

STRUCTURAL POLICY  
COUNTRY NOTES

# Singapore



# Singapore

## A. Medium-term economic outlook (forecast, 2013-17 average):

GDP growth (percentage change):	3.1
Current account balance (% of GDP):	18.9
Fiscal balance (% of GDP):	4.2

## B. Medium-term plan

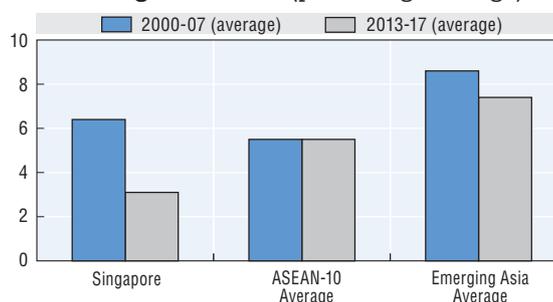
Period:	2010-20
Theme:	High-skilled people, innovative economy and distinctive global city

## C. Basic data (in 2011)

Total population:	5.5 million*
GDP per capita at PPP:	59 711 (current USD)

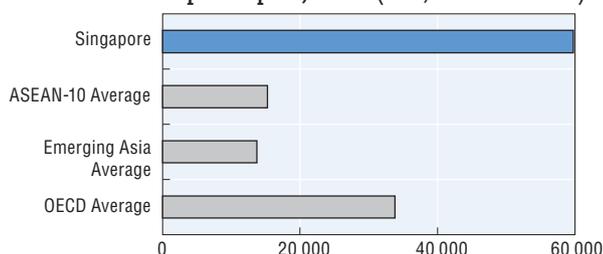
Note: \*Total population data for 2011 are an estimate.  
Sources: OECD Development Centre, MPF-2013, national sources and IMF.

## GDP growth rates (percentage change)



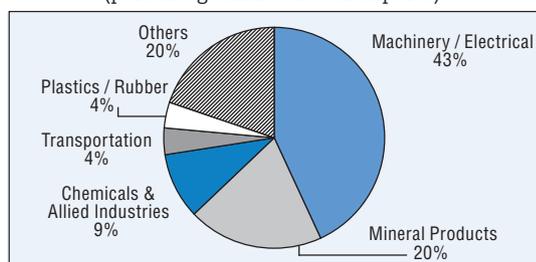
Source: OECD Development Centre, MPF-2013.

## GDP per capita, 2011 (PPP, current USD)



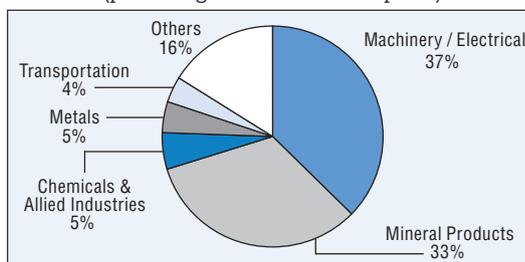
Source: IMF and national sources.

## Composition of exports in 2011 (percentage share of total exports)



Source: Trademap.

## Composition of imports in 2011 (percentage share of total imports)



Singapore is aiming to undertake a number of reforms to be a hub of the global economy. Political pressure is forcing Singapore to rethink the liberal immigration policy that was part of its drive to be a global city. Although creative foreign workers have contributed greatly to economic development, at the same time liberal immigration policy creates several non-negligible issues the society needs to cope with. The government is tightening entry conditions for foreign workers while encouraging foreign entrepreneurs and investing heavily in developing the human capital of indigenous workers and encouraging businesses to upgrade their technology and production methods.

As part of that investment effort, the government has lent strong backing to small and medium-sized enterprises (SMEs). They account for over half of total enterprise value and employ nearly 70% of the workforce. Their rise, though, has been largely driven by government policy which has funded them and boosted the growth of their domestic market. There are now questions as to how sustainable this state's SME policy is in the long term.

Research and Development (R&D) is considered an important component of Singapore's policy of productivity-driven economic growth. In the last two years, the government has brought local SMEs into R&D with cash incentives to help them develop innovation. Combined public and private R&D expenditure has put Singapore among the most R&D-intensive countries. Nevertheless, it lags behind in private R&D spending. Government policy aims to make up the gap by increasing expenditure to levels similar to 3.5% of gross expenditure.

### Singapore's medium-term policy challenges and responses

- Manage foreign worker dependence by increasing the productivity of local workforce
- Sustain SME growth through fostering entrepreneurial environment
- Enhance the innovation capabilities of local enterprises

### POLICY FOCUS

**Manage foreign worker dependence by increasing the productivity of local workforce**

As a small city state with no natural resources, Singapore has long been careful in managing its human capital, seeing such management as an important source of competitiveness and strength for the economy. Over the years, public expenditure on education has consistently been the second highest (after defence) in the government's annual fiscal budgets. In the 2012 budget, for example, expenditure on education claimed a 17.9% share, compared with 20.8% for defence. Such emphasis on education has helped contribute to Singapore's stronger record in human capital development than other countries in the region (Table 2.5.1).

