



BANK OF ENGLAND

Speech

Back to the Future of Low Global Inflation

Speech given by

DeAnne Julius, Member of the Monetary Policy Committee

At the Maxwell Fry Global Finance Lecture, University of Birmingham

20 October 1999

Back to the Future of Low Global Inflation

I am indeed honoured to be here to present the first of these Global Finance Lectures since the renaming of the series after my great friend and colleague, Maxwell Fry. In fact, it was Max who first contacted me with the invitation to speak here last January, and it was his infectious enthusiasm that rapidly won me over to finding an appropriate space in an already crowded diary. Subsequently I had the good fortune of collaborating with Max and several of his colleagues at the Bank of England's Centre for Central Banking Studies (CCBS) on a volume of papers for our annual Central Bank Governors' Symposium last June. Max has always been a key figure in these Symposia. Even before he became Director of the CCBS, he was the intellectual leader and instigator of the topics covered by the 50 plus central bank governors who attended them. Topics ranged from the general (Central Banking in Developing Countries in 1995) to the practical (the role of central banks in helping governments meet their borrowing requirements in 1996) to the technical (financial regulation in 1997; payments systems in 1998) and, this year, to the esoteric (monetary policy frameworks in a global perspective, 1999). Max has enjoyed ranging far and wide over his field, and he is uniquely capable of doing so. But he is also great fun – and a great friend. The flip side of his intellectual curiosity is the warmth of his personality. Many of the governors who attended those Symposia know him as a friend, as well as an advisor. And it is that combination of lively intellect and personal warmth that makes him so inspirational. He may not be here physically today, but he is very much here in our thoughts and best wishes for him and his family this afternoon.

Max encouraged me, as you might expect, to use this speech to explore new ideas, to challenge conventional wisdom. That's not something that comes easily to a central banker, but then I'm rather a recent convert to this profession, so perhaps I haven't yet lost my knack! I did spend several formative years, earlier in my career, using scenario planning techniques precisely to get away from conventional thinking and to help private sector decision-makers 'think the unthinkable' as we called it then. Conventional thinking can be deceptively dangerous when the world is changing. In such times, clinging to old paradigms is at least as risky as embracing new

ones before their validity can be fully established. And my thesis today is that some elements of the so-called ‘new paradigm’ growth theories are simply modern incarnations of the economic trends of earlier era. Other elements clearly strain credulity: none of the arguments I am about to develop could support the stock market valuations for internet companies in the US; nor do I suggest that economic growth is about to accelerate dramatically. But if I am right that the decades of the 1970s and 1980s were the exceptions rather than the norm, then we must particularly guard against using the paradigms and parameters from those 20 years to shape our views about the present period and our projections for the future.

In my current role as a member of the Monetary Policy Committee (MPC), I spend most of my days thinking about the demand side of the economy. We model that using equations that have been calibrated on data going back to the mid-70s or early 80s. Our assigned task on the MPC is to deliver price stability. The Government has set our operational target for this as 2.5% annual inflation on the Retail Price Index excluding mortgage interest payments (RPIX). To hit that target we adjust interest rates in order to restrain or stimulate domestic demand whenever it appears that total demand, looking 1-2 years ahead, is likely to exceed or fall short of the supply capacity of the economy. Monetary policy can do very little to change the supply side. Our lever pushes on demand and we generally take supply as given.

Today, however, I am going to step out of my usual central banker’s preoccupation with demand and instead examine some of the longer-term changes that affect the supply side of our economy. Some of these are international developments. Some relate to new technologies. Some stem from changes in the labour market here in the UK. They share two characteristics. First, the *direction* of their impact on UK inflation, at least over the medium-term, is downwards. But second, the *size* of their impact will be very difficult to discern until many years hence. This is because they are gradual, structural changes whose effect on economic statistics will be overlaid with, and obscured by, the cyclical surges and slowdowns to which we devote so much time and attention. In other words, if we place too much faith in econometric models calibrated from the 1970s and 1980s, we won’t know what’s hit us until it’s too late!

I'll return to that point when I conclude with what this all means for the UK. But first, I'd like to examine the key changes affecting inflation at the international level. My title, and my main focus, is on low *global* inflation.

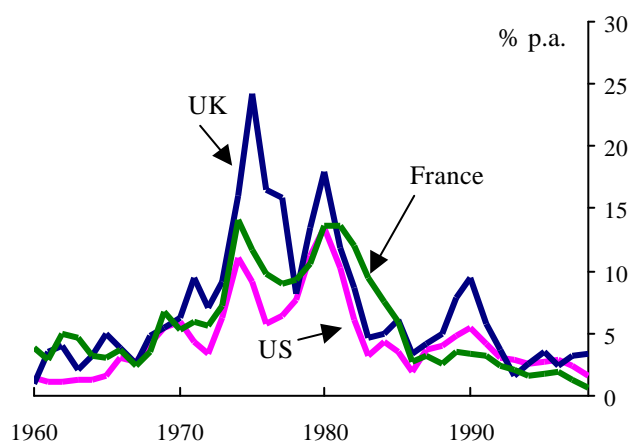
Global Inflation

First, the facts. Global inflation has been low in the 1990s relative to the 1970s and 1980s.

Figure 1 shows the inflation performance of three representative countries of the G7: the US, the UK, and France. While inflation in the UK was worse than in the other two countries, all three suffered from double-digit rates of price increases for several years during that period. Inflation spikes coincided in the mid-70s and again in the early-80s. Britain and the US had smaller inflation bursts in 1990. But since then inflation has been well below 5%, not only in these three countries, but across the industrialised world and in most of the faster growing developing countries.

Figure 1

Recent inflation performance



This is largely explained by changes in the economic and policy environment in the 1990s. Some say we have been lucky. Or, perhaps more accurately, we have not been so unlucky as during the 1970s with the wars and revolutions in the Middle East that resulted in the 1973 and 1979 oil price spikes. Those reduced growth and increased inflation worldwide as central banks

reacted cautiously and, with hindsight, sometimes wrongly in response to those unfamiliar supply-side shocks. Both companies and policy makers have learned from that experience. Firms have shifted to energy-saving production processes, governments have increased taxes on oil consumption to encourage conservation, and as a result, industrialised countries today are much less dependent on oil than they were 20 years ago. These shifts are largely irreversible. In 1998 the oil price, in real terms, fell below the level it had been in the early 1970s prior to the Arab-Israeli conflict. Yet oil consumption rose very little since the tax wedge paid by consumers and the energy-saving technologies used by firms were unaffected. Similarly, the current surge in crude oil prices, if it were to persist, would have much less effect on economic growth and retail price inflation than did a similar rise in earlier decades. In the UK, for example, four-fifths of the petrol price paid at the pump is actually tax. So if the price of crude oil doubles, the retail price of petrol would rise by, at most, 15%.

