MALAYSIA ECONOMIC MONITOR

Growth through Innovation

April 2010

THE WORLD BANK

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PREFACE

In November 2009, the Government of Malaysia and the World Bank signed a three-year Partnership Agreement focused on the policy challenge of growing into a high-income economy. The *Malaysia Economic Monitor* series is a key pillar in this Partnership and represents an effort to promote discussion, analysis, and the sharing of knowledge on the challenges ahead.

This second issue of the *Malaysia Economic Monitor: Growth Through Innovation* reviews recent economic developments, updates the World Bank's view on the economic outlook, and analyzes—in the report's thematic section—how Malaysia's economy can improve its growth performance through innovation. The report is accompanied by an outreach effort to a wide audience of policymakers, private sector leaders, market participants, civil society, think tanks, journalists and the public at large.

This report was prepared by Philip Schellekens (Task Team Leader) in collaboration with Yue Li and Ashley Taylor, with contributions from Natasha Beschorner, Ximena del Carpio, Louis Kuijs, Chanin Manopiniwes, Juan Pradelli, Martin Reichhuber, Vatcharin Sirimaneetham, Tihomir Stucka, and Roy Van der Weide, and under the overall guidance of Vikram Nehru and Mathew Verghis. An external contribution by Cassey Lee of the University of Wollongong is gratefully acknowledged. The team thanks Frederico Gil Sander, Manny Jimenez, Homi Kharas, Cassey Lee, Magnus Lindelow, Kaoru Nabeshima, Jeeva Perumalpillaies, John Roome, Tham Siew Yean, Xiaoqing Yu and Shahid Yusuf for helpful discussions and exchanges, Indra Irnawan for designing the cover and back, and Ruangrong Thongampai and Anissa Amador Tria for administrative and web production assistance.

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EXECUTIVE SUMMARY

RECENT ECONOMIC DEVELOPMENTS AND OUTLOOK

A robust recovery is underway in Malaysia after the downturn in global trade in 2009 hit the economy particularly hard. The reduction in Malaysia's GDP growth rate was the steepest amongst middle-income countries in East Asia. Private consumption and the boost from fiscal stimulus provided support earlier in 2009. Inventory investment has taken over in recent quarters. Exports continue their climb out of one of their most severe slumps in history, driven by regional and, increasingly, global demand. Manufacturing is becoming the locomotive of growth again after services had provided a beacon of strength through the crisis. Strong private capital outflows, particularly portfolio investments, were also experienced in late 2008 and early 2009 but the trend abated as global financial conditions and domestic activity improved over 2009

While aggregate unemployment has shown limited movement, the labor market churning that has been a feature through the crisis has continued. Shifts into self-employment have been particularly strong, which might be associated with a rise in informal employment, as expected during a downturn. Patterns of employment and wage dynamics through the downturn and rebound have varied across sectors, in part reflecting exposures to the external demand shock. The labor market outlook is improving with vacancies on the rise and retrenchments sharply down from their crisis levels.

Monetary, fiscal and financial sector policies played a supportive role during the crisis. As in other countries, a key policy question has been when, and how, to withdraw support without derailing the recovery. The strength of the recovery to date, and the improved outlook, has prompted recent moves towards monetary policy normalization. With the stimulus packages pushing up the federal government deficit to around 7 percent of GDP in 2009, ongoing fiscal consolidation is required.

Real GDP is expected to rebound strongly in 2010. Momentum behind domestic private consumption and investment is building as the recovery in external demand continues. As a result, growth of 5.7 percent is projected for 2010, following a contraction of 1.7 percent in 2009. The future strength of the external demand recovery is one of the main near-term risks. The other is the extent to which there is a transition to growth that is driven by the revival of domestic private investment and continued private consumption growth as fiscal and monetary policy support unwinds.

Implementation of productivity-enhancing structural reforms put forward in the recently released New Economic Model is crucial to the medium-term outlook. Growth forecasts at 5.3 percent in 2011 and 5.6 percent in 2012 price in the implementation of structural reform measures at a gradual pace. The forecasts also reflect a fiercely competitive environment for trade and FDI, as the global economy continues its rebalancing and countries around the region catch up along the value chain.

The main upside risk to the long-term outlook is if the reform program under the New Economic Model will be comprehensively and expeditiously implemented. Along with progress on fiscal consolidation it could also help reverse the recent sharp rise in Malaysia's government debt due to the fiscal stimulus spending. On the flip side, the potential stalling of reform momentum could drive down growth prospects and lead to rising government debt relative to GDP.

GROWTH THROUGH INNOVATION

Innovation—the successful exploitation of new ideas—is the cornerstone of sustained growth and prosperity. It is also central to Malaysia's high-income aspirations. Climbing up the income ladder through innovation-led growth is, however, easier said than done. Many countries aspire to innovate more. The challenge is therefore not only to boost innovation capabilities but also to do so quickly.

The opportunities are vast. Malaysia can extract more value from its growing integration with global production networks and improve its productivity performance, which stalled after the Asia crisis. Malaysia can promote more innovation in business and encourage more businesses to engage in innovation. Government can also contribute to innovation by itself.

Promoting innovation is a complex undertaking that requires a comprehensive approach. Innovation is a multi-dimensional outcome influenced by many factors and players. It applies to products, processes, and organizations, and involves both the creation and diffusion of knowledge. Given this complexity, policy approaches that facilitate rather than orchestrate innovation are likely to stand the greatest chance of success.

Malaysia can address the innovation challenge by improving its innovation capabilities, enhancing the driving force of innovation, and enabling the amplifiers of innovation.

Improving the Capabilities for Innovation: Talent, Technology and Finance

- *Nurturing, attracting and retaining talent.* Innovation rests in the first place on the talent of people: their creativity to develop new ideas, their capacity to absorb knowledge, and their entrepreneurship and skill to turn ideas into results. A talented workforce is the bedrock of innovation. A key priority is to nurture entrepreneurial initiative and address skills shortages—which occur across the skills spectrum including social abilities such as communication, creativity and leadership. As strengthening the education system to address such challenges takes time, Malaysia could also tap into the global talent pool.

- *Upgrading home-grown technological capabilities.* Malaysia has had mixed success in facilitating technology transfers from multinational companies and in multiplying domestic linkages with them. The capabilities of Malaysian firms are presently highly dispersed, creating room for the beneficial diffusion of knowledge through best practice programs, SME assistance and global technology brokers. Technology development takes time and requires continuous investments by firms in themselves. Yet, policies can support this process by strengthening the science base and infrastructure (e.g., broadband).

- *Improving access to finance for innovation.* An agile banking system and a responsive venture capital market are further requirements for innovation. Malaysia tops the world in the Doing Business indicator of access to credit. Yet, according to the latest National Innovation Survey (2005-08), some 43 percent of innovating firms consider access to finance a 'very important' obstacle that could be addressed. Even if currently the limited deal flow represents most likely a lack of demand, the venture capital market can be strengthened to allow for future growth.

Enhancing the Driving Force of Innovation: Competition

- *Leveling the playing field.* Competition—the main driving force of innovation—incentivizes those capable of innovation to innovate. The competitive landscape in Malaysia is however not even. Manufacturing is exposed to international competition, but many services subsectors lack both international and domestic competition. Investment climate surveys suggest that one fifth of services firms list anti-competitive practices as a 'severe' or 'very severe' investment obstacle (World Bank, 2009c). A competition law is being discussed in Parliament, which if enacted and well-enforced would be an important step forward. But fostering competition will also require a rethink of the overlap between public and private activity and potential crowding-out effects.

- *Facilitating the fluid entry and exit of Firms.* Competition requires the entry and exit of firms. New entry can spur incumbents to innovate incrementally. New entrants are also more commonly a source of radical innovations. Barriers to entry and exit thus constrain the innovation process, the costs of which may not be immediately visible but slowly accrue over time through a gradual deterioration of productivity, price and quality competitiveness and relative market share. Improvements in the ease of starting and closing a business in Malaysia are crucial to facilitate the entry and exit of firms at the heart of the competitive process.

- *Supporting labor market flexibility.* Greater competition in product markets will not yield its full potential without supportive labor market institutions and practices. Internal labor markets benefit from good workplace practices that motivate and reward performance. External labor markets benefit from flexibility in employment and wages to link the best talents with the best opportunities—and also to send correct signals for decisions on education and training. Of concern are Malaysia's firing practices, whose restrictiveness stands out within the region.

- *Managing the side effects of greater competition.* For competition to be effective in spurring innovation, elementary risk mitigation and coping mechanisms need to be in place to protect individuals—though not necessarily firms—from the downside risk of failure. Similarly, the upside benefits of innovation need to be protected temporarily with appropriate patent policies so innovators find it worthwhile to make costly upfront investments in innovation.

Enabling the Amplifiers of Innovation: Niches and Clusters

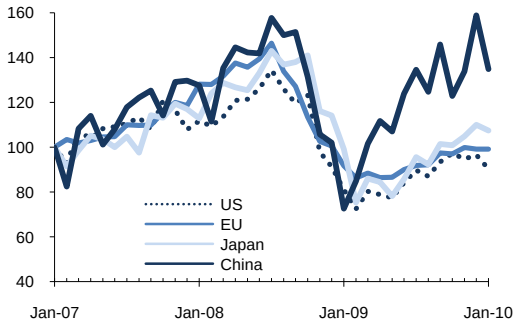
- *Focusing efforts on selected niches.* Malaysia would do well to specialize further on selected growth niches where it can achieve global excellence. Identifying these requires close collaboration with the private sector, reflection on current strengths and capabilities, and analysis of global demand conditions and the specific obstacles to private sector development. Subject to these caveats, it will be important for the scarce public resources to be sharply focused—so as not to dilute impact.

- *Fostering spatial concentration in clusters.* Innovation thrives and spreads in clusters, but market forces produce less clustering than socially desirable. Policies to concentrate skills and infrastructure and to develop network linkages with other centers of economic activity domestically, regionally and globally will be critical to creating more economic density in Malaysia. To try and spread out economic activity is to discourage it—even though side effects such as congestion and pollution need to be managed. Providing good connectivity between leading and lagging regions, spatially unbalanced growth yields better outcomes.

THE MALAYSIAN ECONOMY IN PICTURES

External revival, particularly from China, is aiding Malaysia's recovery

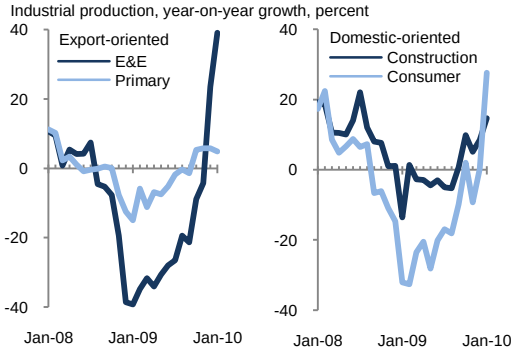
Merchandise imports from all countries, nominal USD levels (Jan-07=100)



Source: CEIC and World Bank staff calculations.

Industrial production is rebounding, especially for E&E and consumer goods

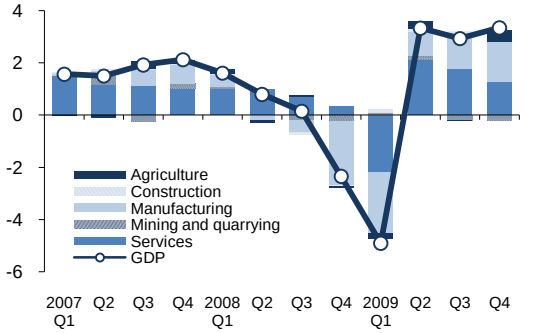
Industrial production, year-on-year growth, percent



Source: CEIC and World Bank staff calculations.

Manufacturing is again a locomotive of growth

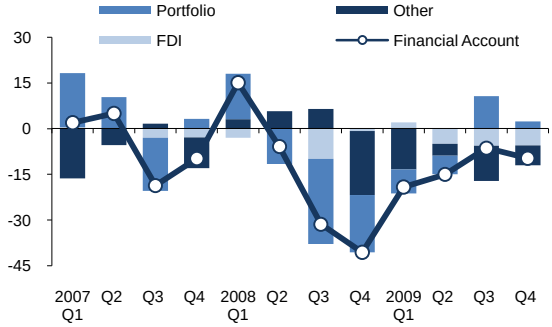
Contribution to real GDP quarter-on-quarter growth, sa, percentage points



Source: Haver and World Bank staff calculations.

Net capital flows improved with the recovery

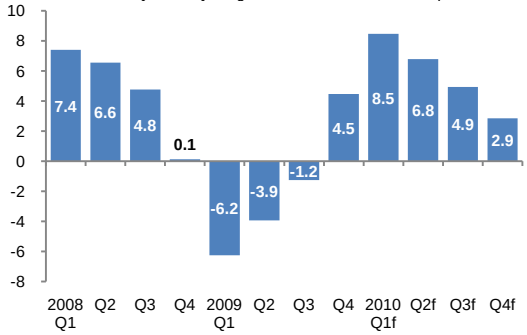
Net flows as share of GDP, percent



Source: CEIC and World Bank staff calculations.

Quarterly GDP growth set to maintain momentum

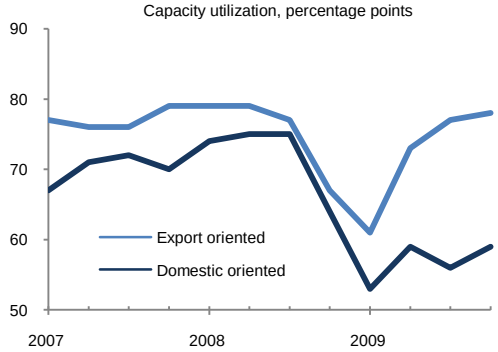
Real GDP year-on-year growth, actual and forecast, percent



Source: CEIC and World Bank staff projections.

Yet, spare capacity may temper private investment

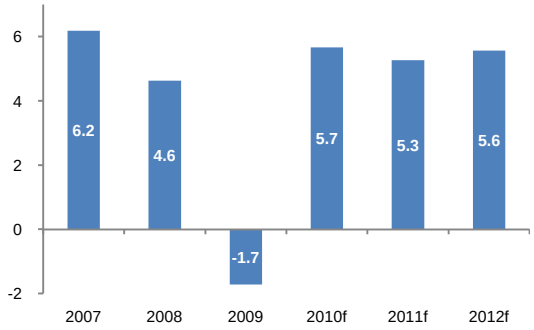
Capacity utilization, percentage points



Source: CEIC.

Growth outlook favorable, but conditional on implementation of reform agenda

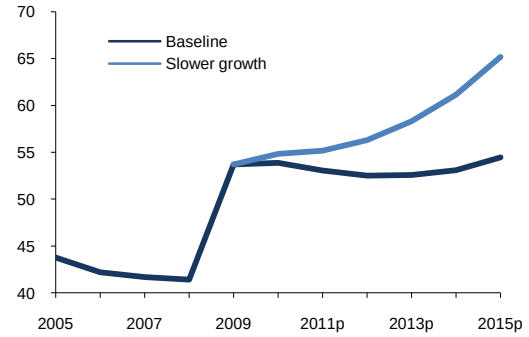
Actual and forecast GDP percent growth, yoy, percent



Source: CEIC and World Bank staff projections.

Reform implementation matters not only for growth itself, but also for debt sustainability

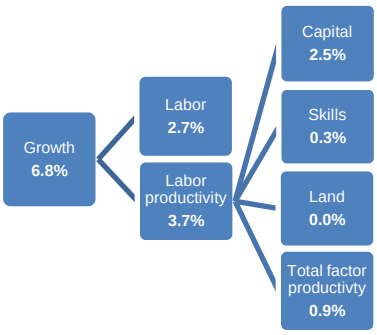
General government debt to GDP, percent



Note: Slower growth is at an average of 4.2 percent over projection period.
Source: Malaysian authorities and World Bank staff projections.

THE INNOVATION CHALLENGE IN PICTURES

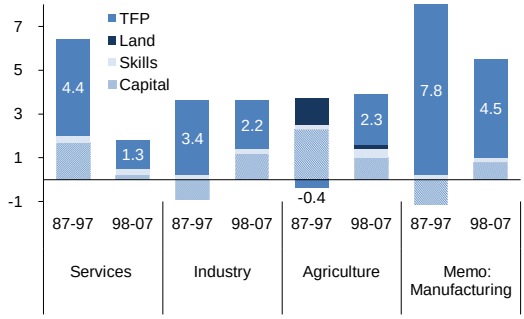
Growth in recent history has been driven by capital and labor accumulation



Source: World Bank (2008).
Note: Period is 1987-2007; figures are growth contributions.

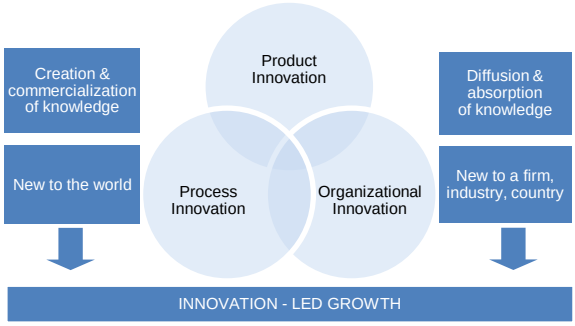
Productivity gains slowed after the Asia crisis

Contributions to labor productivity growth of total factor productivity (TFP), land, skills and capital, percentage points



Source: World Bank (2008).

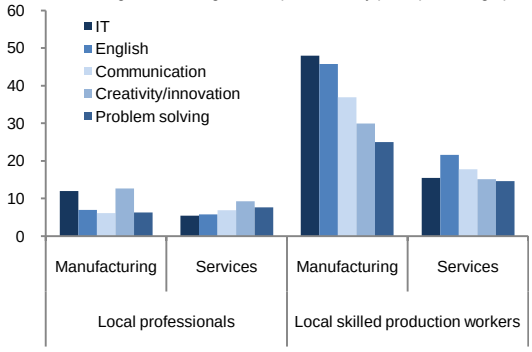
Growth through innovation occurs in multiple ways



Source: Based on Dutz (2009).

Innovation could be spurred by improving skills…

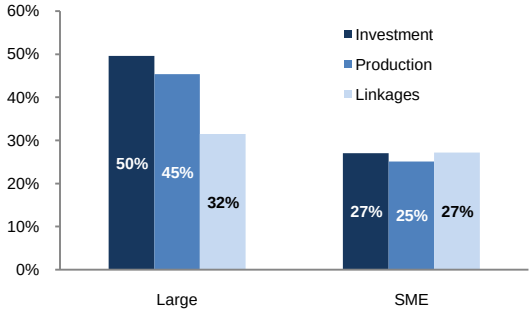
Share of managers indicating skill as 'poor' or 'very poor, percentage points



Source: World Bank (2005 and 2009c).

… reducing disparity in technological capabilities

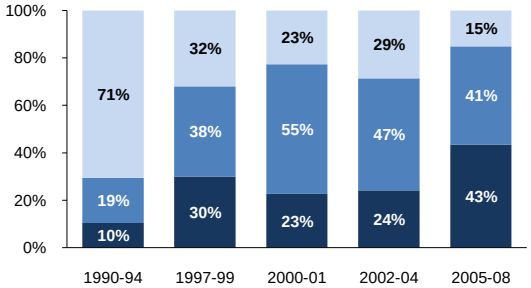
Share of technology capability activities being undertaken, percent



Source: World Bank (2005 and 2009c).
Note: Investment: activities such as project preparation, technology identification. Production: activities such as process and product improvement. Linkages: activities such as knowledge and technology transfers.

… ensuring adequate finance for innovation

Share of firms indicating 'lack of appropriate source of finance' as hampering innovation activities, according to importance, percent

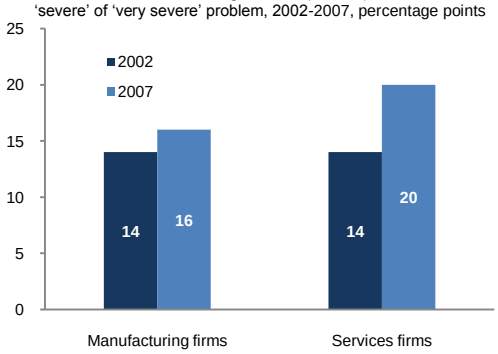


Not important or slightly important
Moderately important
Very important

Source: MASTIC (2006); Lee and Lee (2006); and EPU.

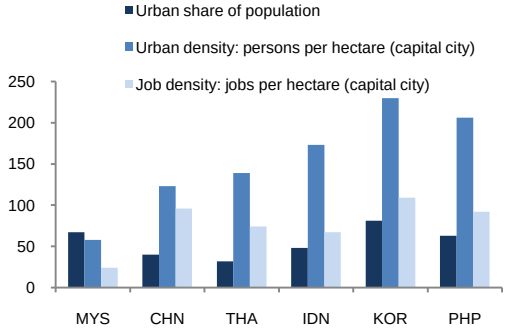
…guaranteeing a level competitive playing field

Share of firms indicating 'anti-competitive practices' as 'severe' of 'very severe' problem, 2002-2007, percentage points



Source: World Bank (2005 and 2009c).

… and concentrating economic activity further



Source: WDI.

1. RECENT ECONOMIC DEVELOPMENTS

The downturn in global trade in 2009 hit Malaysia particularly hard. The reduction in its GDP growth rate was the steepest amongst middle-income countries in East Asia. However, a robust recovery is underway. Private consumption and the boost from the fiscal stimulus packages provided early support. Inventory investment has taken over in recent quarters. Exports continue their climb out of the most severe slump since 1967, increasingly driven by regional demand. As a result, the manufacturing rebound is increasingly the locomotive of growth after services had provided a beacon of strength through the crisis. High frequency indicators, although noisy, also point to the strong rebound in activity.

While aggregate unemployment has shown limited movement, the labor market churning that has been a feature through the crisis has continued. Shifts into self-employment have been particularly strong, which might be associated with a rise in informal employment. The patterns of employment and wage dynamics through the downturn and rebound have varied across sectors, in part reflecting exposures to the fall in external demand. For example, although manufacturing production picked up in mid 2009 as export performance improved, the numbers employed have yet to rise. However, increasing number of vacancies suggest that companies actually want to hire workers but cannot find employees with the right skill set.

Monetary, fiscal and financial sector policies played an important supporting role during the crisis. As in other countries, a key policy question has been when, and how, to withdraw economic stimulus measures without derailing the recovery. The strength of the economic performance to date, and the improved outlook, has prompted recent moves towards monetary policy normalization. With the fiscal stimulus packages pushing up the federal government deficit to around 7 percent of GDP in 2009, moves towards fiscal consolidation cannot be postponed.

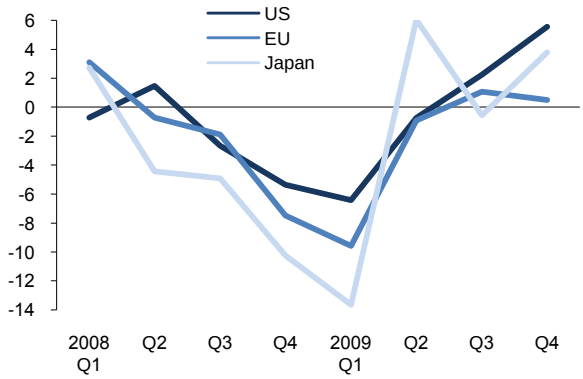
GLOBAL RECOVERY UNDERWAY BUT REMAINS FRAGILE

The pace of the global recovery picked up in the second half of 2009. Extraordinary stimulus measures worldwide and inventory restocking have been key to the recovery in global GDP, along with the resilience of large emerging economies such as Brazil, India and China. While GDP growth has resumed in the major developed economies the recovery is in its early stages.

Developed economy growth remains subdued and differentiated across regions (Figure 1.1). Supported by larger and timelier stimulus measures and lower reliance on exports, the GDP recovery in the US appears stronger than in Europe and Japan. In Q4 2009 US growth was 5.6 percent on a seasonally adjusted annualized rate (saar) basis, but much of the growth came from private inventory investment. Private consumption growth remains relatively weak. High frequency data have also provided a mixed picture, although with more positive releases in recent months, for example on consumer confidence. GDP growth for Q4 in Japan came in at 3.8 percent saar with the EU recording an anemic 0.5 percent. Wholesale and retail sales have also picked up but still remain down on the pre-crisis levels, by up to 25 percent in the case of Japan (Figure 1.2).

Figure 1.1. Developed economy growth has resumed

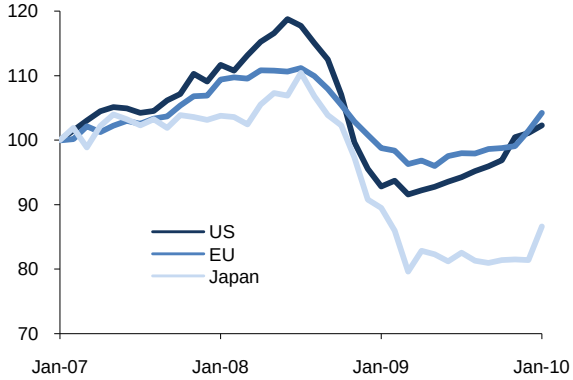
Real GDP growth (percent, saar)



Source: CEIC and World Bank staff calculations.

Figure 1.2. Wholesale and retail sales remain at or below pre-crisis levels

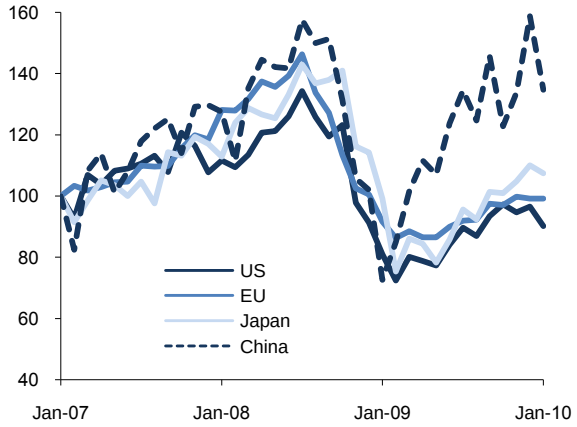
Wholesale and retail sales (sa, January 2007=100)



Source: CEIC and World Bank staff calculations.
Note: Sales in local currency.

Figure 1.3. Global imports have stabilized with the exception of strong growth for China

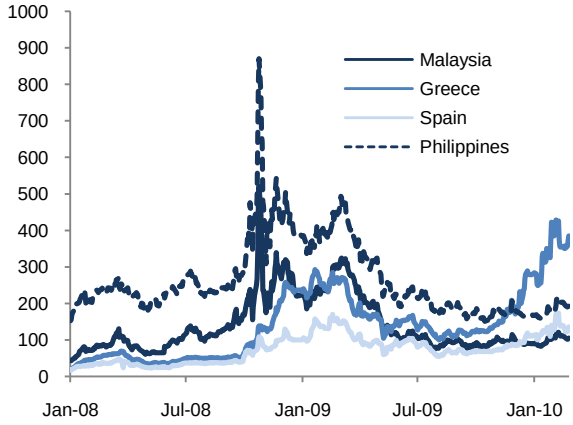
Nominal merchandise imports in USD (January 2007=100)



Source: CEIC and World Bank staff calculations.

Figure 1.4. Spillovers to Asian credit markets from the euro-zone debt crisis appear limited

Sovereign five-year senior credit default swap spread (basis points)



Source: Thomson Financial Datastream.

Emerging markets are driving the global recovery. For example, China's GDP growth accelerated in Q4 2009 to 10.7 percent year-on-year driven by investment promoted by the stimulus packages. The strength of activity in China, and also other major developing economies such as India, has contributed to commodity prices steadily making up their earlier sharp declines of the second half of 2008.

World trade volumes have risen due to the effects of stimulus packages and inventory restocking. This follows a contraction of 14 percent in 2009. The recovery in global external demand, which is of key importance to Malaysia and other export-oriented economies in the region, is increasingly due to China.[1] Even during the pre-crisis period of 2003-2007 China's annual contribution to global fixed investment demand was roughly equal to that of the US. While its contribution to global domestic demand growth was smaller it has been growing fast. Although all major economic blocs saw a sharp decline in imports during the crisis in late 2008, China's recovery in imports started earlier and was stronger (Figure 1.3).

[1] Timmer (2010).

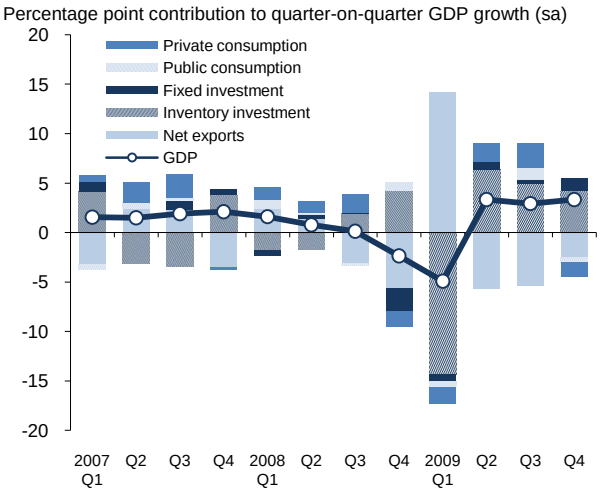
Financial and credit market normalization continues. The initial acute phase of the economic crisis involved intense financial and credit market turmoil. The normalization of many financial and credit market indicators, for example interbank lending rates, has continued in recent quarters. Tightening of bank credit standards has moderated in the US and the EU, according to lending officer surveys. Global equity markets have rebounded. The stock market indices of US, EU and Japan, which had halved from early 2007 to the lows of 2009, are now roughly between 20 and 35 percent down.

Spillovers to Asia from the Euro-zone public debt turmoil have been limited. International bond issuance has jumped worldwide as fiscal financing needs have ballooned with stimulus expenditures. The risk of a fiscal debt crisis in Greece led to a sharp rise in sovereign credit default swap (CDS) spreads on certain other Euro-zone economies such as Portugal and Italy. However, the impact on the cost of default insurance for sovereign credits, and more broadly indices of spreads over US Treasuries, in emerging Asia, including Malaysia, has been muted (Figure 1.4).

RECOVERY IN MALAYSIA IS PROCEEDING

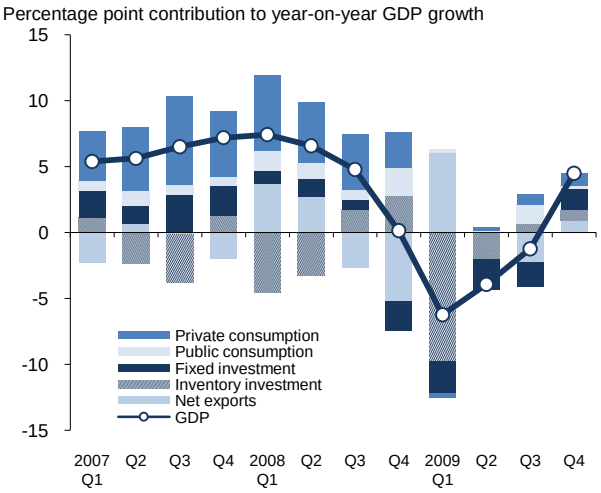
The downturn in global trade in 2009 hit Malaysia particularly hard. Total exports in 2009 were down by 17 percent against 2008 with the trade surplus declining by a similar proportion. The percentage point reduction in GDP growth from 4.6 percent in 2008 to -1.7 percent in 2009 was the steepest amongst middle-income countries in East Asia. The region in aggregate, excluding China, is estimated to have suffered a fall in growth from 4.5 percent in 2008 to 0.9 percent in 2009.

Figure 1.5. Quarterly real GDP growth has remained strong in recent quarters



Source: Haver and World Bank staff calculations.

Figure 1.6. Annual real GDP growth has also resumed



Source: CEIC and World Bank staff calculations.

The tide turned in the second quarter of 2009. On the back of improved external conditions and fiscal stimulus, quarter-on-quarter growth resumed after two consecutive quarters of contraction. The positive momentum continued in the second half of the year, with quarterly growth at about 3 percent (Figure 1.5). Thanks to these developments, annual growth resumed in the fourth quarter (Figure 1.6), and the level of GDP has made up for its lost ground and exceeds the pre-crisis peak by 2 percent. As a result, the speed and strength of Malaysia's recovery compares favorably with those other countries in East Asia similarly exposed to the external demand shock arising from the global recession (Box 1).

BOX 1. MALAYSIA'S RECOVERY IN REGIONAL PERSPECTIVE

The final quarter of 2009 saw all emerging East Asian economies enjoying robust annual output growth, after the sharp downturns seen in late 2008 and 2009. This box considers Malaysia's recession and recovery in the context of the GDP performance of five other regional economies that similarly experienced a steep downturn followed by a sharp recovery, namely Hong Kong, China; South Korea; Singapore; Taiwan, China; and Thailand.[a]

Despite a generally V-shaped recovery, the timing and length of the recessions vary rather markedly across crisis-affected economies (Figure 1.7). Growth performance became more diverse as the crisis deepened. On a quarterly, seasonally-adjusted basis GDP in Singapore and Hong Kong, China, already showed sharp contractions in the second quarter of 2008. Malaysia was the last country to enter the recession in East Asia, primarily due to more supportive private consumption (see Box 1 of the November Malaysia Economic Monitor; World Bank, 2009a).[b] The rebound in all six economies clearly commenced from the second quarter of 2009. This was first supported by resilient Chinese demand and later augmented by a turnaround in G-3 economies and revival in global trade from mid-2009. Nonetheless, the recovery remains somewhat uneven and fragile for some, as evident in the weak quarterly GDP growth for Korea and Singapore in Q4 2009, despite favorable headline year-on-year figures.

In terms of levels, the trough for Malaysia's seasonally adjusted real GDP (reached in Q1 2009) was around 7 percent below the pre-crisis peak of Q3 2008. This was a slightly shallower contraction than a peak-to-trough fall of over 9 percent for Singapore and Taiwan, China, but deeper than Korea's 5 percent (Figure 1.8). Malaysia's recovery was relatively strong—the seasonally-adjusted GDP level in Q4 2009 surpassed the pre-crisis peak by around two percent. Hong Kong, China, and Singapore remain 3-4 percent below their respective peaks, reflecting their particularly high trade openness and exposure to global demand (with exports of goods and services at over 200 percent of GDP in 2008).

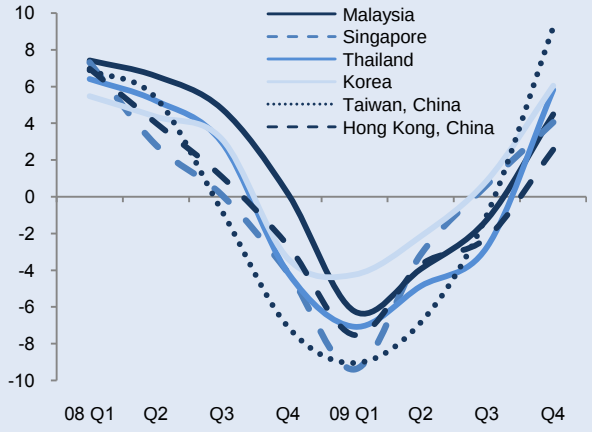
Malaysia emerged from the global recession stronger than others due to more resilient domestic demand and the recovery in net external demand. This was mainly led by robust private consumption (Figure 1.9), but also supported by public consumption and fixed investment (Figure 1.10 and Figure 1.11). All crisis-affected economies introduced extraordinary fiscal packages with priorities on minimizing job retrenchments and maintaining personal income. But what was noticeable for Malaysia and Korea, who both have recovered relatively quickly to pre-crisis GDP levels, was the relative timeliness of the support—Malaysia launched the first fiscal package in November 2008, in addition to the expansionary Budget 2009 announced in August 2008, ahead of the output contraction beginning early 2009.

The contraction in Malaysia's real exports of goods and services in the second half of 2008, seasonally adjusted, was second only to Taiwan (Figure 1.12). The fall in merchandise shipments is even greater given healthy tourism revenue. But net external demand contributed positively to growth because imports fell much more sharply than exports in the first half of 2009. Malaysia's high-tech export products have high import content, so the free fall in export orders from advanced economies resulted in a sudden drop in intermediate imports. This was also reflected in huge inventory destocking.

In terms of the structure of export demand, Malaysia, Singapore, and Thailand rely proportionally more on the (weak) G-3 economies and less on the (buoyant) Chinese market. This was one reason why their exports fell so markedly. For Malaysia, the G-3 economies plus other large East Asian economies excluding China, which are part of the regional production network producing goods finally destined to G-3 economies, accounted for around 72 percent of exports in 2007/2008. This is the highest in this sample of economies, for example for Korea the fraction is around 50 percent.

Figure 1.7. A V-shaped recovery in East Asia but with varying degree of output loss

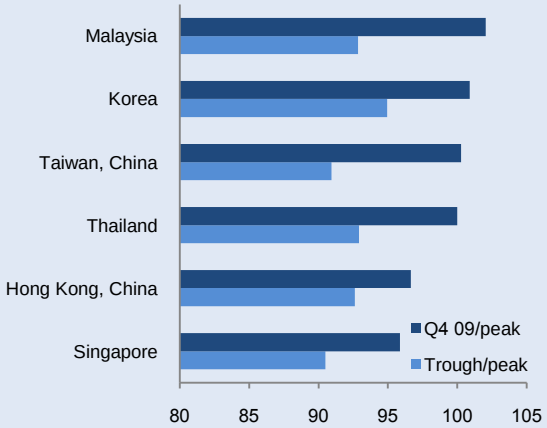
Real GDP growth, yoy, percentage point change



Source: Haver and World Bank staff calculations.

Figure 1.8. Malaysia emerged from the global recession more favorably than others

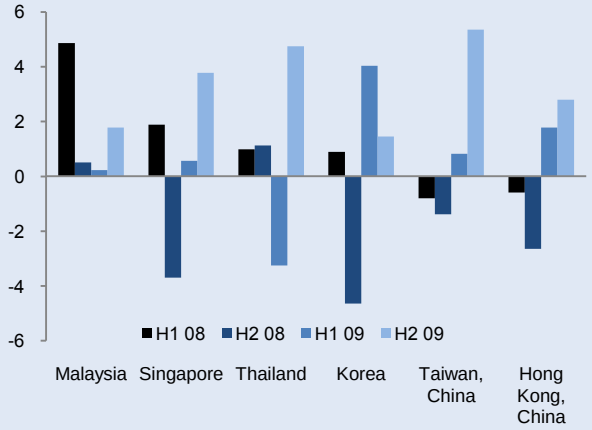
Ratios of real GDP levels, sa, percent



Source: Haver and World Bank staff calculations.
Note: Peak is Q3 08 for Malaysia and Korea, and Q1 08 for others. Except Korea (Q4 08), trough is Q1 09.

Figure 1.9. Resilient private consumption in Malaysia has helped to sustain domestic demand

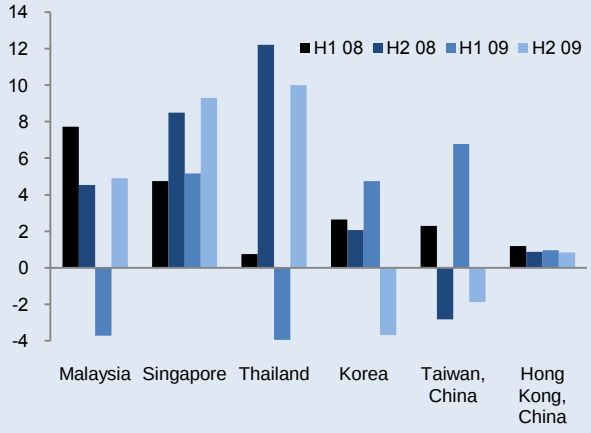
Real private consumption growth, percentage point change from preceding period, sa



Source: Haver and World Bank staff calculations.

Figure 1.10. Public consumption also contributed positively…

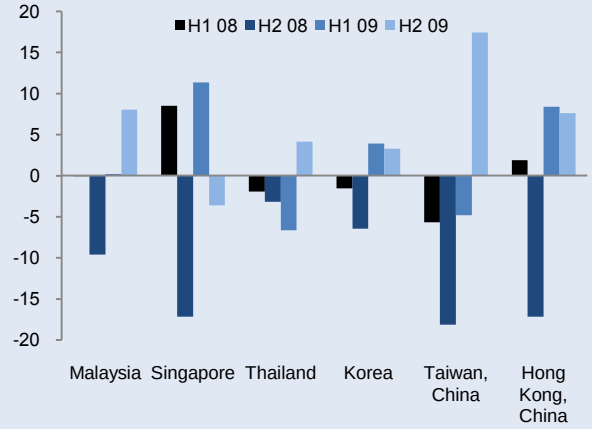
Real public consumption growth, percentage point change from preceding period, sa



Source: Haver and World Bank staff calculations.