Over the past decade, a major force shaping the human capital landscape in Singapore has been the increased presence of foreign workers. As part of the strategy to transform Singapore into a global city, the government had aggressively liberalised the foreign worker and immigration policy.<sup>1</sup> From 2000 to 2011, the number of non-residents rose from 754 500 to 1 394 400, representing a jump from 18.7% to 26.9% of the total population. In contrast, the share of Singapore citizens (excluding permanent residents and non-residents) in the population steadily declined from 74.1% in 2000 to 62.8% in 2011 (Department of Statistics Singapore, 2011).

The aggressive pursuit of the global city vision has transformed not only the physical look of the city state, but also its business environment and production structure. Together with these changes, the composition of the labour force has also been significantly altered – both in terms of the local-foreign mix and the mix between workers in “old” and “new” industries. While the open-door labour policy brought in a large number of highly skilled, high wage foreign workers, it has also led to a huge influx of low-skilled, low-wage foreign workers. Whereas the former could potentially expand the economy's range of skill sets and raise its productivity level, the latter could substantially offset such positive effects. Indeed, with the ready availability of low-wage foreign workers, firms in Singapore might not find many incentives to upgrade their technologies and production structures, or to invest in training or upgrading the skills of their workers.

Table 2.5.1. Human capital development indicators in Asia

	Per capita GDP (USD)	Adult literacy rate (above 15 in age)		Gross enrolment ratio (%)						Human Development Index (New Scale)		
		Female	Male	Primary School		Higher School		Tertiary education		Year	HDI	Ranking
		2005-09	2005-09	Female	Male	Female	Male	Female	Male		2010	2010
<b>Singapore</b>	35 022	91	97	95	95	73	75	40	47	2008	0.846	27
<b>Hong Kong, China</b>	24 626	91	97	105	105	86	86	34	33	2008	0.862	21
<b>China</b>	3 556	87	95	111	111	78	77	23	23	2008	0.663	91
<b>Japan</b>	32 600	99	99	100	100	101	101	54	62	2008	0.884	11
<b>Korea</b>	16 491	98	99	104	104	94	98	69	65	2008	0.877	12
<b>Chinese Taipei</b>	15 552	89	96	102	102	99	98	85	79	2008	-	-
<b>Indonesia</b>	2 142	89	95	116	116	74	73	32	19	2007	0.600	111
<b>Malaysia</b>	8 065	86	93	100	100	72	70	33	27	2007	0.744	59
<b>Philippines</b>	1 639	94	94	109	109	87	79	32	25	2007	0.638	100
<b>Thailand</b>	4 036	92	96	108	108	88	79	45	38	2007	0.654	87
<b>India</b>	946	51	75	109	114	49	53	10	14	2006	0.519	122

Source: CIA World Fact Book 2011, United Nations Database, Asian Development Bank.

Overall, the impact on productivity growth has not been encouraging. From 2000 to 2011, GDP in Singapore grew on average by 5.93% a year. But the total factor productivity (TFP) grew only at 1.80% a year on average. In some years, the TFP level actually declined. Likewise, labour productivity averaged a growth of only 0.57% a year from 2006 to 2011, with a decline in 2001, 2008 and 2009.<sup>2</sup>

Recognising the possible adverse impact that the liberal foreign worker and immigration policy might have on the human capital profile and the productivity growth in the economy, the Singapore government began to review and make adjustments to the policy from early 2011.<sup>3</sup> In the meantime, it continues to find ways to upgrade the skills of the local workforce and raise its productivity.

### Upgrade the skills of the local workforce

A key consideration in the government's human capital development policy in the past two years has been to help local workers adjust to the changing needs in the market so that they can remain "employable" over a longer period. This involves identifying industries that are seen to be sustainable over the long run and then providing workers with the necessary skill sets to stay employed within them.

A key initiative in recent years was the Workfare Training Support Scheme (WTS) rolled out in 2010. The WTS provides subsidies, absentee payroll funding and other incentives for employers to encourage them to send low-wage workers for training. Employers can receive subsidies that pay for up to 95% of the course fees and the absentee payroll. WTS also offers training commitment awards of up to SGD 400 (Singaporean dollars) a year for workers who successfully complete the requisite training modules.

In 2011, the government extended the Continuing Education and Training (CET) scheme to the professionals, managers, executives and technicians (PMETs) who make up more than 50% of the workforce. The CET scheme was previously available only for older, low-wage workers. A wide range of degree- and diploma-level programmes

were made available for the PMETs. In addition, the government significantly raised the subsidies to full time student grant levels for PMETs who choose to pursue their first degrees or diplomas on a part-time basis.

