMAN CAPITAL

Strategies to address the human capital challenge include growing talent internally, providing employee training and development , and raising employee engagement. Employee costs could also be reduced through renegotiations with unions, freezing compensation, redesigning health and retirement benefits, hiring fewer workers, and reducing hours worked. It is also important to improve succession planning for current and future needs.

SUSTAINABILITY

An important strategy to address this challenge is to encourage improvements in sustainability performance on the part of suppliers and other business partners. Treating sustainability as a long-term risk issue and fostering research and development in sustainable technologies are equally important as are initiatives to ensure that sustainability is part of the organisation's corporate brand, identity and culture. Finally, it is also important to ensure sustainability measurement and reporting.

INNOVATION

To foster innovation, it is important to find, engage and incentivise key talent for innovation. Application of new technologies (product, process, information, etc.) and engagement in strategic alliances with customers, suppliers and/or business partners are important strategies to foster innovation. Innovation skills for all employees must be developed as well, and management encouraged to seek Government support and funding for research and development.

OPERATIONAL EXCELLENCE

It can be attained by continuous improvement using quality management tools such as Six Sigma. It is important for an organisation to focus on reducing baseline costs by securing the lowest cost for materials and other inputs. Raising employee engagement and productivity, and improvement of speed to market are equally important considerations.

GOVERNMENT REGULATIONS

In addressing Government regulations, it is important to engage in public-private partnerships as well as encouraging more industry self-regulation. Companies must be alert with regards to various opportunities created by new regulations. Strengthening the internal regulatory compliance process as well as an understanding of international laws and other rules of business conduct are equally important.

Figure 6.7: Strategies to Address Business Challenges for Agriculture Sector

1. Grow talent internally
2. Provide employee training and development
3. Reduce per employee costs through renegotiations with unions, freezing compensation, redesigning health and retirement benefits, hiring fewer workers, reducing hours worked, etc.
4. Raise employee engagement
5. Improve succession planning for current and future needs

1. Encourage improvements in sustainability performance from suppliers and other business partners
2. Foster research and development in sustainable technologies
3. Treat sustainability as a long-term risk issue
4. Ensure sustainability is part of the corporate brand, identify and culture of the organisation.
5. Ensure sustainability measurement and reporting

1. Find, engage, and incentivise key talent for innovation
2. Apply new technologies (product, process, information, etc)
3. Engage in strategic alliances with customers, suppliers, and/or other business partners
4. Develop innovation skills for all employees
5. Seek Government support and funding for research and development

1. Continual improvement (six sigma, total quality, etc.)
2. Focus on reduction of baseline cost
3. Secure lowers cost for materials and other input resources
4. Raise employee engagement and productivity
5. Improve speed to market

1. Engage in public/private partnerships
2. Encourage more industry self-regulation
3. Focus on competitive opportunities created by regulation
4. Strengthen internal regulatory compliance processes
5. Strengthen understanding of international laws and other rules of business conduct

Chapter 7

Productivity Performance of the Construction Sector

PRODUCTIVITY PERFORMANCE OF THE CONSTRUCTION SECTOR

OVERVIEW

The construction sector comprises two major sub-sectors, namely, general construction activities (residential buildings, non-residential buildings and civil engineering) and specialised construction activities or trade activities (electrical works, plumbing, glass works, metal works, air-conditioning, painting, carpentry and tiling).

The sector is an important economic driver of the country due to its linkage with the manufacturing and services sectors. In 2012, the construction sector registered a growth of 18.5% (2011: 4.6%) and contributed 3.4 % to GDP, to a total of RM25.3 billion.

The construction sector registered a growth of 18.5% and contributed 3.4% to GDP.

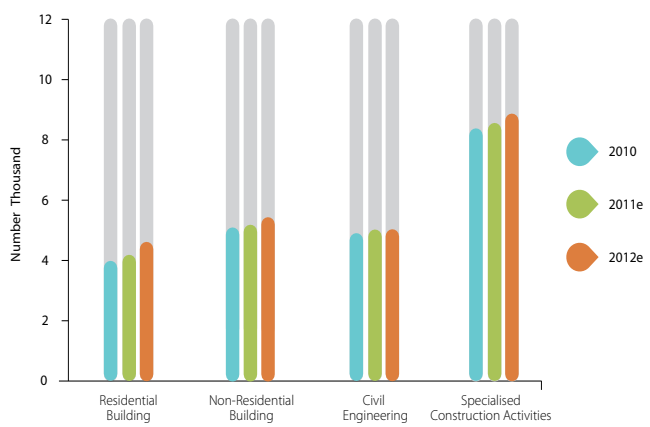
The construction sector earned a double digit productivity growth of 15.5% with an improvement in labour cost competitiveness. It also registered a double-digit growth (10.8%) in capital productivity and a 4.2% growth in capital intensity, indicating a shift towards a greater use of machinery and equipment.

Supporting the growth of the sector is the increasing use of the Industrialised Building System (IBS) in construction. In IBS, pre-fabricated components that are produced in factories are brought to the building sites to be assembled.

Recent initiatives promoting the construction of smart houses, green buildings and renewable energy have resulted in a greater utilisation of manufactured mechanical and electrical components for 'green' purposes, including control systems and the use of building integrated photovoltaic (BIPV) parts.

INDUSTRY SNAPSHOTS

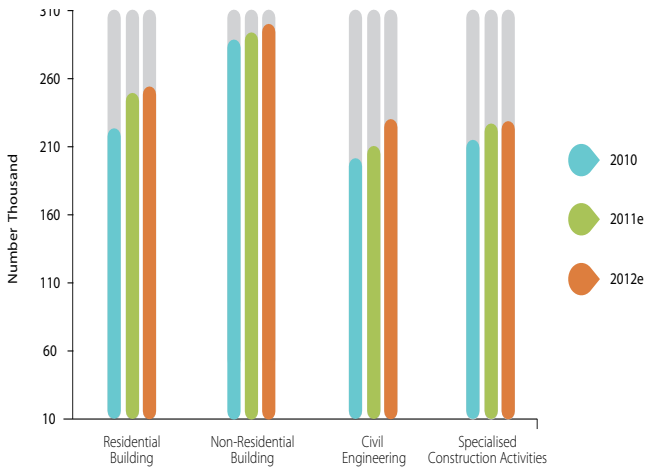
Figure 7.1: Number of Establishments in the Construction Sector, 2010-2012



Computed from: Economic Census 2011, Construction, Department of Statistics, Malaysia
Note: e - Estimate

- Number of establishments grew by 2.9% over the period 2010-2012, from 22,140 to 23,428.
- In 2012 there were 8,891 specialised construction companies recorded, the highest (38%) among the other segments. These are companies engaged in different trades, categorised under specialised works, which are concentrated on the production of pre-manufactured products or component installation processes.

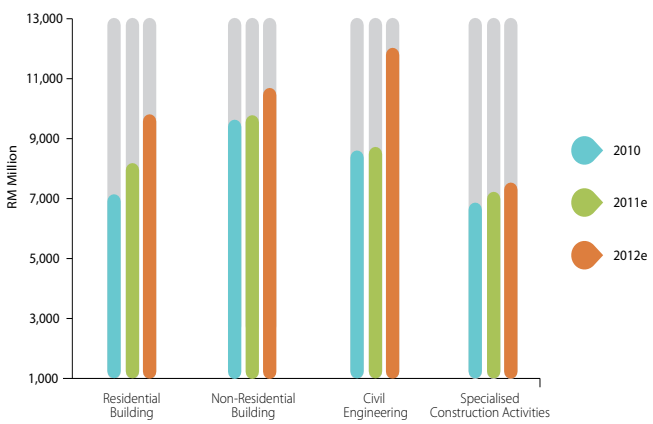
Figure 7.2: Employment of the Construction Sector, 2010-2012



Computed from: Economic Census 2011, Construction, Department of Statistics, Malaysia
Note: e - Estimate

- Employment in the construction sector registered a growth of 3.7% for the period 2010–2012.
- In 2012, the non-residential buildings employed 296,373 workers, the highest among the segments. Next was civil engineering, followed by residential buildings and specialised construction activities with 276,876, 250,095 and 224,143 employees respectively.
- Specialised construction registered the lowest number of employees. This is due to the nature of work which involves the installation of components that requires less employees compared to other construction activities.

Figure 7.3: Added Value of the Construction Sector, 2010-2012



Computed from: Economic Census 2011, Construction, Department of Statistics, Malaysia
Note: e - Estimate

- Added value for the construction sector strengthened by 11.4% from RM31.9 billion to RM39.6 billion for the period 2010-2012.
- In 2012, added value growth was 18.5%, as a result of more efficient processes and systems, namely, project design, construction and management systems, construction technology as well as the utilisation of more modern materials, tools and equipment.
- Civil engineering achieved the highest added value growth of 39.6% amounting to RM12 billion, followed by residential buildings with a growth of 21.4% at RM9.7 billion.

PRODUCTIVITY PERFORMANCE

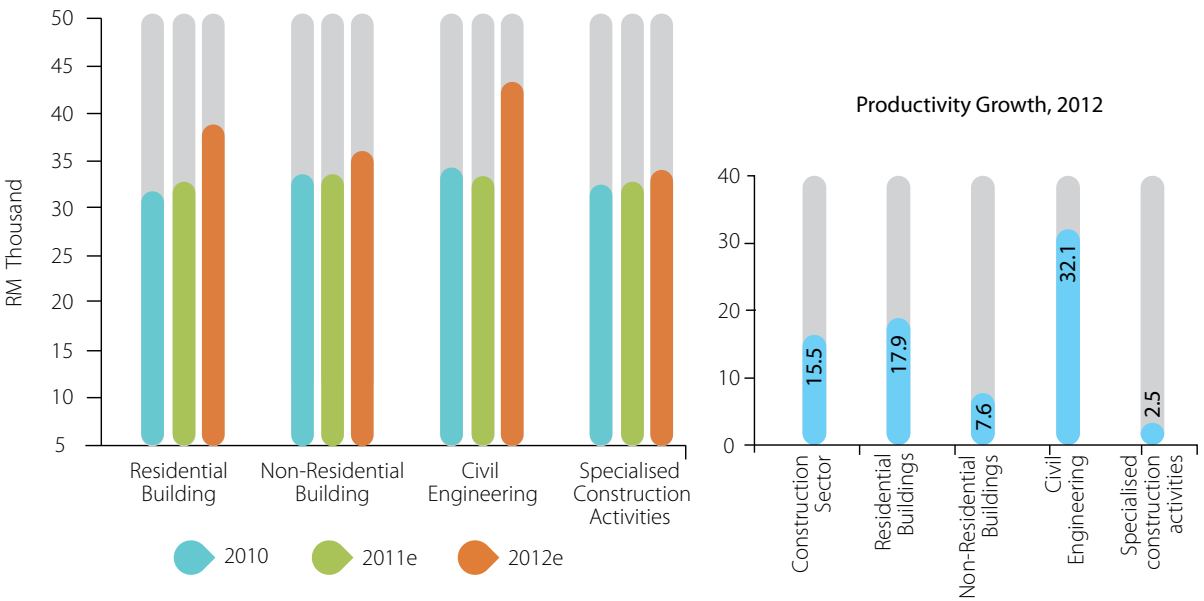
In 2012, the construction sector recorded a productivity growth of 15.5% at a total of RM37,812. The key performance driver in this sector was civil engineering with a productivity growth of 32.1% at RM 43,225 followed by residential buildings with a 17.9% growth, at RM38,692 (Figure 7.4).

The high rate of growth of civil engineering was due to several nationwide mega construction projects under the various EPPs. This was accompanied by a strong demand for residential buildings of which 76% of the purchases were for owner-occupier residences including first time purchasers and 13% were for

second-time buyers as shown by the results of the Property Industry Survey carried out in 2012 by the Real Estate and Housing Developers Association (REHDA).

In 2012, the key performance driver of this sector was civil engineering with a productivity growth of 32.1%

Figure 7.4: Productivity Level of the Construction Sector, 2010-2012

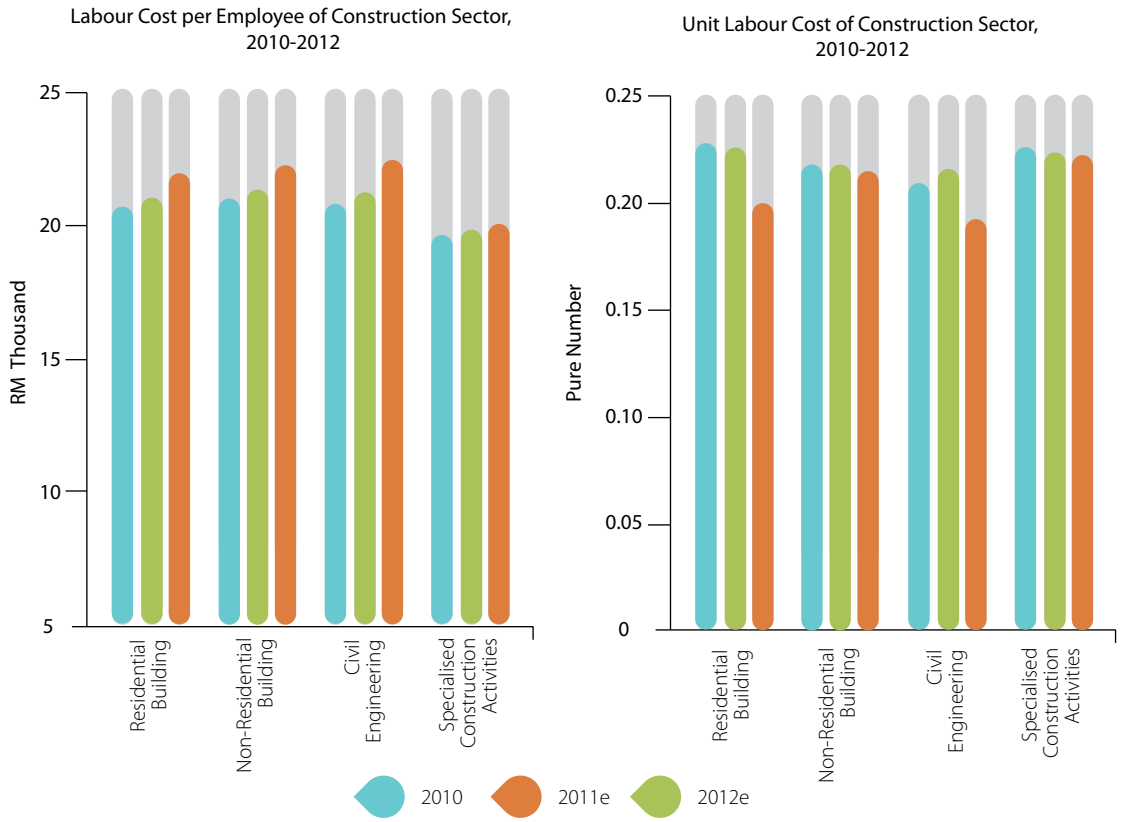


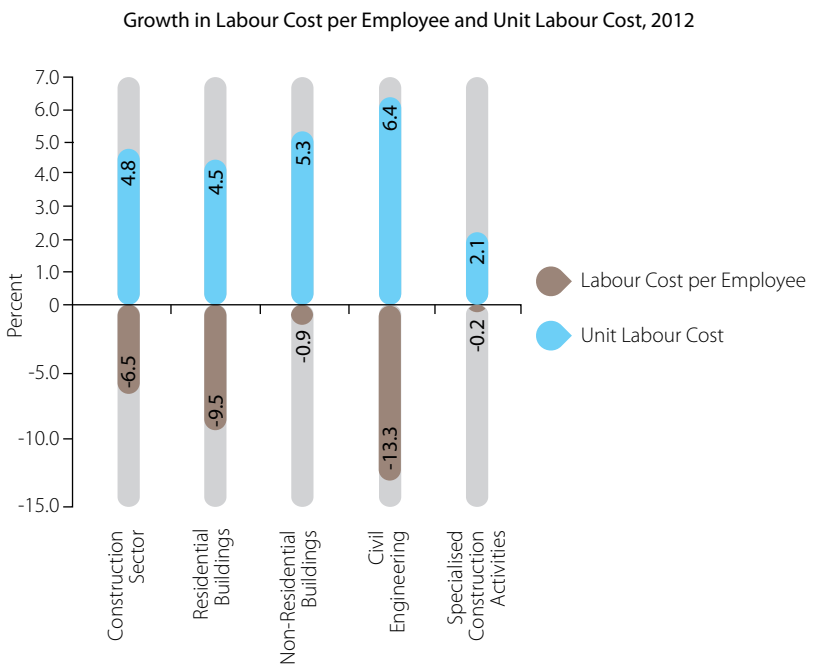
Computed from: Economic Census 2011, Construction, Department of Statistics, Malaysia
Note: e - Estimate

In 2012, labour cost competitiveness of the construction sector increased as manifested by a productivity growth of 15.5% which was higher than the growth in labour cost per employee at 4.8%, and a decline of 6.5% in unit labour cost served to support this growth (Figure 7.5).

Within the construction sector, civil engineering proved to be the most competitive in terms of labour cost in 2012. This was attributed to the deployment of more skilled workers in addition to the higher utilisation of advanced technology and methods of construction.