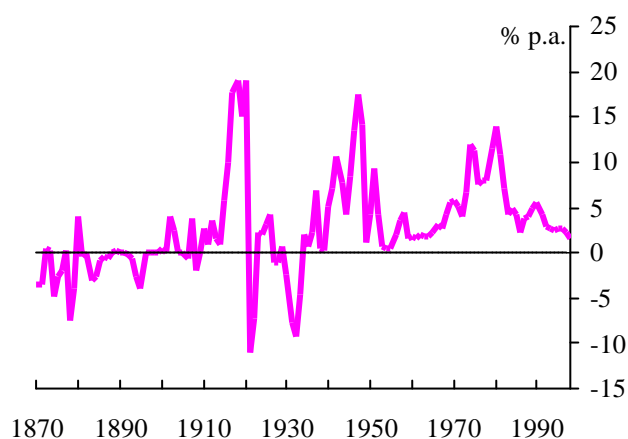
There have also been clear shifts in the policy environment since the inflationary failures of the 1970s and 1980s. Many governments have institutionalised their commitment to price stability with the creation of independent central banks. The UK is a prime, though certainly not the first, example of this. Our Monetary Policy Committee has been given a clear inflation target and the instrument independence to achieve it. Our decisions on interest rates are entirely unaffected by the dates of political party conferences or upcoming elections. The same is true of the new European Central Bank (ECB). Such independence has removed a possible inflationary bias which some have blamed for the persistence of inflation during previous decades.

Thinking on fiscal policy has also evolved. In the US the budget deficits that grew out of financing the Vietnam War and the later build-up of defense spending under President Reagan have been tamed and turned into surpluses. Public antipathy towards deficit spending is strong and support is growing for 'investing' surpluses in the social security fund for future retirement benefits rather than reducing taxes or increasing current government expenditures. The result is low or no government borrowing. This creates room in the financial markets for more private sector borrowing and investment. At least in the US, the combination of a tight fiscal policy and a relatively accommodating monetary policy is widely credited for the long economic upswing of the 1990s.

In Europe fiscal deficits rather than surpluses are still the norm, but since the creation of the ECB the relationship between fiscal and monetary policy has become more explicit. The Growth and Stability Pact sets limits on member governments' budget deficits and the financial markets react nervously if it appears that those limits might be breached. Under the UK system as well, the Government's inflation target provides a clear fulcrum on which the balance of fiscal and monetary policy rests. Interest rates are set to achieve the inflation target, taking into account the Government's announced fiscal plans. If those plans change significantly, and the inflation target remains fixed, then the appropriate level of interest rates will also change. This interdependence of fiscal and monetary policy is as well understood by the financial markets as it is by the Treasury and the Bank of England. The decentralised decision-making that constitutes the global financial marketplace is the ultimate 'enforcer' of fiscal prudence and monetary discipline in all countries today. In that respect, it is the modern equivalent of the gold standard and fixed exchange rates.

Though the 1990s may seem like a new era of price stability, a longer historical comparison gives a different perspective. Before the late-1960s, low inflation was the norm rather than the exception (Figure 2). It took World Wars or oil price shocks or – working in the opposite direction - the Great Depression to knock inflation off course. Throughout most of the late 19th century, price falls were common. This was not just because of the greater importance of commodities then; price falls occurred for manufactured goods too.

Figure 2

Long term inflation performance

The supply side changes in our economies today which are likely to affect inflation prospects over the next decade are broadly similar to those at work during the 50 years that ended with the first World War. Intensified international competition – what some call globalisation - and the spread of new technologies may be thought of, not as elements of a new paradigm, but rather as the current drivers towards the old norm of low global inflation. In my view, these two forces, plus greater price transparency, are the key supply side changes that will affect global inflation outcomes. Those countries that embrace these changes actively are likely to achieve a more favourable inflation/growth combination than they managed during the 1970s and 1980s. Whether this better combination is transitory – lasting only another 5-10 years – or more permanent, will depend on whether these forces result in higher rates of productivity growth. But either way, understanding their possible effect on the inflation outlook now and for the next decade will be critical.

Let's examine the three supply side changes in turn.

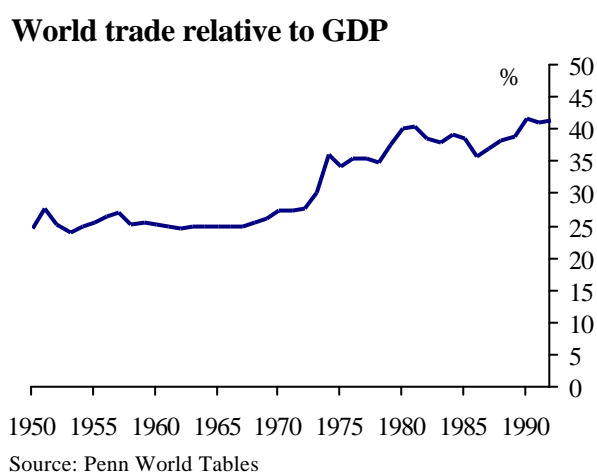
Globalisation

Globalisation, to an economist, means the increasing integration of global product markets. To a businessman, it means global sourcing from the lowest cost suppliers worldwide, a global investment strategy and global competition putting downward pressure on output prices in home

as well as host markets. To a consumer, it means global shopping with easy access to global products and global brands, whether on the high street or via the phone, fax or internet.

Only the oldest and most traditional channels for globalisation - trade and foreign direct investment (FDI) - are well captured in current statistics. The importance of trade, relative to GDP, has been growing since the end of the war. For the world as a whole, the combined share of imports and exports in GDP rose from around 20% in 1950 to nearly 40% in 1992 and has risen further since (Figure 3). This reflects the success of GATT negotiations to remove trade barriers over that period, the quality improvement and cost reductions in transport and communication infrastructure, and the gains from specialisation as developing countries become important producers and exporters of many manufactured goods.