Figure 1.11. …along with fixed investment in late 2009

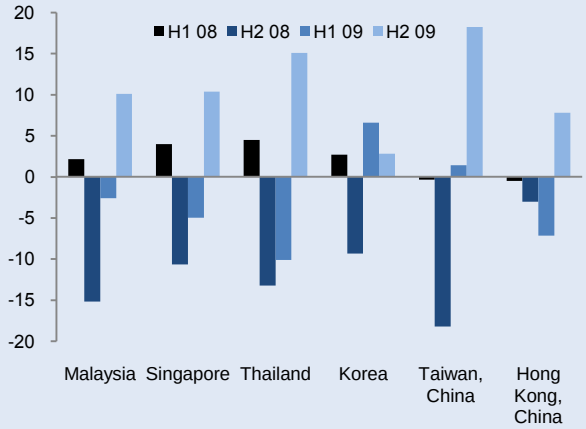
Real gross fixed capital formation growth, percentage point change from preceding period, sa



Source: Haver and World Bank staff calculations.

Figure 1.12. The decline in exports was relatively large

Real good and services exports growth, percentage point change from preceding period, sa



Source: Haver and World Bank staff calculations.

Notes:

[a] These economies suffered at least two quarters of negative, year-on-year output growth during 2008-2009. Other large regional economies such as Indonesia, the Philippines, and Vietnam have so far been more resilient with positive growth throughout.

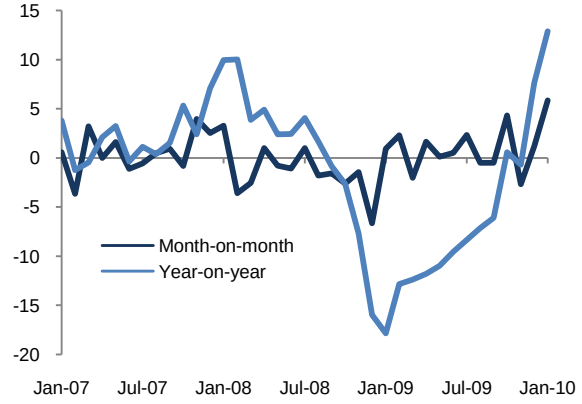
[b] This is true for both GDP growth calculated on a year-on-year basis (which first declined in the first quarter of 2009) and on quarter-on-quarter, seasonally adjusted basis (which first declined in the fourth quarter of 2008).

High frequency indicators, although noisy, also point to the strong rebound in activity. Tracking the recovery in the level of global imports, industrial production continued to rise through 2009 (Figure 1.13). The performance in January 2010 was particularly strong, up almost 6 percent on the month (sa). Focusing on the levels to gauge the extent of the recovery, the industrial production index excluding construction has made up around 12 percentage points of the 19 percent fall from its peak in January 2008. It is 2 percent above the level in September 2008 before GDP began to contract. The improvements in domestic, and external, demand supported the return of annual consumer price inflation to positive territory in December 2009 after the deflation of mid-2009 (Figure 1.14). Similarly, the direction of producer price changes has also seen a turn around—the roughly 2 percent rise in December followed 13 consecutive months of annual price declines.

Confidence indicators suggest continuing improvement. Coincident indicators continue to rise and lagging indicators are making a come-back (Figure 1.15). Consumer and business sentiment indices have seen sharp improvement (Figure 1.16). What is particularly noticeable about the current crisis and the recovery is both the depth of the fall, and the speed of the rebound, of the consumer sentiment measures. This may reflect both the strong domestic policy response to the crisis and the change in perceptions over time from initial fears of a broad-based downturn through to the realization that much of the domestic economy was relatively insulated from a shock which focused on the manufacturing-for-exports sector.

Figure 1.13. The industrial production revival gathers steam

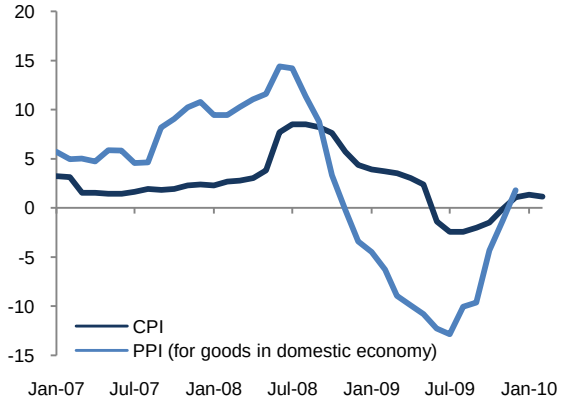
Percent change in sa index



Source: Haver and World Bank staff calculations.
Note: Industrial production excluding construction.

Figure 1.14. As activity recovers, consumer and producer prices are rising again

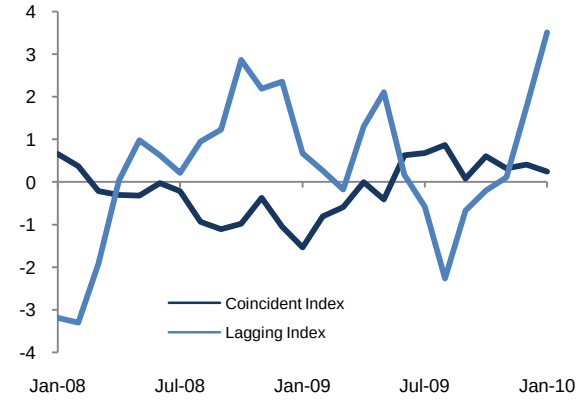
Percent change, year-on-year



Source: CEIC and World Bank staff calculations.

Figure 1.15. Coincident and lagged indicators continue to improve

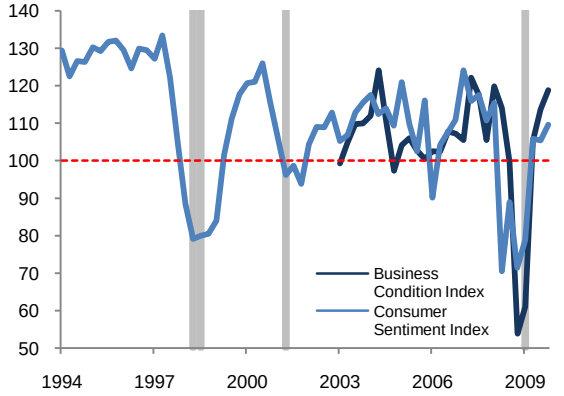
Month-on-month growth in 3mma sa index, percent



Source: CEIC and World Bank staff calculations.
Note: Seasonal adjustment using Tramo-Seats.

Figure 1.16. Sharp recovery in business and consumer sentiment indices

Index



Source: Malaysian Institute of Economic Research (MIER), CEIC, Haver and World Bank staff calculations.
Note: Shaded areas indicated recessions (defined as two or more consecutive quarter-on-quarter GDP contractions, sa). For Business and Consumer Sentiment Indices a value above (below) 100 indicates improvement (deterioration) of sentiment.

Manufacturing surveys confirm these positive developments. For example, the assessment of the negative effect of the crisis on export sales and new orders has declined as the global high-tech and manufacturing cycle has moved into recovery mode (Table 1.1). The average assessment of the decline in profit has moderated through 2009. In addition, almost all indicators are also expected to improve going forward through Q1 2010.

Table 1.1. Survey of manufacturers points to moderation of impact of global economic and financial crisis

Percent of respondents considering global economic and financial crisis has negative/positive impact on factor

	2Q2009 vs 1Q2009		3Q2009 vs 2Q2009		Oct 2009 – March 2010	
	Negative	Positive	Negative	Positive	Negative	Positive
Sales and production						
Sales-export	50.8	32.3	42.9	39.7	36.4	47.3
Sales-domestic	37.3	34.3	40.9	31.9	29.6	42.6
Production volume	44.6	32.5	40.3	33.4	30.6	46.8
New orders	51.4	23.6	42.0	33.3	30.5	42.4
Average sales prices	37.8	16.3	44.9	15.9	33.9	23.7
Labor						
Employment	35.2	11.3	26.1	23.2	19.6	28.5
Wage costs	19.1	17.7	24.2	18.2	21.1	31.6
Non-wage costs	22.7	24.2	28.1	26.5	22.2	35.2
Investment						
New capital investment	32.8	10.5	28.1	14.1	20.0	23.6
Capital expenditure	31.3	16.4	27.7	21.5	18.2	31
Credit						
Access to short–term credit	13.4	14.9	12.3	15.3	12.7	20.0
Access to long–term credit	12.3	13.9	14.3	14.3	14.5	18.2
Cost of credit	14.1	17.2	16.9	16.9	16.7	18.5
Credit terms	16.9	13.8	20.0	15.4	21.4	19.7
Performance						
Liquidity/ cash flow	40	18.5	38.2	23.7	42.1	26.4
Profit	52.7	28.4	52.1	31.0	52.5	30.5
Profit declined on average by	27.6%		17.9%		10.5%	

Source: Federation of Malaysian Manufacturers (2009a and 2009b).
Note: "No Impact" response not included in table.

RECOVERY IS ALSO GAINING BREADTH

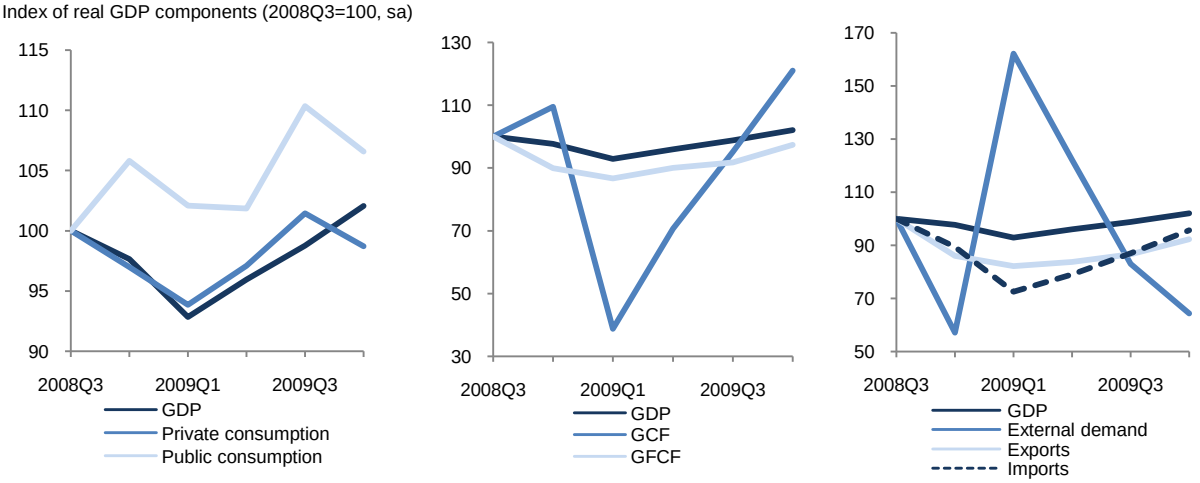
Underneath the recovery lies a differentiated picture across sectors. The aggregate picture is one of a robust momentum building behind improved economic data. However, the path of the downturn and recovery has involved shifts in expenditures, trade and activity across sectors.

Inventories Move into the Spotlight

Annual growth in recent quarters has been strongly supported by domestic demand. For the year as a whole private consumption rose 0.8 percent and public consumption by 3.7 percent. The economic stimulus packages, through promoting job creation in the public sector for example have contributed to both these consumption components. They also supported fixed investment expenditures through infrastructure spending. The quarterly level of seasonally adjusted real private consumption, having fallen by around 5 percent from 2008 Q3 to 2009 Q1, has now almost recovered its pre-crisis level and has been boosted by real wages gains in many sectors and rising consumer confidence (Figure 1.17). While gross fixed investment, seasonally adjusted, remains down by just under 3 percent on the pre-crisis level, total investment including changes in inventories is around 20 percent higher.

Figure 1.17. Real GDP back to pre-crisis levels, with the exception of external demand

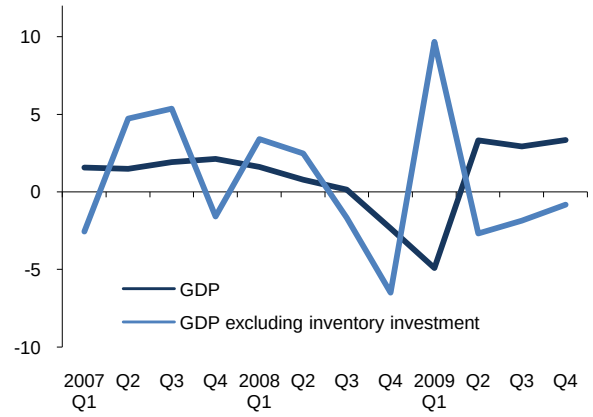
Index of real GDP components (2008Q3=100, sa)



Source: Haver and World Bank staff calculations.
Note: GCF: gross capital formation; GFCF: gross fixed capital formation.

Figure 1.18. The role of inventories in the recent growth dynamics has been marked

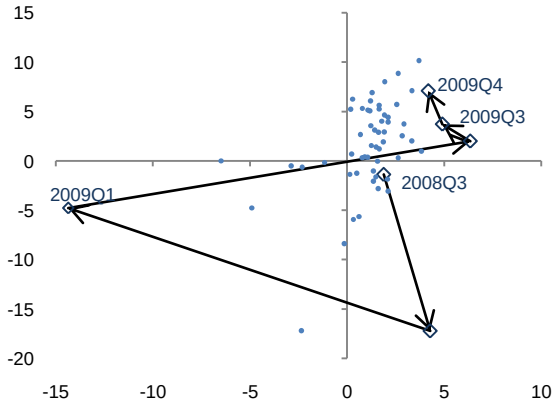
GDP growth, qoq, sa, percentage point change



Source: CEIC and World Bank staff calculations.
Note: Inventory investment includes statistical discrepancy.

Figure 1.19. Exports and inventory investment have both supported growth in recent quarters

Export growth, qoq, sa, percentage point contribution



Inventory investment, qoq, sa, percentage point contribution

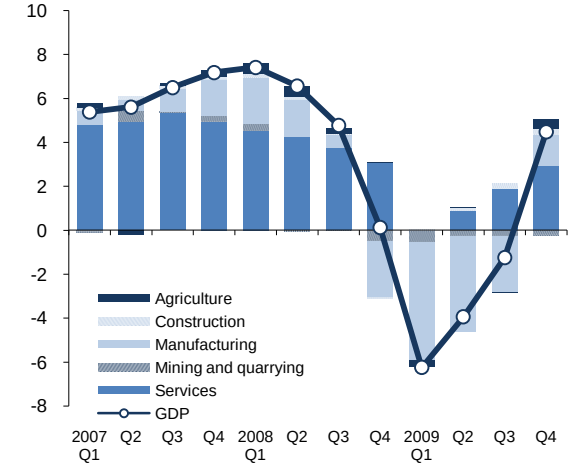
Source: Haver and World Bank staff calculations.
Note: Dots indicate observations from 1996Q2 to 2007Q3. Inventory investment includes statistical discrepancy.

One of the most remarkable features of recent GDP dynamics has been the role of inventories (Figure 1.18). The importance of inventories in Malaysia's business cycle comes as no surprise. The manufacturing sector is export oriented, which exposes inventories to the caprices of world demand. Adding to this are the modern supply management techniques of multinational manufacturers, allowing these firms to play ever more closely to the ball. What did come as a surprise was the unprecedented magnitude of inventory adjustment.[2] The sharp decline in exports at the end of 2008 triggered a massive inventory adjustment in early 2009, which was five times as large in real value terms as the largest quarterly contraction during the Asian financial crisis (or 50 percent higher in terms of percentage point contribution to GDP growth). After the initial shock, inventories resumed their positive contribution, not unlike recent economic history (Figure 1.19).

[2] The changes in inventories include statistical discrepancies arising from balancing, which may not accurately portray the actual magnitude of the inventory adjustment.

Figure 1.20. Annual growth has resumed in all sectors except mining and quarrying

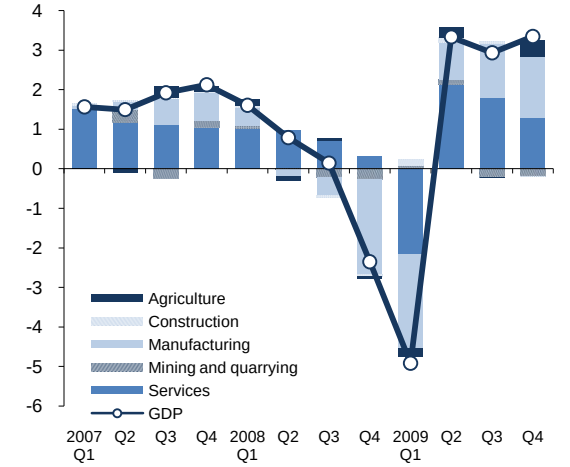
Percentage point contribution to year-on-year GDP growth



Source: Haver and World Bank staff calculations.

Figure 1.21. Manufacturing's contribution to quarterly growth has risen through the recovery

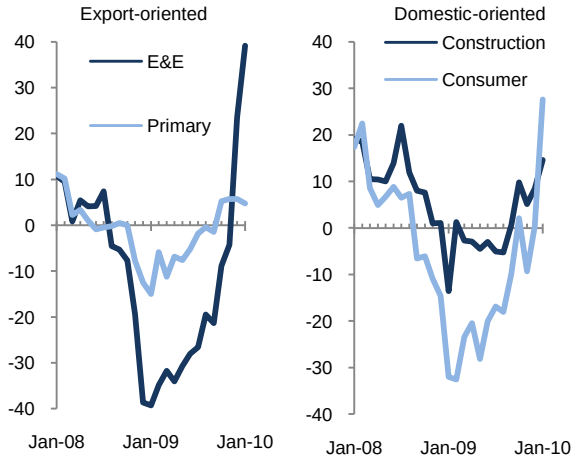
Percentage point contribution to quarter-on-quarter GDP growth (sa)



Source: Haver and World Bank staff calculations.

Figure 1.22. Industrial production evolved differently across sectors

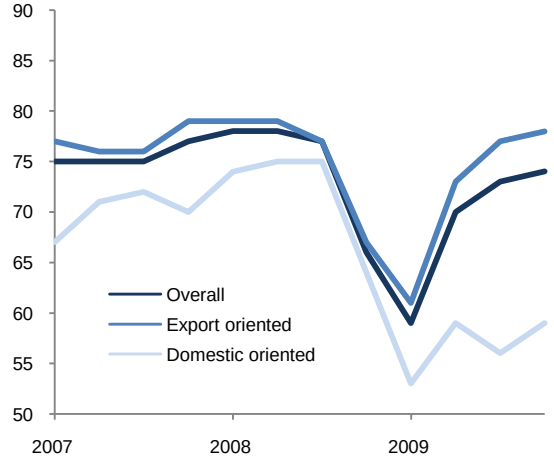
Year-on-year growth, percent



Source: CEIC and World Bank staff calculations.

Figure 1.23. The gap in capacity utilization widened between domestic and export-oriented firms

Percent



Source: CEIC.

Manufacturing Is Making a Come-Back

In contrast to manufacturing, services provided a beacon of strength throughout the crisis (Figure 1.20). Growth in the services sector has been a key support to economic activity over 2009, contributing 1.4 percentage points to annual growth versus a negative contribution of 2.7 percent by manufacturing. Retail and wholesale trade picked up with improved consumer sentiment and the strong performance of private consumption, particularly in the first three quarters. The rebound in activity also supported finance and insurance, which provided the largest service sub-sector contribution to growth of 0.5 percentage points. Government services were buoyed by the fiscal stimulus packages while the communications sub-sector saw continuing growth in broadband and mobile services. The only services sub-sector to contract in 2009 was transport and storage, reflecting its tight linkages with the decline in international trade.

Recent data point to a shift back towards manufacturing as the key driver of the recovery (Figure 1.21). Having led the downturn it is now making a strong contribution to growth, outstripping that of services (with contributions of 1.5 and 1.3 percentage points respectively to seasonally adjusted quarterly growth in Q4). Construction, although a smaller share of the economy, also posted annual growth of 8.5 percent in the second half of 2009, boosted by the fiscal stimulus measures. For example, the first stimulus package announced RM 1.2 billion for the construction of low and medium cost houses and RM 600 million for small projects under the public amenities maintenance and basic infrastructure projects. Agriculture also rebounded in the fourth quarter, up 5.7 percent quarter-on-quarter seasonally adjusted on the back of higher production of palm oil and rubber stimulated by external demand.

Electronics has undergone the most pronounced contraction and rebound in production. Within the manufacturing sector, as expected, domestic-oriented industries such as food products and beverages have undergone a much shallower downturn than export-oriented industries (Figure 1.22). However this characterization is also subject to caveats. Some export sectors, such as primary goods, have received a boost from the recovery in external commodity prices and suffered a less severe crisis than for example the domestic-oriented industry of construction products such as iron and steel and fabricated metals.

Despite the recovery there remains considerable spare production capacity. Capacity utilization rates continued to rise with the recovery, up from a low of 59 percent in Q1 2009 to 74 percent in Q4 2009 (Figure 1.23). However, this remains down on the average levels of over 80 percent in the early 2000s. The business tendency survey of the Department of Statistics points to a higher proportion of respondents reporting a favorable view on the current volume of orders for export than for domestic. Indeed, the divergence between the utilization rates in export- and domestic-oriented industries has risen further (which were 76 percent and 62 percent respectively in Q4).

Commodities and E&E Exports Leading the Way

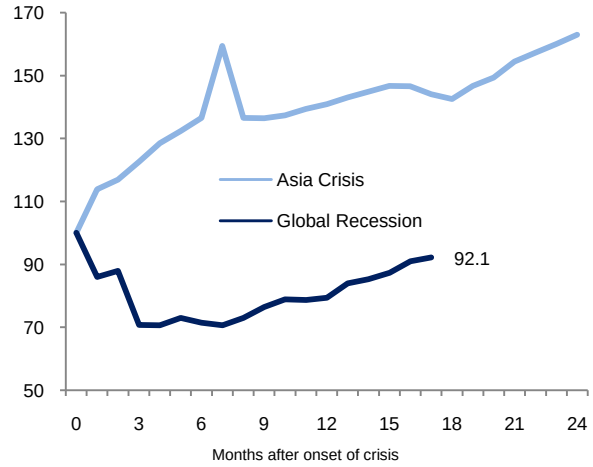
Climbing out of the most severe slump in history, the exports recovery is gaining momentum. Over the course of 2009, global demand has turned around as fiscal and monetary stimulus measures started to bear fruit and replenishment of inventories got underway. Against this backdrop, Malaysia's exports witnessed consistent growth in the second half of 2009, at 2.5 percent per month (3-month moving average, 3mma, sa). As of February, exports have regained much of their losses during the crisis and returned to 90 percent of the pre-crisis level (Figure 1.24).

The recovery stands on the back of a rebound in demand from the region. As growth prospects improved firms in China resumed restocking parts and components from regional suppliers, particularly electronics from Malaysia. Exports to China have more than made up their losses, exceeding the pre-crisis level by about 40 percent (sa). The upward trend, especially of E&E exports, somewhat moderated in February due to the holiday season in China—but is expected to resume. Overall, China and other emerging East Asian economies contributed the majority of quarterly export growth (sa) in recent quarters (Figure 1.25).[3] Demand from Japan, the United States and EU has improved considerably, especially since Q4 2009 but remains weak in comparison to pre-crisis levels.

[3] Emerging East Asian economies include Hong Kong, China(HKG); Indonesia (IDN); Philippines (PHL); Singapore (SGP); Republic of Korea (KOR); Taiwan, China (TWN); Thailand (THA); and Vietnam (VNM).

Figure 1.24. Unlike the Asia crisis, export values took a deep dive and remain down on pre-crisis levels

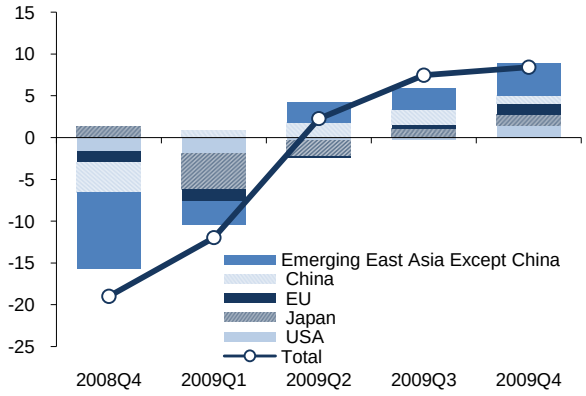
Export value index, sa



Source: CEIC and World Bank staff calculations.
Notes: Export index = 100 for Jul 1997 (Asia crisis) and Sep 2008, respectively; seasonal adjustment using Tramo-Seats.

Figure 1.25. Exports to the region have been key to the export recovery

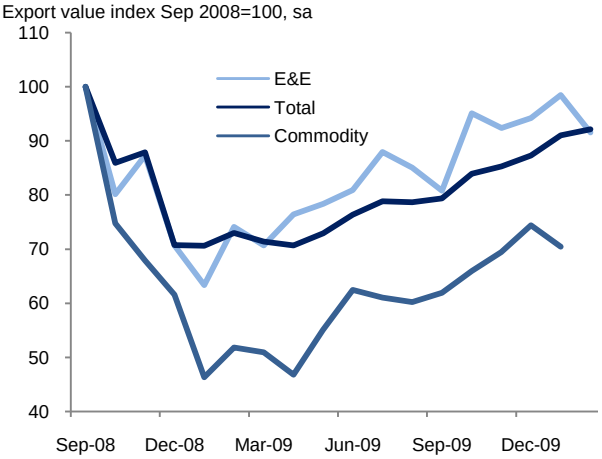
Percentage point contribution to quarter-on-quarter (sa) export growth



Source: CEIC and World Bank staff calculations.
Notes: Emerging East Asia includes HKG, IDN, PHL, SGP, KOR, TWN, THA, VNM; seasonal adjustment using Tramo-Seats.

Figure 1.26. Electrical and electronics are leading the export revival

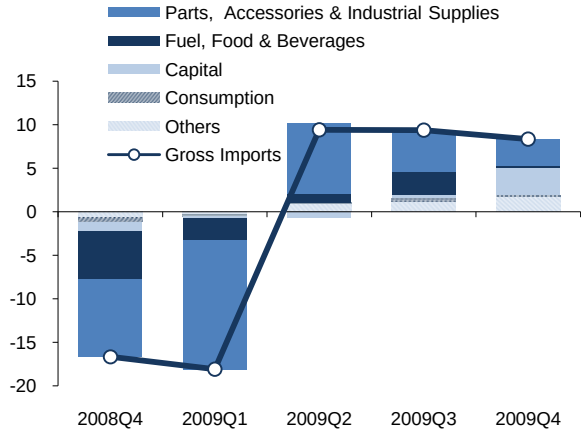
Export value index Sep 2008=100, sa



Source: CEIC and World Bank staff calculations.
Note: Seasonal adjustment using Tramo-Seats.

Figure 1.27. Imports are also rising, dominated by intermediates

Percentage point contribution to quarter-on-quarter (sa) import growth



Source: CEIC and World Bank staff calculations.
Note: Seasonal adjustment using Tramo-Seats.

E&E remains the main driver behind the rebound thanks to improved global consumption demand and inventory restocking (Figure 1.26). The monthly growth rate slowed somewhat in the last quarter of 2009 highlighting the weak demand from the G-3. In contrast, the export growth of commodities, which suffered the largest magnitude contraction in value during the downturn, continued apace over the same period with an average growth rate of about 5 percent (three-month moving average, seasonally adjusted). The rebound in international commodity prices over 2009 has played some role. For example, the average unit value of crude petroleum exports in the second half of 2009 was up about 40 percent on that in the first half. Improved demand for agriculture products, led by palm oil and rubber, also contributed. For example, growth in the volume of exports of palm oil in volume resumed its momentum in the last quarter of 2009 and continued to improve through early 2010.

With exports rising again, import demand has picked up significantly. Imports of intermediates grew particularly fast and regained much of the earlier loss. The contribution of parts and components as well as industrial supplies was the most eminent, around 4 percent out of the 9.4 percent quarterly import growth (sa) in the third quarter of 2009 and 3 percent of the 8.3 percent growth in the last quarter (Figure 1.27). Capital goods imports have also shown a strong improvement in growth over the last quarter of 2009, returning to the pre-crisis seasonally adjusted level and in line with the rise in domestic fixed investment.

Services trade is also on the path to recovery. While services contribute over half of GDP, Malaysia has limited international services transactions, especially in comparison to its buoyant merchandise trade. However, services trade held relatively firm during the crisis and is improving quickly. As of the final quarter of 2009, services exports were almost back to their pre-crisis level, as were imports. A key contributor was receipts from foreign travelers, reflecting for example a successful marketing campaign. In addition, exports in a range of management, construction-related and engineering-related services exhibited resilience as well, registering positive annual growth in three quarters of 2009.

LABOR MARKET IS CHURNING

The labor market churning that has been a feature of the crisis has continued. Employment shifted across sectors and there has also been a rise in moves into self-employment, which might be associated with greater informal employment. Employment and wage dynamics have varied across sectors and industries, in part reflecting their export-orientation but employment–particularly in the manufacturing industry–lags behind. As a result, the impact of the crisis across households has been varied depending on their sources of income and employment.

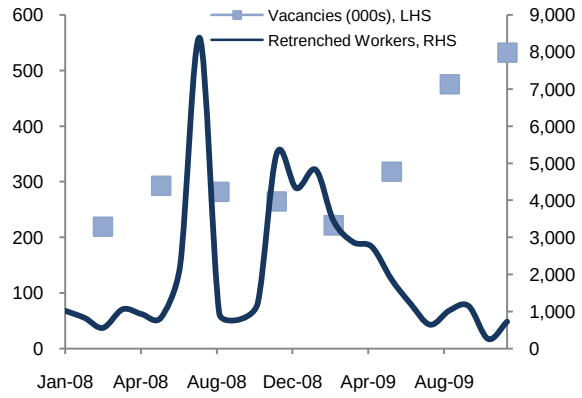
Movement of Workers Across Sectors Continued

Throughout the second half of 2009 aggregate labor market indicators remained almost unchanged, but churning in the labor market continued. The official unemployment rate in Q4 was 3.5 percent, down 0.1 percentage points on the quarter (unadjusted) and up on 3.1 percent in Q4 2008. Labor force participation was unchanged in the third and fourth quarters of 2009 compared to a year earlier, at around 63 percent. However, underneath these numbers retrenchments continued to fall, returning to pre-crisis levels (Figure 1.28). The tightening of labor demand, which took off mid-year, is indicated by the rise in vacancies, particularly in the manufacturing sector, although the number of job seekers (termed registrants in the statistics) has continued to increase (Figure 1.29). In addition, registered placements more than doubled towards the end of 2009 compared to the first half of the year.

The movement of workers across sectors—identified in the November 2009 Malaysia Economic Monitor (World Bank, 2009a)—continued in the second half of 2009. In particular, reflecting the GDP figures, manufacturing was the sector most affected in terms of employment during the crisis. The share of the total employed who work in manufacturing has fallen to 16.2 percent in Q4 2009, down by three percentage points on two years earlier. In addition, labor productivity in manufacturing, measured as real value added per worker, contracted by roughly 9 percent in 2009 as a result of the crisis, compared with a 2 percent fall for the entire economy.[4]

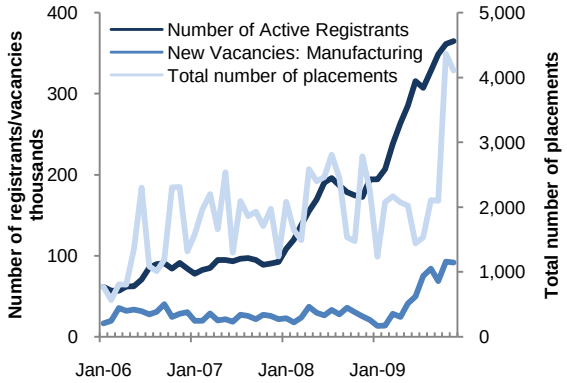
[4] Bank Negara Malaysia (2010).

Figure 1.28. Labor demand has continued to soften



Source: CEIC and World Bank staff calculations.

Figure 1.29. Numbers of job searchers, vacancies and placements have picked up



Source: CEIC and World Bank staff calculations.

Table 1.1. The decline in manufacturing employment was the most prominent among sectors

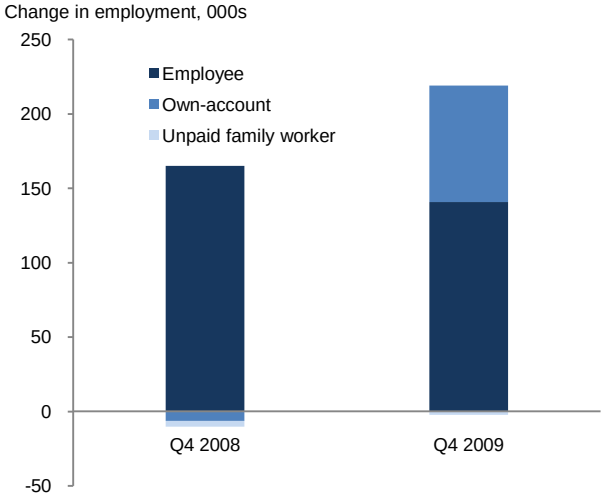
	Change in employment (thousands)		Growth rate (percent)	
	Q4 2008	Q4 2009	Q4 2008	Q4 2009
Manufacturing	55.4	-225.8	2.8%	-11.2%
Agriculture	-55.7	-13.9	-3.6%	-0.9%
Utilities	0.7	-0.9	1.2%	-1.5%
Mining and quarrying	16.2	10.5	39.6%	18.4%
Others	-26.6	21.6	-9.5%	8.5%
Transportation	30.6	46.8	5.7%	8.3%
Finance	-16.1	66.3	-1.9%	8.0%
Construction	94.8	77.5	10.1%	7.5%
Public and social services	18.1	114.5	0.9%	5.7%
Trade	36.7	127.9	1.5%	5.1%

Source: Malaysia Department of Statistics and World Bank staff calculations.

Workers moved into retail and wholesale trade as well as the public sector (Table 1.1). Jobs in services–especially in the trade sector–are usually considered to be of lower productivity and more informal, with lower earnings and no access to formal safety nets. Jobs created in the public sector–i.e. jobs in education, social services administration–also increased as the stimulus packages helped to offset some of the labor market impact of the crisis. For example, one of the measures detailed in the government's second stimulus package was the recruitment of 63,000 staff to fill vacancies and serve as contract officers in various government agencies. Another measure was the provision of on the job training and temporary job placements in government agencies and government-linked companies for another 100,000 individuals.

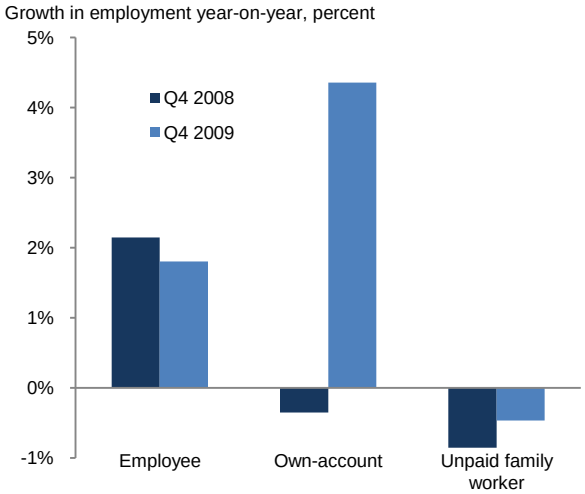
Most newly created jobs have been as self-employed or wage workers (Figure 1.30). The number of unpaid family workers remained almost constant (Figure 1.31). Again this is suggestive of more workers entering the informal sector as the rise in own account workers in Q4 2009 almost quadrupled compared to Q4 2008 – a pattern seen in most countries in the region. Box 2 discusses the issue of labor market informality in more detail. This trend suggests increased stress for families to complement household income, which decreased because of the food and fuel crisis of the past two years.

Figure 1.30. The number of self-employed workers has increased markedly



Source: Malaysia Department of Statistics and World Bank staff calculations.

Figure 1.31. The recent growth rate of the self-employed is double that of employees



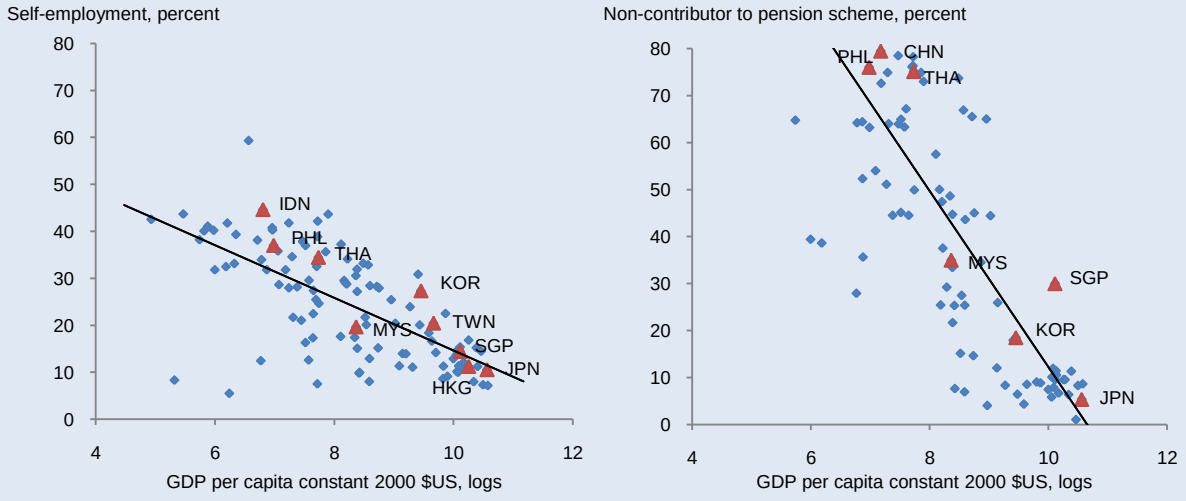
Source: Malaysia Department of Statistics and World Bank staff calculations.

BOX 2. WHY IS INFORMALITY RELEVANT TO MALAYSIA?

What has happened to the level of informal employment during the economic crisis? Although real-time evidence is not available, studies show that the share of informal employment tends to increase during downturns because the informal market can act as a buffer; especially for workers with fewer labor opportunities. Similarly, rapid economic growth can also be accompanied by increasing informality. The level of informality matters since, while it can serve as a means of sustaining livelihoods during difficult economic times, it comes at a cost in the longer term.

Informality is a complex issue. It often reflects economic underdevelopment, even in developed economies (Schneider and Enste, 2000). Measuring the informal economy is inherently difficult. It encompasses underground firms and workers who by definition seek to avoid detection. A few measures can help infer its size, including the lack of pension coverage and prevalence of self-employment. Estimates for Malaysia range from 20 to 35 percent of the workforce. For example, Asher (2005) estimated that 31 percent of the Malaysian workforce is informal. Though the level of informality in Malaysia is larger than a typical developed country, its level for its GDP per capita is relatively low (Figure 1.32).

Figure 1.32. Informality and GDP



Source: World Bank staff calculations

Implications for the Malaysian Economy

Informality can lead to losses in productivity and adversely affect growth. For example, it may encourage firms to stay small, reduce incentives to innovate or improve human capital, promote tax evasion, and promote unfair competition and tactics to work around the rule of law. Empirical estimations, which account for the fact that informality not only affects growth but can also be affected by it, show that rising informality leads to lower growth. A one standard deviation rise in informality can lead to an almost 1 percentage point decline in the growth of GDP per capita (Loayza and Wada, 2010).

Informality predominantly affects smaller firms, which are a key source of employment and growth dynamics. In Malaysia micro, small and medium firms (MSMEs)[a] account for about 99 percent of all establishments in the manufacturing, services, and agriculture sectors.[b] In addition, over three quarters of all MSMEs have less than 5 workers, and these are predominantly concentrated in services and agriculture (Aris, 2007). As most informal firms typically come from the MSMEs pool, and about 65 percent of the Malaysian workforce is employed by such firms, informality is a very relevant concern.

Informality also affects workers' well-being. Formal workers have higher earnings, even accounting for differences in education. Informal workers, as well as their dependents, have fewer savings buffers available to them and face greater income uncertainty. Similarly, they have limited access to formal social services and benefits (other than basic health care and education), such as pensions or out of work compensation, leaving their well-being more exposed to adverse shocks.

Exploring the Root Causes of Informality

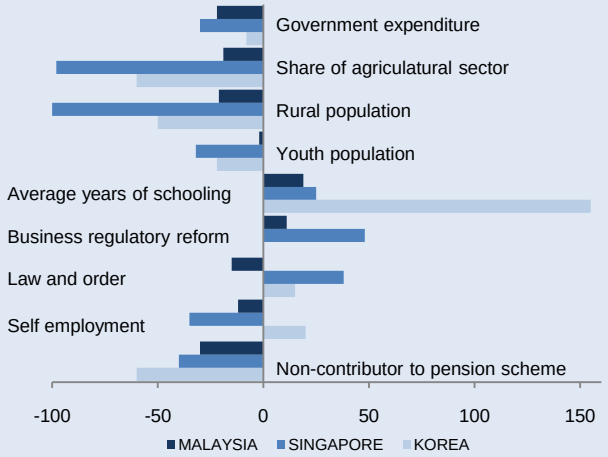
Informality is more prevalent when the business and employment regulatory environment is burdensome, the quality of public services is low, and the monitoring and enforcement of formality are weak (Schneider and Enste, 2000; Loayza and Rigolini, 2009; and Loayza and Wada, 2010). The extent to which informality reflects voluntary exit or involuntary exclusion depends on policies and regulatory frameworks. Informality may be preferred when costs of abiding by the legal and regulatory framework exceed the benefits (OECD, 2008). For example, smaller firms may find it hard to amortize fixed costs of regulatory compliance. Newer firms may choose to avoid the red tape and costs associated with formalization until they have sufficient evidence on their future profitability.