Figure 7.5: Labour Cost Competitiveness Construction Sector, 2010-2012



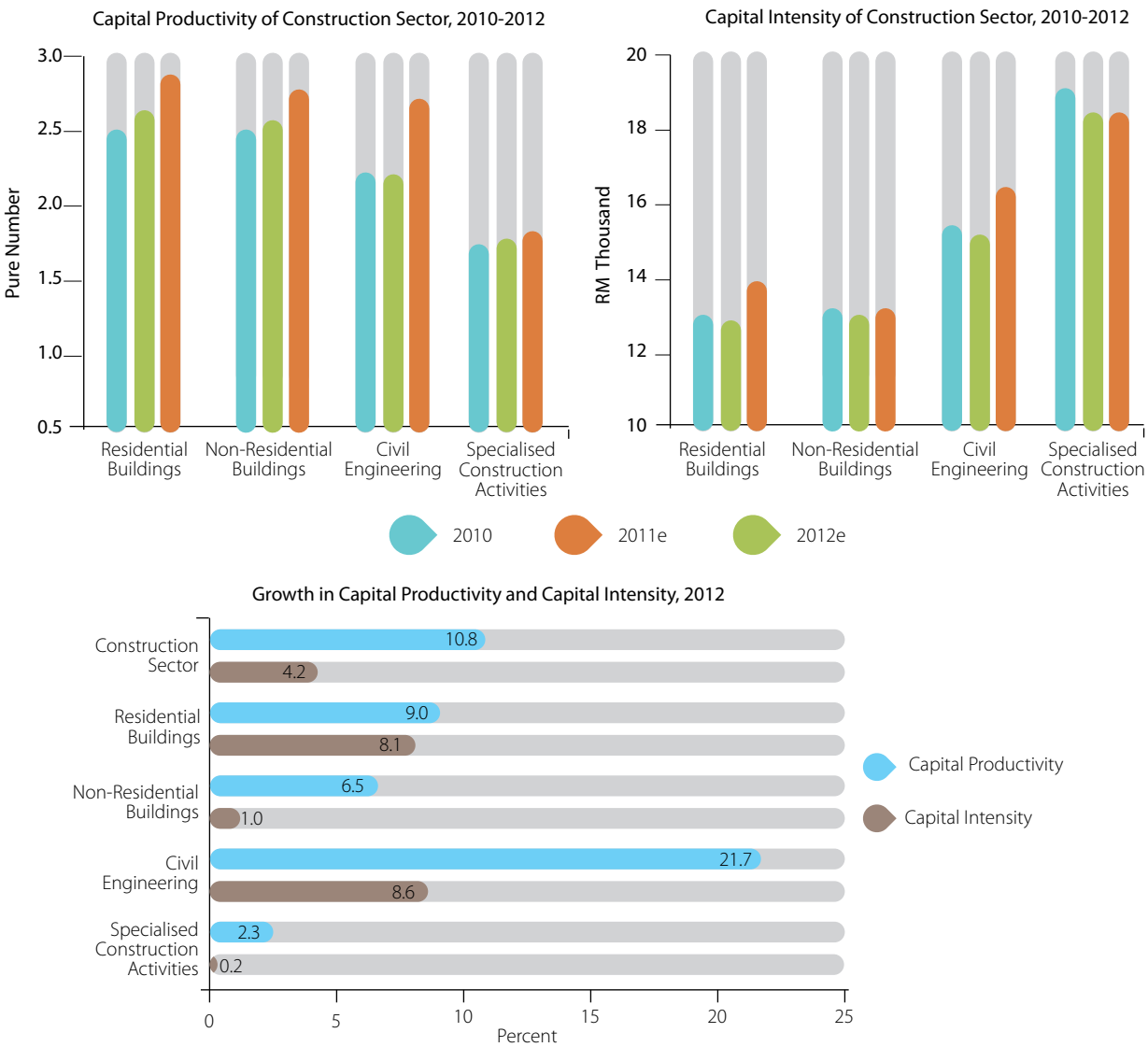


Computed from: Economic Census 2011, Construction, Department of Statistics, Malaysia
Note: e - Estimate

The construction sector recorded a double-digit growth of 10.8% in capital productivity (2011: 1.4%). The higher utilisation of prefabricated materials as well as modern methods of construction such as the deployment of reusable aluminium and plastic formworks required greater investment in the acquisition of ancillary equipment and machinery. Precast wall and slab components require cranes as well as the high-capacity transporters used in construction. This goes hand-in-hand with the need for investment in supporting tools and equipment such as temporary braces, welding units, concrete pumping machines and paper trowels.

In terms of capital intensity, the sector recorded a capital intensity of 4.2% at a value of RM15,261 in 2012. Such growth is an indication that the construction sector is becoming more capital intensive and is has begun to deploy more advanced technology such as IBS and ICT systems which has resulted in more efficient delivery and greater precision in construction, thus reducing operational costs.

Figure 7.6: Capital Productivity and Capital Intensity of Construction Sector, 2010-2012



Computed from: Economic Census 2011, Construction, Department of Statistics, Malaysia
Note: e - Estimate

STRATEGY AND OUTLOOK

Although output of the construction sector is projected to expand significantly by 15.9% in 2013 the sector is still faced with five main challenges which could hinder this projected growth. The challenges facing the construction sector are those listed under the five categories below, namely, global political/ economic risk, government regulation, operational excellence, innovation and customer relationship, outlined in Figure 7.7.

It is to be noted that increasingly, local construction players are gaining wider experience in executing big world class infrastructure and building projects not only at home but also in other countries. In Malaysia, these include the Petronas Twin Towers, our network of highways, the LRT, KLIA, Putrajaya and the SMART tunnel. Overseas construction projects that Malaysian contractors have been involved in are, namely, the construction of an international airport in Cambodia, a water supply project in Sri Lanka, an F1 International Circuit in Bahrain, and an inspiring architectural structure, the Burj Khalifa in Dubai. This shows that Malaysian contractors are recognised internationally as being competent in undertaking complex construction projects worldwide.

The Construction Industry Development Board (CIDB) is encouraging the use of IBS for its components such as prefabricated materials. It has been proven that with IBS, completion time can be reduced by 30%. The advantage of utilising IBS components is that they are manufactured in a factory setting, making it easier to control quality, resulting in more superior buildings; and additionally, the construction process is more orderly and safer. Currently, with more players participating in the manufacture as well as the utilisation of prefabricated components, the construction sector is set to reap the benefits of having a wide range of components available, and furthermore, costs will be reduced.

The availability of skilled and experienced professionals in the construction industry to lead construction projects from initial design to undertaking projects is also a positive indication for the construction sector. These highly-expert professionals include project managers, architects, engineers and quantity surveyors who have had wide experience of working on world class construction projects in Malaysia as well as overseas. In addition, construction industry professionals, who are currently domiciled overseas, are being encouraged to return home under TalentCorp Returning Expert Programme for the purpose of using their expertise to contribute to the advancement of the construction sector.

The development going on in the emerging markets of the ASEAN region such as Cambodia, Myanmar and Laos will also benefit Malaysian construction players. With the expansion of economic activities in these countries, such as tourism, manufacturing and business services, the need for construction of physical infrastructure will increase. Opportunities will open up for Malaysian construction industry professionals to offer their expertise and experience. This would include potential projects related to housing, the construction of highway networks, airports and railways.

At present, IBS is already widely used in government construction projects. The Government has planned to make it compulsory for private projects to utilise IBS components to a minimum of 50% by 2015 as stated in the IBS Roadmap, 2011-2015. As 60% of total construction projects are private concerns, it is expected that this directive will greatly boost the utilisation of IBS. As IBS-driven projects will undoubtedly promote overall productivity, quality and safety, this will ultimately lead to improved performance of the construction sector.

With the advent of trade liberalisation, it is anticipated that there will be strong competition in the construction industry among regional players, especially Thai and Singaporean players. This competition is further heightened by slow economic recovery in Europe and the United States, taking into account IMF forecasts that global growth will only reach 3.6% in 2013.

Figure 7.7: Business Challenges in the Construction Sector

1. Secure alternative methods for input resources
2. Establish crisis management team and procedures
3. Implement contingency for crisis
4. Partner with Government to sovereign that issues
5. Reduce exposure to risky countries

1. Focus on competitive opportunities created by regulations
2. Strengthen internal regulatory compliance processes
3. Strengthen understanding of international laws and other rules of business conducts
4. Engage with the public to influence Government
5. Personally spend more time with regulators

1. Raise employee engagement and productivity
2. Improve capital investment decision process
3. Seek better alignment between strategies, objectives and organisation capabilities.
4. Improve speed to market
5. Continual improvement

1. Create culture of innovation by promoting and rewarding entrepreneurship and risk taking
2. Develop innovation skills for all employees
3. Apply new technologies
4. Engage in strategic alliance with customers, suppliers and other business partners
5. Seek Government support and funding for research development

1. Enhance quality of products / services
2. Increase speed of products and services to market
3. Engage personally key customers / clients
4. Sharpen understanding of customers / clients' needs
5. Broaden range of products / services

Chapter 8

The Way Forward: Boosting Productivity

The Way Forward: Boosting Productivity

What drives productivity growth? What are the key success factors for productivity?

Part of the answer lies in the utilisation of cutting-edge technology. However, even advanced technology on its own without societal innovation or change in the mindset of the people will not result in a quantum leap in productivity. Added to that, private enterprise must adopt innovations too. Company or enterprise innovation must factor in both technological and non-technological innovations and in this, MPC's role lies in promoting non-technological enterprise innovation. These are innovations in the management processes of companies, their marketing strategies and their organisational practices.

In the area of processes, MPC has been helping companies to improve their process efficiency in the areas of work functions, innovation systems and ability to innovate creatively towards achieving organisational excellence. In the area of marketing strategies, MPC has been assisting companies to be innovative by providing tools that can help them achieve growth. One such tool is the Customer Satisfaction Index (CSI) instrument which is a measurement to obtain feedback on customer's satisfaction with regard to a company's products and services. In the area of organisational management, MPC provides a solid framework known as the Business Excellence Framework (BEF) to assist companies. It is to be noted that companies employing this framework usually exhibit a high level of performance.

To achieve good productivity growth, the government has developed a holistic approach aimed at creating a conducive business environment in Malaysia within which companies can thrive. The Malaysian government has succeeded in providing a good transport and communication infrastructure, greater access to quality education and various other industry-driven policies with a view to fostering productivity growth of industries.

In achieving a friendly and productivity-oriented business environment in Malaysia, MPC has been mandated in the Tenth Malaysia Plan 2011-2015 to spearhead a comprehensive review of business regulations and improve processes and procedures to increase productivity and competitiveness of the main economic sectors. It is for this purpose that MPC has been rebranded and restructured to ascertain that it has the capabilities and resources suited to the task of reviewing existing regulations and effecting changes. Unnecessary rules and compliance costs will have to be removed and data on detailed productivity statistics at both national and sectoral levels be made available so that our best practices can be benchmarked with countries having the same stage of development.

MPC'S PLAN OF ACTION

The challenge for MPC is to ensure successful delivery of results for deliverables identified for both government and industry sectors. The final outcome is the creation of a business-friendly environment for companies to conduct business in Malaysia.

INITIATIVES TO MODERNISE BUSINESS REGULATIONS

In modernising business regulations, the Government has played and will continue to play a strong role in facilitating business growth by putting in place procedures and regulations that will support a business-friendly environment for businesses, both local and international. A framework called the Regulatory Review Framework was developed for this purpose (see Figure 8.1). As shown in Figure 8.1, the review activity is expected to achieve two results, firstly, to eliminate unnecessary rules and procedures, and garner savings of RM1 billion in compliance costs annually, and, secondly, to increase overall productivity and market growth.

Government

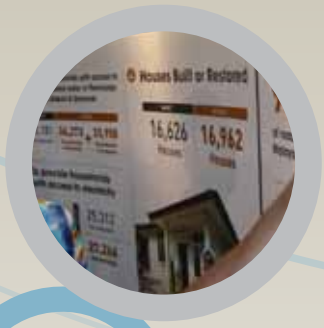
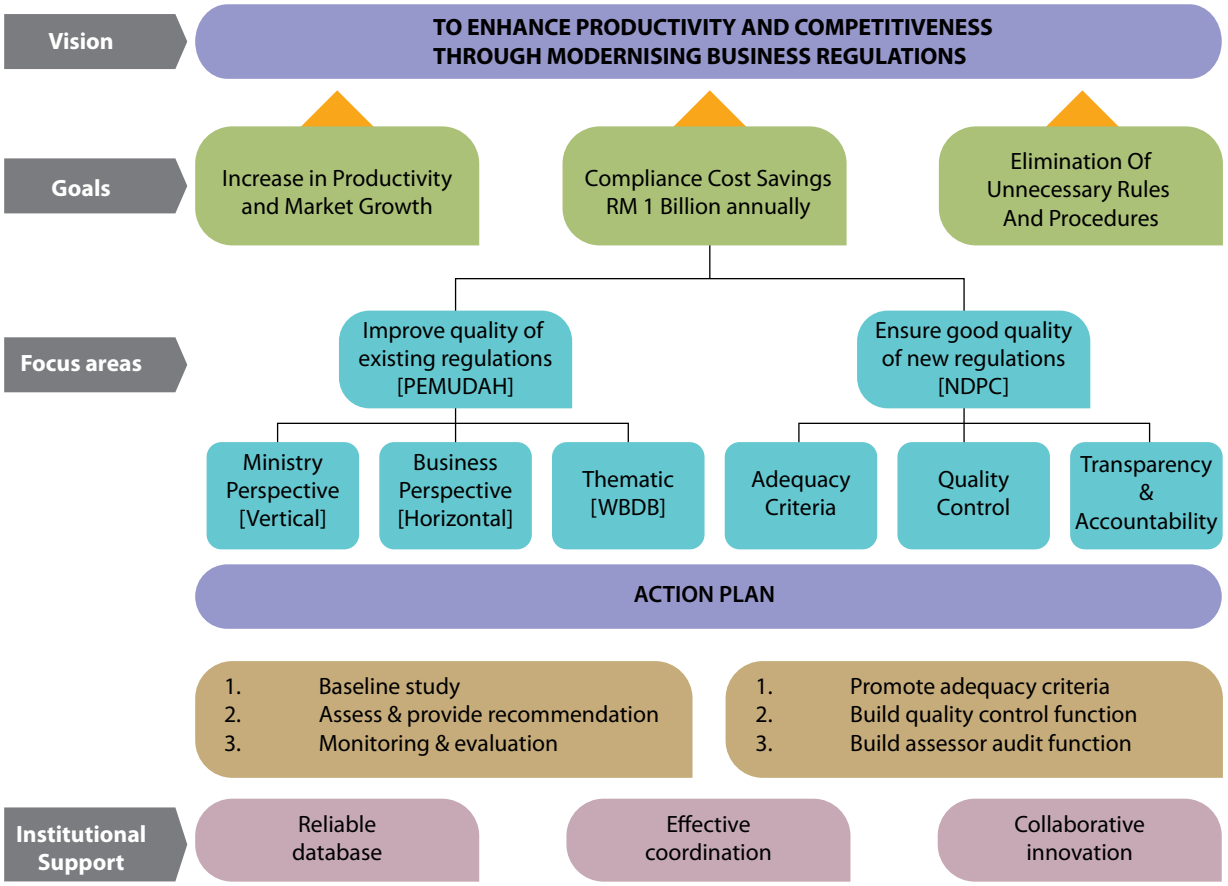


Figure 8.1: The Regulatory Review Framework



The main focus areas in the regulatory review agenda are:

- Improvement in the quality of existing regulations, overseen by PEMUDAH
- Development of new regulations and establishing Good Regulatory Practices overseen by National Development Planning Committee (NDPC).

In the first, which is the improvement of existing regulations, an initiative carried out is modernising business licensing at federal and state levels. In addition, the improvement of existing regulations are carried out following thematic areas outlined in the World Bank 'Doing Business' report.

In the second, the development of new regulations will be subjected to the guidelines outlined under the Good Regulatory Practice (GRP) initiative. In order to achieve GRP, tools and methodologies are provided together with examples of best practices. This will enable regulators to conduct analyses of current regulations using cost-benefit and regulatory impact analysis including standard cost model and benchmarking.

MODERNISING BUSINESS LICENSING AT THE FEDERAL LEVEL

In modernising business licensing, a major priority is the removal of unnecessary regulatory burdens. To achieve this, first of all, a comprehensive review of relevant regulations was undertaken at Federal level, incorporating licences that are thought to impede processes and functions of private businesses.

For example, to conduct business in Malaysia requires at least 10 different business licences and permits. These licences and permits are handled by different authorities and involve different processing times and separate documentations. In the area of Starting a Business in the World Bank 'Doing Business' 2013 Report, Malaysia was ranked at 54th position as compared with its 50th position in 2012.