Figure 3

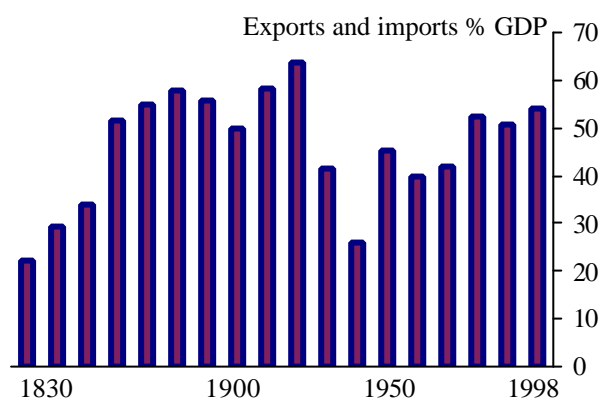


Interestingly, this trend has not been smooth, or always upward, suggesting that structural changes – to the extent that they are linked to openness – tends to occur in waves. This is even more apparent in the UK data where it is possible to look back further in history. Figure 4 shows that the share of trade in UK GDP rose sharply between 1850 and 1920 from 34% to 64%. It then fell back to a trough of 26% as a result of the great depression and World Wars, before beginning the upwards march from 1950 shown on the previous global chart. But it was not until

the 1980s and 1990s that the UK trade share has approached its 1920 elevation. In terms of globalisation through the trade channel, we have gone back to the future.

Figure 4

UK trade relative to GDP



Source: Stein and National Accounts

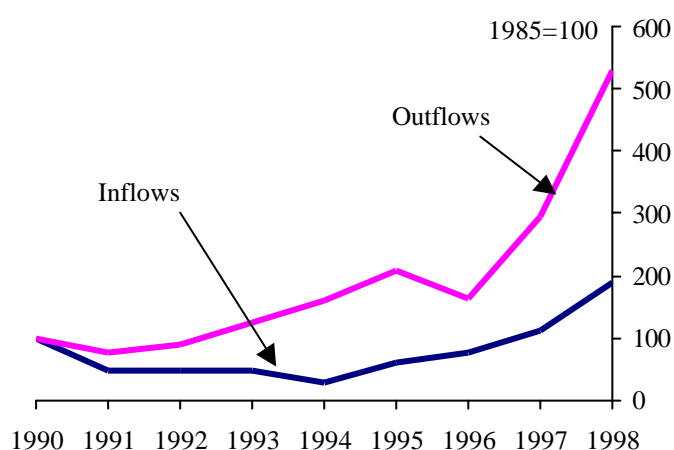
The FDI channel is more exciting and, particularly for the service sector that now accounts for at least two-thirds of output and jobs in most advanced economies, it is the more important vehicle for global competition. If you are in the retailing business, for example, the way to reach foreign customers is not through trade but through opening up shops in their cities. Often this is done through the purchase of, or an investment partnership with, a domestic retail chain. The current wave of merger and acquisition activity – not only in retailing, but also in insurance, banking, telecommunications and other major service industries - is bringing international cost cutting techniques and serious price competition directly into large parts of the economy that were formerly rather distant from such global pressures.

Last year the UK was the second largest recipient of inward investment, after the US, and one of the most important outward investors worldwide. FDI inflows last year rose by \$26 billion to \$63 billion - accounting for over a quarter of all direct investment into Europe (Figure 5). Outflows rose by more, almost doubling to \$114 billion, and moving close to US levels of \$133 billion. British companies are clearly very active in reaching foreign markets through direct

investment, and global companies headquartered elsewhere are raising the competition stakes here in Britain.

Figure 5

UK FDI flows

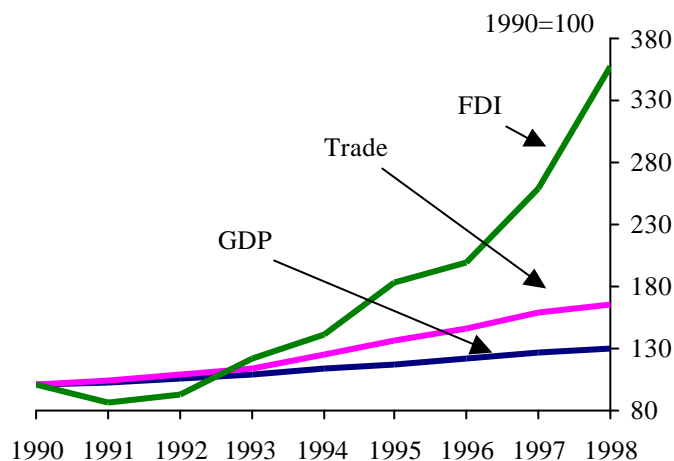


Source: IMF Balance of Payments statistics

While the US and Britain lead the pack, globalisation through FDI has been one of the most striking international trends of the 1990s. World FDI flows have increased sharply, rising over three fold between 1990 and 1998. Figure 6 illustrates the increasing importance of this channel for global integration: FDI flows have outpaced the 30% rise in world GDP and even the 65% rise in world trade. By last year the total sales of inward investors in their host country markets were worth \$11 trillion, compared with total world exports of \$7 trillion.

Figure 6

World GDP, trade and FDI



Source: Datastream, IMF Balance of Payments statistics

Globalisation means different things to different people. It has many channels and its measurement will never be precise. But there is little doubt that a renewed wave of globalisation is underway which is spreading international competition into more sectors and engulfing producers in more countries. This has two important effects on the way inflationary pressures develop in any particular country. First, in a more integrated global economy, it is the world output gap that matters for many prices, not domestic supply capacity. If there is spare world capacity in goods or services that can be transmitted either actually or virtually across borders, then their prices will remain low or even fall. And supply bottlenecks at the global level are much less common than domestically, simply because of scale and the global availability of underemployed labour. Secondly, aside from capacity and business cycle considerations, the faster spread of best-practice management techniques and cost-reducing technologies through FDI means that efficiency inside firms and productivity at the economy-wide level should also increase.

