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Speech by

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Good evening! Googling "Globalisation" generates no fewer than 45 million hits[1], so a lot of (virtual) ink has already been spilt on my topic tonight – though apparently rather less than on "Madonna", given the 90 million hits that her name brings up. But the term is often used rather loosely – and sometimes abusively – to describe all sorts of phenomena. So my talk will focus on just the impact of globalisation on the industrialised economies – and in particular on the inflation process – of the changes in economic geography brought about by the integration of China, India and the emerging economies of Eastern Europe into the world economy and the increased ease with which production can be relocated around the globe.

Of course, the progressive development and integration of more countries into the international trading system is not a new phenomenon. In the post-war era, we have seen first the rise of Japan, followed closely by the emergence of Korea and the other tiger economies of South-East Asia. But what is new this time is the sheer scale of events, with the entry of China, India and Eastern Europe into the global market economy effectively doubling that economy's labour supply, from roughly 1.5 billion to 3 billion.

Now most of these extra workers are relatively unskilled and brought little capital with them into the world economy, so the effect has been to lower the ratios of skilled labour and physical capital to unskilled labour. This should then drive down the wages of unskilled labour relative to skilled labour, as well as driving up the rate of profit on capital. And we should expect to see the production of goods and services that are intensive in the use of unskilled labour shifting to these emerging economies, with production in the industrialised countries shifting towards goods and services that are more intensive in the use of skilled labour – let us call them knowledge-based industries. That is indeed pretty much what has been happening.

Moreover, the integration of China, India and Eastern Europe into the global economy has coincided with an information and communications revolution that, along with falling transport costs, has made it feasible to push the division of labour ever further. So it is not just the production of labour-intensive goods that has been shifting eastwards, but also the labour-intensive elements within production cycles. So a product might be designed in an industrialised country such as the United Kingdom, but assembled in a country such as China, in turn using parts manufactured in surrounding countries. The geographical origin of a product becomes debatable in

[1] You need to search on both "Globalisation" and "Globalization"!

these circumstances: “Made in China” would often be more accurately rendered as “Assembled in China”. Moreover, after-sales service might rely on a call-centre based in India to record problems and utilise domestic workers to undertake the repairs. This unbundling of the production process into its constituent tasks, and the reallocation of those tasks to places with a comparative advantage in undertaking them, has increased the scope for businesses in the industrialised world to organise production in the most cost-effective manner possible.

But this downward pressure on the wage of unskilled labour relative to that of skilled labour does not imply that unskilled labour in the industrialised economies is necessarily worse off. The resulting exploitation of the gains from trade means that the developed economies have access to some goods and services more cheaply than they can be produced at home – it is similar to discovering a new and more efficient technology. So the purchasing power of unskilled workers’ wages may rise, even though their wages relative to those of skilled labour may have fallen. And it is even possible that the demand for unskilled labour in the domestic economy could actually rise. That could happen if some domestic unskilled labour is still necessary in production even after other tasks have been offshored, and if the decline in costs and fall in price stimulate a large enough increase in the demand for the product[2]. So evaluating the ultimate impact of globalisation on the living standards of unskilled workers in the industrialised economies is by no means straightforward. Labour Force Survey data suggest that, in the United Kingdom at least, any adverse effect on the living standards of unskilled workers has been nugatory at best, as average gross weekly earnings for elementary workers actually grew at a slightly faster rate between 1995 and 2006 than those for all workers, though that may reflect in part the impact of the National Minimum Wage.

Not everything has gone according to the economics textbook though. We would also have expected to see investment picking up in the emerging economies, with capital flowing from the industrialised countries, where it is abundant, to the emerging economies, where it is scarce. And if emerging-economy households are able to borrow against their higher expected future income, we might also expect to see consumption picking up. So we should be observing a current account deficit in the emerging economies and a surplus on their capital accounts. Investment certainly has picked up – in China it has touched an astonishing 45% of national output. But instead of running

[2] For further analysis of trade in tasks and its effects, see Gene Grossman and Esteban Rossi-Hansberg, 2006, “The rise of offshoring: It's not wine for cloth anymore”, Federal Reserve Bank of Kansas City Symposium, Jackson Hole.

current account deficits, countries such as China have instead been running a surplus. Capital, far from flowing from the rich industrialised countries to the emerging economies, has tended to flow the other way, in particular to the United States (Chart 1).

