

Mr. Davies looks at whether contemporary forces are eroding distinctions between central banks and pushing them towards some common model Text of the London School of Economic and Political Science Annual Lecture on Central Banking delivered by the Deputy Governor of the Bank of England, Mr. Howard Davies, on 4/3/97.

Central bankers are famous for their obsessive concern about credibility and consistency. By that token, I should be drummed out of the club I have only recently joined. Because when the Governor stood here a little over a year ago, he assured the audience that he was delivering the fourth *and last* in the series of LSE Bank of England lectures. But, in keeping with the usual practice of successful television shows, I am here tonight to open a new series. The LSE seemed to think you would prefer that to filling the schedule hereafter with repeats.

This new series picks up where the last left off. In 1996 the Governor noted there is nowadays a broad consensus that the *raison d'être* of central banks everywhere is the pursuit of monetary and financial stability; but he observed that once you go beyond that level of generality, each central bank is unique - in terms of its constitutional position, the range of its activities, its size, structure and organisation. Many of these differences are the result of history. The question I plan to address tonight is whether contemporary forces are eroding these distinctions between central banks and pushing them towards some common model.

I shall confine myself largely to what is happening in Europe. The increasing globalisation of financial markets is one pressure for change across the world. But in western Europe, the Maastricht Treaty and the preparations for Economic and Monetary Union are requiring central banks to review their statutes and to align their operating procedures. But I also want to talk about the central banks of Eastern Europe. They are feeling similar pressures - several hope that their countries will accede to the European Union within five years or so - but their origins are very different.

In 1989 most of the state banks of central and eastern Europe had little understanding of the rôle of a central bank in a market economy. Since then they have had rapidly to acquire the knowledge and skills needed to tackle acute inflationary pressures while many of their leading banks were effectively bankrupt. At the Bank of England, we have been actively involved in helping them by drawing on our own experience as central bankers, adapting the lessons we have ourselves learned over the years to the unique circumstances of the transition economies.

Much of this effort has been channelled through our Centre for Central Banking Studies which we established in 1990 to provide technical assistance and training to other central banks. We have given advice principally on core functions such as monetary policy and operations, the development of money markets and payment systems, the management of government debt, and banking supervision; but our help has also been sought in some less obvious matters such as the physical security of central bank buildings and their contents. The assistance is provided through our experts visiting other central banks and by their staff coming on study visits to London, as well as through seminars and workshops here and abroad.

In the earlier years most of these events were essentially training courses. But increasingly the participants from many countries are able to contribute more themselves to the discussion so that they are now learning not only from our own experience as central bankers,

but also from each other. And in some instances, their experience may well hold lessons for us. Since 1990 over 4,000 staff of other central banks - two thirds of them from the transition economies - have participated in these various events. The work of the Centre for Central Banking Studies, and the other inter-bank links we maintain (notably between supervisors) give us, I believe, a privileged perspective on the development of central banking across Europe. The analysis below - particularly the Eastern European sections - is very largely the work of Lionel Price, the Centre's Director, and his staff.

History is important

In a study¹ published by the LSE's Financial Markets Group last year, Rosa Maria Lastra concludes that central banks are not "natural products" but products of history. She emphasises the special relationships whereby central banks have been consciously awarded privileges by governments, and have been expected to provide certain services and functions in return. This may seem a dubious process, like selling monopolies. But central banking, she kindly says, is not an "evil": that comes as a relief to some of us. Though a product of history, and a creature favoured by the state, a central bank may serve useful economic goals in the pursuit of stable money and sound banking. While most of their functions could be fulfilled by a different public or private institution, central banks are today typically seen as convenient instruments for the conduct of both monetary policy and banking supervision.

I agree with Dr Lastra's conclusions. Moreover, central banks' differing historical origins influence not only the tasks they carry out today, but also the way in which they think and operate. The Bank of England was established to lend money to the government; and though the Maastricht Treaty now prohibits any buying of British government debt by the Bank of England in the primary market, the Bank still manages government funding operations in an essentially agency capacity (and the present Governor first came to public prominence in this area!). By contrast, the origin of the Federal Reserve Banks in the USA lay in the provision of a reliable nation-wide payment and depository system, and that remains a central activity. While some banking supervision is conducted by the Fed, that is largely the remit of (myriad) other institutions (the Office of the Comptroller of the Currency, banking regulators in each separate state and the Federal Deposit Insurance Corporation).

The Bundesbank was set up against a background of the need to restore and maintain a stable currency, and this, together with the concomitant political independence, remain at the heart of its rôle. An early strong belief in the "real bills" doctrine still influences the Bundesbank's views on appropriate collateral for central bank operations with the market, and justifies its large branch network and staff. The Banque de France has retained more retail banking than most other modern central banks, maintaining branches in every French département (a network it has found difficult to slim down in face of local and trades union opposition). It also makes use of its branches in compiling a *centrale des risques*, a register of commercial bank lending, and in keeping track of the million or so individuals who have drawn bad cheques! The Bank of Japan is more of a medley. Its rôle model when it was established in 1882 was, you may be surprised to hear, the Banque Nationale de Belgique, though some aspects of English banking practice were also adopted. Legislation in 1942 followed the then German model, particularly in making the Bank of Japan subservient to the Ministry of Finance; and after the war, there was American influence.

¹ Rosa Maria Lastra, "Central Banking and Banking Regulation", LSE Financial Markets Group, 1996, page 285.

In Figures 1 and 2, I have attempted to capture some of the distinctions between these leading central banks. (Because I am concentrating on distinctions, I have omitted common tasks - such as the issuance of banknotes and acting as banker for government - which are carried out by virtually all central banks.) Figure 1 shows the UK's "scores" in five areas, while Figure 2 adds in, by way of comparison, the other G5 countries. Mapping the distinctions is not an easy task. For instance, though in Germany a government office is responsible for banking supervision, it is central bank staff who undertake much of the day-to-day work of monitoring individual banks. In France, supervision is the responsibility of the Commission Bancaire, but its secretariat is effectively part of the Banque de France, and the Governor chairs it. And in Japan, the central bank closely monitors the large banks, though the responsibility for supervision formally rests with the finance ministry. Furthermore, the extent of a country's total financial regulatory effort encompassed by the term 'banking supervision' varies - most British banks have set up separate subsidiaries for their trading activity, regulated by securities regulators (though the responsibility for consolidated supervision remains with the Bank of England); by contrast, European banks tend to retain trading within the banking entity.

