6 October 2005

PRESENTATION IN THE ROUND TABLE HOSTED BY DE NEDERLANDSCHE BANK ON 14 OCTOBER 2005

CENTRAL BANK RESERVE MANAGEMENT:
A EUROPEAN VIEW ON RETURN VERSUS LIQUIDITY

Pentti Hakkarainen, Member of the Board

Suomen Pankki – Bank of Finland

Let me first say how delighted I am to have an opportunity to share my views on this important topic with such a prominent group of people.

What could be a European view on central bank reserve management and especially on return versus liquidity? This was probably the question I pondered the most when outlining this short presentation. Management of central bank reserves is such a global topic and subject to such a spectrum of principles, that applying any geographical viewpoint when addressing the issue seems somewhat artificial.

Having said that, however, one can also see specific developments which have taken place in Europe and in the euro area during the last 5 to 10 years – developments which may have led us to have a slightly different angle when approaching this interesting topic. Just by observing what central banks in Europe have done to their balance sheets and investment policies allows one to draw some general conclusions.

Before going further, I would like to mention the well known fact that the level as well as the composition of central bank reserves is always a result of various factors. Some of these factors are more under the control of the current central bank decision makers and some are less so. There are many valid reasons why central banks cannot make large, rapid and regular changes to their reserves and investment policies, even though the underlying willingness to do so may exist.

1. Reserve management framework in the Bank of Finland

Let me start by briefly characterising the reserve management framework in the Bank of Finland, which has remained largely unchanged since Finland joined the euro. It may not be the best example of a trend in Europe, however it does illustrate one approach. After the EMU entry the Bank has invested in corporate bonds, increased duration of investments and started "active investment management".

In accordance with our strategic policies, the Bank of Finland takes the long-term perspective in managing its foreign reserves and handles them in a professional and active manner, on the basis of strict risk management principles.

The Bank of Finland holds foreign reserves in order to meet any additional transfer needs of foreign reserves to the ECB and the financing requirements of the International Monetary Fund (IMF), as well as to prepare for contingencies, such as serious disruptions in the financial markets.

When measured in euro terms, the size of the Bank's foreign reserves has remained stable. The key objectives of the Bank's investment policy – security, liquidity and return – have remained unchanged. The security objective refers to the requirement that the market value of foreign reserves must not fluctuate excessively as a result of the various risks involved. In addition, part of the reserves must be sufficiently liquid; it must be possible to convert it into cash sufficiently quickly and at low cost, whenever needed. Within these constraints, the aim is to obtain the best possible return.

The cornerstone of our investment policy is effective portfolio diversification. This especially concerns currency diversification, since the Bank of Finland holds only foreign (non-euro) assets. The fact that the Bank of Finland does not have a euro portfolio distinguishes it from most other euro area central banks.

The Bank of Finland attempts to limit exchange rate risk by spreading its holdings of foreign reserve assets among six different currencies (USD, GBP, DKK, SEK, CHF and JPY). The benchmark currency distribution is reviewed at 2–3 year intervals. Between the reviews, the actual currency distribution is kept as close as possible to the benchmark currency distribution. Since November 2002, the benchmark currency distribution has remained unchanged.

The interest rate risk associated with the reserves has been mainly measured and managed in terms of duration. The target duration of 2.5 years is applied to all the currencies included in the foreign reserves. Also the value-at-risk (VaR) method has been adopted for risk management purposes.

Most of the reserves are invested in the government (sovereign) paper, but approximately a quarter of the foreign reserves are invested in debt instruments issued by entities with a high credit rating, such as corporates. The credit risk inherent in the credit portfolio is also measured using the VaR method. Effective portfolio diversification is crucial in the management of credit risk. Diversification is achieved by setting maximum limits and minimum credit rating criteria for issuers and counterparty banks and maximum limits for the VaR figures derived for the credit risk on the credit portfolio.

The portfolio that is assessed as being best suited to the Bank's long-term investment objectives is expressed in terms of currency distribution and currency-specific benchmark portfolios. The currency distribution and the structure of benchmark portfolios largely determine the return on invested reserves. The aim of active investment is to obtain a return on invested reserves that is higher than the return on the benchmark portfolios.

This, briefly, describes the reserve management framework in the Bank of Finland.

Let me now take a wider and somewhat more general perspective.

2. Determinants and policy requirements for central bank reserve management frameworks

In a simplified framework, the objectives for holding central bank reserves can be seen as stemming from two types of risk; macroeconomic risks and microeconomic risks.

