

THE CONCEPT OF COMPETITIVENESS

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ABSTRACT

A number of concepts of 'competitiveness' are applied to national economies, not always clearly or helpfully. This paper suggests a possible taxonomy of these concepts, and applies them to Australian data. Australia performs well on the internal competitiveness of its markets. It also does well in measures of competitiveness based on other fundamental drivers of economic growth. Other indices of competitiveness, comparing prices and costs in Australia with those overseas, suffer from conceptual and measurement problems and are therefore of limited value.

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1. INTRODUCTION

There are many articles and speeches that bemoan a lack of competitiveness, exhort Australia to become more competitive, or claim that policies need to be changed because the world has become more competitive. For example, Morgan (2005) recently proclaimed, 'As the pace of globalisation increases, the reality is that governments are in competition with each other. This means that the primary role of government is to establish and foster the conditions for an economy that can compete effectively with the rest of the world'.¹

There seems to be a broad consensus that an 'uncompetitive' economy is a bad thing, much like an uncompetitive firm – or an uncompetitive racing car, or an uncompetitive athlete. But it is much less clear what 'competitiveness' means for a national economy.² It is also in some ways an unfortunate term, as it suggests nations are competing like firms chasing market share or athletes competing for medals, and that one nation doing better economically means that others are

1 He continued, 'aggressive global competition amongst business and economies – competition for investment and labour — is a fact of modern life. In many ways, Australia not only has to keep up, but run harder than our competitors ... few people seem to recognise competitiveness is the reason why we are here in the first place and crucial to continuing prosperity'.

2 Paul Krugman (1994) cites Bill Clinton describing nations as 'like a big corporation competing in the global marketplace'. In Krugman (1994, 1996) he criticises the analogy, noting that economies are much more self-contained than companies. Around 80 per cent of Australia's GDP is purchased by Australians. A company would not survive long if its own employees were accounting for 80 per cent of its sales. Another weakness of the analogy is that, unlike uncompetitive companies, a country can not go out of business. A country's government compels its citizens to pay tax, unlike a firm dealing with its customers. Furthermore, a national economy is substantially more diverse and complex than even a multinational conglomerate.

doing worse.³ In reality, of course, Australia benefits when there is stronger economic growth in the rest of the world.⁴

Often these discussions are vague about the concept of competitiveness underlying the argument being presented. This paper provides a taxonomy of the more commonly used metrics. It classifies them into four concepts, termed here 'internal market competitiveness', 'external price competitiveness', 'external cost competitiveness' and 'measures of competitiveness based on growth fundamentals'. These are discussed in turn in the following four sections. The discussion includes some indicators of how Australia is faring on these various metrics. The sixth section discusses some of the most commonly cited indices of competitiveness, how they relate to the four concepts, and their usefulness. The concluding remarks discuss the relationship (or lack thereof) between competitiveness and the current account deficit.⁵

2. INTERNAL MARKET COMPETITIVENESS

Perfectly competitive markets generally perform more efficiently than monopolies.⁶ Economies where most markets have many producers competing for sales are likely to be more dynamic. Even small economies can have many

3 For example, Australian Industry Group's 2005 report on competitiveness is titled 'Who's winning' and the cover depicts a medal hanging around an athlete's neck.

4 Over the past century, the correlation between the annual growth in Australia's real GDP and that of the world is over 0.5. Correlations over decades reach 0.9. An egregious example of the harm from thinking that economies compete was the rounds of 'competitive devaluations' and protectionist measures that exacerbated the Great Depression of the 1930s. More recently, it may have encouraged governments to try to 'pick winners' and support 'national champions'.

5 Whether a national economy, or a global economic system, based on cooperation rather than competition would better contribute to broader measures of wellbeing or have a more ethical basis is outside the scope of this article.

6 Some 'natural monopolies' are an exception. Sometimes a combination of high fixed and low marginal costs means that a project would only be undertaken by a monopoly.

competitors in their markets if they are open to competitors from outside their borders – by having low or no tariffs or other barriers to trade.