Alternatively, informality may be the only option due to market segmentation or segregation. Some labor market rigidities, such as high wage-setting and high and inflexible non-wage costs, can ration out workers from salaried employment, even though they would prefer it if given the choice (Fiess, Fugazza and Maloney, 2002). In Malaysia, private sector and non-pensionable public workers, except for the self-employed and a few other groups, are required to make social security contributions, pay taxes, and contribute about 11 percent of monthly earnings to the employee provident fund (EPF), with employers also contributing 12 percent. These costs entitle formal workers to receive benefits such as retirement benefits and some funds for housing, education, and medical needs. Despite the seemingly flexible use of these funds, evidence suggests workers perceive the fund to be rigid and that they receive low dividends from their EPF accounts (Thillainathan, 2002a and 2002b).

Other factors closely associated with being informal include educational achievement, production structures, demographic composition, and government presence. Perhaps the most important factor is educational achievement. The likelihood of a worker being informal declines significantly with higher levels of education. Education increases productivity, thus making business costs less onerous and returns to formality potentially larger. Malaysia's emphasis on moving to a knowledge-based economy and developing its human resources is a likely driver of its lower relative informality as compared with regional middle-income economies; however, evidence suggests that the emphasis on education is not equal in all areas of the country.

The main determinants of cross-country informality levels identified in a recent study can be used to benchmark Malaysia's position (Loayza and Wada, 2010). These determinants include measures related to the opportunity costs of remaining formal; business and labor market regulatory freedom; secondary schooling levels; socio-demographic factors, e.g. the share of rural or young workers; the share of production in agriculture, where public services are less prevalent; and, the level of public sector employment which can be a proxy for the ability to monitor and enforce formality. Figure 1.33 illustrates the level of the basic determinants for Malaysia, Korea, and Singapore; each compared to world medians. Unlike Korea and Singapore, Malaysia has a below-median rating for its law and order strength and has relatively lower education levels (although high compared to the world median).

Figure 1.33. Labor informality measures and basic determinants in comparison with world median



Source: Loayza and Wada (2010) and World Bank staff calculations.

This overview highlights that even though informality in Malaysia is not particularly high for its income, it remains a concern due to the prevalence of MSMEs and its potential adverse effects on productivity and growth. Failure to address this issue risks continuing such losses. However, policy makers should not rely on deterrence strategies. Rather, they should focus on reducing the incentives to go and stay informal, i.e. further improving the quality of publicly provided services, streamlining corporate taxes and business regulations, simplifying labor laws, and when possible, easing the tax burden on workers.

Notes:

[a] MSMEs employ less than 5 people and up to 150 in manufacturing, and up to 50 in services or agriculture. Another definition is through annual sales turnover; MSMEs sell less than RM 250,000 to RM 25 million in manufacturing, and between RM 200,000 and RM 5 million in services and agriculture.

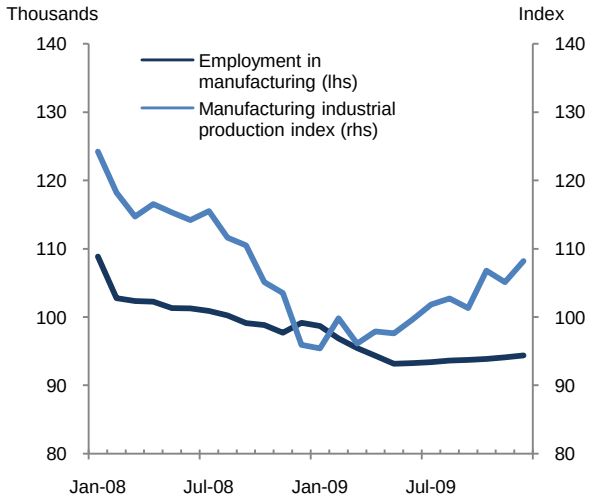
[b] The Malaysian Department of Statistics firm census estimates that 519,000 firms in these sectors are classified as SMEs while 4,100 are classified as large firms.

Industry Wage and Employment Dynamics Varied with Export Orientation

The responsiveness of employment to the manufacturing rebound has been limited. Although industrial production in the manufacturing sector picked up in mid-2009, the numbers employed have yet to rise (Figure 1.34). However, increasing vacancies in the manufacturing sector suggest that companies actually want to hire workers but are finding it hard to add new employees with the right skill set to their payroll. The government's more restrictive policy on the hiring of foreign labor added to this challenge.

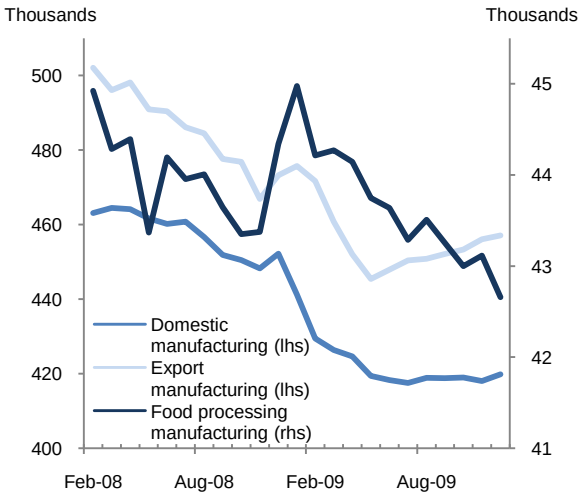
Labor market dynamics also vary within manufacturing. Within the manufacturing sector the labor market responded differently according to its exposure to exports. As an example, consider splitting the manufacturing sector into three broad groups, i.e. processing of agricultural products, manufacturing for the domestic markets and export-related manufacturing.[5] All three subsectors shed employment throughout 2008 and 2009 after a period of growth in the preceding years (Figure 1.35). With the rebound in industrial production, employment numbers stabilized for both domestic- and export-oriented manufacturing and even started to increase slightly for the latter. Nevertheless, in sub-industries that were most aggressive in reducing headcounts there has not been a complete revival of employment. As an example of this pattern, the level of employment in the computers and peripherals industry fell around 30 percent from the beginning of 2008 to mid-2009 and in the final half of 2009 only rose by just over 1 percent.

Figure 1.34. Employment has not tracked the recovery in manufacturing production



Source: CEIC and World Bank staff calculations.

Figure 1.35. Export-oriented industries have shown some limited uptick in employment

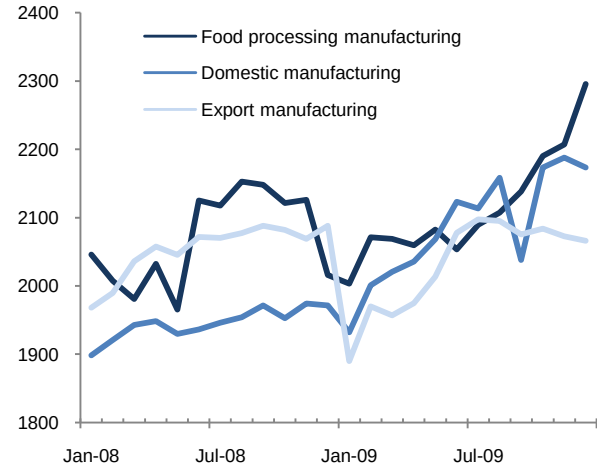


Source: CEIC and World Bank staff calculations.

[5] The classification of industries is based on Lee (2010).

Figure 1.36. Nominal wages show divergent paths across sub-industries

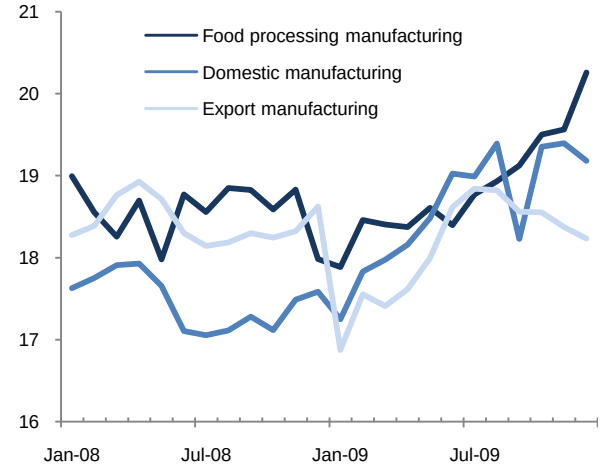
Nominal wages in MYR



Source: CEIC and World Bank staff calculations.

Figure 1.37. Real wages in export manufacturing have trended down over late 2009

Real wages in 2006 prices



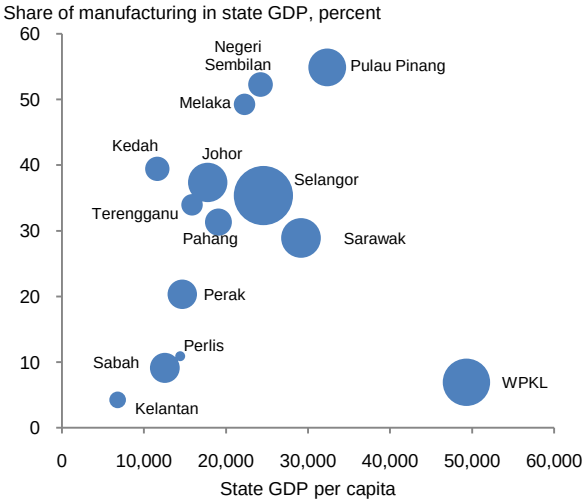
Source: CEIC and World Bank staff calculations.

Average nominal and real wages for the three manufacturing subsectors illustrate the effect of both the food and fuel price shock of 2008 and the economic slowdown of 2008 and 2009. In 2008, nominal wages for both domestic- and export-oriented manufacturing industries remained almost unchanged. In contrast wages in the agricultural products processing industry increased substantially in the second quarter of 2008 (Figure 1.36). This suggests that the impact of increased food prices was positive for earnings in this sector and was transmitted fairly quickly to the labor market. However, because overall consumer prices also increased—albeit at a lower rate compared to other countries in the region—real wages declined for both domestic- and export-oriented manufacturing industries and the positive impact on nominal wages in the processing of the agricultural products industries was almost offset (Figure 1.37).

As exports contracted sharply from late 2008, average wages in export-oriented manufacturing industries fell significantly. Wage bills fell through both reductions in the number of employees through retrenchments, and also through reduced hours worked for those still employed, including temporary closures. Wages for the other two subsectors also fell, although to a lesser extent. Nominal wage rises were seen in the second half of 2009 as the economic recovery gained pace. The drop in wages in early 2009 was almost reversed by September 2009. Although the recovery in average wages in the export-oriented sectors leveled off through the second half of 2009, wages for both domestic manufacturing and agricultural product processing continued to increase until the end of the year. With consumer prices almost stable, this is true for both nominal and real wages.

The crisis is likely to have led to higher poverty incidence, for example through the lowering of real wages or through the impact of remittances. Malaysia's sustained economic growth in the years prior to the recent crisis contributed to a gradual lowering in the poverty rate to around 4 percent in 2008. However, as discussed in Box 3, there remain important differences in poverty rates across geographic regions and between urban and rural populations. Levels of inequality have also remained relatively persistent. In terms of the recent crisis, updated survey data on the impact in Malaysia at the household level, and how this varies with their characteristics such as their skills, education, sector of employment and location, are unfortunately not available. However, at least from the relative importance of manufacturing in regional activity (Figure 1.38) it appears that this dimension of the crisis is focused on the middle income regions within Malaysia.[6] Moving forward, the development of timely monitoring frameworks to analyze the impact of economic developments could play an extremely useful part of the government's surveillance of the economy and help in designing the appropriate, targeted, policy response.

Figure 1.38. Variation in manufacturing share in activity across regions



Source: Department of Statistics and World Bank staff calculations
Note: Bubble area proportional to share of state in Malaysia real GDP.
All data for 2007. WPKL is Federal Territory of Kuala Lumpur.

[6] As in the cross-country empirical evidence, the share of manufacturing in GDP in regions rises with their income per head before falling as services take over (although in the case of Malaysia only the Federal Territory of Kuala Lumpur is on the second part of this inverted-U relationship).

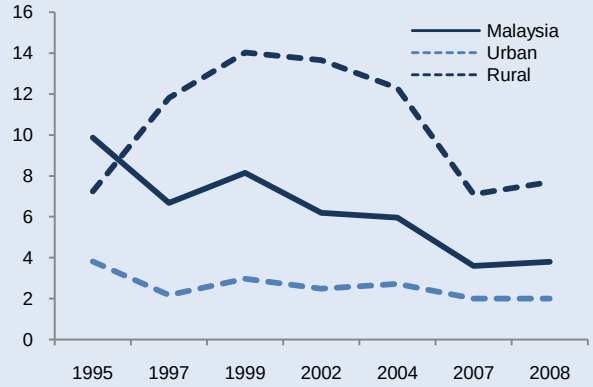
BOX 3. DECREASING POVERTY AND TACKLING PERSISTENT INEQUALITY

Much of the development literature shows that economic growth reduces poverty,[a] and more so if growth takes place in labor intensive sectors, such as agriculture, where many of the poor work.[b] The relation between inequality and economic growth is not as straightforward. Most agree that some inequality is expected in a dynamic economy and embraced when it reflects individual effort, innovation, or other reasons stemming from the dynamism of the market. However, when inequality stems from predetermined circumstances that lead to unequal opportunities, it can hamper social cohesion, foment sociopolitical instability, and disincentivize investment in human capital, which in turn can slow down economic growth.[c]

Malaysia has experienced rapid economic growth since its independence in 1957, with large per capita income increases, resulting in a reduction of aggregate poverty. On the other hand, like other developing (and some developed) countries, Malaysia has experienced a rise in inequality over the same period.

Figure 1.39. Geographic view of the poverty incidence

Share of number of households (percent)



Source: Malaysia Income Surveys.[d]

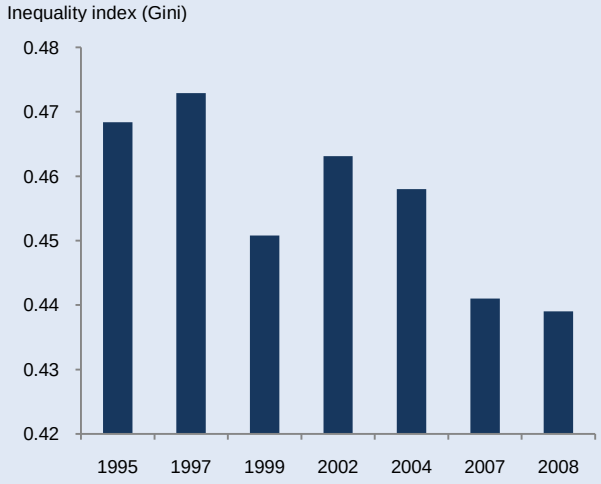
There was a measurable decrease in the aggregate incidence of poverty (based on the national poverty line), from 10 percent in 1995, to 5.5 percent in 2004, and 3.8 percent in 2008. The incidence of poverty varies within Malaysia, resulting from regional and urban-rural disparities. Figure 1.39 shows that poverty is largely a rural problem.[e] Overall poverty has been steadily declining (except for 1999, following the Asian crisis); for 2008, urban estimates are at 2 percent and rural poverty near 8 percent.

Within Malaysia, estimates show that poverty in Peninsular Malaysia is low and decreasing while the poverty incidence in Sabah/Labuan remains high, at around 25 percent in 2004. Using the international poverty line of $2 per day, Malaysia has about 7 percent of its inhabitants living with less than $2 per day; this is lower than comparable countries in the region, such as Thailand with about 11 percent, but at least four times the number for Singapore or Korea.

Though the incidence of poverty has fallen in Malaysia, evidence shows that it is still largely concentrated in certain geographic areas, where in-roads in economic growth and poverty have not decreased inequality in a meaningful manner. Figure 1.40 shows that the Malaysian inequality index, as measured by the Gini coefficient of the income distribution, was near 0.44 in 2008 (where zero indicates perfect equality and one perfect inequality). This is comparable to countries such as Indonesia and Vietnam.

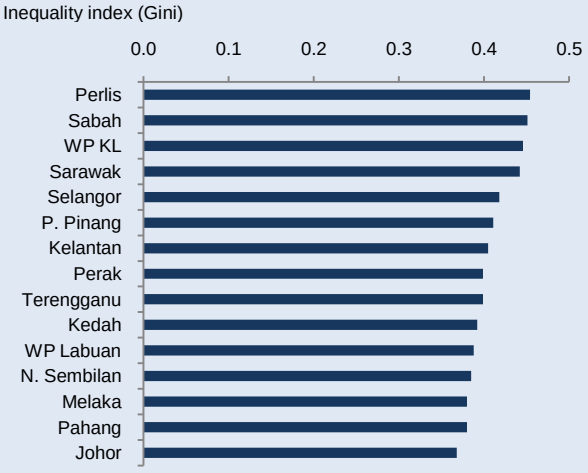
Some reasons identified for the persistence of inequality in Malaysia are the export-oriented industrialization process, equity ownership restructuring, and (unevenness in) access to education and training.[f] Within Malaysia, the highest levels of inequality are in the states of Perlis and Sabah, closely followed by WP Kuala Lumpur (Figure 1.41). Perlis and Sabah are also the two states whose economies are most reliant on agriculture (which accounted for around 30 percent of their respective GDPs in 2007). Sabah, for example, also exhibits a high concentration of poverty with clear urban-rural disparities (rapidly industrializing urban sectors contrasting with the agriculture-dominated rural areas).[g]

Figure 1.40. Inequality over time



Source: Malaysia Income Surveys.

Figure 1.41. Inequality within state (2007)



Source: Malaysian authorities.

Notes:
[a] Dollar and Kraay (2002).
[b] Ravallion and Datt (1996); Loayza and Raddatz (2006).
[c] World Bank (2006b).
[d] Estimates are derived from United Nations Development Program (2007), "Measuring and Monitoring Poverty and Inequality", using the raw data from Household Income surveys for the reference years. Estimates for 2007 and 2008 were derived from the Economic Planning Unit, income based estimates.
[e] These estimates are based on household income, not household expenditure; income-based estimates can differ from expenditure-based estimates. However, findings and implications are consistent with expenditure-based measures.
[f] Ragayah (2008).
[g] Given the industrial structure in these poorer states, the global financial crisis may have a lesser impact than in other states, where economic activity depends more strongly on export-oriented manufactures.

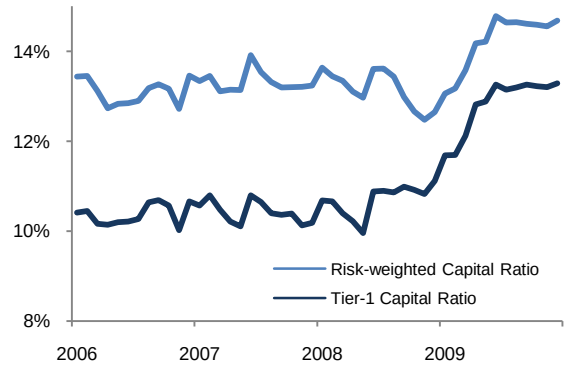
DOMESTIC FINANCIAL CONDITIONS REMAIN RESILIENT

Financial indicators continued to demonstrate a strong domestic financial sector. The system-wide risk-weighted capital ratio remains high and has stabilized at more than 14 percent since August 2009 (Figure 1.42), providing a large buffer to absorb unexpected losses. Profitability appeared to start improving in the third quarter of 2009 after a long decline since early 2008. In the fourth quarter of 2009 the return on assets was around 1.2 percent and the return on equity 13.9 percent. These are down on around 1.8 percent and 23 percent respectively in 2008 Q1. However, on both of these measures Malaysia's performance is in the upper distribution for the region (see Tables 26 and 27 of International Monetary Fund, 2009). The overall non-performing loan (NPL) ratio is low, at 1.9 percent (Figure 1.44).

The aggregate ratio continues to decline although with the caveat that there may be lags in the realization of any problem credits due to the downturn. The manufacturing-for-exports crisis has contributed to a rising relative share of NPLs in the manufacturing sector compared with its share of total lending (Figure 1.43). However, manufacturing loans constitute only about 10 percent of total loans with households, which remain in good financial health with moderate indebtedness compared with other countries such as Korea and Singapore, accounting for around 55 percent.

Figure 1.42. Capitalization remains strong

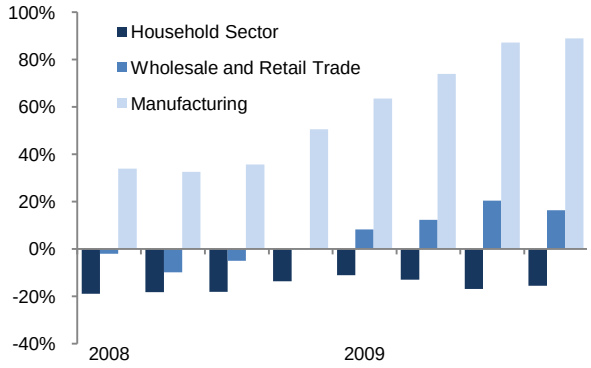
Capital adequacy indicators, percent



Source: Bank Negara Malaysia.

Figure 1.43. Manufacturing accounts for increasing relative share of NPLs

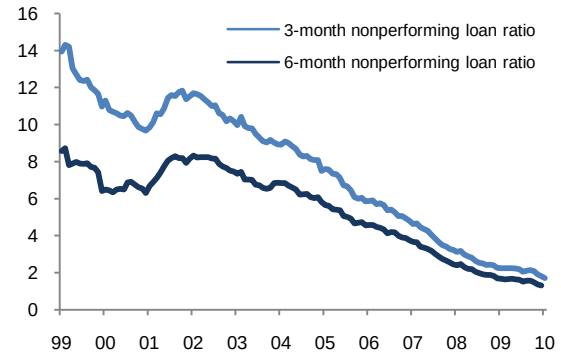
NPL share /loan share -1, percent



Source: Bank Negara Malaysia.

Figure 1.44. Downward trend in NPLs continues

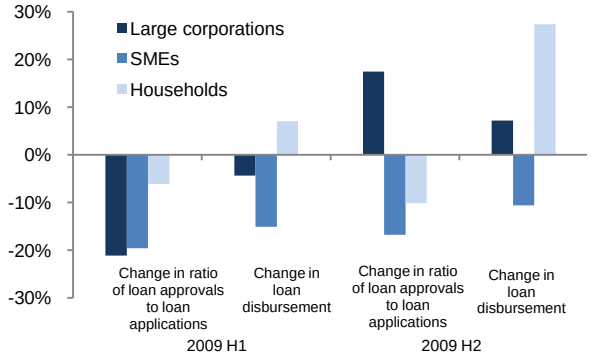
Percent



Source: Bank Negara Malaysia.

Figure 1.45. Credit conditions showing signs of improvement

Change yoy, percent



Source: Bank Negara Malaysia.

Financing conditions are improving. The level of total financing to the private sector through banks and capital markets improved in the fourth quarter, up 29 percent year-on-year in gross terms in Q4 or 8.5 percent on a net basis. Lending activity is picking up, with disbursements to corporates in the second half of 2009 rising by 7.2 percent year-on-year (Figure 1.45). There was also an improvement in the ratio of loan approvals to loan applications in the second half for large businesses. At the firm-level, what is noticeable in the Federation of Malaysian Manufacturers (FMM) survey (Table 1.1 above) is that the majority of respondents over repeated periods feel that there is no overall impact of global economic and financial crisis on access to short- and long-term credit. On the supply-side this is in line with the underlying health of the banking sector and its limited exposure to the economic crisis. However, there is also the demand-side angle of the fall in fixed investment over 2009.

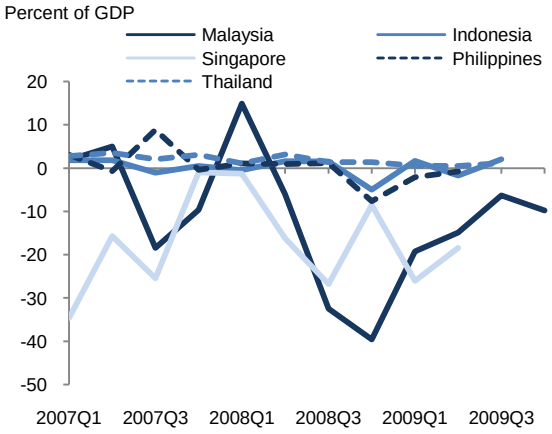
Capital market activity also rose over 2009. The volume of public sector debt securities to finance the deficit increased sharply from RM 62.6 billion in 2008 to RM 96.8 billion in 2009, largely due to the issuance of Malaysian Government Securities (MGS) and Government Investment Issues (GII). The long-term government bond yield is up on last year as issuance levels have increased to finance the deficit. However, it has remained at around 4 percent since early in 2009 (see Box 8 for further discussion). New private sector debt issuance has also risen, up from RM 48.7 billion in 2008 to RM 58.6 billion in 2009. In the equity markets, the KLCI index has continued its recovery. After a peak-to-trough decline of around 40 percent it has recovered to roughly 12 percent below the pre-crisis high. As analyzed in more detail in Box 4, volatility, which rose sharply during the crisis, has come down. New IPOs jumped from RM 1.2 billion in 2008 to RM12.1 billion over the year although this was due primarily to a single offering by Maxis, a telecom company, which is the largest IPO in Southeast Asia of RM 11.5 billion in November 2009.

EARLIER VOLATILITY IN CAPITAL FLOWS HAS ABATED

The domestic financial sector was resilient despite the rapid deterioration in Malaysia's financial account in the face of the crisis. As financial market turmoil and the economic downturn took hold globally, capital flows to emerging markets weakened substantially. Malaysia witnessed one of the most severe cases of capital flights in East Asia (Figure 1.46). Net capital inflows of 15 percent of GDP in the first quarter of 2008 shifted to net outflows of 30 and 40 percent of GDP in the third and fourth quarters, respectively. At its height the magnitude of net outflows to GDP exceeded even Singapore, the regional financial center. As investor sentiment stabilized over 2009, the level of net outflows declined. Full-year outflows, having almost tripled from 2007 to RM 118 billion in 2008, fell back to RM 83 billion in 2009.

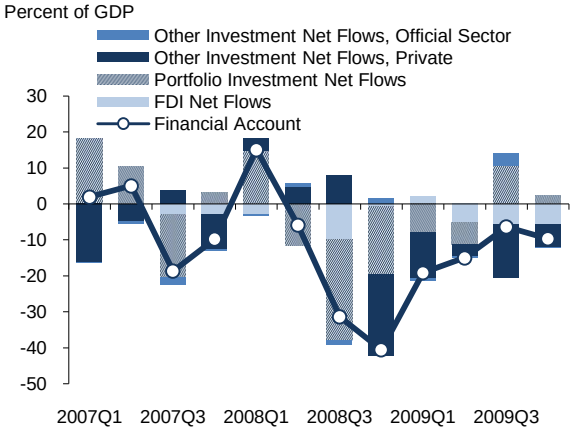
Portfolio investment was a key driver of financial account volatility (Figure 1.47). Net outflows of portfolio investment amounted to almost 28 percent of quarterly GDP in Q3 2008. By the third quarter of 2009, the situation had reversed to a net inflow of 10 percent of GDP, mainly reflecting foreign participation in bonds issued abroad by the oil and gas sector. Stresses in the international banking system, along with reduced levels of trade credit associated with the lower levels of exports, contributed to the net outflows of "other" assets, which include bank credit. The medium-term trend of net FDI outflows has continued through the crisis period. FDI inflows remained depressed in 2009, at around 20 percent of their 2007 levels.

Figure 1.46. Malaysia suffered the largest drop in net financial account flows within the region



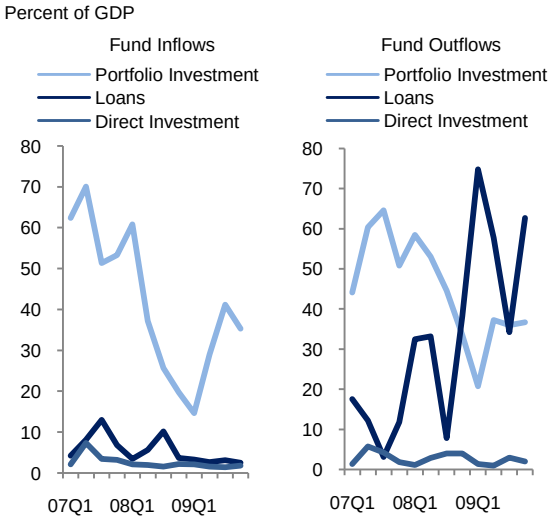
Source: CEIC and World Bank staff calculations.
Note: Data in USD.

Figure 1.47. Net portfolio investment has rebounded



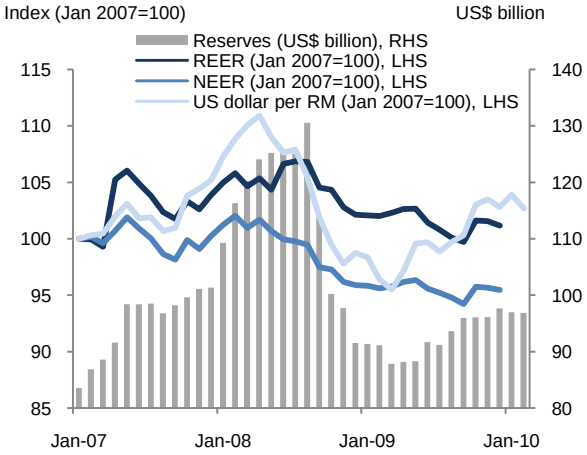
Source: CEIC and World Bank staff calculations.

Figure 1.48. Portfolio flow movements explained much of the deterioration in financial account



Source: CEIC and World Bank staff calculations.

Figure 1.49. Exchange rate appreciation and reserve accumulation in recent months



Source: Haver, Thomson Financial Datastream and World Bank staff calculations.
Note: REER and NEER are IMF IFS real and nominal effective exchange rates (rebased). A rise indicates an appreciation.

Both inflows and outflows contributed to the dynamics of net portfolio investment (Figure 1.48). Thanks to the deepening of domestic capital markets, measures to liberalize international financial transactions and strong growth performance, Malaysia witnessed rising inflows of foreign portfolio flows, or hot money, in the pre-crisis period (around 60 percent of GDP in 2007).[7] However, as risk appetite reduced sharply during the crisis there was a flight-to-safety and heightened home bias in equity holdings, i.e. a preference by investors for equities in their own domestic markets. Foreign

[7] Portfolio investment here includes corporate securities, Malaysian and foreign government securities, private debt securities, money market instruments and financial derivatives. For details, please see Bank Negara Malaysia monthly bulletin.

portfolio investors quickly withdrew from the Malaysian market leading to a sharp reversal of the previous rising trend: the full-year flow dropped by 30 percent to RM 262 billion in 2008. Noticeably, the negative effect on financial account was offset somewhat as Malaysian investors quickly also pulled back on their international outflows. As risk appetite has recovered, inflows from foreign portfolio investors have rebounded amid low developed market expected returns. In the last quarter of 2009, gross portfolio inflows were 35 percent of GDP, up from 20 percent in Q4 2008.

A stronger financial account performance in 2009 contributed to an improved overall balance of payments. As net portfolio outflows declined, total net outflows on the financial account fell from 16 percent of GDP in 2008 to 12 percent in 2009. With the recovery in imports outpacing that of exports, the trade, and current account, balances also narrowed over 2009. However, as nominal GDP fell over the year the current account surplus at around 17 percent of GDP was down slightly on 2008.

The improvement in the balance of payments is reflected in the resumption of the accumulation of international reserves (Figure 1.49). The financial account outflows put downward pressure on the ringgit in the second half of 2008 and reserves fell sharply (down by US$ 16 billion in Q3 and US$ 18 billion in Q4). As the financial account position improved through 2009, the pressure on the ringgit eased and reserves were built up. The current level of reserves of US$ 97 billion however remains down just over US$ 25 billion from the high of May 2008. Overall, the ringgit has appreciated against the dollar since early 2009 but the nominal effective exchange rate has continued a shallow depreciation. These dynamics reflect the weakness of dollar against the currencies of other trading partners. The real effective exchange rate has followed a similar pattern over 2009, after rising through 2007 and 2008 as domestic inflation rose.

The size of the current account surpluses in recent years indicates the extent to which domestic savings in Malaysia outstrip domestic investments.[8] Private savings fell to around 17 percent of Gross National Income (GNI) in 2009, down from 27 percent in 2008, as households adjusted their savings behavior to maintain expenditures in the face of declining incomes. This fall outweighed the slight rise in public savings, which reached 13.9 percent of GNI due to higher surpluses of non-financial public enterprises. On the investment side, as mentioned above, private investment fell sharply (both due to a fall in gross fixed capital formation and, in particular, marked draw down in inventory stocks) while public investment rose with the fiscal stimulus packages. Overall, the fall in the national savings ratio was slightly above that of the investment ratio, leading to the limited decline in the current account surplus.

This excess of domestic savings over investment is reflected in the build-up in Malaysia's net foreign asset position over time which is described in more detail in Box 5. The flow of funds overseas reflects both push and pull factors. On the one hand, international investments in the form of FDI can provide access to new markets for firms and more generally foreign investments can expand the risk-return universe available to domestic investors. On the other hand, as in other capital-exporting countries within the region, there are push factors either through institutional or regulatory arrangements affecting firms which limit the potential domestic returns or a failure of domestic financial systems to effectively intermediate savings through to such investment opportunities.

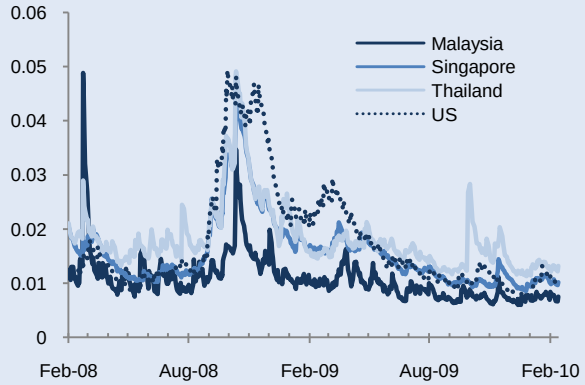
[8] The previous issue of the Malaysia Economic Monitor contains an extensive discussion (World Bank, 2009a).

BOX 4. HOW DID THE GLOBAL FINANCIAL CRISIS AFFECT MARKET VOLATILITY IN MALAYSIA?

The phase of acute financial market distress of the global recession has passed. Although the most pronounced effects were in financial markets in high-income economies, where the crisis started, the impacts were felt in a sharp downturn in capital flows to emerging markets. Malaysia was no exception. In fact, Malaysia's net capital flows, particularly portfolio flows, dropped sharply in late 2008. How did this affect the volatility of Malaysia's equity markets? What do recent, and medium-term, equity market dynamics suggest about Malaysia's financial integration with countries in the region and beyond? These are the questions addressed in this Box.

Figure 1.50. The rise in Malaysia's equity market volatility during the crisis was relatively moderate

Conditional standard deviation of daily equity price returns



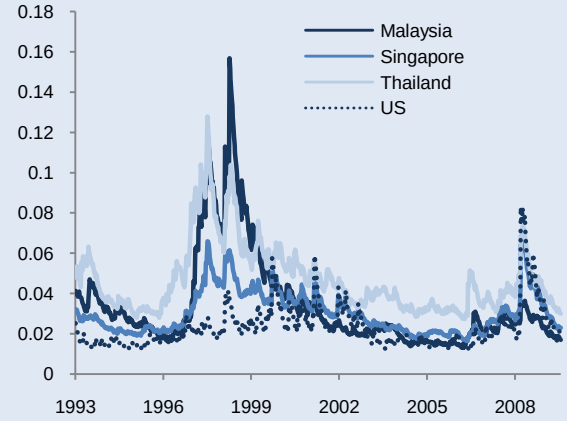
Source: Thomson Financial Datastream and World Bank staff calculations.

Equity price market volatility is associated with both uncertainty and risk. Unsurprisingly, therefore, market volatility rose around the globe as a direct result of the financial turmoil. Surprisingly, however, despite the sheer openness of its economy, its relatively high levels of equity market capitalization and the significant recent portfolio outflows, Malaysia has been one of the least affected in the region by the crisis as measured by equity price volatility indicators (Figure 1.50).[a] All markets experienced rising volatility through late 2007. The distress following the collapse of Lehman Brothers resulted in a bout of particularly high volatility in late 2008, but in Malaysia this was relatively less intense. The financial turmoil was transmitted more swiftly and strongly in terms of equity price volatility to regional financial centers, such as Singapore. As signs of the recovery emerged and investors' expectations stabilized, volatility levels have quickly declined over 2009. Considering also periods where market volatility did not reach extreme levels, Malaysia continued to be the least volatile in the region.

Has Malaysia always been a low-volatility market relative to the rest of the region? Not really. Malaysia was considerably more volatile than Singapore for much of the 1990s and matched the volatility of Thailand when the Asian Financial crisis hit (Figure 1.51).[b] It is clear that, judged by the levels and changes of financial volatility, Malaysia was much more impacted by the Asian Financial crisis than the recent global one. Following the Asian crisis, though, Malaysia moved from a relatively high-volatility to a low-volatility and low-return market. The return, however, is significant given the low level of volatility. As a result, portfolio positions by foreign investors built up prior to the current crisis.

Figure 1.51. Malaysia's equity market volatility is relatively low and has trended downwards

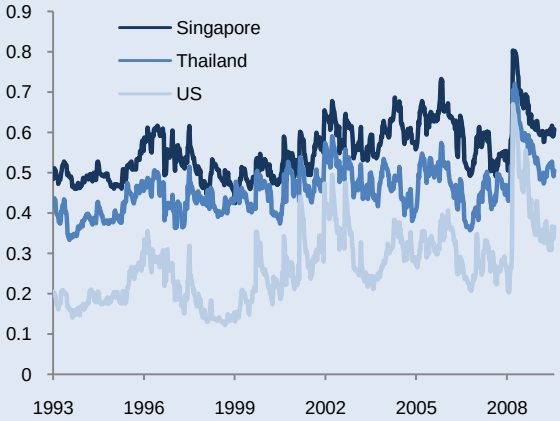
Conditional standard deviation of weekly equity price returns



Source: Thomson Financial Datastream and World Bank staff calculations.

Figure 1.52. Malaysia's co-movement with regional and US equity markets has risen over time

Conditional correlation of weekly equity price returns



Source: Thomson Financial Datastream and World Bank staff calculations.

What explains the transition to the lower-volatility environment and more resilient performance during the current crisis?

- *Improved fundamentals, especially in the strength of the corporate and financial sectors.* Following the Asian crisis the balance sheets of the financial and corporate sectors in Malaysia were strengthened significantly. Corporate leverage ratios were reduced, NPLs were cleaned up and significant precautionary international reserves built up. Interest rate volatility, exchange rate volatility, and industrial production volatility are key economic determinants of market volatility. All of these usual suspects have been relatively muted in the case of Malaysia and are among the lowest in the region.[c]

- *Malaysia's equity markets are more integrated with other Asian countries than with the US*—where the global crisis had its roots (Figure 1.52). Capital controls, which were gradually removed following the Asian crisis, played a role in limiting international integration in earlier years. Malaysia has been closely integrated with regional stock markets, attributable to strong intra-regional trade and investment linkages, economic structure similarity, and geographical and culture proximity. In contrast, Malaysia was much less integrated with U.S. prior to the crisis despite the fact that U.S. had significant influence over Asian stock markets. It helped to mitigate initial spillovers of the crisis and the contagion factor.

In addition to these trends, there is the substantial involvement of government-linked companies and funds in domestic asset markets. For example, the Employee Provident Fund accounts for around 50 percent of the daily Bursa volume of trades. As the holdings of such funds or GLCs will tend to be longer-term they are likely to reduce volatility due to short-term buying and selling, although of course they may limit liquidity, which could have the opposite impact on volatility during crisis periods.