2.1. Macroeconomic and microeconomic risks

Macro risks will always remain the primary risks for a country (or a central bank) to hold reserves against, as they concern not only the risks to monetary, foreign exchange and financial stability, but also risks to the safe functioning of the national economy or the currency area.

The fact that it is the central bank as holder of the country's reserves against macroeconomic risks originally results from an innate division of labour within the country. Due to the nature of a central bank's objectives and other functions, it is the natural institution for the task of holding reserves on behalf of the society it serves.

Although micro risks are also very important, but only secondary when compared to macro risks, as they "only" concern the financial result of the central bank. In this respect, micro risks have implications not only for the financial result of the central bank itself but also its stakeholders, e.g. the Government, to which at least a part of the financial result of the central bank is transferred normally.

In order to fully see the relative importance of macro and micro risks, it is worth emphasising the causality between them. Macro risks are the reason for holding reserves, whereas micro risks are a consequence of holding reserves.

There is a trade off between macro and micro risks. This is partly due to the very different nature of these risks. A central bank may try to eliminate micro risks which can lead to exposing the country more to macro risks. Similarly, by trying to minimise the country's exposure to macro risks, the central bank may tend to face more micro risks.

2.2. Changing weights of macro and micro risks in Europe

Managing macro and micro risks, and the trade-off between them, is difficult since these risks are not perceived as being fixed over time. The weights given to these risks by society and decision makers vary over time. As macro risks materialise during financial turbulence or otherwise hard times, the weight given to them tend to decrease when good times prevail.

When thinking about the framework for defining the level of reserves, liquidity and the composition, a crucial decision concerns the weights placed on macro and micro risks. Although there are many sophisticated tools, techniques and frameworks to approach this problem, one cannot hide from the fact that these weights are often only defined implicitly and they characterise how the world is perceived. Assessment of the risks is, to a significant degree, a highly subjective matter. The reason that this task is primarily given to central bankers probably results from the expectation that central bankers have a longer horizon than other national decision makers and therefore have a comparative advantage in avoiding myopia and getting carried away when times are good.

Looking at the global and European experience in this respect, I would like to make three observations.

First, when reserves are increased – deliberately or otherwise – the central bank becomes stronger in facing macro risks. However this means that micro risks, ie the risks concerning financial results of the bank, may increase. This has been evident not only in Asia during the last few years, but also in some countries in Europe. For instance, a strong inflow of foreign capital has resulted in a significant accumulation of foreign reserves in the new EU member states.

Second, it also appears that in the euro area macro risks are now deemed smaller than they were before the introduction of the common currency and the monetary union. There are probably many good

reasons for this attitude. The change, in this respect, differs from one country to another. A common factor, however, seems to be that the institutional framework supports this trend. It appears that the creation of the Eurosystem has freed a part of the reserve management constraints which was held against macro risks and which is now available for more active management, ie creating potential micro risks.

Personally, I do not believe that macro risks as such have significantly decreased since the introduction of the euro. However, I believe that with the Eurosystem we are provided with more tools to manage macro risks. We have new institutions which share the management of some macro risks with the national central banks. The best example of this is the ECB which, with its foreign reserves, now takes primary responsibility for possible FX interventions. In addition, for many euro area countries the euro is a more usable currency to hold against macro risks than previous national currencies. For instance, the Finnish markka was not, in our case, a reserve currency to hold against macro risks, whereas the euro has many favourable characteristics in this respect.

My third observation concerns the increased freedom that the euro area central banks have today in arranging their financial assets. The euro area central banks have an indisputably independent position from which to carry out their tasks, in comparison to other European or governmental bodies. Independence has not only offered freedom, but also an obligation to have a more efficient, skilful and careful approach to managing micro risks. Euro area central banks are more accountable than ever for showing, through their actions, that they fully deserve their independent role.

3. Liquidity and return characteristics of central bank reserve management

Although the specific words may differ from one central bank to another, safety, liquidity and return are the objectives of reserve management which are most often set by central banks. The Bank of Finland is no exception to this rule.

3.1. Liquidity reserves

In order to simplify the task of defining investment policy for total reserves on the basis of these three objectives, there is a tendency to divide total reserves in two parts, at least metaphorically. I shall refer to these two parts as liquidity reserves, which are held primarily against macro risks, and investment reserves which can be managed concentrating more on maximising return at the chosen level of financial risks. In the current financial markets this division may not lead to different returns, since these reserves can be managed based on almost similar risk-return -ratios.

