

**UK Monetary Policy in a Changing World**

Speech given by

Kate Barker, Member of the Monetary Policy Committee, Bank of England

At the Teesside Business School Annual Lecture 20 November 2003

I am extremely grateful to Imran Contractor, Rebecca Driver and Miles Parker for assistance and useful discussions in the course of the preparation of this paper, and to Andrew Bailey, Charlie Bean, Marian Bell and Sally Reid for helpful comments. The views expressed here are personal and should not be interpreted as those of the Bank of England or other members of the Monetary Policy Committee.

1

All speeches are available online at [www.bankofengland.co.uk/publications/Pages/speeches/default.aspx](http://www.bankofengland.co.uk/publications/Pages/speeches/default.aspx)

# UK monetary policy in a changing world

It’s a great pleasure to be here, and to have been invited to give the Annual Business School lecture. My connection with the University of Teesside has mainly been through the previous Vice Chancellor, Professor Derek Fraser, and my meetings here at the University to date have mainly concerned the subject of football – so it is a quite a change this evening to be here about UK monetary policy.

*Introduction*

I often remark that one of the great benefits of my present job on the Monetary Policy Committee is that it has only one objective – achieving the Chancellor’s target for the inflation rate - in contrast to all of my previous posts in which there were usually multiple objectives and perpetual uncertainty about which one to prioritise. This simplicity may be about to become a little more complicated, with a change in the target definition, and probably the target rate, due to be announced by the Chancellor in the Pre-Budget Report in three weeks time. In practice this may well not make a great deal of difference. The real complication that we face in carrying out this apparently simple task is the very wide range of data and trends which we need to take into account in considering how to achieve the inflation target, however defined.

Our discussions on the Monetary Policy Committee range over a wide number of topics. But the starting point, in the meeting which takes place each month on the Wednesday before we take our monthly decision on interest rates, is almost always a consideration of the latest situation in the world economy, setting the background for the more detailed debate about the UK. In this speech, I want to discuss some issues related to the world economy, partly in the context of how the present global situation affects our decisions now and over the coming months, and partly trying to answer questions about the UK’s competitive position which are often raised in the regular meetings which we have with business contacts across the UK.

The issues I am going to talk about are:

The emerging role of China in the world economy, aiming to set the recent developments in trade flows into a more historical context

Whether the MPC should be worried about the shift of jobs out of the UK to low labour cost locations

The potential risks to the UK outlook from any unwinding of the large US trade deficit

How the prospects for euro area growth affect us, and in particular whether it matters for the UK that over the medium-term GDP growth in the euro area may be relatively sluggish.

Finally, I will comment briefly from my own perspective on the MPC’s recent decision to raise UK interest rates.

*Global imbalances*

Since I first became a member of the MPC in the summer of 2001, our regular commentaries on the UK economy have expressed concern about a range of imbalances. This term has been used very widely – for example in the UK we have discussed differing trends in domestic and foreign demand, differing trends in the manufacturing and service sectors, rising consumer debt and the current account deficit. In previous speeches I have tended to argue that not all of these imbalances, as identified, are necessarily reasons for concern from the monetary policy perspective. The relative decline of the UK manufacturing sector, for example, is largely the continuation of a long-term trend, while the rise in consumer debt is probably explicable to a great extent as part of a broader transition to the new low inflation, low interest regime. In both cases, this does not mean, of course, that there are no problems at all arising from these trends, and at the more micro economic level there are considerable policy challenges from both, and indeed adverse consequences for individuals. So in terms of the wider debate about the overall health of the economy, the term imbalance is rather overused – it tends to suggest problems needing to be resolved, when often there is no problem as such, but merely the effects of a more structural change in the economy showing up in the ongoing data.

Recently one major focus for this type of concern has been about trends outside, rather than within, the UK, and more specifically with the US current account deficit. It is of course difficult not to notice this deficit, given its size, not just in relation to US GDP (the deficit has averaged 3.6% of US GDP over the past five years, reaching

4.6% in 2002) but also in absolute terms, representing around 1.5% of global GDP at current exchange rates. This sheer scale means that in the event of this deficit being unwound abruptly, the potential impact on the world economy as a whole, and in most scenarios on the UK in particular, could be significant.