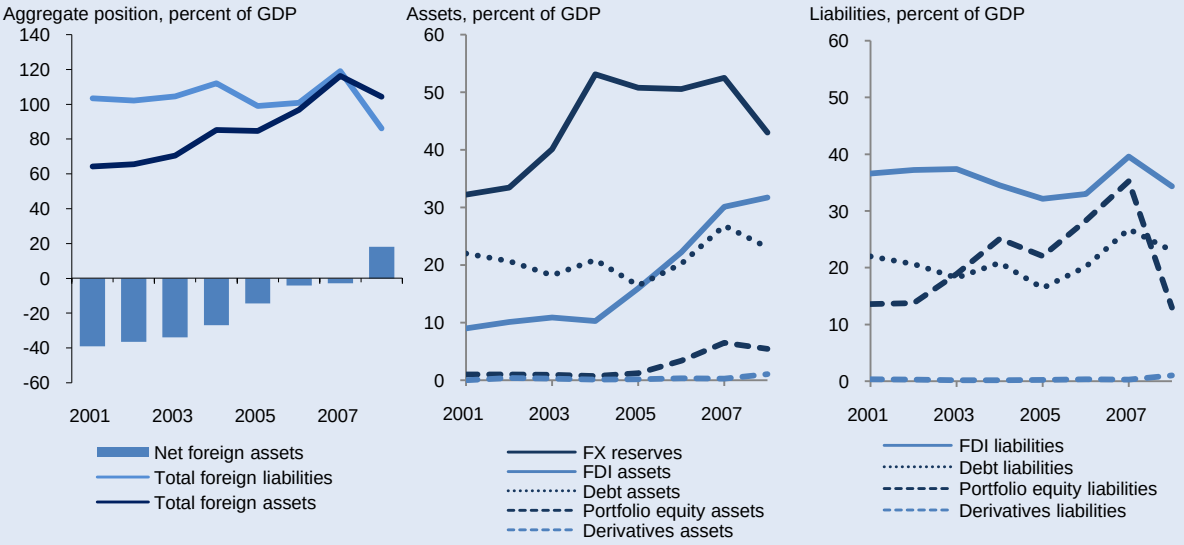
Notes:

[a] The analysis is based on daily log returns derived from daily market price data denoted in US dollars for Malaysia, China, Indonesia, Japan, the Philippines, Singapore, Thailand and Taiwan, China, obtained from DataStream. First-order auto-correlation is removed from the data. Conditional variances and correlations are estimated on the basis of the GO-GARCH multivariate volatility model (Van der Weide, 2002).
[b] The estimates here and in Figure 1.52 reflect weekly volatility measures, estimated with GO-GARCH. With trading in Asia and the US occurring in different time zones, the use of weekly returns avoids the problem of having to synchronize opening and closing times.
[c] See, for instance, Engle et al. (2008) for the determinants of stock market volatility. See Kim and Yang (2009) for developments in Malaysia.

BOX 5. A LONG(ER)-TERM PERSPECTIVE ON CAPITAL OUTFLOWS AND INVESTMENT

Malaysia has been a net exporter of capital in almost every year since the Asian crisis. While the volatile short-run movements in the financial account over 2008 and 2009 may grab the headlines, the underlying picture is that, in flow terms, Malaysia's purchases of foreign assets abroad ('foreign assets' or claims of Malaysia on foreigners) have consistently exceeded the purchases by foreigners of assets in Malaysia ('foreign liabilities' or claims of foreigners on Malaysia). In a dramatic turn of events, the stock of Malaysia's net foreign assets turned positive in 2008, in stark contrast to 1996 when Malaysia registered net foreign liabilities of some 40 percent of GDP (Figure 1.53). This Box examines the factors behind this remarkable change and provides an interpretation of its implications.

Figure 1.53. Foreign assets and liabilities stock positions



Source: CEIC and World Bank staff calculations.

The substantial rise in foreign exchange reserves—which yield a relatively low real return—tells an important part of the story. Emerging markets were hit particularly hard by capital flight during the Asian Financial Crisis and subsequently have accumulated significant foreign reserves as a precautionary measure. By 2007, Malaysia's reserves had reached 52 percent of GDP, up from less than 30 percent prior to the Asian crisis.

The past decade also witnessed an up-tick in the volume of international portfolio flows, both inward and outward. Speculative portfolio inflows may have played a role in anticipation of exchange rate realignment prior to the floating of ringgit in July 2005. Malaysia's sound macroeconomic fundamentals, the rapid development of its domestic financial market and the improved outlook for its corporate sector are likely to have added to these inflows, which became particularly pronounced from 2007.

Recent years have also seen a rise in Malaysian holdings of foreign portfolio equity and debt assets.[a] The easing of capital controls may have played a role. Most portfolio equity funds went into foreign corporate securities and money market instruments with the bulk of funds going through regional or international financial centers. On the debt side, from 2004 the majority of loan outflows have gone through Labuan, Malaysia's International Offshore Business and Financial Center, coinciding with the growing of debt assets. The expansion of trade credits by exporters has also continued, albeit with volatility in line with trade flow dynamics.

Table 1.2. Decomposition of changes in net foreign assets

Decomposition of changes in net foreign assets (percent of GDP)	Average (02-08)	2002	2003	2004	2005	2006	2007	2008
Initial net foreign assets	-22.5	-39.0	-36.5	-33.9	-26.8	-14.3	-4.1	-2.9
Change in net foreign assets	8.2	2.6	2.6	7.1	12.5	10.3	1.2	21.0
Trade balance	18.0	13.7	17.5	17.2	19.1	19.7	17.9	20.8
Rate-of-return effects (a+b)	-9.6	-13.5	-17.8	-15.4	-4.2	-5.9	-14.3	3.8
Investment Income (a)	-4.1	-6.2	-5.2	-4.9	-4.5	-3.0	-2.1	-3.1
Capital Gains (b)	-5.5	-7.3	-12.7	-10.5	0.3	-3.0	-12.2	6.9
Errors, omissions and capital account transfers	-2.1	-0.4	0.0	1.5	-4.8	-4.8	-2.7	-3.8
Growth effect	2.1	3.1	3.1	4.0	2.5	1.3	0.4	0.4

Source: CEIC, Bank Negara Malaysia, Balance of Payment, Investment Position data and World Bank staff calculations.

To disentangle these various developments, Table 1.2 presents the decomposition of the changes in net foreign assets from 2002 to 2008.[b,c] Before discussing the results it is useful to briefly review how the change in a country's net foreign assets in a period can be attributed to different factors. First, there are the flow contributions from the trade balance. The flip-side of a trade surplus is that claims on foreigners (foreign assets) are accumulated in return for the transfer of Malaysian goods and services to foreigners. Second, there is the flow of investment income arising from the net foreign asset position of the previous period. Third, there are the valuation changes on the stocks of assets and liabilities, which may translate in net capital gains or losses. The total returns to net foreign assets—captured below as the rate-of-return effect—comprises both the sum of investment income and capital gains. Fourth, there are the residual factors, which comprise—for the purpose of this exercise—of errors and omissions as well as capital account transfers. These factors drive a wedge between the current account and the net inflow of capital. Finally, since this exercise evaluates the net foreign asset position as a ration to GDP, one also needs to consider that changes in the denominator—the GDP growth effect—affect the ratio as well.

As an export-led economy, Malaysia has traditionally enjoyed strong trade surpluses, one of the driving forces of foreign asset accumulation. Interestingly, however, the accumulation of foreign assets was for most years much smaller than what would have been implied solely by these trade surpluses. This conundrum is explained by sizeable negative rate-of-return effects throughout the period. Table 1.2 suggests this is the natural consequence of two factors. First, payments to foreign investors have significantly exceeded the receipts by domestic residents. Second, valuation effects have generally—though not always—translated into negative net capital gains.

Zooming in on these rate-of-return effects for different assets and liabilities, Table 1.3 documents a number of interesting patterns.[d] First of all, it is clear that, on average, the returns on Malaysia's domestic assets were higher than those on foreign assets possessed by Malaysian residents. Average returns on FDI and portfolio equity are considerably higher than on debt assets and reserves, reflecting their relative risk.[e] One remarkable feature of the period following 2005 is the increase in returns on FDI assets—underpinned by an expansion of outward FDI—whereas returns on FDI liabilities remained much more stable. As a result, return differentials for FDI became significantly positive over 2005-2007, which represents a reversal from the negative position experienced before 2005. Most recently however, the differential dipped again into negative territory. Similarly, portfolio equity investment abroad started to see significantly higher returns over 2005-2007 compared to earlier. Equity investment in Malaysia attracted relatively stable returns. As a result of global turmoil, the return differential sharply narrowed in 2008. The rate of returns on debt assets and reserves was relatively low over 2005-2007 and improved only slightly in 2008—reflecting the size of Malaysia's FX reserves and the relatively low yield on such assets.

Table 1.3. Real rates of returns on assets and liabilities

	2002-2004			2005-2007			2008		
Real rates of returns on assets/liabilities percent)	Assets	Liabilities	Return differentials	Assets	Liabilities	Return differentials	Assets	Liabilities	Return differentials
FDI	2.7	14.6	-11.9	42.0	16.9	25.1	-1.9	3.1	-5.0
Portfolio equity	0.6	25.6	-24.9	77.9	25.6	52.4	-23.9	-41.9	18.0
Debt and FX reserves	-7.4	6.3	-13.7	-2.5	1.8	-4.3	-1.1	13.8	-14.9
Total	-6.8	11.6	-18.4	6.4	11.7	-5.2	-2.3	-5.8	3.5

Source: CEIC, Bank Negara Malaysia, Balance of Payment, Investment Position data and World Bank staff calculations.

Notes:

[a] Debt assets include portfolio debt and other investments.

[b] The methodology in this box follows Tables 2.1-2.4 in "A Global Perspective on External Positions" by Lane and Milesi-Ferretti (2007a). All variables are based on data in local currency and scaled by GDP. Initial Net Foreign Assets (NFA) equals the Net International Investment Position (NIIP) at the end of the previous period. The change in the NFA of year t is the difference in the NIIP between end-year t and end-year t-1. The trade balance is constructed as the sum of the total trade balance and net transfers. Investment Income equals net annual investment income flows. Capital gains refer to the change in asset value due to revaluation and are given by the change in the stock of assets between end-year t and end-year t-1, minus the asset flows during year t. Capital gains on net foreign assets are calculated as the capital gains on foreign assets net of the capital gains on foreign liabilities. Rate-of-return effects are constructed as the sum of investment income and capital gains.

[c] Due to rounding errors, the sum of trade balance, rate-of-return effects, errors & omissions and capital account transfers, and growth effect is slightly different from the changes in NFA. The magnitude of the differences is comparable to Tables 2.1-2.2 in Lane and Milesi-Ferretti (2007a) for advanced economies. In addition, capital account transfers are not reported from 2002 to 2005. It may help explain the differences during the period.

[d] Real rates of return on assets (liabilities) equal the sum of investment income and capital gains of year t divided by the stock of net assets (liabilities) at the end of year t-1 and are deflated by the domestic consumer price index.

[d] The estimated rate of returns on FDI assets and liabilities, and the return differentials for 2002-2004 is comparable to Sheng (2006), who uses data from Lane and Milesi-Ferretti (2007b).

FISCAL AND MONETARY POLICY ADJUSTMENT IS ONGOING

Macro and financial sector policy support has been an important components in managing the downturn and recovery, even if the primary driver has been external demand. This has included the supportive monetary and financial sector policy and the fiscal stimulus packages.

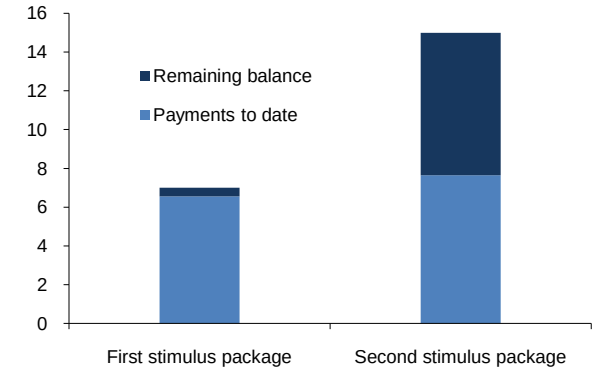
The stimulus packages have pushed up the fiscal deficit. Direct fiscal injections from Malaysia's fiscal stimulus packages are estimated at around 3.3 percent of GDP, against an overall package equivalent to around 9.9 percent of GDP (Bank Negara Malaysia, 2010). Expenditure under the first stimulus package had reached around 94 percent of the RM 7 billion allocation with spending under the second stimulus package around 51 percent of its RM 15 billion fiscal allocation (Figure 1.54). The latter was below the government's expectation of RM 10 billion expenditures under the second package by end-2009 as indicated at the time of enactment of the related legislation. Of the total disbursement allocations under the two packages around 15 percent was to the Ministry of Finance, including agencies such as RM 630 million to SPNM (Housing for all), 6.5 percent to the Ministry of Works and 6.5 percent to the Ministry of International Trade and Industry. As a result of these expenditures, preliminary data indicates a federal government deficit of around 7 percent of nominal GDP for 2009, up from 4.8 percent of GDP in 2008 (Figure 1.55). This exceeds the public sector deficit, which also includes state and local governments, statutory bodies and non-financial public enterprises. The preliminary public sector deficit for 2009 was around 3.8 percent of GDP. As mentioned, and discussed further in Chapter 3, government debt has risen sharply, particularly domestic securities, to finance the deficit (Figure 1.56).

Monetary policy normalization has begun. In early March Bank Negara Malaysia increased the overnight policy rate by 25 basis points to 2.25 percent, the first rate movement in a year and the first rate rise since early 2006. This comes as GDP returns to its trend level and price inflation has picked up (Figure 1.57). The rate hike in Malaysia is one of the first in the region and amongst developed and emerging markets. Vietnam increased its rates in November, Israel in their policy meeting in late December and Australia just before Malaysia. India has followed in March with a rise in its repo rate following January's increase in reserve requirements. With sustained low interest rates and ample liquidity raising some concerns in other countries of renewed asset price bubbles or inefficient credit allocation, the BNM indicated that it wished to adjust the rate "towards normalising monetary conditions and preventing the risk of financial imbalances that could undermine the recovery process".

Financial sector policies have also played a supportive role in addition to the overall monetary policy stance. For example, the SME Assistance Guarantee which was launched in early February 2009 closed its books on new applications at the end of 2009 with participating financial institutions having approved financing of around RM 1.85 billion with just under 80 percent of successful applicants micro to small enterprises. At the other end of the lending process, i.e. debt resolution rather than origination, a wider array of large corporates are now able to access the assistance offered by the Corporate Debt Restructuring Committee (CDRC), which was established in July 2009. For example the thresholds for the level of indebtedness and the number of creditors involved have been reduced.

Figure 1.54. Fiscal stimulus package status

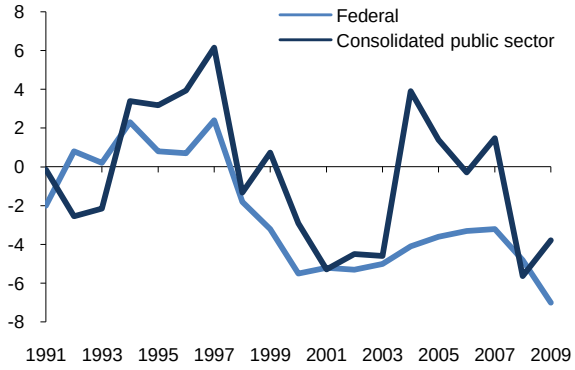
RM billion



Source: Malaysia Ministry of Finance.

Figure 1.55. Public sector deficits widened, reflecting the crisis impact and response

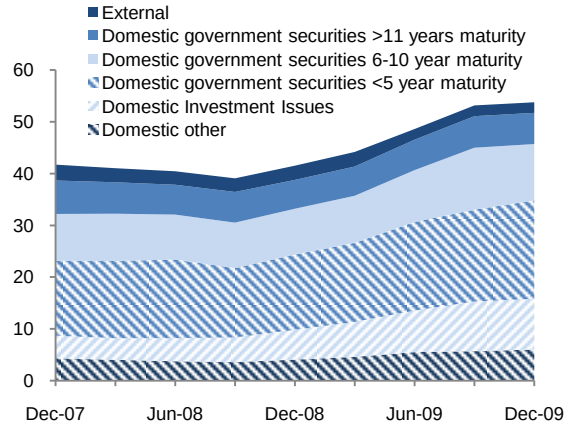
Deficit as percent of GDP



Source: Malaysia Treasury, Bank Negara Malaysia.
Note: Consolidated public sector covers the federal government, local and state governments, statutory bodies and non-financial public enterprises. 2009 data is preliminary.

Figure 1.56. Federal government debt has risen sharply

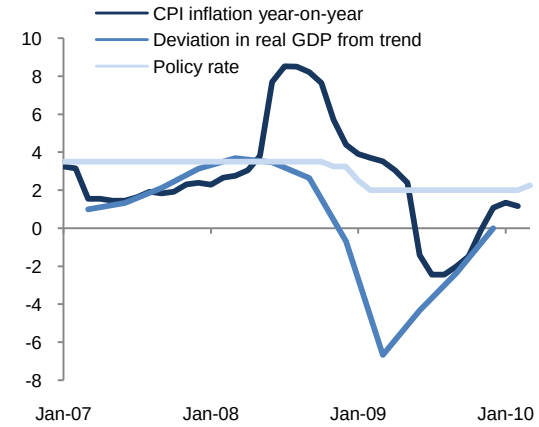
Debt stock by contractual maturity as percent of nominal GDP (4Q rolling sum)



Source: Bank Negara Malaysia, CEIC and World Bank staff calculations.
Note: Domestic other includes Treasury Bills and other loans.

Figure 1.57. Monetary policy has begun to adjust to the recovery in activity and prices

Percent



Source: CEIC, Haver and World Bank staff calculations.
Note: Trend of real GDP (sa) from Hodrik-Prescott filter. Policy rate is at end of period.

2. ECONOMIC OUTLOOK

Real GDP is expected to rebound strongly in 2010. There is rising momentum behind domestic private consumption and investment and the recovery in external demand continues. As a result, growth of 5.7 percent is projected for 2010, following a contraction of 1.7 percent in 2009. The strength of the recovery remains dependent on external demand and in particular the robustness of the worldwide recovery. It also hinges on internal demand and the ability of private sources of domestic demand to strengthen the recovery as the unwinding of fiscal and monetary policy support is needed to reduce fiscal deficits and prevent financial imbalances.

Implementation of productivity-enhancing structural reforms is crucial to the medium-term outlook. Growth forecasts of just below 6 percent for 2011-2015 price in the gradual and less than complete implementation of structural reform measures proposed in the New Economic Model. The forecasts also reflect a fiercely competitive environment for trade and FDI, as the global economy continues its rebalancing and countries around the region catch up along the value chain.

The economic outlook is subject to both external and internal risks. The strength and timing of the economic recovery in developed markets looms over the near-term outlook. This external factor could both surprise on the upside and downside. Growth could also surprise on the upside if the reform program under the New Economic Model is comprehensively and expeditiously implemented. Along with progress on fiscal consolidation, this could also help reverse the sharp recent rise in Malaysia's government debt due to the fiscal stimulus spending. On the flip side, however, the potential stalling of reform momentum could drive down growth prospects and increase debt sustainability risks.

GLOBAL RECOVERY TO BE LED BY DEVELOPING ECONOMIES

After the initial rebound, growth in developed economies is expected to remain sluggish through 2010. This reflects a weakening over the year of the drivers of the rebound in 2009, i.e. the fiscal stimulus packages, accommodative monetary policies and the rebuilding of inventories. Lending conditions are likely to remain relatively weak globally due to the need to rebuild capital and absorb ongoing loan losses. For 2010 as a whole, growth in high-income economies is expected to recover to 1.8 percent after contracting by 3.3 percent in 2009 (Table 2.1). This compares with world growth of 2.7 percent in 2010, after 2.2 percent in 2009.

Developing economies will drive world growth in 2010. East Asia and South Asia, which showed their resilience during the global recession, will take the lead (Figure 2.1). This is largely underpinned by sustained expansion in China and India. However, it remains an open question of whether China, and the rest of the larger emerging markets, can provide sufficient support to global demand for consumer and capital goods to return it to pre-crisis levels, particularly with the prospect of progressive withdrawal of some of their economic stimulus measures.

The ongoing recovery in trade volumes will continue. But, trade may remain well below pre-crisis levels. The weakness and uncertainties in the developed market outlook limits the rebound in international trade, despite eased trade credits and higher commodity prices. World trade volume is likely to expand by only 4.3 percent in 2010, clawing back less than a third of the slump last year. Even by the end of 2012, global trade volumes are expected to remain 2.4 percent below the pre-crisis levels.

The outlook for commodities is mixed. Stronger global demand over 2010 will push up average energy and metal and mineral prices (Figure 2.2). The average oil price is projected to reach around US$76 per barrel in 2010, but, with inventories strong and the rebound in demand still limited, the forecasted price remains a fifth below the peak in 2008. Prices of non-energy commodities are expected to rebound much less forcefully. Strong supply conditions, for example due to good harvests, contribute to the projected marginal decrease of agricultural and food prices over 2010-2011.

Developed economy inflation is set to rise gradually. Given moderate increases in commodity prices and the limited pace of recovery, inflation rates in G-7 economies are expected to remain relatively low at 1.1 percent in 2010, picking up to 1.7 percent in 2011. As a result, and despite the likely move to normalization of monetary policy over the next year or so, international interest rates are expected to stay low in the near-term.

The outlook for international capital flows to emerging Asia is mixed. On the one hand, the ongoing realization of losses from the financial crisis and deleveraging of balance sheets is likely to constrain global liquidity supply. Increased issuance by developed economy governments with their own fiscal problems may also crowd out some of the demand for emerging market sovereign credits. In aggregate, net private capital flows to developing countries are projected to fall by roughly a third in 2010 relative to 2009. On the other hand, with interest rates low in high-income economies, investors may particularly look to East Asia, with its strong growth prospects, for higher yielding assets.

Table 2.1. A modest global economic recovery with subdued trade and low inflation

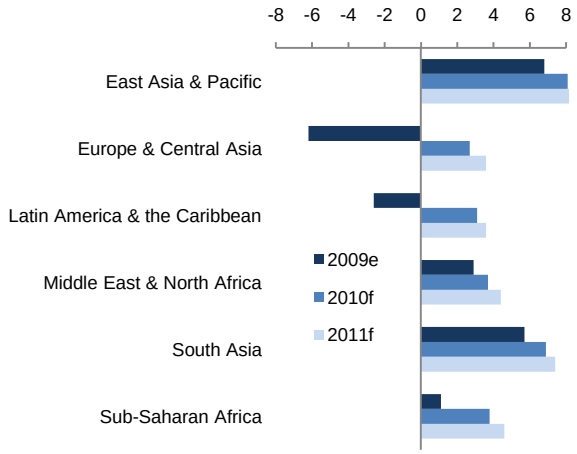
Growth year-on-year, percent

	2008	2009e	2010f	2011f
World GDP	1.7	-2.2	2.7	3.2
High-income economies	0.4	-3.3	1.8	2.3
USA	0.4	-2.5	2.5	2.7
Euro Area	0.5	-3.9	1.0	1.7
Japan	-1.2	-5.4	1.3	1.8
Developing countries	5.6	1.2	5.2	5.8
World trade volume	3.0	-14.4	4.3	6.2
Consumer prices in G-7 countries	3.1	-0.2	1.1	1.7
Commodity prices				
Non-energy commodities	21.0	-21.6	5.3	0.7
Oil price	36.4	-36.3	23.1	0.8
Interest rates ($, 6-month, %)	3.2	1.2	1.8	2.8

Source: World Bank Global Economic Prospects 2010 (World Bank, 2010d).

Figure 2.1. All developing regions resume output growth this year, led by East Asia and South Asia

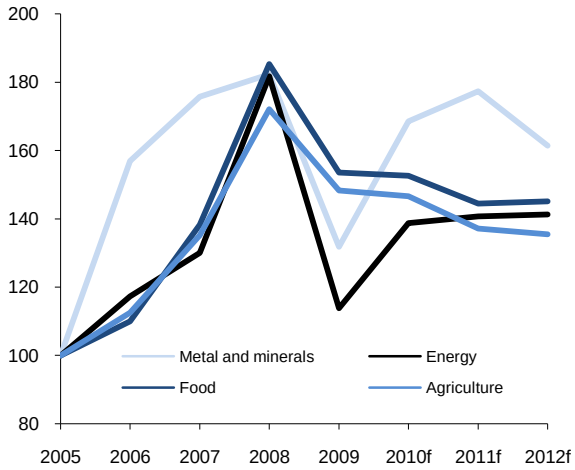
Real GDP growth year-on-year, percentage points



Source: World Bank (2010d).

Figure 2.2. Energy and metal prices rebound in 2010 but food and agriculture prices remained stable

Actual and projected international commodity prices (2005=100)



Source: World Bank.

RECOVERY IN MALAYSIA EXPECTED TO GAIN STRENGTH

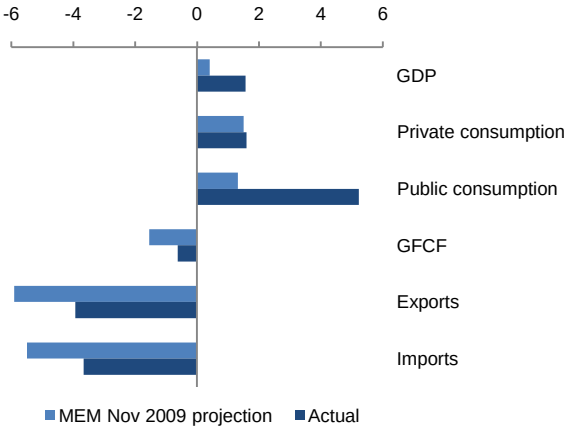
Growth Expectations Upgraded

Growth in the second half of 2009 exceeded the forecasts made in the November 2009 Malaysia Economic Monitor (Figure 2.3). While private consumption came in at a similar growth rate to the projections, public consumption was much stronger. The pick-up in fixed investment was below the projected level, but the recovery in exports in the fourth quarter was above expectations. This decomposition of performance does however point to the importance of temporary growth drivers. The contributions of the fiscal stimulus and the inventory adjustment are likely to weaken over the next year.

Expectations of growth for 2010 have been upgraded. Since mid-2009 market views on the prospects for growth in 2010 have improved as the domestic and global economies began their recovery (Figure 2.4). The mean Consensus forecast from the March 2010 survey is 5.4 percent, 2 percentage points higher than in April 2009. In addition, the dispersion of forecasts has narrowed even as the average has risen.

Figure 2.3. Actual growth in H2 2009 exceeded the projections in the November 2009 MEM

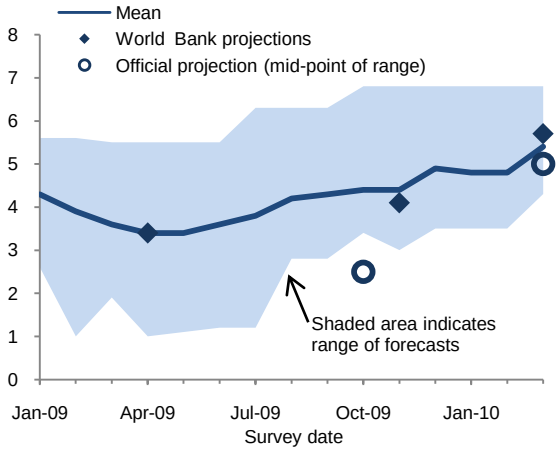
Actual and forecast year-on-year GDP growth rates, percentage points



Source: CEIC and World Bank staff projections.

Figure 2.4. Growth forecasts for 2010 are being upgraded

GDP growth year-on-year, percentage points



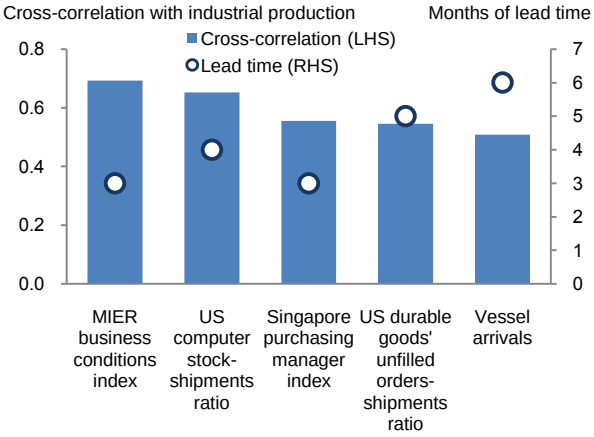
Source: Consensus Economics, Ministry of Finance Malaysia, Bank Negara Malaysia and World Bank.

Leading indicators point to continued recovery momentum in early 2010. Figure 2.5 shows a selection of variables whose annual growth has historically led the growth in Malaysia's industrial production index (IPI).[9] For example, the cross-correlation of the US stock of computers to shipments ratio is highest with a lead time of four months relative to Malaysia's industrial production. Although domestic business sentiment has the highest correlation, the importance of external demand is clear, with lead times of three to six months. Recent trends in these leading indicators point to positive momentum in the annual growth of industrial production going forward (Figure 2.6), although some of the rebound reflects level effects due to the depth of the downturn.

Leading variables of investment and consumption are also supportive of growth in the first half of 2010. A similar cross-correlation analysis was applied to indicators of quarterly total fixed investment and private consumption in real terms (Figure 2.7 and Figure 2.8 respectively). High excess production capacity and lowering of business sentiment are often followed by subdued investments. High rubber prices, secured employment conditions, and favorable equity movements are typically followed by strong consumer spending in the following few quarters. As outlined in Chapter 1 many of these measures have shown movements in support of consumption and investment in recent quarters. This partial analysis suggests that the robust expansion in the fourth quarter of 2009 will continue at least in the first half of 2010.

[9] A total of 82 variables were included in the cross-correlation analysis. Only eight variables met two selection criteria: having the cross-correlation coefficient with IPI of at least 0.50 (with an expected sign) and a lead time of at least three months. The data set includes Malaysian data as well as those from Malaysia's key trading partners (US, EU, Japan, China, and Singapore).

Figure 2.5. External demand historically leads Malaysia's industrial production

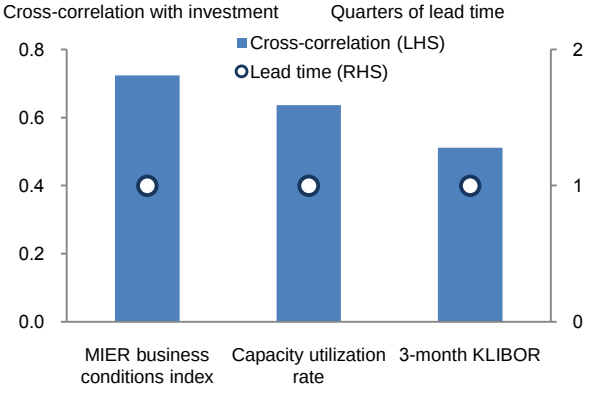


Note: Cross-correlation is the highest calculated value across lead lengths.
Source: CEIC and World Bank staff calculations.

Figure 2.6. External and domestic leading indicators of industrial production continue to improve

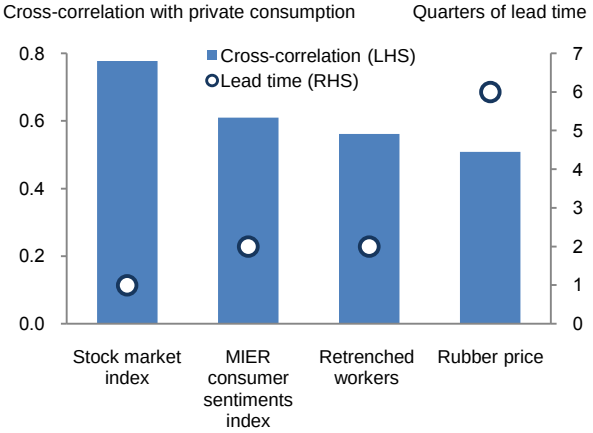
Note: DoS: Department of Statistics.
Source: CEIC, Department of Statistics (DoS) and World Bank staff calculations.

Figure 2.7. Low spare production capacity and capital cost generally lead investments



Note: Cross-correlation is the highest calculated value across lead lengths.
Source: CEIC and World Bank staff calculations.

Figure 2.8. Sentiment and income-related factors guide private consumption movements



Note: Cross-correlation is highest calculated value across lead lengths.
Source: CEIC and World Bank staff calculations.

Solid Growth to Resume in 2010

Real GDP is expected to rebound strongly. In 2010 as a whole, real GDP growth is expected to reach 5.7 percent, up from a contraction of 1.7 percent in 2009 (Figure 2.9). This rebound can be attributed to a low base in 2009, improved export outturns, and the build-up of momentum in both fixed and inventory investment. The strength of the recovery depends in the first place on the robustness of the worldwide recovery, which will affect external demand. In addition, the recovery will depend on a transition to growth that is driven by the private sector as the unwinding of fiscal and monetary policy support is needed to reduce fiscal deficits and prevent financial imbalances. As economic activity picks up, inflation is projected to continue to rise moderately in 2010, reaching 2.2 percent (Figure 2.10). Increases in domestic costs, such as wages, and external commodity prices will contribute to a continuation of the recent trend rise in prices.

Growth in 2010 is expected to be front-loaded. Annual growth rates in the first quarter will reach over 8 percent (Figure 2.11)—given the low base in the previous year. The second half of 2010 could experience a deceleration in growth rates due to higher base levels, waning fiscal stimulus, and further normalization of monetary policy. But at the same time, improvements in the global trade cycle and domestic business sentiments are expected to continue. In fact, a survey by the Federation of Malaysian Manufacturers in October 2009 shows that around 40 percent of surveyed companies believe that a firm recovery will take place in the second half of 2010.[10]

The private sector is expected to lead the revival in consumption. As the public stimulus packages are withdrawn, the private sector will dominate the contribution of consumption to growth. This follows a mere one-percent growth in private consumption in 2009, which is the slowest pace in many years. In addition to the low base levels, a number of factors are expected to contribute to improved consumer confidence and spending: (i) stronger labor market conditions, (ii) the rise in commodity prices (especially rubber and palm oil) from the second half of 2009 since these prices have a lagged positive effect on private spending, (iii) improved earnings in the corporate sector, (iv) resilient tourism sector, (v) favorable stock market performance, and (vi) the ongoing improvement in the credit conditions of households.

In terms of the labor market, after the economic rebound, conditions are also expected to pick up with increasing employment, vacancies and upward adjustments to wages. Survey data from the Department of Statistic's Business Tendency Survey and from the Federation of Malaysian Manufacturers suggests that the businesses expect the labor market in the first half of 2010 to improve (Table 1.1). A Bank Negara Malaysia survey also suggests that in 2010 most firms in the manufacturing, services and construction sectors plan to increase their workforce by 5 percent.[11]

Momentum is expected to build in both fixed and inventory investment. As external and domestic demand recover, the incentives for firms to invest, and rebuild inventory stocks, will rise. This follows a deep contraction in private investment in 2009 when public investment took the lead. However, this revival in private sector investment is dampened by the continued low capacity utilization rates, particularly in the domestic sector. It will also depend on the success of reforms to promote private investment. The government has announced that it will introduce more incentives for Malaysian firms, such as government-linked companies, to invest locally. Public-private partnerships will also be promoted.

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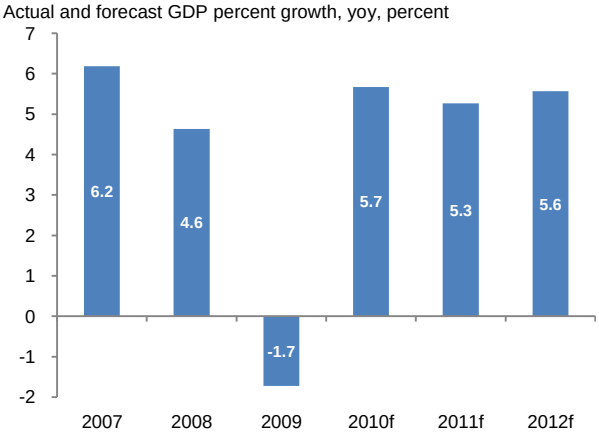
[10] Federation of Malaysian Manufacturers (2009b).
[11] Bank Negara Malaysia (2010).

Figure 2.9. Robust recovery in annual GDP growth

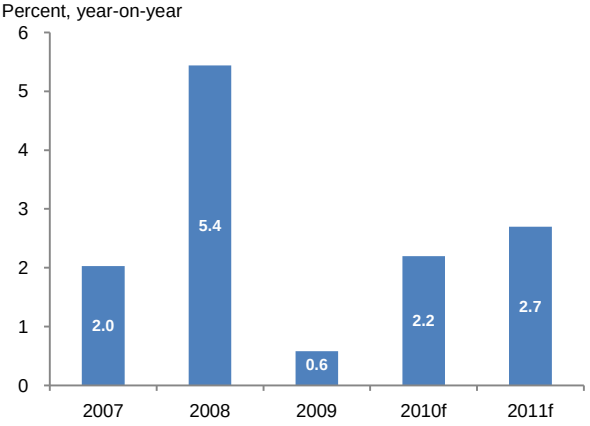
Actual and forecast GDP percent growth, yoy, percent



Source: CEIC and World Bank staff projections.

Figure 2.10. Average consumer price inflation will rise gradually

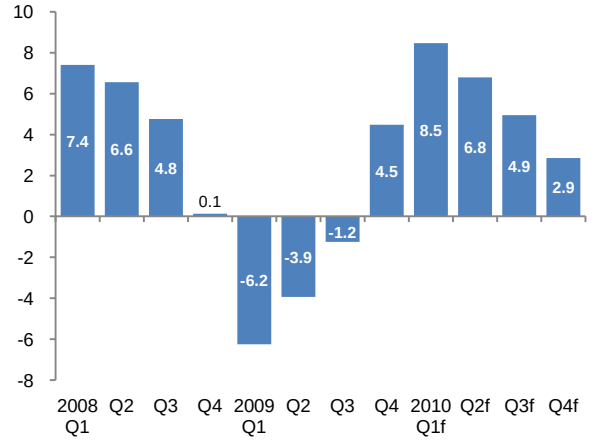
Percent, year-on-year



Source: CEIC and World Bank staff projections.

Figure 2.11. Quarterly GDP growth to continue its momentum in H1 2010

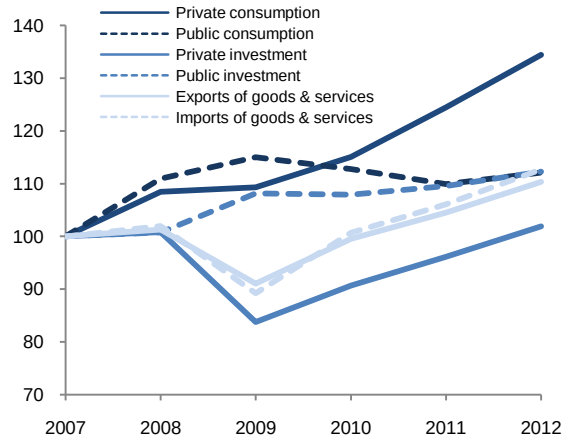
Actual and forecast GDP percent growth, yoy, percent



Source: CEIC and World Bank staff projections.

Figure 2.12. Private sector to sustain the recovery

Index, 2007=100



Source: CEIC and World Bank staff projections.

Merchandise exports will continue to rise. Demand from China remains solid, and is improving in other emerging East Asian economies. But returning to pre-crisis shipment levels will likely take more than a year given the slow recovery projected for global trade. This is despite the possibility that Malaysia will outperform the global average because its key export markets, such as the US, China, and other countries in emerging Asia that are part of the regional production network, are projected to show relatively strong growth. In terms of products, the ongoing improvement in exports of electrical and electronics products should be sustained. The Semiconductor Industry Association projects growth of around 10 percent in world semiconductor sales in 2010, after registering a 9 percent drop in 2009. Prices of oil and liquefied natural gas will be supportive of export values in 2010 although key agricultural items such as rubber and palm oil will suffer from lower or stable prices. On the services side, tourist arrivals should strengthen further in 2010 on the back of strong growth in the ASEAN region (which account for close to 80 percent of Malaysia's overseas tourist arrivals, with over 50 percent from Singapore alone).

However, despite the predicted rebound in exports, the contribution of net external demand to GDP is projected to weaken slightly in 2010. Growth of real imports of goods and services is expected to outpace that of exports due to a surge in imports of capital and intermediate goods to meet rising export orders (given the high import content of export goods) and of final goods imports to fulfill expanding domestic demand. However, the value of the trade surplus is roughly unchanged from 2009 while the services account should continue to post a small surplus. As a result, the current account surplus is expected to fall slightly from around 17 percent of GDP in 2009 to around 15 percent in 2010 and 2011 (Figure 2.13). The strong current account position, along with the potential capital inflows searching for higher yields and attracted by potential rises in interest rates, is expected to support a modest appreciation of the Malaysian ringgit over the next few quarters.

Fiscal and Monetary Policy Support to Unwind over 2010

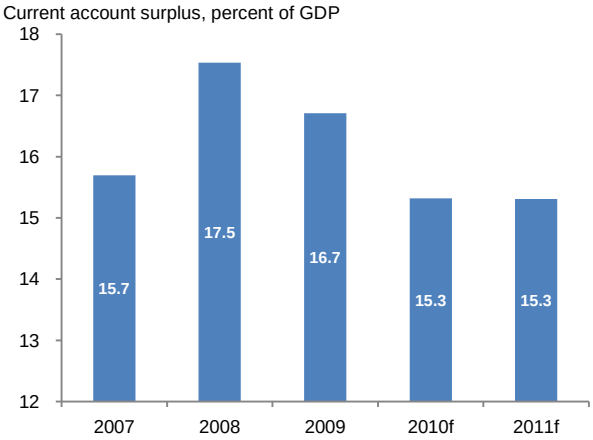
Fiscal consolidation, along with the recovery in growth, is expected to contribute to an improvement in the deficit in 2010 (Figure 2.14). With growth targeted at 6 percent, the government plans to cut the federal government deficit to 5.3 percent of GDP in 2010 from 7 percent in 2009. World Bank projections for 2010 are similar with the deficit of 3.8 percent of GDP projected for 2011 by the Economic Planning Unit. In addition to the gradual withdrawal of the stimulus spending, the fiscal consolidation effort is mainly made through a reduction in the subsidy bill, but also through reducing non-priority spending. Other areas of fiscal reform which could strengthen the government's financial position include managing the fiscal volatility associated with Malaysia's natural resource wealth and broadening the revenue base.

