



OECD Economics Department Working Papers No. 637

Indonesia: Growth
Performance and Policy
Challenges

Luiz de Mello

<https://dx.doi.org/10.1787/236831785800>

Unclassified

ECO/WKP(2008)45

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

22-Sep-2008

English - Or. English

ECONOMICS DEPARTMENT

ECO/WKP(2008)45
Unclassified

INDONESIA: GROWTH PERFORMANCE AND POLICY CHALLENGES

ECONOMICS DEPARTMENT WORKING PAPER No. 637

By Luiz de Mello

All OECD Economics Department Working Papers are available on the OECD internet website at
www.oecd.org/eco/working_papers

JT03250978

Document complet disponible sur OLIS dans son format d'origine
Complete document available on OLIS in its original format

English - Or. English

ABSTRACT/RESUME

Indonesia: Growth performance and policy challenges

Indonesia's growth performance is improving, following a slow recovery from the 1997-98 financial crisis. Investment is picking up, despite considerable business-climate obstacles to entrepreneurship. Unemployment remains high, and labour informality is pervasive. Fiscal policy has been conducted responsibly and in an increasingly decentralised manner. Monetary policy is now carried out within a fully-fledged inflation-targeting framework. This paper argues that the main barriers to raising the economy's growth potential are to be found on the supply side of the economy. Indonesia will need to improve the business environment and to make better use of labour inputs to put the economy on a higher growth trajectory. The country's income gap relative to the OECD is sizeable, and several years of sustained growth will be needed to eliminate it. This Working Paper relates to the 2008 *OECD Economic Assessment of Indonesia* (www.oecd.org/eco/surveys/indonesia).

JEL codes: O10; E50; E60.

Keywords: Indonesia; growth; macroeconomic policies; structural reform.

Indonésie : Performances économiques et enjeux de l'action publique

Les résultats de l'Indonésie sur le front de la croissance s'améliorent, amélioration qui s'inscrit dans le prolongement d'une phase de lente reprise après la crise financière de 1997-98. L'investissement suit une pente ascendante, malgré un climat des affaires très peu porteur. Le chômage demeure élevé et l'emploi dans le secteur informel très largement répandu. La politique budgétaire est conduite de façon responsable et aussi plus décentralisée. La politique monétaire s'articule désormais autour d'un dispositif de ciblage de l'inflation. D'après ce document, les principaux obstacles au relèvement du potentiel de croissance de l'économie indonésienne se situent du côté de l'offre. L'Indonésie va devoir s'efforcer d'offrir aux entrepreneurs des conditions d'ensemble plus propices au développement de leurs activités et de mieux utiliser le facteur travail pour mettre son économie sur une trajectoire de croissance plus prometteuse. L'écart de revenu par rapport aux pays de l'OCDE n'est pas négligeable et plusieurs années de croissance soutenue seront nécessaires pour le combler. Ce Document de travail se rapporte à l'*Évaluation économique de l'OCDE de l'Indonésie*, 2008 (www.oecd.org/eco/etudes/indonesie).

Classification JEL : O10 ; E50 ; E60.

Mots-clés : Indonésie ; croissance ; politiques macroéconomiques ; réformes structurelles.

Copyright © OECD, 2008. All rights reserved. Application for permission to reproduce or translate all, or part of, this material should be made to: Head of Publications Service, OECD, 2 rue André-Pascal, 75775 PARIS CEDEX 16, France.

TABLE OF CONTENTS

Indonesia: Growth performance and policy challenges	5
1. Introduction	5
2. Recovery from the 1997-98 crisis	5
3. What drives Indonesian growth?	6
4. The macroeconomic policy setting	15
5. Policy challenges for enhancing growth performance	22
Bibliography	35
Annex A1 Estimating Indonesia's potential GDP	38
Annex A2 Gauging Indonesia's regional diversity	41
Annex A3 Assessing the restrictiveness of Product Market Regulations	44
 Boxes	
1. Visi Indonesia 2030: The main elements	10
2. Growth accounting in Indonesia: A summary of the literature	11
3. Indonesia's trade regime and performance: An overview	14
4. Fiscal decentralisation in Indonesia: Achievements and challenges	16
5. Inflation targeting in Indonesia	22
 Tables	
1. Indonesia: Selected macroeconomic indicators, 2001-07	9
2. Budget operations: Central government, 1990-2007	18
3. Indonesia: Selected financial and monetary indicators, 2001-07	21
4. Education and health indicators: Cross-country comparisons, 1990, 2000 and 2005	25
5. Product market regulations: Cross-country comparisons	29
A2.1. Provincial economic activity indicators, 1975-2007	42
A2.2. Provincial development indicators, 1975-2007	43
 Figures	
1. The Asian crisis and economic performance: Cross-country comparisons, 1990-2006	7
2. Indonesia's long-term growth performance	8
3. Trade protection, 1989-2006	12
4. Export concentration, 1979-2005	12
5. Labour productivity in manufacturing, 1999-2005	14
6. Inflation, monetary policy and exchange rates, 2000-08	20
7. Educational attainment and performance: Cross-country comparisons, 2006	23
8. Expenditure on education: Cross-country comparisons, 2006	24
9. Innovation indicators: Cross-country comparisons	26
10. Investment and FDI: Trends and cross-country comparisons	32
A1.1. Trend GDP growth: Cross-country comparisons, 1980-2006	40

Indonesia: Growth performance and policy challenges

By
Luiz de Mello¹

1. Introduction

After a comparatively slow recovery from the 1997-98 financial crisis that affected several countries in Southeast Asia and beyond, Indonesia's growth performance has improved markedly in recent years. GDP grew by 6.3% in 2007, the fastest pace of expansion since the crisis. Net exports continue to perform well, but most of the increase in output growth in recent years has come from domestic sources. Nevertheless, unemployment remains stubbornly high, and informality is pervasive in the labour market. Fiscal policy continues to be conducted responsibly, delivering falling public indebtedness, and public services are provided in an increasingly decentralised manner. The institutional framework for the conduct of monetary policy was strengthened with the implementation of fully-fledged inflation targeting in mid-2005. Inflation came down in 2007, following an upsurge in 2005-06 on the heels of a significant reduction in fuel subsidies, but is now trending up again due to higher food and fuel prices.

For a country of Indonesia's income level, an important long-term policy challenge is to raise potential growth so as to secure a convergence in living standards with respect to the more prosperous countries in the OECD area. To achieve this, policy initiatives will be needed in several domains, as recognised in a document (*Visi Indonesia 2030*) published by a group of independent analysts, which lays out their long-term vision for Indonesia. They hope to raise the economy's potential growth rate to about 8.5% per year on average during 2006-30 to place Indonesia among the five largest economies in the world at the end of their planning horizon. This is important, because the current growth level is not high enough to lead to a sustained reduction in poverty and unemployment over the longer term.

This paper discusses Indonesia's growth performance since the 1997-98 financial crisis and identifies the main policy challenges that will need to be addressed to raise the economy's growth potential in a sustainable manner. Attention is devoted to the main obstacles to entrepreneurship and effective utilisation of labour resources, which are dealt with in greater detail in Moccero (2008) and Comola and de Mello (2008a, 2008b), respectively.

2. Recovery from the 1997-98 crisis

Indonesia has now fully recovered from the 1997-98 financial crisis. Nevertheless, international comparisons suggest that the country's post-crisis adjustment has been slower than in regional peers, where an upsurge in investment and exports sustained growth and job creation in the aftermath of the crisis (Figure 1). Indonesian GDP grew at about the average of comparator countries over the period leading up to the crisis, but slowed down considerably thereafter, despite a recovery in recent years. In particular:

1. The author is indebted to Mohamed Chatib Basri, Kyungsoo Choi, Andrew Dean, Stephen Grenville, Peter Jarrett, Hal Hill, Mohamad Ikhsan, Diego Moccero, Arianto Patunru, Thee Kian Wie, and the participants of the EDRC Policy Seminar on Indonesia, held on 9 June 2008, for helpful comments and discussions. He nevertheless remains responsible for any remaining errors and omissions. Special thanks go to Anne Legendre for research assistance and to Mee-Lan Frank for excellent technical preparation.

- Investment was the component of demand that suffered the sharpest decline at the time of the crisis, a development that can be attributed to a large extent to a reversal in FDI inflows (discussed below). Gross fixed capital formation has bounced back since 2000, and has now approached its 1997 level in real terms, when the crisis erupted. By contrast, the post-crisis recovery in investment was particularly swift in Korea and, to a milder extent, the Philippines.
- From the supply side, the turnaround in manufacturing value added has also been slower in Indonesia than in comparator countries, although it had recovered to its pre-crisis level by 2000. This lack of dynamism in manufacturing growth after the crisis poses challenges for the future. All sectors were affected by the crisis, although agriculture was comparatively more resilient.²
- Inflation has been higher in Indonesia since the crisis than in regional peers. This is due in part to the large nominal depreciation of the *rupiah* during the crisis. The Indonesian currency depreciated in nominal terms by far more than any other currency in the region. The ensuing rise in inflation, which reached about 80% on an annualised basis during the first half of 1998, eroded most of the initial boost to competitiveness arising from a weaker currency.
- Indonesia's export growth has been the lowest among the crisis-hit countries, especially in manufactured goods. The contraction in exports was the sharpest in the region in the wake of the crisis, although growth has picked up in recent years.³ Most of the post-crisis expansion in exports has come from non-manufactured goods, including non-agricultural commodities, supported predominantly by price gains, rather than volume growth. The deceleration of volume growth after the crisis was particularly severe in the case of labour-intensive industries, including textiles and footwear.⁴ By contrast, the rebound in trade flows was particularly pronounced in Korea, which explains to some extent that country's swift turnaround after the crisis.

Indonesia's larger fall during the crisis and its failure to recover as promptly as its neighbours suggests that important obstacles must have been at play. These include not only macroeconomic imbalances, reflected in higher inflation, but also a comparatively less supportive business environment, which has discouraged entrepreneurship and prevented a more effective use of labour inputs, with comparatively high unemployment and persistent segmentation in the labour market due to widespread informality (discussed in Comola and de Mello, 2008a). This *Economic Assessment* argues that Indonesia will need to tackle these weaknesses to raise the economy's growth potential and to sustain it over the longer term.

3. What drives Indonesian growth?

Growth performance and relative income gap

Growth has slowed down since the crisis but appears to have regained dynamism since 2004. Real GDP grew on average by 8.1% per year during 1989-96 but decelerated to 5.1% on average during 2002-06 (Figure 2), a period that excludes the crisis years and the ensuing immediate recovery.

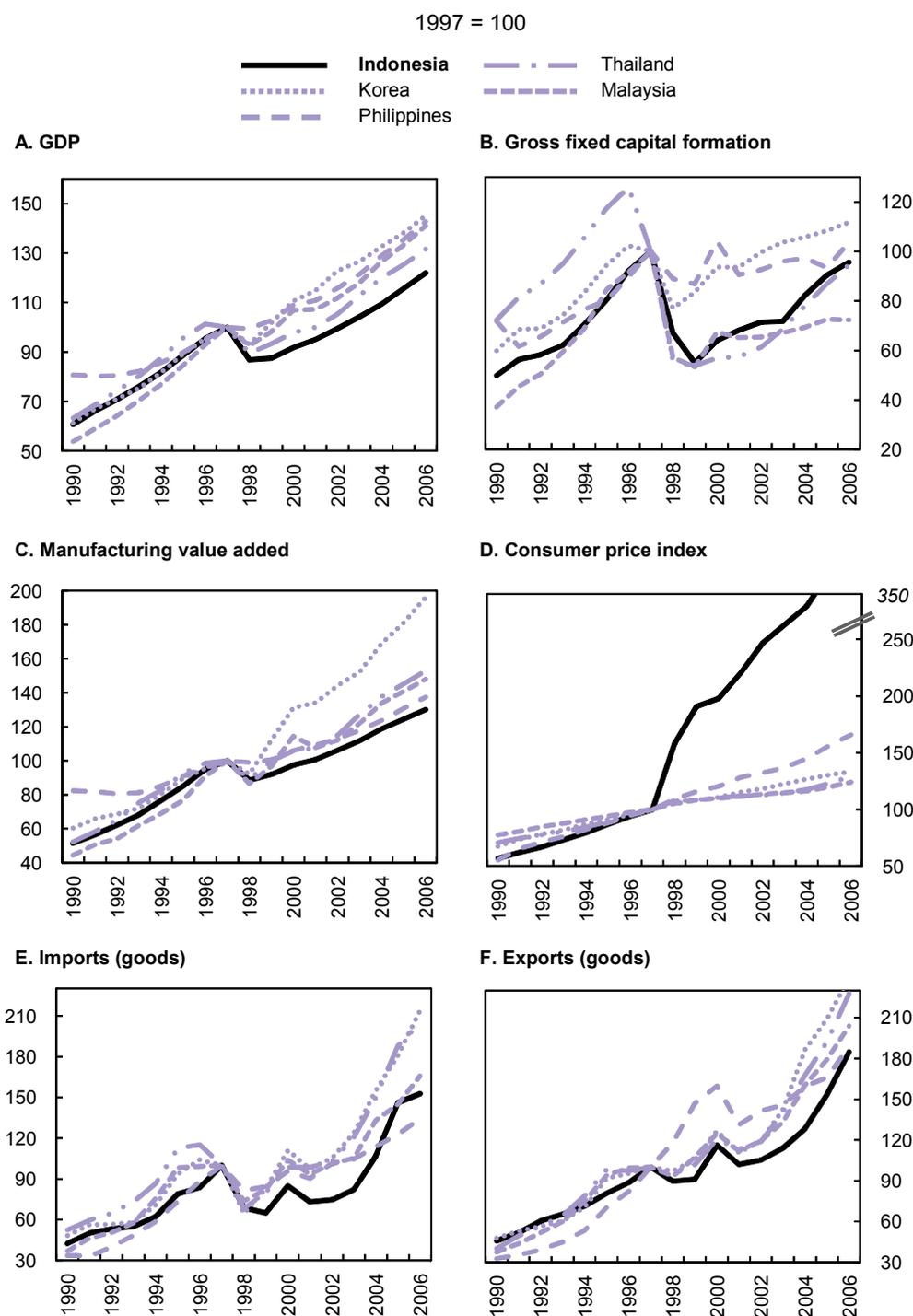
2. See Hill (2007) and Hill and Shiraishi (2007) for more information.

3. See Athukorala (2006) for more information. The share of electronics goods (parts and components) in Indonesia's exports is about 9%, against 21% and 36% in Thailand and Malaysia, respectively. Indonesia has also under-performed in major export destinations, notably China, Japan and the United States.

4. See Basri and Papanek (2008) for more information.

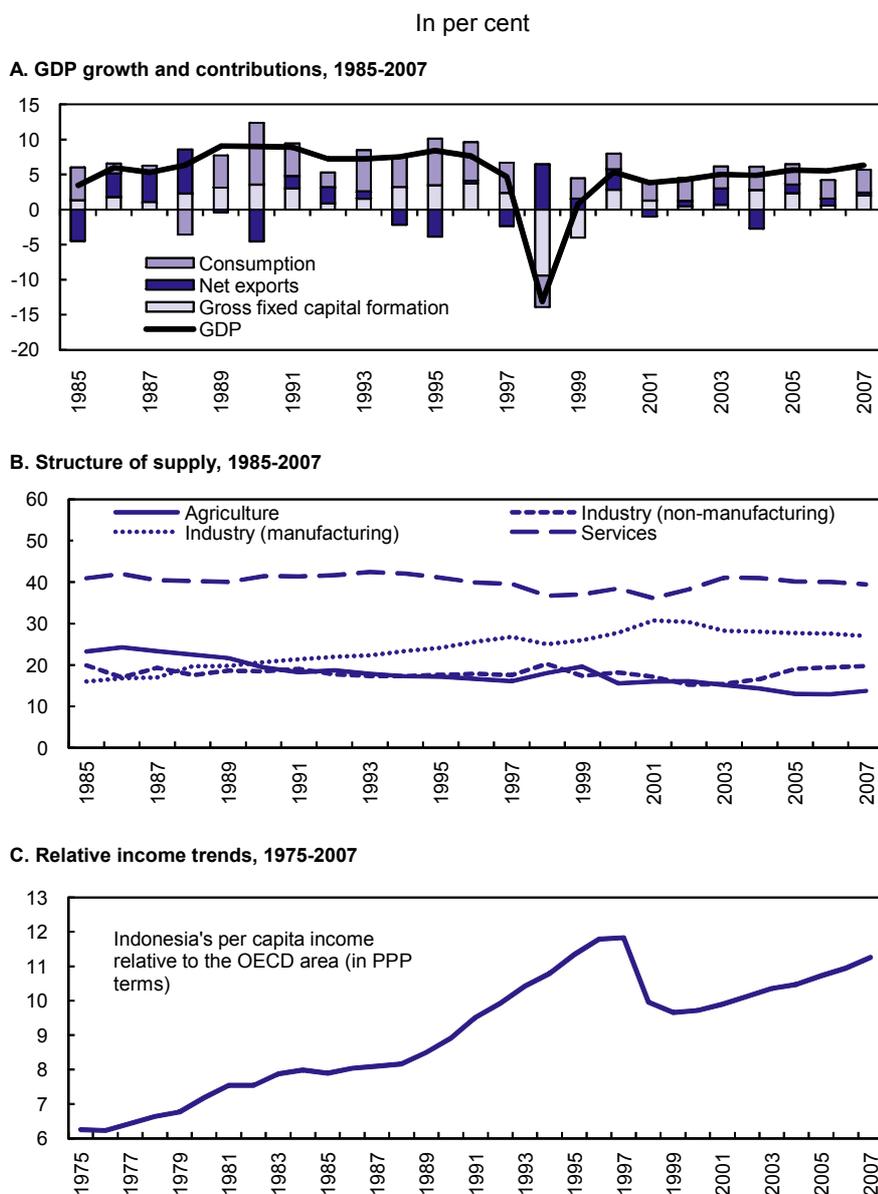
From the demand side, the contribution of private consumption appears to be trending up, especially after 2004, following a few years of predominantly net export- and investment-driven growth.