It is also not always apparent whether the central bank is in practice free to set interest rates to achieve the monetary policy objectives which derive from its own statutes or from objectives set by government. The Bundesbank clearly has that freedom; and the other EU member states have been legislating in accordance with the Maastricht Treaty to give their central banks independence in the field of monetary policy. In Britain, even though there have been very welcome improvements in the transparency of monetary policy formulation since 1992, decisions on interest rates remain clearly with the Chancellor of the Exchequer though now within a clear inflation target framework. In Japan the position is under review. The ultimate authority on interest rates has rested legally with the Minister of Finance, though according to Goodhart, Capie and Schnadt "it is widely understood that it would be extraordinary if the government resorted to these provisions, and they have never been enacted".² The same authors conclude that the Bank of Japan "has thus enjoyed independence in practice". What is harder to judge is the extent to which the Bank of Japan's decisions may have been influenced at times by recognition of the latent ministerial powers.

Notwithstanding those nuances, what can be seen from Figure 2 is that the Bank of England is quite distinctive amongst the five leading industrial countries. We have:

- the least independence in setting interest rates;
- the most comprehensive responsibility for banking supervision (though some other banks have broader financial regulatory responsibilities);
- the greatest role in managing government debt - we provide substantial policy input as well as actually handling auctions as issuing agent for the Treasury;
- the smallest branch network - we have consciously reduced the scope of our private banking activities in recent years (focusing on areas of

² Charles Goodhart, Forrest Capie and Norbert Schnadt, "The development of central banking" in *The future of central banking, the tercentenary symposium of the Bank of England*, Cambridge 1994, page 169.

comparative advantage as a public sector institution) and are now also leaving note distribution to be handled largely by the private banks;

- a comparatively limited but increasing role in the operation of payment and settlement systems - typically, the Bank of England participates in payments systems which are run by the private sector, and has only involved itself in the establishment and operation of settlement systems when the private sector has not itself succeeded in doing so. Recently, however, the introduction of CREST and RTGS, and the European work on TARGET, has expanded on our work considerably.

These maps cannot easily convey a sense of the dynamics of change in central banking. Central banks are evolving creatures, which respond to political and economic forces around them. One unusually powerful force, which will change their environment fundamentally, is EMU. But before considering its impact, I would like to consider the state of play in the rest of (non-EU) Europe, where exciting transformations of a different kind have occurred in the last decade.

Turning socialist state banks into central banks

The central banks of the formerly planned economies of central and eastern Europe have generally developed important responsibilities in each of my five areas (Figure 3). The old state banks have been transformed to fill the vacuum left by the dissolution of the mechanisms and institutions of a planned economy. Most had extensive branch networks and already operated rudimentary payment systems - though transfers often relied on correspondent banking relationships and slow and unreliable postal systems. But under the old regime there was little if any requirement for the other functions - setting interest rates, managing government debt, and supervising banks. Instead the main roles of the state banks had been the provision of banknotes; and making the financial transfers between state enterprises inherent in the central economic plans. The perceived importance of cash, and the bookkeeping culture, still influence to varying degrees their successor institutions. But these banks have been hit by a series of powerful shocks.

(i) Monetary policy

The first is the shift from centralised control of the economy to a market-based system. Instead of directing money to meet enterprises' deficits - a job which required a large branch network and hordes of bureaucrats - the aim is to influence the behaviour of the economy by using indirect instruments of monetary policy to guide interest rates and the exchange rate, and to conduct the prudential supervision of the new commercial banks. But many of the bureaucrats find it difficult to work out which bits of information they need and how often, and prefer instead to demand a substantial volume of data without prioritisation. Some of the staff of eastern European central banks, used to passing on raw data which can be checked against enterprises' targets, find it difficult to analyse information with the aim of learning something about the behaviour of markets, consumers or firms. The simple questions, "Why are we doing this?", "What does this mean?" can be too hard to ask. New goals, however well-enshrined in the constitution and law, do not change culture overnight.

The second culture shock has been the move from a monobank to a two-tier banking system. The old system had two separate monetary circuits - one for cash (used mainly by individuals) and the other in transfers between bank accounts (used by enterprises). One of the early tasks of western advisers was to try to convince the would-be central bankers in the east that monetary policy was not just a matter of regulating the supply of banknotes. And many of the same people found it difficult to accept that the provision of credit by a central bank - whether to government or to enterprises - is likely to have inflationary consequences. When the basic problem is a shortage of national savings (often because the state is pre-empting private savings through its budget deficit and off-budgetary spending), the central bank cannot magically create extra real resources by relaxing monetary policy. Were it so, we central bankers would be even more popular people than we are now.

The response of the eastern European and CIS central banks to their new goals has been tempered by a number of factors:

- how long the old culture had prevailed;
- how democratic the new regime is (independent central banks do not get on well with autocracies);
- the size of the country;
- the availability of foreign currency to the government, whether from export revenues (oil or gas) or loans from international financial institutions; and
- in the case of the ten (yes, ten!) applicants from the region to join the EU, how quickly they believe they need to move into line.

The differences between these central banks are perhaps most marked in relation to monetary policy and financial relations with the government. The westernmost of the transition countries have typically liberalised the most, adopting policies and structures which are already very close to those of their EU neighbours;

while, further East, reform and market-based operations are still viewed with some scepticism (everyone of course pays lip service to the benefits of and need for market reform and structural adjustment, but many do not in their hearts believe it will work for them), and the markets that have been introduced are subjected to discretionary administrative controls - particularly in crises.

Partly because of the influence of the IMF and other western advisers as well as, in the case of EU applicants, the need to harmonise with EU law and practice, the legislation governing the new central banks usually follows a common model, giving them autonomy to pursue an objective of monetary stability. What is interesting is that the aspects of monetary control whose merits we debate in the west - the degree of independence of the central bank, inflation targets versus monetary targets, fixed or floating exchange rates - have in terms of results been of secondary importance to the understanding and acceptance of the case for reform on the part of the public, parliament and government. There is little benefit to a central bank

being independent of government if the parliament is able to force it to grant subsidised credits to favoured sectors. And independence counts for little if the government persists in running a deficit while non-monetary means to finance it have yet to be developed.