Liquidity reserves should be managed in a way which keeps the probability of losses very low over the short-term. Against this background, it is not difficult to see why liquidity and safety take priority over the search for return, when the investment policy is formulated.

The reason for emphasising liquidity and capital preservation naturally is that at a time when macro risks materialise, it would be excessively costly for a country without access to reserves and especially foreign assets. The inability to deliver foreign assets in stress situations and turbulent market conditions can have drastic effects on the real economy and lead to a significant reduction of national income and wealth.

Therefore, having determined the level of liquidity reserves, the very nature of the reserves obliges the implementation of a conservative investment policy. The obligation to be conservative is normally not a great challenge for a central banker.

Liquidity reserves are thus invested in a manner which guarantees, as far as possible, that the assets are usable practically immediately when the central bank or the country needs them the most. For this reason liquidity reserves are normally allocated to a small number of major international currencies and invested in the most liquid and creditworthy assets in those currencies.

For instance, at the Bank of Finland we concretize the liquidity requirement as expecting that 25% of invested reserves should be highly liquid. In terms of high liquidity, only government securities, up to one month repurchase agreements and up to one month deposits in the six reserve currencies can be defined as such.

3.2. Investment reserves and how to manage them

As regards investment reserves, the investment horizon and maintenance period are longer than for liquidity reserves and restrictions regarding safety and liquidity are looser. The investment policy can put more emphasis on maximising return. The investment policy which is optimal for liquidity reserves is not applicable to investment reserves.

When setting an investment policy for investment reserves, central bankers should probably listen more carefully to what asset management professionals, investment bankers and why not even other long term investors have to say. Although the optimisation of a central bank's investment portfolio still comprises restrictions which are not common to the private sector long term investors, the goal of reaching for an efficient frontier is in fact not that different.

So, what advice can asset management professionals give us central bankers, today? Most recently, at least, the following recommendations have reached my ears most often.

First, investment bankers tell us that we should differentiate the currency allocation from the country allocation. Placements can be made separately from managing foreign exchange exposure with currency overlay and thus making use of the best characteristics of both markets. As the currency and bond returns have a relatively low correlation, this would give a significant opportunity to reduce risk without having a negative effect on the return of the total portfolio. What makes this advice especially interesting in my view is the fact that following it would not necessarily increase the cost of liquidating the portfolio, even in distressed conditions.

Second, investment bankers tell us to relax individual duration constraints within each country sector and focus more on total portfolio risk. Being more efficient in taking advantages of the various shapes of yield curves and different covariance amongst the maturity sectors delivers opportunities to both increase return and reduce risk. In essence, for most central banks this also means higher durations.

Third, investment bankers tell us to relax the credit constraints on our portfolios and to widen the array of instruments. Allowing the portfolio to extend into investment-grade credits or even beyond and into instruments like ABS and MBS would again allow improvement in efficiency of the total portfolio, as measured by the Sharpe Ratio type criteria. As we are nowadays continuously reminded, moving away from government risk to credit risk actually allows us to reduce the total risk of the portfolio while increasing returns. This is supported by the Bank of Finland's experience with corporate debt.

The advice given by investment bankers is, of course, correct when judged on the basis of the models and assumptions used. However, the advice may often be derived from too narrow a framework. By this I mean that the advice is often asset management oriented rather than having a more comprehensive asset and liability management framework behind it.

Intuition tells us that central banks which are separate legal entities, more and more like private companies, with their own balance sheets and income statements cannot overlook their liabilities when formulating asset management and investment policies. Even though central banks have unique tasks and objectives which differ from the private sector, it should not mean that central banks can be complacent about their funding structures, about their obligations and about what is done in the world of investment management in general.

In this respect, I would like to put a number of open questions to you. How do central banks generally see their balance sheet liabilities, such as banknotes and equity? What are their costs and interest rate characteristics? Should the way in which the central bank assets are financed affect the way they are invested? For instance, should we see banknotes as having a redemption obligation and if so, should this have an effect on the duration guidelines when setting investment policies? Should part of the assets be earmarked as financed through equity?

An opponent to this approach could of course say that what suits pension funds, for example, is not really applicable to central banks. Central banks are entities which can actually set the cost structure of their balance sheets by, for example, deciding on policy interest rates. Central banks can create funds through issuing banknotes. Yet, on-balance sheet liabilities may not fully characterise the total liabilities of the central bank, for instance, in a serious financial stress.