There has been recent uncertainty over a number of proposed fiscal reform measures. CIMB estimates put fuel subsidies at RM 5.3 billion in 2009, equivalent to 5.7 percent of operating expenditures and 1.3 percent of GDP.[12] The subsidy also leads to indirect costs such as forgone sales tax revenue. The 2010 budget announced a reform of the fuel subsidy scheme, with planned savings of as much as RM 2 billion. However, the reform is now postponed from May 2010 to as late as October, limiting the associated reduction in operating spending relative to budget projections. The government has set up a new unit to review all forms of subsidies, including food items. On the revenue side it has also been reported that plans to introduce the goods and services tax to replace the sales and services tax, which would have expanded the tax base, have been rescheduled to give ample time to get feedback from the public before the second reading of the Bill in Parliament.

Gradual normalization is also expected in monetary policy over 2010. But, a return to the pre-crisis policy rate of 3.5 percent is unlikely in the near future. Sizeable spare capacity, and the potential fragility of the outlook for developed economies, temper against strong upward pressures on rates. Furthermore, raising the policy rates too much or too quickly could deter an upswing in private investment.

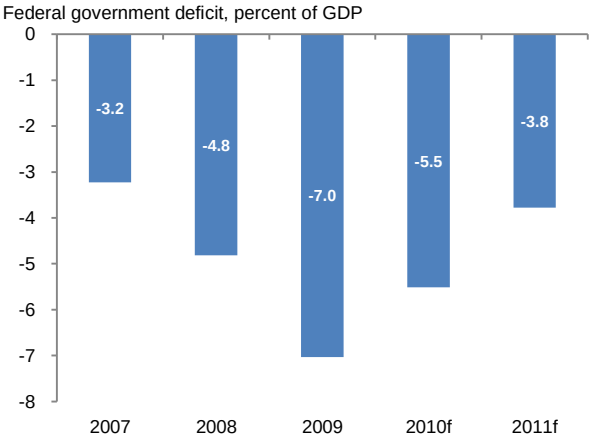
[12] CIMB (2010).

Figure 2.13. Current account surplus to decline but will remain high



Source: CEIC and World Bank staff projections.

Figure 2.14. Near-term consolidation is expected to reduce the deficit



Source: CEIC and World Bank staff projections.

Risks to Near-Term Outlook Remain Significant

The baseline forecasts over the near-term remain subject to a considerable degree of uncertainty, both on the upside and the downside.

One factor of uncertainty relates to the strength of the global recovery. In particular, as in Malaysia's domestic situation, the key question is how private sector activity in these markets will respond to the future withdrawal of fiscal stimulus packages and liquidity support along with possible hikes in domestic interest rates. A weaker-than-expected global recovery and possibly prolonged economic weakness in advanced economies would reduce the role of external demand as an engine of growth. In such a case, domestic demand projections would need to be adjusted downward as well, as the build-up of fixed and inventory investment related to manufacturing-for-export industries may well be reversed.

The recovery may however as well surprise on the upside. Although signals are mixed, high income industrial production and import data showed a strong pick up in January, with imports up 15 percent on a seasonally adjusted basis on the month. To give a further indication of the potential upside to the forecast, World Bank forecasts for GDP growth in the US for 2010 and 2011 of 2.5 and 2.7 percent respectively are below the lower bound of the central tendency forecasts of Federal Reserve Board Governors and Presidents.[13] These ranges, which exclude the three highest and lowest projections, are 2.8 to 3.5 percent for 2010 and 3.4 to 4.5 percent for 2011. If China continues its growing contribution to global demand growth, despite the need for a gradual tightening of its macro policy stance, then this is another source of potential upside for Malaysia's external environment.

[13] Federal Reserve (2010).

On the other side of the coin, it is also worth noting that there are global risks to the continuing of stimulus support for too long. In some countries there may be risks in terms of government indebtedness (and the potential for debt distress concerns to rise) or a return to the problems of excess liquidity, such as asset price bubbles, which contributed to the initial crisis.

A second near-term risk pertains to the question of how private sector growth will perform as fiscal policy and monetary policy support is withdrawn. The baseline forecasts are predicated on a strong recovery in private investment. However, the experience of the post Asian crisis years highlights that falls in investment levels, albeit in that case from a much higher base, can take a considerable time to reverse. In particular, capacity levels remain relatively low and output in 2009 is estimated to be around 1.4 percent below its potential.[14] This is just below the recent low in 2001 of an output gap of 1.6 percent, with real private investment remaining weak in the subsequent year. On the consumption side, improvements in real incomes and employment over 2010 are projected. However, there remains the risk as to how these gains will be allocated between increased consumption expenditures or the replenishment of the buffer savings which were depleted during 2009 to ease the impact of the crisis.

MEDIUM-TERM OUTLOOK EXPECTED TO IMPROVE

A New Economic Model Has Been Proposed

Progress on the structural reform agenda is critical for Malaysia to maintain its competitive edge in the global market place. Indeed, for Malaysia to remain competitive, it will need to shift the source of its competitive advantage from low cost to high value, as discussed at greater length in Chapter 3. An integrated strategy to achieve this objective includes four key elements to address current weaknesses (see the November 2009 issue of the Malaysia Economic Monitor; World Bank, 2009a):

- Specializing the economy further in order to leverage limited resources—both public and private— and achieve agglomeration economies.

- Improving the skills of the workforce, demand for which will rise with increased specialization. Meeting this demand requires simultaneous efforts to improve the quantity and quality of skilled labor.

- Making the growth process more inclusive, helping households not only cope with poverty but also promoting entrepreneurship and prudent risk-taking. Effective social insurance programs and well-targeted social safety nets have an important role to play here.

- Bolstering public finances to address the rising fiscal deficit and also to reconsider the relative role between government and private sector.

[14] Bank Negara Malaysia (2010).

To address the challenge of moving to high income status through inclusive and sustainable growth, the government has announced the broad contours of a New Economic Model (NEM) for Malaysia.[15] The proposed NEM sets out various Strategic Reform Initiatives (SRIs), ranging from improving the skills of the labor force, promoting private-sector driven growth to ensuring the inclusiveness and sustainability of the growth process. Box 6 provides a brief description of the NEM and how the proposed approaches represent a shift relative to previous economic policy frameworks for Malaysia.

The NEM forms the third-pillar in the government's Vision 2020 program of national transformation, including reaching high-income status by 2020. The first pillar 1Malaysia was announced in April 2009, focusing on "preservation and enhancement of unity in diversity". The second pillar, the Government Transformation Programme (GTP), focuses on improving the efficiency of delivery of government services and was announced in early 2010. The final fourth pillar is to be the 10th Malaysia plan which will focus on macro growth targets and the allocation of expenditures and is due in June 2010.

Medium-Term Growth Set To Benefit

Progress on the structural reform agenda could produce a significant tangible growth dividend. The proposed reforms follow on from measures already announced in 2009 which targeted foreign investment and the growth of services in the economy. For example, Foreign Investment Committee guidelines were removed and requirements for 30 percent Bumiputra ownership in domestic equity IPOs were abolished. In 2009, measures were also announced to liberalize service sub-sectors such as health, transport, tourism and business services. The NEM proposes further moves to free up the scope for private investment and to level the competitive playing field through, for example, divestment of GLCs in sectors where the private sector is operating effectively and ensuring that GLCs operate on a strictly commercial basis.

The positive implications for growth of the NEM structural reform agenda are however dampened by two factors. The first one is the fiercely competitive environment for trade and FDI, as the global economy continues to rebalance and countries around the region catch up along the value chain. In addition, the need to deliver on structural reforms may become even more important if cyclical pressures for real exchange rate appreciation serve to limit the price competitiveness of Malaysia's firms in the global market place (Box 7). In particular, the relatively strong recoveries by the Asian economies may mean that pressures for monetary tightening arise more quickly than in higher income economies. This, along with the secular trends of a deepening and broadening of domestic financial markets, may attract increasing investment from overseas. As a result upward exchange rate pressures may materialize, which, all things being equal, could lead to rising relative unit labor costs in the region, increasing the productivity challenge for Malaysia.

[15] National Economic Advisory Council (2010).

BOX 6. WHAT IS NEW IN MALAYSIA'S NEW ECONOMIC MODEL?

In March 2010, the Government of Malaysia unveiled the broad contours of the proposed New Economic Model (NEM). The announcement is to be followed by a period of public consultation to gather feedback on the key principles. Afterwards, the recommendations will be translated into actionable policies, which can then be implemented.

The objective of the NEM is for Malaysia to join the ranks of the high-income economies through a process of growth that is both inclusive and sustainable. Inclusive growth enables the benefits of growth to be shared across all communities. Sustainable growth augments the wealth of current generations in a way that does not come at the expense of future generations. A number of strategic reform initiatives have been proposed, aiming at: greater private initiative, better skills, more competition, a leaner public sector, pro-growth affirmative action, a better knowledge base and infrastructure, the selective promotion of sectors, and environmental as well as fiscal sustainability.

The proposed New Economic Model represents a shift of emphasis in several dimensions:

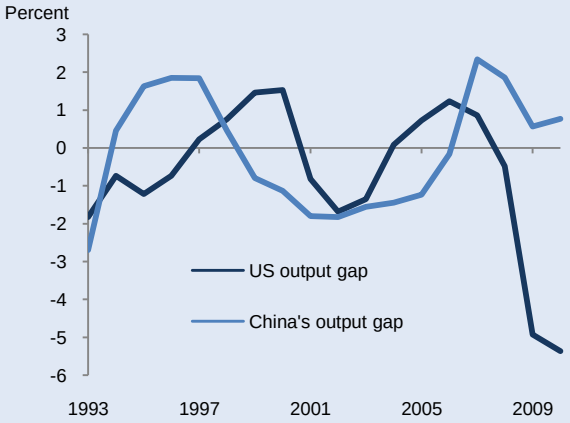
- *Quality rather than quantity.* Mere accumulation of capital and labor quantities does not suffice for sustained long-term growth. To boost productivity, the focus is shifted to the quality of physical and human accumulation and the efficient use of resources.
- *Private versus public.* This involves rolling back the government's presence in some areas, promoting competition and exposing all commercial activities (including that of GLCs) to the same rules of the game.
- *Bottom-up rather than top-down decision-making.* Bottom-up approaches involve autonomy and accountability in decentralized and participative processes—often a source of healthy competition at the subnational level, as China's case illustrates.
- *Unbalanced rather than balanced regional growth.* Growth accelerates if economic activity is geographically concentrated rather than spread out. Malaysia needs to promote clustered growth, but also ensure good connectivity between where people live and work.
- *Selective incentives rather than sector-based approaches.* Transformation of industrial policies into smart innovation and technology policies will enable Malaysia to direct scarce public resources to activities that raise value.
- *From developed to emerging markets.* Malaysia can benefit from emerging market growth by leveraging on its diverse workforce and fostering linkages with Asia and the Middle East.
- *Embracing rather than keeping out foreign talent.* As Malaysia improves the pool of talent domestically, foreign skilled labor can fill the gap in the interim. Foreign talent generates positive spill-over effects to the benefit of the whole economy.

Overall, the New Economic Model demonstrates the clear recognition that Malaysia needs to introduce far-reaching structural reforms to boost growth. The proposed measures represent a significant and welcome step in this direction. What matters most now is the translation of the principles into actionable policies and the multi-year commitment to implement them.

BOX 7. MONETARY AND EXCHANGE RATE PRESSURES IN EAST ASIA: IMPLICATIONS FOR MALAYSIA

The global recession has had a much milder impact in East Asia than in high income countries. GDP declined by 3.3 percent in 2009 in high income countries, opening up large output gaps which will take years to close even in a fairly benign scenario. However, in East Asia the downturn has been much milder. East Asian GDP grew by 6.8 percent in 2009. This average has been influenced by China, where GDP growth was 8.7 percent last year, keeping output close to potential (Figure 2.15). Growth in other East Asian countries was not as fast (1.3 percent in 2009 excluding China), but even there the downturn has been substantially milder than in the high income countries, and spare capacity substantially smaller.

Figure 2.15. Cyclical conditions in China differ sharply from those in the US



Source: CEIC, IMF, World Bank staff estimates.

What does this cyclical divergence imply for monetary and exchange rate conditions in East Asia? With a robust growth outlook ahead, Asian policymakers have started to look towards normalizing monetary policy, even though monetary policy in the US is likely to remain accommodative this year and next. Traditionally, many countries in the region have had a US dollar-oriented exchange rate regime. Several, including Malaysia, have moved away from a rigid peg towards a managed float against a basket of currencies, largely reflecting the rising importance of regional trading partners and the need to maintain exchange rate stability against them. However, many countries in the region still manage their exchange rates with an eye to the US dollar. As long as the economic cycles in East Asia were broadly in line with that of the US this caused few tensions. US monetary conditions were typically broadly appropriate for the region. However, the divergence of cyclical conditions in the region from those in the US is likely to lead to a divergence in monetary conditions, with interest rates likely to rise in the region. Rising relative interest rates in the region, and stronger relative growth prospects to developed markets, could drive further capital inflows, putting upward pressure on regional exchange rates.

The current cyclical configuration may not be one-off. Since the early 1990s, many developing countries and emerging markets have grown substantially faster than the high income countries, increasing their economic importance. This has especially been the case for East Asian countries, notably China. Given its size, China is becoming a growth pole for the world economy in its own right. As this happens, the importance of China's economic cycle for the cycle in South East Asian economies is increasing and that of the US and other high income countries is decreasing, relatively.

How things will evolve will in part depend on the evolution of China's own exchange rate policy. Since the RMB was de-pegged in July 2005 and became managed "with reference to a basket of currencies" it was allowed to strengthen by about 20 percent against the US dollar until it was re-pegged in mid-2008. But, if China's cyclical conditions will continue to differ substantially from those in the US, China will need higher interest rates to mitigate inflation pressures and asset prices even though US rates may stay low. The fear of interest rate sensitive capital inflows has at times made China's policymakers rely on administrative measures, including credit quotas, to tighten monetary conditions. While these measures have been effective, they are distortive and create volatility. China's government has since long had a more flexible exchange rate regime and a more interest rate-oriented monetary policy as a long-term goal. The current divergent cyclical positions may speed up this evolution. Potential strengthening and increased flexibility of the RMB versus the US dollar may provide room for other countries in East Asia to strengthen exchange rates and increase exchange rate flexibility.

Strengthening real exchange rates within the region would put additional pressures on firms to remain competitive in global markets. In the face of rises in their international prices due to exchange rate movements, firms will need to improve further their cost efficiency to retain market share in a given product line or to upgrade along the value chain into new products and services. Achieving such goals is already a key priority for Malaysia as part of making the jump to high-income status. The potential dynamics of regional exchange rates going forward emphasize the importance of meeting this challenge and heighten its magnitude.

The second factor dampening the growth outlook is the difficulty of implementing structural reforms quickly and comprehensively. In any country, an effective package of structural reforms is likely to lead to a change in the economic structure and in the distribution of pay-offs to firms and households. While the long-term benefits in terms of growth and opportunities may be spread widely, in the short-term there may be some who will gain and others who may temporarily suffer losses. The potential distributional consequences are expected to dampen the pace of reform.

Against this background, real GDP growth of just below 6 percent is projected in the medium term. As the economy continues to recover, real GDP growth is expected to average 5.7 percent between 2011 and 2015 and would reach nearly 5.8 percent by 2015. This forecast prices in the realities of a more difficult external environment and the constraints on the structural reform implementation front.

Reform Implementation Key Risk to Growth and Fiscal Sustainability

The main risk to the medium-term outlook concerns the implementation progress on these structural reforms. If weak, potential growth would slip as a result of the anticipated incremental loss of competitiveness of the Malaysian economy. For example, under the NEM framework, private sector investment is expected to revive strongly (the NEM report projects private fixed capital formation to reach around 18 percent of GDP by 2020 compared with around 12 percent in recent years). Failure to implement measures to improve the business climate (such as the proposed single-window online approach to licensing, reduce the involvement of GLCs in economic activity and improve the competitive environment) may limit such a strong revival of private investment, and in turn the growth outlook.

Growth in such a scenario in which structural reform implementation is weak, abstracting from other risks, is projected by the World Bank to reach 4.5 percent in 2010. It then declines to 3.8 percent in 2011 as the base effects of the rebound unwind before gradually rising and stabilizing at 4.3 percent by 2015 (i.e. the average growth of 4.2 percent over 2010-2015 is 1.5 percentage points lower relative to the baseline).

Implementation of the structural reform agenda is not only critical for growth in itself, but also for government debt sustainability. The debt of the consolidated general government increased from 41 percent of GDP in 2008 to 54 percent in 2009 as a result of the fiscal response to the crisis. Box 8 outlines the results of recent analysis of Malaysia's government debt position going forward. The baseline scenario projected by the World Bank assumes growth to rebound to an average of around 5.7 percent over 2011-2015, pricing in difficulties that may materialize with respect to implementing the NEM reforms comprehensively and swiftly. Oil prices are projected by the World Bank to be in the range of USD 82-84 per barrel from 2010 to 2015. The economic recovery and oil prices are reflected in the fiscal projections which also incorporate consolidation measures. Under this baseline scenario, the current set of policies would not reverse the upward jump in debt-to-GDP over 2009, with the ratio to GDP remaining at around 57 percent of GDP in 2015.

Government debt is anticipated to rise further if slippages on the structural reform implementation mean that output growth averages well below the 5-6 percent range of the baseline. With average growth of 4.2 percent over 2011-2015, debt accelerates to almost 70 percent of GDP in 2015. A lack of fiscal consolidation, and lower oil prices compared to prices assumed under the baseline, also have a clear detrimental effect on the debt-to-GDP ratio. Rising government debt ratios may lead to increased financing costs, both domestically and in international markets, with the additional risk of increased crowding out of, already weak, private investment.

These concerns are mitigated by a number of important factors. Malaysia's current debt structure has extremely limited exposure to foreign exchange risk (with external debt less than 5 percent of the total). The share of short-term debt is similarly low. Furthermore, a high proportion of debt is held by longer-term domestic institutions, in particular the Employee Provident Fund. In terms of market indicators, there has been a leveling off in the rise in domestic bond yields which was seen earlier in 2009, associated with concerns over the level of issuance to finance the rising deficit. Levels of external credit spreads have also improved over 2009, returning to levels last seen in mid-2008. There appear to be little spillovers from the Euro-area fiscal troubles. While these variables may be imprecise gauges of credit-worthiness, the structural characteristic of the debt are also supportive of the current health of the government's debt structure.

BOX 8. HOW SUSTAINABLE IS MALAYSIA'S GOVERNMENT DEBT?

The sharp rise in government debt in Malaysia over 2009 has raised concerns over the sustainability of the debt position going forward. A recent World Bank debt sustainability analysis (DSA), in collaboration with the IMF, examines this question, focusing on the debt of the consolidated general government (which includes federal, state and local government as well as statutory bodies, and excludes non-financial public enterprises). A DSA exercise is a tool used to analyze the evolution of debt levels and debt service ratios of a country under a range of different scenarios. The two inputs to the analysis are the country's existing debt levels and structure and a set of economic projections which determine debt levels and their composition going forward. These include, for example, GDP growth, interest rates, exchange rates, oil prices, inflation and the government's primary deficit (i.e. the deficit excluding interest payments).

The fiscal projections in the analysis incorporate the impact of the expected economic recovery and the gradual increase in oil prices. In particular, the recovery would be accompanied by a fiscal tightening resulting from the cyclical increase in revenues and the unwinding of one-off measures and capital spending plans introduced as part of the fiscal stimulus packages. Grants, pensions, and gratuities make the single largest contribution to the anticipated fiscal consolidation as these items accounted for much of the direct fiscal injections of the stimulus packages. Policy actions to curtail or rationalize subsidies are also an important part of the prospective consolidation.

Deficits are projected to improve temporarily due to consolidation and economic growth. The primary deficit of the consolidated general government is expected to narrow from 5.9 percent of GDP in 2009 to 4.2 percent in 2010. It posts a minimum of 1.2 percent of GDP in 2011, but subsequently engages in an upward trend and reaches 3.4 percent in 2015. The subsequent widening reflects a decline in revenues to GDP over time, mainly due to oil-related revenues growing slower than nominal GDP, which more than offsets the decline in expenditures.

Similarly, the overall consolidated general government budget deficit drops to 6.4 percent of GDP in 2010 after recording 8 percent in 2009. The projection is also U-shaped, with a minimum of 3.6 percent of GDP in 2012 and a 2015 end-point at 6.2 percent. The terms of financing of these deficits are also expected to deteriorate somewhat going forward, in line with the expected global monetary tightening. Combined with the rising debt stock this has the effect of increasing the burden of interest expenditures over time, rising from 2.1 percent of GDP in 2009 to 2.8 percent in 2015.

Under the baseline scenario, with the unwinding of one-off measures and the resumption of output growth, the rise in Malaysia's government debt due to the recent crisis response is not reversed over the next six years. The debt-to-GDP ratio remains close to 60 percent of GDP in 2015 compared to 43 percent in 2008. Over the longer term, the current set of policies does not seem to ensure sustainability as rising fiscal deficits are unlikely to be tamed by higher oil prices and/or a return to sustained growth. Discontinued fiscal stimulus measures, structural changes to fuel subsidies, and temporary larger oil-related income revenues do not seem to be sufficient to place placing the debt trajectory on a sustainable path. A tighter fiscal stance in line with historical outcomes would however place the debt trajectory on a downward path.

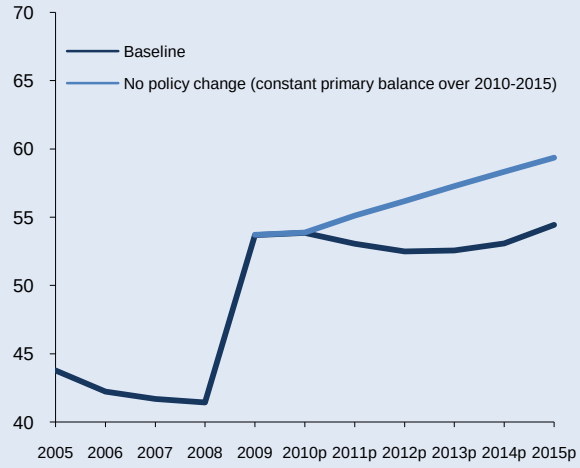
DSAs also include sensitivity analysis through examining a range of alternative scenarios and bound tests. Malaysia's debt dynamics appear resilient to a range of standardized shocks, such as temporary shocks to the interest rate, primary balance and the exchange rate, notwithstanding an increasing debt path under the baseline. For example, while lower oil prices accentuate structural weaknesses within the budget, they have a limited impact on the budget balances.

The debt dynamics are, however, vulnerable to a continuation of the expansionary fiscal stance experienced in 2009. The no-policy change scenario, under which the consolidation plan fails to materialize and deficits persist at the 2010 level during the period 2011-2015, depicts a continuous, notable increase in the debt ratio relative to the baseline scenario (Figure 2.16).

The debt-to-GDP ratio would also rise if the wider structural reform agenda under the New Economic Model were to stall, leading to lower growth relative to the baseline. Under such circumstances, Malaysia's competitive position in the global market place is expected to slip and growth could fall to levels averaging at 4.2 percent over the projection horizon. As a result, the debt level would accelerate to close to 70 percent of GDP in 2015 (Figure 2.17). Conversely, if the reform program under the New Economic Model is comprehensively and expeditiously implemented and growth rises above the baseline projections then this could serve as important factor in pulling down debt ratios going forward.

Figure 2.16. Fiscal consolidation is required to prevent upward debt-to-GDP trajectory

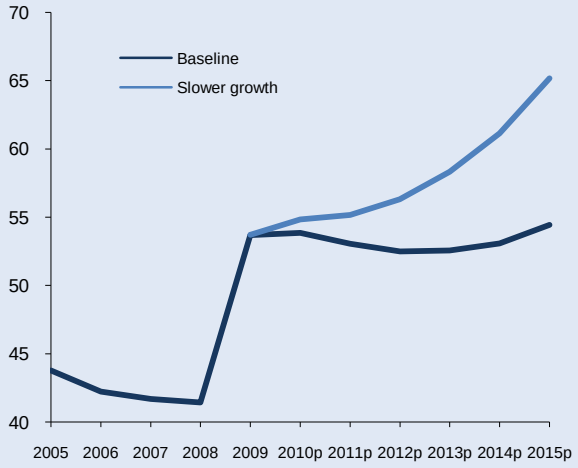
General government debt to GDP, percent



Source: World Bank staff projections and authorities' data.

Figure 2.17. The growth outlook is crucial to debt sustainability projections

General government debt to GDP, percent



Note: Slower growth scenario assumes real GDP averaging 4.2 percent over projection period.
Source: World Bank staff projections and authorities' data.

Market indicators can provide a complementary lens through which to examine the health of a country's fiscal position. While the DSA provides a valuable illustration of the impact of different policies and macro scenarios on the debt profile it does not capture market reactions to changes in a country's actual fiscal indebtedness, or financing position, or other shocks to investor confidence. In thinking about the impact of such shocks it is important to assess the liquidity, foreign exchange, interest rate and maturity risks that are embodied in the structure of country's debt stock. For example, if the debt

stock is in foreign currency, of low maturity and at floating interest rates then rises in international risk aversion will likely lead to rollover difficulties and a rise in the cost of credit. In turn, ongoing financing at a higher rate will have implications for the debt-to-GDP profile going forward via the contribution of debt servicing costs to the deficit. Modeling the feed-back loops between asset market movements, policy adjustments and debt dynamics presents a further, considerable challenge.

Malaysia's debt is primarily domestic, medium- to long-term with a high level held by domestic investment funds. The degree of exchange rate risk appears limited—external debt accounts for just under 4 percent (or 2.1 percent of GDP) of the total consolidated general government debt. Around one quarter of the total debt, is in the form of federal government domestic securities held by the Employee Provident Social Security Fund (around 40 percent of total such securities). Insurance companies, which would also be expected to have a longer-term investment strategy, account for a further 9 percent of federal domestic securities. Banks and foreign investors hold an additional 22 and 15 percent respectively.

Market price indicators suggest that the appetite of investors for Malaysia's government debt remains strong. On the domestic side, government bond yields at longer maturities of 5 and 10 years rose in early 2009 on the expectation of increased issuance associated with the fiscal stimulus packages. However, the upward movement in yields has stabilized over the course of the year (see Bank Negara Malaysia, 2010, for further details). The five- and ten-year maturities are currently around 3.75 percent and 4.75 percent respectively, up around 100 basis points on January 2008. On the external debt side, the five-year CDS spread is around 80 basis points, down from over 500 basis points at the height of the crisis. Too much weight should not be put on a single such indicator but CDS spreads on external debt have declined across the maturity spectrum and the composite EMBIG bond spread has followed a similar trend.

3. GROWTH THROUGH INNOVATION

"No amount of savings and investment, no policy of macroeconomic fine-tuning, no set of tax and spending incentives can generate sustained economic growth unless it is accompanied by the countless large and small discoveries that are required to create more value from a fixed set of natural resources" (Romer, 1993, p. 345).

Innovation—the successful exploitation of new ideas—is the cornerstone of sustained growth and prosperity. To consumers, innovation brings new, higher-quality or simply better-value products, and this contributes to higher living standards. To firms, innovation helps break into new markets, improve market share in existing markets, and raises returns for investors and shareholders. To employees, innovation creates new types of jobs and opportunities for skill-intensive work at higher wages. To the nation as a whole, innovation holds the key to sustained growth and prosperity.

Innovation is central to Malaysia's aspiration of joining the league of high-income economies. Malaysia's economy seems to have entered a stage where it is facing increasing difficulty to remain competitive as a high-volume, low-cost producer. To make the next step up the income ladder, Malaysia will need to shift the source of its competitiveness in the global marketplace from low cost to high value. The economy will need to base its growth on innovation.

The theme of growth through innovation ranks highly on the reform agenda. Innovation takes center stage in the New Economic Model that has recently been announced. The focus on innovation is also reflected in other initiatives such as the recent establishment of a National Innovation Centre, the designation of 2010 as the Year of Creativity and Innovation, and the introduction of outcome-based approaches to foster the implementation of policies, including those aimed at spurring innovation.

Climbing up the income ladder through innovation is however easier said than done. Few have been successful in breaking the glass ceiling between middle and high income. The competitive landscape has changed with new economic powerhouses vying for capital, skill, and trade. Many countries in the region and around the world now aspire to drive growth through innovation. The challenge for Malaysia therefore is not only to innovate but also to do so efficiently.

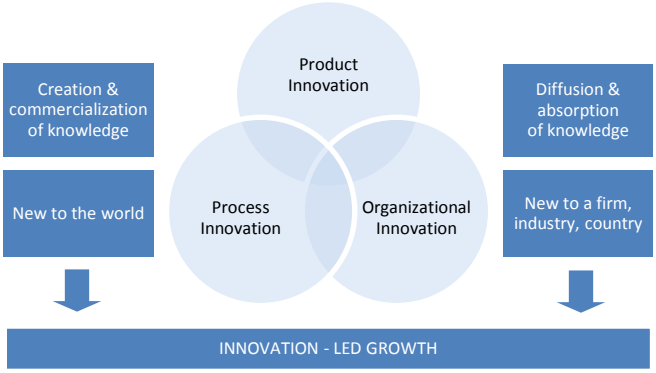
INNOVATION IS KEY FOR LONG-TERM PROSPERITY

Innovation is key to long-term prosperity. It allows countries to produce goods and services of higher value at greater efficiency. Innovation is a key determinant of long-term productivity growth—which modern growth theory considers as the sustained driver of growth. Growth through innovation needs to be supported by a healthy level of investment in physical capital and a creative, entrepreneurial and skilled workforce. But where growth in the past was primarily driven by greater quantities of capital and labor, growth in the future will need to rest on Malaysia's ability to upgrade the quality of these factors of production. Innovation-led growth is likely to lead to greater income inequality, higher spatial disparity, and economic restructuring leading to temporary joblessness for some but new opportunities for other workers. To ensure that innovation-led growth is also inclusive, these challenges will need to be carefully managed with complementary policies.

Why Does Innovation Matter?

Innovation is defined as the successful exploitation of new ideas. Two aspects of this definition are important. First, ideas need to be exploited *successfully*. Innovation thus differs from invention, as an innovation is commercialized and an invention is merely an idea made manifest. Second, innovation is concerned with *new ideas.* But what is new to some may be long-known to others. Some ideas may be new to the world, but most may be new to just a firm, an industry or even a country. The concept of innovation thus encompasses not only the creation and commercialization of new knowledge (e.g. invention of mobile telephony) but also the diffusion and absorption of existing knowledge (e.g. the implementation of best practice management techniques or usage of modern production methods).

Figure 3.1. Three types of innovation matter most for growth



Source: Based on Dutz (2009).

Product, process and organizational innovation are the three most important forms of innovation for growth (Figure 3.1). Product innovation involves the development and commercialization of new or better-quality products. Process innovation is concerned with changes in production processes, distribution methods and support activities that improve the efficiency of production. Organizational innovation is the implementation of new firm structures, management methods and business processes that enhance the value and flexibility of production.

Innovation is neither linear nor formulaic. Derived from creativity, experimentation and knowledge transfer, innovation can materialize in multiple ways. Often the outcome of formal R&D programs, but it may well result from the interaction with end-users. Innovation may also occur as a natural by-product of the production process. Innovation does not necessarily require ground-breaking ideas; more often it crops up in incremental fashion, though once in a while it is radical and revolutionary. Finally, as mentioned earlier, innovation need not be concerned with new discoveries and may simply result from the transfer of existing knowledge to those that were previously not in the know.[16]

Innovation matters for growth in two main ways. First, innovation creates new value-added and improves existing value-added, by creating new products that are desired by consumers and improving existing ones. This is where product innovation matters most. Second, innovation improves the efficiency with which the existing mix of products is produced. This is where process and organizational

[16] Schumpeter (1934), Lipsey, Carlaw and Bekar (2005), Von Hippel (2005).

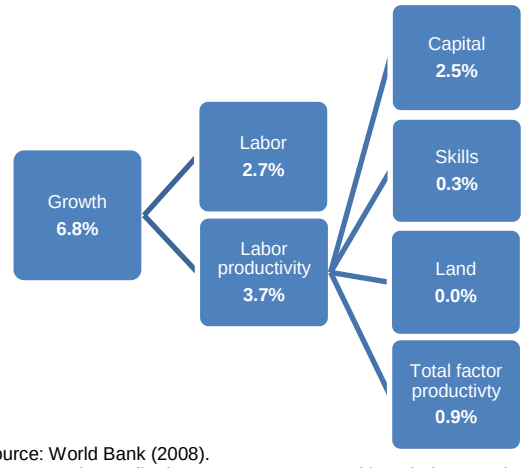
innovation play their key role. In sum, innovation allows a country to produce goods and services of higher value and at greater efficiency, thus increasing its potential growth of output.[17]

What Are the Drivers of Innovation-Led Growth?

A country's growth performance can be explained by many factors. Distinguishing between these factors is useful to monitor and target the drivers of growth. At the most basic level, output growth is driven by growth in the quantity of labor employed and its level of productivity. Labor productivity—that is, output per worker—is an elementary performance indicator of economic efficiency and also a fundamental determinant of real wages. Labor productivity depends in turn on the stock of (physical) capital, the quality of the skills base of the workforce, the available mass of land, and an unexplained residual termed total-factor productivity (TFP). TFP provides the most comprehensive measure of productivity and represents the ability of an economy to produce more without changing any of the inputs of production—and this is where innovation makes its greatest contribution.

Productivity growth is the lynchpin of the high-income economy—it is also where Malaysia has performed relatively weakly (Figure 3.2 and Table 3.1). After the Asian crisis, labor productivity growth slowed down to a rate of only 3 percent compared to almost 6 percent before. The reason for this has been the slowdown in investment, the skills shortages in the Malaysian economy, and lack of significant innovation as measured by TFP growth.

Figure 3.2. Capital and labor accumulation have driven recent growth in Malaysia



Source: World Bank (2008).
Note: Growth contributions over 1987-2007. Although the quantity of land inputs is generally fixed at the country level the quality may change and the allocation of land matters for growth at the sectoral level. Sums may not add up due to rounding and linear approximations.

Table 3.1. Labor productivity growth slowed significantly after the Asian crisis

Annual percent change

	1987-2007	1987-1997	1998-2007
Output	6.8	9.4	5.7
Labor	2.7	3.7	2.0
Labor productivity	3.7	5.5	2.9
Contributions to labor productivity growth:			
Capital	2.5	3.4	1.0
Skills	0.3	0.3	0.3
Land	0.0	0.0	-0.1
Total factor productivity	0.9	1.7	1.6

Source: World Bank (2008).
Note: The average gain in TFP of only 0.9 percent for the full two decades reflects the magnitude of the loss in the Asian crisis period. Sums may not add up due to rounding and linear approximations.

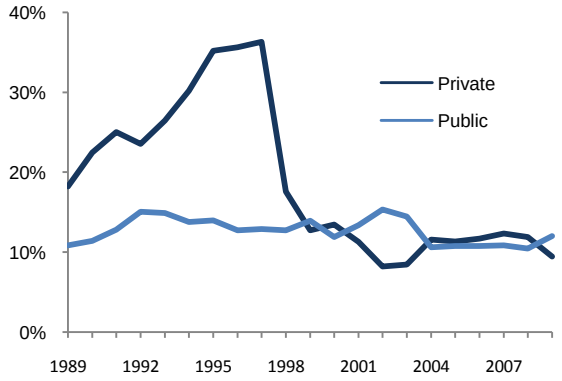
[17] Empirical studies suggest that the benefits of innovation are large. R&D-related innovations, for example, which represent a small subset of the range of innovations, are found to contribute no less than 1.4 percentage points of annual GDP growth in the United States. The benefits of innovation go much beyond the private returns to innovation. Again for the United States, R&D is estimated to provide a return to the country as a whole of as much as 30 percent (Jones, 2002).

Growth through innovation will need to be supported by a healthy level of high-quality private investment, which will promote learning and technological change. Malaysia's private investment share in GDP fell dramatically following the Asian financial crisis and, unlike other countries in the region, it never fully recovered (Figure 3.3).

There are a few reasons, however, why investment shares should not be expected to fully recover to pre-crisis levels. First, some of the high level of pre-crisis investment, for example in the construction sector, was likely above the optimal level to start with. Second, an economy increasingly reliant on services may warrant lower levels of fixed capital investment—in contrast for example to China, where the high investment share reflects an industrial structure reliant on heavy manufacturing.[18] Third, the pursuit of opportunities abroad is not without merit, as investment in the region allows Malaysia to repatriate the financial benefits and such investment together with those of other countries allows for greater trade in the region.

Figure 3.3. Private investment fell and never recovered

Share of investment in GDP, percent



Source: CEIC and World Bank staff calculations.

These qualifiers do not remove the concern that the current level of investment may be too low relative to the needs of a dynamically efficient economy. Recent investment climate studies suggest that institutional and structural factors are at play, which have likely dampened the appetite for domestic investments.[19] These include skilled labor shortages, tax regulations and/or high taxes, lack of business support services, bureaucratic burdens and anti-competitive practices. Addressing these investment climate constraints will help Malaysia in ensuring a good return on investment domestically and attracting foreign capital.

Growth through innovation needs to be supported by a skilled labor force. Table 3.1 suggests that the contribution to labor productivity growth arising from skills augmentation is minimal and has been minimal during the periods before and after the Asian financial crisis. The limited contribution is indicative of the skills shortages that continue to exist in Malaysia. Firms consider the skills issue a main investment climate obstacle, a result that will be discussed more fully later in the Chapter.

[18] World Bank (2009b).
[19] World Bank (2005 and 2009c).

Does Innovation Produce Inclusive Growth?

Not necessarily. Innovation-led growth is likely to lead to a more narrowly specialized economy. This builds on the empirical observation that, while middle-income countries appear to be much more diversified than low-income countries, rich countries have a much less diversified economic structure. The growth process from middle to high income therefore seems to be associated with greater specialization of production and a greater focus on higher-value added products.

The gains from specialization may not accrue equally in terms of incomes and geography. Income inequality may rise. Those with skills and already high earnings may benefit more in the short-term than those at the bottom of the earnings distribution who may need to reskill to take advantage of new job opportunities. Innovation may accentuate spatial disparities. Innovation thrives in cities that act as a magnet for a skilled, diverse and creative workforce. Innovation benefits from the geographical clustering of activity and may lead to greater spatial concentration of economic activity.

As the economy specializes, innovation may require labor to reallocate across firms and industries. Not all firms or industries are likely to benefit equally from innovation. Innovation in one firm may render another firm uncompetitive, contributing to its decline and eventual closure. Innovation in one industry may pull resources away from other industries. Innovation may also result in less labor-intensive production techniques—even if at the macro level innovation is found to be strongly associated with job growth through stimulating demand for new, higher-quality or better-value products.

Even if innovation may give rise to disparity and friction, it is still essential for long-term growth.[20] In other words, the need to manage the side effects does not obviate the need to enlarge the 'pie' of aggregate economic activity through productivity growth and innovation. The challenge therefore is to complement innovation policies with targeted inclusiveness strategies, to make sure that the benefits of growth are shared widely and any short-term negative effects are cushioned with adequate social protection mechanisms.[21]

INNOVATION PRESENTS A GROWING CHALLENGE

Is Malaysia well positioned to grow through innovation? The host of indicators reviewed below suggests that Malaysia has yet to enter the stage of innovation-led growth. Malaysia's innovation performance is in line with that of other middle-income countries but shows a significant gap with high-income countries. While there has been improvement in some dimensions such as patenting, this occurred from a relatively low base. International comparison also suggests that Malaysia's relative position to other middle-income countries has not significantly improved. The review of these indicators is useful to highlight the point that Malaysia faces a growing challenge to innovate. Given Malaysia's innovation performance thus far, innovation capabilities will need to be upgraded—particularly in view of the progress other countries in the region are making on the innovation front.

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[20] See Gill and Kharas (2007) on specialization. Dew-Becker and Gordon (2005) and Rose (2007) on income inequality; World Bank (2009b) on clustering; and, Nordhaus (2005) on job creation.

[21] To the extent that innovation generates rapid growth, innovation also facilitates implementing inclusiveness policies, as these are more easily introduced in an environment of a growing economy.

Broad Indicators Suggest Weakening Dynamism

Productivity Growth Has Slowed Down

Following the Asian financial crisis, the Malaysian economy saw a significant decline in labor productivity growth compared to the period preceding the crisis, but total factor productivity gains remained roughly unchanged (Table 3.1 above). The 2.6 percentage point drop in labor productivity growth was accompanied by a slowdown in employment growth as well as a significant fall in the rate of physical capital accumulation. TFP growth, in contrast, saw only a slight decline of 0.1 percent.