If we look at five of the central European countries where reform is most advanced - the Czech and Slovak Republics, Slovenia, Hungary and Poland - the first two have succeeded in bringing annual inflation down to single figures, while inflation in Hungary and Poland is just below 20%. All except Hungary monitor an intermediate monetary target, but these targets have proved unreliable friends in the transitional economies generally. It has been far from easy to predict the velocity of money when the economic and financial structure is in turmoil. The more important success factor appears to be exchange rate policy. The Czechs and Slovaks have been able to hold their exchange rates fixed against a Deutsche Mark/US dollar basket. This has not been sufficient to deliver the inflation rates of 1-3 % seen in Germany and the United States, as the transition economies are experiencing faster rates of growth in productivity in tradables; they need to permit their currencies to appreciate if they are to lower their inflation rates further. But their fixed exchange rates have cemented and enhanced the credibility of the sound monetary and budgetary policies being followed.

Yet fixing the exchange rate is not the only route to lowering inflation. Slovenia has succeeded with a managed float, though a key factor has been its willingness to keep their real exchange rate relatively high. In contrast, Hungary and Poland have tried to prevent the inevitable real appreciation of their currencies by continually depreciating their nominal exchange rates in reflection of their higher rates of inflation. Polish policy became less accommodating last year, and Hungary may be set to follow.

Of course, an exchange rate peg is far more credible if a country has sizeable foreign exchange reserves. The Baltic states were fortunate in this respect as they regained access to the gold held by their central banks in London and Paris before the War; and Estonia and Lithuania have gone as far as to fix their exchange rates rigidly in a currency board system which removes discretion from monetary policy. (Note that these countries too are experiencing real appreciation: annual inflation is nearly 15% despite their fixed exchange rates.) The IMF is now encouraging Bulgaria to follow suit and adopt a currency board as the central bank there has not been able to impose a sufficiently tight monetary policy in the face of lack of progress on other aspects of reform. But the currency board can only succeed as part of a comprehensive package of fiscal and structural measures. The strict monetary policy rules of a currency board can work well if fiscal policy is highly responsible - or will become so as a result of the currency board; if not, it may put severe strains on the banking system, as has been the case in the Baltic states.

(ii) Banking supervision

This potential conflict between monetary policy and maintaining the stability of the banking system is not one which has greatly troubled most western industrial countries in recent years. But in some transition economies, such conflicts have been real. In most, the problem has not been so much to *maintain* the stability of the banking system as to create a robust banking system from a number of often insolvent state-owned banks spun off from the old monobank, together with newly created commercial banks whose behaviour has frequently been far from prudent.

In contrast to the diverse arrangements in the west, banking supervision in transition economies is nearly always the responsibility of the central bank (although in some cases the Ministry of Finance is also involved in the licensing of banks). An exception is Hungary, where supervisory responsibilities have in large measure been transferred to the State Banking Supervision Office: the central bank is nominally responsible only for monitoring banks' liquidity and foreign exchange positions, although in practice its role extends rather more widely.

In most of the countries - especially in those with hopes of acceding soon to the EU - banking legislation approximating to western standards is (or is about to be) in place. But in practice, banking supervision has proved a difficult topic to master. Whereas monetary policy requires a highly trained but small cadre of economists in the head office of the central bank, large numbers of supervisors are needed, often spread across the country, to deal with a multitude of new banks with poor quality accounts. And the skills of assessing risk and the quality of management have not always come easily to staff from a bookkeeping background whose instincts are to tick boxes rather than make judgements. Staff who have acquired the skills needed are frequently enticed away to work for commercial banks at higher salaries.

(iii) Managing government debt

Another field in which central and eastern European central banks are generally more heavily involved than their western counterparts is in the management of government debt. (Hungary, where there is a separate debt office under the Ministry of Finance, broadly on the Irish model, is again an exception.) Under the old regimes governments relied on their state banks for finance, but the new statutes of the central banks - usually following an IMF model - limit the provision of finance to government. Ceilings are mostly around 5% of government revenues, though in Estonia and Lithuania they are zero. With monetary financing restricted, new methods of financing governments have had to be developed and nearly all the central banks have taken a leading part in this process.

Even where the government's own financing needs have been small, as in the Czech Republic, central banks have been keen to establish markets in short-term paper in which they can conduct monetary operations. Several of them have issued their own bills for this purpose, particularly where in the early years the finance ministry was reluctant to issue government paper. Whether the market being developed is in government, central bank or private paper, the central banks have had to strike a difficult balance in deciding how frequently to intervene in the markets. In the absence of intervention, a market can remain illiquid and unused. But if the central bank intervenes too much and holds prices too steady, then private market-makers will not develop. This dilemma is not unique to transition countries. Similar dilemmas arise elsewhere, and some western central banks still sometimes play a role, if only a marginal one, in balancing supply and demand in the domestic securities and foreign exchange markets.

(iv) Payment and settlement systems

One area of activity in which the new central banks do mirror the diversity of their western counterparts is in responsibility for payment and settlement systems. Of the nine central banks in central and eastern Europe, five operate the main clearing system themselves. In the other four countries the position is roughly as it is here, with the central bank participating

in, and providing final settlement for, a privately owned clearing system. In Russia the central bank has been slow to develop its own payment system, and commercial banks have been putting parallel mechanisms in place. In the west, technological developments and a desire to reduce systemic risks have been drawing central banks like ourselves into greater involvement in payment and settlement services, especially in the provision of real-time gross settlement. No doubt the central banks in the transition economies will feel the same pressures before long.

(v) Branch networks

On the last of my five metrics of central bank functions - the size of the branch network (which I use as a convenient proxy for the extent of their involvement in straight banking activities and in note distribution) - the transition central banks occupy an intermediate position. The extensive branch networks of the monobanks went largely to the savings banks, and in some case they have been turned into commercial banks. The result has been surprisingly consistent across central and eastern Europe, with one branch remaining for every ½ - 1 million people (except for the Bank of Estonia which has no branches, a scrupulous qualification). Some of the new central banks are even now questioning, as we have done, whether they need branches - as distinct from regional agencies - at all. Following the setting up of a State Treasury, the Hungarian central bank has closed more than half its branches.

Obviously the political structure and geography of the country is material. In the USA and Germany, the maintenance of a branch network reflects the federal structure of the state. In Russia, a federal state with a very large geographical area, the Central Bank has sixty territorial branches and nineteen regional banks - apparently rather modest numbers for a country with some 150 million people spread across ten time zones. But in addition the CBR in 1994 ran 1,356 cash and settlement centres, 13 banking schools, and 30 "other organisations". To run this empire the bank employed over 52,000 staff, having created over 7,000 additional posts in the previous two years to conduct its various new functions.