Governments can encourage competition by avoiding favouritism in their own purchases. They can avoid protecting dominant firms by using legislation to encourage new entrants and by not allowing unnecessary monopolies.⁷ Ensuring competitive markets is not just a matter of governments not impeding them – it also requires active steps to promote competition and break down cartels.⁸ Reforms to improve competition in these ways are the focus of the Productivity Commission and the Australian Competition and Consumer Commission.

Improvements in this aspect of competitiveness can be thought of as the economy moving towards and/or shifting out the production possibility frontier. However, while most commentators would agree that the Australian economy has become more competitive since the early 1980s, it is hard to say by how much.

7 A natural monopoly may be better in public ownership than private, but it might be possible to introduce elements of competition to some parts of its operations.

8 The same Adam Smith (1776) who wrote of how society benefited from the ‘invisible hand’ of competition, warned that ‘people of the same trade seldom meet together, even for merriment or diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices’.

In the absence of objective quantitative indicators to measure internal competitiveness, one means of assessment is to survey business leaders. Surveys by the World Economic Forum (2005) and International Institute of Management Development (2005) ask business leaders in a large cross-section of countries, including Australia, to score various aspects of competition in the local market on a 1-7 or 1-10 scale. Australia has generally improved its performance in these comparisons, and in many aspects there is not much room for any further relative improvement (Table 1).

Table 1: Australia's ranking among countries in surveys of business opinion

	2005	1999
Intensity of local competition (WEF)	5 th /117	9 th /59
Rarity of market dominance (WEF)	15 th /117	n/a
Regulatory framework encouraging competitiveness (IMD)	7 th /51	n/a
Legislation preventing unfair competition (IMD)	2 nd /51	8 th /47
Effectiveness of antitrust policy (WEF)	2 nd /117	3 rd /59
Lack of price controls (IMD)	8 th /51	14 th /47
Days to start a business (IMD)	1 st /51	n/a
Ease of starting a business (WEF)	1 st /105	18 th /59
Creation of firms supported by legislation (IMD)	8 th /51	n/a
Absence of trade barriers (WEF)	20 th /117	n/a
Absence of protectionism (IMD)	10 th /51	23 rd /47
Rarity of foreign ownership restrictions (WEF)	13 th /117	n/a

Sources: World Economic Forum (1999, 2005); IMD (1999, 2005).

3. EXTERNAL PRICE COMPETITIVENESS

A firm will be uncompetitive in a market if its price is well above that charged by its rivals for a similar product and it makes few sales. An analogous approach is used to measure external price competitiveness for national economies.

Measuring external price competitiveness in international markets requires converting domestic prices into a common currency so they can be compared. An example is the annual exercise conducted by *The Economist* magazine in compiling its 'Big Mac' index.⁹ It converts the Australian price of a Big Mac hamburger, chosen because Big Macs are basically the same all over the world, into US dollars and finds it costs US\$2.44. By comparison, the Big Mac costs US\$3.15 in the United States. The cheapest Big Macs are in China (\$US1.30) and the most expensive in Switzerland (US\$4.93).

Concluding from these calculations that Australia is only middlingly competitive in the global market for Big Macs is not particularly helpful as Big Macs are not traded internationally. But in principle the same exercise can be undertaken for a range of traded goods and these can be weighted appropriately to derive an index of overall external price competitiveness.

Detailed price comparisons are conducted as part of the International Comparison Programme, now run by the World Bank, OECD and Eurostat.¹⁰ Unfortunately, their work is so demanding that results come out with considerable lags – the most recent results refer to 1996. The reports are not particularly illuminating on competitiveness, as they generally just show that prices overall (and, in particular, prices of services) tend to be higher in wealthier countries.