Table 3.2. The sectors experienced different growth patterns

Growth rate, percent

		Output	Labor	Labor productivity
Services	87-97	10.8	4.1	6.4
	98-07	6.2	3.3	1.8
Agriculture	87-97	1.1	-2.2	3.3
	98-07	3.3	-0.8	3.9
Industry	87-97	11.0	8.1	2.7
	98-07	5.4	1.4	3.6
Manufacturing	87-97	13.9	8.0	5.4
(memo)	98-07	6.9	1.0	5.5

Source: World Bank (2008).
Note: Sums may not add up due to rounding and linear approximations.

Underneath these aggregate developments lie interesting differences, as the examination of labor productivity trends at the sectoral level in Table 3.2 suggests:

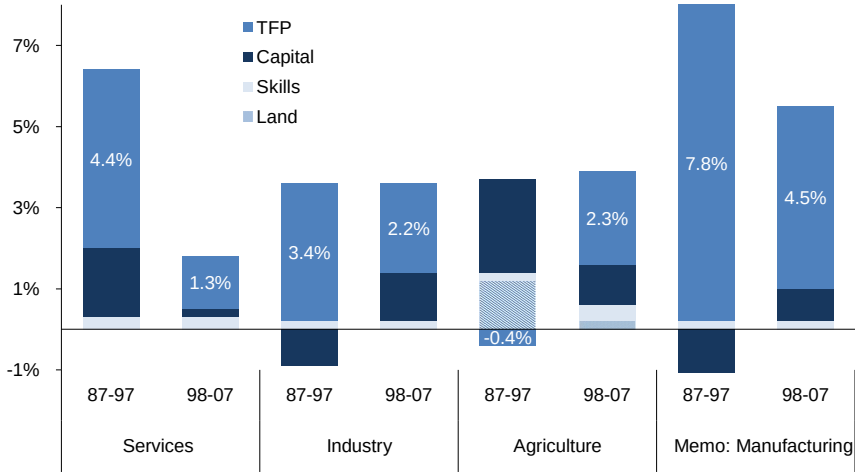
- In services, labor productivity growth declined significantly from some 6.4 percent in the pre-Asian crisis period to a mere 1.8 percent in the period afterwards. Employment growth in the sector remained robust at 4.1 percent before the crisis and 3.3 percent afterwards. The productivity slowdown was due to output growth slowing down while labor kept on flowing into the sector.

- In industry, labor productivity growth rose from 2.7 percent before the crisis to 3.6 percent afterwards. This increase was accompanied by a drastic decline in employment growth—from 8.1 percent to just 1.4 percent. Since the decline in employment growth exceeded the slowdown in output growth by a significant margin labor productivity growth rose. These patterns obtain as well for the manufacturing subsector, even though labor productivity growth there remained roughly constant.

- In agriculture, labor productivity saw continued growth following the Asian crisis, at 3.9 percent, up on 3.3 percent in the period beforehand. Employment growth was on a steady decline both before the crisis at -2.2 percent and after the crisis at -0.8 percent. The increase in labor productivity is explained by the fact that output growth tripled even though labor continued to flow out of the sector.

Figure 3.4. Total factor productivity growth weakened in all sectors, except agriculture

Labor productivity growth and the contribution of TFP, capital, skills and land, percentage points



Source: World Bank (2008).

Gauging the performance of total factor productivity, which relates to broad measures of innovation, the data suggests a weakening dynamism in key sectors of the economy (Figure 3.4). To arrive at this conclusion, the contributors to labor productivity growth—capital, skills, land and TFP—are examined in further detail. In services, TFP growth slowed from 4.4 to 1.3 percent. In industry, the slowdown was from 3.4 to 2.2 percent—masking an even larger drop in manufacturing from 7.8 to 4.5 percent. The agriculture sector on the other hand improved notably from -0.4 to 2.3 percent. The slowdown in TFP growth in services, industry and—within industry—manufacturing points to weakening dynamism.

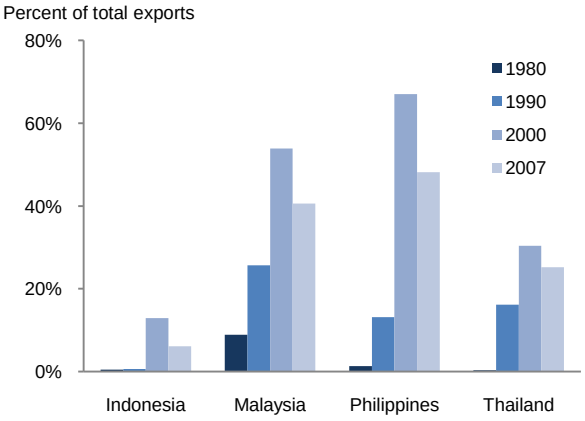
Finally, it should be noted that economy-wide productivity is not only affected by productivity developments within each sector but also by the movement of workers and other resources between sectors. Efficiency gains could result from the movement of workers from low-productivity to high-productivity sectors. The analysis suggests that this sectoral “reallocation effect” added about 1 percent of growth a year in the period before the crisis—primarily on account of movement out of agriculture into services. After the crisis, however, this positive effect became negligible.

Export Mix Registered Growing Sophistication…

Malaysia has been highly successful in deriving growth from export-led industrialization. Since the establishment of a free-trade zone in Penang in 1971, Malaysia successfully attracted multinational companies (MNCs), initially from Japan and the United States and later from Europe. The export-led industrialization transformed Malaysia into Asia’s third-most open economy trade, with trade at its peak reaching twice the value of annual GDP.

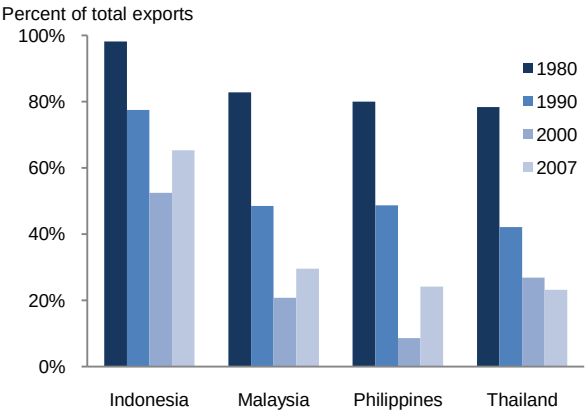
Not unlike other countries in the region, the particular pattern of export-led industrialization strongly favored the electrical and electronics (E&E) sector. Over the last four decades, E&E came to represent some 40 percent of all exports (Figure 3.5). This was accompanied by a parallel diminishing importance of the resource-based sector, which initially accounted for some 95 percent of all exports and declined to 30 percent in recent years (Figure 3.6). In addition to E&E, engineering and low-tech manufactures also rose in importance. Other sectors that contributed markedly in the region were low-tech goods, textiles, and engineering in Thailand, engineering in the Philippines, and textiles in Indonesia (Table 3.3). As a result of Malaysia's growing reliance on the E&E industry, the sophistication of its export mix—as measured by the proportion of high-technology goods in total exports—now ranks amongst the highest internationally (Figure 3.7).

Figure 3.5. The export share of electrical and electronics industries has seen a substantial rise



Source: UN Comtrade.

Figure 3.6. The export share of resource-based industries has declined in relative importance



Source: UN Comtrade.
Note: Includes primary, agro and other resource-based products.

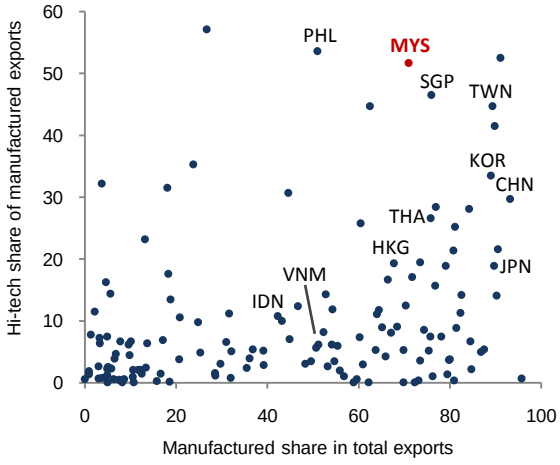
Table 3.3. A more detailed look into changes of the export mix

Percentage point change in export share over 1970-2007

	IDN	MYS	PHL	THA
Non resource-based products				
E&E	6	40	48	25
Other high-tech	0	2	1	1
Textile & other	9	2	5	11
Other low-tech	6	8	3	9
Automotive	2	0	6	6
Process	4	5	1	6
Engineering	6	9	8	15
Resource-based products				
Primary products	-44	-49	-4	-70
Agro-based	12	-16	-51	-4
Other resource-based	-2	-2	-17	1

Source: UN Comtrade.

Figure 3.7. Malaysian exports are highly technology-intensive



Source: WDI and World Bank staff calculations.
Note: UN Comtrade definition of high-tech goods.

… But Export Value Added Has Stagnated

Does the greater sophistication of the export mix suggest that industry is moving up the value chain? Malaysia is at the top of the world league when measured by the share of high-tech exports to total exports and also Malaysia's manufactured exports to total exports are large. But comparison of domestic value-added to total output value suggests that Malaysia remains highly reliant on low- and semi-skill intensive assembly-type manufacturing.

The value-added ratio has stagnated or declined for most industrial sectors over the 1981-2002 period for which a consistent set of data is available (Table 3.4). Only in a few sectors (footwear, apparel, plastics, rubber and nonferrous metals) did the share of domestic value added rise. In other important sectors (especially machinery, food products and equipment products) the ratio fell substantially. The fall was more pronounced where value-added was initially high relative to output value, most notably in the production of machinery (Figure 3.8). The share of domestic value-added in machinery, for example, is one of the lowest in the region (Figure 3.9).

Table 3.4. The value-added ratio fell or stagnated for most products

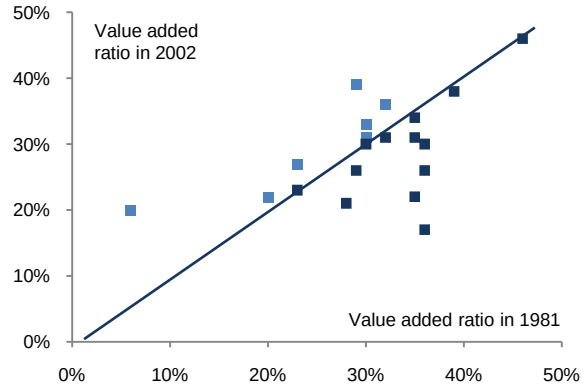
Value-added as percent of output value

Worst performers	1981	1990	2002	1981-2002	Best performers	1981	1990	2002	1981-2002
Machinery, except electric	36	32	17	-19	Nonferrous metals	6	14	20	14
Food products	35	36	22	-13	Footwear, exc. rubber, plastic	29	34	39	10
Prof. and scientific equipment	36	29	26	-10	Plastic	32	35	36	4
Machinery, electric	28	22	21	-7	Rubber	23	27	27	4
Transportation equipment	36	29	30	-6	Chemicals	30	38	33	3
Wood products	35	33	31	-4	Petrochemicals	20	25	22	2
Textiles	29	28	26	-3	Leather products	30	25	31	1
Apparel, except footwear	35	32	34	-1	Glass	46	49	46	0
Paper products	39	40	38	-1	Iron and steel	23	20	23	0
Others	32	40	31	-1	Fabricated metal products	30	27	30	0

Source: UNIDO INDSTAT3; Yusuf and Nabeshima (2009).

Figure 3.8. Especially products with initially high value added ratios saw value added decline

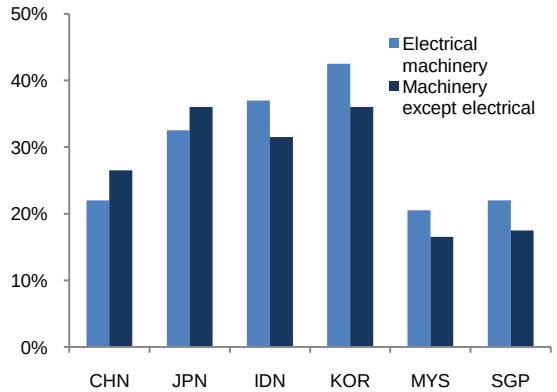
Value-added as percent of output value, 1981 versus 2002



Source: UNIDO INDSTAT3; Yusuf and Nabeshima (2009).
Note: Product groups are mentioned in Table 3.4.

Figure 3.9. Malaysia's domestic value added in machinery is among the lowest in the region

Value-added as percent of output value



Source: UNIDO INDSTAT3; Yusuf and Nabeshima (2009).
Note: Data is for 2003. For JPN, KOR and MYS, data is for 2002.

Comparison between 2002 and 2004 suggests that the value added ratio continued to decline on average, even though there was a greater dispersion around the average.[22] The simple average value-added ratio declined from 28.5 to 26.9 percent during this period. Considering subsectors that account for more than 10 percent of manufacturing output , the value added ratio fell for food and beverages (1.6 percentage points down) and radio, TV and telecommunications equipment (1.2 percentage points down), whereas it increased for machinery for office and computing (2.4 percentage points up) and coke and petroleum products (3.8 percentage points up).

Surveys Reveal Need for More Innovation and Better Diffusion

Survey analysis provides a complementary angle to the examination of productivity and value-added data. The recent World Bank investment climate survey data for example reveals interesting aspects about the innovation efforts of Malaysian manufacturing firms (Table 3.5). The survey conducted based on 2007 data suggests that less sophisticated forms of innovation activities, such as upgrading existing product lines or machinery and equipment, are conducted more widely. Filing patents—a tangible innovation outcome—is less prevalent. While electronics firms scored much better on all dimensions, innovation efforts were also relatively focused on the less sophisticated activities.

Comparing firms that participated in both the 2002 and 2007 surveys, innovation efforts slightly deteriorated across most dimensions. There is also no strong evidence that electronics firms spent more efforts on innovation, even though a larger number of firms reported subcontracting R&D projects and introducing new technologies. This begs the critical question: if firms in the E&E sector are not innovating more, who will?

Table 3.5. Innovation efforts by firms generally declined between 2002 and 2007

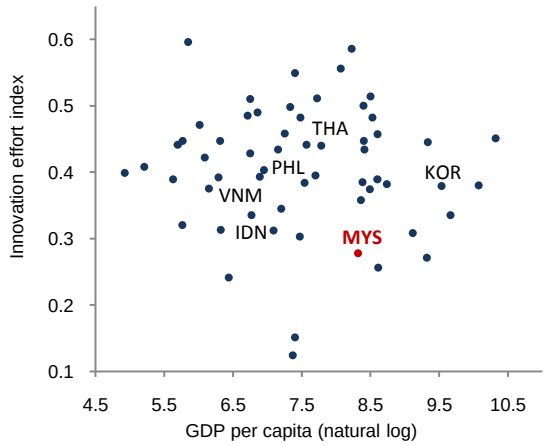
Share of manufacturing firms carrying out innovation activities, percent

Innovation activity	All firms		E&E firms	
	2007	Change from 2002	2007	Change from 2002
Upgraded an existing product line	48.0	- 4.6	81.3	0.0
Developed a major new product line	26.2	- 3.6	46.9	-18.7
Upgraded machinery and equipment	60.3	- 2.0	84.4	0.0
Introduced new technology to change prod. process	27.6	- 1.7	50.0	+12.5
Filed patent/utility or copyright protected materials	11.1	- 3.2	9.7	-6.4
Subcontracted R&D projects to other organizations	6.1	+ 1.5	6.3	+6.3
Agreed a new joint venture with foreign partner	5.2	+ 1.0	6.3	-9.3

Source: World Bank (2005, 2009a and 2009c) and World Bank staff calculations.

Figure 3.10. Innovation efforts by firms lagged those of other countries in the region

Innovation effort index against GDP per capital (natural log)



Source: World Development Indicators and World Bank staff calculations.

[22] The difference between the 1981-2002 data set and the 2000-2004 data set lies in industry classification. The longer data set used Rev 2 classification, whereas the shorter one is based on Rev 3 classification.

Based on investment climate surveys for many countries around the world, an index is constructed that captures the innovation efforts of firms. The index equals the average number of innovative activities conducted by each firm out of: (i) developing a major new product line, (ii) upgrading an existing product line, (iii) introducing new technology that has markedly changed the way the main product is made, and (iv) establishing a new joint venture with foreign partner.

Figure 3.10 plots the innovation index against the natural log of real GDP per capita for 59 economies (where the data corresponds to years when an investment climate assessment was made, ranging from 2002 to 2006). On average, Malaysian firms carried out only one out of four activities, well below the outcomes of other countries at similar income levels but also emerging East Asian countries such as Thailand, the Philippines, and Vietnam.

These results are confirmed by other surveys. The World Bank's Knowledge Economy Index ranks Malaysia 48th out of 145 countries in 2009—roughly the same rank as a decade ago. This index captures the ability to generate, adopt and diffuse knowledge, and to create an environment that allows the effective use of knowledge. Comparison with high-income and other East Asian economies suggests that Malaysia lags in the areas of innovation and education. Other economies in the region (e.g. China; Singapore; Taiwan, China; and Vietnam) have made improvements as measured by this index.

The Technological Readiness indicators of the World Economic Forum measure the agility with which an economy adopts existing technologies to enhance the productivity of its industries. The index captures the extent to which technologies are diffused to the benefit of various economic participants in the country. Whether the technology used has or has not been developed within national borders does not matter for its effect on competitiveness. The indicator suggests that Malaysia occupies the middle ground, in line with its income position, and points to scope for more diffusion. The potential for raising productivity growth through diffusion therefore exists but seems to be insufficiently exploited (Table 3.6).

Table 3.6. The benefits of diffusion are insufficiently exploited

Rank out of 133 countries

	Technological Readiness
Singapore	6
United Kingdom	8
Hong Kong, China	9
United States	13
Korea, Rep.	15
Taiwan, China	18
Australia	20
New Zealand	23
Japan	25
Malaysia	37
Thailand	63
China	79
India	83
Indonesia	88

Source: World Economic Forum (2009b).

Narrow Indicators Point to Limited Improvement

More narrow indicators of innovation—primarily focused on technological forms of innovation—confirm that Malaysia's innovation performance has remained at levels comparable to, but not exceeding, its middle-income peers. In what follows, the discussion will focus on innovation input indicators—such as R&D spending, researchers and technicians—and innovation output indicators—such as domestic and international patenting.

R&D Input Indicators Remain at Low Levels

R&D spending and personnel in Malaysia rose over the last two decades but remains low when compared internationally (Table 3.7 and Figure 3.11 to Figure 3.13). While R&D captures innovation only narrowly, this low level is a cause of concern if Malaysia wishes to upgrade its own technological capabilities. The evolution in the number of personnel engaged in R&D mirrored the developments in R&D spending.

Table 3.7. R&D spending rose and then stabilized at a low level of GDP

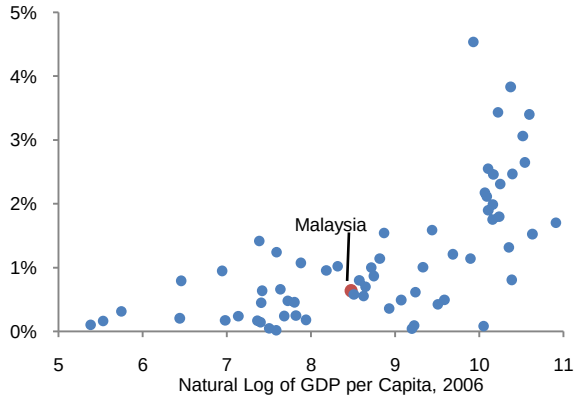
R&D spending as percent of GDP

	1996	1998	2000	2002	2004	2006	2007
Japan	2.8	3	3	3.2	3.2	3.4	3.4
Korea	2.4	2.3	2.4	2.5	2.8	3.2	3.5
US	2.5	2.6	2.7	2.7	2.6	2.6	2.7
Singapore	1.4	1.8	1.9	2.2	2.2	2.3	2.6
Australia	1.7	1.5	1.6	1.8	1.9	2.2	...
UK	1.9	1.8	1.9	1.8	1.7	1.8	1.8
China	0.6	0.7	0.9	1.1	1.2	1.4	1.5
HK	...	0.4	0.5	0.6	0.7	0.8	...
India	0.6	0.7	0.8	0.7	0.7	0.8	0.8
Malaysia	0.2	0.4	0.5	0.7	0.6	0.6	**...**
Thailand	0.1	...	0.3	0.2	0.3	0.2	...

Source: UNESCO and World Bank staff calculations.

Figure 3.11. R&D spending remains at low levels when compared internationally

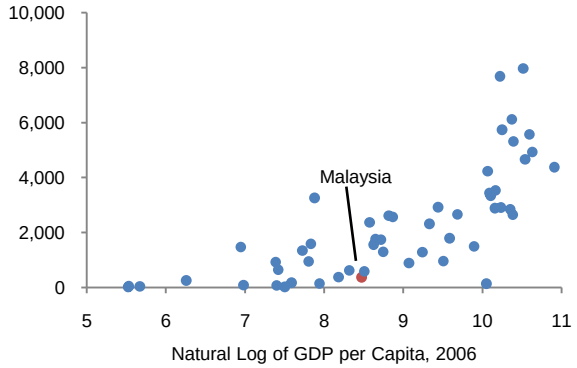
R&D spending as percent of GDP, 2006



Source: UNESCO and World Bank staff calculations.

Figure 3.12. International comparison points to low numbers of R&D researchers

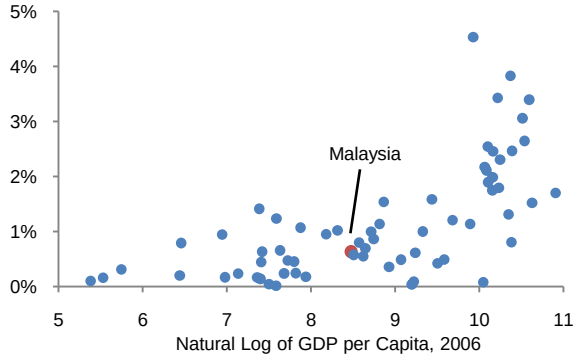
Researchers in R&D per million people, 2006



Source: UNESCO and World Bank staff calculations.

Figure 3.13. The pool of technicians in R&D is also very low when compared internationally

Technicians in R&D per million people, 2006



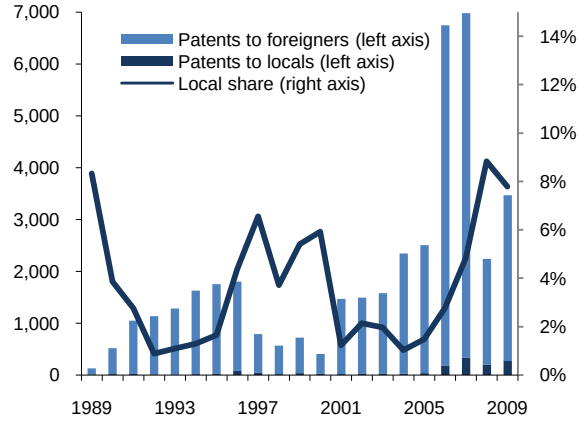
Source: UNESCO and World Bank staff calculations.

Patenting Activity Has Picked Up But Remains Low

Patenting activity in Malaysia expanded from 2001, but then fell due to the crisis (Figure 3.14 and Table 3.8). Most patents granted in Malaysia were granted to foreigners. In recent years, however, an increasing share went to locals, reaching about 8 percent in 2009. The patents issued domestically are mainly for chemistry and metallurgy, human necessities, operational technology, electricity and physics.

Patenting activity outside of Malaysia by Malaysian residents also increased.[23] Patenting with the US Patent and Trademark Office (USPTO), in particular, saw a significant rise. Between 1995 and 2008, US patents issued to residents of Malaysia rose twenty-fold (Figure 3.15). However, this increase took place from a very low base. From an international perspective, Malaysia's patenting performance normalized by population size—remains close to what its per capita income level would predict (Figure 3.16).

Figure 3.14. Domestic patenting activity accelerated before the crisis



Source: Intellectual Property Corporation of Malaysia (MyIPO).

Table 3.8. Domestic patents cover a range of technology classes

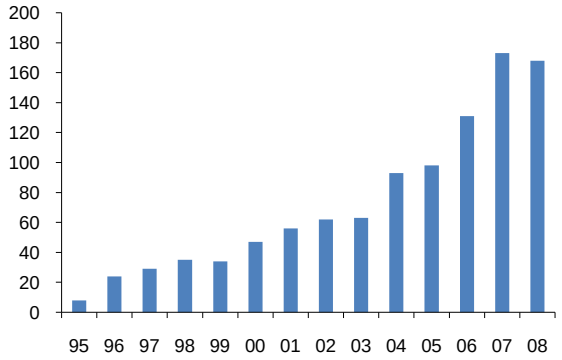
Share of domestic patents in total patents granted, percentage points

	1993	2001	2009
Chemistry, metallurgy	39	20	24
Human necessities	17	11	19
Performance of operations, transport	13	16	18
Electricity	11	27	14
Physics	12	16	14
Mechanical engineering & other	4	7	5
Fixed constructions	3	3	3
Textiles, paper	1	1	2

Source: Intellectual Property Corporation of Malaysia (MyIPO).

Figure 3.15. US patents granted to Malaysia rose rapidly

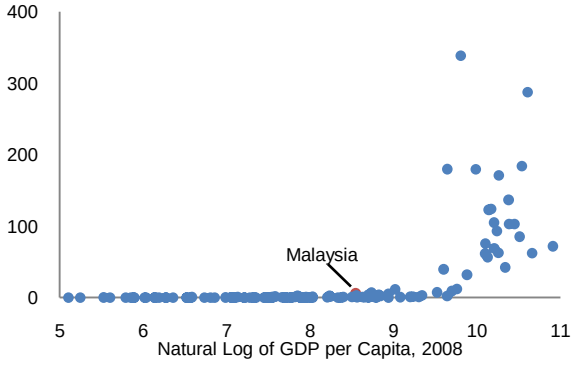
US patents issued to residents of Malaysia



Source: United States Patent and Trademark Office (USPTO).

Figure 3.16. Normalized by population, US patenting is low but in line with other middle-income peers

US Patents issued to foreign residents per million people, 2008



Source: United States Patent and Trademark Office (USPTO) and World Bank staff calculations.

[23] Overseas patent indicators are useful as they offer higher international comparability. Patents taken overseas often also serve to protect a firm's most valuable innovations.

Table 3.9. US patents to Malaysia residents cover primarily E&E technology classes

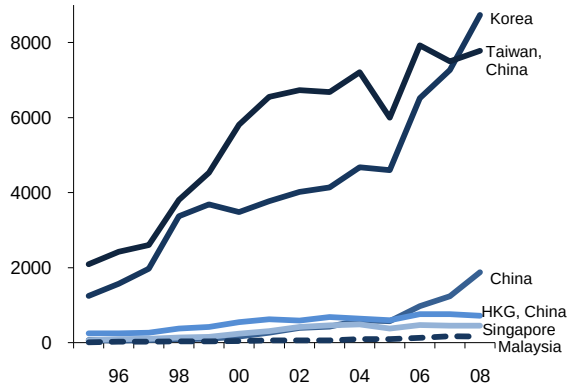
US patents issued to residents of Malaysia according to technology class

	2004	2005	2006	2007	2008	Total
Active Solid-State Devices (e.g., Transistors, Solid-State Diodes)	9	12	11	17	20	69
Radiant Energy	1	1	14	18	25	59
Semiconductor Device Manufacturing: Process	7	8	9	16	10	50
Illumination	0	2	5	13	4	24
Electricity: Measuring and Testing	3	6	4	6	4	23
Electronic Digital Logic Circuitry	0	0	3	7	3	13
Computer Graphics Processing and Selective Visual Display Systems	1	1	2	5	4	13
Plastic and Nonmetallic Article Shaping or Treating: Processes	5	0	4	1	1	11
Electric Lamp and Discharge Devices	2	0	4	3	2	11
Electric Lamp and Discharge Devices: Systems	1	2	4	2	1	10
Electricity: Electrical Systems and Devices	1	4	2	2	1	10
Supports: Cabinet Structure	0	2	2	2	3	9
DP: Design and Analysis of Circuit or Semiconductor Mask (Data Processing)	0	1	3	4	1	9
Television	0	0	1	1	6	8

Source: United States Patent and Trademark Office (USPTO).

Figure 3.17. Korea and Taiwan, China, are leading the way in patenting

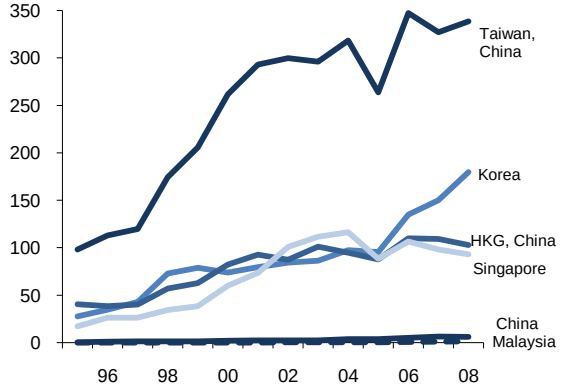
US patents issued to foreign residents



Source: United States Patent and Trademark Office (USPTO).

Figure 3.18. Normalized by population, Taiwan, China, stands out

US patents issued to foreign residents per million people



Source: United States Patent and Trademark Office (USPTO).

Most of the USPTO patents are granted to MNCs located in Malaysia. With the exception of individually-owned patents, only four Malaysian organizations—Silterra, MPOB, Harn Marketing, and UPM—were granted five or more patents each between 2003 and 2007.[24] Most of the patents extended are within technology classes related to the E&E sector (Table 3.9). Malaysia's most patented technology class is that of active solid-state devices (for example, transistors and solid-state diodes).

What is also remarkable is the rapid increase in US-registered patents for some countries in the region and the relative stagnation or even decline for others. In terms of absolute number of patents, it is clear that both Korea and Taiwan, China, are the leaders in the Asia ex-Japan group (Figure 3.17). They also recorded a very rapid increase in patenting, especially Korea in the second half of this decade. China is picking up very rapidly from a lower base, in contrast to Hong Kong, China, and Singapore which registered initially good growth but are now experiencing a decline. The numbers normalized by population make Taiwan, China, stand out, and as expected reduce the performance of China (Figure 3.18).

[24] Yusuf and Nabeshima (2009).

The Innovation Challenge: Intensify and Broaden Innovation

What does the preceding analysis suggest about the innovation challenge which is key to the long-term prosperity of the Malaysian economy?

Malaysia registered tremendous success over the last few decades in expanding export volumes. It has done so by plugging the tradable segment of the economy into the cross-border production networks of multinational companies. In consequence, the export mix shifted progressively into products of increasing technological sophistication.

Malaysia has been less than successful, however, in extracting domestic value added from its growing integration with the global and regional economy. This is reflected in the fact that the value-added contributed domestically remains at only a fraction of total output value. The growing sophistication of Malaysia's export products has therefore not yet significantly seen a greater reliance on domestic innovation.

A review of Malaysia's innovation performance confirms this picture. While innovation is a concept hard to grasp and measure, with many intangible aspects, the triangulation of the evidence available supports two key conclusions. First, Malaysia's innovation performance improved in some dimensions—for example, patenting—but this improvement occurred from a low base. Second, international comparison does not indicate that Malaysia has significantly improved its position relative to other middle-income countries.

Simply put, the innovation challenge for Malaysia is to intensify and broaden innovation. As innovation relies in the first place on the knowledge, skills and creativity of those working in businesses, the key challenge is to see more innovation in business and more businesses engaging in innovation. Government can also contribute to innovation, both by innovating itself and encouraging innovation elsewhere. The innovation challenge will be to put innovation at the heart of the strategies of all players in the Malaysian economy.

ADDRESSING THE INNOVATION CHALLENGE

Promoting innovation is a complex undertaking. Innovation is a multi-dimensional concept that encompasses product, process and organizational innovation and is concerned with the creation and commercialization of new knowledge as well as the diffusion and absorption of existing knowledge. Innovation outcomes are affected by many factors and players.

Given this complexity, policy approaches that facilitate rather than orchestrate innovation are likely to stand the greatest chance of success. Three sets of policies in particular are deemed to be critical:

- *The capabilities for innovation: talent, technology and finance.* For innovation to take place, a number of key preconditions need to be satisfied: a competent, entrepreneurial and creative workforce, the ability to acquire or develop technology assets, and the adequacy of financial systems to supply funds at reasonable cost to innovating firms.

- *The driving force of innovation: competition.* Competition is what drives individuals and organizations to seek out new value and do things more efficiently. Competition enables the transformation of capabilities into results.

- *The amplifiers of innovation: niches and clusters.* For public sector interventions to yield maximum effect, they are sharply focused on selective niches, so as not to dilute impact. For innovation to thrive and spread, economic activity is best concentrated in clusters.

Facilitate or Orchestrate?

Approaches to Policy Intervention

Addressing the innovation challenge requires in the first place an understanding of potential bottlenecks to innovation. These may arise from two main sources: market failures and imperfections in the enabling environment. When left to their own, markets innovate less than what is socially desirable, which justifies a role for policy to boost innovation (Box 9). Imperfections in the enabling environment are a second source of bottlenecks. To unleash the innovation potential, policymakers can tackle these—self-inflicted—obstacles directly.

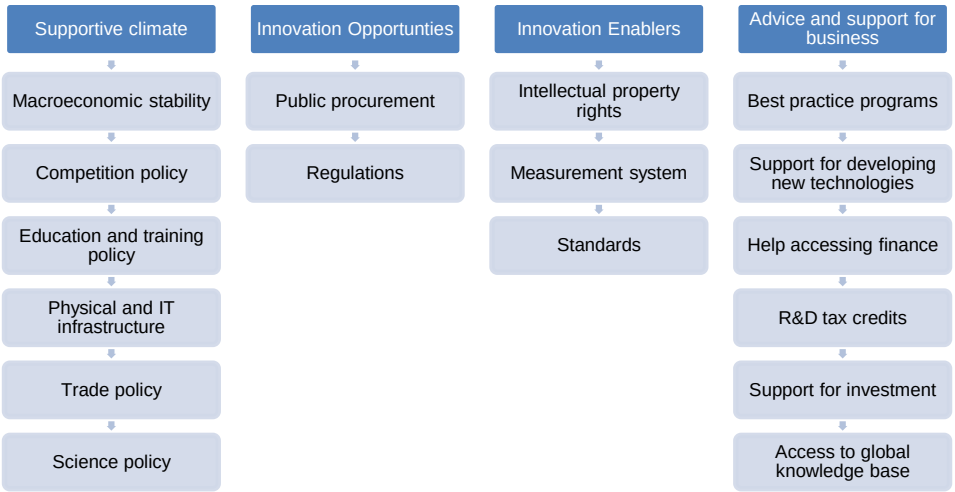
Promoting innovation is a complex undertaking since innovation outcomes are affected by so many factors and result from the interactions between so many players (Box 10). The simple solutions of the past—such as, providing tax incentives to attract assembly manufacturing—are no longer sufficient to attract and develop the innovation-intensive activities of the future.[25] The agenda is more complex now and success in raising innovation is likely to be favored by more nimble approaches that emphasize facilitation over orchestration.

[25] World Bank (2006a, 2010b).

Facilitating innovation will require close cooperation between government and business. The type of fine-grained knowledge required to identify market failures and respond to them effectively is not the kind of knowledge that traditional bureaucratic agencies can easily acquire or use. Instead, a very close and collaborative relationship with business is required to address the market failures effectively.

Public policy interventions for innovation have traditionally combined the tackling of cross-cutting issues with the provision of selective incentives to address specific market failures (Figure 3.19).

Figure 3.19. How policymakers around the world influence innovation



Source: Based on UK Department for Trade and Industry (2003).

It should be noted that the success of innovation-led growth will depend to an important degree on the private sector itself—on its ability to take on the challenges that arise from an increasingly competitive environment. The need to innovate applies to all players in Malaysia's economy.

Scoping and Sequencing

To be successful, any strategy aimed at facilitating innovation will need to be both comprehensive and well-sequenced. A comprehensive reform strategy—as advocated under the New Economic Model—is clearly favored over piece-meal approaches as the bottlenecks holding back innovation are widespread and deep-rooted. In addition, the reform agenda needs to be well-sequenced. Reforms in some areas (for example, competition policy) may not bear fruit if other conditions are not in place (e.g. sufficient labor market flexibility and adequate social protection mechanisms).

Innovation strategies also need to reach out to a wide spectrum of players. The need to improve innovation capabilities extends beyond a few large firms and universities; it encompasses all sectors and players of the economy—including small and large firms, private and government-led firms, as well as government itself.

The innovation concept is much broader than cutting-edge R&D that moves out the international knowledge frontier. Non-technological forms of innovation that rest on the diffusion of existing knowledge and result in productivity improvements in lagging firms may produce larger growth dividends as well.

BOX 9. WHY DO MARKETS UNDERSUPPLY INNOVATION?

Economic theory suggests a strong rationale for policy intervention to facilitate and support innovation in the economy. This rationale derives from the problem that markets—when left to their own—do not allocate sufficient resources for innovation. In economics jargon, these market failures arise from fixed and sunk costs, externalities, coordination failures, and informational asymmetries. The resulting innovation efficiencies create a powerful role for policy, without which the incentives to innovate would be compromised.

- Innovations may require large *upfront, fixed and sunk costs*. Firms are willing to innovate only if the potential market for their innovations is deemed sufficiently large to recover these fixed costs. Cost recovery may be hampered if the cost of reproducing an innovation is small. This could lead to a drop in the price of a commercialized innovation and eliminate the incentive to innovate in the first place. Intellectual property rights serve to provide innovating firms with temporary monopoly power in the use of the knowledge that they created and make it possible for them to control the terms on which others can subsequently use that knowledge.

- Since the returns to innovation cannot be fully privately appropriated, firms will innovate less than society needs. *Knowledge spillovers* may occur in different ways. An entrepreneur may develop a new business model that others copy. A university transfers discoveries from the lab to the market place. A company invents a new technology that leads to innovations in other companies. These spillover effects can be substantial and the social returns from corporate R&D may be at least double the private returns (Jones and Williams, 1998; Mansfield, 1991).

- The positive *externalities arising from geographical clustering* may be underappreciated by markets. Both the creation and diffusion of innovation often occur in geographical clusters. Clustering contributes to productivity growth as it enables firms to benefit from common resources, facilitates labor market matching and contributes to knowledge sharing. Yet, since the benefits of clustering—as the benefits of innovation—spill over beyond the boundaries of the firm, market forces may produce less clustering than society needs, constraining the rate of innovation in the market place (Cortright, 2006).

- The interests of key players in the innovation process may not be aligned, resulting in *coordination failures*. Industry-university collaboration is an example. University researchers may not always be keen to work on problems that are relevant to the commercial needs of firms. Universities may also be less than proactive in licensing university intellectual property to firms. Conversely, individual firms sometimes may wish to 'rent' the research capabilities of firms, appropriate discoveries for themselves and thereby impede the diffusion of knowledge (Litan, Mitchell and Reedy, 2008; Lester and Piore, 2004).

- Private financiers may be unwilling to provide early-stage financing for innovation activities. Innovation is an activity with a highly uncertain outcome and a large degree of *information asymmetry* may exist between the information available to inventors and investors. External capital may only be available at large cost and financial markets may supply insufficient funds, especially for small and start-up firms in R&D intensive and high-technology sectors.

- *Inertia* in the diffusion of new ideas may mean that innovations are not broadly spread. Entire industries may lag in the adoption of more productive processes and organizational forms. Small and medium-sized enterprises may not be benefiting from ideas that have been around for decades. They may not realize how their performance compares with their peers, they may not know how to access information and how to effect change, and they may not know how to innovate by themselves (Hall, 2004; Black and Lynch, 2004; Mansfield and others, 1977).

BOX 10. INNOVATION IS BEST FACILITATED, NOT ORCHESTRATED

Innovation is an elusive concept: it is hard to pin down, hard to measure, and most of all hard to control. Innovation is multi-dimensional, occurs at many levels, and is influenced by many players. Innovation is often hard to qualify—let alone quantify—and the information available is typically spotty, outdated or both. Under these circumstances, it comes as hardly a surprise that innovation is difficult to manage.

Given the complexity of the reform agenda and the need to press ahead on the implementation front, the government of Malaysia has emphasized the introduction of novel techniques to connect policy efforts with economic outcomes. While outcome-based frameworks are useful in many respects, their design features matter greatly in determining whether better economic outcomes can be achieved.

Contract theory offers some basic lessons as to how outcomes in environments like these are best managed. In a seminal paper on multi-tasking, Holmstrom and Milgrom (1991) examine how to structure incentives when outcomes depend on multiple factors that can only be measured or verified with varying degrees of precision. Their analysis concludes that, in environments where outcomes depend to a large extent on factors that cannot be easily measured, linking strong incentives to those factors that are easily measured may cause neglect of other more-difficult-to-measure factors and produce overall worse outcomes.

The implication for the design of policies aiming to boost innovation is that a narrow focus on the easy metrics of innovation is likely to be counterproductive. Aspects of innovation that are more easily measured are primarily concerned with numbers—the number of patents, the number of scientific papers, the amount of money spent on R&D. Aspects of quality are much more difficult to grasp. On top of this, the linkages between innovation inputs and outcomes are still far from fully understood.