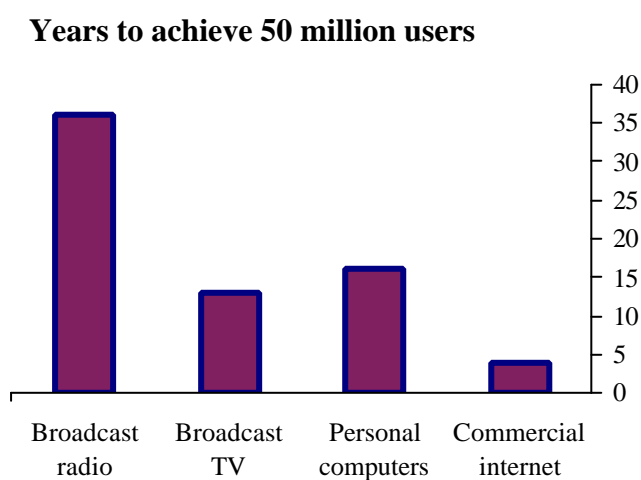
New technologies

The current wave of innovation in information and communications technology (ICT) is the second major supply side development in the global economy. The effect of these technologies –

which cover computing power, the development of the internet, satellite communication, fibre optics and lasers – is to improve the speed, quality and accessibility of information flows at negligible marginal cost.

ICT has a huge potential to increase the efficiency with which capital and labour are combined in production. For many products ICT has already reduced design times, increased quality control, and shrunk the need for precautionary stocks in the production chain. Improved information flows enable firms to respond more efficiently to shifts in consumer preferences, and to customise products and services to their needs. The speed and low cost of information transfer has led to greater outsourcing by producers to the cheapest global supplier, spurring and speeding the globalisation process. As Figure 7 shows, while it took 36 years to achieve 50 million users for radio, 13 years for TV, and 16 for PCs, for the internet it has taken fewer than 5!

Figure 7



Source: US Commerce Dept

The internet puts ICT directly at the service of the consumer. As shoppers we can now compare the prices of standard goods and services online and either bypass the middleman and buy them

directly or use that information to extract discounts from our local supplier. While my own forays into electronic shopping are so far limited to books, airline tickets and used cars, the price reductions achieved on those items have certainly whetted my appetite for more! As both consumers and search engines become more sophisticated, competitive pressures on prices and distribution margins will intensify and affect many more items in the Retail Price Index.

Unfortunately statisticians are lagging behind in measuring these new purchasing patterns. No country officially measures e-commerce in its national accounts yet, so estimates tend to be based on private surveys which may not be representative. With that caveat in mind, in the US e-commerce is estimated to be worth around \$35 bn or 0.4% of GDP.¹ In the UK, BRMB Internet Monitor recently reported that £2 billion was spent online in the past 12 months which was a tenfold increase from a year ago. In just six months the number of people using the internet for shopping rose by one-third to 2.5 million and now represents about a quarter of UK internet users. Verdict Research estimates that online shopping in the UK will rise to 2.5% of retail spending in the next three years. Others have made higher forecasts. If US patterns of internet penetration and use are followed here with a lag then e-commerce would reach 4% of GDP by 2002.

This is likely to intensify the downward pressures on retail margins, especially for goods which are easy to compare such as books. More than 2% of all books sold in Britain are already sold online. Prices are said to be 10-50% below those in retail outlets. Capturing such transactions and prices in the official statistics will become increasingly important. The recent statement from the Office of National Statistics that it is examining how it can include online shopping in the Retail Price Index is to be welcomed.

But the biggest impact of e-commerce will probably come through its effect on the ability of firms to reduce costs through outsourcing and more efficient supplier relationships. Currently, four-fifths of e-commerce is business-to-business use rather than business-to-consumer, and this share is expected to remain stable as internet usage rises. Again the US appears to be moving

¹ "e-commerce @ it best", September 1999, Report by Performance and Innovation Unit (PIU), Cabinet Office.

faster than Europe. A recent study by Andersen Consulting found 77% of US senior executives agreeing that e-commerce is “a significant part of the way we currently operate” while only 39% of European executives said so. But these percentages are growing rapidly. As Figure 7 showed, internet use is spreading much faster than previous ICT innovations.

The effects are likely to be seen first on prices and margins, and then on productivity. Of this trio, only prices are measured in a reasonably accurate and timely way. Margins are estimated from input and output price series but do not take proper account of capital and labour inputs. Productivity is estimated indirectly from output and employment data, where the former is subject to large revisions years after it is first published. A recent staff research paper from the US Federal Reserve Board showed how monetary policy mistakes of the 1960s and 1970s “could be attributed in large part to changes in the trend growth of productivity in the economy which, though clearly seen in the data with the benefit of hindsight, was virtually impossible to ascertain in real-time.” (Orphanides, 1999).² Our successors at the Bank of England could be saying the same thing about us in ten years time if we rely too heavily on current productivity estimates when we have reason to believe that historical trends may be changing.

Price transparency

The third structural change exerting downward pressure on inflation, relative to the 1970s and 1980s, is increased price transparency. Part of this is interwoven with the rise of ICT and internet shopping as just described. But there are two other contributing factors. The first is low inflation itself. Stable prices overall make it easier for consumers to spot relative price increases by removing the background confusion of high and variable general inflation. It is also harder for producers to move off their ‘price points’ even when their costs are rising. The Bank of England’s regional agents report ubiquitous anecdotes from their business contacts about consumers becoming more price-conscious. “They look, they have money in their pockets, but they don’t buy unless they think it’s a bargain.” Even in the banking sector, low nominal interest rates have meant more shopping around by savers and more complaints by consumer groups

² Athanasios Orphanides, “The Quest for Prosperity Without Inflation”, Staff paper, Federal Board of Governors, May 1999.

about the margins between banks' lending and savings rates. Margins of two or three percent are much more noticeable when official rates are five or six percent than when they were fifteen percent.

Price transparency in Europe is also being increased by the introduction of the euro. This will become even more apparent to consumers when euro-denominated notes and coins replace national currencies in just over two years time. Then it will become even easier to compare prices and make purchases in neighbouring countries. For companies, the removal of foreign exchange risk in dealing with purchasers and suppliers in other Eurozone countries has been widely anticipated. It is beginning to feed through into increased merger activity, although it is impossible to say how much of that is driven by the euro and how much by cyclical and other factors. There are already a few instances reported of contracts negotiated in euros even where one party is outside the eurozone e.g. BMW with Rover suppliers in Britain. Whether Britain is in or out in the future, the consolidation of 15% of world GDP into a single currency brings greater price transparency to a large share of its market.