To undertake the regulatory review initiative, several Focus Groups have been formed under PEMUDAH (the Special Taskforce to Facilitate Business) and entrusted with specific tasks. An example is the Focus Group to undertake Business Process Re-engineering in Business Licensing (FGBPR). This Focus Group is continuously engaged in efforts to modernise licensing to help facilitate the process of obtaining licenses and permits; not an easy task, considering a total of 23 ministries and agencies are involved in business licensing at the Federal level.

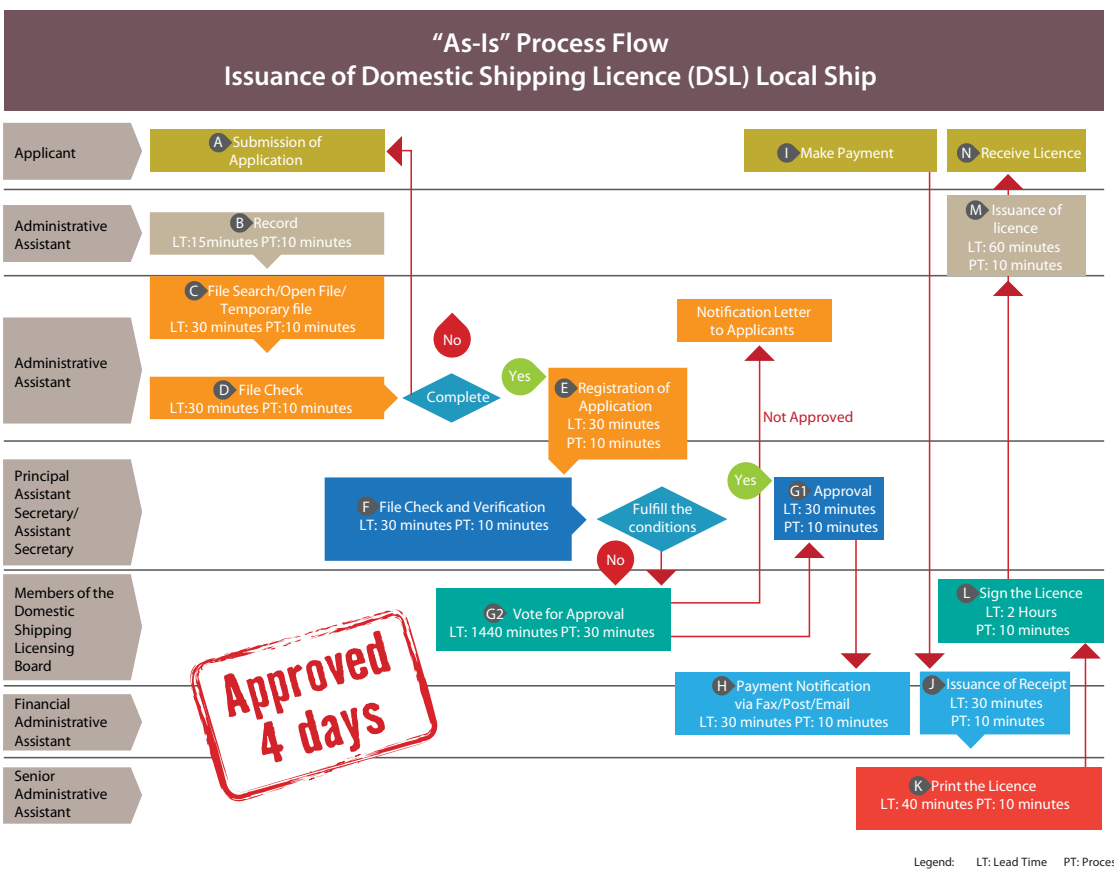
As of February 2013, a total of 779 licences have reviewed by FGBPR. These have been re-engineered or simplified and composited into 452 business licenses. In addition, nine licenses were abolished, while work towards abolishing another 19 is in the pipeline.

BOX 8.1 SIMPLIFICATION OF ACQUIRING A DOMESTIC SHIPPING LICENCE

Below is an example of the simplification of the process of acquiring a domestic shipping licence from the Maritime Division, Ministry of Transport about a success story with regard to the modernising licences initiative.

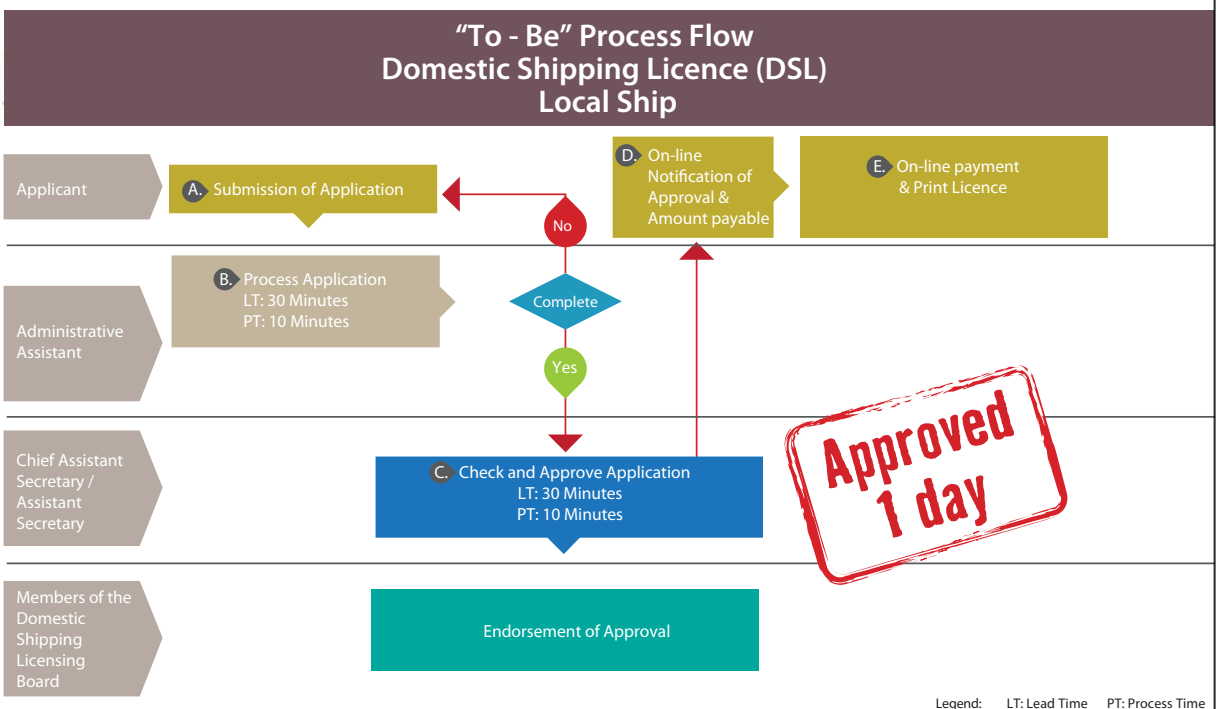
The diagrams and table below illustrate how the Maritime Division of the Ministry of Transport (MOT) has simplified their processes for businesses obtaining a Domestic Shipping License (DSL) from a period of four days to one day. The number of supporting documents has been reduced from six to four documents.

Figure 8.2: Pre-Simplification of Acquring a Domestic Shipping Licence



Source: MAMPU BPR Report 2013

Figure 8.3: Post-Simplification of Acquiring a Domestic Shipping License



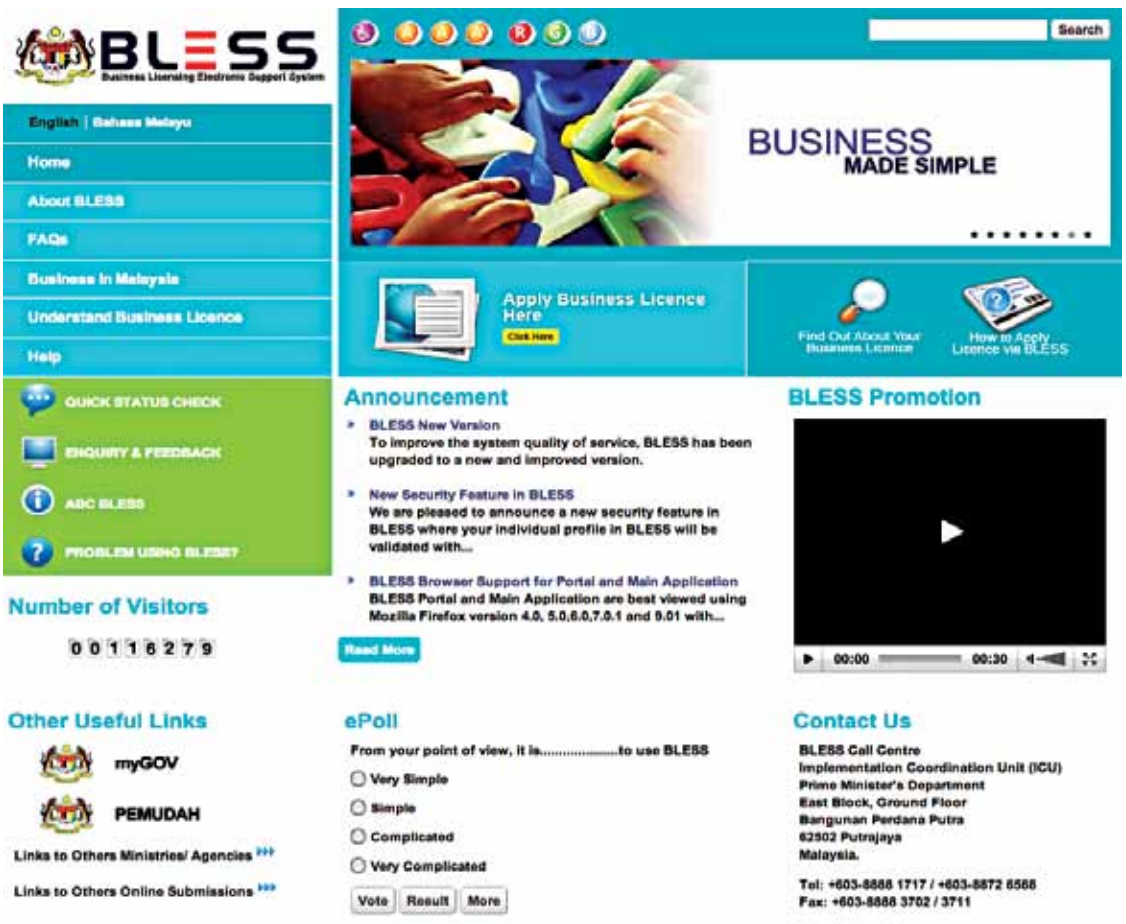
Source: MAMPU BPR Report 2013

Figure 8.4: Summary of Findings and Recommendations in the Process of Getting a Domestic Shipping Licence, Maritime Division, Ministry of Transport

	Before reform	After reform
Processing Time	4 days	1 day
Supporting Documents	6 documents	4 documents (SSM Online Information)
Application Method **i. Application** **ii. Submission** **iii. Processing**	i. Download via website ii. Manual iii. Manual	e-DSL (from e-submission to digital licence)
Approving Authority	i. Members of the Domestic Shipping Licensing Board (conditional approval) ii. Principal Assistant Secretary/Assistant Secretary (unconditional approval)	Empowerment granted to: • Principal Assistant Secretary/Assistant Secretary (conditional & unconditional approval) • Decision of application will be tabled to the members of the Domestic Shipping Licensing Board for endorsement

BUSINESS LICENSING ELECTRONIC SUPPORT SYSTEM (BLESS)

Once simplified, licences such as the one illustrated above, will be integrated or automated into a portal known as the Business Licensing Electronic Support System (BLESS). BLESS is an on-line, one-stop centre for concurrent applications of licences, permits and approvals. It also provides information on business licence applications and functions to facilitate the process of obtaining licences.



In a nutshell, the initiative of modernising business licensing will undoubtedly provide a truly business-friendly environment for corporations that want to conduct business in Malaysia. This initiative will also result in the enhancement of the quality and productivity of products and services of the business community and as such, will enable them to offer more competitive prices to consumers.

MODERNISING BUSINESS LICENSING AT THE STATE LEVEL

Modernising Business Licensing initiatives were filtered down to state level and overseen by the PEMUDAH's Focus Group on Business Process Re-engineering (FGBPR). Again, the task of the Focus Group is to reduce regulatory burdens and modernise business licensing. Similar to the Federal level, the same indicators were being carried out at state level. It was found that the states have over 3,000 regulatory procedures, which are administered by about 900 agencies. Indeed, these are cumbersome and serves only to hamper the expansion of businesses at both Federal and state levels.

BOX 8.2 MODERNISING BUSINESS LICENSING (MBL) AT SELECTED STATES

Pahang is the first state to initiate MBL project starting on May 2012. The main objective of the project is to review all business licences at state level and to identify bureaucratic issues that are thought to impede the business community. Areas regarding improvement were identified after which steps were taken to find ways to reduce costs. At the same time, efforts to improve efficiency were undertaken with the goal of creating a conducive business environment to enhance business competitiveness at state level.

In Pahang, 14 state agencies involved in MBL projects presented their initial reviews of business licensing to PEMUDAH at state level. The state reviewed a total of 205 licences out of which 107 licences (52%) had gone through the business process re-engineering (BPR) exercise and 82 licenses (40%) were left intact. As a result of this effort, 107 licenses have been simplified and composited into 47 licences.

In Negeri Sembilan too, 14 state agencies were involved in the MBL exercise. The result was that a total of 197 licences have been reviewed; 32 licenses (16%) have gone through business process reengineering (BPR), 90 licenses (45%) have been left intact; and one (0.5%) has been eliminated.

In Melaka, 10 state agencies were involved in the MBL exercise. A total of 115 licences have been reviewed; 35 (30%) licenses have gone through BPR and 66 (57%) licenses have been left intact.

In Sarawak, 21 agencies were involved in the MBL exercise with a total of 161 licenses being reviewed and the same number of licences, 161 (100%) have gone through the BPR process and been modified.

It is necessary to continuously review licensing rules and laws at state level in order to reduce compliance costs borne by the business community. Not only that, continuous review will facilitate the approval of relevant regulations, and help to reduce red tape and time taken in the application of licenses needed to conduct business. Cumbersome and outdated administrative procedures must be repealed and regulations that are obsolete eliminated.

MODERNISING REGULATIONS FOR TRADING ACROSS BORDERS, ENFORCEMENT OF CONTRACTS, AND OBTAINING CONSTRUCTION PERMITS

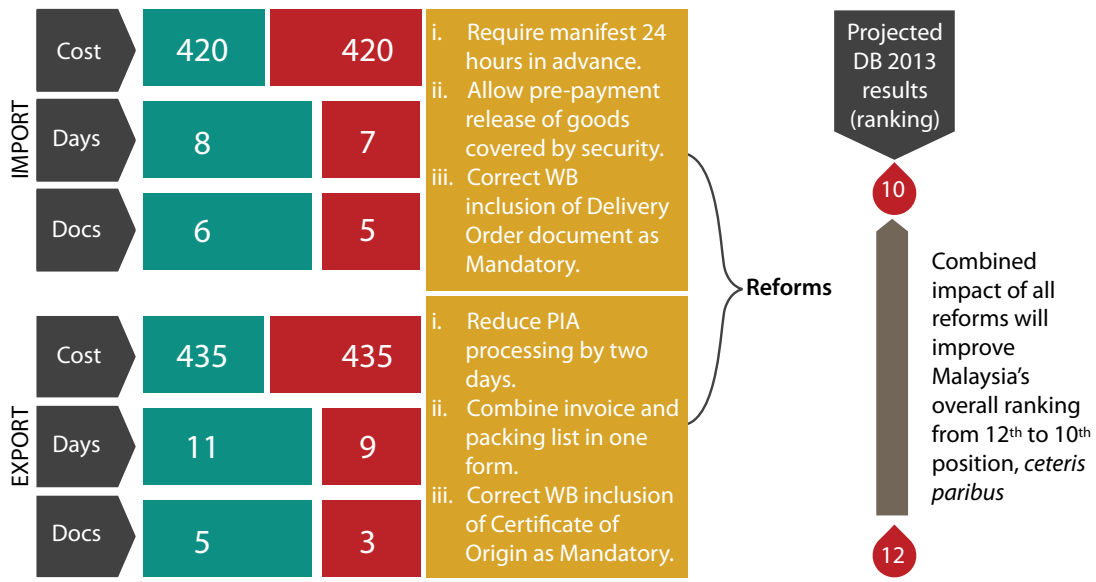
The World Bank Doing Business (DB) 2013 Report ranked Malaysia 11th (DB 2012: 29th) among 185 economies for ease in trading across borders. The report defines 'Trading Across Borders' as 'the time and cost (excluding tariffs) associated with exporting and importing a standardised cargo of goods by sea transport'. In arriving at their ranknгs, the World Bank factored in the time and cost necessary to complete every official procedure for exporting and importing goods; however, the time and cost in transportation by sea are not included. All documents needed by the trader to export or import goods across the border are factored in.

MALAYSIA'S PERFORMANCE IN TRADING ACROSS BORDERS (TAB)

Efforts are being intensified to improve Malaysia's standing in the area of Trading Across Borders with the initiatives undertaken by the Focus Group on 'Trading Across Borders' (TAB). The Focus Group is in continuous discussion with key stakeholders to examine TAB indicators such as number of procedures, time necessary for completion of procedures, and cost associated with all procedures. Of the three indicators, Malaysia has good standing with regard to cost as we are the lowest among the countries in this region.