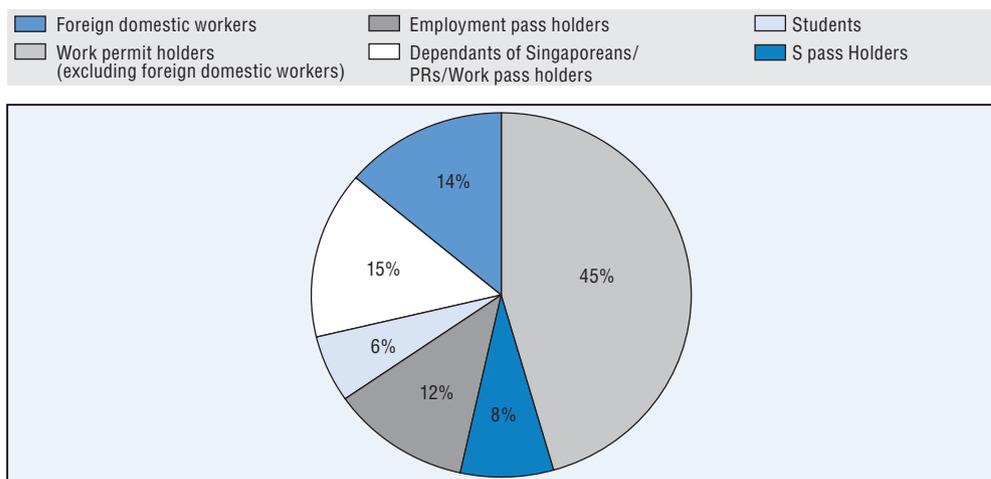
At the same time, the government continues to beef up human capital through investment in infrastructure for education and training. In 2009, the fourth university, the Singapore University of Technology and Design (SUTD) was set up with a strong focus on innovation and entrepreneurship. SUTD has strategic partnerships with the Massachusetts Institute of Technology (MIT) in the US and Zhejiang University in China as ways of tapping into the opportunities offered by the two largest economies in the world. In 2012, the Yale-National University of Singapore joint campus was opened as part of the policy to provide more high-quality tertiary education choices for Singaporeans.

At a lower level, the government continues to expand the polytechnics and the Institutes of Technical Education (ITEs) which equip non-graduates with a wide range of technical skills at a diploma level. Under the new “One ITE System, Three Colleges” plan, multiple ITEs will be consolidated to form a new ITE network to enhance the competitiveness and attractiveness of ITE education. The third and final ITE college central campus will be ready in 2013 to complete the network. The Ministry of Education has committed USD 2 billion to further growing the ITEs over the next five years.

### Managing foreign worker dependence

Over the past two years, the government has been carefully calibrating the inflow of foreign workers and new immigrants, both in terms of quantity and quality. In 2011, there were 27 521 new permanent residents (PRs) and 15 777 new citizens, down from 79 167 new PRs and 20 513 new citizens in 2008. A much larger majority of the new residents now possess post-secondary educational qualifications than in previous years.<sup>4</sup> Over the long run, the government’s objective is to keep the total number of foreign workers at one-third of the total workforce in Singapore.<sup>5</sup> Currently, holders of employment passes and S passes (issued to highly skilled foreign workers who earn higher salaries) account for 20% of the total number of the non-resident population, while work-permit holders (low-wage foreign workers and foreign domestic workers) make up 60% (Figure 2.5.1).

Figure 2.5.1. Composition of non-resident population in Singapore, 2011



Source: Department of Statistics, Ministry of Manpower.  
 StatLink  <http://dx.doi.org/10.1787/888932774509>

A number of price-based and quantity-based measures have been used in the last two years to calibrate the inflow of foreign workers. They include higher levies on foreign workers, stricter approval criteria for work permits and employment pass applications, and lower employment quotas.

To encourage companies to reduce their dependence on low-skilled foreign workers, for example, the qualifying salaries for employment pass (EPs) and S pass holders were raised in July 2011. The qualifying monthly salary for S-pass holders was increased to SGD 2 000 from SGD 1 800, while those for the Q1, P2 and P1 categories of employment pass were raised to SGD 2 800, SGD 4 000 and SGD 8 000, respectively (Table 2.5.2).<sup>6</sup>

The Ministry of Manpower will also continue to raise the foreign worker levies steadily in six-monthly intervals up to July 2013. At the same time, the government also introduced various programmes under the Workforce Skills Qualification (WSQ) framework to help enterprises assess and certify the skill levels of potential foreign workers, so that they better match the wages and productivity of the foreign workers employed.

The 2012 budget saw further tightening on the employment of foreign workers. The dependency ratio ceiling which specifies the number of foreign workers (as a proportion of total number of workers) that a company can hire was reduced for the manufacturing and service sectors. Meanwhile, the man-year entitlement (MYE) quota for the construction sector which measures the number of foreign workers that can be hired within one project was also reduced by 5%.