To summarise so far, there are three powerful and partly interconnected trends in the world economy at the turn of the century that can be expected to exert downward on prices from the supply side: intensified globalisation; the rapid diffusion of ICT; and greater price transparency due in part to the introduction of the internet and the euro. These certainly will not remove the necessity for monetary policy makers to remain alert for signs of inflation and to raise interest rates whenever it appears that prospective demand growth is excessive, in relation to prospective supply. But they do imply that prospective supply will be more difficult to estimate from historical relationships, and that domestic price setting behaviour will be more constrained than in recent decades by international competitive forces. Monetary policy can only influence nominal demand growth. The split of nominal growth between output and prices is determined by the bargaining outcomes between buyers and sellers, and employers and employees throughout the economy. If global competitive forces bear down on domestic prices more strongly, then in the short-to-medium term domestic inflation will be lower and output growth higher. If those same forces drive improvements in domestic productivity, then a more permanent shift can be made to a higher growth path consistent with low and stable inflation.

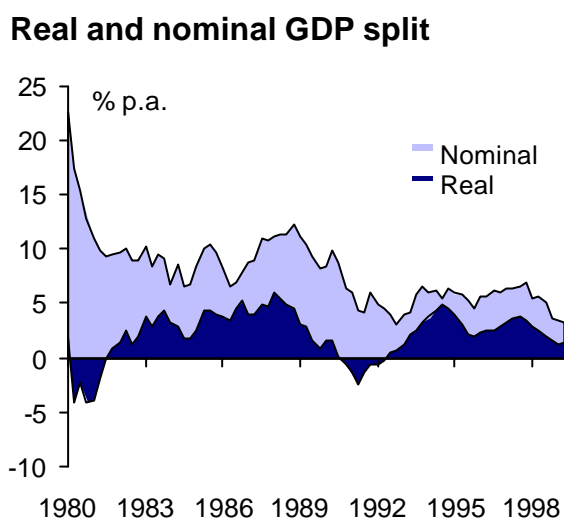
Let's turn now to the UK. We live in an open economy, with a higher than average share of trade in GDP, where the absolute level of inward investment last year was second only to the US, and where internet use by business ranks seventh in the world.³ On top of that, our exchange rate has been rather strong, at least against the euro and its constituent currencies, for the past three years. We should be feeling the chills of these global competitive winds more than most. What evidence is there that they are having an effect, first, on our prices and, second, on our sustainable rate of growth?

Retail prices in the UK

Recent UK economic performance has been impressive. Output has grown for 28 consecutive quarters over this recovery, the longest sustained expansion since recent records began in 1955. This has been accompanied by a fall in the unemployment rate to 4.2% on the claimant count measure – its lowest rate for nearly 20 years - or 5.9% on the broader LFS measure. Since the recovery began, output growth has averaged 3% per year while inflation has averaged just 2.8% (Figure 8). Based on past experience, many economists would have predicted that such high rates of growth and employment would generate high wage pressure and rising inflation. On the contrary, inflation has been broadly stable over the 1990s and is currently below the Government's target at 2.1%. The so-called headline rate has fallen to 1.1% - its lowest rate since 1963.

³ As measured by internet hosts per thousand inhabitants reported by the OECD Internet Software Consortium.

Figure 8



While the overall inflation rate is a product of monetary policy, trends in individual price components can provide some insight into what lies behind this favourable split between growth and inflation in recent years. The degree to which policy needs to be tightened in order to keep inflation from rising depends on the strength of upward price pressure from wages and margins when unemployment is low and the economy is growing rapidly. Offsetting these ‘bottom up’ cyclical pressures are the ‘top down’ structural forces from global competition, new technologies and greater price transparency that have been discussed. If these downward structural pressures are increasing, then they will limit or delay the rise in interest rates necessary to keep inflation from rising when domestic demand is strong.

The relative importance of cyclical and structural factors in price setting is rarely clear cut, but micro and survey evidence, to which we now turn, can help to establish whether particular prices rise and fall with demand or exhibit longer-term, structural behaviour.

The obvious place to look for structural pressures on margins through international competition is in the prices of goods that are both widely traded and traditionally purchased through retailers. Three examples are apparent among the major categories that make up the RPIX. Household goods, shown in Figure 8, exhibit a clear deflationary tendency since 1996 despite strong demand growth in that category for much of that period. Textiles, clothing and footwear demand

has seen some major ups and downs over the past five years while prices have been flat or falling (Figure 9). The picture for electrical goods is even more striking (Figure 10). Prices have been falling over most of the 1990s, while demand has grown very strongly. Of course, part of the fall in electrical goods prices is probably explained by technical progress, but this picture is also consistent with an increase in global capacity in these sectors and competitive pressure on retailers. Temporary factors such as sterling's appreciation and the Asian crisis probably accelerated these deflationary trends but they do not map cleanly onto them. And despite strengthening domestic demand new retail competitors in these and other sectors such as food may cause these price declines to accelerate.