Central bank staffing and costs

All this shows that, even though all European central banks face similar pressures, the solutions remain quite diverse. That is reflected in relative costs. Comparable data are hard to come by, but the Bank of Russia appears to have more staff per head of population than any other. The People's Bank of China is larger, employing some 150,000 people (but only 1,000 in head office where policy is centralised), but considering the PBoC's continuing role as banker to the state-owned enterprises that looks small in relation to a population of 1.2 billion. Other very large central banks are the Reserve Bank of India with 32,000 staff and the US Federal Reserve System with 25,000.

One would expect the number of staff employed by a central bank to depend not just on the population of the country (and in this there should be some economies of scale) but also on the range of tasks it has and how efficiently it conducts them. At the Bank of England we take a lot of interest in comparative efficiency: we are determined to be a value for money central bank, and benchmark ourselves against others wherever possible. Some of the data we use are confidential: central banks are more candid with each other in private than they are in public. But there are a few published measures. A study in 1995 by Fry, Goodhart and

Almeida³ of a sample of 30 central banks, largely from developing countries, tested twelve variables as possible explanations of non-supervisory staff numbers. Most significant was a country's population, with an elasticity of one half, confirming substantial economies of scale across the sample countries. There were positive relationships with real per capita income (central banking appears to be a luxury good!), the number of branches, and the use of exchange controls (both of which would increase staff needs). Perhaps surprisingly the more independent central banks seemed to employ fewer staff (perhaps that could be the basis of an accommodation with Gordon Brown!). Amongst the variables which showed no relationship was the inflation rate (though there could be a simultaneity problem here).

Figure 4 shows the numbers of staff employed two or three years ago by the central banks of various industrial countries and some of the transition economies. There is clearly the expected positive relationship with population, but the ratio varies hugely: a central bank on the highest of the three parallel lines has ten times the staff per million population as one on the lowest line. The extent of this dispersion is more apparent in Figure 5 which shows the number of staff per million population for the large countries. With only around 3,500 people - down by more than 50% over the last twenty years and still falling fast - the Bank of England itself is one of the most modestly staffed in relation to its population. In contrast to the significant results found by Fry *et al.* from their sample of developing countries, regression analysis on the industrial country data shows only weak evidence of small economies of scale. Nor did other variables tested on industrial countries yield any significant results. As for the transition economies, their staff numbers generally conform to those in industrial countries with similar populations. The exception is the Bank of Russia, whose staff looks abnormally large. Some of these central banks are still growing as they seek to carry out their new functions; but one or two, like the National Bank of Hungary, are already reviewing what they are doing and how they do it, and are slimming down. By the end of this year, they expect to have 40% fewer staff than two years ago.

These variations in staff numbers naturally have an impact on the running costs of central banks, but relative salary levels and non-staff costs are obviously also important. Figure 6 is based on data for 1992, taken from central banks' Annual Reports. The vertical axis shows the gross operating costs of each central bank as a percentage of GDP. The horizontal axis shows population. For a swathe of countries across the bottom of the chart - from New Zealand at 0.06% through Sweden, Denmark, Switzerland, the Netherlands and Australia (0.04 - 0.05%) to Britain (0.037%) and Canada and the United States at 0.03% - there may be some scale effect, but several European countries do not fit this model at all. The central banks of Italy and France - countries with the same population as the UK - then cost 5 and 3.5 times more than us, and the picture has changed little since. Some of the differences may be down to national culture, but another factor may be that the funds at the disposal of the different central banks vary widely. In particular, I suspect that some of our relative cheapness may be attributable to the Bank Charter Act of 1844, since which time the seignorage on our banknote issue has been passed directly and immediately to the government. This is not generally the case abroad, at least in European countries - west or east - where profits, a fraction of seignorage, are passed only periodically to government. (The UK is also unusual in that foreign exchange reserves, and any profits earned on them, belong to the government rather than to the central bank, although the Bank of England does of course have responsibility for managing the reserves).

European integration

³ Maxwell Fry, Charles Goodhart and Alvero Almeida, *Central Banking in developing countries*, Routledge, 1996, pages 97-99.

Looking at the European continent as a whole, it is interesting that, whereas the common history of central and eastern European countries over the last half century has produced broadly similar central banks in the different countries - at least in those which are contemplating accession to the European Union - the central banks of the existing member states are a disparate bunch. What remains to be seen is how far the advent of Economic and Monetary Union may induce more homogeneity and, indeed, reduce costs. It ought to be the case, after all, that one monetary policy is cheaper to administer than 15, or 25.

The European Central Bank will appear a much more concentrated creature than the central banks we have been looking at. It will be responsible for the issuance of euro banknotes (known to the cognoscenti as bridging finance) but beyond this, in terms of the diagram I have been using, the ECB will be almost uni-dimensional (figure 7). According to the Maastricht Treaty its independence in setting interest rates will be unparalleled. But it will not supervise banks (not even as an agent) and it will not manage government debt. It is agreed that those functions will remain firmly with the national central banks (or other relevant agencies). In payment systems the ECB will be responsible for only the tip of the iceberg, that is TARGET, the system linking the various national payment systems of EU member states. This narrow focus is no accident: the ECB's task is to maintain monetary stability, and its design reflects that. The European System of Central Banks, collectively, will do much more than that, of course.