Table 2.5.2. The schedule of foreign workers levy changes in Singapore

	Current		01-Jul-11		01-Jan-12		01-Jul-12		01-Jan-13		01-Jul-13	
	DR	Levy USD Skilled/ Unskilled	DR	Levy USD Skilled/ Unskilled	DR	Levy USD Skilled/ Unskilled	DR	Levy USD Skilled/ Unskilled	DR	Levy USD Skilled/ Unskilled	DR	Levy USD Skilled/ Unskilled
<b>All Sectors</b>												
Tier 1	≤20%	110	≤15%	120	≤15%	160	≤10%	200	≤10%	250	≤10%	300
<b>S Pass</b>												
Tier 2	>20-25%	150	>15-25%	180	>15-25%	250	>10-25%	320	>10-25%	390	>10-25%	450
<b>Manufacturing</b>												
Tier 1	≤35%	170/270	≤30%	180/280	≤30%	190/290	≤25%	210/310	≤25%	230/330	≤25%	250/350
(Work permits) Tier 2	>35-55%	210/310	>30-50%	240/340	>30-50%	270/370	>25-50%	300/400	>25-50%	330/430	>25-50%	350/450
Tier 3	>55-65%	450	>50-65%	450	>50-65%	450	>50-65%	470	>50-65%	500	>50-65%	550
<b>Services</b>												
Tier 1	≤25%	170/270	≤20%	180/280	≤20%	210/310	≤15%	240/340	≤15%	270/370	≤15%	300/400
(Work permits) Tier 2	>25-40%	300	>20-35%	300/400	>20-30%	330/430	>15-25%	360/460	>15-25%	380/480	>15-25%	400/500
Tier 3	>40-50%	450	>35-50%	450	>30-50%	470	>25-50%	500	>25-50%	550	>25-50%	600
<b>Construction</b>												
MYE	≤87.5%	160/470	≤87.5%	180/230	≤87.5%	200/300	≤87.5%	250/350	≤87.5%	280/400	≤87.5%	300/450
(Work permits) MYE-waiver		310		380		450		500		550		600
<b>Process</b>												
MYE	≤87.5%	160/470	≤87.5%	180/300	≤87.5%	180/300	≤87.5%	210/310	≤87.5%	230/330	≤87.5%	250/350
(Work permits) MYE-waiver		310		380		380		470		500		550
<b>Marine</b>												
(Work permits)	≤83.3%	170/300	≤83.3%	180/300	≤83.3%	190/300	≤83.3%	210/310	≤83.3%	230/330	≤83.3%	250/350

Source: Ministry of Manpower, Republic of Singapore.

## Political pressure for restrictions on foreign workers and upgrading local workers

The Singapore government will likely find it increasingly more challenging in the future to rely on foreign workers and new immigrants to augment Singapore's human capital stock and change its human capital profile. The liberal foreign worker and immigration policy has been seen by many as contributing to a number of social, political and economic woes such as widening income inequality, rising social tensions among the new and old residents, and the loss of social cohesion, etc. Despite the government's efforts to convince Singaporeans to be receptive to new arrivals and to integrate them, political pressure for tightening the foreign labour inflows is likely to persist. The government will face increasingly greater pressure to upgrade the local workforce and increase their productivity and hence wages. This will also entail encouraging companies to increase their investment in new technology and production structures.

### Box 2.5.1. Enhancing integration policies: Examples from OECD countries

In OECD countries exposed to large scale immigration there has been a recent trend of enhancing integration programmes to further refine their well-established integration systems.

In **Australia**, a new Multicultural Council was created in 2011 to foster multiculturalism and provide advice to the government on multicultural affairs. Similarly, there has been greater emphasis in tackling racism. A national anti-racism partnership was set up in order to develop a comprehensive anti-racism strategy.

In **Canada**, the funding of integration programmes has been reformed to bring together separate settlement programmes, such as Language Instruction for Newcomers to Canada, Immigration Settlement, and the Adaptation Program. The administrative process for immigrant support organisations has thus been simplified for greater flexibility in assisting immigrants. As a result of the reform, newcomers' use of settlement services has increased by 8%.

In **Luxembourg**, an optional two-year contract (the Welcome and Integration Contract [CAI]) is offered to all foreign newcomers aged 16 or older. The foreign arrivals who take up the CAI are bound to attend a half-day orientation and information session on daily life in Luxembourg, a six-hour civics course, and language training that is available in Luxembourgish, French or German. In return, acceptance of the CAI includes an exemption from the mandatory course for acquiring Luxembourg nationality, positive consideration of applications for permanent residence and priority access to national integration measures.

In **Sweden**, co-ordination of new arrivals was centralised under the Public Employment Service in 2010. There is also a uniform public allowance scheme for newly arrived migrants. Eligibility for the allowance scheme is conditional on active participation in introductory measures. Furthermore, a civic orientation programme and a new introductory guide are also meant to assist new immigrants in their integration efforts. The new national integration strategy aims at formulating general measures based more on the needs of the whole population less on the country of origin. The Swedish government has also announced its intention to increase ethnic and cultural diversity among public-sector employees.