Figure 1. The Asian crisis and economic performance: Cross-country comparisons, 1990-2006



Source: World Bank (*World Development Indicators*) and OECD calculations.

Figure 2. Indonesia's long-term growth performance



Source: OECD (MEI database), World Bank (*World Development Indicators*) and OECD calculations.

From the supply side, manufacturing output expanded rapidly after liberalising reforms in the mid-1980s on the back of rising export demand. But it now appears to be losing momentum (Table 1), particularly in the sectors where Indonesia has a comparative advantage, including natural resources (particularly wood, oil and gas) and labour-intensive activities, such as the production of textiles, clothing and footwear. The electronics, including electrical appliances, and automotive industries have nevertheless grown quite strongly in the post-crisis period.⁵ As for the other components of supply, the share of

5. In the case of electronics, Indonesia has begun to develop an export-oriented assembly sector connected to global production networks, although it is still a minor player in the main East Asian networks (Athukorala, 2006).

agriculture in GDP is trending down, but it continues to account for the bulk of employment.⁶ Consistent with a pick-up in private consumption, growth in the services sector has been particularly brisk over the last five years. These trends suggest that the sectors producing non-tradable goods have become increasingly more dynamic relative to those specialising in tradables, including agriculture, forestry and fisheries, mining and manufacturing.

Table 1. Indonesia: Selected macroeconomic indicators, 2001-07

	2001	2002	2003	2004	2005	2006	2007
Supply and demand							
GDP (in current trillion <i>rupiah</i>)	1 684.3	1 897.8	2 045.9	2 273.1	2 785.0	3 339.5	3 957.4
GDP (in current USD billion)	164.1	203.8	238.5	254.3	287.0	364.6	432.8
GDP per capita (in USD PPP)	2 530.9	2 655.5	2 803.9	2 988.0	3 209.5	3 454.4	...
GDP growth rate (real, in per cent)	3.8	4.3	5.0	4.9	5.7	5.5	6.3
GDP growth rate (real, in per capita, in per cent)	2.4	2.9	3.6	3.5	4.3	4.5	5.1
Supply (real growth rate, in per cent)							
Agriculture	4.1	2.7	4.8	2.1	2.2	3.4	3.5
Mining	0.3	0.5	-0.4	-4.9	3.1	1.8	2.0
Manufacturing	3.3	5.9	4.7	6.4	4.6	4.6	4.7
Services ¹	5.0	4.7	6.6	7.2	8.0	7.4	8.9
Demand (real growth rate, in per cent)							
Private consumption	3.5	3.8	3.9	5.0	4.0	3.2	5.0
Public consumption	7.5	13.0	10.1	4.0	6.7	9.7	3.9
Gross fixed investment	6.5	2.2	3.5	14.1	10.9	2.5	9.2
Exports	0.6	-1.0	8.0	11.1	16.4	9.6	8.0
Imports	4.2	-4.0	2.5	25.6	16.7	9.2	8.9
Public finances (central government, in per cent of GDP)							
Revenue	18.3	16.4	17.0	17.8	17.8	19.1	17.9
Expenditure	20.7	17.7	18.7	18.6	18.3	20.1	19.1
Overall balance	-2.5	-1.3	-1.7	-1.0	-0.5	-1.0	-1.2
Gross debt (general government)	75.0	65.8	60.6	56.1	45.5	39.2	35.0
Exchange rate, interest rate and prices							
Exchange rate (<i>rupiah</i> per USD, end-period)	10 255	9 318	8 572	8 941	9 713	9 167	9 140
Short-term interest rate (One-month SBI rate, in per cent)	17.6	12.9	8.3	7.4	12.8	9.8	8.0
CPI inflation (in per cent, end-of-period)	12.5	9.9	5.2	6.5	17.1	6.6	6.6
GDP deflator (in per cent)	16.7	8.1	2.7	5.9	15.9	13.6	11.5
Balance of payments (in USD billion)							
Current account balance	6.9	7.8	8.1	1.6	0.3	10.8	10.4
In per cent of GDP	4.2	3.9	3.4	0.6	0.1	2.9	2.4
Trade balance	22.7	23.5	24.6	20.2	17.5	29.7	21.7
Exports	57.4	59.2	64.1	70.8	87.0	103.5	118.0
Imports	34.7	35.7	39.5	50.6	69.5	73.9	85.3
International reserves (gross)	28.0	32.0	36.3	36.3	34.7	42.6	56.9
Outstanding external debt	133.1	131.3	135.4	137.0	130.7	128.7	136.6
In per cent of GDP	80.7	65.7	57.0	53.4	45.3	34.9	31.2

1. Includes electricity, gas, water and construction.

Source: World Bank (*World Development Indicators*), Ministry of Finance, BPS, Bloomberg and OECD calculations.

6. Rice is the main food crop produced, followed by cassava and maize. Non-food crops include rubber, oil palm, coffee, tea, cocoa and sugar cane. Poultry is the fastest growing livestock production.

Indonesia's per capita income gap relative to the OECD average (measured in purchasing power parity terms) has narrowed since the sharp drop induced by the crisis. Rapid growth during 1989-96 led to a swift convergence in relative income levels, a trend that was interrupted by the financial crisis. Indonesia's relative income level nevertheless remains low and has yet to reach the pre-crisis peak of about 12% of the OECD average. This income gap illustrates the scope for catching-up in relative standards of living in the years to come. For example, if the economy grew by 8.5% per year during 2006-30 (about 7.5% in per capita terms), as envisaged in *Visi Indonesia 2030* (Box 1), and considering that potential growth in the OECD area is at most 2.5% per year (about 1.7% in per capita terms) on average, Indonesia's income level would rise to about 40% of the OECD average in 2030. This is comparable to the current relative income level of the less affluent OECD Member countries, such as Mexico.

Box 1. *Visi Indonesia 2030*: The main elements

Visi Indonesia 2030's main objectives are: *i*) to place Indonesia among the world's five largest economies, with GDP per capita in the neighbourhood of USD 18 000 (for a population of 285 million people), and among the top 30 countries in terms of human development (on the basis of the United Nation's HDI index), and *ii*) to ensure the inclusion of 30 Indonesian companies among the Fortune 500 Companies. Attainment of these objectives should also be consistent with a sustainable management of the nation's natural resources, especially with regards to the need to secure the supply of food, energy and water. Including Indonesia among the world's top ten tourist destinations is another complementary objective.

The document describes Indonesia's projected growth trajectory in three separate phases: restructuring, with growth initially in the range of 5-7% per year; acceleration, with annual growth at about 9-11% in real terms; and sustainability, with a slowdown in annual growth to about 7-9%. The average real GDP growth rate during 2006-30 would need to be 8.5% per year, for an inflation rate of 3%, which is consistent with that of the country's main trading partners, and population growth at about 1.1% per year. During restructuring, growth would be driven by the acquisition of foreign technology, which would foster growth during the acceleration phase, especially in manufacturing and then in services, so as to achieve a sustainable growth path over the longer term. Growth should be consistent with a reduction in the incidence of poverty to about 4% of the population from nearly 18% in 2006.

This growth pattern would be consistent with a decline in the share of agriculture in GDP and a strengthening of the services sector, with a steady GDP share of manufacturing. The take-off and sustainability of growth would require durable increases in productivity per worker, especially in agriculture and manufacturing. Technological development and innovation are considered to be keys to achieving this goal. The private sector would be the main source of dynamism in the economy.

Productivity-driven growth will depend on improvements in the population's average educational attainment. To this end, both access to, and the quality of, education services will need to improve at all levels of enrolment. Some emphasis will need to be placed on higher education as a vehicle for innovation during the acceleration phase. Also, efforts to enhance the competitiveness of the Indonesian economy would need to focus on improving the investment climate and governance, and to create synergies between the private sector and the government.

Input accumulation versus productivity gains

Input accumulation, rather than productivity enhancement, has been the main driver of growth in Indonesia. On the basis of the estimates reported in Annex A1 using national-accounts data, the accumulation of labour and physical capital accounted for most of the estimated trend GDP growth before the crisis. Gains in total factor productivity (TFP) – the efficiency with which the factors of production are used to produce output – accounted for only about one-quarter of the estimated 6% trend GDP growth rate during 1990-96. The contribution of TFP growth nevertheless appears to be rising: it accounted for about 35-40% of the estimated 4% trend GDP growth during 2000-07. These national-accounts-based calculations are by and large consistent with estimations using sectoral or enterprise-level information.

There are large variations in estimates, depending on data sources and methodology used, but recent empirical analysis has emphasised a recovery in TFP growth over the last few years (Box 2).

Box 2. Growth accounting in Indonesia: A summary of the literature

Although methodological differences among the empirical studies lead to a broad range of estimates, there is general agreement that growth has been based predominantly on the accumulation of inputs, in particular physical capital. Sector- and firm-level analysis on the basis of Indonesia's annual Industrial Survey (*Statistik Industri*) yields higher estimates of TFP growth in the pre-crisis period than those obtained from national-accounts data.

Economy-wide evidence

Van der Eng (2007) reports an increase in TFP growth after 2000 to about 2% per year during 2000-06 on the basis of a production function using education-augmented employment and varying labour shares. Prior to 1997, TFP growth was positive but contributed only marginally to output growth. Since 2000, however, TFP growth has risen and accounted for a higher share of output growth.

TFP growth based on economy-wide data tends to be underestimated in Indonesia, because the labour share measured from the national accounts is exceedingly low at 0.2, against an average of 0.6-0.7 in the OECD area. Attempts have been made to re-estimate labour income (e.g. Sarel, 1997), suggesting a higher share of about two-third of national income. The estimates reported by Vial (2006) based on firm-level data in manufacturing during 1988-95 point to an elasticity of value added to labour in the neighbourhood of 0.74, which tends to be higher in more labour-intensive sectors. This discrepancy between the estimated and national accounts measures of labour shares suggests that the share of wages in value added is indeed severely underreported.

Sectoral evidence

Timmer (1999) and Aswicahyono and Hill (2002) are among the forerunners to growth accounting using Indonesian manufacturing data. Both studies report an increase in TFP growth after economic liberalisation in the mid-1980s relative to the 1970s. Timmer (1999) estimates that TFP gains accounted for about one-fifth of growth in manufacturing value added during 1975-95. The contribution of inter-sectoral input reallocation is estimated to have been low over the period. Aswicahyono and Hill (2002) find that TFP accounted for about one-third of industrial growth during 1984-93, essentially due to within-sector productivity gains. TFP levels across sectors also converged more rapidly over the period.

Warr (2006) decomposes growth between factor accumulation and improvements in TFP and the latter between the weighted average of sectoral productivity levels and the efficiency effect of factor movements among sectors with varying levels of productivity. The decomposition exercise is carried out for the period 1980-2002. The results show that 93% of growth in the pre-crisis period (1980-96) was attributable to factor accumulation alone. TFP growth turned negative in the immediate post-crisis period. Contrary to previous findings, however, the reallocation effect is particularly strong in explaining TFP growth in both pre- and post-crisis periods.

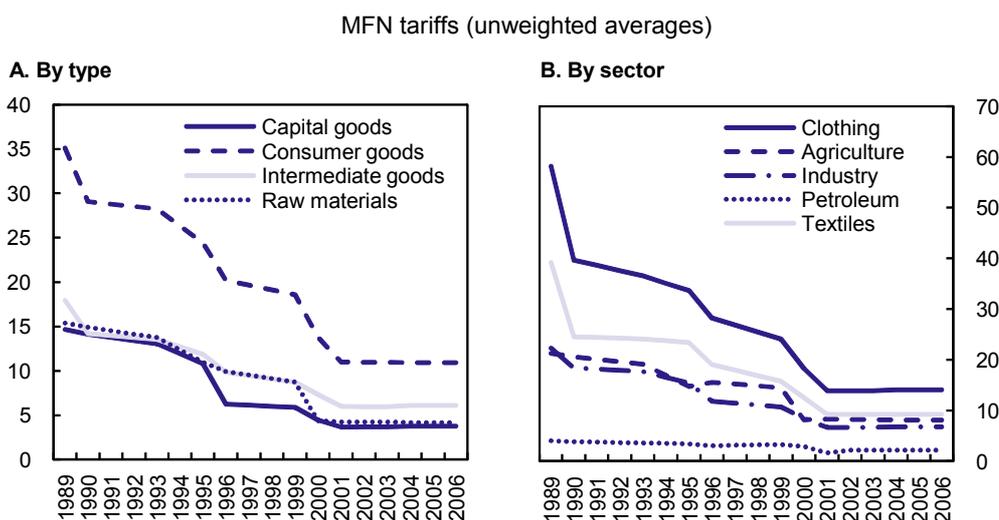
Estimates of TFP growth in agriculture also suggest that most of the increase in output stems from input accumulation (Fuglie, 2004). Most of the growth in TFP appears to have taken place during 1968-92; therefore, the lack of productivity growth thereafter cannot be explained entirely by the financial crisis.

Of course, TFP estimates are sensitive to modelling assumptions, data quality (especially with regards to the computation of the physical capital stock), the choice of sectoral aggregation techniques, and the selection of deflators, among other issues. The fact that the industrial survey, on which most current estimates are based, does not report capital stock, and that the investment series are considered to suffer from considerable underreporting (Timmer, 1999) are important sources of concern regarding the reliability of existing estimates.

TFP growth is estimated to have been affected positively by structural reform, especially those changes that have enhanced trade openness. Indonesia went through a period of economic liberalisation in the mid-1980s, including a gradual reduction in trade protection (Figure 3 and Box 3). These reforms have contributed to raising productivity in non-oil manufacturing relative to the 1970s, when policies were more interventionist, and the country's trade and investment regimes were more restrictive (Aswicahyono and Hill, 2002). In general, increasing trade openness is expected to boost TFP growth not only through heightened competition with imported goods, but also as a result of knowledge spillovers and technological

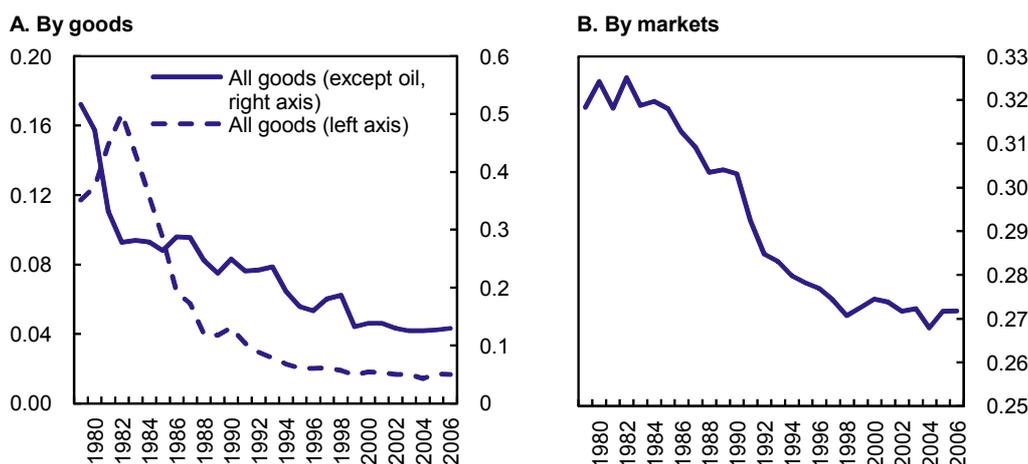
progress embodied in imported capital goods and intermediate inputs. This potential stimulus to the diffusion of technological progress is particularly important in Indonesia, given the low level of R&D carried out by the private sector (discussed below). Increased trade openness was also accompanied by a gradual decline in export concentration for both markets and goods, including for non-oil products (Figure 4). But the trend in export concentration appears to have levelled off since the financial crisis.

Figure 3. Trade protection, 1989-2006



Source: UNCTAD-TRAINS and OECD calculations.

Figure 4. Export concentration, 1979-2005¹



1. Export concentration is defined as $C = \sum_i \left(\frac{X_i}{X} \right)^2$, where X denotes total exports and i denotes export markets or goods.

Source: COMTRADE and OECD calculations.