Malaysia will engage with the World Bank with regard to their inclusion of Certificate of Origin (COO) as a required document for export. This needs further analysis on the issuance of Preferential Certificate of Origin for electrical and electronics product category (following the assumptions of the World Bank) where the duty is almost zero. It also involves tracking records of our COO being used as a back to back COO. In the case of imports, the World Bank also counted the Delivery Order document as one. The World Bank previously used the term cargo release order, but upon clarification by the Focus Group that the cargo release order is not a physical document, but rather, an instruction by Customs to the ports, via the ports' system, that the goods have been released by Customs, the World Bank has renamed the document as 'Delivery Order'. In 2013, Malaysia will continue to engage with the World Bank with regard to the COO and the Delivery Order (which is now submitted electronically to the ports). The summary of reforms identified by the TAB Focus Group is shown in Figure 8.5.

Figure 8.5: Impact of Reforms in Trading Across Border (TAB)



MALAYSIA'S PERFORMANCE IN EASE OF ENFORCING CONTRACTS

Malaysia's performance in Enforcing Contracts maintained its position in the top 20 percent at the 33rd rank (DB 2012: 31st). Additionally, Malaysia's overall ranking in enforcing contracts has improved from 81st position in the DB 2007 report to 33rd in the current DB 2013 report. It is to be noted that the 'Enforcing Contracts' (EC) indicator is a measure of the efficiency of the judicial system in resolving a hypothetical lawsuit to enforce a contract for the sale of goods using three criteria, namely, the number of procedures needed, total time in days from the moment a plaintiff decides to sue until payment is received, and the total cost in official fees in US dollars. Each of these three criteria is measured for each of the three stages of a hypothetical judicial proceeding, namely, the filing and servicing of the lawsuit, the requisite trial and judgment, and the enforcement of judgment on the defendant.

The overall ranking for EC is determined by the equal weighting of the three criteria and these are described below:

- In totalling up the procedures, what is taken into account are the sum of interactions between the parties and with the court, and factored in as well, the internal actions of the court in resolving the case. Steps carried out concurrently are not counted as separate steps.

- Time in days is measured from the moment the plaintiff decides to commence with the filing of a lawsuit until the moment of payment, which is undertaken after the enforcement of judgement.

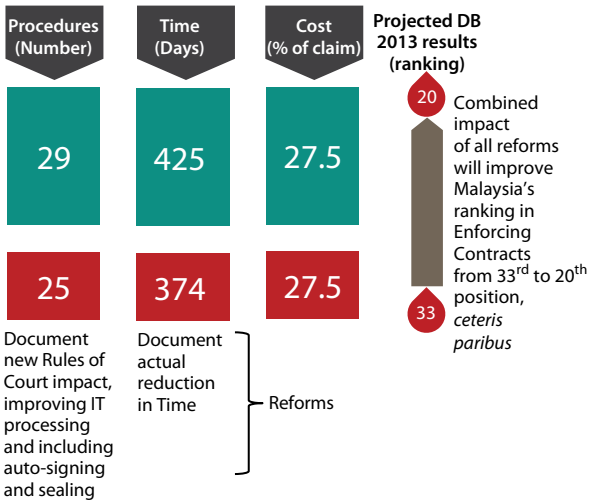
- Costs, which form a percentage of the claim, include attorneys' fees, and court and enforcement costs.

The EC measure is based on the performance of the court in the country's largest commercial city that has jurisdiction over cases involving claims that are equivalent to 200% of per capita income (in Malaysia's case, this amounts to approximately RM16,000). It is however, inappropriate to benchmark against this as the quantum of the claim for unpaid goods. This is on the low side for Malaysia because generally the value of such claims filled in court are much higher. Most of these claims are filed in the High Court which now has juridiction for claim value of more than RM1 million.

The amount of Attorney Fees is not strictly based on the amount of claim, but, on work done, court hierarchy, complexity of case and seniority of counsel. The Focus Group will engage with World Bank to seek qualification for Malaysia that the claim value stated in the case study is not a standard case for Malaysia.

Malaysia's judicial system has undergone reform from time to time to be in line with current needs. Further reforms have also been identified by the EC Focus Group (Figure 8.6). These reforms, if implemented, will improve Malaysia's ranking in Enforcing Contracts from 33rd to 20th placing, with all other factors remaining the same.

Figure 8.6: Impact of Reforms on Enforcing Contracts (EC)



MALAYSIA'S PERFORMANCE IN GETTING CONSTRUCTION PERMITS

The rationale for reviewing current regulations in dealing with construction permits in Kuala Lumpur is to curb unnecessary burdens arising from the regulations themselves, poor enforcement or administration, and unnecessary duplication and inconsistencies. According to the World Bank Doing Business 2012 report Malaysia ranked at 113th and the result has led to an unfavourable image for Malaysia. The report stated that a Principle Submitting Person has to go through 22 procedures which takes 260 days before getting construction permits from various technical agencies. As a result of this burdensome process, the Focus Group on Dealing with Construction Permits (FGDCP) has been tasked to conduct a baseline study and to propose significant changes to the government to improve the situation. The Focus Group comprises stakeholders from five ministries, nine agencies and a number of private consultants. In the period from December 2011 to February 2012, FGDCP studied the approval process for permits by studying a sample case which is the setting up of a Petronas Service Station on Cochrane Road, Kuala Lumpur. Baseline data revealed that there were 37 procedures to be fulfilled in getting construction permits in Kuala Lumpur. In terms of time taken, it was estimated by the regulators that the whole process of approving the application took 161 days.

The results prompted the focus group to take bold action by organising a Public Consultation Forum on 3rd April 2012. The event was to introduce a new framework in dealing with construction permits spearheaded by MPC as the lead agency. The consultation represents a collaborative innovation initiative in the promotion of Good Regulatory Practices in Malaysia. Members of industry were asked to use the event as a platform for exchange of views and giving of feedback. Members of industry were also urged to play a more active role in formulating and recommending changes that would make the new model or process to be introduced more effective, efficient and practical.

Subsequently, on 1st June 2012, the FGDCP in Kuala Lumpur introduced a new fast track approval process in the application of construction permits. The fast track approval for small-scale non-residential projects known as "OSC 1 Submission", covers concurrent submissions of planning permission plans, buildings plans, engineering plans, fire safety plans and utility plans, and will require only 10 procedures and take 100 days to obtain approval.

In the recently published Doing Business 2013 Report, Malaysia registered a marked improvement in ranking for efficiency in dealing with construction permits which has risen to 96th position. It was noted by the World Bank that Malaysia has made dealing with construction permits faster by setting up the one-stop centre for obtaining approvals for low-risk projects such as building a simple commercial warehouse or petrol station. The coordination between the Kuala Lumpur City Hall (DBKL) in-house technical departments and external technical agencies has reduced the number of procedures and the time taken to obtain the required approvals.

As the new procedures will significantly reduce time and red tape, it is imperative that the implementation is disseminated. In the World Bank Report, a reduction of 10 days in start-up time will lead to an increase of 0.4% in economic growth and 0.25% in investment rate. Investors should take note that the Malaysian Government is continuously improving its service delivery system in order to remain competitive and resilient on the world scene. Further strengthening of the permit approval procedures through public and private collaboration must be continued in order to obtain regular feedback and to ensure that all views are taken into account for continuous improvement.

Figure 8.7: A One-Stop Centre 1 Submission

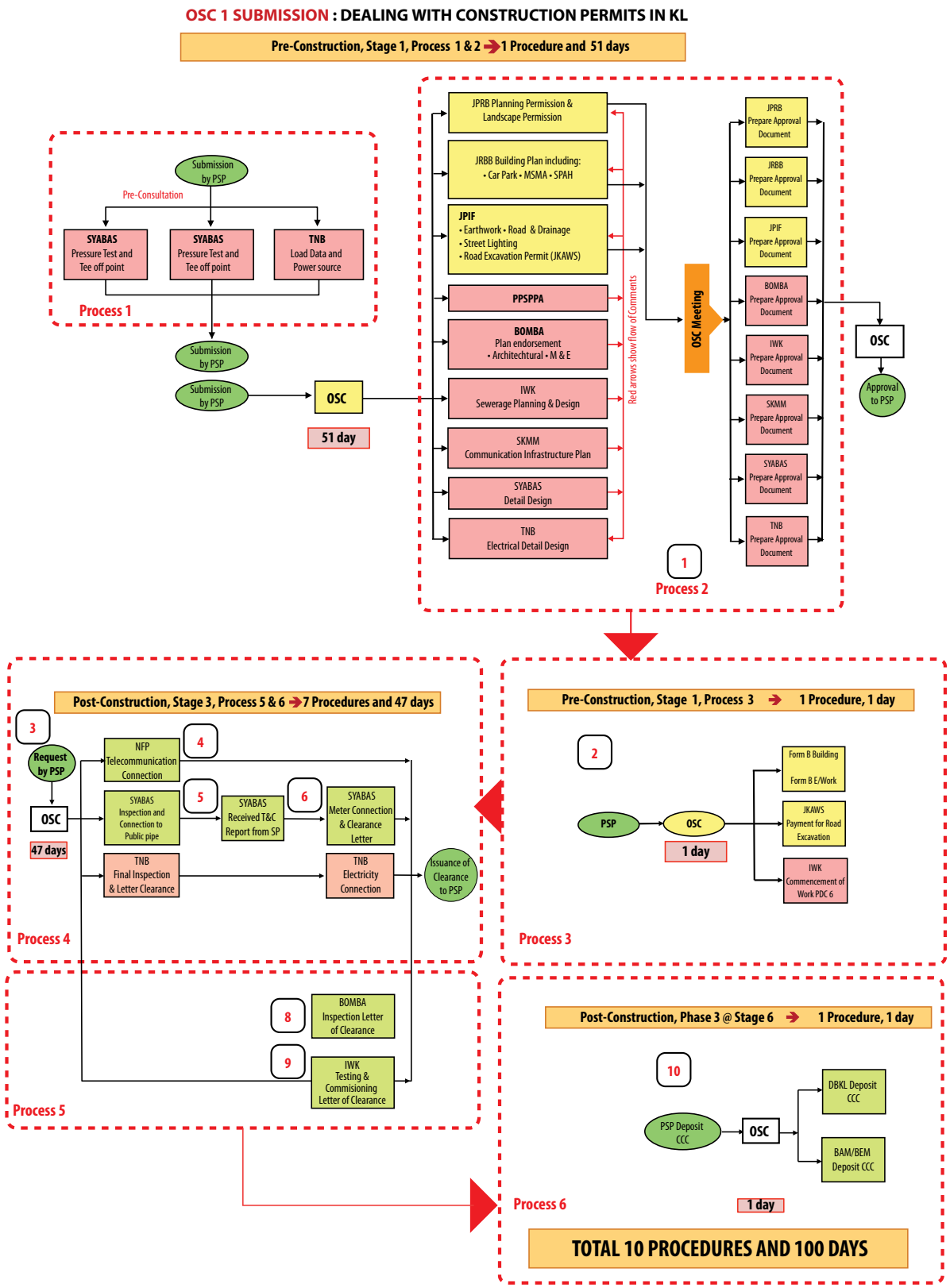
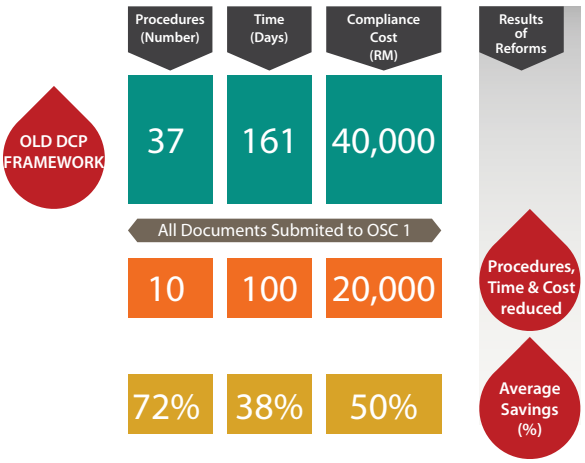


Figure 8.8: Impact of the use of OSC 1 Submission on Dealing with Construction Permits in Kuala Lumpur - based on a single submission



ENABLING BUSINESS ENVIRONMENT USING GOOD REGULATORY PRACTICE (GRP)

We may recall that the Regulatory Review Framework hinges on two focus areas, one of which concerns improvement in the quality of existing regulations that was described above. The second initiative is the development of new regulations based on good regulatory practices. A process or framework to ensure good practice when developing rules and regulations, or in other words, a quality regulatory management system, will have to be put in place.

QUALITY REGULATORY MANAGEMENT SYSTEM (QRMS)

Good regulatory practice requires a framework that has characteristics of good governance and fulfills criteria such as 'adequacy' and 'quality control' or 'gatekeeping' features. Having such a framework will minimise unnecessary compliance costs and fulfill the expectations of the business community. Regulatory management systems have been utilised effectively in countries such as Australia, Canada and countries of the Organisation for Economic Cooperation and Development (OECD). Using the regulatory practices of these countries as models, MPC has recently developed quality regulatory management system for Malaysia. The existing regulatory management system is shown in Figure 8.9 and the proposed framework for rule-making and enforcement is shown in Figure 8.10.

Figure 8.9: Existing framework used for developing regulations

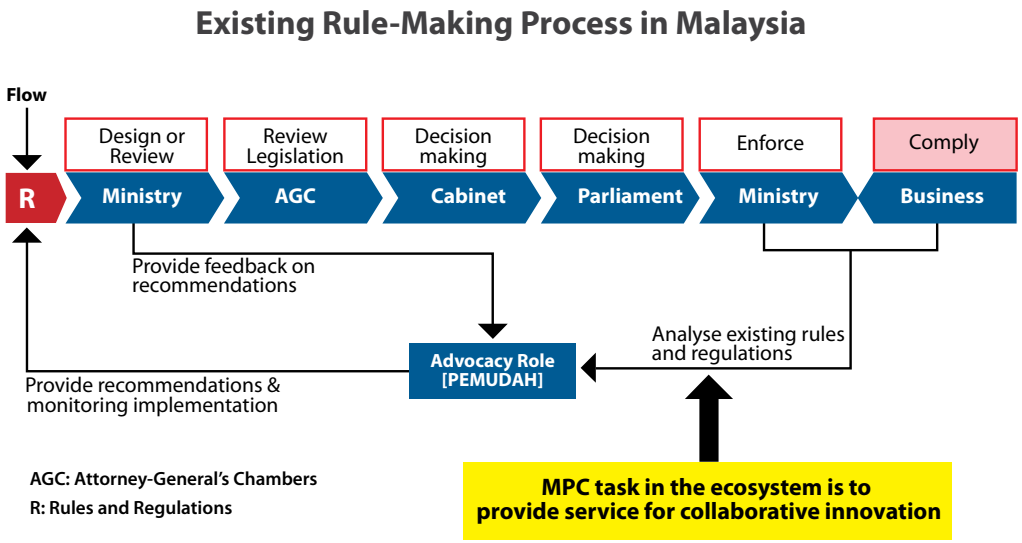
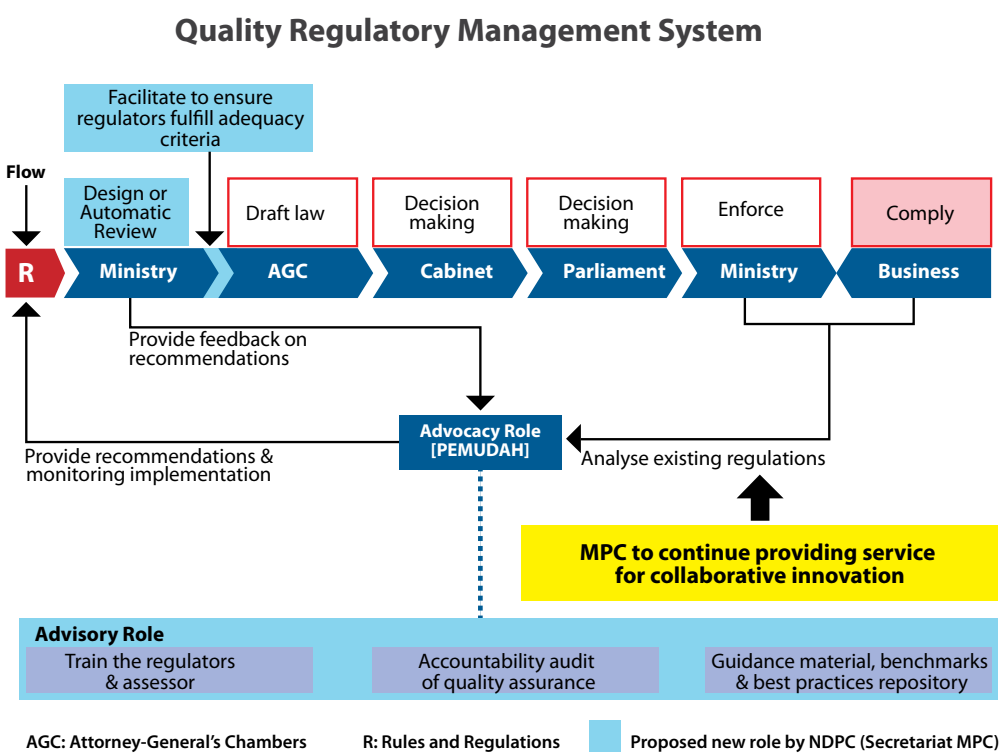


Figure 8.10: New framework in the rule-making process



The regulatory framework proposed by MPC for both existing and new regulations is meant to ensure conformance with various elements in Good Regulatory Practices (GRP). The key elements in the new regulatory framework are more comprehensive, thus, will result in regulations that are of high calibre. The recommendations in the new framework are listed below:

- The establishment of a oversight body role that will check and enforce compliance with adequacy criteria and requirements;
- Publication and availability of the framework for well-designed regulatory development and review systems;
- The provision of training and capacity building for regulators with regard to procedural requirements such as the Regulatory Impact Analysis (RIA) and Public Consultation procedures;
- Introduction of automatic reviews for new regulations; and,
- Regulators to provide feedback on recommendations made by the central overseeing body.