Under such circumstances, fitting the innovation challenge into a straight jacket by capturing what can be easily measured may eventually cause other dimensions that are less easily measured to be ignored. This could result in worse overall outcomes. The ultimate metric of innovation is market success and the key is to allow firms to fail if they do not meet the market test. Approaches that facilitate, rather than orchestrate, innovation complemented with selective and highly focused incentives may in this context be the most likely avenue to success.

Improving Innovation Capabilities: Talent, Technology and Finance

For innovation to be able to take place, a number of key preconditions need to be satisfied. This includes first and foremost the talent of the workforce. Innovation rests on people and their skills, creativity, and entrepreneurship. It also rests on how organizations bring out the best in people. Second, innovation requires access to technologies (both soft and hard) which provide the means of transforming ideas into results. A supportive infrastructure is equally important. Third, innovation hinges on the ability of the financial system to provide suitable instruments that help to fill the financing gaps.

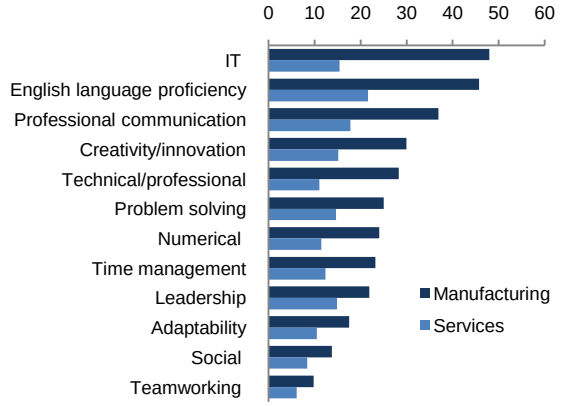
Nurturing, Attracting and Retaining Talent

Innovation rests in the first place on the talent of people: their creativity to develop new ideas, their capacity to absorb knowledge, and their entrepreneurship and skill to turn ideas into results. A talented workforce is the bedrock of innovation.[26] Strategies to promote innovation would therefore in the first place need to nurture talent and also encourage talent to come to and stay in Malaysia.

Recent investment climate assessments by the World Bank have indicated that firms consider the quality of the skills base of Malaysia's workforce as a cause for concern. Some 40 percent out of 1,400 firms sampled in a recent survey reported the skills issue as a top investment climate obstacle.[27] This concern is held across the board, regardless of the region where the firm operates, the size of its operations, the export orientation, the ownership structure, and the industry it belongs to.

Figure 3.20. Skill deficiencies for local production workers

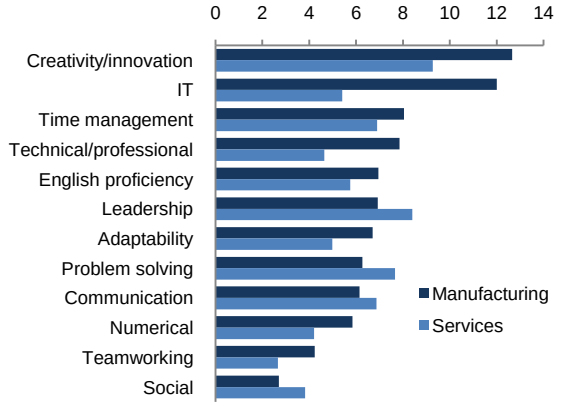
Percent of managers considering the listed skill of local skilled production workers as 'poor' or 'very poor'.



Source: World Bank (2005 and 2009c).

Figure 3.21. Skill deficiencies for local professional workers

Percent of managers considering the listed skill of local professionals as 'poor' or 'very poor'.



Source: World Bank (2005 and 2009c).

The concerns about quality apply to broad segments across the skills spectrum, both cognitive and non-cognitive (Figure 3.20 and Figure 3.21). Firms are particularly concerned about the skills of local production workers, especially in manufacturing but also in services. The key concerns are in the area of technical/professional, communication, IT, leadership and English language proficiency skills for

[26] Berry and Glaeser (2005).
[27] World Bank (2009c).

manufacturing, and technical/professional, IT, communication, social, leadership, creativity/innovation skills for services. Firms also report skills deficiencies at the local professional level, especially creativity/innovation and IT skills in manufacturing and creativity/innovation, leadership, problem solving, and communication skills in services.

These skills problems harm productivity growth as firms have no other choice than to hire someone who is less than ideally qualified for the job. Employee surveys confirm these suboptimal hiring policies. Only 7 percent of manufacturing workers (15 percent in services) feel that the ideal field of education best suited for their job is the one they possess. As much as 17 percent of manufacturing workers (15 percent in services) feel the ideal field is completely different from their own.

Table 3.10. The performance of 13-year olds in math and science is slipping

Ranking and score

	1999	2003	2007
	Math Score 13-year old		
Taiwan, China	3 (585)	4 (585)	1 (598)
Korea	2 (587)	2 (589)	2 (597)
Singapore	1 (604)	1 (605)	3 (593)
Hong Kong, China	4 (582)	3 (586)	4 (572)
Malaysia	16 (519)	10 (508)	20 (474)
	Science Score 13-year old		
Singapore	2 (568)	1 (578)	1 (567)
Taiwan, China	1 (569)	2 (571)	2 (561)
Korea	5 (549)	3 (558)	4 (553)
Hong Kong, China	15 (530)	4 (556)	9 (530)
Malaysia	22 (492)	20 (510)	21 (471)

Source: Trends in International Mathematics and Science Study.

Attention will need to be given to the role of skills as a foundation for innovation. Science, technology, engineering and mathematics skills are not sufficient—even though improving these will be necessary as Table 3.10 suggests. For innovation to thrive, non-cognitive skills are also important. For example, strong leadership, management and problem-solving skills of those at the helm of new businesses are key to the survival and success of a business. In addition, for innovation to be a broad-based inclusive process, the disparities in the skill base need to be addressed (Box 11).

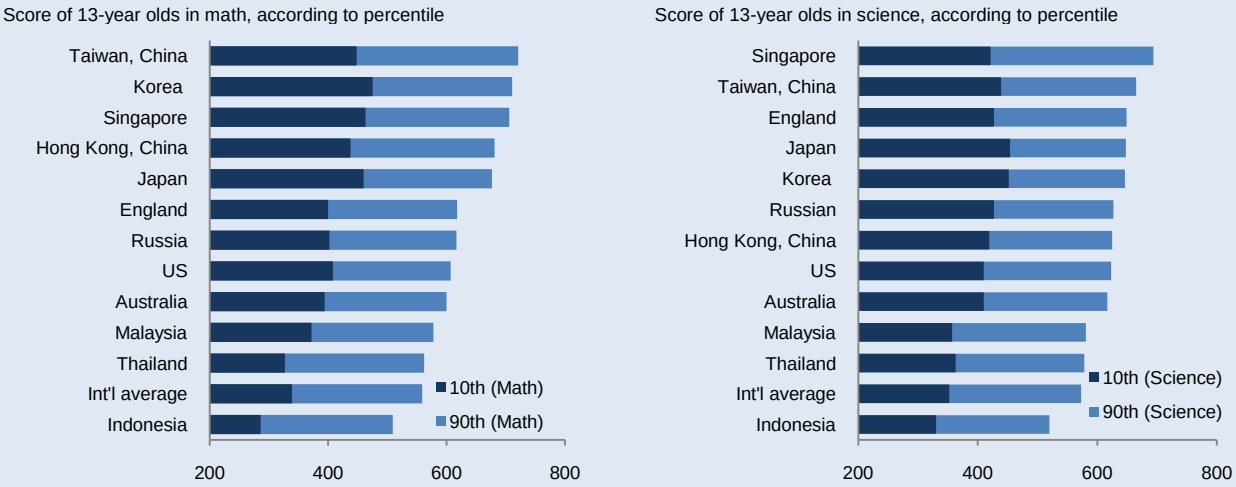
Addressing the weaknesses will require strengthening the education system—as discussed in the November 2009 Malaysia Economic Monitor.[28] But improving the education system inevitably takes time. In the meantime, Malaysia can tap the global talent pool. But to compete for the best brains in the world, immigration and employment restrictions may need to be reviewed. The country can also tap into its diaspora and offer returning migrants programs that welcome them and their families to stay. Leveraging on the diversity of Malaysia's human capital is another avenue to pursue. A diverse workforce is better able to predict the demands of the diverse market place and develop innovative products to meet these demands.

[28] World Bank (2009a).

BOX 11. PROMOTING EQUALITY OF OPPORTUNITIES IN SKILL FORMATION

Education is essential in enabling knowledge capability and readiness to participate in the labor market. It is also an important determinant of an individual's earning potential and the economic welfare of his or her family; thus, inequalities in education contribute to inequalities in other socio-economic dimensions. Malaysia has put in place many national programs aimed to increase the quality and effectiveness of education; some examples are scholarships, smart schools, boarding facilities, and textbooks-on-loan programs. Despite the large push in access and participation in school, especially in primary education, the quality of education remains below other comparable economies—and decreasing. More specifically, out of 48 countries worldwide, Malaysia ranked 20th and 21st in math and science, respectively, in the latest Trends in Mathematics and Science Study. The average scores for Malaysian students were closer to those obtained by Thai students than scores from students in Singapore, Korea, Japan, and Hong Kong, China; all which placed in the top tier for both subjects. Relative to an earlier ranking in 2003, Malaysia lost ground in math (from 10th to 20th place) and science (from 20th to 21st place).

Figure 3.22. Scores for top 90th and bottom 10th percentiles in math and science show stark disparities



Source: Gonzalez (2009).

Source: Gonzalez (2009).

Though the difference in average scores between Malaysia and other benchmark countries is large, the disparity identified within students in the country is also important (Figure 3.22). In science, the top 90th percentile of Malaysian students (right panel) performed similar to Thai students; however, the lower 10th percentile had a lower score than Thai students. The size of the 90th to 10th percentile disparity in math is 55 percent; this disparity is similarly high among students in Hong Kong, China, but much higher than students in Korea and Japan, both countries with 49 percent or less. The disparity in science is more accentuated for Malaysia; the top students obtained a score 63 percent higher than the bottom students.

These disparities indicate that there may be differences in educational participation and quality that affect learning and leave some students less prepared to work in a knowledge-based economy. There is some evidence that participation of students from low-income and remote areas, especially in Sabah and Sarawak, continue to lag behind (United Nations Development Program, 2003). In terms of

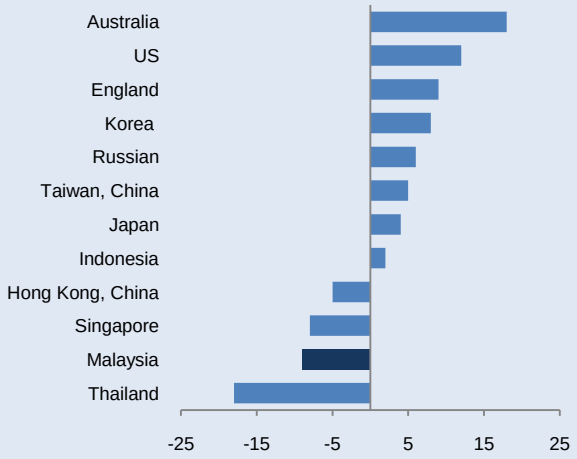
achievement, the performance of students from rural areas lags behind that of urban students; one reason is that urban schools attract and keep more experienced teachers, thus facing increased opportunities in education quality. Another reason is that the digital divide between rural and urban areas is still large; and even if the ICT infrastructure is improving, technological skills are not evenly taught.

Figure 3.23. Differences between scores for males and females are large

Score of 13-year olds in math, average difference between males and females

Source: TIMMS (2007).

Score of 13-year olds in science, average difference between males and females



Source: TIMMS (2007).

Education is one of the main instruments used by the Malaysian government to improve the socio-economic status of its population and bring about equitable development. Given its importance, most countries aim to decrease gender gaps in education that stem from factors such as policies, cultural norms, among others. Since its independence Malaysia has put in place many programs to promote gender equality and have women as active participants in the development process. The illiteracy rate for women decreased from 35 percent in 1980 to 12 percent in 2004; though the illiteracy rate for males is still significantly lower, at 5 percent (Ministry of Women, Family and Community Development of Malaysia and United Nations Development Program, 2007). As an example of the gains from changes in government policy to promote gender equality, the Ministry of Higher Education reports that in 2005, about 55 percent of all enrollees in higher education were women. Policy effects are not only clear in terms of participation but also in terms of achievement. At the upper school level, there are significant gender disparities in math and science achievement; female students achieved significantly higher scores than their respective male counterparts (Figure 3.23).

Unfortunately, educational gains are not fully reflected in the labor market, where about 70 percent of all people outside the labor force are women, and a good number of them are engaged in house-related work. Similarly, women's share of jobs in high-skill categories, such as legislators, senior officials, managers, professionals, technicians, and associate professionals, is still low (35 percent) compared to men's share (65 percent), which likely reflects lower opportunities to fully participate in all areas of the economy. Further analysis would be useful to investigate the disconnect between achievement (and participation) in education and job type in the labor market to understand how policy makers can improve opportunities and harness educational gains in the economy better.

Upgrading Home-Grown Technological Capabilities

The technological capabilities of firms are critical to the innovation process. Technological development is not a process that can be promoted instantly, but requires continuous investments by firms in their own technological capabilities. Simply purchasing new machinery or entering into a partnership with MNCs is likely insufficient to enable catch up with global leaders. Development of technological capabilities also extends beyond the firm level and needs to take into account the linkages between firms and other economic agents, combined with all the factors and institutions that support the technology enabling environment.

Recent work by the World Bank (2005 and 2009c) examines the technological capabilities of some 1,400 Malaysian firms according to three key dimensions (discussed further in Table 3.11).

- *Investment technological capabilities* refer to 7 capabilities, which matter before and while an investment is undertaken and are primarily concerned with project preparation, technology identification and technology transfer.
- *Production technology capabilities* include 14 capabilities related to processes (quality control, maintenance, plant layout, inventory control and equipment and process improvement) and products (e.g. mastering product design and specifications and licensing of product technology).
- *Linkage technological capabilities* refer to 9 capabilities needed to exchange knowledge and technology with suppliers, clients, subcontractors, service firms, consultants, and technology institutions. Such linkages improve firm efficiency and economy-wide technology diffusion.

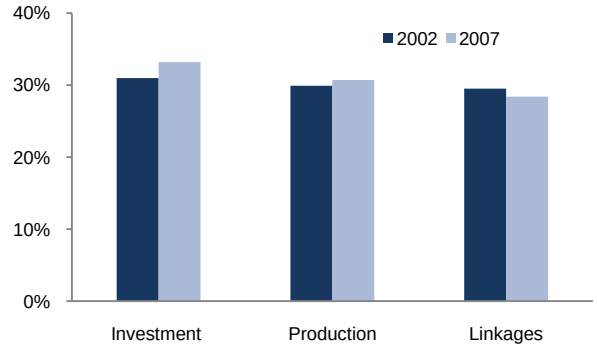
Table 3.11. Overview of Capabilities Captured by Technological Capabilities Index

Investment TCI		Production TCI		Linkages TCI	
1	Plans to invest to increase capacity or improve quality	1	Share of production machines that is computer controlled	1	Share of domestic inputs coming from same region as location establishment
2	Share of next investment related to IT	2	Employment of staff exclusively for design, doing innovation, R&D	2	Prevalence of suppliers making raw materials to unique specification
3	Training workforce to implement technology transferred from parent	3	Subcontracting of R&D projects to other organizations	3	Use of email in interaction with clients and suppliers
4	Participation in MNC licensing, training, and quality certification programs	4	Royalty payments	4	Use of websites to sell products
5	Organization of formal in-house training programs	5	Plans to introduce new designs or products over next 2 years	5	Prevalence of learning new technologies from MNCs
6	Participation in formal training programs run by other organizations	6	Upgrading of machinery and equipment	6	Technological innovation in collaboration with other firms
7	Spending on design or R&D in previous year	7	Entry into new markets due to process or product improvements in cost or quality	7	Technological innovation in collaboration with universities
		8	Filing of patent/utility models or copyright protected materials	8	Technological innovation in collaboration with research institutes
		9	Development of new product lines	9	Technological innovation in collaboration with other institutions
		10	Upgrading of existing product line		
		11	Introduction of new technology that changed the way the main product is produced		
		12	Adaptation or R&D of technology transferred from parent to suit local conditions		
		13	Receipt of government incentives to conduct technological innovation and R&D		
		14	Attainment of ISO 9000, 9002 or 14,000 certification		

Source: World Bank (2009c).

Figure 3.24. Investment and production technological capabilities improved only slightly from 2002 to 2007

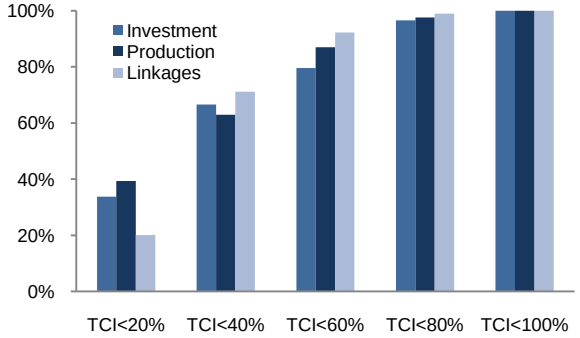
Share of technology capability activities being undertaken



Source: World Bank (2005 and 2009c).
Note: Technology capability index (TCI) identifies 7 activities for investment, 14 for production and 9 for linkages.

Figure 3.25. Two-thirds of firms undertake fewer than 40 percent of technological capability activities

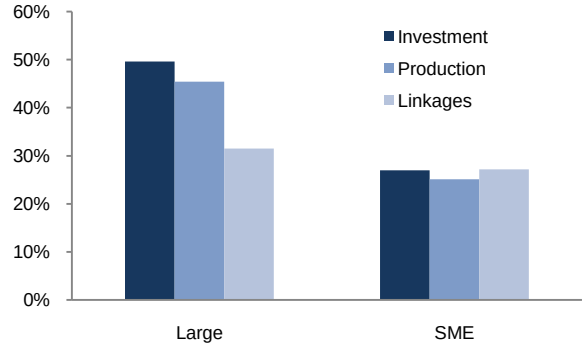
Share of firms reporting technology capability activity < x percent



Source: World Bank (2005 and 2009c).
Note: Technology capability index (TCI) identifies 7 activities for investment, 14 for production and 9 for linkages.

Figure 3.26. As expected, the technological capabilities of SMEs are weaker

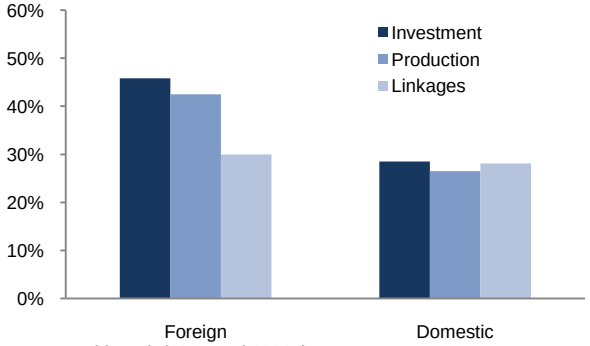
Share of technology capability activities being undertaken



Source: World Bank (2005 and 2009c).
Note: Technology capability index (TCI) identifies 7 activities for investment, 14 for production and 9 for linkages.

Figure 3.27. Despite stronger capabilities in other aspects, foreign firms lack in linkages

Share of technology capability activities being undertaken



Source: World Bank (2005 and 2009c).
Note: Technology capability index (TCI) identifies 7 activities for investment, 14 for production and 9 for linkages.

A striking result is that technological capabilities in these three dimensions are persistently low (Figure 3.24). The average firm conducts only a third of the technological capability activities in investment, production and linkages. These results seem to persist over 2002-2007. The low level of technological capabilities is problematic in that it is likely to hamper innovation performance. Linkages capabilities have declined between 2002 and 2007. As linkages are crucial in expanding the knowledge economy throughout Malaysia, emphasis can be laid on developing an economic environment that fosters cooperation, interaction and interdependence between economic agents.

Examining the distribution of these results, the analysis suggests that more than two-thirds of the firms sampled carry out less than 40 percent of the technological capabilities activities (Figure 3.25-Figure 3.27). The results also show a large degree of dispersion across regions (with as expected the poorer regions performing less well), industries (with garments, wood, textiles and food processing scoring lowest), firm characteristics (with SMEs, non-exporters and domestically-owned firms performing less well).[29] These disparities suggest substantial opportunity for upgrading technological

[29] For a detailed description of these variations, see World Bank (2005 and 2009c).

capabilities and through them productivity growth. To make the next step up the income ladder, Malaysia's firms will need to achieve this objective. This does not just involve improving the capabilities of the best performers but also reducing the dispersion in capabilities across firms.

Diffusion of innovation provides a powerful avenue to realize productivity gains in relatively short periods of time. Government can provide advice and support to businesses through best practice programs, support to access the global knowledge base, support in the acquisition of technology and customization for commercial purposes.

Bringing laggards up to par is also important to make the effect of greater competition in the economy more palatable. While greater competition is generally advantageous to innovation, it is likely that those firms operating further away from the technology and efficiency frontiers will be discouraged rather than encouraged by greater competition.[30] It is therefore desirable to put in place 'distance-shortening measures' alongside measures to inject greater competition within the economy.

The significant presence of multinational companies has provided the country with export-oriented platforms, but Malaysia appears to have had more limited success in transferring the technological capabilities of MNCs to indigenous companies and in multiplying the linkages of MNCs with the domestic economy. As a result, while various clusters have developed around the MNC-led manufacturing core, these clusters have remained primarily logistical clusters. Such clusters derive their benefit from the reduction of total supply chain costs. What has happened to a much more limited extent is the development of knowledge clusters, where close proximity and interaction fosters the sharing of knowledge, technology and expertise.

Why has this been the case? Two factors seem relevant. First, local content sourcing rules do not appear to have been effectively implemented. This may have been partly due to the fear of driving away relatively footloose MNCs. The size of Malaysia's domestic market may also have played a role here.[31] Second, the quality of human capital in Malaysia and, relatedly, the capacity to absorb new technology have likely also contributed to the limited transfer of knowledge from MNCs to indigenous firms.

Ultimately, knowledge remains 'local' and does not automatically flow across borders. For countries that engage more in R&D and have a strong science base it is easier to comprehend, adopt and adapt innovations. Building a strong absorptive capacity is therefore essential to take full advantage of international knowledge spillovers. In addition, a strong local R&D base makes it more attractive for foreign investors to locate their activities in the country.[32]

As Box 12 illustrates, the future plans of MNCs matter as well. Considering the spectrum of Japanese multinational firms in the E&E industry, it is clear that the economic geography of foreign direct investment and trade continues to be redrawn, with the center of gravity shifting increasingly towards China. These ongoing developments underscore the importance to complement technology acquisition through FDI with domestic efforts to upgrade technological capabilities.

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[30] Howitt (2009).

[31] Market size appears to be one factor why China has met with less resistance from MNCs to transfer knowledge.

[32] MNCs locate R&D activities on the basis of the size and growth prospects of the market, the quality of local R&D skills, and the protection of intellectual property (Thursby and Thursby, 2007).

Yet, in addition to relying on technology transfers from FDI and developing home-grown technological capabilities, Malaysia can also leverage on more direct forms of cross-border technology acquisition. Technology brokers can assist in the global procurement of technology, where the broker acts as an intellectual property intermediary. By tapping into the global technology markets and seeking customized solutions Malaysia can upgrade its technological capabilities rapidly, while it simultaneously improves home-grown capabilities and attempts to foster further integration and technology transfer from MNCs.

To build local technological capabilities, Malaysian firms can also more fully leverage on university-firm linkages. As Table 3.12 suggests, universities and research centers are only limited sources of inspiration for innovation in Malaysia. Firms do not feel that universities and research houses can render services that are relevant to their operations. To remedy this, consideration could be given to developing intermediary organizations that facilitate matchmaking between the university and the firm. However, in the long run, the more effective approach will be to improve universities' teaching and research capabilities and develop reputations for scientific excellence.[33]

Table 3.12. Clients and suppliers are key to innovation

Share of respondents in 2002-04 innovation survey considering information source of high or medium relevance, percentage points

	Share
Clients or customers	80
Suppliers of equipment, materials, components, software	69
Within the company	58
Competitors and industry peers	48
Conferences, trade fairs, exhibitions	40
Scientific journal and trade/technical publications	26
Government or private non-profit research institutes	25
Technical, industry of service standard	24
Consultants	24
Other companies within company group	21
Commercial labs and private R&D institutes	14
Professional conferences, meetings, journals	13
Universities and other higher education institutes	11

Source: MASTIC (2006).

In addition to assisting firms' efforts to improve technological capabilities, government can also put in place a supportive infrastructure for technological development. While investment in transport and other energy infrastructure helped in the promotion of traditional industries and services, the emphasis is now shifting to laying the 'soft' infrastructure groundwork for a knowledge-based economy–such as the regulatory and institutional framework for new information and mass communication technologies–and the hard infrastructure requirements such as the communications infrastructure. Malaysia's ambitious broadband agenda is one such area of reform (See Box 13).

[33] Yusuf and Nabeshima (2009).

BOX 12. GEOGRAPHY IN MOTION: JAPANESE PERSPECTIVES ON THE FUTURE OF FOREIGN DIRECT INVESTMENT

As technology leaders in the electrical and electronics (E&E) industry and one of the largest sources of foreign investment in Southeast Asia, Japanese firms have played a pivotal role in the development of Malaysia's manufacturing sector. Alongside multinationals from other countries, they have remained key players in the E&E industry of Malaysia, which accounts for the lion's share of the country's exports.

This Box examines, on the basis of a rich set of data supplied by the Japan External Trade Organization, the perspectives of Japanese E&E firms as well as their intentions to invest in Malaysia, the region and the rest of the world. The data provides insights into the nature of existing operations in Malaysia, the concerns held by firms about doing business in the country, how these compare with other countries in the region, and what the future of foreign direct investment beholds.

The Rise of China is Evident in the Overseas Presence of Japanese Firms

The significance of China as a basin of attraction for not only manufacturing but also R&D is striking. Figure 3.28 suggests that 20 percent of E&E firms have R&D bases in China—compared to just 5 percent in other individual countries in the region. China also stands out for its production base, with 60 percent of firms represented. Next come Thailand and Malaysia at 30 and 24 percent. Other higher-cost countries seem to have lost their appeal somewhat as a cost-competitive production base. Many firms have also established regional HQs in China, and market size has been a key determinant for establishing sales bases. The rise of China in both manufacturing and R&D is consistent with the fact that R&D, especially of the new product development and localization kind, is typically conducted around a manufacturing core.

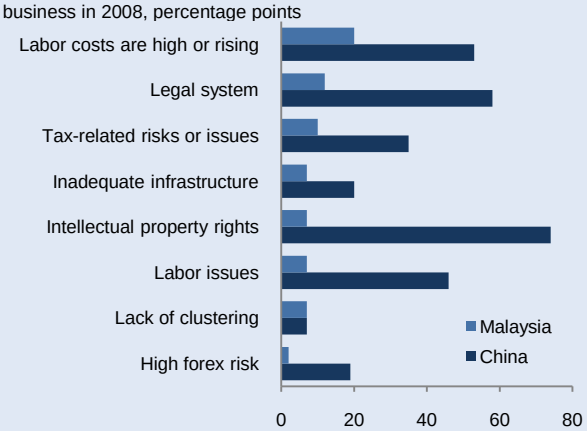
Figure 3.28. Japanese E&E firms maintain a large presence in Malaysia for production, but not R&D

Share of Japanese E&E firms with overseas bases in 2008 by function, percentage points

Source: Japan External Trade Organization (JETRO).
Note: Out of a total of 68 firms that had overseas bases. E&E refers to electrical and IT equipment and electronic parts and devices.

Figure 3.29. Malaysia compares favorably with China on doing business indicators

Share of Japanese E&E firms reporting item as risk or issue in doing business in 2008, percentage points



Source: Japan External Trade Organization (JETRO).
Note: Out of a total of 74 firms in China and 41 in Malaysia. E&E refers to electrical and IT equipment and electronic parts and devices.

Table 3.13. Labor costs are a concern especially in China, Singapore and Malaysia

Share of Japanese E&E firms reporting item in selected country as risk or issue in doing business in 2008, percentage points

China		Singapore		Vietnam		Malaysia	
Intellectual property rights	74	**High or rising labor costs**	**43**	Inadequate infrastructure	63	**High or rising labor costs**	**20**
Legal system or operation	58	High forex risk	5	Legal system or operation	40	Legal system or operation	12
High or rising labor costs	**53**	Lack of clustering	2	Lack of clustering	35	Tax-related risks or issues	10
Labor issues	46	Inadequate infrastructure	2	**High or rising labor costs**	**28**	Lack of clustering	7
Tax-related risks or issues	35	Tax-related risks or issues	2	Labor issues	20	Labor issues	7
Inadequate infrastructure	20	Intellectual property rights	2	Tax-related risks or issues	18	Intellectual property rights	7
High forex risk	19	Labor issues	0	High forex risk	15	Inadequate infrastructure	7
Lack of clustering	7	Legal system or operation	0	Intellectual property rights	13	High forex risk	2
Respondents (number)	74		44		40		41

Thailand		India		Philippines		Indonesia	
High or rising labor costs	**17**	Inadequate infrastructure	63	Inadequate infrastructure	45	Inadequate infrastructure	36
High forex risk	13	Legal system or operation	40	Lack of clustering	26	Legal system or operation	36
Legal system or operation	13	Tax-related risks or issues	31	Legal system or operation	26	Labor issues	27
Inadequate infrastructure	12	Labor issues	29	Tax-related risks or issues	16	Tax-related risks or issues	24
Labor issues	12	Intellectual property rights	26	Intellectual property rights	13	High forex risk	21
Lack of clustering	12	Lack of clustering	17	Labor issues	10	Lack of clustering	9
Tax-related risks or issues	10	High forex risk	11	**High or rising labor costs**	**6**	Intellectual property rights	9
Intellectual property rights	6	**High or rising labor costs**	**9**	High forex risk	3	**High or rising labor costs**	**6**
Respondents (number)	52		35		31		33

Source: Japan External Trade Organization (JETRO).
Note: E&E refers to electrical and IT equipment and electronic parts and devices.

Market Size Has Been the Key Driver of Foreign Direct Investment

As is evident from Figure 3.29, the appeal of market size seems to dominate any concerns about the business climate. Examining the concerns of Japanese firms about the business environment, Malaysia does better than China on all dimensions. The size of China's market has been a key factor of appeal, compared to the relatively saturated Malaysian market—as is also evident in the regionalization strategies of Malaysian firms. Labor costs rank as a top concern in Malaysia, but this must be seen in perspective. As Table 3.13 suggests, labor costs are of a concern in China, Singapore and Vietnam, whereas they are much less relevant in India, the Philippines and Indonesia.

The Map of Regional Production Networking Continues to be Redrawn

Table 3.14 indicates a number of interesting patterns about the future intentions of Japanese E&E firms. The continued attractiveness of China as a destination for sales, manufacturing (from low to high-tech), R&D and regional HQ is apparent. Sales expansion is anticipated especially for the BRIC countries, Europe and US. Interest to expand lower-tech goods is registered for China, Vietnam and Thailand; for higher-tech goods, interest is primarily in China. Interest to locate primary research functions outside of Japan is limited—and where this does take place, the likely recipients will be the advanced economies of Europe and US. Only few countries are likely to benefit from R&D for new product development and localization. The rise of China here is notable again. China and Singapore are likely destinations for new regional HQ establishments, whereas China and Hong Kong, China, are likely candidates for new distribution activities.

The implications for Malaysia are twofold. First, Malaysia can take advantage of emerging opportunities by plugging itself into the changing configurations of regional production networks and leveraging on market growth in China and elsewhere. Second, while the data indicates that the prospects for R&D expansion in new product development, the relative shift in R&D investment towards China will necessitate other countries, including Malaysia, to increasingly rely on home-grown efforts in acquiring technological capabilities and upgrading along the value chain.

Table 3.14. The Prospects for Business Expansion are Becoming Increasingly Focused on China

Share of firms planning business expansion in the next 3 years or so in selected country according to function relative to total of Japanese E&E firms planning expansion in 2008 (percentage points)

Sales operation		Production (Mid to low-end products)		Production (High-end products)		R&D (Primary research)	
China	49	China	37	China	14	United States	4
Western Europe	31	Thailand	18	Thailand	8	Western Europe	2
India	27	Vietnam	12	Vietnam	4	China	0
United States	24	**Malaysia**	6	United States	4	Hong Kong, China	0
Russia & CIS	20	Indonesia	6	CEE	4	Taiwan, China	0
Brazil	18	CEE	6	Republic of Korea	2	Republic of Korea	0
Vietnam	16	United States	4	**Malaysia**	2	Singapore	0
Thailand	14	Taiwan, China	2	Indonesia	2	Thailand	0
CEE	14	Mexico	2	Philippines	2	**Malaysia**	0
Middle East	12	Western Europe	2	India	2	Indonesia	0
Taiwan, China	8	Hong Kong, China	0	Western Europe	2	Philippines	0
Singapore	8	Republic of Korea	0	Hong Kong, China	0	Vietnam	0
Republic of Korea	6	Singapore	0	Taiwan, China	0	India	0
Indonesia	6	Philippines	0	Singapore	0	Canada	0
Hong Kong, China	2	India	0	Canada	0	Mexico	0
Malaysia	2	Canada	0	Mexico	0	Brazil	0
Canada	2	Brazil	0	Brazil	0	CEE	0
Philippines	0	Russia & CIS	0	Russia & CIS	0	Russia & CIS	0
Mexico	0	Middle East	0	Middle East	0	Middle East	0

R&D (New product development)		R&D (Localization)		Regional HQ		Distribution	
United States	8	China	16	Western Europe	12	China	6
China	4	United States	6	China	8	Hong Kong, China	6
Republic of Korea	2	Western Europe	4	Singapore	8	United States	6
Thailand	2	Thailand	2	United States	8	Western Europe	6
Malaysia	2	Indonesia	2	India	4	Thailand	4
Indonesia	2	Vietnam	2	**Malaysia**	2	Russia & CIS	4
India	2	India	2	Hong Kong, China	0	**Malaysia**	2
Western Europe	2	Mexico	2	Taiwan, China	0	CEE	2
Hong Kong, China	0	Middle East	2	Republic of Korea	0	Taiwan, China	0
Taiwan, China	0	Hong Kong, China	0	Thailand	0	Republic of Korea	0
Singapore	0	Taiwan, China	0	Indonesia	0	Singapore	0
Philippines	0	Republic of Korea	0	Philippines	0	Indonesia	0
Vietnam	0	Singapore	0	Vietnam	0	Philippines	0
Canada	0	**Malaysia**	0	Canada	0	Vietnam	0
Mexico	0	Philippines	0	Mexico	0	India	0
Brazil	0	Canada	0	Brazil	0	Canada	0
CEE	0	Brazil	0	CEE	0	Mexico	0
Russia & CIS	0	CEE	0	Russia & CIS	0	Brazil	0
Middle East	0	Russia & CIS	0	Middle East	0	Middle East	0

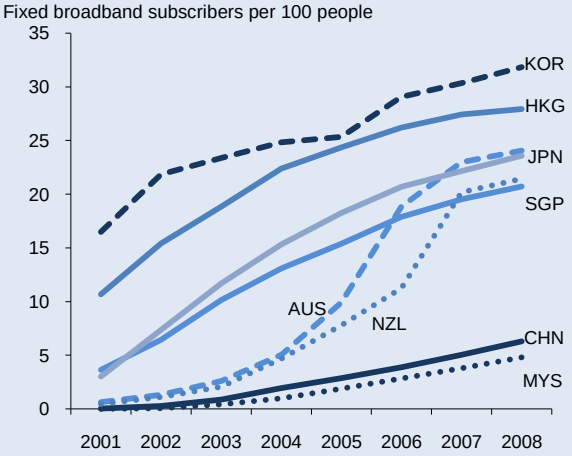
Source: Japan External Trade Organization (JETRO).
Note: In 2008 the total number of firms planning business expansion was 49. E&E refers to electrical and IT equipment and electronic parts and devices.

BOX 13. DEVELOPING BROADBAND: MALAYSIA'S AMBITIOUS REFORM AGENDA

Broadband internet has become increasingly important in everyday life and has transformed how the world is doing business. Worldwide, fixed-line broadband subscribers have been increasing at the average rate of approximately 40 percent annually (2001-2007 data). By the end of 2009, there were about 1 billion broadband subscribers worldwide for both wired and wireless, and the number continues to grow, particularly for wireless.

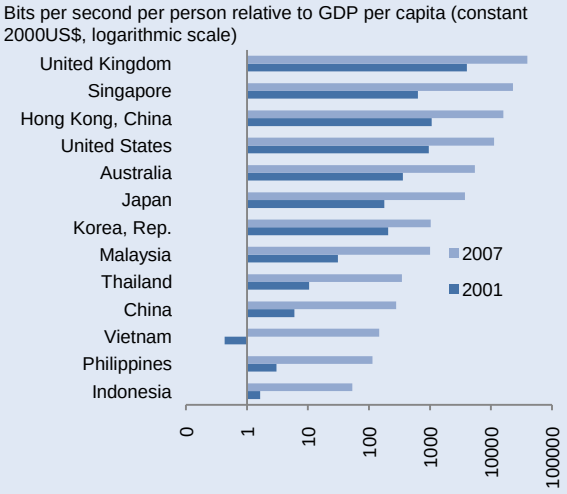
Broadband internet is also important for economic growth. Among many studies, a World Bank study found out that in low- and middle-income countries, every 10 percent increase in broadband penetration is associated with an increase in economic growth by 1.38 percent (Qiang, 2009). McKinsey & Company estimates that a 10 percent increase in broadband household penetration can boost GDP by a range of 0.1 percent to 1.4 percent. The direct impacts include actual investment plus multiplier effects through upstream and downstream businesses, whereas the indirect impacts can come through foreign direct investments, productivity increases, and human capital improvement (McKinsey & Company, 2009).

Figure 3.30. Fixed broadband subscribers are rising from a low base



Source: WDI, World Bank.

Figure 3.31. Malaysia's international bandwidth is low



Source: WDI, World Bank.

Malaysia's broadband infrastructure is more advanced than many of its regional neighbors but lags that of higher-income economies in the region and OECD economies. Malaysia's percentage of fixed broadband subscribers was around 4.8 percent in 2007 (Figure 3.30). This is about the same level observed in the other Southeast Asian economies of Vietnam, the Philippines and Thailand (not shown in the Figure), but is much lower than the region's high-income economies. The household penetration rate improved significantly from 1 percent in 2004 to 31.7 percent in 2009, where access occurs mostly through fixed broadband. From the supply perspective, the ratio of international internet bandwidth (bits per second per person—which impacts the speed and price of Internet access)—is quite far behind Japan, Hong Kong (China), and Singapore (Figure 3.31).

While broadband access and usage are on a positive upward trend, the challenge is to accelerate this. How can Malaysia achieve this challenge? It appears that the combination of regulatory incentives, investment stimulus through private-public partnerships and demand aggregation would be most appropriate.

On the regulatory side, the Malaysian Communications and Multimedia Commission (MCMC) has adopted pro-competition and pro-convergence regulations including, for example, technology and service-neutral licensing. However, fixed broadband provision is not yet competitive on the grounds of avoiding infrastructure duplication.

The government recognized supply constraints in the early 2000s. Under its National Broadband Plan (2004) and the subsequent MyICMS 886 (Malaysian Information, Communications and Multimedia Services) strategy, the government emphasized broadband infrastructure investment and demand aggregation measures. The intention was to connect enough communities to develop a critical mass that would make private investment attractive. The target of 75 percent household penetration by 2010 has however proven to be overly ambitious. Of course, many unexpected developments occurred such as the recent global economic and financial crisis. With the economy slowing down, the target has been revised to 50 percent household penetration rate in 2010.

Moreover, the government has since developed a more targeted approach for deploying broadband, in partnership with the private sector and based on demographic and geographic differences. The government has been partnering with the largest fixed line and fixed broadband service provider, Telekom Malaysia Bhd (TM), in rolling out RM 11.3 billion high speed (fixed) broadband (HSBB) infrastructure over the next 10 years. This would cover more than 1.3 million premises in priority economic areas or major urban, industrial and commercial centers (referred to as Zone 1). Semi-urban areas and more rural areas are being addressed under the original MyCSM 886 or Broadband for the General Population (BBGP) initiative (fixed and wireless). Under this scheme, wireless broadband infrastructure is spread out to four main cellular service providers. For example, there are over 466,500 subscriptions for third-generation high-speed downlink packet access (3G HSDPA) services with 183,800 accounted for by household subscriptions (MCMC, 2010). An additional RM 125 million has been allocated to a program that aims to bring telecentres to the very remote and largely poor areas.

The Government has also undertaken measures to stimulate demand for broadband including the multimedia supercorridor (MSC), plus Internet connections for government offices, schools, universities and healthcare facilities, and has considered fiscal incentives for increasing access to computers.