Why might this have happened? One explanation is that it reflects a deliberate policy choice. The Asia crisis of 1997-98 revealed that developing countries relying on footloose foreign capital to finance investment were vulnerable to sudden stops or reversals in those capital flows. That has made emerging economies more inclined to rely on domestic savings to finance their investment. In China's case, this has partly been through substantial saving by the official sector, and in particular by the accumulation of foreign reserves, particularly US treasuries, that are approaching $1 trillion. Moreover, corporate saving has been unusually high in China, while the absence of a significant social safety net has also encouraged households to maintain high rates of savings in order to build up a store of wealth for precautionary purposes.

A second explanation is that the capital markets in these countries are relatively underdeveloped, and the institutions for intermediating funds from savers to investors are relatively inefficient. That means that they may be relatively less effective at utilising capital inflows, other than through foreign direct investment, i.e. when foreign companies invest directly in subsidiaries domiciled in the emerging economy or via joint ventures. By contrast, the US financial markets are deep and liquid and still offer an attractive home for overseas investors[3].

One other macroeconomic oddity that is also worth noting is the behaviour of global real interest rates. Standard economic analysis would suggest that the increased demand for investment goods resulting from the increase in global labour supply ought to drive up the world real interest rate. But world real interest rates have tended to fall over the past few years (see Chart 2; I focus on longer-term rates in order to abstract from short-term movements associated with the business cycle). That is something that former Fed Chairman, Alan Greenspan, described as a “conundrum”. The current Fed Chairman, Ben Bernanke, has attributed it to an unusually high level of global savings[4] – a “savings glut” – not just because much of the investment in the emerging economies

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[3] See Eswar Prasad, Raghu Rajan and Arvind Subramanian, 2006, “Patterns of international capital flows and their implications for economic development”, Federal Reserve Bank of Kansas City Symposium, Jackson Hole; and Ricardo Caballero, Emmanuel Farhi and Pierre-Olivier Gourinchas, 2006, “An equilibrium model of global imbalances and low interest rates”, Centre for Economic Policy Research Discussion Paper 5573, April.

[4] See Ben Bernanke, 2005, “The global saving glut and the US current account deficit”, Sandridge Lecture, Virginia Association of Economics, Richmond, Virginia.

has been financed by domestic savings, but also because of high rates of savings in Japan and the European Union driven by the ageing of their workforces. It is also possible that the rapid growth in global liquidity during the early years of the millennium may have played a part.

Let me now turn to the aspect of globalisation that is of particular concern to central bankers, namely its impact on inflation. The past fifteen years have seen inflation rates settle at low levels throughout the industrialised world (Chart 3). And many countries in the developing world, which had previously experienced high inflation, have seen it falling. If you ask the average businessman or woman why this is the case, he or she is almost certain to reply that it is down to cheap imports from the Far East and Eastern Europe. Monetary policy probably won't get a mention. Yet you will all know from your first-year macroeconomics course that this can't be right, as inflation must ultimately be a monetary phenomenon. So how can we reconcile the business view with that of the economist?

The answer, of course, is that globalisation essentially represents a shock to relative prices, not the absolute price level. Imports are only one part of the consumption basket, and what happens to the general price level also depends on what happens to the prices of domestically-produced goods and services. The prices of tradable goods that are close substitutes for the imports may be driven down, but the prices of other goods and especially non-tradable services can rise faster. This may happen automatically, if consumers react to the rise in purchasing power associated with cheaper imports to increase their spending on other goods and services, driving up their prices. But even if it doesn't, the overall inflation rate should in the long run remain unchanged, provided that the monetary authorities ensure that steady growth in overall nominal demand is maintained through an appropriate monetary policy. If a country does not fix its exchange rate and is free to pursue an independent monetary policy, it can ultimately always choose its own inflation rate.

That is graphically illustrated in Chart 4, which shows the inflation rates of goods and services separately. For much of the past decade, goods price inflation was depressed by the increased availability of cheap imports, especially from Asia. But that was offset to a degree by relatively rapid inflation in the less internationally tradable services category. Note, however, the recent pickup in the rate of inflation in goods prices as the effect of the increase in energy prices since 2004 and buoyant global demand works through, together with the corresponding decline in services inflation.

But this does not mean that globalisation has been irrelevant for the inflation process in the industrialised economies. Recall first that the standard view suggests that inflation is related both to the level of demand relative to potential supply – the output gap – and to expected inflation. Activity can only run ahead of potential supply in the economy so long as inflation runs ahead of expectations. Any attempt systematically to exploit this short-run trade-off is ultimately doomed to failure as inflation expectations will eventually adjust. That is an insight that won Ned Phelps this year's Nobel Prize for economics. But globalisation affects this story in a number of ways.