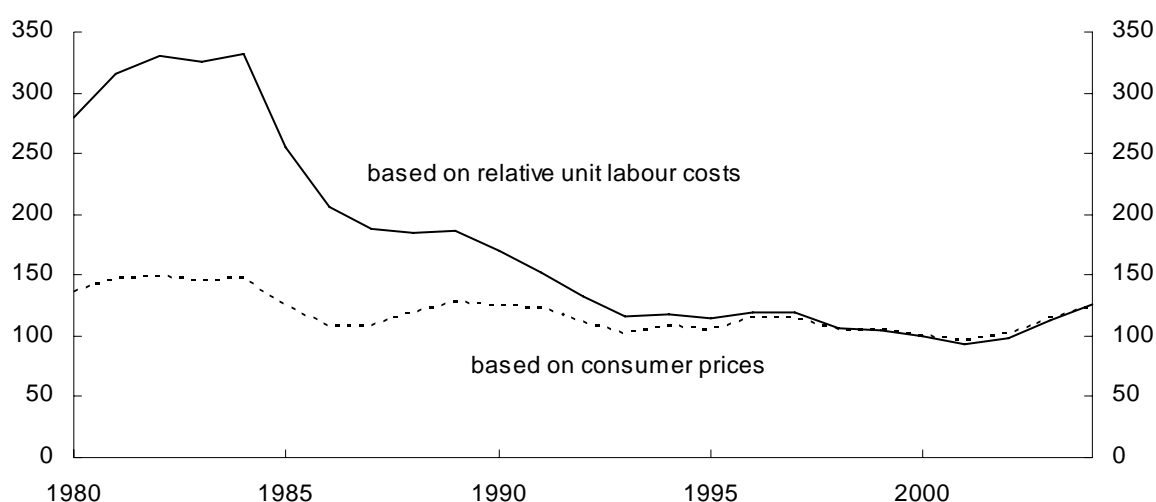
A more common example of this sort of calculation is a measure of the 'real exchange rate'. The most common definition of this compares a domestic price

9 The index has been calculated since 1986. The most recent update of the numbers was in the 14 January 2006 issue and the most recent discussion appeared in the 11 June 2005 issue. Parsley and Wei (2003) provide a more technical analysis.

10 See ABS (2005) for further information on the project.

index to a world price index adjusted by the exchange rate.¹¹ Real exchange rate measures are cited relative to an arbitrarily chosen base year. They therefore at best indicate whether an economy is becoming more or less competitive, but not its current level of competitiveness. An example is an index of ‘competitive position’ compiled by the OECD, shown by the dashed line in Chart 1. This shows Australia losing ‘competitiveness’ in recent years as the exchange rate appreciates and inflation remains similar to that in our trading partners. (Importantly, this measure does not allow for Australia’s terms of trade having improved.)

Chart 1: OECD measures of manufacturing competitiveness
(level in year 2000 = 100; increase represents loss of competitiveness)



Measures of the real exchange rate are often based on consumer price indices or GDP deflators, and therefore include prices of many non-tradable services.¹² Alternative measures are based on export prices or producer prices and are

11 The comparison can be made with a single country, but generally, a real effective rate is calculated using weights for a range of economies, generally those which are major trading partners. Some international agencies also give weight to potential competitors in Australia’s markets. See Koch (1984) and Turner and Van ‘t dack (1993) for details. (Complicating matters, some authors define the real exchange rate as the price of tradables relative to nontradables. See Dwyer and Lowe (1993) for a detailed discussion.)

12 Their interpretation will also depend on whether the country is small and a price taker, or large enough to influence prices.

closer to the idea of a measure of competitiveness in *external* prices. But even these suffer from measuring prices of different goods as different countries export different things. If the price of Australia's iron ore exports goes up by more than the price of Chinese microwave ovens (when expressed in the same currency), does this mean Australia has become less competitive in any meaningful sense? Some economists would argue that movements in real exchange rates are dominated by these sort of measurement issues. Abstracting from transport costs and taxes, if global markets are competitive then the price of the same good should be the same all around the world provided the good is traded.

A clear example is the spot price of gold which is virtually identical in all markets. If the 'law of one price' applied to all goods as it applies to gold, then variations in measured real exchange rates would not tell us anything useful about competitiveness.