Figure 9

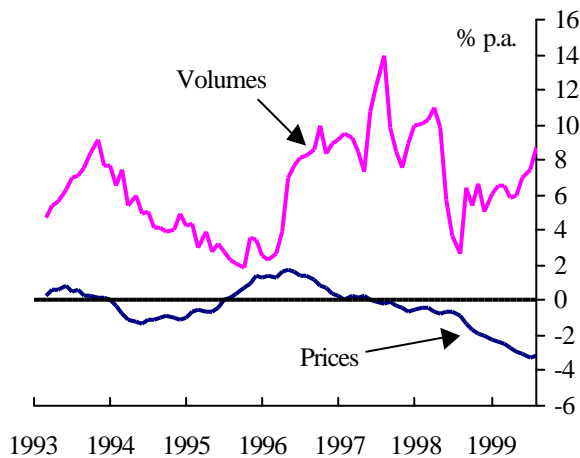
Household goods

Figure 10

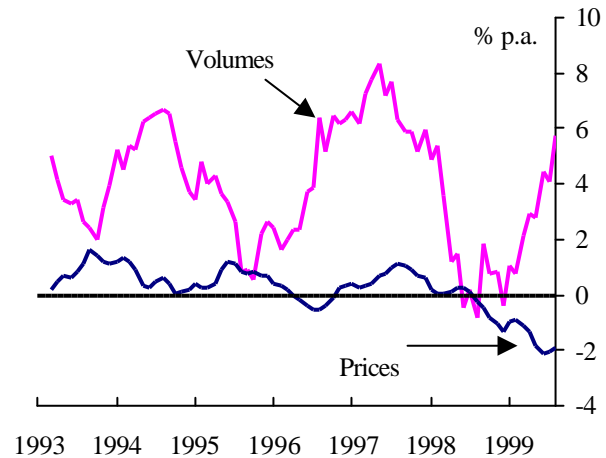
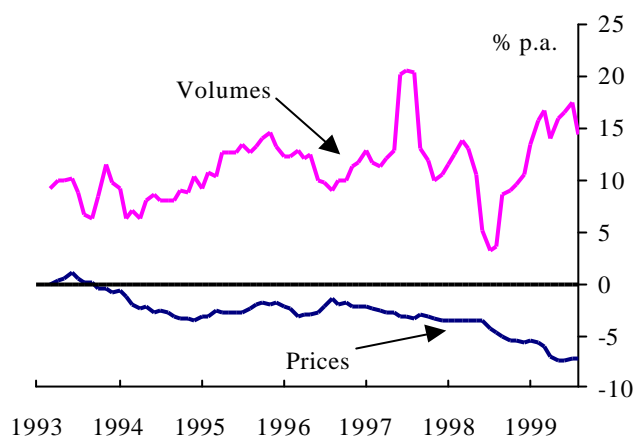
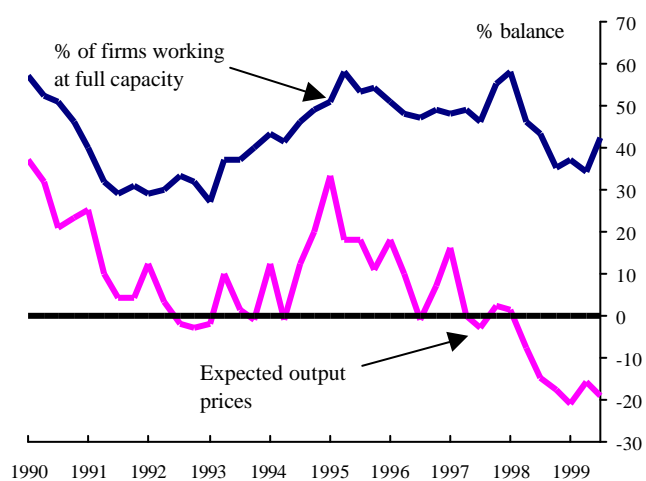
Textiles, clothing & footwear

Figure 11

Electrical goods

There is also evidence from the CBI Survey of manufacturing firms on the weakening link between domestic capacity utilisation and prices. Figure 12 shows the falling trend of expected output prices since the mid-90s despite relatively high levels of capacity use at least between 1995 and 1998.

Figure 12

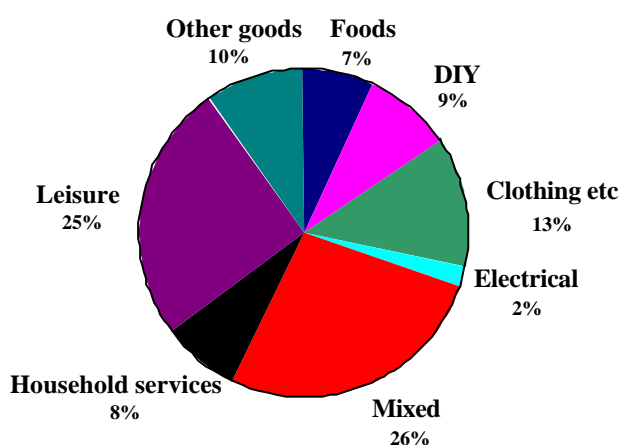
CBI capacity utilisation and prices

A third source of evidence on this point comes from the September 1999 survey carried out at the MPC's request by the Bank's regional agents, on the question of structural changes in

retailing. This is not a statistically robust national sample but rather a reasonably diverse collection of information by those with in-depth knowledge of the respondents' businesses. The agents spoke with 102 firms covering retail goods and household services (such as insurance) across the country (Figure 13). They asked about the extent of price discounting and the reasons behind it. We were trying to gain an insight into whether those reasons were structural or cyclical.

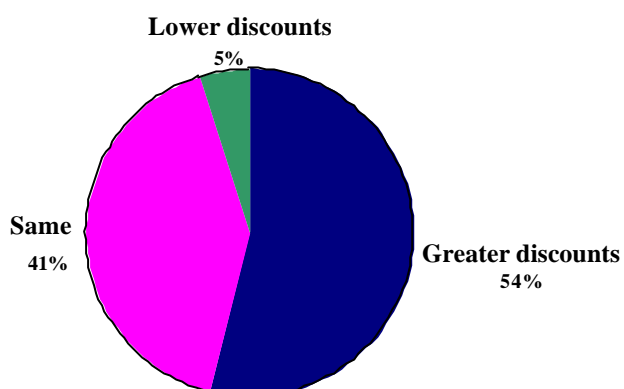
Figure 13

Sample coverage



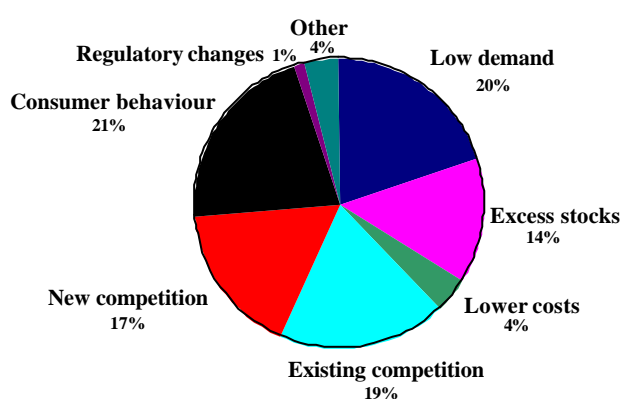
Confirming the picture in official statistics, the survey results showed that most of the pickup in retail sales values over the past year had resulted from higher volumes, not higher prices. More than half of all respondents reported larger or more frequent discounting over the past 12 months compared to a year ago (Figure 14). Only 5% of the sample reported less discounting. Discounting had increased particularly for food, cars and clothing.

Figure 14

Extent of price discounting

Around two-thirds of respondents cited either changes in consumer behaviour or new or existing competition as reasons for greater discounting - in other words structural rather than cyclical changes were responsible (Figure 15).

Figure 15

Reasons for discounting

New competitors were particularly referred to by leisure and DIY contacts – less so by food and clothing retailers. However, the ‘Walmart effect’ is focussing minds in areas such as clothing, because of their global buying power, and the internet is perceived as a growing influence driving down prices. Retail pricing points are an integral feature of the market and resistance to

changing them is significant, especially as the customer wants to benchmark his/her bargain against a known price. In sum, this survey showed discounting to be a widespread phenomenon which is becoming an expected feature of the market, at least in sectors such as mixed retail, food and clothing. This reflects perceptions that consumers are now accustomed to looking for bargains, and retailers say this is unlikely to change.