Industry

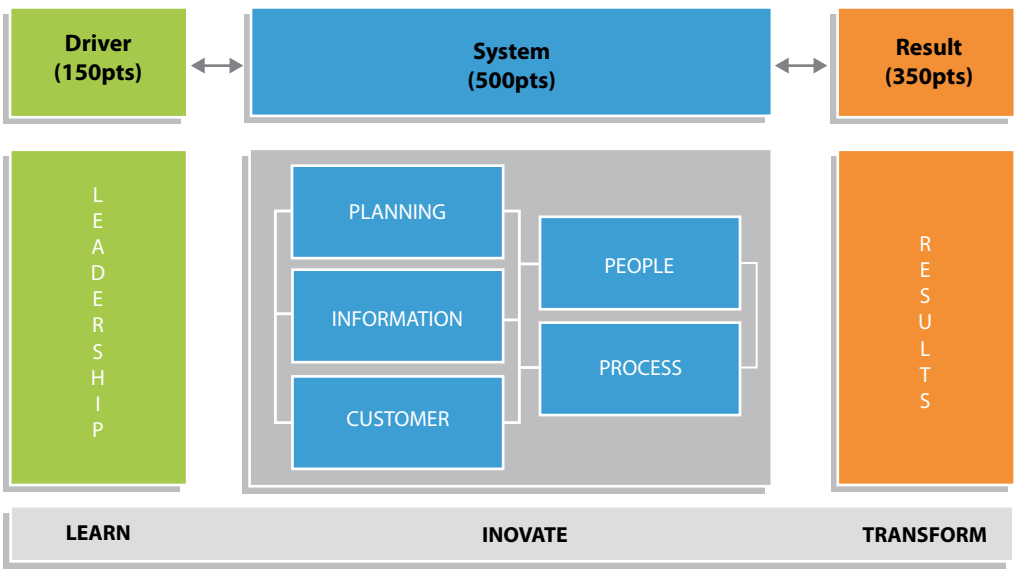
RECOMMENDATIONS FOR THE INDUSTRY SECTOR

MPC's raison d'être is to raise productivity levels of organisations in the country. Over the years, MPC has initiated a good number of programmes so that organisations achieve productivity and excellence. For the industry sector, MPC has an overall model called the Business Excellence Framework (BEF). The BEF provides a holistic approach aimed at strengthening the management system and work processes of an organisation. Companies which adopt the framework will be able to function at a high level of productivity and achieve excellence in business and ultimately be competitive. The BEF will enable companies to produce core results, namely, recognition as high performance and receive certifications in national and international standards competitions.

THE BUSINESS EXCELLENCE FRAMEWORK (BEF)

BEF aims to transform companies to be high performing by assisting the main driver of the organisation, which is its leadership. Leadership will achieve excellence through the engagement of people in the organisation, that is each and every individual in the company. Strategic planning under BEF will result in integrated and concerted effort through a shared vision of all personnel in the organisation. Under BEF, information is shared, and accurate data is displayed and known to every individual. It is this shared knowledge that plays an important role in decision-making. In addition, all action taken by the organisation following BEF are customer-focused. Furthermore, it is not only people that play a key role in BEF; processes are equally important. Hence, BEF recommends that all processes must be continuously evolving and improved in order to get the results that will make the company high performing (Figure 8.11).

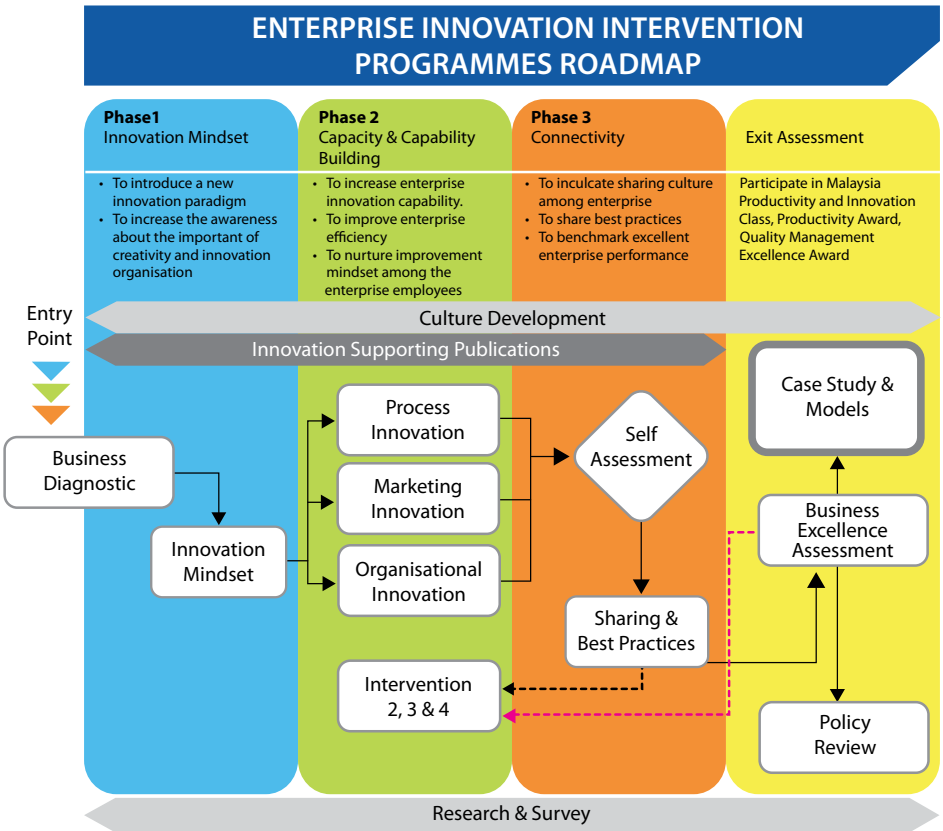
Figure 8.11: Business Excellence Framework (BEF)



THE ENTERPRISE INTERVENTION INNOVATION PROGRAMME (EIIP)

BEF as a management and productivity framework, is only a tool to achieve productivity. To implement BEF, MPC has initiated the Enterprise Intervention Innovation Programme (EIIP). EIIP can help steer companies towards excellence in performance. Various activities have been initiated under EIIP, as the diagram below shows (Figure 8.12).

Figure 8.12: Enterprise Intervention Innovation Programme (EIIP)



To begin with, EIIP attempts to change the mindset of workers in an organisation. In Phase one, after going through a series of activities designed to change the mindset of workers, a diagnostic examination is undertaken to assess the current situation of the organisation. This diagnosis is guided by criteria set by the BEF and once concluded will reveal areas needing improvement, which can be shortfalls in process efficiency, leadership or difficulty in getting available and accurate information. Phase two is devoted to capacity and capability building. In this phase, various tools and initiatives are introduced such as lean management, team excellence and material cost saving, initiatives Lean QE (5S), various customer-centric initiatives, customer satisfaction measures, etc. Phase three involves the sharing of best practices achieved by an organisation that can be emulated by others. This is done through case studies, best practices workshops and through various publications. Finally, it is important for the company to continue reassess the impact of the intervention by utilising a suitable tool or initiative so that the effort put in can be sustainable over the long term.

EIIP PROJECT UNDER MYKE

One of the projects under MPC's Enterprise Intervention Innovation Programme (EIIP) is a project known as Malaysian Knowledge Content in Key Economic Sectors (MyKe). A total of 200 SME companies are involved under MyKe. The aim of the MyKe Intervention Programme is to increase productivity levels of SMEs so that they can become high performing and competitive.

Under MyKe, a business excellence (BE) score of 400 and above was set as the standard denoting business performance that is good and above average. A score below 400 is defined as low performing. The MyKe project ran from 2011 to 2012. With MPC's support, the companies involved in the project achieved the results that is outlined as follow.

Before intervention, the percentage of companies scoring below and above 400 were 52% and 48% respectively. After intervention, the percentage of companies scoring below 400 was reduced to 17% while those scoring above 400 had risen to 83%.

- process efficiency Improvement in - 83% of companies registered a process efficiency of more than one (PE > 1)
- reject rate Improvement to - 93 percent of companies recorded a reject rate of <5%.
- time delivery Improvement in - 80% of companies achieved more than 90% on-time delivery.
- customer satisfaction rating Improvement in - 92% of companies achieved a 75% point in customer satisfaction rating

SERVICE EXCELLENCE

The dynamism of the business environment has compelled organisations to compete vigorously for market share to secure long-term growth and profitability. Additionally, organisations are expected to fulfill the changing needs of customers by providing a variety of products and services, albeit with small market growth. Thus, satisfying customers' needs has become one of organisational strategies as a defensive strategy focusing on retaining current customers as loyal purchasers of the organisation's product and services.

Using the Customer Satisfaction Index (CSI) as a measurement tool, CSI will serve as a quantitative benchmark of the quality of goods and services produced by organisations. Leveraging on the American CSI database, comparison of benchmarks can be made over time and across participating countries like Singapore, South Korea, and the United States. Accordingly, organisations will be able to measure their customer engagement through various identified touch points such as at the information counter or the payment counter.

Subsequent to measuring CSI, organisations aiming to raise satisfaction by incorporating an extensive and holistic approach of the service excellence can be trained further in the Customer-Centric Initiative (CCI) programme. CCI takes place when employees of an organisation are focused on the customer's total value chain of experience and able to deliver different products and services to different types of customers. This is a paradigm shift for organisations in becoming excellent service provider. Among the focus areas of CCI programme are service leadership, service agility, and customer experience.

BOOSTING PRODUCTIVITY THROUGH INDUSTRY WIDE INITIATIVES

We find that as a rule, companies benefit from the implementation of the various productivity tools and initiatives under MyKe. Among the tools and productivity initiatives undertaken to help boost productivity are: Lean Management, Green Productivity, and Lean QE. Business excellence is recognised through the award of certificates and standards such as ISO9000, ISO 14000, CMMI (Capability Maturity Model Integration).

GREEN PRODUCTIVITY

Green Productivity (GP) is a strategy for enhancing productivity and promoting good environmental performance in the socio-economic development of the country. GP is the application of appropriate techniques, technologies and management systems to produce environmentally compatible goods and services. GP methodology can be applied not only in the manufacturing sector but also in communities, the services sector, and even in agriculture. In advancing the GP programme, MPC places emphasis on a "down-to-earth" approach at the workplace. The action for an environmentally sustainable development in the manufacturing sector, for instance, will have to start at the shop floor. It is at the shop floor that efforts should be deployed, i.e. in the production of environmentally friendly goods which are of superior quality. Secondly, management should put in place measures to reduce environmental problems such as global climatic change and the depletion of the ozone layer. MPC has introduced Green Productivity initiatives in industry, based on the above premise and has achieved very encouraging results.

MATERIAL COST SAVINGS INITIATIVE

Material Cost Savings (MCS) is part of the GP concept and is meant to inculcate greener production practices in industry. MCS is a system that measures the flow and stock of materials in the manufacturing process and estimates the cost of wastes and emissions to a high degree of accuracy.

MCS seeks to reduce costs through waste reduction, thereby improving resource productivity.

The benefits of implementing MCS are:

- reduction in the amount of waste generated,
- reduction in material input and material costs,
- increase in processing efficiency and reduction in manufacturing cost, and
- lowering the environmental impact of manufacturing industries.

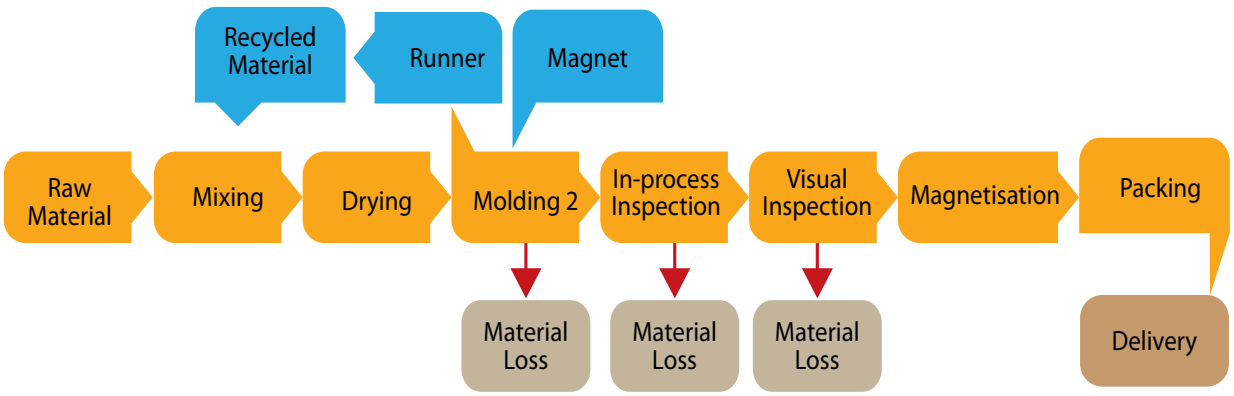
Below, an example of best practice in the application of MCS in a manufacturing company, is shown. The example involves the process of manufacturing plastic magnets.

Figure 8.13: The Process of Manufacturing Plastic Magnets

THE APPLICATION OF MCS IN THE MANUFACTURING PROCESS OF PLASTIC MAGNETS

Figure 8.14: Process Involves in the Application of MCS in the Production of Plastic Bonded Magnets

Magnet Ring Production (magnet with plastic over-molding)



Note: Boxes in red indicate material losses in the process of production

Processes identified as contributing to material loss pertaining to material cost, energy cost & system cost include:

- Purging during moulding (due to frequent machine stops and model change-overs);
- Inconsistency in the moulding process (due to a tooling problem);
- High defect ratio of magnet production (due to weak magnet strength);
- Non-availability of detailed information on analysis of individual defect criteria (effective counter-measures not able to be implemented); and
- Disposal of QA samples (apart from samples kept daily, the balance of QA samples are disposed off after measuring them).

LEAN MANAGEMENT

Lean management practices have been applied in the manufacturing sector for over a decade, after which it was adopted by financial institutions, the healthcare and hospitality industries, and lately, the public sector. Lean in Quality Environment (Lean QE) is one of the lean management tools that has derived its philosophy from the Toyota Production System (TPS). This tool is totally devoted to the elimination of wasteful practices and shortening time customers to receive goods ordered. Lean QE begins by working to improve individual process steps but the gains become more powerful if those steps are linked together.

Lean QE is using the Value Stream Mapping (VSM) as its main approach. VSM is a graphical tool that helps to see and understand the flow of material and information as a "product/service" makes its way through their value stream. The organisations can clearly look for opportunities to eliminate or reduce waste along the processes by implementing VSM.

Currently, MPC East Coast Region (WPT), the Centre of Excellence in Lean, is in the midst of implementing six projects utilising Lean Management in the service industry at Pahang, as shown below:

1. Pahang State Development Corporation (PKNP);
2. Kuantan Specialist Hospital (KSH);
3. Global Factor Sdn. Bhd.;
4. Kuantan District and Land Office (PDT);
5. UiTM Pahang; and
6. Kuantan Municipal Council (MPK).

One best practice has been singled out and this is the service function of the Pahang State Development Corporation (PKNP). PKNP is the first governmental organisation in Malaysia to embark on the Lean initiative which implemented the Lean QE approach.

BEST PRACTICES OF LEAN QE USING VSM

Perbadanan Kemajuan Negeri Pahang (PKNP) is an early adopter of Lean QE in Malaysia. PKNP has at least one lean project in every department, with an annual budget of RM26,000 each. The main obejctive is to reduce customer complaints in terms of service delivery. With Lean QE, PKNP has successfully reduced the service delivery process from 15 to 13. The two processes which did not add value to the whole process were eliminated. As a result, processing time was reduced from 18 working days to six working days.

PKNP uses Value Stream Mapping (VSM), a Lean tool to look closely at processes, operations, and systems to improve in order to serve the public better. In using VSM, each step of a certain process is documented and captured. Each step is then analysed and categorised into value added, non-value added or non-value added but necessary. The unnecessary steps are the steps that must be reduced, if not eliminate.