In thinking about the US deficit, however, as with trends in the UK economy, the nature of our concern about it should relate to an analysis of the cause. In a rather trivial sense this is obvious – America is having a good time consuming more than she is producing. But the corollary of that is that the rest of the world is kindly consuming less than it is producing, enabling the US to have this good time. And this is not taking place not only in Europe, but also of course in Asia. I will discuss the US current account deficit, and how and why it might unwind, later. But now I want to look at the first of the topics I have raised, which is about China.

*The emergence of China*

Several months ago, when I was first thinking about the topic for this lecture, China seemed an attractive central theme. It was clearly of more and more importance to many of the businesses visited by MPC members. Since then coverage in the media of the impact of China on the rest of the world economy, and on the UK has risen sharply. Much of this debate has focused around the question of the value of the renminbi, and the desire of some US policymakers to persuade Chinese policymakers that they should start to appreciate their currency. Indeed, some reports suggested that this topic was a key focus of the G7 Dubai meeting in September, which resulted in a communiqué calling for more flexible exchange rates. But how important has China really become, and what is the likely impact on the UK?.

The most significant trend in the recent data has been the rapid rise in China’s integration into the world economy, as exports of goods and services rose from 6.7% of Chinese GDP in 1980, to 29.6% in 2002. Imports rose almost equally steeply, but China has moved into a trade surplus of over $30 billion (2.5% of GDP). (For comparison, the US trade deficit was $131 billion last year.). Over the same twenty years or so, China’s share of world goods exports rose from 0.9% to just over 5%. Asia, in particular Japan, is the main market, taking 45% of Chinese exports, with 22% going to the US and 15% to the EU. Again using 2002 data, around 18% of

Japanese imports came from China, and 11% of US imports (just above the Japanese share). China is a very much less significant trading partner for the UK, accounting last year for less than 1% of exports and 2.5% of imports. To put this into perspective, this import share is well behind countries such as Belgium (5%) or the Netherlands (6.5%).

This trade data needs to be interpreted with some care. A significant portion of China’s exports are of goods which were shipped there for reworking or assembly, so that the raw export data tend to give an over-stated picture. In addition, there are problems in some data series about the inclusion of re-exports to and from Hong Kong. Nevertheless, it is clear that the Chinese economy has opened up rapidly to trade*,* cemented by her accession to the World Trade Organisation in 2001. While the pace of growth in China apparently continues around the 8-9% per annum rate recently established (and only temporarily dented even by SARS), the impact of this new major trading partner is set to increase for a significant period.

In a longer-run perspective, this is part of a wider shift of trade towards South-East Asia If the US, Canada, Japan and Western Europe are taken to represent the old industrialised world, these countries’ share of world exports, by value, has stayed broadly around 60% for the last four decades (although there have been some fluctuations due to changes in oil and commodity prices, and indeed these comparisons generally need to be treated carefully because of the changing relative goods prices.) Over the same period, the one noticeable feature of changing shares has been the rise of South-East Asia (excluding China), marching steadily ahead, from 4% in 1960, to 6% in 1980, 10% in 1990 and 13.5% in 2002.

A comparison could be drawn with the impact of Japan’s arrival as a major global player in the late 1960s and early 1970s. Japan’s export share of world trade rose from 3% in 1960, to around 6% in 1975 to over 9% in 1985, and this trend was associated by the mid-1980s with large current account surpluses. As this was a period of relatively poor performance in the EU and the US, there was much concern about the Japanese advance into key sectors. Today, looking at subsequent developments, it is easy to see that this process of trade gain was bound to come to an

end (though the recent lengthy period of Japanese domestic stagnation was not an inevitable consequence).

But given the sheer size of China’s population, 1.29 billion, compared with Japan’s 127 million, the potential is for both a much bigger effect and more pervasive effect in the long run. A number of estimates have been made of when China will move up the ladder of rankings in terms of being a world economic power. For example Goldman Sachs1 recently predicted that China could be the second largest world economy in less than 15 years. (In the same piece, India was projected as the world’s third largest economy by around 2030).

Taking a long historical context, the shift in economic power today could be seen as reversing another major shift that took place much earlier. In 1820, Japan, China, India and the rest of East Asia accounted for around 55% of world GDP and 60% of world industrial production. However, these shares declined as industrialisation came sooner to other countries and regions. By around 1875, these countries’ share of world industrial production was less than 20%, about the same as that of the UK. At the same date, the UK accounted for over a third of world manufacturing exports, a startlingly high share2.