A milder version of the same argument is the long-established idea of 'purchasing power parity'.¹³ This suggests that either domestic prices (in a world of fixed exchange rates) or exchange rates (if they are floating) will adjust to keep the real exchange rate stable. Purchasing power parity does not hold in the short term, but many studies find it seems to hold in the longer term.¹⁴ Typically, the 'half-life' of fluctuations in the real exchange rate is around 3-5 years; see for example, Taylor (2002) and the survey by Rogoff (1996). This would imply that if real exchange rates are a valid measure of competitiveness, any loss of competitiveness is self-correcting.

13 The term 'purchasing power parity' was first used by Cassel (1922) in discussing the setting of new gold standard parities after World War I, but Angell (1926) traces the basic idea back over a century earlier.

14 The tendency for the relative price of non-traded goods and services to rise in fast-growing economies, known as the Balassa-Samuelson effect, puts a trend into the real exchange rates of these economies when calculated using consumer price indices.

Another complication is that prices should conceptually be adjusted for quality changes, but this is hard to do in practice. A company improving the quality of its goods may have rising prices but this would be a reflection of greater competitiveness, not a sign of declining competitiveness. Something analogous may happen with economies. The real exchange rate tends to rise in economies which are innovative and successful, making their price competitiveness appear worse; Turner and Van 't dack (1993).

4. EXTERNAL COST COMPETITIVENESS

A variant of the above calculations is to compare costs between countries, which can vary even if the law of one price holds. The largest business cost, and the one most commonly compared internationally, is (unit) labour costs.¹⁵

Labour costs in manufacturing are compared across a number of countries by the United States Bureau of Labor Statistics. This shows, unsurprisingly, that Australian wages are similar to those in other advanced economies but higher than those in emerging economies (Table 2). But this table does not take us far in assessing competitiveness, as it is well known that wages are high in countries where productivity is high (as illustrated in Chart 2 which shows cross-country data for manufacturing sectors, in a range of both advanced and emerging economies).

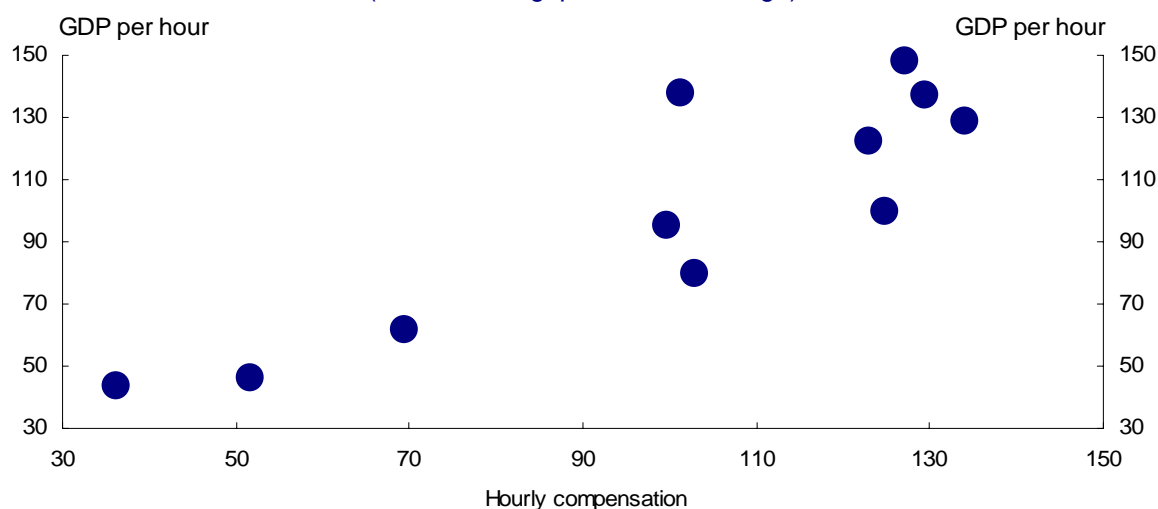
Table 2: Hourly compensation costs for manufacturing workers, 2004, US dollars

Australia	23.09	Brazil	3.03
Canada	21.42	Korea	11.52
European Union	27.17	Mexico	2.50
Japan	21.90	Sri Lanka ^(a)	0.51
United States	23.17	Taiwan	5.97

(a) 2003.
Source: US Bureau of Labor Statistics, November 2005. The comparison uses market exchange rates.