The effect of trade liberalisation on productivity appears to have been strongest as a result of lower tariff protection for goods used as industrial inputs, rather than final goods. This is confirmed by empirical evidence for the manufacturing sector (Amiti and Konings, 2005). It can be argued that lower tariffs on imported inputs are productivity-enhancing because of product variety and quality effects. But the comparatively weaker effect of trade liberalisation on productivity due to lower tariffs on final goods might suggest the presence of barriers to competition. This is because, for a more liberal trade regime to contribute to efficiency gains, it needs to foster competition in domestic markets.⁷ Based on this empirical finding, it can be argued that product-market regulations may have failed to ensure competition between domestic and foreign producers as the country's trade regime was liberalised.

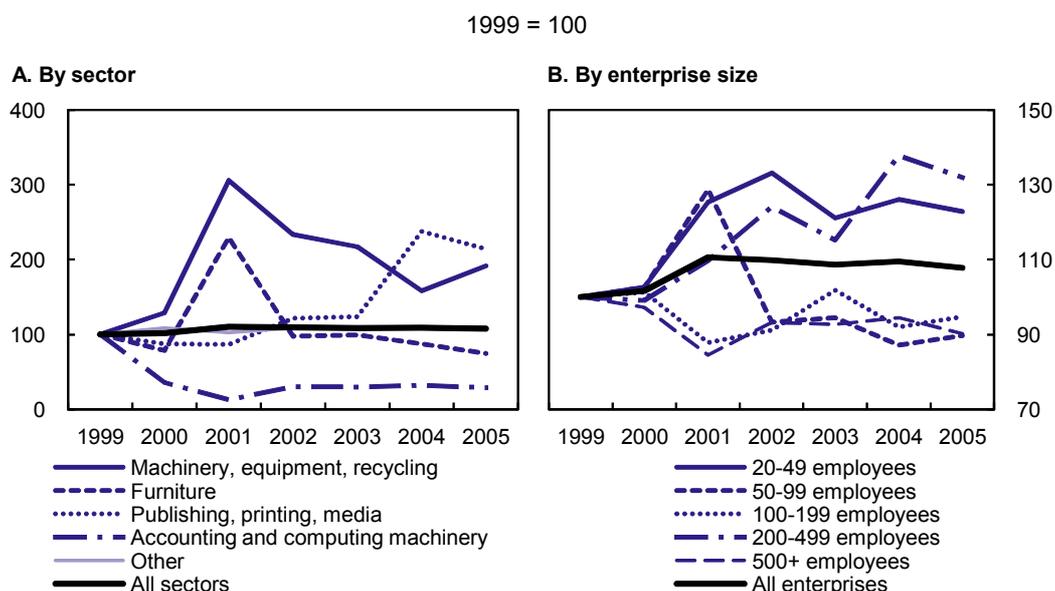
Efficiency gains can also arise from competition in foreign markets. Exporting firms tend to be more efficient than domestic firms, because they compete abroad. This is confirmed by empirical evidence for Indonesia: analysis based on enterprise-level data shows that exporting firms tend to be more productive and to grow faster than non-exporting firms (Sjöholm, 1999a and 1999b). Cross-country experience also suggests that exporting firms tend to be more innovative than their counterparts that do not export. This association between innovation, productivity and export orientation is important, because it underscores the logic of integrating – and maximising synergies – among policies in the areas of innovation and trade competitiveness.

FDI also contributes to productivity growth. Foreign-owned or controlled enterprises tend to be more efficient than their locally-owned counterparts. This is because they have superior firm-specific assets arising from the use of more modern technologies, best management practices and know-how, and easier access to global distribution, marketing and production networks. This hypothesis is borne out by Indonesian data. Evidence at the enterprise level for the manufacturing sector suggests that value added per employee is indeed higher in foreign-owned or controlled firms, taking account of scale effects in production (Takii and Ramstetter, 2005). The share of foreign-owned enterprises in value added has risen steadily over time, including in the aftermath of the 1997-98 crisis, to reach about 36% on average in 2000-05 (with 22% of employment).⁸ The sectors with the largest presence of foreign-owned or controlled firms are electric, electronic and precision machinery.

Labour productivity has risen at a relatively modest pace in manufacturing since 1997-98. Industrial-survey data for manufacturing enterprises with at least 20 employees show that labour productivity grew on average by about 1.3% per year during 1999-2005 (Figure 5). Productivity gains have been particularly high in sectors such as machinery and equipment, and productivity gaps between enterprises of different sizes appear to have persisted over time. It should be recognised, however, that these trends may overestimate productivity growth to the extent that smaller enterprises, which account for the bulk of employment in Indonesia, including unregistered businesses, are excluded. Labour productivity is likely to have risen at an even slower pace in those enterprises.

The bulk of labour productivity growth can be attributed to firm dynamics. This is the case when entry of more productive firms displaces their less productive counterparts, and resources (labour and capital) can be reallocated to more productive uses. Empirical evidence using enterprise-level data shows

-
7. Evidence for the OECD shows that relatively pervasive employment protection and anti-competitive regulations in goods markets tend to curb FDI (Hajkova *et al.*, 2006). In a similar vein, Blomström and Kokko (1993) find that the intensity of the technological transfer from US firms investing abroad increases with competition in the host country.
 8. Takii and Ramstetter (2005) highlight a discrepancy in FDI trends calculated on the basis of the balance of payments and *Statistik Industri*. Accordingly, industrial-survey data do not show a fall in foreign ownership in manufacturing, as opposed to the balance-of-payments estimates.

Figure 5. Labour productivity in manufacturing, 1999-2005¹

that the effect of entry and exit on productivity was particularly strong for smaller enterprises over the period 1994-2000 (ter Wengel and Rodriguez, 2006). However, firm dynamics appear to have changed over time. Entry rates do not seem to have recovered after the crisis (Narjoko, 2006). Smaller firms are growing more slowly, and most output growth is now coming from existing firms, rather than from new entrants. Sector-level data shows that net entry has been negative in selected sectors, including textiles, clothing and footwear, wood products and non-metallic minerals, in which Indonesia has a comparative advantage, but positive in basic metals and electronics. Conversely, patterns in plant expansions and contractions do not seem to have changed after the crisis, although there are variations across sectors. These findings underscore the scope for productivity enhancement through regulatory reform aimed at lowering entry costs, such as pro-business registration and licensing procedures, and facilitating exit, through effective bankruptcy legislation and well functioning legal and court systems (discussed in Moccero, 2008).

Box 3. Indonesia's trade regime and performance: An overview

Trade regime

Indonesia is a fairly open economy. Import tariffs have been declining steadily since the 1980s. The average unweighted MFN tariff was 7% in 2006 (6.1% if trade-weighted). The authorities are committed to reducing average tariffs further by 2010. By then, 87% of tariff lines will be either 5% or 10%. There is, however, an exemption list of products subject to import duties of 35% or more, which accounts for about 6% of all tariff lines. These products will not be subject to lower rates until 2020.

At about 3-4%, Indonesia's effective import tariff, defined as the ratio of revenue from customs duties to imports, is much lower than the average MFN tariff rate. This is essentially because of Indonesia's commitments to the ASEAN Free Trade Agreement (AFTA); accordingly, the most common effective preferential tariff lines have rates ranging between 0 and 5%. At the same time, a substantial proportion of imported intermediate goods enter duty-free under Indonesia's various export facilitation programmes.

Despite comparatively low tariffs, Indonesia's trade regime also includes a number of non-tariff barriers. They are related predominantly to a range of agricultural products, including rice, sugar, wheat flour, shrimps and cloves, as well as motor vehicles, electronic components and textiles, among other items. Non-tariff protection has increased since 2001, and anti-dumping measures are alleged to have been used as a protectionist instrument.

The liberalisation of Indonesia's trade regime over the years is unlikely to be reversed. But protectionist pressures sometimes emerge, reflecting to a certain extent different policy priorities among the government agencies and ministries in charge of setting tariff and non-tariff instruments. Import tariffs are under the purview of the Ministry of Finance, which is a proponent of trade openness, while non-tariff barriers are often set by line ministries, such as Agriculture and Industry, which tend to be more protectionist (Basri and Soesastro, 2005).

Trade performance

Despite a relatively open trade regime, Indonesia's actual openness, measured as the ratio of imports and exports to GDP, is much lower than in regional comparator countries. At about 51% of GDP, Indonesia's trade ratio compares unfavourably with the average of 130% of GDP for the ASEAN countries during 2000-07, although Indonesia is much larger than those other countries. In addition, Indonesia's market share has stagnated at nearly 1% of world trade, while those of other Asian countries have risen since the 1997-98 financial crisis. This export stagnation is especially disturbing in the case of labour-intensive goods and natural resources, in which Indonesia has a comparative advantage.

There is potential for raising Indonesia's trade. Controlling for size, economic development and location, the empirical evidence reported by Jain-Chandra (2007) shows that actual import and export flows are significantly below the levels implied by standard gravity models. This gap suggests that there is considerable latent demand for Indonesian exports and scope for raising imports. Supply constraints, discussed elsewhere in this *Economic Assessment*, may create obstacles for higher trade. But comparative advantages and specialisation patterns also matter.

4. The macroeconomic policy setting

There is broad agreement that a stable macroeconomy is an essential framework condition for sustained growth. Indonesia's policy framework has evolved considerably over the years, and the country's macroeconomic performance has improved.

Fiscal policy

Fiscal policy has been conducted in an increasingly decentralised manner. The process of decentralisation that was launched in 2001 put the local governments at the helm of service delivery (Box 4). Resolute central government control over sub-national finances, especially in the areas of budget making, financial management and investment, has prevented financial imbalances from emerging and endangering overall macroeconomic stability. This is particularly remarkable in a country with sizeable vertical imbalances in intergovernmental fiscal relations, which are financed predominantly through block transfers from the centre. In such an environment, international experience suggests that decentralisation often results in fiscal disarray, especially in countries with comparatively weak fiscal institutions (de Mello, 2000). Another achievement on which Indonesia should be commended is the actual implementation of decentralisation in 2001, a complex process that required considerable coordination efforts to prevent disruptions in service delivery.

Fiscal performance has improved over the years. Tax revenue has risen steadily, especially from the income tax and, to a lesser extent, the value-added tax (VAT) (Table 2). Revenue from taxes on international trade is coming down in relation to GDP, reflecting essentially a gradual reduction in import tariffs (discussed above). Efforts are under way to strengthen tax administration, especially with respect to

the protection of taxpayers' rights⁹ and the administration of VAT refunds; to alleviate the income tax burden on businesses by reducing marginal tax rates; and to broaden the VAT base. Decisive action has been taken to stamp out corruption in customs and tax administration, including by the dismissal of senior government officials and a significant increase in compensation for civil servants working in those agencies.

At the same time, there have been important changes in the composition of expenditure. A reduction in interest payments since the financial crisis has created room in the central government budget for hiking capital spending. Also, transfers to the provinces and local governments have increased since 2001 in tandem with decentralisation, which has also led to a gradual decrease in central government spending on payroll, because of the devolution of formerly deconcentrated personnel to sub-national jurisdictions.

Box 4. Fiscal decentralisation in Indonesia: Achievements and challenges

Following the demise of the Suharto regime in 1998, Indonesia launched an ambitious fiscal decentralisation programme in 2001. Decentralisation allowed for increasing demands for policymaking autonomy at the sub-national level to be met in a country that is characterised by considerable economic, geographic, religious and ethnic diversity. Indonesia is the world's largest archipelago State and one of the most spatially diverse nations in its resource endowments, population settlements, location of economic activity, ecology and ethnicity. There are in total 350 identified ethnic groups. In the early 2000s, per capita regional product in the richest province, East Kalimantan, was around 16 times that of the poorest, Maluku (Annex 1.A2).

The institutional framework for decentralisation was consolidated in Laws No. 22 (on regional governance) and No. 25 (on intergovernmental fiscal relations) of 1999. Complementary legislation was issued in 2004 (Law No. 32 of 2004) to strengthen central government control over local government finances and to clarify expenditure assignments between the provinces and the local governments. The main features of Indonesian decentralisation are as follows:

- **A focus on local, rather than middle-tier, governments in service delivery.** Several expenditure assignments, especially in the social area, were decentralised to the local governments (*kabupaten/kota*). Local governments were also granted political autonomy, and efforts have been made to boost accountability of locally elected leaders and legislatures. Local governments now account for almost two-thirds of consolidated government spending, nearly double the pre-decentralisation share.
- **Significant vertical and horizontal imbalances in intergovernmental fiscal relations.** Local governments have limited taxing autonomy: income and property tax revenue is collected by the centre and transferred to the local governments on a derivation basis. The bulk of local government revenue comes from a general allocation grant (DAU, *dana alokasi umum*),¹ followed by the sharing of oil and gas revenue (SDA) and earmarked or conditional transfers (DAK, *dana alokasi khusus*), which are used to finance predominantly capital outlays. Own revenue accounts for less than 10% of local government revenue. Decentralisation exacerbated horizontal inequality among the local governments, because the sharing of revenue from the exploitation of natural resources is limited to the oil- and gas-rich provinces, and the scope for equalisation through the general allocation grant on the basis of estimated fiscal capacity and expenditure needs is limited.

9. The government's original proposal was that taxpayers who wished to appeal against their tax assessment should make an initial payment in advance. If the appeal were rejected, the taxpayer would have to pay a fine of up to 100% of his/her tax liability. Taxpayers could appeal again, but the fine would increase to 200% of tax liabilities for a failed appeal. This proposal was rejected, and the law approved by Parliament in 2007 requires no advance payment for appeals and sets fines at 50 and 100% of tax liabilities, respectively. The new law also provides for punishing tax officials who are found to have treated taxpayers unjustly.

- **Central government financial control.** The central government retains control over the regional governments (provinces and local governments) in areas related to tax policy (by setting tax bases and ranges for rates), budget making (local budgets need to be submitted to and approved by the central government), financial management (there are constraints on local government borrowing and debt management) and investment programmes, including in devolved sectors, such as education, health care and infrastructure development.

The main achievements of “big-bang” decentralisation in 2001 are as follows:

- **Smooth implementation.** Legal uncertainty and the need to decentralise a large number of personnel and assets to the provinces and local governments posed considerable risk of disruption in service delivery in the wake of decentralisation. Nevertheless, disruption was minimal, despite serious administrative and capacity constraints at the local level.
- **Preservation of macroeconomic stability.** The decentralisation of expenditure mandates and the design of revenue sharing and transfer systems posed risks for macroeconomic financial management. Nevertheless, revenue sharing was guided by a “revenue-follows-expenditure” principle, which prevented the creation of unfunded mandates, although expenditure needs were not carefully assessed at the time of decentralisation. Legal constraints imposed on sub-national financial operations, including on borrowing, also minimised financial risks. Since 2004, there has been greater control by the centre on regional government budget making and personnel management.

Despite these achievements, there are important challenges to be addressed.

- **Capacity constraints.** The demands imposed by decentralisation have put considerable strain on the central government, particularly in the areas of budget making and more recently personnel management. Delays in the approval of local government budgets are not infrequent, which disrupts the implementation of local infrastructure projects, for example. At the local government level, capacity constraints are concentrated in service delivery. It is estimated that regions have been building up savings over the recent past that amounted to some 70 trillion *rupiah* (2% of GDP) at the beginning of 2006 (World Bank, 2006).
- **Creation of local taxes and levies.**² Such levies are often created in an extra-legal manner (*i.e.* without the review and approval by the central government, as required by law), despite the issuance of Law No. 34 of 2006, which sets out a “positive list” of allowable taxes, together with prescribed rate ranges. This proliferation of local levies has resulted in institutional uncertainties that have affected the business climate adversely. The proliferation of such levies has also created a fertile ground for corruption.
- **Scope for horizontal equalisation in the grant system.** There is a trade-off between increased emphasis on the financing of local government wage costs on the basis of general allocation transfers (DAU) after 2004 and the scope for equalisation through grant arrangements. In addition, for the equalisation component of the grant system to be effective, information is needed on local government fiscal capacity and expenditure needs to be reliable and timely, instead of the proxies currently used.
- **Proliferation of local jurisdictions.** The number of local governments rose from 314 in 1998 to 440 at end-2005. Also, five provinces were created, raising their number to 33. Legal constraints on the creation of new jurisdictions are lax and incentives are strong, given the reliance of local governments on financing from the centre, as well as bureaucratic and political rent seeking in some cases.³

1. DAU is financed through a fixed share of central government net revenue (currently 26%), of which 90% is allocated to the local governments on derivation and, to a much lesser extent, equalisation bases, and the remainder is allocated to the provinces. Although DAU allocations are intended to be formula-based, they are still guided in part by historical budgeting on the basis of pre-decentralisation appropriations for the formerly deconcentrated personnel and assets that have subsequently been decentralised to the regional governments. There has been less emphasis on equalisation and more on financing local government wage bill since 2004. See Hofman *et al.* (2006) for more information.

2. See Lewis (2006) for more information.

3. See Fitriani *et al.* (2005) for more information.

Despite successive reductions, especially in 2001-02 and 2005, price subsidies for fuel and electricity continue to weigh heavily on the budget. Despite an increase in domestic prices by nearly 30% in May, fuel subsidies are projected to account for almost 20% of spending in 2008, up from about 13% in 2007, owing to high international oil prices. Fuel subsidies correspond to the transfers from the central government to the State-owned oil company (*Pertamina*) to cover the losses the company incurs when the domestic price of fuel is kept below international prices. Electricity subsidies, which also arise from maintenance of domestic prices below their market-clearing level, are also costly to the budget.¹⁰ The authorities have reiterated on several occasions their intention to eliminate these subsidies, but no date has yet been set. Efforts to introduce explicit mechanisms for adjusting domestic fuel prices, such as in 2001-02, have faced political opposition, especially in periods of rising international oil prices.