When commentators worry today about the UK losing share of world trade, it is worth recalling that this process has gone on since the late 19th century, in what looks like an inexorable trend. Yet of course at the same time the UK has continued to grow and our income per head has risen many times over. The emergence of other trading partners has boosted, not damaged, our growth. Our decline, such as it has been, is in relative terms, and even there it is worth recalling that ‘in terms of GDP per head’ while we are around 30% behind the US, a big gap, we are forty times better off than India.

1 Goldman Sachs (2003)

2 CEPR (2002)

*Changes in the UK’s pattern of production*

So probably there is nothing new, or indeed unusual relative to historical experience, about the shifts in economic significance and in trade flows which are taking place at present. However, this does not mean that they are unimportant in considering the outlook for the world economy, or in looking at geopolitical pressures. Much more parochially, these trends give rise to what may be the most asked question of MPC members on our regular visits to firms around the country. This is: aren’t we worried about the steady, or possibly accelerating, loss of production (especially manufacturing production) from the UK to low cost locations?

Indeed, on one of my recent regional visits, a low-loader was visible through the office window, engaged in loading up capital equipment to take some of the production overseas. I did wonder if that was carrying the desire to bring reality home to MPC members just that bit too far!

This concern about the loss of production has been enhanced by a recent spate of announcements, exemplified by the HSBC decision to shift 4000 call centre jobs to China, India and Malaysia. This has been followed, among others, by a similar decision from Lloyds TSB, with even the National Rail Enquiries line now on the list. This of course signals the departure of some service sector, perhaps particularly financial sector, jobs out of the UK, rather than manufacturing jobs which have generally been thought of as more vulnerable in this respect. It has increased for some the sense that the UK’s economy is increasingly fragile, with every activity now contested by low cost competition.

However, I would argue that there are good reasons why these trends, though very difficult for the firms and individuals concerned, are not worrying at the level of the whole economy. This is not just because an issue like this is not one which monetary policy can address (though clearly it isn’t). More importantly it is because I consider that although particular jobs may be lost to these alternative locations, there is no reason to think that employment in the UK will necessarily suffer in the long term.

The more obvious, though less fundamental, reason for believing the UK can maintain a high level of employment is that, alongside the trend for more of the service sector to be contested by foreign competition, there is also a relative rise in demand for goods and services which involve an inevitably high level of local employment – construction (public and private), education, health, many forms of leisure services and retailing activity. So there is a large proportion, probably around 60% of economic activity, which is unlikely to move a big share of its employment abroad.

The more theoretical, and more powerful, reason is the basic economic insight that countries will always be able to export successfully the products in which they have a comparative advantage. This means that, even if another country is more efficient than the UK at making every tradeable product, there will be some products where the advantage is less significant. Trade flows and exchange rates will adjust (at least in theory) to enable the less efficient country to specialise in these.

The obvious followup question to this proposition, from any businessperson struggling to understand how the UK can survive the onslaught of low-cost competition, given the huge gap in wage levels between here and China or India, is to ask what these products might be for the UK? This is a question I at least am happy to duck. It is probably sensible to do so, as even if it is clear what those products are today, it is uncertain how long the advantage will remain. The risk is that any prediction about the right sector will be remembered for longer than the sector itself remains strong. It is not so much sectors as characteristics that build advantage for example in the UK these might include design expertise and the English language. Call centre jobs are only the most widespread example of activities which have come here, and then started to depart, over the past decade. But it is surely true that the UK will be relatively efficient, compared to other EU countries, or to China and India, in a large number of product areas.

The power of the theory is that we don’t have to know what exactly the goods and services are, in which we will specialise successfully in the future, although there may be some benefit from policies which seek to build on the advantages which exist today. One possible indication that of where this might be at present is suggested by the recent improvement in the UK’s relative export prices for services. And as I

suggested by pointing out how far in terms of losing trade share the UK has gone, this loss of share is certainly not necessarily accompanied by economic decline. It seems unlikely that in the 1880s, or for that matter the 1920s or 1950s, the UK’s sources of comparative advantage were known at the time, or that the future sectors could have been accurately predicted. Yet despite concerns over the loss or diminution of industries ranging from corn to steel to cars to financial services, the long term trend is that we have become wealthier, more productive and (at least recently) more employed. Trade has contributed to this – by giving consumers access to cheaper goods and services.