First of all, movements in the terms of trade – the price of exports relative to that of imports – associated with globalisation potentially alters the level of activity that is consistent with stable inflation. Thus the availability of cheap imports from Asia has acted very much like a positive supply shock, boosting potential supply. That is because UK businesses' demand for labour depends inversely on the cost of that labour relative to the price of their output, while workers' supply of labour depends on the purchasing power of their earnings, some of which is spent on imported goods. So a fall in the price of imports relative to domestic goods allows workers to enjoy higher real wages without any cost to their employers. This then tends to raise the equilibrium level of employment in the economy.

In effect then, the beneficial terms of trade shock provides a favourable 'tailwind', allowing central banks to run the economy at a higher level of activity than would otherwise have been the case, or else to bring inflation down without having to squeeze down on growth. But empirical studies – many of them carried out at the Centre for Economic Performance here at LSE – suggest that this effect may only be temporary, possibly because workers start building into their wage aspirations the extra increase in living standards from the terms of trade gain. That suggests we should not count on it continuing.

Moreover, the development of China and India has been something of a double-edged sword, as rapid Asian growth has been a major driver of the tripling of oil prices since early 2004, as well pushing up the prices of non-oil commodities substantially. Countries importing these commodities have therefore suffered an increase in the price of these imports that offsets to some degree the gain from access to low-cost goods. Even for a country like the United Kingdom, which is roughly self-sufficient in oil, the rise in the oil price will still initially redistribute income away from households

and non-oil businesses and towards the oil companies and the government. Should workers resist the consequent decline in the purchasing power of their wages, the level of potential supply would be adversely affected.

The second potential effect of globalisation is on the short-run dynamics of the inflation process. One of the most notable developments of the past decade or so has been the apparent flattening of the short-run trade-off between inflation and activity. That is particularly obvious in the case of the United Kingdom (Chart 5), but can also be observed in many other countries (e.g. Chart 6 for the United States). As can be seen, the Seventies were characterised by an almost vertical relationship in the United Kingdom, in which any attempt to hold unemployment below its natural rate resulted in rising inflation. In the Eighties, the downward sloping relationship reappears, as inflation was squeezed out of the system by the slack in the economy. However, since the early Nineties, the relationship looks to have been rather flat.

Now in theory, it is possible that this just reflects our extraordinarily precise management of aggregate demand, which has kept unemployment exactly in line with a falling natural rate. But while macroeconomic policy may have been much better over this period, it defies belief that it was *that* much better. Instead it looks as if the inflation process itself may have changed in some way.

Part of the story probably *is* connected to the change in policy regime, though in a more subtle fashion. Inflation targeting appears to have kept inflation expectations well-anchored (Chart 7), whereas in the past falling unemployment might have led to expectations of higher future inflation, adding to the upward pressures on current inflation. Moreover, businesses need to raise prices less frequently to keep up with inflation when its average rate is low, so that increases in demand are less likely to lead to an increase in the overall price level, at least in the short run.

But the structural consequences of globalisation also seem to have flattened the short-run trade-off between inflation and the domestic output gap through a variety of channels. First, the increased trade and specialisation associated with globalisation reduces the response of inflation to the domestic output gap, and at the same time potentially makes it more sensitive to the balance between demand and supply in the rest of the world[5]. A recent study carried out at the Bank for

[5] See, for instance: Jordi Gali and Tomasso Monacelli, 2005, "Monetary policy and exchange rate volatility in a small open economy", *Review of Economic Studies*, Vol. 72, pp707-734; and Razin, Assaf and Chi-Wa Yuen, 2002, "The 'New Keynesian' Phillips curve: Closed economy vs. open economy", *Economics Letters*, Vol. 75, May, pp.1-9.

International Settlements by Claudio Borio and Andy Filardo[6] finds some empirical support for this proposition across a range of countries.

Second, increased competition from labour-abundant economies may reduce the cyclical sensitivity of profit margins, as businesses have less scope to raise their prices when domestic demand increases. So assuming that marginal costs rise with output, we would expect that the mark-up of price over marginal cost will tend to be squeezed more when demand rises (and vice versa, when it falls). Work carried out at the Bank by former MPC member, Steve Nickell, together with Nicoletta Batini and Brian Jackson[7] finds that this indeed seems to be the case.