Table 2. **Budget operations: Central government, 1990-2007**

	In per cent of GDP					
	1990	1995	2000	2005	2006	2007
Revenue and grants	18.1	14.2	14.8	17.8	19.1	17.9
Tax	9.4	9.7	8.3	12.5	12.2	12.4
Income tax	3.5	4.2	4.1	6.3	6.3	6.0
Value-added tax (VAT)	3.5	4.2	2.8	5.0	5.0	4.9
International trade	...	...	1.3	1.3	1.3	1.1
Other	3.5	3.7	2.5	3.6	3.7	3.9
Non-tax	1.2	0.6	0.5	0.5	0.4	0.5
Grants	1.2	1.2	1.2	2.0	1.9	1.9
Expenditure	17.1	13.0	15.9	18.3	20.1	19.1
Current	7.7	5.7	11.7	10.7	10.2	11.1
Personnel	3.0	2.6	2.1	2.0	2.2	2.3
Goods and services	0.8	1.0	0.7	1.2	1.4	1.4
Interest payments	2.1	1.3	3.6	2.1	2.4	2.0
Subsidies	1.5	0.0	4.5	4.3	3.2	3.8
of which: fuel	1.5	0.0	3.9	3.4	1.9	2.1
Other	0.2	0.7	0.8	1.1	1.1	1.6
Development outlays ¹	6.4	4.3	1.9	2.2	3.1	1.6
Intergovernmental transfers	3.0	3.1	2.4	5.4	6.8	6.4
Overall balance	1.0	1.2	-1.2	-0.5	-1.0	-1.2
<i>Memorandum items:</i>						
Financing						
Domestic sources	-1.4	-0.2	0.4	0.8	1.7	1.8
Bank	-1.4	-0.6	-0.9	-0.1	0.6	0.4
Non-bank	0.0	0.3	1.4	0.9	1.1	1.5
Privatisation	0.0	0.0	0.0	0.0	0.0	0.0
Recovery of bank assets	0.0	0.0	1.4	0.2	0.1	0.1
Bond assurances	0.0	0.3	0.0	0.8	1.1	1.4
Foreign sources	0.3	-1.0	0.7	-0.4	-0.8	-0.6
Gross debt	42.4	30.8	83.8	45.5	39.2	35.0

1. Comprises outlays on capital and social assistance from 2005.

Source: Ministry of Finance, World Bank (*World Development Indicators*) and OECD calculations.

Fuel price subsidies are undesirable for a number of reasons. *First*, they benefit the well-off more than vulnerable individuals. Official estimates show that nearly two-thirds of subsidies on fuels accrue to the

10. Expenditure on both types of subsidy is strongly correlated, because higher oil prices affects the cost of electricity generation, given Indonesia's reliance on diesel-based power plants.

richest 40% of the population. The electricity subsidies that are not capped at low consumption capacity have also been shown to be rather regressive (World Bank, 2007). *Second*, they pose an undue financial burden on the State-owned utility companies, which are prevented from pursuing their commercial objectives independently of the government's social policies. *Third*, they have an adverse impact on the environment by keeping the price of fossil fuels artificially low, thereby discouraging conservation and a search for alternative sources of energy. *Finally*, by putting pressure on the budget, these subsidies run counter to ongoing efforts to allocate a rising share of budgetary resources to infrastructure investment, human capital accumulation and social protection programmes.

Consistent with improving fiscal performance and growth, public indebtedness has come down from about 84% of GDP in 2000 to 35% in 2007. The public debt ratio rose alarmingly in the immediate aftermath of the 1997-98 crisis, owing principally to the costs accruing to the budget from the government's blanket deposit guarantee scheme and the issuance of recapitalisation bonds to rescue the failing banking and corporate sectors, totalling about 740 trillion *rupiah* in 1998-99 (about one-half of GDP in 1999). However, owing to fiscal restraint, public debt has fallen quickly as a proportion of GDP since 2001.¹¹ A Fiscal Law (Law No. 17) was introduced in 2003, capping budget deficits at 2% of GDP and the public debt at 60% of GDP.

There is fairly widespread agreement that, with favourable public debt dynamics, Indonesia is likely to enjoy a comfortable fiscal position over the longer term. A further gradual reduction in public indebtedness is expected to continue to alleviate the financial burden of debt service. At the same time, efforts to cut back price subsidies would create further room in the budget to reallocate appropriations in favour of more meritorious, growth-enhancing programmes. These trends are welcome, because a strengthening of social protection, especially through targeted income transfers to vulnerable households, as well as rising demand for social services, including education and health care (see below), will probably account for a growing share of the budget.

Monetary policy

Monetary policy has been conducted within a fully-fledged inflation-targeting regime since July 2005, when monetary targeting was formally abandoned (Box 5). Annual inflation targets had been announced since 2000, and legislation was issued in 1999 (and revised in 2004) granting Bank Indonesia independence. It is therefore too soon to ascertain the extent to which the change in the policy regime has affected macroeconomic outcomes in a discernible manner. Credibility was enhanced by Bank Indonesia's resolute response to an upsurge in inflation in 2005-06, when it pre-emptively raised the policy interest rate to tackle the second-round effect of the adjustment in fuel prices from feeding through to headline inflation (Figure 6). The inflation outlook nevertheless began to deteriorate towards end-2007 owing to rising food and unsubsidised fuel prices, and worsening inflation expectations. The policy interest rate was raised by 50 basis-points in total in May and June 2008 to 8.5% following a 25 basis-point cut in December 2007. A further tightening is expected in the course of the year in response to the sharp increase in domestic fuel prices in mid-May. Decisive action in this area is essential for anchoring inflation expectations over the coming months and continuing to build credibility in the policy regime. Inflation is currently higher in Indonesia than in the country's main trading partners. At nearly 14%, Indonesia's average consumer-price inflation during 1995-2007 is well above the 2% average of its trading partners. Inflation is also more volatile in Indonesia: the coefficient of variation of inflation during 1995-2007 is about 1.1, against nearly 0.4 for the average of the country's main trading partners. The most important consideration in this area is that a persistent inflation differential is detrimental to the competitiveness of Indonesian exports if the nominal exchange rate fails to adjust. The government has signalled its commitment to inflation

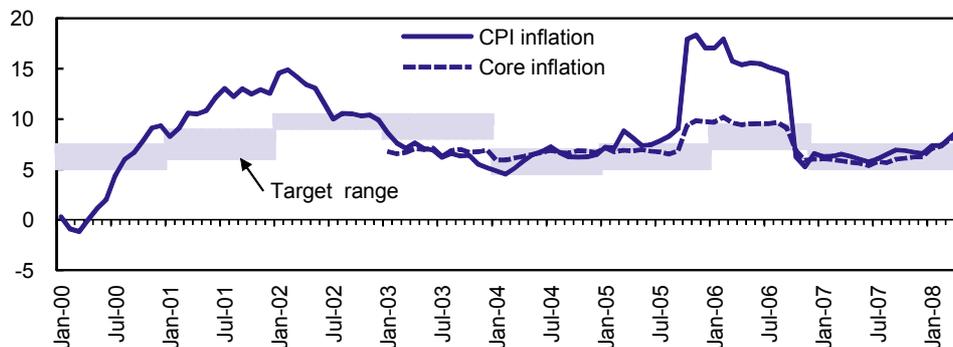
11. See Rosengard (2004) for a detailed analysis of Indonesia's fiscal performance before and after the crisis.

convergence by setting gradually decreasing the inflation targets for 2008-10, from 4-6% in 2008 to 3-5% in the medium term.

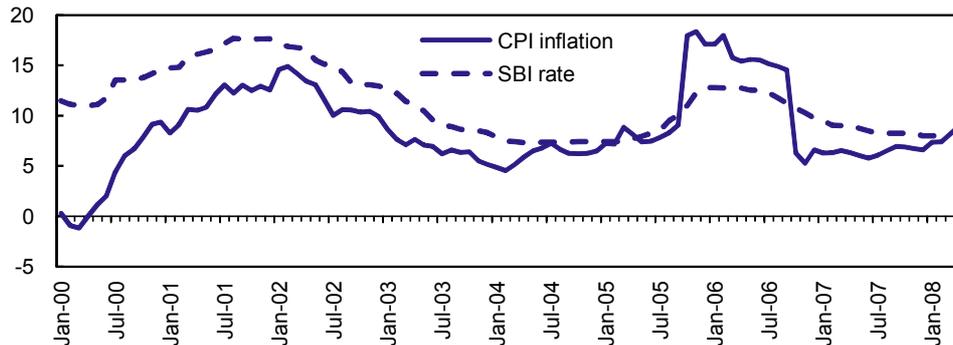
Figure 6. Inflation, monetary policy and exchange rates, 2000-08

In per cent, unless otherwise indicated

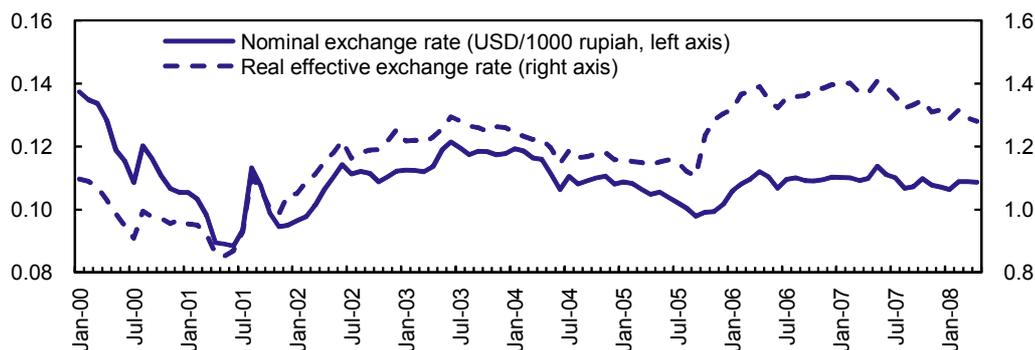
A. Inflation and targets



B. Inflation and monetary policy



C. Exchange rates



Source: Bank Indonesia and OECD calculations.

A floating exchange-rate regime is serving Indonesia well. It has allowed the central bank greater flexibility to conduct monetary policy. Exchange-rate flexibility also has the advantage of allowing adverse external shocks to be absorbed at a lower output loss than in the case of managed or fixed regimes. The central bank has intervened periodically in the foreign-exchange market, especially in periods when the exchange rate has appreciated and concern has emerged about export competitiveness. Until recently, a declining interest-rate differential with respect to global markets had put some downward pressure on the *rupiah*.

A high share of food and administered prices in the consumption-price index (CPI) poses a challenge for the monetary authorities. To a certain extent, this is true for emerging markets in general, which tend to have a higher weight of such items in the CPI than more mature economies. To deal with this problem, BI and the government set up an Inflation Control Taskforce in 2004, whose members are from various line ministries, to propose the inflation target to be set annually, to evaluate the sources of inflationary pressures and their impact on the achievement of the inflation target, to recommend policy options for achieving the inflation target, and to disseminate information on the inflation target and the policy efforts to achieve it.

The banking sector is sound, having recovered in earnest from the financial crisis of 1997-98. Capital-assets and liquid reserves-assets ratios have improved over the years, and the prevalence of non-performing loans has been reduced (Table 3). Banking regulations have been tightened since the financial crisis, including through more stringent requirements for loan classification, provisioning, related-party lending, capital adequacy and exchange-rate risk. The blanket deposit guarantee that was put in place at the time of the crisis has now been replaced by more effective financial safety nets, which include lender-of-last-resort operations for systemically important institutions and short-term liquidity facilities for banks, as well as a limited deposit-insurance scheme. Bank Indonesia's supervisory capabilities have also been strengthened. Moreover, there has been considerable consolidation in the banking sector in recent years, a phenomenon that is not yet expected to thwart competitive pressures in the industry. Nevertheless, the non-bank segment remains small, and the banking sector is dominated by State-owned institutions.

Table 3. **Indonesia: Selected financial and monetary indicators, 2001-07**

	2001	2002	2003	2004	2005	2006	2007
Financial indicators							
Ratio of bank capital to assets (in per cent)	5.2	8.8	9.6	10.8	10.2	10.7	11.1
Ratio of bank liquid reserves to bank assets	11.1	11.1	12.0	14.1	15.5	15.9	..
Ratio of non-performing loans to gross loans (in per cent)	31.9	24.0	19.4	14.2	14.8	13.1	13.5
Monetary aggregates							
Liquid liabilities (M3, in per cent of GDP)	50.9	48.2	47.0	44.9	43.1	41.3	..
Money and quasi-money (M2, in per cent of GDP)	48.2	47.1	45.3	43.1	40.1	38.6	..
Money and quasi-money growth (annual, in per cent)	11.9	4.8	7.9	8.9	16.4	14.9	..

Source: World Bank (*World Development Indicators*).

Box 5. Inflation targeting in Indonesia

Bank Indonesia has set and announced explicit inflation targets as its ultimate monetary policy objectives since 2000, following the enactment of the central bank law in 1999.¹ The law was subsequently amended in 2004, and the inflation target was set by the government in coordination with the central bank at 5-7% in 2005, 4.5-6.5% in 2006 and 4-7% in 2007. These targets were revised upwards in March 2006 to 7-9% in 2006 and to 5-7% in 2007 and set at 4-6% in 2008.

Both the definition of the price index used for targeting inflation and the level of inflation to be targeted have changed over the years. BI announced its first annual target for CPI inflation at the beginning of 2000 for the period 2000-01 excluding administered prices. The target was set for full CPI inflation in 2002. The central bank nevertheless emphasized core inflation, which excluded administered and volatile food prices, when formulating monetary policy. In addition to setting the annual targets, the central bank also announced in 2002 its commitment to bring CPI inflation down to a 6-7% range within five years as a medium-term inflation objective. This long-term target was adjusted upwards in 2006 to the 7-9% range in response to the fuel-price hike, but was subsequently lowered to 5-7% from 2007.

As in other inflation-targeting emerging-market economies, the announcement of targets for inflation coexisted with monetary targeting during an initial transition phase. BI used base money as its operational target until July 2005, but the instability of money demand and the difficulty of pursuing two separate targets led the central bank to focus solely on the pursuit of its inflation target.

The policy interest rate is the BI Rate, the rate of return on the one-month Bank Indonesia Certificate (SBI). Several facilities are in place for short-term lending and liquidity withdrawal. In addition, to ensure stability in the money-market rate, BI has provided a standing facility (corridor) within an 800 basis-point band (300 basis-points above the BI Rate and 500 basis-points below it). This band was narrowed in early 2008 to 600 basis-points (300 basis-points above and below the BI Rate).

1. See Sarwono (2008) for more information.

5. Policy challenges for enhancing growth performance

Boosting human capital accumulation and innovation

Background

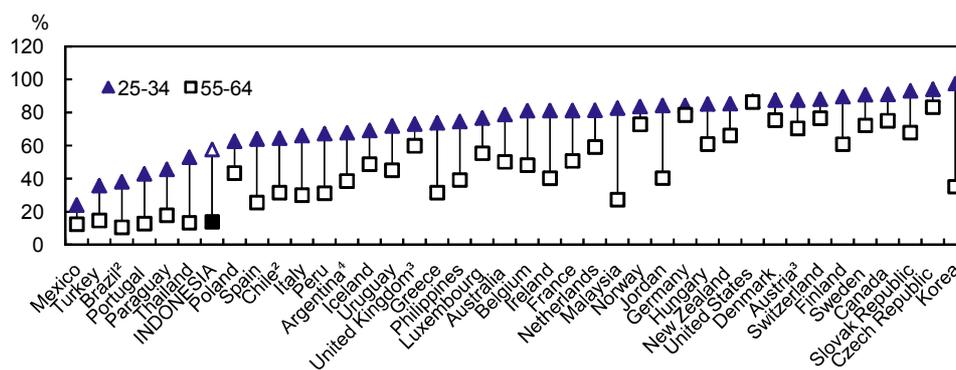
Low human capital is an important impediment to productivity enhancement. It constrains technological progress, including both the creation and diffusion of new technologies, and the development of skills-intensive industries. Indonesia's basic indicators of educational attainment have improved but remain sub-par in comparison with OECD countries and regional peers (Table 4). Progress in this area, which should not be underestimated, owes much to an ambitious programme that was put in place in the 1970s to build schools and to ensure access to schooling by the population, especially school-age children residing in remote areas. Consistent with these efforts, the increase in educational attainment across age cohorts has been remarkable (Figure 7). The share of population with at least lower-secondary education is more than three times as high among younger individuals (25-34 years of age) as for their older counterparts (aged 55-64 years). Notwithstanding this achievement, the performance of Indonesian students on the basis of standardised tests, such as the OECD's Programme for International Student Assessment (PISA), is clearly inferior to that of regional peers and the OECD area.