Economists frequently strive, as I have just done, to describe this theory of comparative advantage, but it is doubtful that we have always been entirely successful, as it is a theory which does not appeal readily to common sense. There is in fact a story that the leading economist Samuelson was asked if there was any part of economics which was both true, and also not trivial – not simply common sense. He suggested comparative advantage as the key powerful, counterintuitive insight which the subject provided, and commented in his reply on the difficulty of persuading others to believe it. (The effect of this story, however, may be a little diminished by the fact that most of you might more commonly wonder if *any* of economics could be described as common sense.)

Also, like many theories, this one can seem a bit thin when set against events in the real world. It implies no need to take any account whatever of the shifting patterns of trade from the monetary policy standpoint, or from any other macroeconomic view. Any tensions would simply be dealt with through changes in relative prices and, if necessary, changes in exchange rates, to deliver a overall satisfactory and Panglossian outcome. However, of course this theory is about the long run – whereas monetary policy is set with regard to the more immediate prospects for the economy, and we are concerned with managing the path to this long run.

Reality therefore is inevitably more complicated. Even if, in the UK today, it is possible to dismiss the concerns about low-wage competition, by pointing to the sustained low level of unemployment, these concerns did at least appear to be more appropriate in the high unemployment 1970s when the threat to our economic well-

being was believed to come from Japan. And in the US now, where unemployment rose from 3.8% in spring 2000 to around 6% in 2002, the idea that globalisation is a painless process would not go uncontested.

There are three considerations which can help towards an answer to this question. First, even if it is accepted that that world trade is not a zero sum game, but rather one that creates growth, this does not necessarily hold for all of the participants all of the time. The problems in agreeing ways forward on world trade liberalisation are certainly not irrational, from each individual country viewpoint. The World Trade Organisation is necessary to police the way in which trade is conducted and resist dumping or other trade practices. When these negotiations fail, as they did in Cancun recently, the result is irrational, in the sense that the welfare outcome is probably second-best for the global economy.

Secondly, while the eventual outcome of the process may be favourable, there are obviously many losers initially - sectors, companies, and individuals who find they are no longer able to compete, either at all, or not in that locality. Adjusting to different industrial structures as the nature of comparative advantage changes is a costly process – skills and infrastructure become redundant and need to be redeveloped. Here in the North-East it is probably self-evident that whole regions can be adversely affected for long periods – but I hope also clear that decline can be put into reverse. However, the general problem that on the whole it is difficult to compensate effectively losers from this adjustment process is not the only one which slow-growing regions face. With the faster pace of sectoral change, this can make a nonsense of attempts to craft industrial strategies over the medium-term.

There may also be implications for the type of job that is available. A recent academic study3 suggested that, in the UK, the introduction of technology has had the effect of job polarisation, with the share of employment rising for the best-paid occupations (such as software engineers, management consultants) and also for the worst-paid occupations (such as care assistants, educational assistants, hotel porters). While they attribute this to the nature of new technology, foreign trade pressures may

3 Goos and Marten (2003)

be part of the story, and one result may be that, if closures or redundancies as production moves abroad bring middle-paid earners into the jobs market, the only way for them to go may be down.

The third point follows on naturally from the second. It is often easier for policymakers, and indeed sometimes for firms, to suggest that the cause of their economic difficulties lies abroad, rather than at home. But in fact there may be few cases where this is true. Rather, it is necessary for individual countries to ensure that their domestic policies enable them to deal with the structural change which inevitably occurs. In fact, to return to an earlier comment, it was probably as much structural problems with the UK’s labour market than produced our problems in the 1980s, as the emergence of Japan. And in the US, it is probably post September 2001 effects, coupled with corporate accounting problems, as much as China. China’s biggest impact may be less on the US itself, as on the other low cost sources for US imports, such as Mexico.

*Risks in the world economy*

How does all this bear on what is probably the biggest uncertainty in the world economy at present – the question of whether, when and how the large US external deficit will start to correct? There are two main ways in which this might come about, but neither is by any means certain. The first might be through adjustments in the US domestic economy – for example, a shift in the behaviour of US consumers. Private savings remain at a low level, around 3.5% of disposable income, and an increase in savings would tend to reduce imports. It could be that the weak labour market, due in (small) part to the shift of production to China, will prove the trigger to a consumer slowdown. (However, the US labour market now seems to be recovering, and the behaviour of US consumers could be justified in terms of their income expectations).