Looking ahead, the key regulatory challenge is to promote market growth through greater competition and to stimulate more affordable pricing and better service quality. Malaysia's telecommunications market is generally competitive, though there are limitations on fixed broadband to limit "duplication". While open access to such infrastructure may be regulated, the limitation may need to be revisited. The average price for a 1 Mbps subscription in Malaysia is currently RM80 or about US$ 23.50. The comparison with South Korea at US$ 0.45 per Mbps with a maximum available speed of 46 Mbps or with Singapore at US$ 19.95 for 3 Mbps suggests that opportunities to enhance quality and reduce prices do still exist.

The pursuit of public-private partnerships can be a useful avenue to promote broadband development. Collaborative approaches between the public and private sectors to promote and later universalize broadband services contribute to the success stories in various countries, including South Korea. By facilitating different modes of competition, through facilities, service, or intermodal (i.e. DSL, cable modem, and wireless 3G), the aim is to create a level playing field and competitive market that ensures fast, private-led growth. However, it is crucial that the modality of public-private partnership allocates appropriate risks, responsibilities, and returns that ensure fair competition, where an indication of success is the improved unit price to consumers in relation to the cost to the public sector.

With respect to demand-side policies, more demand stimulation will be needed, including through further development of applications/content value-added services to attract users. In the face of demand uncertainty, private investors may however be reluctant to move forward. Cognizant of this challenge, the government has focused demand-side policy on (1) creating public awareness of benefits and availability of broadband, (2) promoting e-commerce, e-learning, and provide key public services online, and (3) providing incentives to improve affordability. These efforts will need to intensify. Faster roll-out of value-added applications, and government services, and ICT in education programs—accessible via fixed or mobile broadband access devices—would likely create an additional demand pull for high-speed Internet access.

In sum, international experience suggests broadband matters for growth. But, Malaysia still has a distance to go to reach the levels of provision and penetration of higher income economies. The ambitious policies have been put in place with impressive progress. But even so, challenges remain for Malaysia in driving broadband development toward the next level.

Improving Access to Finance for Innovation

Responsive financial markets and institutions are yet another foundation of innovation. Finance for innovation requires a strong financial services sector with a supportive banking system and a venture capital market for early stages and expansion financing.[34] The availability of equity risk capital through venture capital markets assists emerging technology-based firms and contributes to the development of radical innovation.[35] Venture capital is more than just providing money. It can transfer a range of skills and knowledge, for example, relating to processes, markets, and management for example, through the involvement of venture capital companies via directorships on boards and active engagement with management. Moreover, a well-developed domestic and international financial sector more generally provides greater risk-sharing capacity for firms and households, across sectors and regions. This facilitates greater specialization, allowing the development of niches and clusters which, as discussed below, can amplify the impact of innovation.

[34] Early-stage venture capital consists of seed capital for developing initial concept and start-up financing for product development and initial marketing. Expansion venture capital funds the growth of firms to develop production capacity and build market share.

[35] Kenney (2008).

The World Bank's Doing Business indicators rank Malaysia top of the world on the ease of getting credit based on institutional features (Table 3.15). This is supported by a generally adequate availability of credit through Malaysia's banking system, a good performance on legal rights and depth of credit information indicators, and a good coverage through public registries and private bureaus. In addition, Government has played an integral role in providing the necessary funding for innovation through grants.[36] Finally, some 88 percent of total SME financing in Malaysia is sourced from banks and the loan approvals rate stood at a high level of 82 percent as of January 2010.

Table 3.15. Malaysia ranks top of the world on ease of getting credit

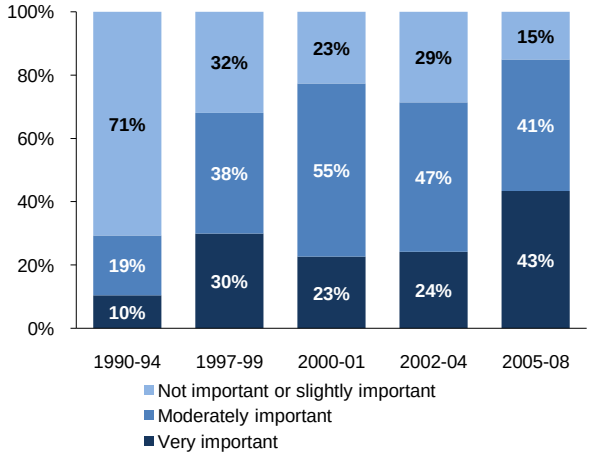
Ease of getting credit rank and sub-indicators

	Rank	Strength of legal rights index (0-10)	Depth of credit information index (0-6)	Public registry coverage (% of adults)	Private bureau coverage (% of adults)
Malaysia	1	10	6	48	82
Hong Kong, China	4	10	4	0	72
New Zealand	4	9	5	0	100
Singapore	4	10	4	0	40
Japan	15	7	6	0	76
Korea	15	7	6	0	94
China	61	6	4	62	0
Taiwan, China	71	4	5	0	63
Thailand	71	4	5	0	33
Indonesia	113	3	4	22	0

Source: World Bank (2010a).

Figure 3.32. Yet, a lack of finance appears to be constraining innovation

Share of firms considering 'lack of appropriate source of finance' as factor hampering innovation activities, according to importance



Source: MASTIC (2006); Lee and Lee (2006); and EPU.

Table 3.16. Private-sector driven sources of venture capital have risen from a low base

Amount in US$ million

	2003	2006
Government agencies	300	366
Corporations	114	338
Foreign investors	6	68
Banks	97	66
Individuals	35	45
Insurance	1	10
Pension and provident funds	1	7
Total	553	899

Source: Economic Planning Unit; Yusuf and Nabeshima (2009).

Table 3.17. Venture capital deal flow is highly dispersed over several sectors

Cumulative number of firms receiving investment by sector

	1990	1995	2000	2007
Medical	0	1	5	9
IT internet	0	0	14	26
IT non-internet	0	0	7	39
Nontechnology	1	5	26	44
Total	1	6	52	118

Source: Lyons and Kenney (2007).

[36] The Malaysian Government provides through ministries and agencies a number of grants and funds to promote research and scientific activities, and to support the National Innovation Model. Under the Ninth Malaysia Plan a total of about RM3 billion was provided for the purposed through the Ministry of Science, Technology and Innovaton (MOSTI). The government also provides RM1.4 billion to various government-linked venture companies to promote and part-finance innovation, technology acquisition and commercialization of R&D findings. All of these incentives are also available to SMEs.

Despite these positive indicators and programs, the results from Malaysia's National Innovation Surveys suggest that firms with innovative ideas continue to find it difficult to finance the activities required to translate these ideas into outcomes (Figure 3.32). Whereas in the early 1990s some 29 percent of firms considered access to finance as 'moderately or very important', this figure rose to 84 percent in recent years. The share of innovating firms that considered the financing constraint 'very important' has increased significantly to 43 percent in recent years.

The difficulties of obtaining finance seem to apply especially to smaller firms.[37] Data from the latest national innovation survey (2005-2008) suggest that some 40 percent of small- and medium-sized firms consider access to finance a 'very important' constraint hampering innovation activities, as opposed to 30 percent of large firms. This finding thus suggests that even though from an institutional perspective the ease of getting credit in Malaysia is world-class, select groups of smaller firms seem to be falling through the cracks. Government policies that assist small firms unleash their innovation potential could in this context contribute significantly to economy-wide productivity growth.

In addition to banking finance, the availability of venture capital funds is also important. On this front, Malaysia has seen a steady increase in recent years in the volume of venture capital and increasingly from private sources, which is a welcome development (Table 3.16). But while the volume of venture capital appears to have increased, the number of deals has not. They peaked in 2000 with 20 venture capital deals and have afterwards declined.[38] The cumulative deal flow between 1990 and 2007 is also strongly dispersed (Table 3.17). This diffuse approach also suggests that deal flow is weak.

The economics of venture capital are characterized by high risk and high returns. Investing in young firms is risky with many of them failing and becoming total losses. The compensation for the failures comes from investments that yield 10, 20, or even 100 times the initial capital invested by the venture capitalists. This asymmetric return profile means that venture capitalists only invest in firms offering the opportunity for extremely large returns. But for venture capitalists to be able to realize these returns, they need to be able to liquidate the holdings and exit the investment with ease. In environments where exit (either locally or internationally) is impossible, venture capitalists cannot invest.[39]

Initial public offerings and mergers & acquisitions are the two main indicators to assess the success of the venture capital industry of Malaysia (Figure 3.33). Yusuf and Nabeshima (2009) report that there are only few firms which venture capitalist have successfully exited from as well as a lack of mergers. The evolution of new listings on the Malaysian stock market seems to have declined as well in recent years. These outcomes suggest that Malaysia is still at an early stage of venture capital development.

Whether this has up to now posed a constraint to Malaysia's innovation performance is not clear given that the limited innovativeness of Malaysian firms has also reduced the demand for such financing mechanisms. Also, in historical terms, technology clusters have not been sparked by pools of venture capital per se, but rather by technology-based entrepreneurship that provided a persistent flow of investment opportunities. It thus appears that the more important priority therefore is to invest in creating capable technical entrepreneurs and improving the environment for entrepreneurship.

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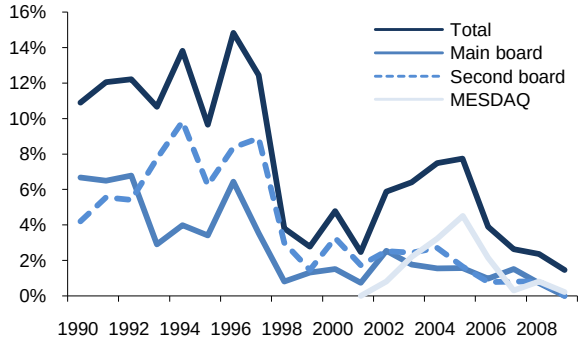
[37] Lee and Lee (2006).
[38] Lyons and Kenney (2007).
[39] Lyons and Kenney (2007).

Figure 3.33. New listings on the stock market have slowed

Share of new listings each year to total listings



Source: CEIC.

Promoting the Driving Force of Innovation: Competition

Competition is a fundamental driver of innovation.[40] Increased competition—by freeing the markets from barriers to entry and other regulations—helps exert downward pressure on costs, reduce slack and corporate governance problems, and provide incentives for efficient organization of production. Increased competition for scarce resources will facilitate the process of moving up the value chain and put pressure on firms to be constantly on the look-out for productivity enhancements. Competition policies that level the playing field will help facilitate the entry of new firms—often the source of more radical product innovations than incumbent firms.

- As a cautionary note, however, it is useful to point out that greater competition *does not automatically* lead to more innovation. Preconditions need to be satisfied in that firms need to be first enabled to innovate—and this is where the earlier discussion on talent, technology, and finance comes in. If greater competition is introduced without having these fundamentals in place, innovation activity may well decrease instead of increase—as some firms may be discouraged by the prospect of entry by superior competitors.[41]

- For competition to effectively spur innovation, both the *downside and upside risks* to households and firms need to be managed. Elementary risk mitigation and coping mechanisms need to be in place to protect individuals—though not necessarily firms—from the downside risk of failure. Similarly, the upside benefits of innovation need to be protected temporarily with appropriate patent policies so innovators find it worthwhile to make costly upfront investments in innovation.

[40] Ex-ante competition or contestability is of particular importance. Somewhat paradoxically, more competitive markets are more likely to be more concentrated, as eventually only the most innovative survive. Concentration is not necessarily a sign of lack of competition. What matters more is that markets are contestable (Howitt, 2009).

[41] Aghion, Harris and Howitt (2001).

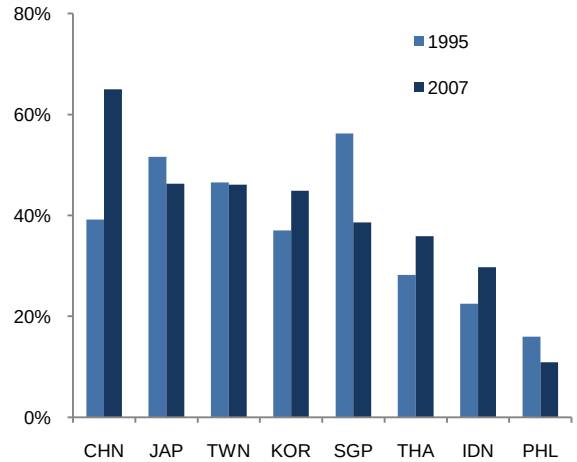
Leveling the Playing Field

The Competitive Landscape in Malaysia is Uneven

Malaysia with its large export-oriented manufacturing sector has certainly acknowledged the value of product market competition. The MNC-led manufacturing sector is exposed to fierce competition in international markets. What is more, it appears that competition in products where Malaysia has developed comparative strengths is intensifying. The share of overlapping trade values between Malaysia and China is rising very rapidly, creating greater competitive pressure for market share (Figure 3.34).[42]

Figure 3.34. External competition is rising with China

Overlapping trade value share between Malaysia and selected countries, percent



Source: UN Comtrade; Yusuf and Nabeshima (2009).
Note: PHL data is for 1996; TWN data is for 1997.

Table 3.18. Internal competition rankings middle those of the region

Rank based on executive survey

	Rank
US	4
Taiwan, China	5
Hong Kong, China	7
Japan	9
UK	10
India	11
Australia	18
China	27
Singapore	30
Malaysia	31
Indonesia	44
Thailand	45
Korea	49
New Zealand	58

Source World Economic Forum (2009c).

Yet, competition within Malaysia's economy is uneven. While the MNC-led manufacturing sector may be exposed to ferocious external competition, the competitive pressures arising in other parts of the economy are weak either due to the presence of public corporations and private monopolies or simply because the goods and services are not tradable.

Malaysia's organization of industry and structure of ownership may have limited the contestability of markets. Major conglomerates and government-linked corporations crowd the economic landscape. The turnover in the list of leading firms is low and there are few additions to the ranks of the largest business entities.[43] In spite of recent liberalization measures, the services sector remains highly protected. Malaysia remains the third-highest in the number of regulations it needs to revise to meet ASEAN's service sector liberalization requirements. These findings point to limited dynamism in the business environment.

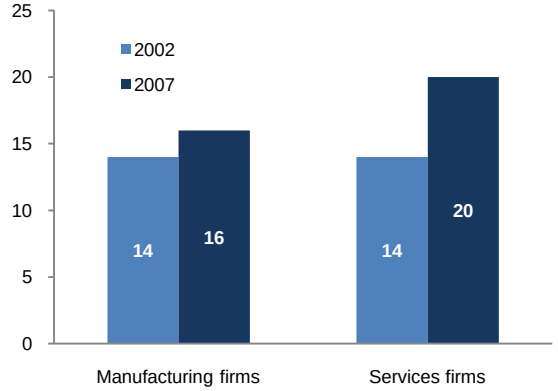
[42] The overlapping trade value for a commodity exported by two countries is the minimum of the export values of the commodity by both countries. The pairwise overlapping trade share is the sum of value for all overlapping commodities expressed as a proportion of the total trade value of exports by a country.

[43] Yusuf and Nabeshima (2009).

World Bank surveys of Malaysian firms suggest that anti-competitive practices in the services sector were considered of major—and rising—concern (Figure 3.35).[44] Based on information available in 2007, some 20 percent of services firms sampled considered anti-competitive practices as a 'severe or very severe' investment climate obstacle. This represents a 6.3 percent increase compared to the previous investment climate assessment in 2002. With this, the concern about anti-competitiveness practices ranks among the top-three areas of rising concern.

Figure 3.35. Firms became increasingly concerned about anti-competitive practices

Share of firms indicating 'anti-competitive practices' as 'severe' of 'very severe' problem, 2002-2007, percentage points



Source: World Bank (2005 and 2009c).

Increased Competition Could Produce Large Growth Dividends

Leveling the playing field by fostering greater openness and competition could produce large growth dividends. Greater competition would lift the productive efficiency of domestic producers and induce them to innovate and develop better products. These benefits could be especially large to the services sector.

- Raising competition by removing foreign equity investment constraints could raise services productivity by as much as 40 percent (Table 3.19). This would help reverse the dramatic slowdown observed in services productivity after the Asian financial crisis (Figure 3.4).

- A better services sector will also benefit other sectors. The current lack of business support services is considered a major investment climate obstacle (Figure 3.36 and Figure 3.37).

- A more dynamic services sector will also allow Malaysia to insert itself into tradable services—a rapidly growing dimension of global trade.

[44] World Bank (2009c).

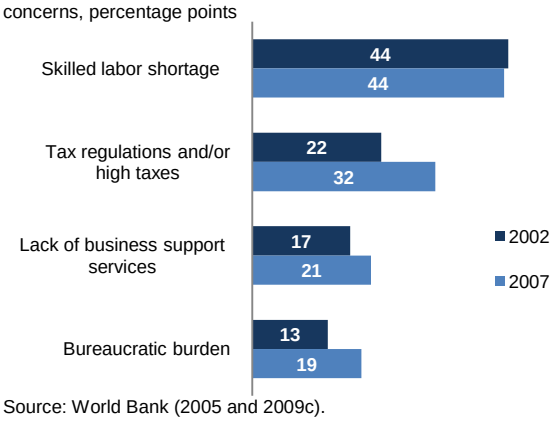
Table 3.19. Boosting foreign equity ownership can be a strong driver of productivity growth

Dependent variable: log of sales per worker	(1)	(2)
Constant	5.32***	5.56***
Log of assets value per worker	0.57***	0.56***
Foreign equity more than 30 percent	0.41**	0.42**
Age	-0.01*	-0.01**
Log of average years of education per worker	-0.13	-0.08
Share of sales for exports	0.24	0.17
Training	0.14	0.16
Industry fixed effects	no	yes
Region fixed effects	no	yes
Year fixed effects	yes	yes
Number of observations	1408	1408
Number of firms	377	377

Source: World Bank (2009c).
Note: *, **, and *** denote significance at the 90 percent, 95 percent and 99 percent confidence levels respectively

Figure 3.36. Manufacturing firms are increasingly concerned about a lack of business support services

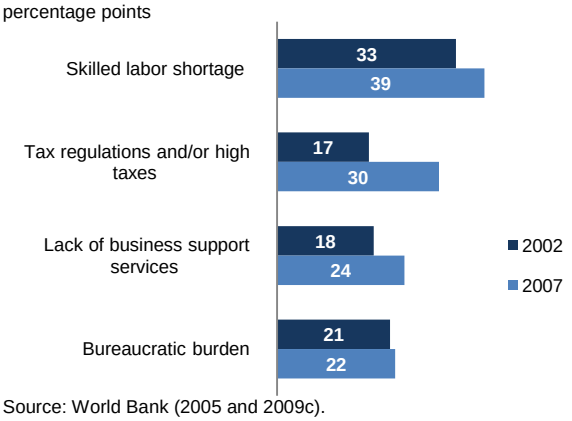
Share of manufacturing firms indicating problem as one of top three concerns, percentage points



Source: World Bank (2005 and 2009c).

Figure 3.37. … and this is even more so for services firms themselves

Share of services firms indicating problem as one of top three concerns, percentage points



Source: World Bank (2005 and 2009c).

Malaysia's Competition Policy is Being Revamped

Malaysia's Parliament is currently considering a Competition Bill and a Competition Commission Bill. If enacted and well enforced, the competition law would provide ammunition against anti-competitive practices and contribute to leveling the uneven playing field. The proposed legislation is discussed in further detail in Box 14.

While the enactment of a competition law would be an important step forward, it may not be sufficient to improve competition unless other policy reforms are introduced as well. Competition policy goes beyond anti-trust and also encompasses the openness of trade policies, investment policies, and regulatory frameworks that govern and circumscribe the environment within which private actors can compete.

Liberalization measures that allow for freer market entry play a role here, but so do deregulation measures that remove government restrictions on economic activity. This will require a rethinking of the role of government-linked companies, which is significant in the Malaysian economy. To the extent that such companies compete with the private sector, it is beneficial to ensure that they are subject to the same competition framework. Rebalancing the role of government-linked corporations in Malaysia's economy would also give breathing space for the private economy to develop.

Facilitating the Fluid Entry and Exit of Firms

A key ingredient for greater competition is the entry and exit of firms. When markets function well, new entry can spur the incumbents to incrementally innovate. New entrants are also more commonly a source of radical innovation. Barriers to entry and exit constrain the innovation process, the costs of which may not be immediately visible but slowly accrue over time through a gradual deterioration of relative market share. The accumulated costs of keeping nonviable and unproductive firms artificially afloat may well exceed the benefits that would arise from introducing a new technology. For the economy as a whole, this is clearly a no-win situation.

Table 3.20. Malaysia ranks low on the doing business indicators for business start-ups

	Rank	Procedures (number)	Time (days)	Cost (% of income per capita)	Min. capital (% of income per capita)
New Zealand	1	1	1	0.4	0
Australia	3	2	2	0.8	0
Singapore	4	3	3	0.7	0
Hong Kong, China	18	3	6	1.8	0
Taiwan, China	29	6	23	3.9	0
Korea	53	8	14	14.7	0
Thailand	55	7	32	6.3	0
Malaysia	88	9	11	11.9	0
Japan	91	8	23	7.5	0
China	151	14	37	4.9	130.9
Indonesia	161	9	60	26	59.7
India	169	13	30	66.1	210.9

Source: World Bank (2010a).

Table 3.21. Closing a business is also burdensome in Malaysia

	Rank	Recovery rate (cents on the dollar)	Time (years)	Cost (% of estate)
Japan	1	92.5	0.6	4
Singapore	2	91.3	0.8	1
Taiwan, China	11	80.9	1.9	4
Korea	12	80.5	1.5	4
Hong Kong, China	13	79.8	1.1	9
Australia	14	78.8	1	8
New Zealand	17	76.2	1.3	4
Thailand	48	42.4	2.7	36
Malaysia	57	38.6	2.3	15
China	65	35.3	1.7	22
India	138	15.1	7	9
Indonesia	142	13.7	5.5	18

Source: World Bank (2010a).

More can be done in Malaysia to reduce entry costs for new firms—and indeed efforts are under way to reduce such costs. The World Bank's Doing Business indicators shown in Table 3.20 suggest that Malaysia has a relatively high regulatory burden of starting a business. Business start-ups can be encouraged by reducing the number of procedures and the time taken to implement them, cutting the minimum capital requirement, introducing a one-stop shop, standardizing incorporation documents, cutting formalities and allowing for online start-up.

Similarly, nonviable and unproductive firms must be allowed and facilitated to fail (Table 3.21). The Doing Business indicators for Malaysia suggest that it is relatively costly, cumbersome and time-consuming to close a business in Malaysia. Reforms in this area are important not only in improving recovery rates for residual shareholders, but also in promoting new business start-ups and encouraging the reallocation of labor and capital resources to their most productive uses.

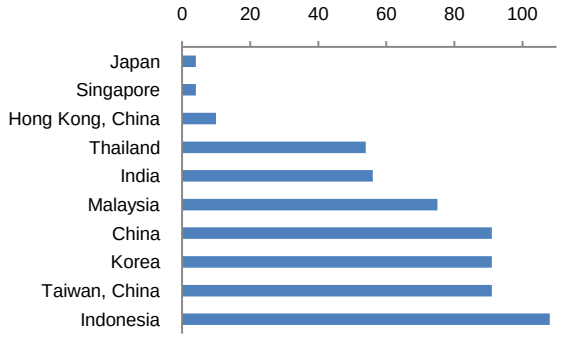
Supporting Labor Market Flexibility

Greater competition in product markets will not yield its full potential without the cooperation of labor and capital markets. Labor and capital need to be able to flexibly respond to and support the never-ending process of economic restructuring.[45] To this end, factor markets need to work well and a better functioning of these markets is also a function of their exposure to competition.

The competition for labor occurs both inside firms and between them. Internal labor markets benefit from the introduction of supportive workplace practices that reward good performance and improve worker motivation. External labor markets benefit from the flexibility to expand and shrink headcount and also from the responsiveness of wages to performance and economic conditions. This helps ensure that human resources are efficiently allocated across firms and industries. It also helps provide the right price signals for human capital decisions on education and training.

Figure 3.38. Making staff redundant is costly in Malaysia

Redundancy costs, weeks of salary



Source: World Bank (2010a).

Table 3.22. Malaysia ranks in the middle on the enforcement of intellectual property rights

	Ranking
Singapore	2
Australia	10
New Zealand	13
Japan	14
US	18
Hong Kong, China	21
UK	22
Korea	26
Taiwan, China	28
Malaysia	33
China	53
Thailand	55
India	57
Indonesia	102

Source: World Economic Forum (2009c).

While these recommendations may appear conventional, they are nevertheless important. Of particular concern are the restrictive firing practices in Malaysia. A worker with 20 years of employment in a medium-sized business is entitled to a severance payment of 75 weeks—compared to just 4 weeks in Singapore and 10 weeks in Hong Kong, China (Figure 3.38).

Managing the Side Effects of Greater Competition

Managing the cost of failure for individuals will be an important challenge to be met if greater competition is introduced. Adequate social protection mechanisms for workers in this regard will be helpful. The current practice of requiring firms to pay large severance payments is a policy that protects the jobs and not the workers. In higher-income countries, public unemployment insurance schemes typically provide protection to workers. Such schemes transfer the burden of social protection from firms to the government, making firms more competitive and making it easier for them to fail if the need arises.

[45] Capital markets were discussed earlier in the context of financing for innovation.

Entrepreneurs need to receive some form of protection as well. Innovation intrinsically involves a high dose of experimentation and risk taking. It is inevitable that some, if not many, attempts will fail. If the cost of failure is however punitive, this will reduce the incentive of entrepreneurs to undertake innovation activities. Reducing the stigma of failure is also key to promoting innovation, as a stigma of failure may lead entrepreneurs to shy away from inherently risky activities—which may produce large risk-adjusted returns from a social point of view. Entrepreneurs who fail must be given the opportunity to restart. Bankruptcy laws need to be supportive of innovative ventures that involve an element of high risk.

Greater competition may dilute innovation's rewards. To encourage innovation, a certain level of profitability must be achieved so firms can recover the large sunk costs from upfront investment. This is where patent policy and the enforcement of intellectual property rights comes in, with the objective of providing firms with at least temporary ex post monopoly power for their innovations (Table 3.22).

In addition to the need to manage the cost of individual failure, the benefits of innovation success must also be protected. Patent policy can play an important role that is complementary to competition policy. Anti-trust works better when patent policies are relatively lax. [46] This is because the ex-post concentration that may result from fierce competition could result in satisfied leaders with no incentive to innovate and discourage laggards that have given up. Allowing patents to lapse earlier or be broken more easily creates beneficial conditions for the lagging firms to make a come-back eventually.

Another way for firms to recoup the costs from sunk investment while accepting greater competition is to ensure they have access to a sizeable market. This will allow firms to sell new products on a larger scale and exploit economies of scale, increasing hereby the expected profits and therefore rate of innovation. To the extent that the domestic market is saturated, trade policies can work towards enlarging the market available to domestic firms. Trade promotion, regional trade integration and bilateral trade arrangements may all be helpful in this respect.

[46] Aghion, Harris and Howitt (2001).

*GUEST CONTRIBUTION BY CASSEY LEE**

BOX 14. WHITHER MALAYSIA'S COMPETITION POLICY?

Malaysia's development policies in the past thirty years can be characterized by several key elements: export-oriented industrialization, poverty eradication and wealth redistribution. One consequence of these policies has been the relative neglect of competition policy as a potentially important ingredient of the national development strategy. As a result, the policy emphasis has been on 'national competitiveness' rather than competition in domestic markets. This state of affairs is also manifested in the delay in implementing a national competition policy in the form of a broad, comprehensive and consistent framework that guides policy making with the objective of promoting competition within the various sectors in the economy.

Indicators of Concentration Differ Widely Across Industries

Firm concentration—an imperfect proxy for product market competition—varies widely across industries. Consider first the manufacturing sector—accounting for close to 30 percent of GDP and about 80 percent of exports. The sector is highly dualistic and comprises both export-oriented industries (e.g. electrical and electronics) and domestic-oriented ones (e.g. food and beverage). Within both of these groups, the degree of producer concentration is relatively high for a number of industries (Table 3.23). The concentration in export-oriented industries poses less of a concern, since a significant proportion of output is exported abroad (Table 3.24). In contrast, high concentration levels in domestic-oriented industries are of concern especially if import penetration ratios are low (as in the soft drinks industry).

Similarly, in the services sector, producer concentration also remains relatively high in a number of industries. Privatization followed by selective liberalization has certainly promoted competition in a number of industries, such as mobile telephony. However, market competition appears to be constrained in industries such as pay satellite TV and independent power production. Producer concentration in some sectors has also increased as a result of mergers whether induced by government (e.g. commercial banking) or by market players themselves (mobile telephony).

Malaysia Has Yet to Develop a National Competition Policy

A national competition policy can be construed as a broad, comprehensive and consistent framework for policy making with the objective of promoting competition within the various sectors in an economy. Such a policy would include legislations that are aimed at promoting competition such as competition (antitrust) laws as well as regulations aimed at promoting competitive market structure and behavior. In countries with competition policies, the government should ideally ensure that most, if not all, of its economic policies are consistent with the principles of promoting competition. This would include liberalization and deregulation of the domestic and export-oriented sectors.

* School of Economics, University of Wollongong. This Box is based on Lee (2010).

Table 3.23. Concentration indices for 52 manufacturing industries

Industry	Four-firm concentration ratio 2003-04	Herfindahl index 2003-04	Industry	Four-firm concentration ratio 2003-04	Herfindahl index 2003-04
Manufacturing, means of 52 industries	46	12	Footwear	43	6
Optical & photographic machinery	91	36	Radio & TV receivers, recorders	41	6
Tobacco	91	27	Basic nonferrous metals	41	7
Watches & clocks	87	27	Other electrical equipment	40	6
Radio & TV transmitters, telephony	84	21	Basic iron & steel	36	5
Aircraft, other transport machinery	80	56	Metals' casting	35	5
Glass	79	27	Electronic components	34	4
Electric lamps & lighting machinery	79	32	Apparel except furs	28	4
Other domestic appliances	76	17	Basic chemicals	26	3
Textiles' spinning, weaving, finishing	73	24	Insulated wire & cable	26	3
Bicycles & wheelchairs	71	9	Other textiles	26	3
Ships & boats	68	13	Motor vehicle parts	23	3
Leather	68	15	Structural metal products, etc.	23	2
Dairy	67	13	Special purpose machinery	22	2
Office & computing machinery	66	18	Grain mill, starch, feeds	22	2
Motorcycles	65	5	Other food	20	2
Beverages	65	13	Paper	19	2
Accumulators, primary cells & batteries	63	13	Printing & recorded media	19	58
Medical machinery, etc.	59	12	Other fabricated metals, etc.	18	2
Refined petroleum	57	12	Plastics	17	1
Electricity distribution machinery	54	14	Meat, fish, fruits, vegetables, etc	17	1
Publishing	50	8	Other wood	12	1
General purpose machinery	50	9	Rubber	12	1
Electrical motors, generators, etc.	49	10	Furniture	11	1
Knitted & crocheted fabrics, etc.	48	10	Wood sawmilling & planning	10	1

Source: Ramstetter and Sharazat (2009).

Table 3.24. Import penetration in selected manufacturing industries

Percentage points

Industry	Production Exported	Import Penetration Overall	Import Penetration Intermediate	Import Penetration Final
Dairy products	18	45	44	46
Soft drinks	13	2	1	2
Tobacco	38	26	0	27
Knitted fabrics	38	34	36	32
Wearing apparel	59	15	12	16
Leather	86	93	86	99
Footwear	74	66	43	79
China, glass and pottery	37	40	41	31
Radio, TV and comm equipment	92	91	90	103
Electrical appliances and houseware	39	28	6	57
Household Machinery	95	81	79	87
Ship and boats	10	35	33	38
Motor vehicles	10	37	41	35
Cycles and motorcycles	31	26	10	46
Instruments and clocks	88	91	81	95

Source: Lee (2010).
Note: Data are for 2000. Import Penetration is calculated based on the following formula:
Import Penetration = Imports / (Imports + Domestic Production Not Exported)

Malaysia currently does not have a de facto national competition policy. The Fair Trade Practices Policy was formally launched in 2005 to promote competition, amongst others, but has had little effect on policy making in a broader sense across the different economic sectors. Overall, most policies affecting competition are formulated and applied on a sectoral basis, which can create inconsistencies with the basic principles of competition policy. Take, for example, the telecommunications sector–where market liberalization in some markets was accompanied by the issuance of monopoly license and fixed price (e.g. in power purchasing agreement in the electricity sector) in other markets. Sector-based policies and legislations to promote competition—such as in the Communications and Multimedia Act (1988) and the Energy Commission Act (2001)—have had limited impact in promoting competition.

The Proposed Competition Bills Are a Step Forward, But More Needs to Be Done

The enactment of a competition law such as the proposed Competition Bill 2010 (CB 2010) and Competition Commission Bill 2010 (CCB 2010) is definitely a step in the right direction and will provide Malaysia an opportunity to address some of the above problems. The two Bills, if enacted and enforced carefully, represent one of the most significant legislations affecting the domestic trade sector since the Consumers Protection Act was passed in 1999.

The effectiveness of the competition legislation will, however, depend on a number of factors. These include the independence and capacity of the enforcement agency. Even though the Competition Commission, as proposed under the CCB 2010, is not a fully independent agency, the CB 2010 proposes good governance practices (e.g. public submissions and appeal tribunal). The fact that the bills highlight the promotion and protection of the process of competition as the singular objective is also a welcome development. As such, conflicts with other industrial policy-type goals have been avoided (such as the promotion of SMEs participation and socio-economic considerations). Even though the government-linked companies (GLCs) are not outright exempted from the CB 2010, there are provisions for individual exemptions which should be applied carefully. Unfortunately, both the telecommunications and energy sectors have been exempted.

Finally, to promote the degree of competition within and across all economic sectors, the reform agenda should not stop at competition policy. The broader policy framework focusing on the importance of promoting competition needs to be enhanced as well. Against this background, the prospects for further liberalization of the services sector need to be examined. For example, a more open and competitive public procurement system would be helpful. Finally, the government could reassess the role of GLCs in the economy and hasten the withdrawal of their roles in areas of overlap with private commercial activity.

Competition Policy Reform Holds the Key to Realizing Vision 2020

Competition policy is key for Malaysia to boost its future global competitiveness. This is because the promotion of competition in domestic markets both in the manufacturing and services sectors is crucial to enhance the efficient allocation of resources within the country. This will ensure the economy's long-term dynamism as well as provide a conducive environment for innovation and entrepreneurship to flourish. Only then will the country's vision of becoming an economically developed country be realized.

Amplifying the Impact of Innovation: Niches and Clusters

Focusing Efforts on Selected Niches

For Malaysia to join the league of high-income economies against the backdrop of an increasingly competitive external environment, it needs to specialize further on a limited number of products and services and deepen its comparative advantage in them. Blind diversification is often an expensive mistake and, by "trying to be good at everything, one may turn up being excellent at nothing".[47] Specialization is therefore in order and this is best achieved by focusing on a few growth niches where it is possible to achieve global excellence.

In articulating a strategy to specialize, one cannot declare a comparative advantage in a particular sector by decree. Identification of new niches for growth requires a bottom-up, iterative approach in close collaboration with the private sector, universities and research institutes. In identifying future areas of growth, it is essential to focus on business areas where there is a demonstrated ability to compete in a related area. That related area need not be in the same sector, but it should build within reach in terms of the existing set of capabilities.

With the launch of the blueprint of the New Economic Model (NEM) in March 2010, National Key Economic Activities were suggested, where Malaysia can develop and further deepen its comparative advantage.[48] Subject to further public consultation, the NEM has identified possible growth drivers in the electrical and electronics industry; palm oil-related downstream industries; high-end commercial agriculture; oil and gas industry; educational, medical and bio tourism services; green technology industries and services; integrated Islamic finance (banking, capital markets and insurance); biotechnology and life sciences; IT industry; creative industries (music, film, arts and culture).

The identification of new growth areas is not the same as the identification of public policy interventions to support such activities. The latter must be based on a detailed understanding of the obstacles to private sector development and the opportunities for public policy to coordinate activities (critical mass issues), compensate firms for market externalities (discovery and learning externalities), and to provide appropriate incentives, policies and infrastructure. [49]

Yet, once the new growth areas are identified and the rationale for public policy intervention is determined, it is important that the limited resources available are sharply focused on a few selected areas. Ideally, these would consist of a few high value-added sectors with strong global growth prospects and where Malaysia can develop global brands through innovation.[50]

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[47] Hidalgo, Klinger, Barabási and Haussmann (2007).

[48] National Economic Advisory Council of Malaysia (2010), and the Keynote Address at the Invest Malaysia 2010 conference by Prime Minister Najib on March 30, 2010.

[49] World Bank (2010b).

[50] This is in the spirit of the government's announcement to rationalize all research funds and grants and to establish a National Innovation Center.

Fostering Spatial Concentration in Clusters

Innovation thrives and spreads in spatially concentrated clusters of economic activity. Clusters facilitate the creation and diffusion of knowledge. Clustering allows firms to benefit from the availability of common resources (e.g. a workforce with particular skills and a common supplier base), facilitates better labor market matching, and helps with the sharing of knowledge. Clusters need not be made up of high-tech firms and are neither confined to manufacturing—clusters can also develop around a broad range of service industries.

Market forces however can produce less clustering than is socially desirable. The benefits of clustering spill over beyond the boundaries of the firm. Each firm in the cluster benefits from the presence of other firms in the cluster, but no individual firm takes these 'external' benefits into account when it makes its own location decisions. Firms in a cluster may also have common needs (e.g. for worker training or infrastructure) that they cannot meet on their own.

Table 3.25. While urbanization is high, the spatial density of economic activity is low

	Urban (%)	% in cities > 1 million	Urban Density Pers/ha	Job density Jobs/ha
Malaysia	67	6	58 (KL)	24 (KL)
China	40	18	123 (Beijing)	96 (Beijing)
Thailand	32	10	139 (Bangkok)	74 (Bangkok)
Indonesia	48	12	173 (Jakarta)	67 (Jakarta)
Korea	81	51	230 (Seoul)	109 (Seoul)
Philippines	63	14	206 (Manila)	92 (Manila)

Source: WDI, World Bank.

By concentrating skills and infrastructure and developing network linkages with other economic centers domestically, regionally and globally, Malaysia will be able to develop concentrations of economic activity within which reinvigorate the growth process through agglomeration benefits.

- When the market for inputs is broad, suppliers can reap internal, plant-level scale economies and reduce prices because of large volume production runs. Suppliers can also afford to customize products to meet the exact specifications of the firm.

- When many firms producing similar goods are in one location, the labor market deepens. Firms can more easily find specialized skills and training programs can be organized. Workers and employers face reduced risks of a mismatch between the skills on offer and those needed.

- Common locations permit the rapid diffusion of cutting-edge ideas in an industry. For businesses that compete in global markets, the ability to operate on the frontier of new products is critical. Learning and innovating are key strategies for survival. [51]

[51] World Bank (2010b).

As the World Bank's 2009 World Development Report has argued, to try and spread out economic activity is to discourage it.[52] Malaysia has thus far favored a spatially balanced approach to regional development—by spreading out activity with the objective of ensuring that all regions share in the growth process. Paradoxically, however, spatially unbalanced economic growth is more likely to achieve this objective, providing simultaneous efforts are made to ensure good connectivity between the leading and lagging regions. The challenge for Malaysia is to build density and allow unbalanced economic growth to take place (Table 3.25). By concentrating economic activity in selected clusters, density can build and the positive spillovers will benefit the rest of the country.

CONCLUSION

Continued success in the global market place requires an unrelenting commitment to innovation. In today's fast-paced globalized world, the innovation challenge is not a one-off challenge. Sustaining competitiveness on the basis of costs has become a risky proposition. New players have entered the game of low-cost high-volume production. The Malaysian economy needs to shift its comparative advantage from one based on relatively low costs to one based on high value and innovation.

Innovation is best facilitated, not orchestrated. This is because innovation is hard to manage in a systematic fashion. The process of innovation is neither linear nor formulaic and involves risk and randomness. Innovation is about the creation and use of novel forms of value, and is the outcome of a process of creativity coupled with entrepreneurship.

Innovation should not solely be the preserve of high-technology firms. Innovation can bring large benefits to large segments of the Malaysian economy. Moving up the value chain and competing on value rather than cost does not mean that Malaysia must cede entire industries to lower-wage countries. Even in low-tech industries, dominated by labor-intensive production, some firms will be able to carve out innovation-based product niches.

As productivity growth accelerates, companies will be able to produce at costs equal or below those of lower-wage countries. Enhancing productivity will require sustained process and organizational innovation, including the adoption of advanced technologies which cannot be easily replicated in lower-wage countries.

Energizing the sources of innovation requires policy intervention. Multiple market failures as well as imperfections in the enabling environment hold back Malaysia's innovation potential. The experience of countries around the world suggests that putting in place the right combination of policies can make a large difference in unleashing the innovation potential.

Growth through innovation requires targeted reforms in three dimensions. The first relates to capabilities, where talent, technology and finance need to be fully supportive to enable firms to innovate. The second is competition which is the driving force of innovation, and here competition policy, market flexibility, and social protection and patent policies are of key importance. The third concerns the amplifiers of innovation. Niches and clusters are essential to make sure that efforts yield their maximum economic impact by concentration in products and across space.

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[52] World Bank (2009b).

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