To a certain extent, Indonesia's low educational attainment and poor performance appear to be associated with a lack of investment in education. Total spending financed from public sources is low in

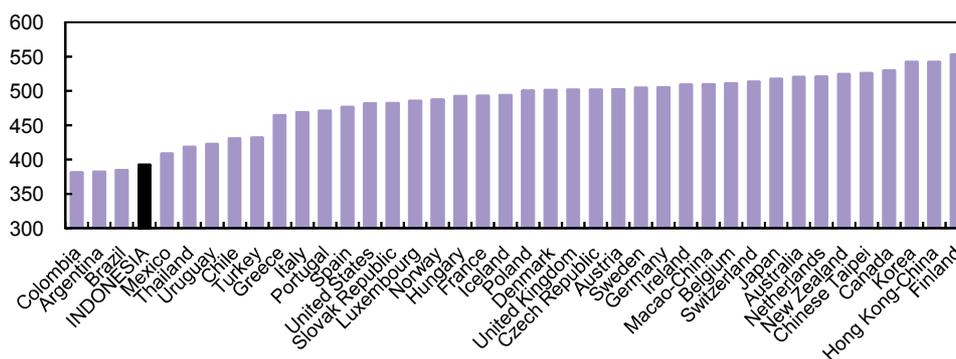
relation to national income, despite some improvement over the years, even with respect to regional comparator countries (Figure 8). As an initial step towards remedying this situation, the authorities amended the Constitution in 2002 to introduce a floor for government spending on education at 20% of total expenditure. Budgetary appropriations are therefore expected to rise over time, because current spending remains well below the mandated level.

Figure 7. **Educational attainment and performance: Cross-country comparisons, 2006**

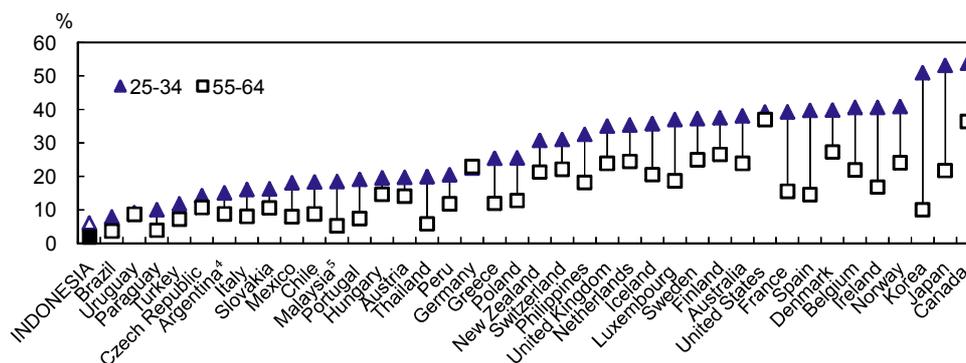
A. Lower-secondary educational attainment by cohort¹



B. PISA score



C. Tertiary educational attainment by cohort

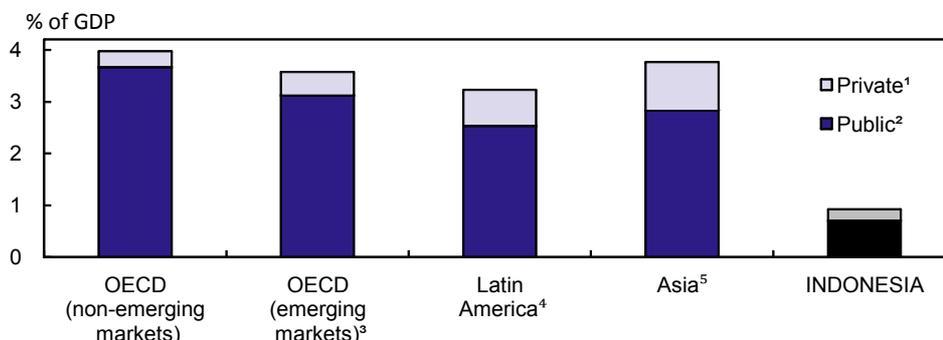


1. Excludes ISCED 3C short programmes.
2. The year of reference is 2004.
3. Includes some ISCED 3C short programmes.
4. Refers to urban areas.
5. Post-secondary non-tertiary education is included in tertiary education.

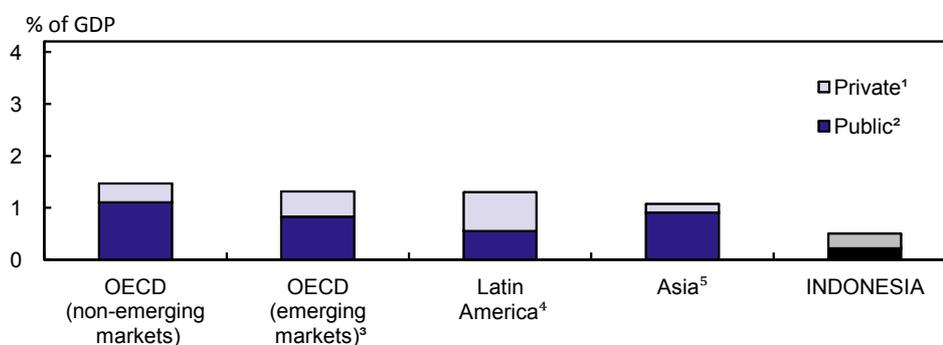
Source: OECD (*Education at a Glance*) and UNESCO/UIS WEI.

Figure 8. Expenditure on education: Cross-country comparisons, 2006

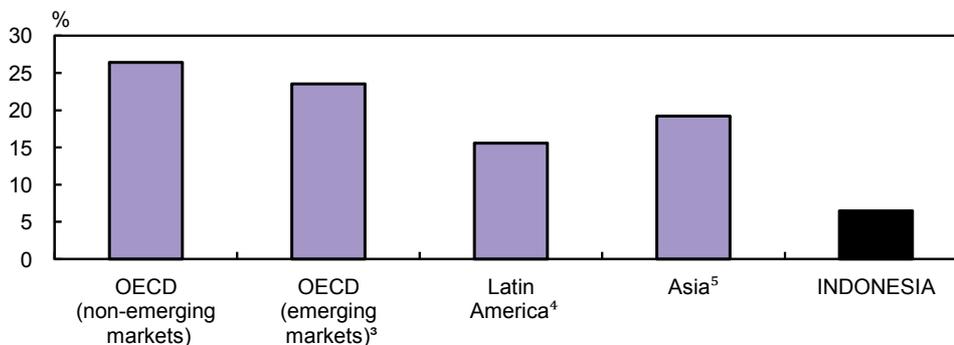
A. Pre-tertiary



B. Tertiary



C. Annual expenditure on educational institutions per student relative to GDP per capita



1. Net of public subsidies for educational institutions.
2. Includes public subsidies to households attributable to educational institutions and direct expenditure by educational institutions financed from international sources.
3. Includes Czech Republic, Hungary, Korea, Mexico, Slovak Republic and Turkey.
4. Includes Argentina, Brazil (only public spending), Chile, Paraguay, Peru and Uruguay.
5. Includes India, Malaysia, Philippines and Thailand.

Source: OECD (*Education at a Glance*).

Table 4. Education and health indicators: Cross-country comparisons, 1990, 2000 and 2005

	Indonesia			Southeast Asia	OECD
	1990	2000	2005		
Education					
Net enrolment rates (%)					
Primary education	96.6 ¹	93.9	95.5	93.2	96.0
Secondary education	39.1 ¹	48.6	58.3	68.3	92.3
Tertiary education (gross)	9.2 ¹	14.4 ²	17.1	20.4	69.5
Persistence to grade 5, total (% of cohort)	83.6 ¹	95.3	89.5 ³	..	..
Repetition rate, primary (% of total enrolment)	9.7 ¹	6.2 ²	4.6	1.5	..
Literacy rate (% of population aged 15 and above)	83.6 ¹	95.3	89.5 ³	..	..
Males	81.5	..	90.4 ³	90.8	99.1
Females	75.3	..	86.8 ³	86.8	98.9
Health					
Births attended by skilled health staff (% of total)	31.7 ¹	64.2 ²	71.5 ³	86.9	..
Pregnant women receiving prenatal care (%)	76.2 ¹	..	..	88.6	0.0
Immunisation rates (per cent of children ages 12-23 months)					
DPT	60.0	75.0	70.0	83.7	95.4
Measles	58.0	72.0	72.0	83.4	92.5
Malnutrition prevalence, weight for age (% of children under 5)	..	24.6	..	15.0	..
Incidence of tuberculosis (per 100 000 people)	342.8	269.7	239.2	136.5	16.0
Mortality rate, under age of 5 (per 1 000)	91.0	48.0	36.0	32.7	5.7

1. Refers to 1991.

2. Refers to 2001.

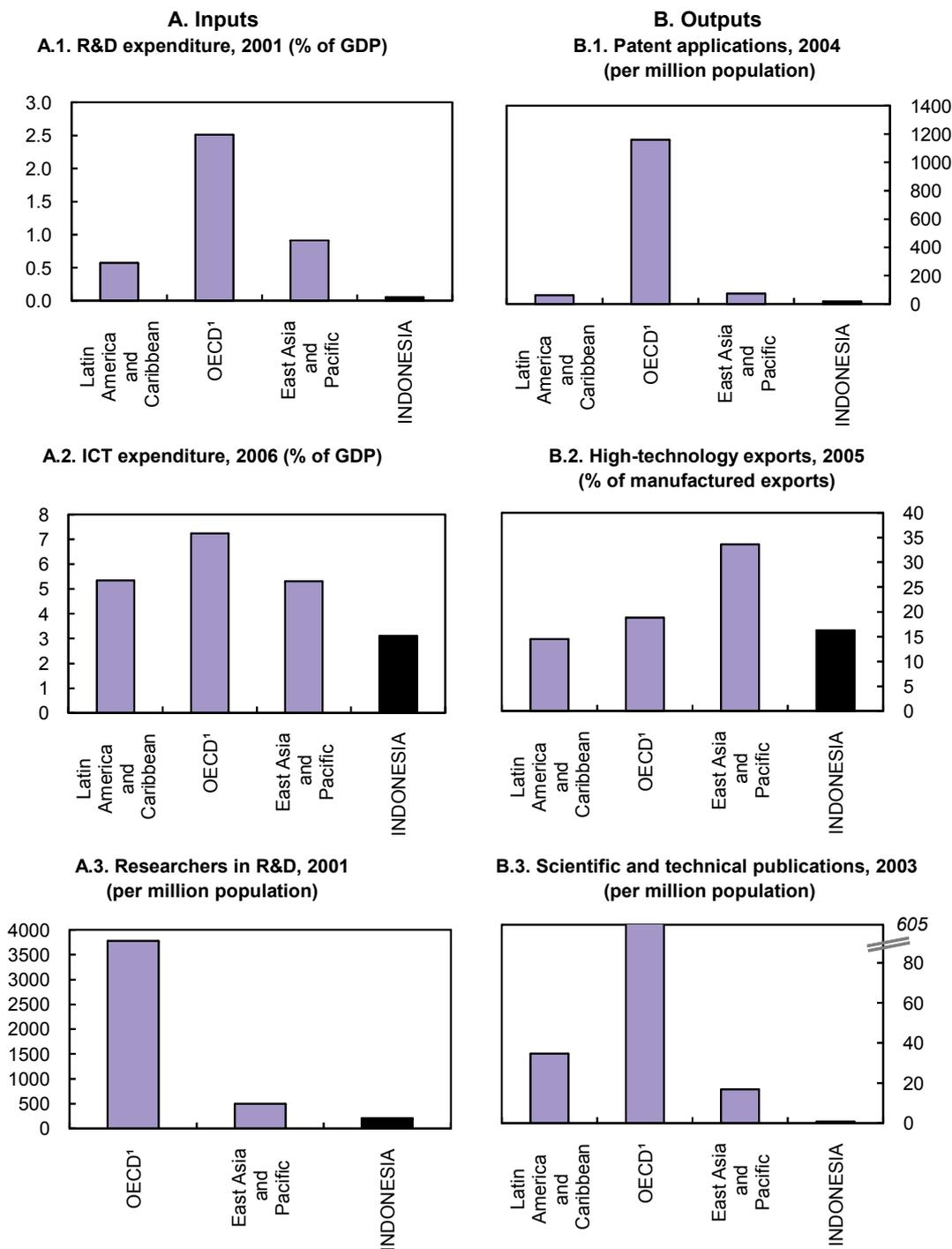
3. Refers to 2004.

Source: World Bank (*World Development Indicators*).

Consistent with relatively low educational attainment, the human capital embodied in the labour force is also low. Enterprise-level data available from the industrial survey for 1997, the latest year for which comprehensive information is available on the composition of employment in the industrial sector by educational attainment, shows that only about 4% of employees had completed at least higher education, against about 40% for those who have completed upper-secondary education. This is not surprising, given the country's comparatively low tertiary-education attainment rate, which did not vary much across age cohorts.

Low human capital also affects a country's potential for innovation, an area where Indonesia fares rather poorly in comparison with OECD countries and regional peers. Input indicators, such as R&D intensity, spending on information and communication technologies, and the share of researchers in the labour force, show that innovation intensity is low (Figure 9). To a large extent, R&D activity is affected by the structure of the economy, and spending tends to be comparatively low in natural resource-dependent economies. This is the case even in the OECD area. Moreover, the composition of R&D activity is heavily tilted towards government financing in Indonesia, which accounts for about 80% of the 0.5% of GDP spent on R&D in 2007. As a result, the bulk of scientists and researchers work in public universities and research institutions, rather than in the business sector. This is important, because reliance on public funding is in sharp contrast with the OECD area, where about two-thirds of R&D spending is financed by private sources. Innovation is also affected by low tertiary-educational attainment, which constrains the supply of scientists and skilled labour needed for the development of skills-intensive industries.

Figure 9. Innovation indicators: Cross-country comparisons



1. Excludes Czech Republic, Hungary, Korea, Mexico, Slovak Republic and Turkey.

Source: World Bank (*World Development Indicators*).

As a result of limited innovation activity, it is not surprising that innovation performance, as far as gauged by the number of triadic patents (*i.e.* registered in the European Union, Japan and the United States) and scientific publications held by residents, is also rather unsatisfactory. Indonesia also

compares unfavourably with respect to its neighbours in terms of the technological content of its exports. It is important to recognise that patents and publications are imperfect output indicators, given that successful innovation outcomes may also result in copyright and other licensing arrangements. But, all in all, on the basis of these conventional metrics, there appears to be plenty of room for improvement as a means of raising productivity in Indonesia through increases in innovation intensity.

Policy considerations

Policy efforts to boost human capital accumulation and innovation should focus not only on increasing educational attainment, especially at the upper secondary and tertiary levels, but also on improving performance. To some extent, the planned increase in budgetary appropriations to meet the requirement that at least 20% of government spending should be allocated to education would go some way in financing the attendant costs. But this requirement raises the question of whether or not this spending level is attainable in the near term, especially if teachers' compensation, which accounts for the lion's share of spending, is excluded from the mandated floor. The realism and desirability of the 20% spending target would therefore need to be carefully assessed. At a minimum, the floor should be redefined to include expenditure on personnel, which was excluded from 2003. In any case, it is unclear whether a rapid increase in budgetary appropriations would deliver a commensurate improvement in outcomes. International experience suggests that, for increases in outlays to bear fruit, they need to be accompanied by complementary policies to improve the efficiency of spending, including teacher training.

But initiatives to improve formal education will not benefit those workers who are already in the labour force. Vocational education and training are under the purview of local jurisdictions, although the central government retains a coordinating and supervisory role. There is little information on the programmes currently in place, especially those provided by private institutions, which are also active in this area. It is nevertheless clear that opportunities for labour training are scarce, even for formal-sector workers, and non-existent for those outside the formal labour market. The 2003 Manpower Law calls for the creation of a national vocational training system. Effort should therefore be focused on putting in place affordable, cost-effective programmes for labour training that could also be extended to informal-sector workers.

Skills certification should be expanded. The 2003 Manpower Law also covers this area, which is carried out by institutions accredited by the government. The move as from 2003 towards competency-based, rather than training-oriented, certification is welcome. But the number of competencies for which certification is currently available is limited. There is also considerable fragmentation in the system, with several competencies applying to a single occupation. Therefore, it would be desirable to expand the certification system to cover more occupations, especially those in the most dynamic sectors of the economy, and to develop cross-competency certifications that would provide a better match between occupations and their required competencies. Greater effort in this area could go in the direction of upskilling the labour force and equipping workers, especially those with informal-sector occupations, with marketable competencies. This is important, because the empirical evidence reported in Comola and de Mello (2008) shows that educational attainment is a very powerful predictor of a worker's employability in the formal sector.

The performance of Indonesian students suggests that there is ample room for improvement. The authorities are well aware of the need to make steady progress in this area and have begun to take action. There is fairly broad agreement, based on international experience, that the quality of teachers is an important determinant of student performance. To tackle deficiencies in this area, a law on skills certification for teachers was enacted in 2005 (World Bank, 2007; Arze del Granado *et al.*, 2007). Of course, for these efforts to come to fruition, follow-through is essential, and the capacity of local governments – which have become the main providers of educational services since decentralisation

in 2001 – to ensure high standards will need to be enhanced and monitored carefully. Should teachers' compensation be included in the minimum spending floor for education, additional funds would have to be made available for financing training programmes for teachers.