Third, production costs may also have become less sensitive to the state of the business cycle. The increased ease with which activities can be off-shored to China, India or Eastern Europe will make workers less inclined to push for higher wages when unemployment falls, and stiffen the hand of employers in resisting such claims, so limiting the effect of higher activity on the marginal cost of labour.

Moreover, there is an additional factor in the case of the United Kingdom, in the shape of increased inward migration. Official migration estimates – though it should be emphasised that there is very considerable uncertainty over the true magnitude – together with a reasonable assumption about migrants' labour force participation suggests that migration probably accounts for around two-thirds of the increase in the workforce since 1997. The size of this flow, particularly from the Accession countries of Eastern Europe, reflects in part the substantial wage differentials between the United Kingdom and the migrants' home country, but the magnitude of the flow is also likely to vary in line with the tightness of the UK labour market. And businesses are increasingly used to sourcing their workers from abroad, often through the use of specialised agencies. So if they are finding it difficult to get the additional workers they need, rather than bidding up wages to attract them from other firms, they may instead simply look to get them from abroad. The migration resulting from the increased international mobility of labour therefore represents another force that weakens the link between activity and the cost of labour.

[6] Claudio Borio and Andrew Filardo, 2006, "Globalization and inflation: New cross-country evidence on the global determinants of domestic inflation", mimeo, Bank for International Settlements, Basle.
[7] Nicoletta Batini, Brian Jackson, and Stephen Nickell, 2005, "An open economy New Keynesian Phillips curve for the UK", *Journal of Monetary Economics*, vol. 52, pp. 1061-1071.

These three factors – increased specialisation; the intensification of product market competition; and the impact of that intensified competition and migration on the behaviour of wages – should all work to flatten the short-run trade-off between inflation and domestic activity. But it is worth mentioning one consequence of globalisation that might work in the opposite direction. An increase in the competitive pressures in product markets will mean that the profits foregone by setting a price at the "wrong" level will be all the greater. That would encourage businesses to revise their prices more frequently, and will tend to steepen, rather than flatten, the trade-off[8]. That is in the opposite direction from the likely impact of moving to an environment of low inflation that I mentioned earlier.

By way of providing some evidence on this, we recently asked our regional Agents to conduct a small survey of some of their business contacts in order to see how the frequency of price changes had changed over the past decade. Chart 8 shows the results, broken down by sector. The striking thing is the increased frequency of price changes in the retailing sector (the "other" sector comprises just a handful of firms and should be ignored) and the decreased frequency of price changes in manufacturing. As it is the latter sector that is probably most exposed to the effects of globalisation, this suggests that any effect on the frequency of price change from that quarter has been limited. But the increase in the frequency of price changes in retailing probably does reflect the dramatic intensification of competition in that sector – the "Tesco effect".

The extent to which the flattening of the short-run inflation-activity trade-off is down to globalisation, and the extent to which it is associated with the change in monetary regime is ultimately an empirical matter. There are cross-country empirical studies that suggest that it is indeed flatter in more open economies[9]. And there are also studies that suggest that the change in the conduct of monetary policy has been important[10]. So both factors are likely to be at work.

Perhaps even more important than the way globalisation has affected the response of inflation to demand is the way that it appears to have altered the response to cost shocks. If you had told the MPC in early 2004 that oil prices would triple over the following two years, I think we would have

[8] See Ken Rogoff, 2003, "Globalization and global disinflation", in Federal Reserve Bank of Kansas City, *Monetary Policy and Uncertainty: Adapting to a Changing Economy*, pp.77-112.
[9] See e.g. Joseph Daniels, Farrokh Nourzad and David Vanhoose, 2005, "Openness, central bank independence, and the sacrifice ratio", *Journal of Money, Credit and Banking*, Vol. 37(2), April, pp.371-379.
[10] See e.g. Luca Benati, 2005, "The inflation-targeting framework from an historical perspective", *Bank of England Quarterly Bulletin*, Vol. 45(2), Summer, pp.160-168.

been very worried indeed about the possible inflationary impact, notwithstanding the fact that it was partly associated with the same globalisation forces that were helping to drive down the prices of imported goods. While the oil intensity of production today is about half what it was in the Seventies, we would nevertheless have been concerned that the higher cost of energy would lead to so-called second-round effects on wages as workers sought to maintain the purchasing power of their earnings, as well as on to the prices of other goods and services.