On the prices front, then, there is considerable evidence in the UK to suggest that long-term structural changes are bringing effective downward pressures to bear on prices and margins, even during times of relatively robust demand and high domestic capacity utilisation.

Are these competitive pressures feeding through to a supply side improvement?

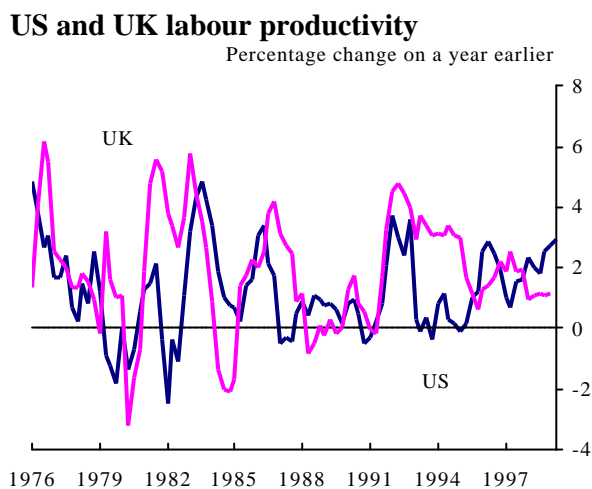
Unfortunately, the short answer to this question is ‘we won’t know until at least ten years hence.’ Productivity improvements take time to germinate and statisticians take even longer to confirm them.

In the US some evidence of a productivity growth shift has begun to emerge. Since 1996, US labour productivity has risen at an annual average rate of 2.0%, well above its average of 1.4% since 1970. Moreover, this is more than appears to be explained by the growth of capital inputs – total factor productivity has risen also. However, there is debate about the extent to which higher productivity is concentrated in the computer sector where sharp price falls have boosted output (Gordon, 1999⁴).

In the UK, which is generally reckoned to be about three years behind the US in ICT penetration, annual labour productivity growth has slowed since 1995, averaging around 1.5% compared with a long run average of just above 2.0%. The MPC suggested in its May *Inflation Report* that this slowdown may be partly explained by firms anticipating only a temporary slowdown in demand. If so, this and other cyclical factors such as capacity utilisation, may be obscuring underlying improvements in productivity. In fact, from productivity data itself it is difficult to discern either structural or cyclical patterns (Figure 16).

⁴ Gordon, R.J., “Has the “New Economy” rendered the productivity slowdown obsolete?”, June, 1999.

Figure 16

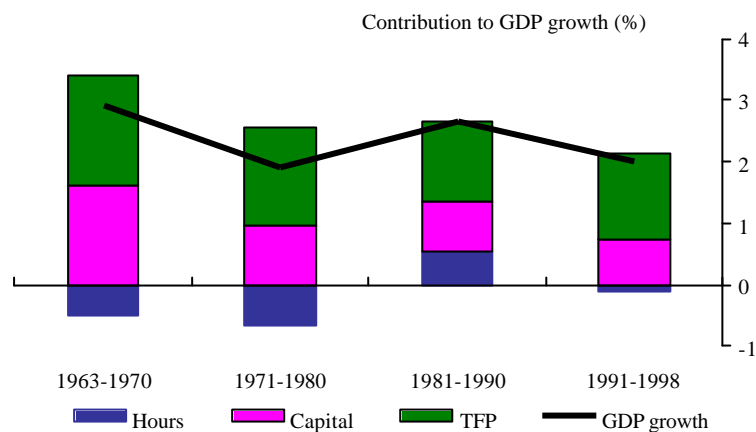


In any case, labour productivity provides only a partial explanation of trend growth. In a growth accounting framework, real GDP growth can be decomposed into the growth of capital inputs, labour inputs, and the efficiency with which these inputs are combined in production - or total factor productivity growth. It is more useful to analyse these determinants over longer time horizons when cyclical influences are less predominant.

Figure 17 shows a decomposition of UK growth by decade since 1963. It shows how growth was affected by the oil shocks, falling from an annual average rate of almost 3% between 1963-70 to below 2% between 1971-80. Part of this fall is accounted for by capital inputs, whose contribution to growth virtually halved between the 1960s and subsequent decades. There was a sharp decline in productivity post-73 as well, but the slower growth of investment and the capital stock mattered more. Shorter working hours and a stagnant labour force have meant that the contribution of labour inputs has been negative in three out of the last four decades, with the industrial stoppages of the 1970s particularly affecting that decade. Labour inputs have been an important swing factor in delivering higher growth. During the 1980s higher employment and hours worked made a positive contribution to growth, more than accounting for the increase in growth rates over the 1970s. Demography and better industrial relations partly explain this, but social and economic changes which increased female participation in the labour force were also important.

Figure 17

Growth accounting



Against this historical backdrop, it is interesting to analyse the growth patterns of the 1990s in more detail (Figure 18). As the upswing gathered pace, both employment and total factor productivity switched from making negative to positive contributions to growth. Employment growth has continued over the decade as unemployment has fallen and, at least until very recently, the rate of labour force participation has risen. There is scope for a further rise if female participation rates continue to converge with those in the US and if government programmes such as the New Deal and the Working Families Tax Credit succeed in drawing more people into employment. Both prospects are made more likely by the current tightness in the labour market as signalled by the low unemployment rate. Once in the labour force, those formerly without a job gain experience that can make them more attractive to the next employer. Such hysteresis effects mean that prolonged periods of low unemployment can gradually reduce an economy's natural rate of unemployment that is compatible with stable inflation. Only time will tell if that is currently happening in Britain.

The other factor behind the UK's growth performance during the 1990s has been the strong increase in investment (Figure 18). Business investment has risen at an annual average of 6.8% compared with a long run average since 1965 of 2.7%. It reached a record high in 1998 of 14% of GDP, compared with a long run average of around 10%. We don't know how much of this increased investment has been in computers and related new technologies because no separate

estimates are available in the UK. But investment trends in the US and UK have been similar, and we know that much of the growth in the US can be attributed to ICT investment. In the US, there was a five-year lag between the rise in investment and the eventual rise in measured, economy-wide productivity. If the UK were to follow that pattern, then evidence of an improvement in productivity would begin to emerge next year. But recall my earlier chart showing the huge year-to-year swings in measured productivity, both in the US and the UK. Even if our recent investment patterns launch us into the Millennium at a higher rate of productivity growth, we probably cannot confirm that for at least another decade.