15 The next most commonly compared cost is taxation. For example, Australia’s statutory 30 per cent company tax rate places it around the OECD average; Kelly and Graziani (2004). The recently commissioned international comparison of Australian taxes will shed further light.

Chart 2: Wages and productivity across countries
(manufacturing; per cent of average)



Source: Based on data for 2001 from International Labour Organisation, *Key Indicators of the Labour Market*, 3rd edition, Geneva, 2003. Hourly compensation is measured in US dollars and manufacturing GDP per hour in constant price 1990 dollars. Both series have been scaled to percentages of the average for the economies included.

In principle, a comparison could be done for 'unit labour costs', the ratio of wages to productivity. But given the difficulties involved in getting internationally consistent data on the levels of both wages and productivity, measures of the ratio may be quite unreliable.

As with external price competitiveness, more common than comparisons of the level of costs across countries are comparisons relative to a base year. As noted above, these at best indicate whether an economy is becoming more or less competitive, but not its current level of competitiveness. The OECD produces a measure of 'competitive position' based on relative unit labour costs in manufacturing, shown by the solid line in Chart 1. Such a series is hard to compile and it has been subject to significant revision.¹⁶ There can also be significant conceptual problems with such series.

16 For example, in the table in the June 1994 *Economic Outlook* this measure suggested Australia's competitiveness deteriorated by almost 20 per cent between 1987 and 1991, but by the June 2004 *Economic Outlook* the same measure of competitiveness was showing around a 20 per cent improvement over the same period.

International comparisons of costs may be useful for analysing the international competitiveness of a particular industry within a country. But it is less clear whether it is meaningful to talk about the 'competitiveness' of a whole national economy. The principle of 'comparative advantage' implies that the world is better off if countries specialise in the things they do well or cheapest in a relative sense. Countries, no matter how talented their people, or how fertile their fields, can not have a comparative advantage in everything. And even the most devastated country cannot have a comparative advantage in nothing. This implies that all countries are 'internationally competitive' in some areas and not in others.

On this thinking, a surge in wages (not offset by productivity improvements or exchange rate depreciation) would shift a country's comparative advantage towards less labour-intensive goods. This would mean a loss in competitiveness for some individual firms, and a likely reduction in domestic employment. However, while the economy as a whole would become less competitive in making labour-intensive goods, it would not necessarily be less competitive overall.¹⁷

5. MEASURES BASED ON GROWTH FUNDAMENTALS

Another concept of competitiveness is that an economy is competitive if it does things that are likely to encourage economic growth. There is a vast literature on the causes of economic growth. The Nobel Prize-winning economist Robert Lucas (1988) has said that once you start thinking about economic growth it is hard to think of anything else. The explanators most often found to be

17 The economy may be worse off due to the disruption involved in shifting its specialisation. There are also issues concerning the distribution of the gains from trade when comparative advantages change.

significant are high investment volumes, education and ‘openness’ – both to trade and ideas.¹⁸ Higher population growth is associated with higher growth in real GDP, but probably a little less than proportionately. High (double-digit) inflation is inimical to economic growth. There is also evidence that respect for the rule of law and property rights and a fair judicial system are important.

There is also some overlap with the ‘internal market competitiveness’ discussed above, as this also contributes to economic growth.¹⁹ Measures which capture these macroeconomic and institutional factors are sometimes termed measures of ‘competitiveness’, although they are at least as relevant to domestic economic growth as to success in international trade.