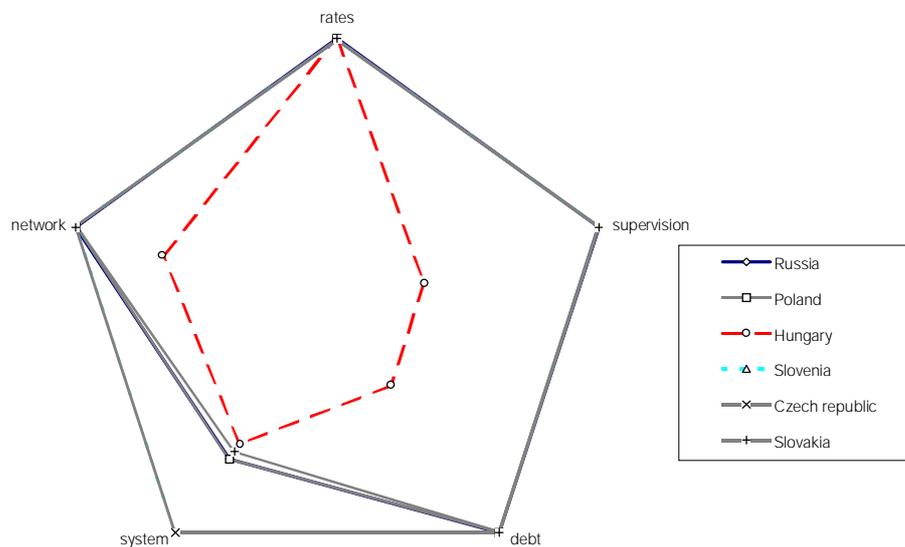
Discussions between EU central banks on how monetary policy will operate within the EMU are well advanced, and the European Monetary Institute published a report in January setting out what is agreed and what remains to be decided. In principle, the creation of the ECB in 1998 (in advance of Stage III) or thereafter need not affect the other activities of EU central banks, whether they are in or out of the euro-area, provided they do not conflict with the ECB's achievement of monetary stability. But it seems very likely that some of the activities of the national central banks, and especially those who are members of the euro-area, will change character as EMU develops (if it does). That is partly because questions will undoubtedly be asked about costs. One American commentator has recently pointed out that the total cost of the US Federal Reserve system today is well under a third of the total costs of EU central banks. On that issue, as I have demonstrated, I believe we at the Bank of England have a good story to tell. But the introduction of the euro would also have major implications for payments systems and financial markets generally, which are bound to push national central banks closer together. At the same time, functions further from the core of central banking, and especially those which could be performed as well or better by the private sector, are likely to move out of the central banks.

As for monetary policy, if you will permit me one last quotation, one which should appeal to this audience, Alex Cukierman said in his extensive study of central banking, "A governor who is backed by an absolutely and relatively strong research department carries

more weight vis-à-vis the Treasury and other branches of government”.⁴ The same will be true within the European System of Central Banks, so I envisage national central banks keeping their capacity to analyse the state of their domestic economy. However, it ought to be possible, over time, for the ins to capture some economies of scale, and to develop centres of excellence in central banks around the Union, with expertise in particular areas of work. It is unlikely to make sense to have 15 (and certainly not 25) teams of economists analysing the causes of changes in the velocity of euroM4.

But I do not wish to give the impression that EMU, even if it comes about on something roughly approaching the current timetable, will be the ‘end of history’ as far as European central banking is concerned. I suspect that central banks in Europe will continue to display great diversity, and will continue to evolve in different directions, and at different speeds, in response to the characteristics of their local habitat. What is important is that they should be responsive, learning and self-critical organisations, ready to react quickly to changing circumstances. They must also, in my view, display their accountability, perhaps more so than in the past. With the greater responsibilities which European central banks, East and West, have assumed in recent years, comes a greater need to explain the basis on which decisions are made, and to account for the resources deployed in making those decisions. That accountability runs partly to the Treasury, who exercise financial discipline over us, partly to Parliament - whose growing interest in our affairs we welcome - and partly to the broader community. I see this series of lectures fitting within that context, and have been pleased this evening to have the opportunity to set out some more recent reflections, from within the Bank, on the way we exercise our functions on the people’s behalf.

ECE and Russia



⁴ Alex Cukierman, *Central bank strategy, credibility, and independence: theory and evidence*, MIT Press 1992, page 393.