Figure 18

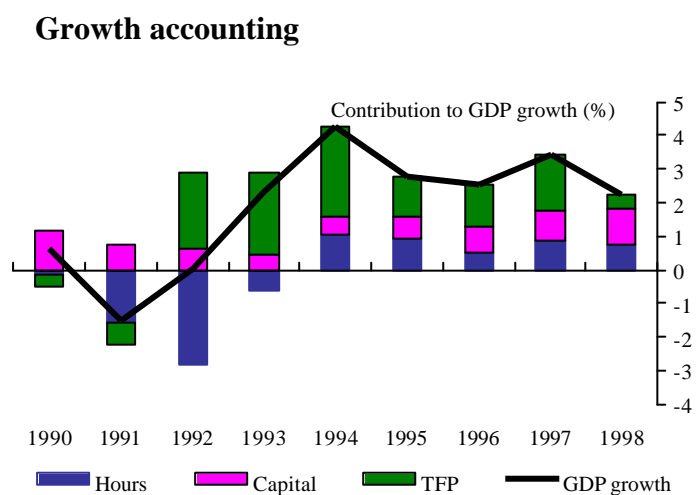
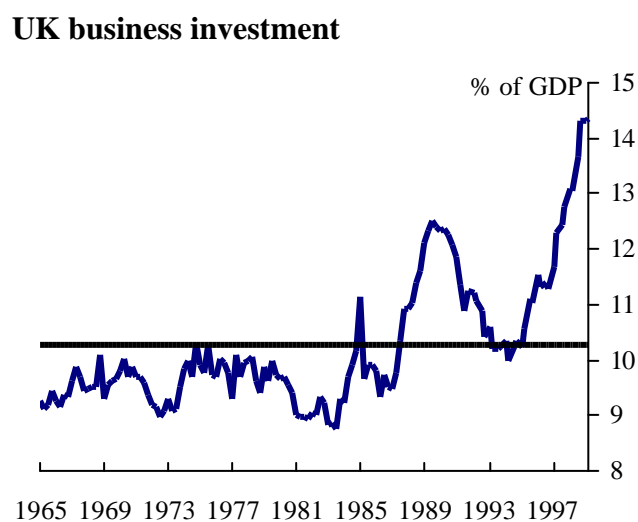


Figure 19



Implications for policy makers

To conclude, let me try to distil some practical advice for policy makers out of the picture of change and inevitable uncertainty that I have been painting.

First, be sceptical of forecasts. They are necessarily built upon the behavioural relationship of the past. Many of these will persist into the future. But in the case of global inflation, the 1970s and 1980s were particularly unfortunate decades. Dependence on oil and the Middle East, coupled with the abandonment of fixed exchange rate anchors, produced inflationary tendencies in the global environment that policy makers of the time were slow to recognise. In other decades, both past and present, the prevailing global forces have been mildly deflationary, driven by declining production costs and expanding competition. This change in ‘wind direction’ is too subtle, too pervasive and too recent for conventional forecasting models to incorporate.

Historically calibrated models of the UK are likely to pose particular risks in this regard because of Britain’s exceptionally poor inflation performance during the 1970s and 1980s. In the forecasting work we do at the Bank of England we try to take account of this by regularly reviewing discrepancies between our equation forecasts and actual outturns, and then imposing judgmental changes on the equations where we think they may be misleading us. We also try to illustrate the high degree of uncertainty around our forecasts by presenting them as fan charts of probability distributions rather than point estimates. But this does not address the bias that may be present in the model itself, and there is still a tendency by commentators to focus on the central forecast point at the two year horizon and use the difference between that and our point target for inflation as the central guide to policy.

Second, listen and learn from real-time experience. If model-based forecasts are highly uncertain and potentially misleading, then it is especially important to seek out complementary sources of information and interpretations of economic developments from those actually in the thick of the action. The Bank’s regional agents hold detailed discussions with business people around the country to provide us with such feedback. In addition, I find that first-hand meetings and visits often yield insights into puzzles in the data or provoke new ideas for our

econometricians to test back in London. The many membership surveys that are carried out by organisations such as the CBI, the BCC, CIPS, EEF and so on also help to shed light on current and future developments as revealed through orders and expectations. In changing times it pays to be eclectic.

Third, pay special attention to prices. Economists are trained to think of prices as information signals. They are sensitive indicators, revealing even small shifts in supply or demand. They are readily observable, unlike output gaps, natural rates of unemployment or trend productivity. One particular set of prices is also our inflation target, and every sportsman knows the value of keeping a close eye on one's target! But the lags between changes in interest rates and inflation are such that we must also watch prices all along the supply chain. Input prices – from oil and other commodities to wages and commercial rents – will eventually influence retail prices. This 'bottom up' view of pricing is incorporated into the Bank's and most other forecasters' models. But output prices – and output price expectations – will also influence margins, and eventually wages, rents and other negotiated input prices. In a world of stronger global competition and more price transparency, one might expect such 'top down' price setting behaviour to become more widespread. So as well as looking at model-based inflation forecasts, we should remember that current prices, at all levels, remain our most accurate and timely barometers of inflationary and deflationary pressures in the economy.

Fourth and finally, be pre-emptive, but delicately so. If one has reason to believe that the economy is in a period of transition and that the global trends from the 70s and 80s no longer provide a confident grounding for forecasts, then one needs to tread carefully. It is still right, given transmission lags, to move interest rates before inflation deviates significantly from target. But we must recognise that firms and households are learning new behavioural patterns in response to the new technologies and competitive pressures facing them. Aggressive patterns of policy change, or activist attempts to fine-tune the future, carry particular risks during such junctures.

This is not a new insight in response to a new paradigm. It is another example of applying the lessons of the past. The paper by Orphanides to which I referred earlier concluded, after his

examination of the policy mistakes in the US that led to what he calls the Great Inflation of the 1970s:

“Fundamentally, it may matter not so much whether policy is driven by rule versus discretion but whether policy reflects prudence versus overconfidence. This indicates the profound importance of appreciating the information problem for successful policy design...Activist discretionary policy as well as activist rules will fail to deliver on their promise when they are based on a false presumption of confidence about the policymaker’s understanding of the economy” (Orphanides, 1999)

To avoid the policy mistakes of the past, one should be open-minded about the paradigms – new or old – that will shape our future.