6. INDICES OF COMPETITIVENESS AND THEIR USEFULNESS

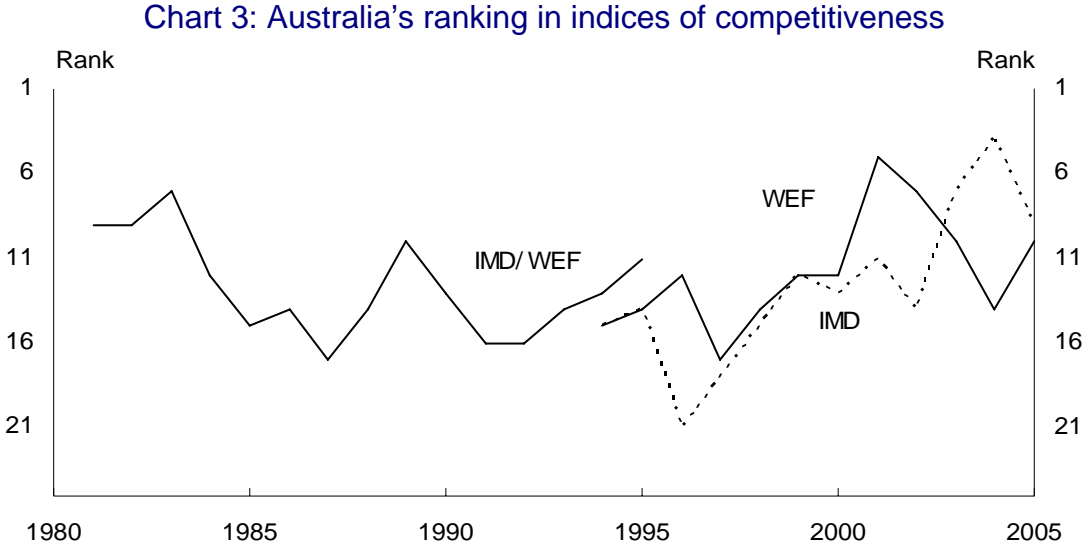
Two international competitiveness indices, and in particular Australia’s overall ranking in them, attract considerable press attention. From 1980 to 1995, a single index of competitiveness was published jointly by the International Institute of Management Development (IMD), a leading Swiss business school, and the

18 It is not just high investment spending that matters. Argentinean firms last century spent a reasonable amount on investment but high tariffs on imported equipment meant they did not add that much to the capital stock. Investment was also high in the former Soviet Union, but many commentators would argue much of it was wasted producing unwanted products. China’s inaptly named ‘Great Leap Forward’ also involved vast amounts of poor quality investment, such as backyard furnaces used to convert useful tools into useless slag.

19 An even stronger positive association is found with ‘backwardness’. It is easier for economies to grow fast when they are ‘catching up’ from a long way behind. But it would be perverse to include being backward as a competitive strategy. Geography also seems to matter; being landlocked increases the cost of trade while being in the tropics increases the incidence of malaria, and both make economic growth more difficult. Being in areas suitable for growing crops and with animals suitable for domestication made initial economic growth easier; Diamond (1997). For summaries of the economic growth literature, see for example, Levine and Renelt (1992), McMahon and Squire (2003) and Sala-I-Martin (1997).

World Economic Forum (WEF), an international group best known for organising an annual conference in Davos, Switzerland. Since 1996, they have produced separate indices, the IMD in its *World Competitiveness Yearbook* and the WEF in its *Global Competitiveness Report*. The WEF takes a more medium-term focus; Woods (1999). There are 51 economies currently covered by both institutions, with a correlation coefficient between the 2005 rankings of the two institutions of 0.89.

Australia’s rankings on these indices are shown in Chart 3.²⁰



Note: Prior to 1994, there were separate rankings for OECD and non-OECD economies.

The indices seem most like measures of competitiveness based on growth fundamentals, although they include variables more in line with the other concepts as well. The two groups both (somewhat arbitrarily) weight together a large number of variables (around 150 for the WEF and over 300 for the IMD). As well as ‘hard data’ from statistical agencies, both indices use surveys of the opinions of business leaders (about a third of the index for the IMD, but much

20 These rankings should only be regarded as approximations given the extent of revisions made to both the coverage and methodology of the indices. Furthermore, there are often only small differences between the scores on which the rankings are based; a 5 per cent drop in Australia’s score on the WEF’s index would see it drop eleven places.

more for WEF) about their own economies. For Australia the IMD works with the Committee for Economic Development of Australia and the WEF with the Australian Industry Group. However, as business leaders are only asked for opinions on their own country, those countries with brash, confident leaders will poll better than those with more self-effacing or reflective leaders.