However, central banks have more and more similarities with private sector long term investors, such as pension funds. Both have long-term liabilities or objectives. Confidence is the core element in both businesses. Both have to demonstrate reliably that future obligations can be met. Since obligations materialize in the distant future, both institutions require decent return on assets invested to maintain or increase the real value of the assets.

Both have increased demand to carry out their activities, also when it concerns the area of investment, in a transparent manner. In general, central banks are not yet required to report on their financial performance more than annually. It may only be a question of time when evaluation of performance is carried out more often.

Despite some similarities, it is perhaps needless to say that they are not identical or comparable peers as such.

In any case, I think it is fair to say that more attention should be paid to comprehensive asset and liability management in central banks too. The liability side of the balance sheet always contains crucial information on dependencies between different balance sheet items and understanding them fully is a prerequisite for setting an investment policy that maintains a strong central bank balance sheet. The characteristics of liabilities naturally have an impact on the entire interest rate risk of the balance sheet and certainly on defining the duration of the invested assets.

Perhaps one weakness in the recommendations offered to central bankers is the fact that they are often derived by simple mean-variance optimisation frameworks. The models use estimated parameters, such as correlation coefficients, which are often treated as stable. This may be a serious weakness, since central banks' investment policies have traditionally been defined especially for those periods when these parameters tend to break down. Central banks may not be prepared to accept losses, and thus understanding the asymmetry of dispersion and the potential negative outcomes is necessary.

It is important to emphasise that central bank specific restrictions significantly limit setting investment policies for investment reserves. Again, these restrictions probably vary among central banks in their nature and number. Also the size of the central bank and its role in the global scene has an effect on how restricted it feels. Developments during recent years seem to confirm this observation.

In general, it can be said that European central banks have probably fewer restrictions and they can move faster and more flexibly than 10 years ago. Even though the trend in reserve management has provided more freedom, there is one abstract and important restriction; the so-called reputation risk. There are many ways to define reputation risk. None of the definitions are exhaustive and can sometimes be deemed contradictory. For instance, reputation can be damaged when a central bank incurs loss due to the default of a debt security, even though the effect on the total portfolio return can be marginal.

There may be some practical hindrances to implementation of a modern investment policy for investment reserves like, for example, IT systems, experience and skills. In some cases, it may not be possible to include a new financial instrument in the investment universe, due to the IT system available or a lack of skills, even though it would be optimal from the portfolio performance point of view. Of course, this would give the incentive to an investment banker to offer advice using external asset management (i.e. outsourcing) to circumvent these restrictions.

The justification for a central bank to manage liquidity reserves is clear and often written in national legislation. The justification for managing investment reserves or assets in the excess needed for macro risks is not as clear. In fact, if the central bank does not manage investments and risks efficiently following the highest professional standards, one should not be surprised to hear occasional comments questioning the birthright of the central bank to manage them. Especially, when investment reserves are mostly held in domestic currency, their link to central bank policy tasks may not be that clear to outside observers. On top of which, one can expect more regular comparisons with the performance of similar investors managing wealth, such as pension funds. As a result of increased transparency and accountability requirements, central banks cannot avoid this kind of exposure.

4. Conclusions

I would like to end now by drawing the following conclusions.

It is clear to me that the liquidity requirement today, as seen in its strictest form, is applicable to a smaller proportion of central bank reserves in the euro area than it was before the introduction of the euro. The common currency and its track record so far support the notion that the macro risk burden of a national central bank is partly carried by the European institutional framework and therefore, national foreign reserves have been reduced. However, this may not have diminished the need for reserves. The euro may have partly just substituted foreign currencies in central banks' financial assets since it may be deemed useable in crisis situations, as any foreign currency.

At the same time, as we are due to hear in the next session in greater detail, one can see that the balance sheets of the euro area central banks are not becoming smaller. On the contrary, the continuous growth of the Eurosystem liabilities due to the strong demand for euro banknotes has meant that also the asset side of the Eurosystem balance sheet has continued to grow.

Following these two effects, both of which interestingly result from the success of the common currency, many euro area central banks are facing a situation where their investment reserves are on a progressive path. This has meant, and will continue to mean, that the portfolio-theoretic thinking and the return objective will take a larger role when setting investment policies in the euro area central banks.

From both the European and the euro area point of view the return and liquidity determinants for setting investment policies have indeed changed. In terms of asset allocation, there is more leeway between foreign currency and domestic euro assets. In this environment concentrating only on asset

management techniques is probably too narrow an approach and more attention should be paid to the liability side of the central bank balance sheet.

In any case, euro area central banks have become increasingly accountable for managing national wealth through the exercise of prudent stewardship.