After this first step is completed, a Current State Map is then created and ideas for improvement (Kaizen Blitz) are listed. Next, a Future State Map is created - this map should be ambitious, but needs also realistic. Next, actions to bridge the gap between current and future state maps are put in place. Lastly, the Implementation Map along with the Current and Future Maps are displayed in a visible place in the organisation, so that progress can be monitored by everyone in the organisation.

As a result of the implementation of lean management using VSM in PKNP, a great number of improvements were made, of which there are too many to list, so we will only list two of them. One, is improvement in the Preparation and Execution of Purchase Agreement with regard to Industry Sites and improvement recorded is given below:

Lead Time	:	Improved 60.2% (9,728 min to 3,866 min)
Process Time	:	Improved 41.3% (3,000 min to 1,761 min)

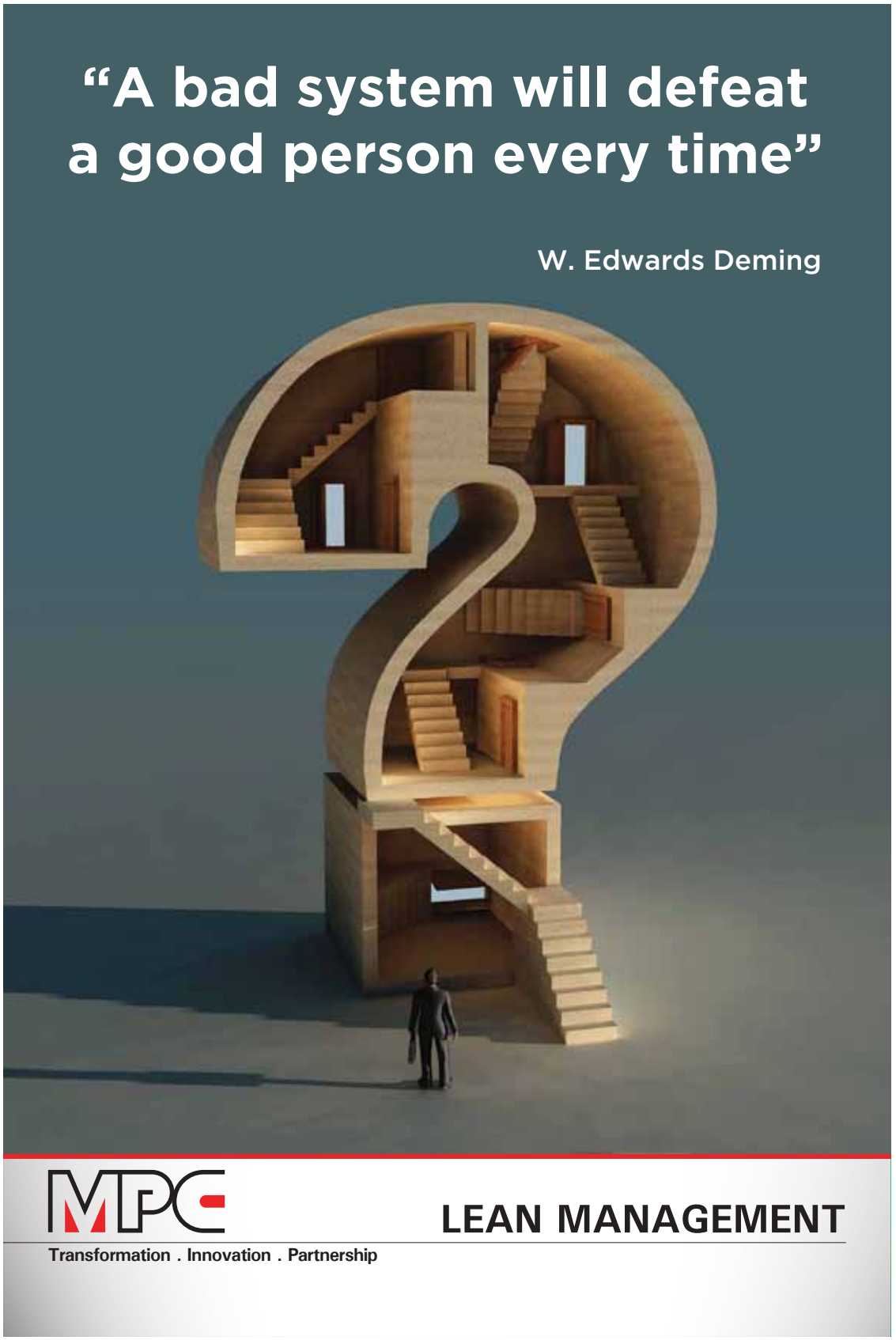
“Where there is no standard, there can be no Kaizen”

Taiichi Ohno

MPC

Transformation . Innovation . Partnership

LEAN MANAGEMENT


“A bad system will defeat a good person every time”
W. Edwards Deming
MPC
Transformation . Innovation . Partnership
LEAN MANAGEMENT

Two, is improvement made in Rental Property Management and the improvement is given below:

Lead Time : Improved 1.6%
(595 min to 585 min)

Process Time : Improved 57.3%
(19,795 min to 8,445 min)

Overall, the impact of the implementation of lean management on customers using VSM in PKNP is as given below.

- Customer gets faster service with quality;
- Waiting time is reduced;
- Damage complaints are quickly attend to;
- Quick submission of Housing Loan Applications;
- Prompt payments made to contractors and suppliers; and
- Projects can be completed quickly, hence, allowing tenants/buyers to occupy premises immediately.

LEAN IN HEALTHCARE SERVICES

Healthcare is an ideal services to reap the benefits of Lean in revealing new opportunities to improve effectiveness. While Lean was developed originally in the automotive sector, it has spread across the manufacturing and the service industries to companies such as Southwest Airlines and Vanguard Insurance in the United States. Recently, the healthcare industry has demonstrated success using these principles in the United States, United Kingdom, Australia and Canada. It is clearly shown that Lean is now becoming a critical tool for maximising customer value and eliminating waste in healthcare industry.

However, to understand why, managers and clinicians must first accept that waste equals opportunity: the more waste (repeated steps, rework and unnecessary motion) that exist in a process, the greater the opportunity is to convert that waste into value-added activities. For example, when they remove the "waste of waiting" and patient wait times are reduced or when they remove the "waste of inventory" and capital is freed up to invest elsewhere. MPC believes that one approach that can creates new opportunities to do more and better with less is Lean. Once a healthcare organisation is familiar with Lean methodology, it takes no more than a few hours of observation on the front lines to uncover opportunities for improvement, such as repeated laboratory orders, staff walking miles to find equipment and forms produced and never read. The Lean methodology is the solution of the challenges faced by the healthcare system, for example the quality of patient care, the number of patient served and patient waiting times.

EXCELLENCE THROUGH TEAMWORK

Teamwork is the essence of workplace productivity. Fostering teamwork will create a work culture that values collaboration and a shared vision and shared goals. Creative and committed teams provide the foundation for continuous improvement. Teams can become catalysts of change in driving productivity and enhancing innovativeness.

In order to sustain team spirit and to create sustainability in organisations, avenues are being created by MPC through the organisation of several events. One of them is the National Innovation Creative Circle (NICC), an annual event at the company level, the regional level and the national level. Winning teams at the national level are given the opportunity to compete at the international level called The International Convention on Quality Control Circles (ICQCC).

Additionally, in order to widen the scope and depth of innovation projects of Malaysian companies, the National Exposition on Team Excellence will be introduced following the example of International Exposition On Team Excellence (IETEX), an annual event organised by the Singapore Productivity Association. The Singapore IETEX provides a platform for experts on quality, and quality circle practitioners and enthusiasts from all over the world to meet and to learn from the experiences and good practices of international organisations and teams. There is also the International Quality and Productivity Convention (IQPC) event. In 2012, IQPC was held in Indonesia and for the first time, MPC brought Malaysian teams to participate in this convention.

ANNUAL PRODUCTIVITY & INNOVATION CONFERENCE / NATIONAL INNOVATION CREATIVE CIRCLE

The Annual Productivity & Innovation Conference (APIC) and Exposition 2012 was a prime event organised by MPC. APIC 2012 brought together participants of four major events, namely, the National Innovative and Creative Circle Convention (NICC), the Quality Environment Convention (5S), the Productivity Conference (PC) and the CEO Masterclass. NICC features selected ICC among the Gold award recipients at the Regional ICC Convention. The winners of the NICC 2012 were as follows.

Team LULUS from Perusahaan Otomobil Nasional Sdn Bhd won the The Best Overall ICC Excellence Award. Team KITTO KATSU from Fuji Electric Semiconductors was the Team that generated the most cost savings and QSR Brands Berhad won the award for being the Organisation that Sent the Most Number of Teams in a Year.

INTERNATIONAL EXPOSITION ON TEAM EXCELLENCE

For the first time in 2012, Malaysian teams participated in the IETEX competition. The four teams representing Malaysia were: Reach from UiTM Pahang, Lestari from USM Kelantan,Terrabytes from the Royal Customs Department of Kuala Lumpur and Pro Control from Tenaga Nasional Berhad. Team Reach from UiTM Pahang won the Silver Award with their project titled "Neuro Cognitive Tracking and Corrective Action: A Way Out to High Performance Gap amongst Students". Lestari from USM Kelantan won a Merit award

INTERNATIONAL QUALITY AND PRODUCTIVITY CONVENTION, INDONESIA

Malaysian teams participated for the first time in the IQPC 2012 organised by the Wahana Kendali Mutu and Association of Quality and Productivity Management of Indonesia. This participation is an initial step in the expansion of collaboration between Malaysian and other countries in the region. The event attracted about 1,400 participants who are international participants from 130 industries. A total of 252 teams competed in the technical category. There were several winners from Malaysia. KD Pelanduk from Royal Malaysia Navy won the Platinum Award. Saizen from UiTM and Resque United from PHN Industry Sdn.Bhd both won the Gold Award. MPC received the Newcomer Award together with some other organisations that joined this convention for the first time.

CERTIFICATIONS AND STANDARDS

Working towards obtaining a certification or standard is a good way for organisations to boost productivity among workers. Standards such as ISO 9000, ISO 14000, ISO 22000 can create confidence among buyers that products and services of these companies are safe, reliable and of good quality. Standards are strategic tools in business that can reduce costs by minimising waste and errors and increasing productivity. If a company is ISO certified, this will open up opportunities for the company to venture into new markets and take part in global trade.

BOX 8.3 CASE ON GOOD MANUFACTURING PRACTICES

When PG Bakery began to implement the Good Manufacturing Practices (GMP) tool, the initial diagnostic test yielded an overall score of 53%. The Information element scored 80%, with Process having a score of 79%. The Planning, Customers, and People elements yieded low scores of 31%, 32% and 43% respectively. Encik Mohd Amin, the manager and owner, carried out all management functions and there was no proper collection of customer feedback to improve customer service not to mention an absence of a systematic employee development programme.

GMP MS 1514 certification is the standard for the food industry in Malaysia. After intervention by MPC, PG Bakery was able to achieve the GMP MS 1415 certification. PG Bakery reported increased sales. PG Bakery's signature bread called 'Bata Bread' has enabled them to penetrate the local bread market with market share in Kelantan and Trengganu (previously monopolised by Gardenia) increasing to 50% within 2 years. PG Bakery also reported cleaner surroundings, reduced production and maintenance costs and a tremendous increase in profits with a happier and more motivated workforce.

INNOVATIVE HUMAN RESOURCES MANAGEMENT PRACTICES

Innovative human resources (HR) practice in the long run will have an impact positively on the company's bottom line and certainly would have a favourable impact in increasing employee productivity and creating a better work environment. Successful innovative HR practices such as creating improved workplace environment, and productivity gain sharing initiatives, will promote employee engagement, employee motivation, employee development, and employee retention.

BOX 8.4 HUMAN RESOURCE BEST PRACTICE

The following case demonstrates an example of HR best practices in Perodua, a car manufacturing company, that has resulted in the following:

- Reduced absenteeism (unplanned leave, sick leave and non-info);
- Improved attendance rate from 86% to an average of 94%;
- Reduced application for bridging holidays (leave taken in conjunction with weekend leave and festive holidays) among employees;
- Reduction in rate of defective goods from 3% to 0.03%; and
- Increased attendance rate to be consistently above 90% with a margin of 6% for annual leave, 2% for medical leave and 2% for other leave of absence.

INITIATIVE 1: MANAGEMENT WELCOMING STAFF A DAILY PRACTICE

- Managers and HOD will greet employees every morning at all three entrances at 7.45 a.m. This is a recognition by management that each and every employee is an important asset to the company, indirectly motivating them to come to work on time; and
- Every sales representative is required to come to the office for morning briefing before attending to their clients.

INITIATIVE 2: ENCOURAGING STAFF TO PLAN LEAVE

- Staff are required to plan their annual leave and submit their leave application 5 days in advance.
- The company will replace certain holidays that are allowable by the Labour Law except for Merdeka Day, 1 Malaysia Day, Labour Day and the Agong's Birthday
- Special and longer holidays are given for certain occasions listed below:
  - First day of school – 1 day;
  - Chinese New Year – 3 to 4 days;
  - Hari Raya Aidilfitri- 5 days; and
  - Hari Raya Haji - 5 days.

A limited number of days is added to the annual leave to replace working days for the above occasions.

INITIATIVE 3: BUILDING A CONDUCIVE WORKING ENVIRONMENT

- Build a conducive working environment by instituting the Clean, Bright, Beautiful (CBB) programme such as, painting the factory floor white and using of white light bulbs, improving the factory facilities and amenities to attract employees to come to work;
- The CBB program also start from the staff hostel to inculcate positive values among the staff;
- The CBB program requires that cleanliness of toilets must be of hotels standard; and
- Under the CBB program, Management would also collects cigarettes butts and thrash thrown by the staff, weighs them, then displays the collection to staff.

INITIATIVE 4: SUSTAINING GOOD PERFORMANCE THROUGH SALARY INCENTIVES

- Line workers who come early to work, will be given a commitment incentive of RM1.50/day on top of their daily production attendance allowance;
- Annual increment is based on employee's performance; and
- Besides the 2-month fixed bonus for non-executive employees annually, there will be extra ex-gratia bonus based on the employee and company's performance.

Appendices

APPENDIX A - PRODUCTIVITY

TERMINOLOGY AND DEFINITION

PRODUCTIVITY is the relationship between the amount of output produced and the amount of input used to produce the output. Higher productivity means achieving more with the same or lesser amount of input resources. Increase in productivity will lead to benefits such as higher standard of living, enhanced competitiveness and better quality of life.

Total Factor Productivity (TFP)
TFP measures the efficiency of the utilisation of both capital and human resources. It is also regarded as a measure of the degree of technological advancement associated with economic growth. Higher TFP growth indicates efficient utilisation and management of resources, materials and inputs necessary for the production of goods and services.

At the national level, Total Factor Productivity (TFP) growth reflects the portion of the growth in the Gross Domestic Product (GDP) other than growth in inputs such as employment, capital investment and natural resources.

At the firm level, TFP growth implies the upgrading of skills and technical manpower, application of technology and creation of new technologies, adoption of best management practices and institutionalised corporate culture and work ethics.

Added Value
Added value measures the wealth generated by collective efforts of those who work in an enterprise (the employees) and the capital providers for example, investors and shareholders. Added value is different from sales revenue or value of production because it does not include the wealth created by the suppliers to the enterprise.

Added Value Calculation
There are two ways added value can be calculated:

i. Addition Method
This is called the wealth distribution method.

Added Value = Labour Cost + Interest + Tax + Depreciation + Profit
It is called wealth distribution because the added value created is used to pay those who have contributed to its creation in terms of wages & salaries (labour cost) for the employees, interest and loan for capital providers, taxes to the Government, depreciation for capital equipment usage and profits to the owners.

ii. Subtraction Method
This is called the wealth creation method.

Added Value = Total Output less Bought-In Materials and Services (BIMS)
In order to produce goods or services, a company has to purchase the necessary raw materials and other inputs. The difference between the total value of output and total cost of inputs i.e. all inputs and services bought from another company is called added value.

Total Output (TO)
It is defined as value of products manufactured (ex-factory value) + value of construction work done + change in Work-In-Progress (WIP) + capital expenditure on own construction + income from services rendered + income from sales of goods purchased in same condition.

Total Input (TI)
It is defined as value of materials consumed + value of supplies consumed + cost of printing + cost of goods sold in same condition + water + electricity + fuels + lubricants + supplies + salaries and wages + fees paid to non-working directors + payments to contractors + payment in kind to paid employees + value of free wearing apparel + employer's contribution to Government funds + payments for industrial work done by others + payments for non-industrial services + interest charges + depreciation + indirect taxes.

Labour Cost (LC)
It is defined as payments in the form of gross salaries and wages, bonuses, and other cash allowances paid to employees + allowances, fees, bonuses and commissions paid to working directors + fees paid to non-working directors for their attendance at the Board of Directors' meetings + payments in kind to paid employees + value of free wearing apparel provided + employer's contribution to Government funds.