Source: OECD (2012c).

## POLICY FOCUS

### Sustain SME growth through fostering entrepreneurial environment

Singapore has traditionally relied on multinational corporations (MNCs) and the large government-linked companies (GLCs) as the main drivers for economic growth. Most economic policy measures in the past were geared towards facilitating the operations of the MNCs and the GLCs, especially those of the former. In contrast, much less attention was given to promoting the growth of SMEs. As a result, SMEs in Singapore have not been able to play as significant a role in innovation and productivity growth as their counterparts in other countries.

Over the past few years, SMEs have come more to the fore. Their contribution to total enterprise value rose from about 30% in late 1990s to about 46% in 2004. By 2010, the contribution had risen further to 58%. Meanwhile, SME employment as a share of total employment to 67% in 2010 from 56% in 2006. Various surveys have consistently ranked Singapore as having among the most conducive environments for doing business (World Bank, 2012d).

The enhanced contribution of the SMEs reflects changes both in policy orientation and in the economic environment, as well as the impact of specific government policies. As international competition for foreign direct investment heightened in recent years, there has been increased recognition among policy makers of the need to build up Singapore's indigenous productive capabilities – especially those of its SMEs. In a report released in 2010, the Economic Strategies Committee (ESC) – a government committee set up to help provide strategic direction for the economy's growth in the coming decade – identified SMEs as a key driver of productivity-driven growth. The ESC report set a target of doubling the number of local SMEs with revenues of over SGD 100 million to 1 000 in the next ten years.

The gradual rise of the SMEs unfolded against the background of policies the government had redesigned in its quest to transform Singapore into a global city. The focus of policy shifted from attracting and serving the needs of MNCs to attracting a critical mass of creative foreign workers who were able to help develop and grow new, innovation-driven industries. An outcome of this policy shift was a rapid expansion of the population base which significantly enlarged the domestic market for SMEs – especially those in the service industries – and contributed significantly to their growth.

The growth of the SME sector in recent years has also benefited from targeted government measures in a few areas such as access to finance, the development of human resources and the internationalisation of SMEs' operations.

### Array of new funding arrangements for SMEs

Various surveys suggest that the constraints that restricted SMEs' access to finance for local business has eased significantly in recent years.<sup>7</sup> Government involvement, both in debt- and equity-financing, play a significant role in reducing funding constraints. However, the government is anxious to avoid potential moral hazards in extending its help. In debt-financing schemes, it provides funding for SMEs only once commercial banks and financial institutions have agreed to lend to these enterprises after the relevant due diligence process. In equity financing, the government does not take equity stakes in SMEs alone, but only matches private sector investment. Direct government

funding for SMEs through grants or other assistance schemes often takes a targeted approach and is restricted to certain business activities in SMEs' development, such as international expansion, workforce training and technology adoption. Over the years, the government has also encouraged the formation of credit bureaux which propose advanced credit-scoring facilities to help banks and financial institutions improve their assessment of SMEs' creditworthiness.<sup>8</sup>

Financing for cross-border businesses remains an issue as overseas expansion typically requires longer times and a larger amount of financing. Such a constraint could put Singaporean SMEs at a disadvantage compared to their counterparts in some countries in the region who enjoy the support of government-backed export-import banks (EXIMs) and other export credit agencies. To address this concern, state-owned investment company Temasek Holdings, together with a consortium of financial institutions (including banks and insurance corporations), set up a new project finance company (PFC), called Clifford Capital, in 2012. The PFC focuses on providing longer-term financing for local companies engaged in projects in emerging markets, especially in infrastructure (power, waste and water treatment, transport, etc.), marine sector-related projects where Singapore is seen to enjoy a competitive advantage. About SGD 400 million of credit is expected to be provided annually, which could help catalyse some SGD 23 billions' worth of offshore projects for SMEs.<sup>9</sup>

### **Human resource development in SMEs stepped up**

A new three-year initiative for Enhanced Training Support (ETS) was unveiled in the 2012 budget to provide a wider choice of training programmes available to workers, especially those in the SME sector. The Workforce Development Agency (WDA) estimated that about 8 400 courses could come under the umbrella of the new ETS scheme. Workers who attend training courses under ETS (and employers who send them) are eligible for the same subsidies they receive under the WTS scheme.<sup>10</sup> In addition to the various incentives for training and skills upgrading, the government also tries to enhance SMEs' access to external human capital by building up a network of "mentors" who could provide strategic and expert advice to them. This is done through a number of platforms, such as SPRING Singapore.<sup>11</sup>

### **SME business operations on an increasingly international footing**

The 2012 budget provided a further boost to the Double Tax Deduction ("DTD") scheme for SMEs with overseas operations. It allows them to claim up to 200% tax deduction on four types of expenditure incurred in market expansion and investment-related activities.<sup>12</sup> The DTD scheme was also simplified for SMEs by removing the need to apply for approval from IE Singapore (formerly the Singapore Trade Development Board) or the Singapore Tourism Board (STB). In addition, it provides for increased tax rebates as well as an automatic claim feature that helps reduce the administrative costs for SMEs venturing overseas.