The second obvious potential trigger for deficit correction would be a change in perceptions abroad. For example, a loss of confidence in the sustainability of the US deficit might trigger a fall in the US dollar. However, it has been argued that such a correction is not inevitable. The US is believed to be more able than other countries to run a large deficit, due to the dollar’s role as the international reserve currency

which means that there is a continual desire by other countries to hold dollar assets. In terms of the stock of dollar assets, many commentators have noted the increased holdings by some Asian countries, particularly China. However, this seems to be a strategic choice, and therefore unlikely to be much affected by concerns about relatively short-term dollar movements. In this context it may be worth noting that Chinese agents hold less than 5% of the stock of US treasuries, less than a third of the share held from Japan. Additionally, despite her large and persistent deficit, and having net foreign liabilities, the US has only recently moved into a position where her net international income from financial holdings has become negative4. So it is not clear that financing concerns are likely to trigger a flight from US dollar assets.

Based on historical experience, a dollar fall would have to be very large to reduce significantly the foreign deficit (the real effective dollar correction in the mid –1980s was almost 30%). And, looking at this in bilateral terms, it is also hard to see what would bring this about. The dollar has already fallen against the euro, from a peak of close to 0.85 dollars per euro in the middle of 2001, to 1.17 dollars on average in October 2003, a depreciation of around 30%. Given the persistently weak outlook for euro area growth, it is not easy to see why the euro should, in the short-term, attract financing flows away from the US dollar and strengthen further. The dollar depreciation already seen is having some effect on trade flows, and will itself tend to prevent a further rise in the US deficit.

A dollar decline might be in the US’s interests, if the positive impact on net trade offset the negative impact on consumer incomes due to higher import prices. But if it occurred against the euro, it would mean that the efforts of EU policymakers to get growth up to a reasonable level would be badly set back. If the Asian currencies abandoned their dollar pegs, the need to adjust trade flows and the loss of export income would place strain on potentially frail banking systems in some countries, notably China, bringing the period of rapid growth to a halt. It is therefore easy to see why the US concerns about the weak renminbi have not been strongly supported by other countries.

4 Bank for International Settlements (2003)

The uncertainties about whether and how the US current account deficit might correct are thus considerable. And in interpreting what it would mean for the UK, there is the further complication of how the sterling exchange rate might react to either type of shock (either a sudden adjustment by US consumers, or a dollar fall). If sterling fell with the dollar, for example, the impact on growth might be less as a result of depressed exports, but there would be upward pressure on inflation.

These risks have been identified in recent Bank of England Inflation Reports as one of the MPC’s major concerns about the world economy. But there may also be risks, although probably rather smaller ones, related to the emerging importance of China. It is important to have good projections of the growth in China itself, and an understanding of how this will affect global developments. Over the past few weeks, there have been headlines about steel prices rising because of demand from China (I appreciate that, if true, this might be seen as good news for this area), similar projections about oil prices, and a significant China-related rise in freight costs. These stories are unlikely to have quite the dramatic effects suggested, but still indicate that China’s scale is such that a more rapid pace of growth there would be a small upward risk to our inflation forecast (although this could be offset if the increased production from China bore down further on trade prices of manufactured goods).

On the other hand there is also a downside risk - that the pace of growth in China might not just falter, but fall significantly, due to possible overinvestment in the present wave of optimism, and given the weaknesses of the Chinese banking system. In this case, the impact on the rest of the world would come through both knock-on effects in the rest of South-East Asia due to the interdependence of the region, and through adverse impacts on the many multinational firms who are heavily invested there.

The final source of risk for the UK at present from the world outlook is different. It is that euro area growth may again disappoint. In the short-term it is straightforward to see how this would tend to depress the prospects for UK exporters, and, relevantly for the MPC, bring downward pressure on inflation. A further issue might be whether, given that trend growth in the euro area is estimated to be lower than in the UK,

partially for reasons of slow population growth, this would tend to limit our own prospects.

The answer to this question is generally no. Growth in any single economy is fundamentally determined by factors within that economy – the supply of labour, the availability of capital, and the efficiency with which it is used. Over a longer period, other markets would tend to replace the euro area for UK exporters, as opportunities in these faster growing areas are exploited. But there is one sense in which there may be a little constraint on the UK. Expanding world trade is generally helpful for all economies, and if the euro area grows more slowly because of slow productivity growth, at the margin this is bad news for the rest of us. I have laboured this point a little in order to suggest that we should be more concerned about weak growth abroad than about the rise of new competitors.