Bought-In Materials And Services (BIMS)
It is defined as Bought-In Materials plus Bought-In Services where Bought-In Materials is the value of materials consumed in production (including transport charges incurred and taxes and duties paid on the materials); while Bought-In Services is the value of supplies consumed such as packaging materials, consumable stores (including stationery and office supplies, materials for repairs and maintenance) + cost of printing + lubricants + cost of goods sold in same condition as purchases + water + electricity + fuels + payments to contractors + payments for industrial work done by others + supplies + payments for non-industrial services.

Productivity Indicators
The followings are the productivity indicators such as:
- Labour Competitiveness
- Labour Productivity
- Capital Productivity
- Capital Intensity

Labour Competitiveness
Competitiveness in terms of labour cost indicates the comparability of the industry in producing products or services at the lowest possible labour cost. Three competitiveness ratios which include Added Value per Labour Cost, Labour Cost per Employee and Unit Labour Cost are explained below:

RATIO	UNIT	WHAT IT TELLS
1. Added Value per Labour Cost = $\frac{\text{Added Value}}{\text{Labour Cost}}$	Pure Number	This ratio indicates how competitive the enterprise is in terms of labour cost. A low ratio indicates high labour cost which does not commensurate with added value creation.

2. Labour Cost per Employee = Labour Cost / Number of Employees	RM	This ratio measures the average remuneration per employee. A high ratio means high returns to individual worker and vice-versa.
3. Unit Labour Cost = Labour Cost / Total Output	Pure Number	This ratio indicates the proportion of labour cost to total output. A high ratio indicates high labour cost. This could be due to labour shortage and lack of skilled labour, or poor labour mix. It could also be due to high labour turnover.

Labour Productivity

It can be used as one of the ways of gauging the productivity performance of the industry. The commonly used indicator is Added Value Per Employee.

RATIO	UNIT	WHAT IT TELLS
1. Added Value per Employee = Added Value / Number of Employees	RM	Reflects the amount of wealth created by the company, relative to the number of employees it has. It is influenced by: - Management efficiency - Work attitudes - Price effects - Demand for the products A high ratio indicates the favourable effects of labour factor in the wealth creation process. A low ratio means unfavourable working procedures such as: - High bought-in materials and services - Wastages of time and materials - Inadequate salary/wages rates
2. Total Output per Employee = Total Output / Number of Employees	RM	The size of output generated by each employee of the enterprise.

Capital Productivity
Capital productivity indicates the degree of utilisation of fixed assets and how efficient these assets are being utilised. It is defined as Added Value generated per Ringgit of Fixed Assets. High ratio indicates better performance of the assets.

RATIO	UNIT	WHAT IT TELLS
Added Value per Fixed Assets = Added Value / Fixed Assets	Pure Number	Indicates the degree of utilisation of tangible fixed assets. A high ratio indicates the efficiency of assets utilisation. A low ratio reflects poor assets utilisation.

Capital Intensity
Capital intensity measures the amount of fixed assets allocated to each employee. It is also known as Fixed Assets per Employee or simply capital-to-labour ratio. This ratio measures whether an industry is relatively capital-intensive or labour-intensive.

RATIO	UNIT	WHAT IT TELLS
Fixed Assets per Employee = Fixed Assets / Number of Employees	RM	This ratio indicates whether an enterprise adopts a capital-intensive or labour-intensive policy. A high ratio indicates the high capital intensity. A low ratio means: - Dependence on labour-intensive methods - Low technological inputs

APPENDIX B - INNOVATION

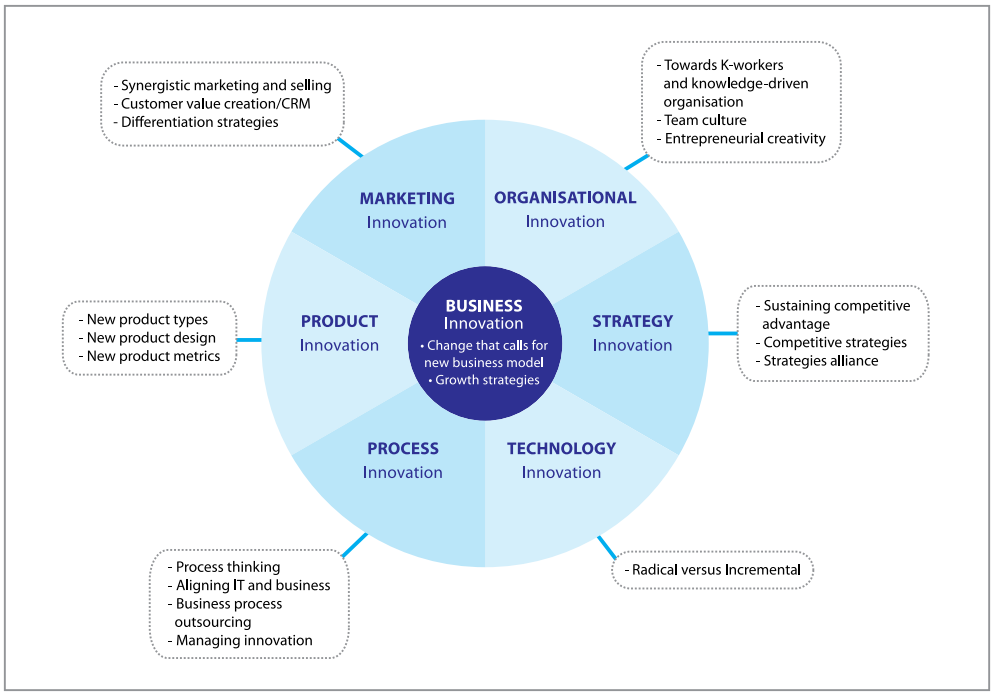
TERMINOLOGY AND DEFINITION

INNOVATION is a wide concept and can be interpreted in many ways. Innovation adds values to products and services, stimulating sales growth, exploiting new markets and formulating new organisational methods. Hence there are different perspectives of innovation namely;

- Product Innovation involves new products and new characteristics of old product; process may be the same but the product has completely changed;
- Process Innovation entails a new or significantly improved production or delivery method;
- Marketing Innovation is concern with creating a new marketing method incorporating significant changes in product design or packaging product placement, product promotion or pricing; and
- Organisational Innovation involves introducing new organisational methods in the firm's business practices, workplace or external relations.

The input to any innovation begins with ideas depending upon the pool of ideas available and the ability to generate new ideas and the ability to reintroduce new products, services and processes. Ideas and innovations within the organisational context are contributions made with the objective of improving the operations of the organisation.

CREATIVITY is the process of developing new or interesting ideas, while innovation is the implementation and transformation of those ideas into valuable or profitable solutions. Innovation finds the value in creativity, so innovation is really about how organisations can profit from their ideas.



Source : SMART Innovation by Vadim Kotelnikov, Inventor & Founder, Ten 3 Business e-Coach.www.100ventures.com, (2001)

APPENDIX C - COMPETITIVENESS

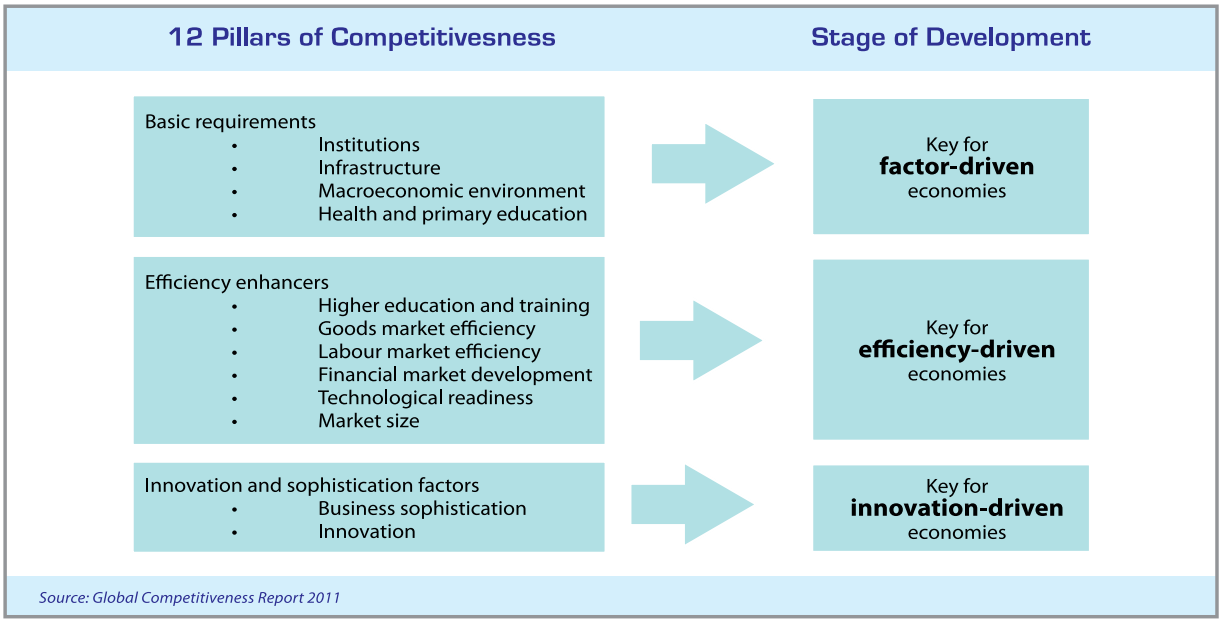
TERMINOLOGY AND DEFINITION

Institute For Management Development (IMD)
Competitiveness is a field of economic theory, which analyses the facts and policies that shape the ability of a nation to create and maintain an environment that sustains more value creation for its enterprises and more prosperity for its people.

World Economic Forum (WEF)
Competitiveness is defined as the set of institutions, policies and factors that determine the level of productivity of a country. The level of productivity, in turn, sets the sustainable level of prosperity that can be earned by an economy. Thus, more competitive economies tend to be able to produce higher level of income for their citizens.

Organisation for Economic Cooperation and Development (OECD)
The degree to which a nation can, under free trade and fair market conditions, produce goods and services, which meet the test of international markets, while simultaneously maintaining and expanding the real incomes of its people over the long term.

Malaysia Productivity Corporation (MPC)
The degree to which the region (nation) can produce goods and services which meet the test of international markets, out-performing others, while its citizens earn a standard of living that is both rising and sustainable over the long-run.



Stage of development
1. Factor-Driven Economies – Basic factor conditions such as low-cost labour and unprocessed natural resources are the dominant basis of competitive advantage and exports. Factor-driven economies are highly sensitive to world economic cycles, commodity prices, and exchange rate fluctuations.
2. Efficiency-Driven Economies – A country's advantage comes from producing more advanced products and services highly efficiently. Heavy investment in efficient infrastructure, business friendly government administration, strong investment incentives, improving skills and better access to investment capital allow major improvements in productivity.
3. Innovation-Driven Economies – The ability to produce innovative products and services at the global technology frontier using the most advanced methods becomes the dominant source of competitive advantage. An innovation driven economy is characterised by distinctive producers and a high share of services in the economy and is quite resilient to external shocks.

APPENDIX D - REGULATORY REVIEW

TERMINOLOGY AND DEFINITION

Australian Government Productivity Commission
The Australian Government Productivity Commission (AGPC) constitutes the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australian citizens. It reviews existing regulations and undertakes comprehensive research on important policy issues, for instance, identifying the drivers or factors influencing productivity and trade regulations.

Business Licensing
Business licensing is a term that is normally used to describe an ex-ante process of approval for a firm's core business activity. In the context of regulatory review, business licensing is a process of approving a firm's core business activity prior to the official granting of a business license to commence operation.

Business Licensing Electronic Support System
Business Licensing Electronic Support System (BLESS) is a portal that provides information and facilitates companies to apply licenses or permits to start operating business in Malaysia. It is a virtual One-Stop Service Centre that assists companies to obtain business licenses on a timely and organized manner. BLESS is developed and administered by the Implementation Coordination Unit (ICU), Prime Minister's Department, Malaysia.

Business Process Re-engineering
Business process re-engineering (BPR) refers to the analysis and design of workflows, processes, business process redesign, business transformation or business process change management.

Code of practice
Code of practice is simply a set of rules specifying appropriate conduct or behavior for certain aspects of business. Generally, the set of rules are not mandatory or compulsory. However, in certain countries (for example United Kingdom), code of practice refers to a set of formally binding rules issued by a body of an agency and they are known as mandatory codes of conduct.

Compliance costs
Compliance costs are basically the direct additional costs to businesses for undertaking the various tasks associated to complying with government regulations. They are not just merely the direct charges or fees imposed by the government but also include any costs arising from the necessity of having to comply with the regulations concerned, for example facilitating inspection.

Consultation
Consultation is a systematic public engagement which involves seeking, receiving, analysing and responding to feedback from stakeholders or affected parties including the general public. Public consultation gives citizens and business the opportunity to provide an active input in regulatory decisions.

Gate-keeper
Gate-keeper is one of the three founations for an effective process of Regulatory Impact Analysis (RIA). Generally the gate-keeper is an independent body that oversees the implementation of RIA and assesses the Regulatory Impact Statement (RIS). The typical roles and functions of a gate-keeper are to:

1. Advise regulating agencies whether a RIS is required;
2. Examine the adequancy of RIS
3. Provide training and advice on RIS process; and
4. Report on periodical basis, RIS compliance

Good Regulatory Practices
Good regulatory practices (GRP) can be defined as a set of principles which is intended to provide guidelines to regulatory management. Generally, it is intended to assist regulators in the adoption of efficient regulatory arrangements which should improve the consistency and transparency of regulations which will be introduced or reviewed. Therefore, the main goal of GRP is to ensure quality regulation whereby it meets the desired objectives as well as minimise costs and market distortions.

Guillotine Approach
The core principle of Guillotine Approach specifies that any regulation required for future policy needs for market-led development, which is not successfully justified as legal will be eliminated. Besides, it also specifies that any regulation that is needed but not business-friendly will be simplified as far as possible. The Guillotine Approach was pioneered by Sweden in the 1980s and was subsequently used in various forms by Hungary, South Korea, and Mexico.

National Development Planning Committee
The National Development Planning Committee (NDPC) is the highest policy-making forum for development planning that deliberates economic and socio-economic matters in Malaysia. The NDPC is a committee of senior government officials, chaired by the Chief Secretary to the Government. Heads of all economic development ministries, including the Governor of the Central Bank, are members of this Committee. The NDPC is responsible for formulating and reviewing all plans for national development and making recommendations on the allocation of resources. It also oversees the implementation of the national development plans.

National Policy on the Development and Implementation of Regulations
The National Policy on the Development and Implementation of Regulations is meant to address the gaps in the management system for regulations to put Malaysia in a position to meet international best practices in regulations or Good Regulatory Practices (GRP). Therefore, the objective of the Policy is to ensure that the Malaysia's regulatory regime effectively supports the country's aspirations to be a high-income and progressive nation whose economy is competitive and subscribes to sustainable development and inclusive growth. The Policy is developed through a consultative process which involves a range of stakeholders within the government.

Non-Regulation
Non-regulation is a regulatory control exercised by individual businesses or industry associations without government involvement or interference.

Non-regulation option should be considered whenever:
- There is no strong public interest concern, especially no major public health and safety concern;
- The problem is a low-risk event with minimal impact or insignificance; and
- The problem can be fixed by the market itself. For instance, there may be an incentive such as industry survival or market advantage for individuals and groups to develop and comply with self-regulatory arrangements.

One-Stop-Centre
"One-Stop-Centre" is a tool to improve regulatory access. Through this tool, government authorities provide accessibility to many regulatory services in a single physical location. One-Stop-Centre is cost effective for small and medium size enterprises (SMEs) whereby their transition costs related to regulation are relatively high.

Permit
Permit is a regulatory tool that authorises actions related to the core business activities. For example, an authorisation to complete a single instance of an activity (to build a warehouse).

Regulatory Burden
Regulatory burdens are the regulatory costs incurred by businesses when applying for licenses, filling up forms as well as when reporting and meeting notification requirements for the government. It also includes the payment of certain fees or investment in specific equipment as well as the administrative compliance costs encompassing time and money spent on formalities and paperwork necessary for compliance with regulations. In other words, administrative burdens are the costs incurred by businesses when complying with obligatory information arising from government regulation.

Regulatory Impact Analysis
Regulatory Impact Analysis (RIA) is a process or technique in determining the impact of regulatory review. RIA is used to examine selectively the potential impacts arising from government action or nonaction as well as to disseminate the information to decision-makers and the public. RIA is also known as Regulatory Impact Assessment.

Regulatory Impact Statement
Regulation Impact Statement (RIS) is vital to the Regulatory Impact Analysis (RIA) process. The RIS is a government agency document which is different from a Cabinet paper that represents a minister's document. It provides a summary of the agency's best advice to its Minister and Cabinet on the problem definition, objectives, identification and analysis of the full range of practical options, as well as information on implementation arrangements. Whereas, the Cabinet paper presents the Minister's advice or recommendations to Cabinet.

Review
Review or revision clause refers to a provision in regulation that requires a review to be conducted within a certain period, but however the outcome in terms of status quo, revision or repeal is not pre-determined.