In countries with comparatively low innovation intensity, foreign direct investment and imports of capital goods and intermediate inputs are important conduits for technological progress. Further reductions of tariff protection for such goods would therefore be welcome and could facilitate access by Indonesian firms to new technologies embodied in imported inputs, machinery and raw materials. But it should also be recognised that the scope for technological spillovers between foreign affiliates and local companies tends to be reduced when the technological gap between these firms is too large (de Mello, 1999; Takii, 2005). This suggests that policy effort to foster innovation in the business sector can go some way in equipping local firms to make the most of foreign investment in terms of technological upgrading.

Making the regulatory framework in product markets more pro-competition

Background

To gauge the extent of restrictions in Indonesia's product-market regulations, a quantitative indicator was constructed based on the methodology used in the *OECD International Regulation Database* to describe the variability of regulatory approaches in the OECD area (Annex 1.A3). The results, reported in Table 5, show that Indonesia's score is much higher than the average of OECD countries and slightly above that of the Latin American countries for which information is available (Brazil, Chile and Mexico, which is an OECD Member country). This indicates that Indonesia's regulatory framework in product markets is more restrictive than those in the OECD area, Brazil and Chile. But Indonesia fares well in relation to India, the only regional comparator country for which the PMR indicator is currently available, and South Africa.

The assessment of Indonesia's regulatory environment in product markets suggests considerable scope for reform. In particular, with respect to inward-oriented policies, the restrictiveness of Indonesia's regulatory framework is comparable to that of other emerging-market economies in the OECD area. Regulations are nevertheless more restrictive than in Latin America on average but significantly less so than in India. In particular, pro-competition forces are thwarted by interventionism in many areas, in spite of recent deregulation efforts and reform. For example, the Indonesian government owns the largest firms in several sectors (generation/import, transmission and distribution of electricity; production and import of gas; water production and distribution; and postal services) and is the majority owner of the largest firm in other sectors, including transmission and distribution of gas, and telecommunications. The government also has a stake in some manufacturing sectors and insurance. With regards to barriers to entrepreneurship, administrative burdens are comparatively light in relation to comparator countries in the OECD area and Latin America, although some sector-specific restrictions remain, including in transport and retail distribution.

With regard to outward-oriented policies, the restrictiveness of Indonesia's regulatory framework is on a par with those of other emerging-market economies in the OECD area. It is nevertheless less restrictive than in Latin America and especially India. Ownership and regulatory barriers to foreign investment remain; they are comparable to those of Canada, Italy, Mexico and Turkey, where such restrictions are particularly stringent in the OECD area. Foreign ownership restrictions are particularly burdensome in sectors, such as telecommunications, retail distribution and transport. This is despite the considerable improvements brought about by enactment of the Investment Law (discussed in Moccero, 2008, together with Indonesia's foreign investment regulations on the basis of the OECD methodology for quantifying the restrictiveness of such provisions for its Member countries). Regulatory barriers are also

particularly burdensome in Indonesia in comparison with OECD countries, but less so than in Latin America.

Table 5. Product market regulations: Cross-country comparisons

Low scores indicate less restriction¹

	Indonesia	India	South Africa	Latin America	OECD emerging markets	OECD
Product market regulation	2.1	2.9	2.6	2.0	2.0	1.5
Inward-oriented policies	2.2	3.0	2.7	1.9	2.2	1.8
State control	3.3	3.5	3.2	2.1	2.5	2.1
1. Public ownership	3.8	3.8	3.5	1.9	2.7	2.4
Scope of public enterprise sector	5.7	4.9	4.8	3.0	3.8	3.1
Size of public enterprise sector	4.6	4.6	4.2	1.4	2.4	2.5
Direct control over business enterprises	1.9	2.5	2.3	2.0	2.1	1.9
2. Involvement in business operation	2.7	3.0	2.7	2.3	2.2	1.7
Use of command and control regulation	4.6	5.0	3.2	3.2	2.8	2.2
Price controls	0.5	0.8	2.0	1.3	1.5	1.0
Barriers to entrepreneurship	1.2	2.6	2.2	1.8	2.0	1.5
1. Regulatory and administrative opacity	0.4	1.6	3.5	1.7	1.6	1.4
Licence and permits system	0.0	1.8	6.0	2.0	2.3	2.2
Communication and simplification of rules and procedures	0.6	0.9	0.9	1.3	0.5	0.5
2. Administrative burdens on start-ups	1.7	3.8	1.4	2.1	2.7	1.8
Administrative burdens for corporation	1.0	4.3	1.8	1.8	2.9	1.9
Administrative burdens for sole proprietor firms	2.3	4.8	1.3	3.1	2.8	1.9
Sector specific administrative burdens	1.7	3.3	0.8	1.6	2.7	1.6
3. Barriers to competition	1.1	1.2	2.2	1.2	1.0	0.8
Legal barriers	4.0	0.9	2.2	2.0	1.2	1.4
Antitrust exemptions	0.0	1.2	2.2	0.9	0.9	0.4
Outward-oriented policies	1.8	2.6	2.4	2.2	1.7	1.1
Barriers to trade and investment	1.7	2.6	2.3	2.2	1.7	1.0
1. Explicit barriers	2.0	3.0	2.3	2.2	2.4	1.4
Ownership barriers	3.0	2.9	2.3	1.6	2.6	1.8
Discriminatory procedures	0.0	2.0	2.7	1.4	0.7	0.5
Tariffs	2.0	4.0	2.0	3.7	3.3	1.4
2. Other barriers	1.5	2.0	2.4	2.2	0.8	0.5
Regulatory barriers	1.6	1.6	2.4	2.2	0.3	0.2
<i>Memorandum items:</i>						
Policies by functional area						
Administrative regulation	1.1	3.0	2.2	1.9	2.3	1.6
1. Administrative burdens of start-ups	1.6	4.0	1.3	2.1	2.7	1.8
2. Regulatory and administrative opacity	0.4	1.5	3.4	1.7	1.5	1.4
Economic regulation	2.9	2.7	2.9	1.9	2.1	1.8
1. Regulation of economic structure	4.1	3.0	3.3	2.1	2.3	2.2
2. Regulation of economic behaviour	2.9	3.3	2.8	2.3	2.4	1.9
3. Regulation of competition	0.9	1.4	2.3	1.2	1.3	0.9

1. The scores refer to the status of regulations in 2003 for the OECD countries and Chile, 2004 for Brazil and 2007 for Indonesia and South Africa. Latin America includes Brazil, Chile and Mexico. OECD emerging markets include Czech Republic, Hungary, Korea, Mexico, Poland, Slovak Republic and Turkey.

Source: OECD (2003, 2004, 2007 and 2008) and OECD calculations.

Policy considerations

Competition is a key driver of productivity growth in OECD countries.¹² Restrictive regulations in product markets have an adverse effect on an economy's growth performance, because they hamper the reallocation of factors of production towards higher-productivity sectors. This is also the case in Indonesia, given the enterprise-level evidence reported above that reallocation effects have been important sources of productivity gains in manufacturing. A removal of restrictions that forestall competition in product markets would therefore probably contribute to productivity enhancement in support of faster growth.

There is considerable room for reducing the size and scope of government so as to make Indonesia's regulatory framework in product markets more pro-competition. Indonesia's efforts to modernise its economy through privatisation in the 1990s, including recent attempts to liberalise State-owned monopolies in key industries, should be praised. But the extent of government ownership in selected sectors, such as network industries, shows that there is much to be done. The experience of several countries in the OECD and Latin America suggests that, where appropriately designed regulatory frameworks are in place, the withdrawal of the State from manufacturing and network industries has been accompanied by an expansion of supply, a reduction in prices and increases in productivity. Against this background, the authorities' privatisation programme should be given utmost support. In addition, the legal barriers that currently exist on the number of competitors in those sectors where the government has majority (or full) ownership should be removed, especially in financial services, public utilities and transport.

At the same time, the regulatory framework could become friendlier to entrepreneurs. Coordination with sub-national governments could be bolstered, given the increased role played by the sub-national jurisdictions in regulatory matters. As discussed in Comola and de Mello (2008b), at a minimum, a programme could be set up at the national level to review and reduce the number of licenses and permits issued by the local jurisdictions. Effort should also be stepped up to remove remaining ownership barriers to foreign investment. This is important for boosting the economy's growth potential not only through alternative financing for much needed investment in physical capital, but also to encourage productivity enhancement through competition and access to technology.

Tackling infrastructure bottlenecks*Background*

Despite a recovery in investment flows in recent years, Indonesia's investment-to-GDP ratio is lower than in many regional comparator countries (Figure 10). Unlike public investment, which has risen to its pre-crisis level, private investment has yet to recover fully. It is true that investment ratios were higher in most regional peers before the financial crisis, reflecting to a large extent inefficient capital accumulation during most of the 1990s. The stock of FDI is also relatively low in relation to GDP in Indonesia and has not yet recovered to its pre-crisis level. To the extent that FDI is an important source of finance for investment and a conduit for technological progress, low FDI-to-GDP ratios may be a source of concern.

Indonesia appears to suffer from a dearth of infrastructure, which is likely to hinder growth. Basic infrastructure indicators, especially in energy, transport and water/sanitation are particularly poor, even in comparison with regional peers. These deficiencies pose important obstacles to improvements in the country's investment climate. There are therefore reasons to expect higher investment in infrastructure development to be growth-enhancing in the short term. More generally, there is fairly general agreement

12. See OECD (2002a), for empirical evidence on the linkages between the intensity of competition in product markets and productivity performance.

that the link between infrastructure and growth tends to be stronger in lower-income countries, where infrastructure deficiencies are most pressing.¹³ Empirical evidence also suggests that this relationship changes over time, often in a non-linear fashion, because overall economic conditions and regulations are expected to affect firms' abilities to take advantage of infrastructure development and the associated network externalities.¹⁴ Moreover, because there are complementarities between infrastructure development and investment in human and physical capital, infrastructure is likely to raise the productivity of investment in other types of capital, even when its own direct impact on growth is diminishing.¹⁵

Policy considerations

It is difficult to estimate the amount of investment needed to bolster infrastructure development. For example, for lower-middle income countries, such as Indonesia, investment needs have been estimated for the period 2005-15 at nearly 6.5% of GDP per year on average, including 2.5% of GDP in maintenance (Fay and Yepes, 2003).¹⁶ More important than the magnitude of these estimates is the recognition that there are trade-offs that need to be taken into account in the allocation of scarce budgetary resources between infrastructure and non-infrastructure investment. Measures of social rates of return could be used as benchmarks, but it is difficult to calculate them reliably. It is therefore important to find ways to gauge the productivity of different types of investment in infrastructure development relative to that of other types of capital, including human capital, and the complementarities that might exist among these investments. In any case, given the increasingly prominent role of local governments in this area, it is important to boost coordination across levels of government in both policy design and service delivery and to improve technical capacity at the local level.

Bearing these tradeoffs in mind, it appears that efforts to reduce transport and communication bottlenecks should feature prominently in the infrastructure development agenda of archipelago nations, such as Indonesia. On the basis of the estimates reported for Indonesia by Canning and Bennathan (2000), the social rate of return to investment in transport (paved roads) far outweighs that of investment in electricity generation and in other types of physical capital accumulation. There are numerous efficiency gains that are expected to emerge from progress in this area. For example, better transport and communication infrastructure would likely have spillover effects on trade, both regionally and internationally, and facilitate the integration of the more remote parts of the country into national and global economic networks. The attendant impact on supply conditions should not be underestimated, especially if supported by concomitant pro-competition initiatives in product and labour markets. This is also important for the conduct of monetary policy, because supply-related factors are believed to account for some of the downward price rigidity that has maintained Indonesia's inflation above that of its trading partners.

13. See Estache and Fay (2007) for a survey of the empirical literature.

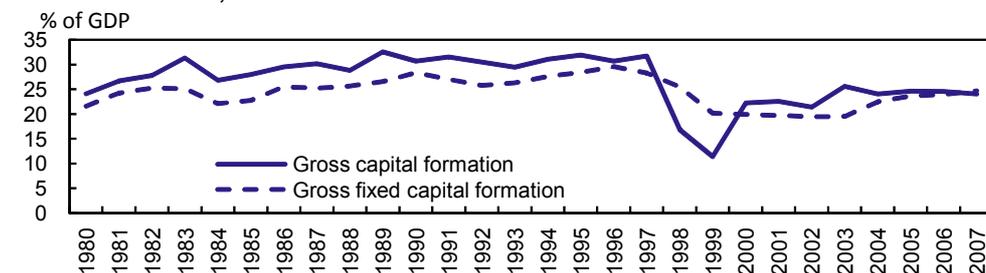
14. These non-linearities in the relationship between infrastructure investment and growth arise from network effects. See Hurlin (2006) for cross-country evidence for a large number of developing and developed countries with emphasis on roads, railways, telecommunications and electricity.

15. See Canning and Bennathan (2000) for cross-country evidence of the elasticity of output with respect to infrastructure development (measured by paved roads and electricity generation capacity) in the presence of complementarities between different types of capital.

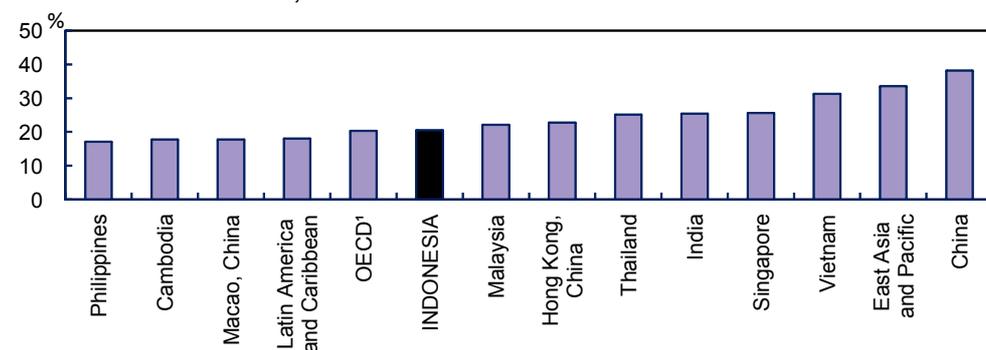
16. The estimates refer to the investment necessary to satisfy consumer and producer demand on the basis of projected GDP growth and include the following sectors: roads, railways, telecommunications, electricity, water and sanitation.

Figure 10. Investment and FDI: Trends and cross-country comparisons

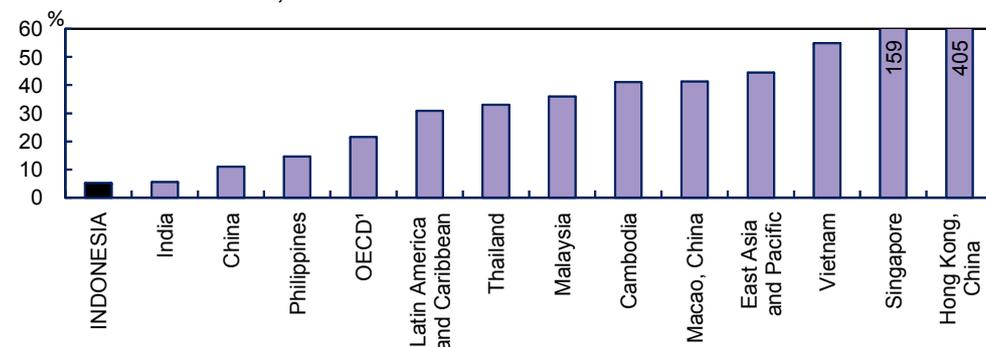
A. Investment trends, 1980-2007



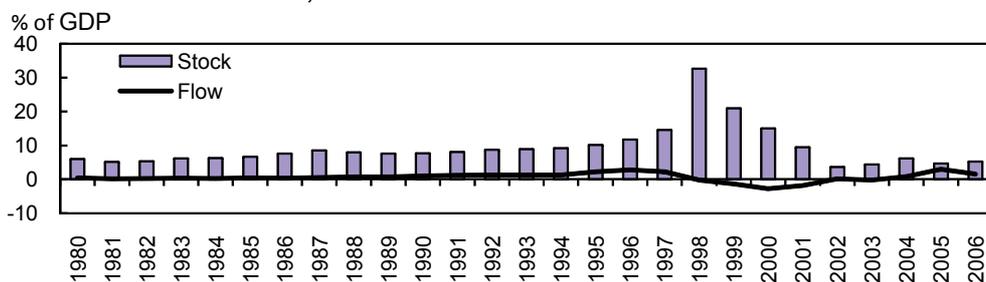
B. Investment-to-GDP ratios, 2006



C. FDI stock-to-GDP ratios, 2006



D. FDI net inflows and stocks, 1980-2006



1. Excludes Hungary, Mexico, Poland, Slovak Republic and Turkey.

Source: UNCTAD, World Bank (*World Development Indicators*) and OECD calculations.

In addition to economic efficiency considerations, better infrastructure can also affect the living conditions of the poor, to the extent that they are granted access to affordable services. The payoff of policy action in this area is manifold. For example, by reducing distances and travel costs, improvements in transport infrastructure are likely to raise the value of the assets of the poor, especially those living in remote areas, and to reduce their production costs, such as those related to the shipping of agricultural produce to consumer markets. In addition, better transport infrastructure and connection to the electricity grid facilitate access to schools, which fosters human capital accumulation and subsequently improves the earnings potential of the low-income population. Moreover, water and sanitation infrastructure reduces the risk of water-borne diseases and therefore boosts the health status of the poor, which is known to be closely associated with their earnings capabilities.