*Why rates were raised in November*

These various international risks formed part of the backdrop to the policy discussion in the MPC at the beginning of this month, and the decision at that meeting to raise UK base rates by 0.25 percentage points. I wanted to use this opportunity to say a little about the rationale for that rate rise. Interest rate decisions are always believed to be the right choice in order to achieve the inflation target. In this case, the fundamental reason was that growth prospects were brighter, both abroad and in the UK, and this was expected to put upward pressure on inflation. The issues of increased house prices and of the rising debt of the consumer sector, were looked at, of course, in terms of their impact on these outlook for inflation. So the continued growth of debt was highly relevant to that decision, because it suggested that the consumer was spending more freely than we had expected, given the squeeze on real post-tax wage incomes that has been underway in recent months. But for me certainly, there was no implication that the rise was needed to reduce the growth of debt per se, and equally no implication of seeking to control the rate of growth of house prices.

I have argued before that the balance of evidence at present suggests that, while there is a proportion of households who have unduly high debt burdens, and may run into problems, this is more likely to be a problem at the micro, than at the macro, level.

Interest rates would have to rise very much more significantly before creating problems for most mortgage borrowers, as mortgage interest payments, relative to income, is now at a historically low level. And unsecured borrowing rates are much higher than base rates – a quarter point change in these rates, will have a relatively small effect on the size of the interest bills. Of course this is only part of the picture of household gearing, as capital also has to be repaid, but the point is that small changes in interest rates alone are unlikely to have a significant adverse impact on the household sector.

I want to stress this point, to be clear in advance that if the next month’s data for consumer debt shows a further rise, as is likely, this would not suggest either that the interest rate rise had in some sense failed to work, nor that the MPC would immediately be looking to raise rates again. The change in rates was aimed at longer- term considerations, and of course at managing the economy as a whole. This is what drives our thinking, and also our individual monthly votes. And these votes are cast in line with our individual views on what should happen in each month, rather than attempting to set the scene for future decisions. The latter is an inherently risky course, since any view about next month’s decision is always conditional on the next month’s data, and any indication of bias can readily be confounded by events.

*Conclusion*

In these remarks, I have tried to give some sense of how economists think about the present changing patterns of world trade and growth, and to point out that these changes are not unprecedented. In response to an imaginary business contact, I have explained that the arrival of significant low-cost competitors with increasing skill levels does not mean long term decline for the UK economy, but will rather increase the benefits from trade (although it will undoubtedly bring sectoral and regional difficulties, and raise new challenges for microeconomic policy.)

In addition, some of the major risks which face the MPC, and which have made recent decisions very finely-balanced, stem from concerns about how the world is coping with the inevitable transition as a group of new economic powers emerges. But in the longer term, it is more likely to hold back the UK economy if our trading partners are

inefficient and slow-growing, than if they are dynamic, provided we continue with our present stable policy framework.

I want to finish with two optimistic observations. The first is that the recent decision to raise interest rates, as our Inflation Report published last week made clear, did not reflect worries about rising debt, but rather optimism about the economy. It should be taken as good news that the MPC feels able to move interest rates back towards the long-term neutral level, and that the economy no longer needs such a large monetary stimulus. The second is that I hope trade worries do not end with China and India. Already in China and other Asian economies a middle-class is emerging, and China will not always be such a low cost source. Indeed, the day I really look forward to is when businesses are worried about the emergence of a trade threat from the African countries that today are so desperately poor. Then I really would know that globalisation had worked for everyone. My optimism here is tempered by regret that this day seems a very long way off.

# Sources

Bank for International Settlements – 73rd Annual Report (June 2003)

CEPR Policy paper no 8: ‘Making Sense of Globalisation: A Guide to the Economic Issues’ (2002)

Goos, Marten and Manning, Alan: ‘Lousy and lovely jobs – the rising polarisation of work in Britain’ *Centre for Economic Performance, LSE* (2003)

Wilson, Dominic and Purushothaman, Roopa: ‘Dreaming with BRICSs: The Path to 2050’, *Goldman Sachs Global Economics Paper No: 99* (2003)