The publications bring together a lot of useful comparative information about economic conditions and business perceptions across economies.²¹ But there are many examples of data used in the indices whose relevance could be questioned. A striking example where Australia is ranked as one of the least competitive economies is on kilometres of rail track relative to land area – but it is hard to believe that having myriads of tracks criss-crossing our deserts would make us more competitive! Exchange rate stability is included as an indicator of competitiveness, but in Australia’s case, the flexible exchange rate provides an important means of maintaining stability in the face of external shocks, which almost certainly enhances economic growth. Some variables seem more related to the economy’s size than to its competitiveness (for example, real GDP, numbers of listed companies, air passengers and Nobel prizewinners). Some measures are biased towards either the United States in particular, or English-speaking economies in general, such as patents registered with the US patent office, but not elsewhere, as a measure of innovation. Some questions asked as ‘changes’ might be more appropriately asked as ‘levels’ (for example, ‘during the past year, obtaining credit for your company has become more difficult/easier’; measures of change in exchange rate; change in unit labour costs in the past year). Some data seem hard to believe or meaningless (for example, if Taiwan really has more cellular mobile subscribers than inhabitants, as the data imply, does this make it more competitive?).

21 Another useful source of such information is OECD (2006) but the OECD does not combine its indicators into a single index.

One means of assessing the utility of measures of competitiveness is to ask whether they have predictive power. Noting that Japan was ranked the world's most competitive economy in 1990, just before its 'lost decade' (and Switzerland which also had a poor growth record in the 1990s was ranked second), might suggest not.

A more rigorous test is to add competitiveness rankings to a standard regression model for economic growth, to see if they add explanatory power. Table 3 reports the results of a cross-country regression which uses measures of initial income, export shares and inflation in 1990 to 'explain' the variation between 23 economies in the growth of their real GDP over the subsequent 13 years. The coefficients all have the expected signs although some do not achieve the standard statistical level of significance.

When the ranking of the economies in the IMD/WEF index of competitiveness for 1990 is added to the regression, while it has the 'right' sign, it is insignificant and makes little difference to the coefficients on the other variables. This would imply that the measure does not tell us anything we do not already know from other information about the likely subsequent performance of economies. It is also a poor predictor of growth when entered on its own, implying it does not provide a good 'summary indicator' of the fundamental causes of economic growth. It may provide a good indicator of the investment climate. More sceptically, Kay (2005) suggests that the question to which the competitiveness rankings form the answer is 'which countries have policies of which the IMD or WEF most approve?'.

Table 3: Regression explaining annual average percentage growth in real GDP, 1990-2003 for 23 economies; coefficients with t-statistics in brackets

Constant	40.6 (3.8)	44.3 (3.1)	2.19 (7.1)
Population ^(a)	1.66 (3.9)	1.62 (3.6)	
Initial income ^(b)	-3.94 (3.9)	-4.30 (3.2)	
Export share ^(c)	0.36 (0.9)	0.37 (0.9)	
Inflation ^(d)	-0.11 (3.6)	-0.12 (3.5)	
Competitiveness ^(e)		-0.018 (0.4)	0.026 (1.2)
R ²	0.65	0.66	0.06

(a) Annual average percentage growth, 1990-2003.

(b) Log of per capita real GDP in 1990.

(c) Log of percentage share of GDP in 1990.

(d) 1990.

(e) Ranking of the economies in the IMD/WEF index of competitiveness for 1990.

7. CONCLUDING REMARKS

The linkages between competitiveness, trade and economic growth are not easy to disentangle. As one country's exports are another country's imports, increasing international trade does not automatically lead to faster economic growth. Rather the effect comes from the favourable impact of such trade on domestic economic efficiency. Especially for small economies, openness to trade should boost economic growth by increasing domestic competitive pressures (from imports) and allowing domestic producers access to wider markets and so economies of scale (from exports). This effect is compounded by openness to trade tending to be associated with openness to ideas (contrast Hong Kong and North Korea at two extremes on both).