Work is also underway to help SMEs mitigate non-payment and other risks when they venture abroad. The government plans to revamp risk assessment procedures in order to help provide better trade finance solutions for SMEs (see Budget 2012). A number of commercial banks, together with the International Finance Corporation (IFC) and the Asian Development Bank (ADB), are actively exploring ways to help SMEs better manage their risks in offshore businesses. Since 2011, IE Singapore has also engaged in discussions with various partners to help design schemes that offer SMEs more affordable insurance coverage for political risks in overseas markets.

## Further reforms needed

Singapore has made significant progress in promoting the growth of SMEs in recent years. Much of the impetus appears to have come from the government. Even the expansion of the domestic market was a result of the strategic shift in its growth approach. To its credit, the government has tried to keep the interventions at the macro-level and to preserve as much of the market mechanism as possible. However, questions remain over the long-term sustainability of such a government-driven approach. It is not clear, for example, how much more the domestic market could continue to expand, given the strong political pressures against the liberal foreign workers and immigration policy.

A more fundamental issue pertains to the oft-mentioned lack of entrepreneurial and risk-taking culture in Singapore. Studies consistently indicate that Singaporeans lack entrepreneurial drive. A recent survey showed that less than 16% of Singaporean workers have considered setting up their own businesses, compared with 40% in Hong Kong, China (and 33% in Chinese Taipei), even though the World Bank ranks Singapore along with Hong Kong, China as one of the best places in the world for doing business.<sup>13</sup> One of the immigration policy's objectives in introducing the S pass was to take in foreigners who are potential entrepreneurs but lack the necessary educational qualifications as the employment pass holders. In recent years, there has been talk about offering incentives to SMEs from neighbouring countries to relocate to Singapore. Whether this is feasible remains to be seen.

### POLICY FOCUS

#### Enhance the innovation capabilities of local enterprises

The key thrust of the 2010 ESC Report which mapped out Singapore's new economic growth strategy in the coming decade was that economic growth in Singapore must be productivity-driven. Fostering innovations is central to this growth strategy. Over the years, Singapore has been trying to build a comprehensive R&D ecosystem comprising public sector research bodies (e.g. A\*STAR), academic research institutes and corporate R&D laboratories.

R&D is not, however, an end in itself. It is considered a driver of economic growth and it is important that enterprises create value from R&D investment and the intellectual properties generated. Traditionally large (domestic and foreign) corporations which enjoy strong government backing carry out the bulk of innovation and commercialisation activities in Singapore. For many years, for example, the Economic Development Board has been offering incentives to large foreign corporations to either relocate to or build their regional R&D centres in Singapore. As a result, foreign corporations and large local enterprises accounted for 85.7% of industry R&D expenditure from 2002 to 2010.<sup>14</sup> SMEs' innovation capabilities have developed chiefly through collaborative test-bedding for commercialisation and other forms of spillover effect.

In the last two years, however, the government has put a growing emphasis on broadening the base of innovative activities in the economy and bringing in local enterprises, especially SMEs. It has launched a number of initiatives to help integrate local enterprises with public R&D capabilities through various platforms such as SPRING Singapore.

One such programme is the Innovation Voucher Scheme (IVS) first introduced in the

2010 budget. The initial objective is to connect knowledge institutions (KIs) with local enterprises to facilitate the transfer of know-how and technology from the former to the latter. Qualifying enterprises can obtain innovation vouchers from SPRING Singapore, which can be used to support projects or procure services from approved KIs. The IVS has set relatively low application criteria to make the programme more widely available for local enterprises. The 2012 budget further expanded the IVS to cover three new areas – productivity, human resource development, and financial management – in addition to technology- related projects.

**Table 2.5.3. Summary of deductions/allowances under the Productivity and Innovation Credit (PIC) provision of Singapore**