In the event, pay growth has so far remained remarkably stable (Chart 9). Indeed far from picking up over the past year or so, it has actually eased. Since consumer price inflation has picked up during that time, the rate of growth of the purchasing power of those wages (the real consumption wage in Chart 10) has slowed and ensured that the real wage in terms of the price of UK output (the real product wage) has grown more or less in line with trend productivity growth.

One reason why wage growth may have been so subdued is that unemployment has edged up since early 2005. But that appears not to be the whole story. Exactly the same heightened competitive pressures in product markets that appear to have contributed to the flattening of the inflation-activity trade-off, may also have affected the way that businesses have responded to the increase in energy costs. Rather than immediately pass on in full such increases in higher prices, it appears that they may have instead looked to lower other costs, either by granting lower wage increases, or by putting downward pressure on the prices of intermediate inputs, or by raising efficiency. Our regional Agents have also asked a sample of their business contacts how they have responded to the squeeze in profit margins occasioned by the rise in energy costs. The survey suggested that relatively few businesses expected to be able to raise prices and instead planned to raise efficiency, reduce employment or push down on wage and other costs (Chart 11). And some respondents felt they had little alternative but to accept the hit on their margins. That was especially the case in manufacturing, which is the sector that is most exposed to international competition.

The consequence of this is that, far from seeing second-round effects on wages and other prices as energy costs have risen, if anything they so far seem to have acted as a bit of a cushion. That is illustrated in Chart 12, which shows the contribution to inflation of the domestic non-energy component of consumer prices for the United Kingdom, United States, the euro area and Canada since 1993 plotted against the contribution of energy and import prices, which can be treated as being largely exogenous to each region. (For clarity and to allow for different average overall

inflation rates, the inflation components are presented as deviations from regional averages.) There are clear signs of an inverse correlation in all regions, though the relationship is certainly far from perfect. But if this relationship continues to hold in the future, then we might expect the beneficial effect on inflation from the recent fall in oil prices to be partly offset by faster inflation in the non-energy components of consumer price inflation as businesses seek to rebuild their profit margins and workers make up for the squeeze on the purchasing power of their wages.

(Some commentators have interpreted this as implying that a rise in oil prices is bad news and a fall in oil prices is also bad news. That, of course, is nonsense. The presence of a countervailing response of non-energy price inflation to changes in energy price inflation just means that a rise in oil prices is not such bad news for inflation as it first appears, and that a fall in oil prices is not such goods news as it first appears.)

Finally, some brief words on how the changes in inflation dynamics that appear to be down in part to the impact of globalisation might affect the conduct of monetary policy. Clearly the reduced pass-through of energy cost increases into wages and prices is good news for central banks. But the flattening of the inflation-activity trade-off is rather more of a mixed blessing. On the one hand, demand shocks and policy errors will not show up in large movements of inflation away from target. On the other hand, variations in aggregate demand become rather less effective as a means of controlling inflation. So if inflation has settled above target, a deeper or more prolonged slowdown is potentially required to bring it down. That puts an even greater premium on keeping inflation expectations well-anchored around the target. Given that we know relatively little about how people form their expectations, it suggests that it is better to err on the side of caution by preventing any sustained pick-up (or decline) in inflation in the first place. And given that demand movements may contain little information about future inflation pressures, it suggests the need to pay particular attention to direct measures of incipient inflationary pressures in both product and labour markets.

Let me conclude by noting that the integration of China and the other emerging economies represents both an opportunity and a challenge for the industrialised economies. It is an opportunity because it allows a more efficient international division of labour and has the potential to raise living standards in both East and West. And it is a challenge because the global relocation of activities potentially involves losers as well as gainers. The danger is then that the realisation of

those potential gains is prevented by the imposition of protectionist measures. The challenge to policy makers is to make sure that does not happen.

Globalisation also offers a special challenge to monetary policy makers. While globalisation is not the ultimate cause of the generally low and stable inflation experienced by most industrialised economies over the past fifteen years, the associated improvement in the industrialised countries' terms of trade has provided a benign backdrop to the widespread pursuit of low inflation through stability-oriented monetary policies. But that beneficial tailwind has waned somewhat in the past couple of years. Moreover, intensified competition in product markets, along with other factors, does seem to have altered the way in which wages and prices are determined, complicating our task. Central bankers are a long way from having a full understanding of what is going on here and further research on these questions is definitely called for. Perhaps when I next give a speech here, some of you will have come up with the answers. Thank you!

ENDS