Figure 1

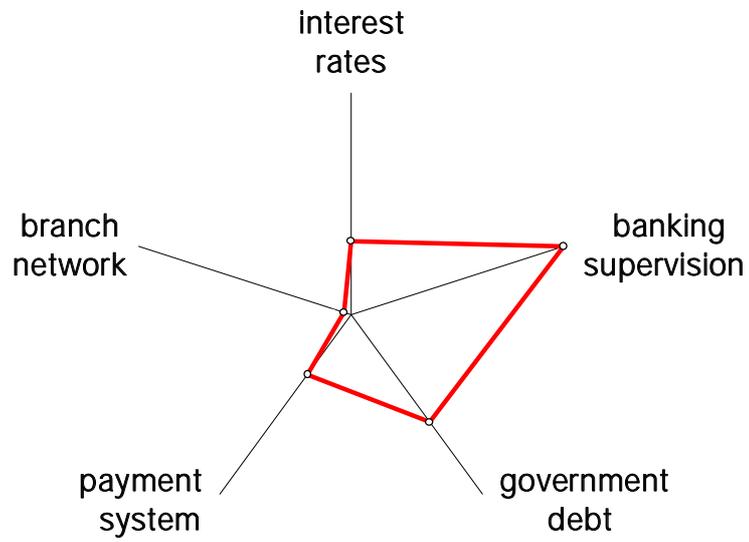


Figure 2

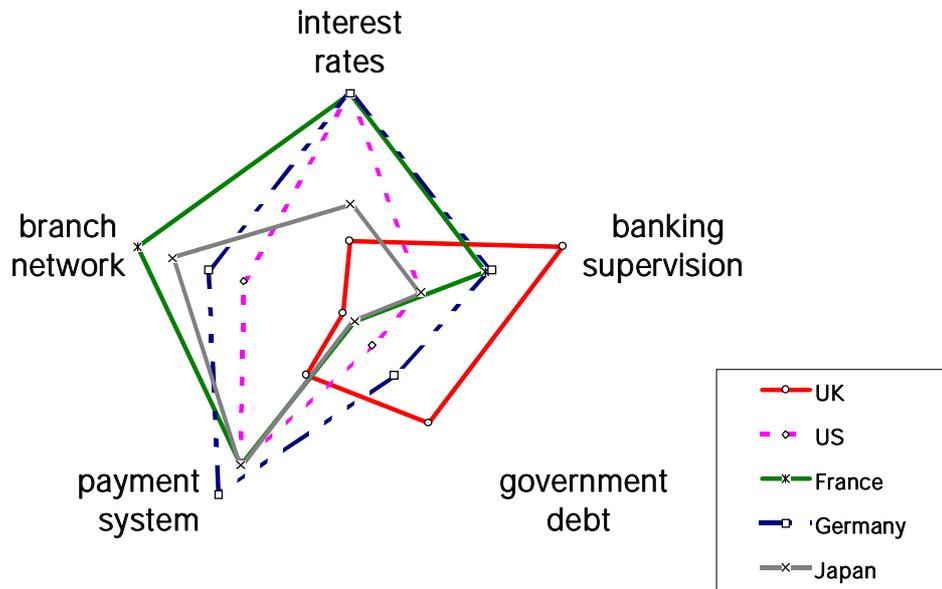


Figure 3

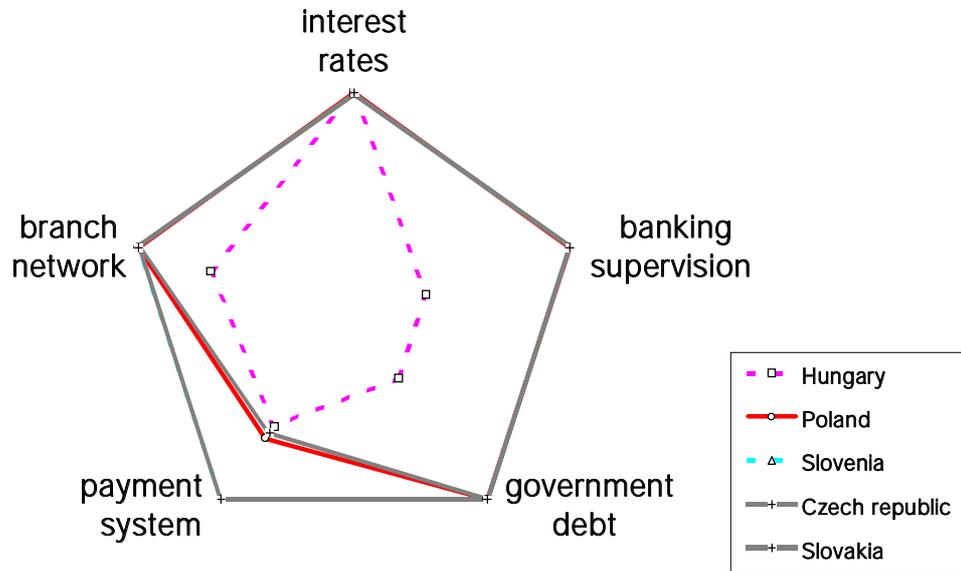


Figure 4

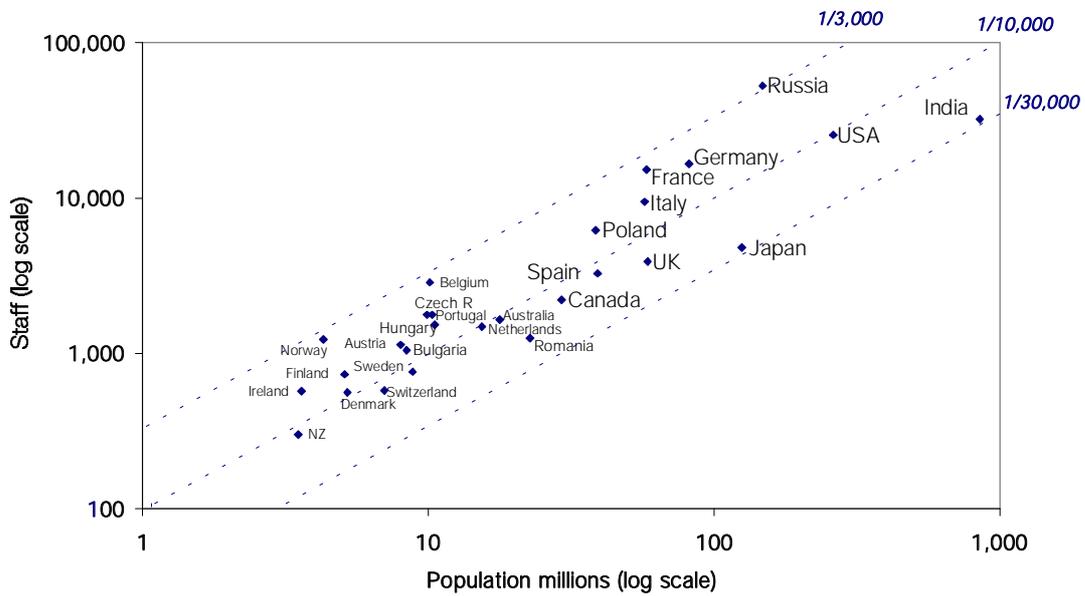


Figure 5

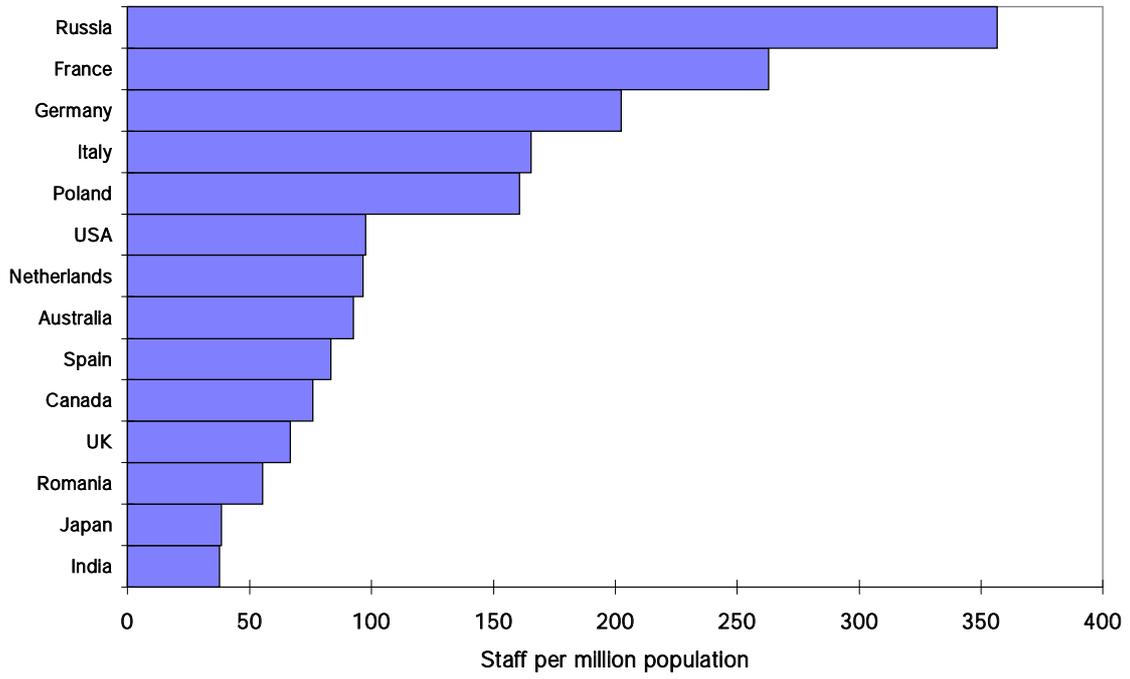


Figure 6

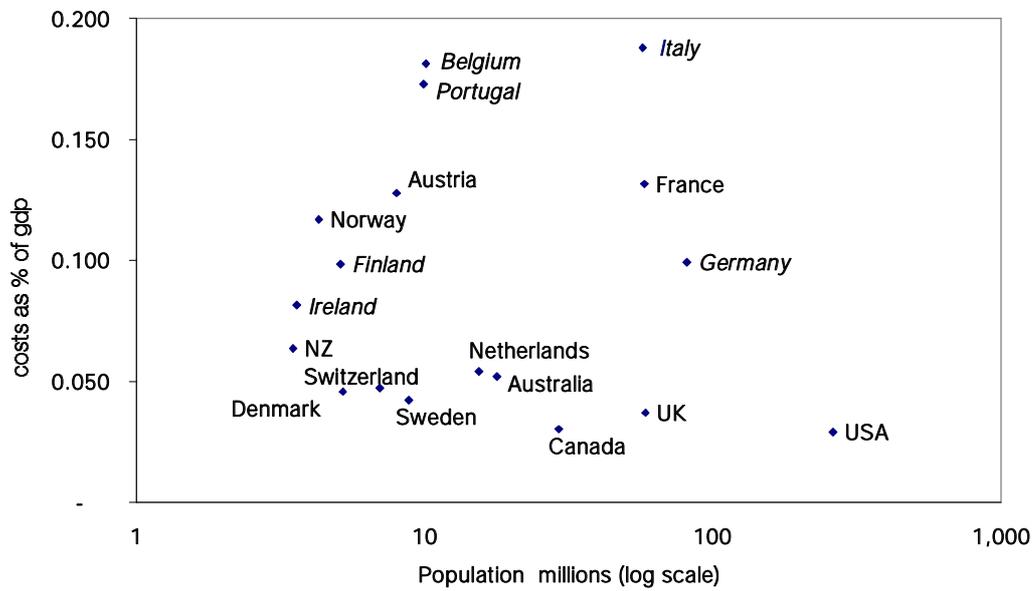
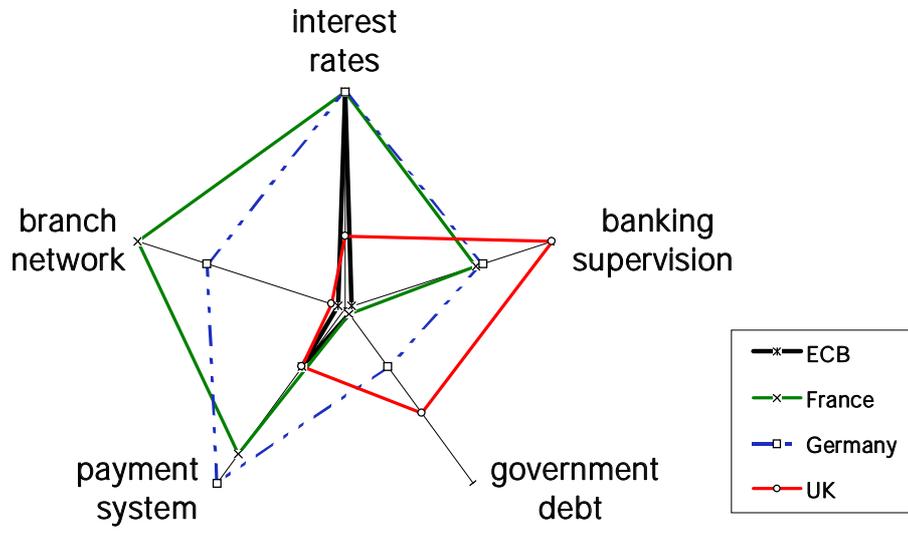
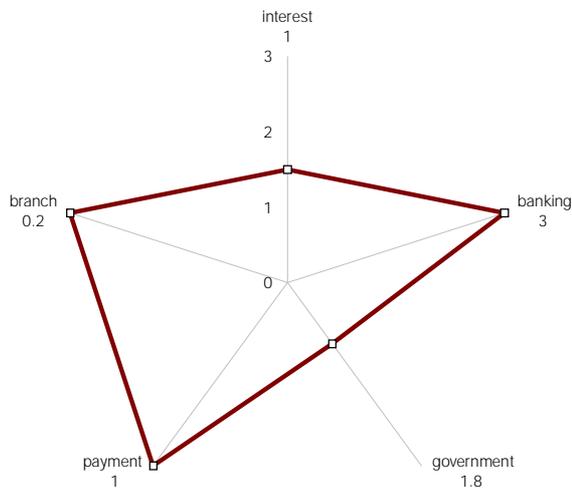


Figure 7



PBOC



DATA

	rates	supervision	debt	system	network
	interest	banking	government	payment	branch
UK	1	3	1.8	1	0.1
US	3	1	0.5	2.5	1.5
France	3	1.9	0.1	2.5	3
Germany	3	2	1	3	2
Japan	1.5	1	0.1	2.5	2.5
Italy	3	3	1	3	3
Canada	3	1	1	0.5	2

	rates	supervision	debt	system	network
	interest	banking	government	payment	branch
Hungary	3	1	1	1.8	2
Poland	3	3	3	2	3
Slovenia	3	3	3	3	3
Czech republic	3	3	3	3	3
Slovakia	3	3	3	1.9	3
Romania	3	3	3	3	3
Bulgaria	3	3	3	2	1.5
Russia	3	3	3	2	3

	rates	supervision	debt	system	network	
	interest	banking	government	payment	branch	
ECB	3	0.1	0.1	1	0.1	
France	3	1.9	0.1	2.5	3	
Germany	3	2	1	3	2	
UK	1	3	1.8	1	0.2	
PBOC	interest	banking	government	payment	branch	3
	1.5	3	1	3		