Access considerations also often depend on affordability, rather than simply physical connectivity to services. Ill-designed, poorly targeted subsidies would make services affordable but at the cost of diverting budgetary resources to the non-poor, while at the same time distorting relative prices (discussed above and in OECD, 2002b). These are complex policy issues, but efforts to replace price subsidies for electricity and fuels by targeted transfers to low-income individuals would go in the right direction. In addition, affordability can be improved through sectoral regulations that boost competition in service delivery and therefore contribute to lowering service costs. The removal of constraints on private-sector involvement in network industries, which pose considerable obstacles in some sectors on the basis of the analysis of restrictions in product-market regulations, could be considered as a policy option to enhance competition in product markets.

Making the labour code more flexible

Background

Indonesia's labour code is characterised by burdensome dismissal procedures and severance compensation entitlements in relation to several countries in the OECD area and regional peers. It has also become more restrictive over time, especially after enactment of the Manpower Law of 2003. Minimum-wage provisions have also become increasingly onerous, especially since decentralisation in 2001, when local governments have been granted additional prerogatives in this area. The restrictive labour code is detrimental to growth, because it perpetuates segmentation in the labour market in a country where informality is already widespread. It also has an adverse effect on trade competitiveness, given Indonesia's comparative advantage in the production of labour-intensive goods. Enterprises are likely to have substituted skilled labour and capital for unskilled labour in response to the higher costs associated with a progressively more onerous labour legislation.

Restrictive employment protection legislation is inequitable. It protects workers who are typically better educated and more able to fend for themselves against adverse economic shocks, to the detriment of those in the informal sector and with the most tenuous attachment to the formal labour market, such as women and youths. Therefore, in addition to taking a toll on economic efficiency, a strict labour code fails to provide social protection for those workers who would be most vulnerable to changing labour-market conditions.

Policy considerations

To the extent that burdensome labour laws penalise vulnerable workers instead of protecting them, their use as a social protection device should be called into question. Policy action should therefore be focused on making the labour legislation more flexible for both regular and temporary/fixed-term contracts. The review of the 2003 Manpower Law – which was planned for 2005-06 but did not come to fruition – would provide an invaluable opportunity for making progress in this important policy area.

Several options can be considered for achieving this goal, while bearing in mind the need to strengthen Indonesia's safety nets in a fiscally sound manner and to deal with the trade-offs associated with the allocation of scarce budgetary resources to satisfy competing demands for human capital accumulation, social protection and infrastructure development. The authorities' efforts in this area since the 1997-98 crisis through community-based and targeted income transfers to vulnerable and poor individuals are commendable. Additional policy options for further improvement in this area are also discussed below.

Bibliography

- Amiti, M. and J. Konings (2005), "Trade Liberalisation, Intermediate Inputs and Productivity: Evidence from Indonesia", *IMF Working Paper*, No. WP/05/146, International Monetary Fund, Washington, D.C.
- Arze del Granado, F.J., W. Fengler, A. Ragatz and E. Yavuz (2007), "Investing in Indonesia's Education: Allocation, Equity and Efficiency of Public Expenditures", *Policy Research Working Paper*, No. 4329, World Bank, Washington, D.C.
- Aswicahyono, H. and H. Hill (2002), "Perspiration' and 'Inspiration' in Asian Industrialisation: Indonesia Before the Crisis", *Journal of Development Studies*, Vol. 38, pp. 138-63.
- Athukorala, P.C. (2006), "Post-crisis Export Performance: The Indonesian Experience in Regional Perspective", *Bulletin of Indonesian Economic Studies*, Vol. 42, pp. 177-211.
- Basri, M.C. and H. Soesastro (2005), "The Political Economy of Trade Policy in Indonesia", *ASEAN Economic Bulletin*, Vol. 22, pp. 3-18.
- Basri, M.C. and G. Papanek (2008), "Dutch Disease and Employment in Indonesia", *Working paper*, LPEM-FEUI, University of Indonesia, Jakarta.
- Blomström, M. and A. Kokko (1993), "Policies to Encourage Inflows of Technology through Foreign Multinationals", *World Development*, Vol. 23, pp. 459-68.
- Canning, D. and E. Bennathan (2000), "The Social Rate of Return on Infrastructure Investments", *Policy Research Working Paper*, No. 2390, World Bank, Washington, D.C.
- Comola, M. and L. de Mello (2008a), "The Determinants of employment and earnings in Indonesia: A multinomial selection approach", *Economics Department Working Paper*, forthcoming, OECD, Paris.
- Comola, M. and L. de Mello (2008b), "How Does Decentralised Minimum-Wage Setting Affect Unemployment and Informality? A Quasi-Natural Experiment for Indonesia", *Economics Department Working Paper*, forthcoming, OECD, Paris.
- Conway, P., V. Janod and G. Nicoletti (2005), "Product Market Regulations in OECD Countries: 1998 to 2003", *Economics Department Working Paper*, No. 419, OECD, Paris.
- De Mello, L. (1999), "Foreign Direct Investment-Led Growth: Evidence from Time Series and Panel Data", *Oxford Economic Papers*, Vol. 51, pp. 133-51.
- De Mello, L. (2000), "Fiscal Decentralization and Intergovernmental Fiscal Relations: A Cross-Country Analysis", *World Development*, Vol. 28, pp. 365-80.
- Estache, A. and M. Fay (2007), "Current Debates on Infrastructure Policy", *Policy Research Working Paper*, No. 4410, World Bank, Washington, D.C.

- Fay, M. and T. Yepes (2003), "Investing in Infrastructure: What is Needed from 2000-2010", *Policy Research Working Paper*, No. 3102, World Bank, Washington, D.C.
- Fitriani, F., B. Hofman and K. Kaiser (2005), "Unity or Diversity? The Creation of New Local Governments in a Decentralised Indonesia", *Bulletin of Indonesian Economic Studies*, Vol. 41, pp. 57-79.
- Fuglie, K. (2004), "Productivity Growth in Indonesian Agriculture, 1961-2000", *Bulletin of Indonesian Economic Studies*, Vol. 40, pp. 209-25.
- Hajkova, D., G. Nicoletti, L. Vartia and K.-Y. Yoo (2006), "Taxation, Business Environment and FDI Location in OECD Countries", *OECD Economics Department Working Paper*, No. 502, OECD, Paris.
- Hill, H. (2007), "The Indonesian Economy: Growth, Crisis and Recovery", *Singapore Economic Review*, Vol. 52, pp. 137-66.
- Hill, H. and T. Shiraishi (2007), "The Indonesian Economy: A Decade after the Crisis", *Asian Economic Policy Review*, Vol. 2, pp. 127-45.
- Hofman, B., K. Kaiser Kadjatmiko and B.S. Sjahrir (2006), "Evaluating Fiscal Equalisation in Indonesia", *World Bank Policy Research Working Paper*, No. 3911, World Bank, Washington, D.C.
- Hurlin, C. (2006), "Network Effects of the Productivity of Infrastructure in Developing Countries", *Policy Research Working Paper*, No. 3808, World Bank, Washington, D.C.
- Jain-Chandra, S. (2007), "Is Indonesia Adequately Integrated into Global and Regional Trade and Finance?", *Indonesia: Selected Issues*, IMF Country Report No. 07/273, International Monetary Fund, Washington, D.C.
- Lewis, B.D. (2006), "Local Government Taxation: An Analysis of Administrative Cost Inefficiency", *Bulletin of Indonesian Economic Studies*, Vol. 42, pp. 213-33.
- Moccero, D. (2008), "Improving the Business and Investment Climate in Indonesia", *OECD Economics Department Working Paper*, No. 46, OECD, Paris.
- Narjoko, D. (2006), *Indonesian Manufacturing and the Economic Crisis of 1997/98*, PhD thesis, Australian National University, Canberra.
- Nicoletti, G., S. Scarpetta and O. Boylaud (1999), "Summary Indicators of Product Market Regulation with an Extension to Employment Protection Legislation", *Economics Department Working Papers*, No. 226, OECD, Paris.
- OECD (2002a), *Economic Outlook*, No. 72, OECD, Paris.
- OECD (2002b), *Towards Asia's Sustainable Development: The Role of Social Protection*, OECD, Paris.
- OECD (2003), *OECD Economic Survey of Chile*, OECD, Paris.
- OECD (2004), *OECD Economic Survey of Brazil*, OECD, Paris.
- OECD (2007), *OECD Economic Survey of India*, OECD, Paris.

- OECD (2008), *OECD Economic Assessment of South Africa*, OECD, Paris.
- Rosengard, J. (2004), “Will Bank Bailouts Bust Budgets? Fiscalisation of the East Asian Financial Crisis”, *Asian-Pacific Economic Literature*, Vol. 18, pp. 19-29.
- Sarel, M. (1997), “Growth and Productivity in ASEAN Countries”, *Working Paper*, No. 97/97, International Monetary Fund, Washington, D.C.
- Sarwono, H. (2008), “Monetary Policy in Emerging Markets: The Case of Indonesia”, in L. de Mello (ed.), *Inflation Targeting in Emerging-Market Economies*, OECD, Paris.
- Sjöholm, F. (1999a), “Exports, Imports and Productivity: Results from Indonesian Establishment Data”, *World Development*, Vol. 27, pp. 705-15.
- Sjöholm, F. (1999b), “Technology Gap, Competition and Spillovers from Direct Foreign Investment: Evidence from Establishment Data”, *Journal of Development Studies*, Vol. 36, pp. 53-73.
- Takii, S. (2005), “Productivity Spillovers and Characteristics of Foreign Multinational Plants in Indonesian Manufacturing 1990-95”, *Journal of Development Economics*, Vol. 76, pp. 521-42.
- Takii, S. and E.D. Ramstetter (2005), “Multinational Presence and Labour Productivity Differentials in Indonesian Manufacturing, 1975-2001”, *Bulletin of Indonesian Economic Studies*, Vol. 41, pp. 221-42.
- Ter Wengel, J. and E.R. Rodriguez (2006), “Productivity and Firm Dynamics; Creative Destruction in Indonesian Manufacturing, 1994-2000”, *Bulletin of Indonesian Economic Studies*, Vol. 42, pp. 341-55.
- Timmer, M.P. (1999) “Indonesia’s Ascent on the Technology Ladder: Capital Stock and Total Factor Productivity in Indonesian Manufacturing, 1975-95”, *Bulletin of Indonesian Economic Studies*, Vol. 35, pp. 75-97.
- Van der Eng, P. (2007), “Total Factor Productivity and Economic Growth in Indonesia”, unpublished manuscript, School of Management, Marketing and International Business, Australian National University, Canberra.
- Vial, V. (2006), “New Estimates of Total Factor Productivity Growth in Indonesian Manufacturing”, *Bulletin of Indonesian Economic Studies*, Vol. 42, pp. 357-69.
- Warr, P. (2006), “Productivity Growth in Thailand and Indonesia: How Agriculture Contributes to Economic Growth”, *Working Paper in Economics and Development Studies*, No. 200606, Department of Economics, Padjadjaran University, Bandung.
- World Bank (2006), “Revitalizing the Rural Economy: An Assessment of the Investment Climate Faced by Non-Farm Enterprises at the District Level”, The World Bank, Washington, D.C.
- World Bank (2007), *Indonesia Public Expenditure Review 2007*, World Bank, Washington, D.C.

Annex A1

Estimating Indonesia's potential GDP

This Annex calculates trend GDP for five Asian countries that were affected by the financial crisis of 1997-98 (Indonesia, Korea, Malaysia, Philippines and Thailand) using a production function approach akin to that used by the OECD Secretariat for its Member countries.

Methodology

As a first step, total factor productivity was calculated as follows:

$$\ln(TFP_t) = \ln(Y_t) - r_K \ln(\bar{K}_t) - r_L \ln(\bar{L}_t), \quad (\text{A1.1})$$

where Y_t denotes real GDP; $\bar{K}_t = \gamma_t K_t$ is the utilisation-adjusted capital stock, where $\gamma_t = (1 - u_t)$ denotes a coefficient of utilisation of installed capacity, u_t is the rate of unemployment, and K_t is the capital stock; $\bar{L}_t = (1 - u_t) \bar{F}_t$ is utilisation-adjusted labour, where \bar{F}_t denotes the labour force; $\ln(\cdot)$ denotes the natural logarithm; and t is a time indicator. The shares of capital and labour in GDP (r_K and r_L , respectively) are set at 33 and 67%, respectively.¹

Finally, trend GDP was calculated as follows:

$$\ln(Y_t^*) = \ln(TFP_t^*) + 0.33 \ln(K_t^*) + 0.67 \ln(L_t^*), \quad (\text{A1.2})$$

where the asterisks indicate that the series are HP-filtered. Forecasts of the relevant series using an AR model were estimated for 2007-10 (2008-10 for Indonesia) and used to compute the HP trends in order to minimise the end-point bias associated with HP filtering.²

Data

To ensure cross-country comparability, annual data available from the IMF's *International Financial Statistics* (IFS) database were used in the calculations for the period 1980-2006 for all countries (data from national sources were used to update the series for Indonesia through 2007). The variables of interest are: GDP, gross capital formation, labour force and the unemployment rate. The GDP and gross capital

-
1. The capital share used in the exercise is a rough average of those estimated by Sarel (1997) for the ASEAN countries, which are in the range of 28-35%. The ratios implied by the national accounts are implausibly low for these countries, as discussed in the main text.
 2. Ideally, the NAICU and NAIRU rates should be used in the calculation of the utilisation-adjusted capital and labour inputs needed to compute trend GDP. However, these series could not be reliably estimated for the countries in the sample due to structural breaks in the relevant series, notably those associated with the financial crisis.

formation series are in constant USD using 2000 PPP parities. The capital stocks were constructed using the perpetual inventory method (for investment series starting in 1960 and using a fixed depreciation rate of 5%). Missing values in the unemployment series were interpolated linearly and updated from national sources.

Findings

Based on the methodology above, total factor productivity growth appears to be bouncing back in all countries, especially Indonesia and Thailand (Figure A1.1). TFP growth has contributed about 1.5 percentage points to Indonesia's trend GDP growth per year on average since 2000. Based on the growth-accounting exercise, trend GDP growth seems to be in the neighbourhood of 4% per year in Indonesia, still below the average of the pre-crisis period (1990-96) of about 6%. Indonesia's trend growth rate is estimated to be slightly lower than those of Korea and Malaysia, but higher than those of Thailand and the Philippines.³

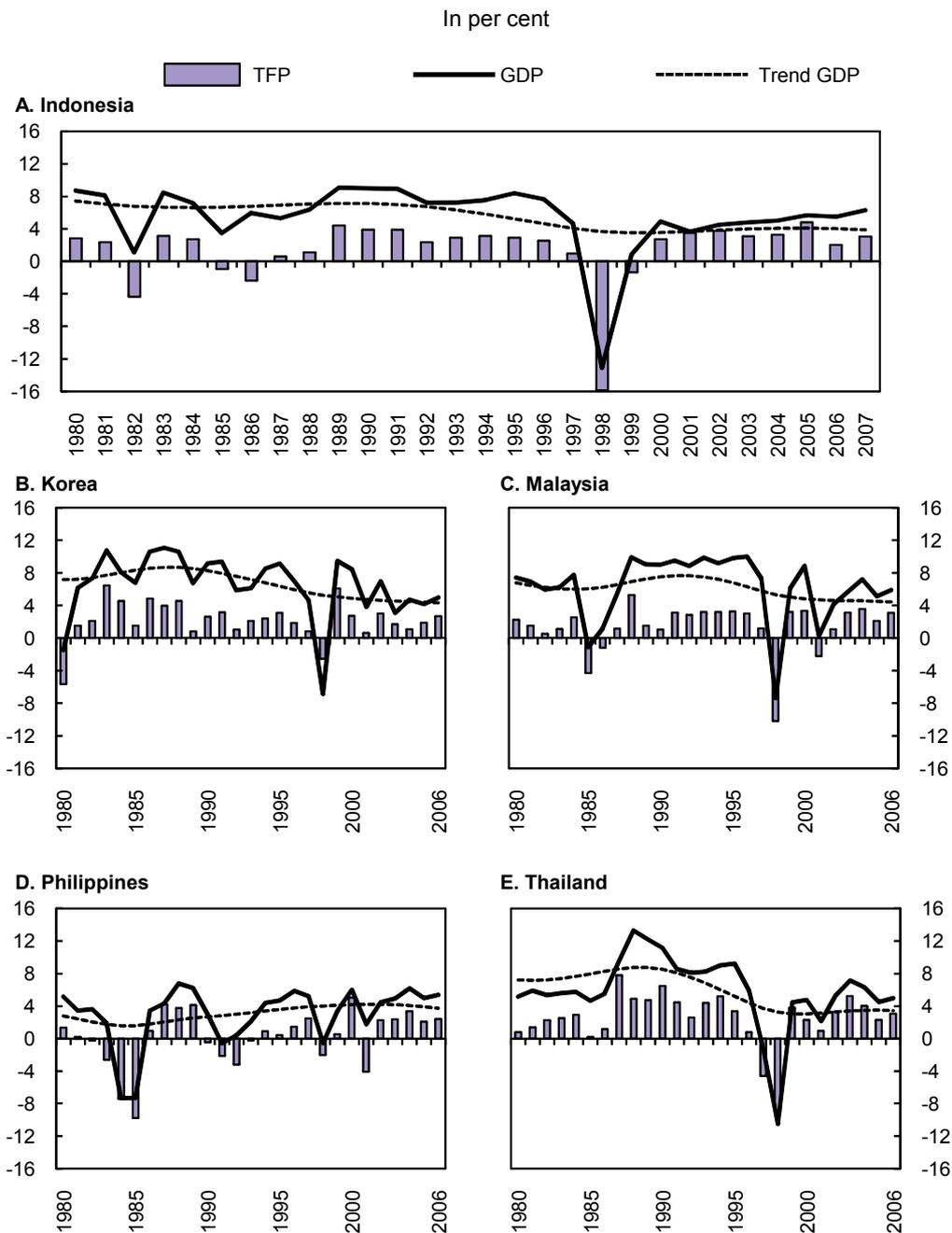
Important caveats

The calculations reported above should be interpreted with caution, because growth accounting has obvious limitations, which are well known. In particular:

- The computation of TFP is sensitive to measurement errors, because it is by definition a residual (*i.e.* the difference between output growth and a weighted average of the growth rates of the utilisation-adjusted factors of production). TFP estimates are also sensitive to the measurement of capital and labour shares in national income. A correction is made in the calculations for factor utilisation, because estimates of TFP growth would be pro-cyclical, if the underutilisation of inputs during cyclical downturns were not taken into account. The use of the unemployment rate as a proxy for capital utilisation is obviously imperfect, but unavoidable due to data constraints. Moreover, factor quality is treated in the calculations as constant over time, whereas increases in the stock of human capital of the labour force are expected to affect the economy's overall efficiency.
- Likewise, estimates of trend GDP growth on the basis of growth-accounting exercises are affected by the business cycle. Also, and perhaps most importantly, the effects of ongoing structural reform on efficiency and input accumulation, which take time to come to fruition, are not taken into account in the computation of current trend growth rates using growth accounting.