Popular discussion often views 'competitiveness' as a way to narrow the current account deficit of the balance of payments. Certainly, a company that is viewed as having improved its competitiveness will attract more investors and make more sales. However, a country is not a company writ large; Krugman (1996).

A country which is perceived as more competitive will also attract more foreign investment. But this will in general be associated with a larger, not smaller, current account deficit (due to higher imports of capital equipment, an income-induced increase in consumption imports and/or the effect of an appreciation of the exchange rate). It is a matter of accounting identities that the current account is the difference between national saving and investment. Therefore, increased capital inflow is associated with a higher current account deficit, unless there are some associated changes to other aspects of national saving and investment.

This does not mean that the aspects of competitiveness discussed in sections 2 and 5 are not desirable. But they are desirable because of their impact on domestic productivity and economic growth. And they would be just as desirable were the current account to be in surplus, or other economies growing more slowly.

REFERENCES

Angell, J 1926, *The Theory of International Prices: History, Criticism and Restatement*, Harvard University Press.

Australian Bureau of Statistics 2005, 'The International Comparison Program and purchasing power parities', *Australian Economic Indicators*, December, ABS.

Cassel, G 1922, *Money and Foreign Exchange after 1914*, Constable and Co, London.

Diamond, J 1997, *Guns, Germs and Steel: the Fates of Human Societies*, Jonathan Cape.

Dwyer, J and Lowe, P 1993, 'Alternative concepts of the real exchange rate: a reconciliation', *Reserve Bank of Australia Research Discussion Papers*, no. 9309, July.

IMD 2005, *World Competitiveness Yearbook 2005*, IMD, Lausanne.

Kay, J 2005, 'The question of how countries 'compete'', *Financial Times*, 17 May.

Kelly, J and Graziani, R 2004, 'International trends in company tax rates – implications for Australia's company income tax', *Economic Roundup*, Australian Treasury, Spring, pp 23-47.

Koch, E 1984, 'The measurement of effective exchange rates', *BIS working papers*, no. 10, September.

Krugman, P 1994, 'Competitiveness: a dangerous obsession', *Foreign Affairs*, March/April, pp 28-44.

Krugman, P 1996, 'A country is not a company', *Harvard Business Review*, January-February, pp 40-51.

Levine, R and Renelt, D 1992, 'A sensitivity analysis of cross-country growth regressions', *American Economic Review*, vol 82, no. 4, September, pp 942-63.

Lucas, R 1988, 'On the mechanics of economic development', *Journal of Monetary Economics*, vol 22, no. 1, pp 3-42.

McMahon, G and Squire, L (eds.) 2003, *Explaining Growth: a Global Research Project*, International Economic Association conference volume no. 137, Palgrave, Basingstoke.

Morgan, H 2005, 'The business of reform', speech to the National Press Club, Canberra, 15 June.

Organisation for Economic Cooperation and Development 2006, *Going for Growth 2006: Economic Policy Reform*, Paris.

Parsley, D and Wei, S-J 2003, 'A prism into the PPP puzzles: the microfoundations of Big Mac real exchange rates', *National Bureau of Economic Research working papers*, no. 10074, November.

Rogoff, K 1996, 'The purchasing power parity puzzle', *Journal of Economic Literature*, vol XXXIV, no. 2, June, pp 647-68.

Sala-I-Martin, X 1997, 'I just ran two million regressions', *American Economic Review*, vol 87, no. 2, May, pp 178-83.

Smith A, 1776, *An Inquiry into the Nature and Causes of the Wealth of Nations*. (The quotation is from book 1, chapter 10.)

Taylor, A 2002 'A century of purchasing power parity', *Review of Economics and Statistics*, 84, pp 139-50.

Turner, P and Van 't dack, J 1993, 'Measuring international price and cost competitiveness', *BIS Economic Papers*, no. 39, September.

Woods, G 1999, 'World competitiveness: Australia fair to middling', *Australian Parliamentary Library Current Issues Brief*, no. 1998-00/6, February.

World Economic Forum 2005, *The Global Competitiveness Report 2005-2006*, Palgrave Macmillan.