Country	Banker to governmer	Banker to banks (clearing)	LOLR	Banking Supervision	Securities settlement	FX management	Interest rates	Independence	Debt management	3rd co purpose	Staffing	Branches
Britain	Y	n		Y	Y	Y	N	N	y	Y	3,425	0
France	Y	Y	Y	Y		Y	Y	Y	N		15,220	200
Germany	Y	Y		Y		Y	Y	YY	n		17,519	
Ireland	Y	Y		Y				Y	N		574	
Italy	Y	Y		Y		Y	Y	Y	n		9,445	
Netherlands	Y	Y		Y		Y	y	Y	N		1,540	
Spain	Y	Y		Y		Y	Y	Y	n		3,262	
Sweden	Y	Y	Y	Y		Y			N		760	
Switzerland	Y	Y		N		Y	Y	Y			575	
Canada	Y	n		N		Y			N		2,220	
Japan	Y	Y		N		Y	n	N	N		4,800	45
USA	Y	Y		n	Y	Y	Y	Y	N		25,465	12
Australia	Y	Y		Y		Y	y	y	N		1,648	
NZ	Y	Y		y		Y	Y	Y	N		300	0
Czech	Y	Y		Y		Y	Y	Y	Y			14
Hungary	Y	Y		N		Y	Y	Y	N		1,523	8
Poland	Y	Y		Y		Y	Y	Y	Y		6,188	49
Romania	Y	Y		Y		Y	Y	Y	Y			41
Russia	Y	Y	Y	Y	N	Y	Y	Y	Y		52,042	79

	Popl'n	Gross expenditure	Popl'n	Staff	P per cap.	Staff/pop	Log data staff	popln	staff/pop		gdp	
India			850	32000		38						
Japan	125	-	125	4800	34,630	38	8.48	18.64	-10.17	#NUM!	10.45	Japan
Romania	22.7		22.7	1255	1,270	55	7.13	16.94	-9.80	#NUM!	7.15	Romania
UK	58.4	0.037	58.4	3892	18,340	67	8.27	17.88	-9.62	1.31	9.82	UK
Canada	29.2	0.030	29.2	2220	19,510	76	7.71	17.19	-9.48	1.11	9.88	Canada
Spain	39.1	-	39.1	3262	13,440	83	8.09	17.48	-9.39	#NUM!	9.51	Spain
Australia	17.8	0.052	17.8	1648	18,000	93	7.41	16.69	-9.29	1.65	9.80	Austria
Netherlands	15.4	0.054	15.4	1485	22,010	96	7.30	16.55	-9.25	1.69	10.00	Netherlands
USA	261	0.029	261	25465	25,880	98	10.15	19.38	-9.23	1.07	10.16	US
Poland	38.5		38.5	6188	2,410	161	8.73	17.47	-8.74	#NUM!	7.79	Poland
Italy	57.1	0.188	57.1	9445	19,300	165	9.15	17.86	-8.71	2.93	9.87	Italy
Germany	81.5	0.099	81.5	16494	25,580	202	9.71	18.22	-8.51	2.29	10.15	Germany
France	57.9	0.132	57.9	15220	23,420	263	9.63	17.87	-8.24	2.58	10.06	France
Russia	148		148	52805	2,650	357	10.87	18.81	-7.94	#NUM!	7.88	Russia
1/3000 line			1	333								
1/30,000 line			3	100								

	Popl'n	Gross expenditure	Popl'n	Staff	per cap.	Log data	staff	popln	staff/pop		gdp	
France	57.9	0.132	57.9	15220	23,420		9.63	17.87	-8.24	2.58	10.06	France
Germany	81.5	0.099	81.5	16494	25,580		9.71	18.22	-8.51	2.29	10.15	Germany
Japan	125	-	125	4800	34,630		8.48	18.64	-10.17	#NUM!	10.45	Japan
UK	58.4	0.037	58.4	3892	18,340		8.27	17.88	-9.62	1.31	9.82	UK
US	261	0.029	261	25465	25,880		10.15	19.38	-9.23	1.07	10.16	US
Australia	17.8	0.052	17.8	1648	18,000		7.41	16.69	-9.29	1.65	9.80	Austria
Austria	8	0.128	8	1136	24,630		7.04	15.89	-8.86	2.55	10.11	Australia
Belgium	10.1	0.181	10.1	2868	22,870		7.96	16.13	-8.17	2.90	10.04	Belgium
Canada	29.2	0.030	29.2	2220	19,510		7.71	17.19	-9.48	1.11	9.88	Canada
Denmark	5.2	0.046	5.2	560	27,970		6.33	15.46	-9.14	1.52	10.24	Denmark
Finland	5.1	0.098	5.1	732	18,850		6.60	15.44	-8.85	2.29	9.84	Finland
Ireland	3.6	0.082	3.6	574	13,530		6.35	15.10	-8.74	2.10	9.51	Ireland
Italy	57.1	0.188	57.1	9445	19,300		9.15	17.86	-8.71	2.93	9.87	Italy
Netherlands	15.4	0.054	15.4	1485	22,010		7.30	16.55	-9.25	1.69	10.00	Netherlands
Norway	4.3	0.117	4.3	1226	26,390		7.11	15.27	-8.16	2.46	10.18	Norway
Spain	39.1	-	39.1	3262	13,440		8.09	17.48	-9.39	#NUM!	9.51	Spain
Sweden	8.8	0.042	8.8	760	23,530		6.63	15.99	-9.36	1.44	10.07	Sweden
Switzerland	7	0.047	7	575	37,930		6.35	15.76	-9.41	1.55	10.54	Switzerland
Russia	148		148	52805	2,650		10.87	18.81	-7.94	#NUM!	7.88	Russia
Poland	38.5		38.5	6188	2,410		8.73	17.47	-8.74	#NUM!	7.79	Poland
Bulgaria	8.4		8.4	1044	1,250		6.95	15.94	-8.99	#NUM!	7.13	Bulgaria
Czech Republic	10.3		10.3	1767	3,200		7.48	16.15	-8.67	#NUM!	8.07	Czech Republic
Romania	22.7		22.7	1255	1,270		7.13	16.94	-9.80	#NUM!	7.15	Romania
Portugal	9.9	0.173	9.9	1771	9,320			16.11	-8.63	2.85	9.14	Portugal
NZ	3.5	0.064	3.5	300	13,350		5.70	15.07	-9.36	1.85	9.50	NZ
Hungary	10.5		10.5	1523	6,100							
India			850	32000								
1/3000 line			1	333								
1/30,000 line			3	100								