Simplification
Simplification refers to measures that reduce administrative burdens in dealing with government regulations, which are paperwork and informational requirements imposed by governments on enterprises, citizens and the civil service.

Transparency
Transparency is a key pillar of effective regulation. It sustains confidence in the legal environment, making regulations more secure and accessible, less influenced by special interests, and thus more open to competition, trade and investment. This incudes public engagement.

APPENDIX E - TECHNICAL NOTES

TERMINOLOGY AND DEFINITION

Employees (ILO)
Employees are all those workers who hold the type of job defined as paid employment jobs. Employees with stable contracts are those employees who have had, and continue to have, an explicit (written or oral) or implicit contract of employment, or a succession of such contracts, with the same employer on a continuous basis.

Employers (ILO)
Employers are those workers who, working on their own account or with one or a few partners, hold the type of job defined as a self-employed job, and in this capacity, on a continuous basis (including the reference period) have engaged one or more persons to work for them in their business as employees.

Foreign Direct Investment (FDI)
Foreign direct investment (FDI) is the category of international investment that reflects the objective of a resident entity in one economy to obtain a lasting interest in an enterprise resident in another economy.

Gross Domestic Product (GDP)
Gross domestic product is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of

natural resources. The total market value of all final goods and services produced in a country in a given year; equals total consumer, investment and government spending, plus the value of exports minus the value of imports.

Gross National Income (GNI)
Gross national income (GNI) (formerly gross national product, or GNP) is the sum of gross value added by all resident producers plus any product taxes (less subsidies) that are not included in the valuation of output plus net receipts of income from abroad.

Inflation
Broad increased in prices. In practical terms, inflation means goods and services are being valued as more desirable than money. This also affects wages; periods of high inflation tend to be marked by increases in average income. Inflation can be caused by either too few goods offered for sale, or too much money in circulation.

Interest payment
Interest is payable by units that incur certain kinds of liabilities, namely deposits, securities other than shares, loans and accounts payable. Including interest to non-residents, to residents other than general government and to other general government units.

Real GDP Growth
Constant price estimates. In theory, the price and quantity components of a value may be identified and base periods prices are substituted for those of the current period. Methods are used in practice to calculate variables at constant prices. Another method, commonly referred to as price deflation, involves dividing price indexes into the observed values to obtain volume estimates. The price indexes used are constructed from prices of the major items of each value.

Total labour force
The total labour force, or currently active population, comprises all persons who fulfill the requirements for inclusion among the employed or the unemployed during a specified brief reference period.

Unemployment
Unemployment is defined as people who are jobless, looking for jobs, and available for work. Unemployed persons comprise persons aged 15 to 64 who were: without work during the reference week, i.e. neither had a job nor were at work (for one hour or more) in paid employment or self-employment; currently available for work, i.e. were available for paid employment or self-employment before the end of the two weeks following the reference week; actively seeking work, i.e. had taken specific steps in the four weeks period ending with the reference week to seek paid employment or self-employment or who found a job to start later, i.e. within a period of at most three months.

DERIVING THE SOURCES OF LONG-TERM ECONOMIC AND PRODUCTIVITY GROWTH

SOURCES OF LONG-TERM ECONOMIC GROWTH

The equation which computes the sources of economic and productivity growth uses a production function as the starting point:

$$Q = f(K,L) \qquad (1)$$

where

Q	=	Output or GDP
K	=	Capital
L	=	Number of workers

By including a time variable (assumed due to technical progress), the resulting shifts of the production can be represented by:

$$Q_t = f(K_t, L_t, t) \qquad (2)$$

thus implying that the same input quantities yield a different output at different points of time.

Assuming that technical progress is both neutral and disembodied (Solow, 1957), the production function (2) can be expressed as:

$$Q_t = A(t) \cdot f(K_t, L_t) \qquad (3)$$

where

Q_t, K_t and L_t	=	output and factor inputs during period t
A(t)	=	technical progress or TFP as a function of time

Differentiating (3) with respect to time and denoting the derivatives by putting a dot over the variable, hence

$\dot{Q}$ = dQ/dt we have

$$\dot{Q} = \dot{A} \cdot f(K_t, L_t) + A \cdot \frac{\partial f}{\partial K} \cdot \dot{K} + A \cdot \frac{\partial f}{\partial L} \cdot \dot{L} \qquad (4)$$

Dividing throughout by Q leads to an expression for the proportionate rate of change in output:

$$\frac{\dot{Q}}{Q} = \frac{\dot{A}}{A} \cdot f(K_t, L_t)/Q + A \cdot \frac{\partial f}{\partial K} \cdot \frac{\dot{K}}{Q} + A \cdot \frac{\partial f}{\partial L} \cdot \frac{\dot{L}}{Q} \qquad (5)$$

$$\frac{\dot{Q}}{Q} = \frac{\dot{A}}{A} \cdot f(K_t, L_t)/Q + A \cdot \frac{\partial f}{\partial K} \cdot \frac{K}{Q} \cdot \frac{\dot{K}}{K} + A \cdot \frac{\partial f}{\partial L} \cdot \frac{L}{Q} \cdot \frac{\dot{L}}{L} \qquad (6)$$

Solow (1957) assumed that factors are paid their marginal products under competitive equilibrium conditions, so that

$$\frac{\partial Q}{\partial K} = A \cdot \frac{\partial f}{\partial K} = \frac{r}{p}$$

$$\frac{\partial Q}{\partial L} = A \cdot \frac{\partial f}{\partial L} = \frac{w}{p}$$

where

p	=	prices of output
r	=	prices of capital inputs
w	=	prices of labour inputs

$$\frac{\dot{Q}}{Q} = \frac{\dot{A}}{A} + \frac{rK}{pQ} \cdot \frac{\dot{K}}{K} + \frac{wL}{pQ} \cdot \frac{\dot{L}}{L} \qquad (7)$$

In Solow's notation, the shares of capital and labour are denoted by w_K= r.K/p.Q and w_L = w.L/p.Q respectively, thus with this assumption the equation (7) becomes:

$$\dot{Q}/Q = \dot{A}/A + w_r \cdot \dot{K}/K + w_L \cdot \dot{L}/L \qquad (8)$$

Further, assuming constant returns to scale, where percentage change in inputs leads to the same percentage change in output, the following holds:

$$w_K + w_L = 1$$

Therefore equation (8) becomes:

$$\dot{Q}/Q = \dot{A}/A + w_K \cdot \dot{K}/K + (1 - w_K) \cdot \dot{L}/L \qquad (9)$$

where

$\dot{Q}/Q$	=	Proportionate rate of change of output
$\dot{A}/A$	=	Proportionate rate of change of technical progress of TFP
$\dot{K}/K$	=	Proportionate rate of change of capital
$\dot{L}/L$	=	Proportionate rate of change of labour

SOURCES OF LONG-TERM PRODUCTIVITY GROWTH

Subtracting $\dot{L}/L$ from both sides of equation (9) to express the equation in terms of productivity:

$$\dot{Q}/Q - \dot{L}/L = \dot{A}/A + w_K \cdot \dot{K}/K + (1 - w_K) \cdot \dot{L}/L - \dot{L}/L$$

$$\dot{Q}/Q - \dot{L}/L = \dot{A}/A + wK \cdot (\dot{K}/K - \dot{L}/L)$$

Therefore

$$\dot{q}/q = \dot{A}/A + w_K \cdot \dot{k}/k \qquad (10)$$

where

$\dot{q}/q = \dot{Q}/Q - \dot{L}/L$ = Proportionate rate of change of productivity

$\dot{A}/A$ = Proportionate rate of change of technical progress or TFP

$\dot{k}/k = \dot{K}/K - \dot{L}/L$ = Proportionate rate of change of capital to labour ratio

Equation (10) denotes that changes in productivity over time are therefore the result of neutral technical progress (or TFP) and of increases in capital to labour ratio (capital intensity).

SOURCES OF LONG-TERM ECONOMIC GROWTH EXPRESSED IN TERM OF PRODUCTIVITY GROWTH

Subtracting (10) from (9) to derive the relation between economic growth and productivity growth

$$\begin{aligned}\dot{Q}/Q - \dot{q}/q &= w_K \cdot \dot{K}/K + (1 - w_K) \cdot \dot{L}/L - w_K \cdot \dot{k}/k \\ &= w_K \cdot \dot{K}/K + \dot{L}/L - w_K \cdot \dot{L}/L - w_K \cdot \dot{k}/k \\ &= w_K \cdot \dot{k}/k + \dot{L}/L - w_K \cdot \dot{k}/k \\ &= \dot{L}/L\end{aligned}$$

Therefore

$$\dot{Q}/Q = \dot{q}/q + \dot{L}/L \qquad (11)$$

where

$\dot{Q}/Q$ = Proportionate rate of change of output

$\dot{q}/q$ = Proportionate rate of change of productivity

$\dot{L}/L$ = Proportionate rate of change of labour

Alternatively, equation (11) can be written as:

$$\dot{Q}/Q = \dot{A}/A + w_K \cdot \dot{k}/k + \dot{L}/L \qquad (12)$$

Equation (11) expresses economic growth in terms of productivity growth and an increase in labour input (employment expansion), while that of equation (12) expresses it in terms of TFP growth and an increase in labour and capital inputs.

Appendix F - Contributions by Manufacturing Sub-Sectors, 2012

Sub-sectors	Total output		Added value		Employees	
	RM (Million)	Share (%)	RM (Million)	Share (%)	Number (Thousand)	Share (%)
Food Products	158,802.61	17.70	17,476.59	9.78	209.99	11.41
Beverages	6,511.69	0.73	979.76	0.55	13.95	0.76
Tobacco Products	1,126.16	0.13	335.88	0.19	1.73	0.09
Textiles	7,156.99	0.80	1,656.36	0.93	29.95	1.63
Wearing Apparel	4,409.77	0.49	1,189.53	0.67	46.25	2.51
Leather & Related Products	1,171.50	0.13	330.71	0.19	9.92	0.54
Wood & Products of Wood and Cork, Except Furniture; Articles of Straw & Plaiting Materials	17,682.70	1.97	3,846.35	2.15	99.27	5.39
Paper & Paper Products	12,258.09	1.37	2,778.73	1.56	63.00	3.42
Printing & Reproduction of Recorded Media	18,783.84	2.09	3,782.33	2.12	57.98	3.15
Refined Petroleum Products	132,846.04	14.81	34,159.54	19.12	5.69	0.31
Chemicals & Chemical Products	76,628.87	8.54	18,626.82	10.43	81.87	4.45
Basic Pharmaceutical Products & Pharmaceutical Preparations	3,576.12	0.40	1,128.08	0.63	13.28	0.72
Rubber & Plastic Products	55,401.27	6.18	11,078.27	6.20	211.22	11.47
Other Non-Metallic Mineral Products	29,577.60	3.30	7,419.89	4.15	83.39	4.53
Basic Metals	46,322.35	5.16	7,368.52	4.12	73.72	4.00
Fabricated Metal Products, Except Machinery & Equipment	28,571.12	3.19	6,537.32	3.66	119.37	6.48
Computer, Electronic & Optical Products	182,695.11	20.37	36,442.19	20.40	320.87	17.43
Electrical Equipment	23,176.69	2.58	4,132.32	2.31	84.52	4.59
Machinery & Equipment n.e.c.	22,289.87	2.49	5,474.13	3.06	87.64	4.76
Motor Vehicles, Trailers & Semi-Trailers	34,888.36	3.89	6,387.21	3.58	76.85	4.17
Other Transport Equipment	13,259.00	1.48	2,553.07	1.43	33.58	1.82
Furniture	11,165.93	1.24	2,938.51	1.64	80.70	4.38
Other Manufacturing	6,055.32	0.68	1,380.17	0.77	23.30	1.27
Repair & Installation of Machinery & Equipment	2,594.87	0.29	646.42	0.36	12.79	0.69
Manufacturing	**896,951.87**	**100.00**	**178,648.73**	**100.00**	**1,840.82**	**100.00**

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ACRONYMS AND ABBREVIATIONS

3G	–	Third Generation
4G	–	Fourth Generation
ABOS	–	Asia Business Outlook Survey
AGC	–	Attorney General Chambers
AI	–	Agriculture Institutes
ASEAN	–	Association of Southeast Asian Nations
BB1M	–	Baucer Buku 1 Malaysia
BEF	–	Business Excellence Framework
BIPV	–	Building Integrated Photovoltaics
BPR	–	Business Process Reengineering
BR1M	–	Bantuan Rakyat 1Malaysia
CCI	–	Customer-Centric Initiatives
CEO	–	Chief Executive Officer
CIDB	–	Construction Industry Development Board
CIP	–	Critical Infrastructure Protection
CMDV	–	Centre for Marker Discovery and Validation
CMMI	–	Capability Maturity Model Integration
CNCA	–	Certification and Accreditation Administration of China
CPO	–	Crude Palm Oil
CRPC	–	Castration Resistant Prostate Cancer
CSI	–	Customer Satisfaction Index
CT	–	Computed Tomography
DBKL	–	Kuala Lumpur City Hall
DOA	–	Department of Agriculture
DSL	–	Domestic Shipping License
E&E	–	Electrical & Electronic
EC	–	Enforcing Contracts
ECER	–	East Coast Economic Region
EIIP	–	Enterprise Intervention Innovation Programme
EIU	–	Economist Intelligence Unit
EPP	–	Entry Point Projects
ETP	–	Economic Transformation Programme
FDI	–	Foreign Direct Investment
FFB	–	Fresh Fruit Bunch
FGBPR	–	Focus Group to Undertake Business Process Reengineering in Business Licensing
FGDCP	–	Focus Group on Dealing with Construction Pemits
FTE	–	Fulltime Work Equivalent
GCR	–	Global Competitiveness Report
GDP	–	Gross Domestic Products
GII	–	Global Innovation Index
GITR	–	Global Information Technology Report
GKL/KV	–	Greater Kuala Lumpur/Klang Valley
GLP	–	Good Laboratory Practices
GMP	–	Good Manufacturing Practices
GNI	–	Gross National Income

GRP	–	Good Regulatory Practices
GTP	–	Government Transformation Programme
HD	–	High Definition
HKL	–	Hospital Kuala Lumpur
IBS	–	Industrialised Building System
ICQCC	–	International Convention Quality Control Circle
ICT	–	Information and Communication & Technology
IMD	–	Institute for Management Development
IMF	–	International Monetary Fund
IMR	–	Institute for Medical Research
IP	–	Internet Protocol
IQPC	–	International Quality and Productivity Convention
IT	–	Information Technology
IUBT	–	Inkubator Usahawan Belia Tani
IZAQ	–	Integrated Zone for Aquaculture
JCI	–	Joint Commission International
KLIA	–	Kuala Lumpur International Airport
KR1M	–	Kedai Rakyat 1Malaysia
LTE	–	Long Term Evolution
M&E	–	Machinery and Equipment
MAD	–	Mutual Acceptance Data
MBL	–	Modernising Business Licensing
MCS	–	Material Cost Savings
MICE	–	Meeting, Incentives and Conventions and Exhibitions
MNC	–	Multi-National Company
MOA	–	Ministry of Agriculture and Agro-Based Industry
MOT	–	Ministry of Transport
MPC	–	Malaysia Productivity Corporation
MPOB	–	Malaysian Palm Oil Board
MQA	–	Malaysian Qualification Agency
MRI	–	Magnetic Resonance Imaging
MSC	–	Multimedia Super Corridor
MSQH	–	Malaysian Society Quality in Health
MyKe	–	Malaysian Knowledge Content in Key Economic Sectors
NATC	–	National Agriculture Training Centre
NCER	–	National Corridor Economic Region
NDPC	–	National Development Planning Committee
NICC	–	National Innovation Control Circle
NKEA	–	National Key Economic Areas
NRI	–	Network Readiness Index
OSC	–	One Stop Centre
PAKAR	–	The Community Market Programme or Pasar Komuniti
PEMANDU	–	The Performance Management Delivery Unit
PEMUDAH	–	Special Taskforce to Facilitate Business
QE	–	Quality Environment
QRMS	–	Quality Regulatory Management System
R&D	–	Research and Development
REHDA	–	Real Estate and Housing Developers Association

RIA	–	Regulatory Impact Analysis
RM	–	Ringgit Malaysia
RTC	–	Rural Transformation Centre
SALM	–	Malaysian Farm Certification Scheme
SALT	–	Livestock Farm Accreditation Scheme
SKM	–	Sijil Kemahiran Malaysia or Malaysia Skills Certification
SME	–	Small Medium Enterprises
SOM	–	Malaysian Organic Scheme
SRI	–	Strategic Reform Initiatives
STEM	–	Science, Technology, Engineering and Mathematics
TAB	–	Trading Across Borders
TCB	–	The Conference Board
TFP	–	Total Factor Productivity
TKPM	–	Taman Kekal Pengeluaran Makanan
TPS	–	Toyota Production System
UK	–	United Kingdom
UMMC	–	University Malaya Medical Centre
USA	–	United States of America
USD	–	US Dollar
VHM	–	Veterinary Health Mark
VSM	–	Value Stream Mapping
WCY	–	World Competitiveness Yearbook
WEF	–	World Economic Forum
WIPO	–	World Intellectual Property Organisation

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