3. Calculations of trend GDP and TFP growth for Korea may differ slightly from those reported in the OECD *Economic Outlook* database because of differences in methodology and data sources. The calculations for Korea were carried out to ensure consistency with the growth-accounting exercises reported for the other countries under consideration.

Figure A1.1. Trend GDP growth: Cross-country comparisons, 1980-2006¹



1. 1980-2007 for Indonesia.

Source: World Bank (*World Development Indicators*) and OECD calculations.

Annex A2

Gauging Indonesia's regional diversity

This Annex provides an overview of the regional distribution of economic activity in Indonesia.¹ It is not possible to discuss trends at the local government level, since the data series available span a shorter time period.

It is customary to divide Indonesia into five major island groupings: Java-Bali, Sumatra, Kalimantan (Borneo), Sulawesi, and the Eastern provinces. Java dominates the economy, accounting for almost two-thirds of GDP and household expenditure (Table A2.1). Sumatra comes next, followed by Kalimantan. Mining, especially oil and gas, inflates the economic activity indicators of the resource-rich provinces: Riau, East Kalimantan, Papua (Irian) and Aceh. Over time, and regardless of the measure used, there has been a shift of economic activity towards Java-Bali, especially Jakarta. Sumatra's share of economic activity has been affected by a falling share of oil and gas in the national economy. At the same time, the share of the eight Eastern provinces in the national economy has been declining. Moreover, there are large inter-provincial differences in income and welfare. The gap in income and consumption per capita between the richest and poorest provinces is very large (Table A2.2). Output per capita in East Kalimantan, the richest province, is nearly 16 times higher than in Maluku.

A few stylised facts emerge from these comparisons. *First*, there is no case of a province with consistently poor performance for sustained periods of time. Even the provinces that have slipped behind have still grown quite strongly since the 1970s, except for the crisis period. *Second*, while there have been consistent good performers, notably Bali, East Kalimantan and Jakarta, the group of top performers has been quite diverse in terms of location, size and socio-economic characteristics. *Third*, economic activity has continued to cluster around some key regional economies, including Java, Bali, Sumatra and Kalimantan, as opposed to the Eastern provinces. *Fifth*, there is no generalised natural-resource pattern: in some cases, resource-rich regions have been associated with uneven development, as in Aceh and, to some extent, Papua. In other cases, for example Riau and East Kalimantan, the abundance of natural resources has been reasonably widely distributed. The provinces that are rich in natural resources have nevertheless benefited from the ongoing commodity-price boom.

1. Adjustments have been made to the pre-2000 data to account for the creation of provinces for 2000. For example, West Java refers to the current provinces of West java and Banten.

Table A2.1. Provincial economic activity indicators, 1975-2007

In per cent of total

	Gross regional product (GRP)		Non-mining GRP		Consumption	
	1975	2007	1975	2007	1983	2004
Sumatra	32.2	23.0	21.0	20.4	20.6	20.2
Aceh	1.6	2.1	1.7	1.6	2.1	0.9
North Sumatra	5.7	5.2	6.6	5.7	6.4	5.4
West Sumatra	1.8	1.7	2.3	1.9	2.2	1.8
Riau	15.1	7.4	2.1	5.2	1.9	5.5
Jambi	0.8	0.9	0.9	0.8	0.6	0.9
South Sumatra	4.8	3.6	4.5	2.9	4.7	3.6
Bengkulu	0.3	0.4	0.4	0.4	0.5	0.4
Lampung	1.9	1.8	2.4	1.9	2.2	1.6
Java-Bali	51.5	60.2	62.8	64.7	64.4	67.4
Java-Bali (w/o Jakarta)	42.8	44.1	51.8	47.0	54.0	51.0
Jakarta	8.7	16.1	11.0	17.8	10.4	16.5
West Java	14.5	18.0	16.3	19.3	17.2	19.0
Central Java	9.9	8.8	12.5	8.5	14.5	10.4
Yogyakarta	1.2	0.9	1.5	1.0	1.6	0.9
East Java	15.8	15.2	19.9	16.8	18.7	19.3
Bali	1.3	1.2	1.6	1.3	2.0	1.3
Kalimantan	7.1	9.1	6.1	6.4	5.4	4.6
West Kalimantan	1.4	1.2	1.8	1.3	1.7	1.3
Central Kalimantan	0.5	0.8	0.7	0.9	0.9	0.9
South Kalimantan	1.0	1.1	1.3	1.2	1.5	0.9
East Kalimantan	4.1	6.0	2.3	3.0	1.2	1.6
Sulawesi	5.0	4.1	6.3	4.5	6.2	4.4
North Sulawesi	1.3	0.8	1.6	0.9	1.3	0.7
Central Sulawesi	0.4	0.6	0.6	0.7	0.8	0.8
South Sulawesi	3.0	2.1	3.8	2.4	3.5	2.4
Southeast Sulawesi	0.3	0.5	0.3	0.6	0.6	0.5
Eastern provinces	4.3	3.6	4.0	3.9	3.5	3.3
West Nusa Tenggara	0.8	1.0	1.0	1.1	1.0	0.7
East Nusa Tenggara	0.8	0.5	1.0	0.6	1.0	0.7
Maluku	0.9	0.3	1.1	0.3	0.9	0.4
Papua	1.8	1.9	0.9	2.0	0.7	1.5

Source: BPS (Regional Income by Industry and Expenditure).

Table A2.2. Provincial development indicators, 1975-2007

Indonesia = 100

	GRP per capita		Non-mining GRP per capita		Consumption per capita	
	1975	2007	1975	2007	1983	2004
Sumatra	177.0	108.2	115.3	96.1	104.8	93.9
Aceh	93.3	111.9	97.9	88.1	114.4	49.5
North Sumatra	101.9	90.6	116.7	99.9	111.0	92.3
West Sumatra	79.1	81.4	99.2	90.5	96.8	87.6
Riau	1061.5	259.3	150.2	181.0	128.8	198.0
Jambi	87.1	74.8	101.5	67.9	62.0	75.9
South Sumatra	160.6	100.6	150.1	80.8	144.8	100.5
Bengkulu	61.9	50.4	77.6	56.0	90.5	56.3
Lampung	72.9	54.2	91.6	58.9	62.2	48.4
Java-Bali	79.4	100.6	96.9	108.2	101.9	114.2
Java-Bali (w/o Jakarta)	70.5	79.0	85.4	84.2	92.2	92.7
Jakarta	212.1	400.0	267.1	442.5	224.9	403.0
West Java	78.7	81.7	88.6	87.4	91.3	94.8
Central Java	55.6	61.4	69.6	59.5	85.9	69.4
Yogyakarta	61.6	61.1	77.4	68.0	88.1	59.7
East Java	76.3	92.7	95.9	102.8	96.7	115.2
Bali	77.6	77.8	97.1	86.5	119.0	82.5
Kalimantan	159.2	163.1	136.6	114.3	114.7	79.2
West Kalimantan	84.2	65.0	105.9	72.3	101.9	62.2
Central Kalimantan	88.3	88.1	110.9	97.9	132.7	86.7
South Kalimantan	72.2	74.3	90.5	81.2	110.6	59.3
East Kalimantan	576.5	448.6	325.9	220.5	131.5	123.3
Sulawesi	70.6	56.2	87.7	62.2	87.4	59.0
North Sulawesi	86.9	57.3	109.0	63.7	89.6	51.9
Central Sulawesi	55.1	58.1	69.1	63.2	91.4	67.5
South Sulawesi	70.7	55.4	89.0	61.4	85.7	61.4
Southeast Sulawesi	52.7	56.1	52.8	62.4	87.6	49.8
Eastern provinces	78.1	59.5	72.5	64.6	64.1	54.3
West Nusa Tenggara	45.5	50.5	56.6	56.1	53.9	35.8
East Nusa Tenggara	41.5	27.5	52.1	30.6	52.0	38.5
Maluku	91.9	25.2	113.1	28.0	89.6	38.5
Papua	226.8	154.0	111.1	163.5	84.3	126.2

Source: BPS (Regional Income by Industry and Expenditure).

Annex A3

Assessing the restrictiveness of Product Market Regulations

This Annex quantifies the restrictiveness of Indonesia's product market regulations (PMR) on the basis of the OECD methodology (Nicoletti *et al.*, 1999; Conway *et al.*, 2005). The results are reported in the main text.

Methodology

The PMR indicator system has a pyramidal shape, with 16 low-level indicators at the base and one overall indicator of product market regulation at the top. The low-level indicators capture a specific aspect of the regulatory regime summarising information on 137 economy-wide or industry-specific regulatory provisions, based on answers to the OECD Regulatory Indicator questionnaire. Higher-level indicators are constructed as weighted averages of their constituent lower-level indicators. The PMR index ranges between 0 and 6, with 0 indicating the lowest and 6 the highest level of rigidity.

The PMR indicator can be decomposed into two main groups: *i*) inward-oriented policies, comprising state control and barriers to entrepreneurship, and administrative and economic regulation, and *ii*) outward-oriented policies corresponding to barriers to trade and investment. The 16 low-level indicators, which cover a wide range of product market policies, are as follows:

- ***Scope of public enterprises***: measures the pervasiveness of state ownership across business sectors as the proportion of sectors in which the state has an equity stake in at least one firm.
- ***Size of public enterprise***: reflects the overall size of state-owned enterprises relative to the size of the economy.
- ***Direct control over business enterprises***: measures the existence of government special voting rights in privately-owned firms, constraints on the sale of state-owned equity stakes, and the extent to which legislative bodies control the strategic choices of public enterprises.
- ***Price controls***: reflects the extent of price controls in specific sectors.
- ***Use of command and control regulation***: indicates the extent to which government uses coercive (as opposed to incentive-based) regulation in general and in specific service sectors.
- ***Licenses and permits systems***: reflects the use of 'one-stop shops' and 'silence is consent' rules for getting information on and issuing licenses and permits.
- ***Communication and simplification of rules and procedures***: reflects aspects of government's communication strategy and efforts to reduce and simplify the administrative burden of interacting with government.
- ***Administrative burdens for corporations***: measures the administrative burdens on the creation of corporations.

- ***Administrative burdens for sole proprietors***: measures the administrative burdens on the creation of sole-proprietor firms.
- ***Sector-specific administrative burdens***: reflects administrative burdens in the road transport and retail-distribution sectors.
- ***Legal barriers***: measures the scope of explicit legal limitations on the number of competitors allowed in a wide range of business sectors.
- ***Antitrust exemptions***: measures the scope of exemptions to competition law for public enterprises.
- ***Ownership barriers***: reflects legal restrictions on foreign acquisition of equity generally in public and private firms and specifically in the telecommunications and airlines sectors.
- ***Tariffs***: reflects the (simple) average of most-favoured-nation tariffs.
- ***Discriminatory procedures***: reflects the extent of discrimination against foreign firms at the procedural level.
- ***Regulatory barriers***: reflects other barriers to international trade (*e.g.* international harmonisation, mutual recognition agreements).

The PMR indicators are based primarily on explicit policy settings and account only for formal government regulation. Thus, the indicators record only ‘objective’ data about rules and regulations, as opposed to ‘subjective’ assessments of market participants for indicators based on opinion surveys.

WORKING PAPERS

The full series of Economics Department Working Papers can be consulted at www.oecd.org/eco/Working_Papers/

636. *A taxonomy of instruments to reduce greenhouse gas emissions and their interactions*
(September 2008), Romain Duval
635. *Quantifying the effect of financial conditions on US activity*
(September 2008) Stéphanie Guichard and David Turner
634. *Have long-term financial trends changed the transmission of monetary policy*
(September 2008), Stéphanie Guichard and David Turner
633. *Raising education achievement and breaking the cycle of inequality in the United Kingdom*
(August 2008) Anne-Marie Brook
632. *The euro changeover in the Slovak Republic: implications for inflation and interest rates*
(August 2008) Felix Hüfner and Isabell Koske
631. *Tax reform for efficiency and fairness in Canada*
(August 2008) Alexandra Bibbee
630. *Reforming the Polish Tax System to Improve its Efficiency*
(August 2008) Alain de Serres
629. *Modernising Canada's Agriculture Policies*
(August 2008) Peter Jarrett and Shuji Kobayakawa
628. *Recent trends and structural breaks in US and EU15 labour productivity growth*
(August 2008) Laure Turner and Hervé Boulhol
627. *Health Status Determinants: Lifestyle, Environment, Health Care Resources and Efficiency*
(August 2008) Isabelle Joumard, Christophe André, Chantal Nicq and Olivier Chatal
626. *Market Mechanisms in Public Service Provision*
(August 2008) Hansjörg Blöchliger
625. *Improving human capital formation in India*
(July 2008) Sean S. Dougherty and Richard Herd
624. *Labour regulation and employment dynamics at the state level in India*
(July 2008) Sean S. Dougherty
623. *India's growth pattern and obstacles to higher growth*
(July 2008) Sean S. Dougherty, Richard. Herd, Thomas. Chalaux and Abdul. Erumban
622. *Reaping the benefits of stronger competition in network industries in Germany*
(July 2008) Nicola Brandt

621. *The Usefulness of Output Gaps for Policy Analysis*
(July 2008) Isabell Koske and Nigel Pain
620. *Taxation and Economic Growth*
(July 2008) Åsa Johansson, Christopher Heady, Jens Arnold, Bert Brys and Laura Vartia
619. *Coping with labour shortages: How to bring outsiders back to the labour market*
(July 2008) Ekkehard Ernst
618. *Achieving sustainability of the energy sector in Canada*
(June 2008) Annabelle Mourougane
617. *The Dutch tax-benefit system and life-cycle employment. Outcomes and reform options*
(June 2008) Ekkehard Ernst and Timo Teuber
616. *Regulation, Allocative Efficiency and Productivity in OECD Countries: Industry and Firm-Level Evidence*
(May 2008) Jens Arnold, Giuseppe Nicoletti, and Stefano Scarpetta
615. *Public social spending in Korea in the context of rapid population ageing*
(May 2008) Randall S. Jones
614. *Enhancing the globalisation of Korea*
(May 2008) Randall S. Jones and Taesik Yoon
613. *Reforming housing and regional policies in Korea*
(May 2008) Randall S. Jones and Tadashi Yokoyama
612. *Moving towards more sustainable healthcare financing in Germany*
(May 2008) N. Brandt
611. *Improving education outcomes in Germany*
(May 2008) David Carey
610. *Have developed countries escaped the curse of distance?*
(May 2008) Hervé Boulhol and Alain de Serres
609. *Measures of international transport cost for OECD countries*
(April 2008) Stephen S. Golub and Brian Tomasik
608. *Encouraging labour force participation in Chile*
(April 2008) D. Contreras, L. de Mello and E. Puentes
607. *Tackling business and labour informality in Chile*
(April 2008) D. Contreras, L. de Mello and E. Puentes
606. *Delivery cost-efficient public services in health care, education and housing in Chile*
(April 2008) D. Contreras, L. de Mello and E. Puentes
605. *Managing Chile's macroeconomy during and after the copper price boom*
(April 2008) Luiz de Mello