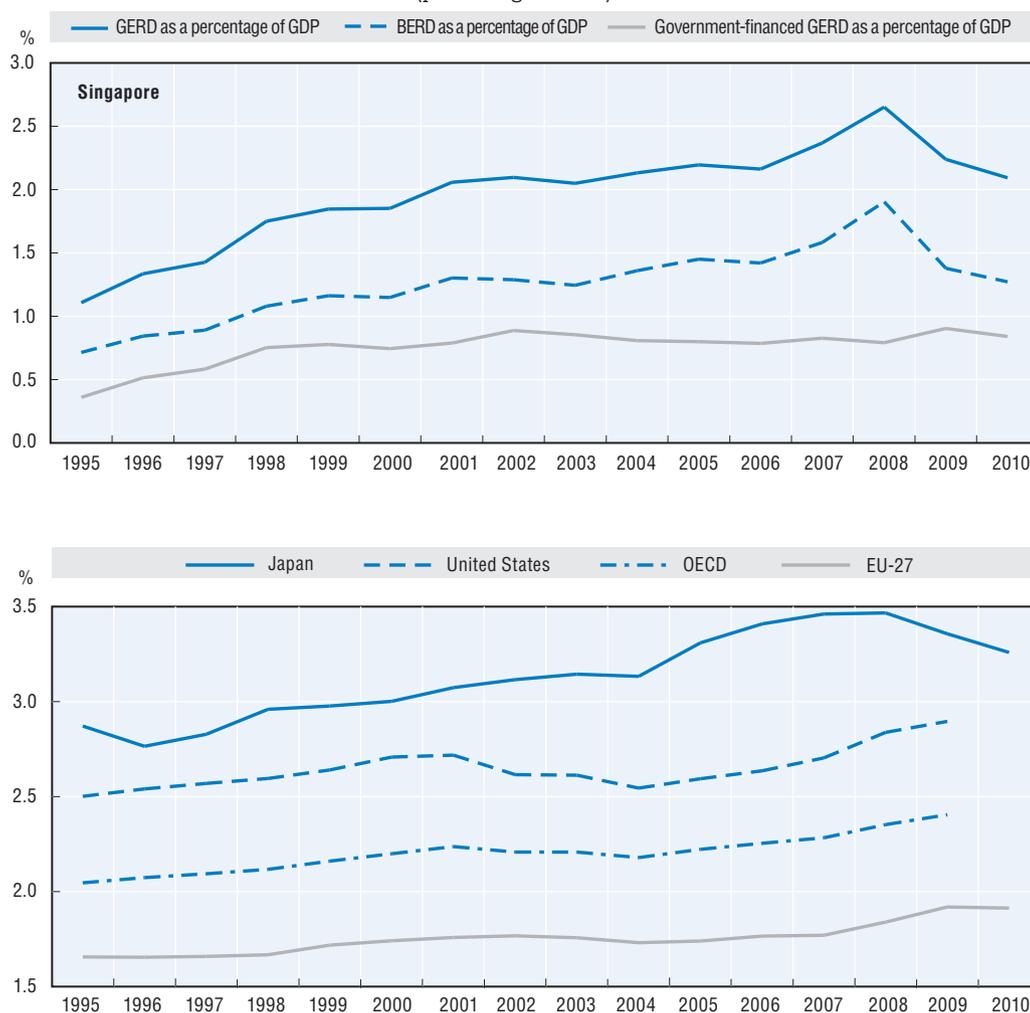
Qualifying activities	Brief description of qualifying expenditures under the PIC	Total deductions/allowances under the PIC (as a % of qualifying expenditure)	Examples of qualifying expenditures
<b>Acquisition or leasing of PIC automation equipment</b>	Costs incurred to acquire/ lease PIC automation equipment	400% allowance/deduction for qualifying expenditure subject to the expenditure cap, 100% allowance/deduction for the balance of expenditure exceeding the cap	Cost/lease expenses of IT equipment such as fax machine, laser printer, computer, lap-tops and software;
<b>Training expenditure</b>	Costs incurred on: <ol style="list-style-type: none"> <li>In-house training (e.g. Singapore Workforce Development Agency (WDA) certified, Institute of Technical Education (ITE) certified) In-house training not accredited by WDA or approved/certified by ITE, subject to a cap of USD10,000 per year for YA 2012 to YA 2015</li> </ol>	400% tax deduction for qualifying expenditure subject to the expenditure cap, 100% deduction for the balance of expenditure exceeding the cap	Cloud computing payment External course fees for staff; costs incurred on internal Workforce Skills Qualification (WSQ) courses for employee skills upgrading
<b>Acquisition of intellectual property rights (IPRs)</b>	2. All external training Costs incurred to acquire IPRs for use in a trade or business (exclude EDB-approved IPRs and IPRs relating to media and digital entertainment content)	400% allowance for qualifying expenditure subject to the expenditure cap, and 100% allowance for the balance of expenditure exceeding the cap	Training of agents from YA 2012 Payment to buy a patented technology for use in manufacturing process
<b>Registration of intellectual property rights (IPRs)</b>	Costs incurred to register patents, trademarks, designs, and plant varieties	400% tax deduction for qualifying expenditure subject to the expenditure cap, 100% deduction for the balance of expenditure exceeding the cap	Price paid for trademark Fees paid to Intellectual Property Office of Singapore (IPOS) to register trademark
<b>Research &amp; development (R&amp;D)</b>	Costs incurred on staff costs and consumables for qualifying R&D activities carried out in Singapore or overseas if the R&D performed overseas is related to the taxpayer's Singapore trade or business	400% tax deduction for qualifying expenditure subject to the expenditure cap. For the balance of qualifying expenditure exceeding the cap for R&D performed in Singapore, deduction will be 150%. For balance of all other expenses, including expenses for R&D performed overseas, deduction will be 100%	Salaries for R&D personnel and fees to R&D body for creating a novel product
<b>Design expenditure</b>	Costs incurred to create new products and industrial designs where the activities are primarily carried out in Singapore	400% tax deduction for qualifying expenditure subject to the expenditure cap, 100% deduction for the balance of expenditure exceeding the cap	R&D cost sharing from YA 2012 Fees to engage in-house eligible designers or outsourced to eligible design service providers to carry out approved design activities

Source: Inland Revenue of Authority Singapore.

In both the 2011 and 2012 budgets, the Productivity and Innovation Credit (PIC) provision was broadened to cover tax credits not only for actual innovations but also for other innovation-related activities such as training, the acquisition of intellectual property rights and R&D activities (see Table 2.5.3). Other cash incentives are available in the Technology Innovation Programme (TIP), introduced in 2011 to subsidise projects that help local enterprises develop new products, business processes and business models, or to improve on existing products, processes and business models.

In 2012, a new collaborative initiative between the government and industry, PRIME (Productivity, Resilience and Innovation for Manpower Excellence), was launched to help companies build up their innovation capabilities. The new programme is meant to be a one-stop shop for industry conferences, project consultancy and relevant government training schemes to facilitate holistic solutions for innovation and industry upgrading.

Figure 2.5.2. Gross expenditure on R&D in Singapore and other selected countries, 1995-2011  
(percentage of GDP)



Source: National Survey of R&D 2010, OECD Main Science and Technology Indicators Database, June 2012.

StatLink  <http://dx.doi.org/10.1787/888932774528>

While official efforts to spread innovation across the whole corporate spectrum are relatively new, it is noteworthy that total business expenditure on R&D as a share of GDP has been rising over the years. In fact, it has accounted for a large part of the rise in gross expenditure on R&D, although much of the business expenditure was likely to have been carried out by large corporations (Figure 2.5.2).<sup>15</sup> Combined spending on R&D by the public sector and the business community represented 2.14% of GDP in 2010, putting Singapore in the top division of R&D-intensive countries such as the US and Germany. Commensurate with the increase in the total R&D expenditure was the expansion of human resources in R&D. Total research manpower – which includes researchers, post-graduate students, technicians and support staff – has increased at a compound annual growth rate of 6.1% since 2000.

### **Some concerns for the future**

R&D spending by business enterprise in Singapore still lags behind levels in other R&D-intensive nations such as the OECD member countries, particularly Japan. However, over time, as innovation culture becomes more pervasive, SMEs and large enterprises in Singapore might be expected to play an increasingly larger role in R&D and innovation activities. Over the next five years, the government intends to increase gross expenditure on R&D to 3.5% of GDP, a level similar to those in other R&D-intensive nations.

## Notes

1. See Reports by the Economic Review Committee (ERC) 2002, and the Economic Strategy Committee (ESC), 2010. Also see K.S. Tan's "From MNC Hub to Global City: Managing Singapore's Comparative Advantage"; presentation at Singapore Management University, 2012.
2. Source: Department of Statistics, Singapore.
3. The liberal foreign worker/immigration policy was also seen to have contributed to other adverse economic, social and political impacts including a fast widening income gap, raising tensions among new and old residents.
4. Source: National Population and Talent Division, Singapore.
5. For details, see speech by Gan Kim Yong, Manpower Minister, at the budget debate on 9 March 2011.
6. Source: Ministry of Manpower, Singapore.
7. See SME Development Survey by DP Information Group for the period of 2009, 2010 and 2011 and SME index released by the Singapore Business Federation (SBF)
8. Research shows that credit scoring facility provides better assessment for credit risk.
9. See press release from Ministry of Finance, Singapore, February 2012.
10. See Section on Human Capital Development above.
11. SPRING Singapore is the government agency tasked to help develop and grow the local enterprises in Singapore.
12. These activities include overseas business development trips/missions, overseas investment study trips/missions, participation in overseas trade fairs, and participation in approved local trade fairs.
13. See Survey conducted by Gallup in 2010.
14. Calculated using data from National Survey of R&D in Singapore (various years).
15. The decline of GERD/GDP ratio in 2009 and 2010 was due mainly to the exceptionally strong GDP growth (13.9%) – marking a rebound from the global financial crisis – which surpassed the GERD growth (7.4%). The actual expenditure on GERD had actually increased during this period – USD 6 billion in 2009 and USD 6.5 billion in 2010. In 2009 and 2010, public expenditure on R&D accounted for a larger share of overall R&D growth than business expenditure mainly owing to the economic crisis and the contraction of R&D activities in the private sector.

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