

Ajith Nivard Cabraal: Expanding financial services in Sri Lanka

Address by Mr Ajith Nivard Cabraal, Governor of the Central Bank of Sri Lanka, at the opening of a new branch office in Jaffna by The Hongkong & Shanghai Banking Corporation Ltd, Jaffna, 11 February 2010.

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My dear friends,

I am delighted to be here in Jaffna today for the opening of a new branch of HSBC, one of the market leaders in global banking. The history of the HSBC in Sri Lanka could be traced back to 1884, when it first commenced operations in Colombo. Today, the largest foreign bank operating in Sri Lanka has moved to Jaffna bringing banking to the doorsteps of people in the Northern Province. This is indeed a historic milestone.

This development did not happen by chance. It did not take place automatically. With the liberation of our entire nation in May last year, the Government and the Central Bank have taken determined efforts to expand financial services, facilitate and stimulate economic activities, and develop infrastructure in the North and the East. In fact, I have personally participated at several bank branch openings during the last few months, and our officers have been following up the progress, and these outcomes are a result of such combined efforts. Today, I can proudly say that an ever-growing number of financial institutions operate in the North and that these provide diverse financial services, whilst of course we would be the first to admit that a lot more needs to be done.

My dear friends, the development and maintenance of essential public infrastructure is an important ingredient for sustained economic growth and poverty reduction. In particular, health, education, electricity, housing and efficient water and sanitation services help lay the groundwork for a productive and healthy population, capable of contributing to sustained economic growth. We all know that as a result of the long and bloody conflict, the infrastructure facilities in the North could not be developed as done in the other Provinces. It is due to that fact that, with a view to fast tracking the development in the North, the Government has now launched a well-planned, integrated, accelerated development program titled "Vadakkinn Vasantham." Under this program, the Government expects to invest approximately Rs. 295 billion (US\$ 2.7 billion) during the next 3 years, towards rehabilitation and development activities. This program is expected to cover the rehabilitation of roads and other transportation infrastructure, the upgrading of electricity for domestic housing and industry, water supply, agriculture and irrigation infrastructure and the improvement of the manufacturing framework. The Government also intends to implement a special poverty reduction program and establish the required social safety net, quickly.

My dear friends, as we all know, the speedy resettlement of the internally displaced people has also been a top priority for the Government. Towards this goal, many extraordinary efforts have been taken. Out of the over 300,000 internally displaced persons who were rescued and had to be temporarily housed in welfare camps, over 217,000 or 72% have already been resettled. All those from Vavuniya, Mannar, Jaffna, a part of Mulativu and Killinochchi have now returned to their homes. The others mainly from Mulativu and Killinochchi are also to be resettled systematically without any undue delay, depending on the speed at which the de-mining processes take place. This is an outstanding achievement against all odds, and I believe the successful resettlement is a tribute to the deep commitment of the Government, the tremendous efforts of our public service and the dedicated contribution of several international organizations. I am also tempted to mention that this surprising outcome may have been a pleasant surprise to many who at certain times

expressed the belief that the government may not have had the inclination nor the urgency to carry out this challenging task so expeditiously.

My dear friends, the Central Bank has also contributed its mite to these normalization processes. We have, so far, over the past 8 months, granted approvals for the establishment of more than 90 banking outlets in the Northern Province. We have introduced a Special Loan Scheme, also titled “Vadakkinn Vasantham” to boost the livelihood development of the people in the North. Under this scheme, an initial sum of Rs. 3,000 million has been appropriated to be disbursed at a concessionary interest rate of 9% per annum to the eligible micro, small and medium scale enterprises, through several Participating Financial Institutions. The repayment period could extend up to 5 years with a grace period of 6 months. I am happy to note that over 9,000 loans amounting to Rs. 1.8 billion have already been registered with the PFIs and disbursements of over Rs 1 billion has taken place.

My dear friends, the rich resources of the North, including its forests, agricultural land, wet lands, lagoons and bays provide a solid base for many enterprises. Even during the conflict period, the Northern Province accounted for 10 percent of the paddy production, 40% of Red Onions, 10% of Chillies, 14% of Green Gram and 25% of Ground Nuts. These statistics indicate that there would be many viable income generating activities which could be promoted to upgrade the livelihood of the people, with the assistance of the banking sector. It has been estimated that 129,000 fishermen, representing 20 percent of the total number of fishermen in our country, live in 219 fishing villages in the Northern Province. In the year 2006, the total fish production from the North stood at 25,900 MT, representing 12 percent of the country's total production. These facts also indicate that the income generating activities in the fisheries sector too could be developed substantially in the coastal areas with the provision of appropriate banking facilities, particularly for multi-day boats, fishing gear and other ancillary needs such as ice plants, and storage facilities.

Over the past several years, the Central Bank has also initiated several credit schemes applicable throughout the country, aimed at promoting regional development and poverty alleviation. In particular, work has commenced on a new Poverty Alleviation Micro Finance Project to cover conflict-affected districts. Approximately 3,000 beneficiary groups with more than 12,000 low-income families have already been organized within the Jaffna peninsula under this project. We have also fast-tracked the Agro-Livestock Development Loan scheme, which is another scheme that could provide increased benefits to this Province.

My dear friends, during the several recent visits that I made to Jaffna, I always made it a point to meet with the Chambers of Commerce officials, bankers, Teachers, students, villagers, fishermen and many others. We received many valuable suggestions from them. In particular, we received too very useful ideas to open a Central Bank's Provincial Office and to arrange for a Special Northern Regional Development Fund for the Northern Province. I am glad to announce today that we will implement both such initiatives in the coming months.

My dear friends, I thought it may also be appropriate to use this opportunity to make a special appeal to the Sri Lankan Tamil Diaspora, living in all parts of the world. The decades long conflict which sapped our combined energies in various ways, is finally behind us. Therefore, it is now time for all of us to get together and rebuild our nation, in particular, the areas that have suffered. We, on our part, are keen to assist the people of the North to resume normal lives as soon as possible. Towards that outcome, we believe the Diaspora too could play an active role and become partners in the development process of the North. They can be an important influence to accelerate investments to these areas and thereby support the expansion of industrial activity and tourism. Needless to say economic opportunities in the North are expanding day by day, and I would like to urge overseas Sri Lankans to take an early look at emerging investment opportunities in these areas, particularly in the fields of IT, education and real estate development where they can surely and effectively contribute.

I would also urge the Chambers of Commerce and Industries, and other similar Associations to consider establishing international institutional frameworks and links, which would pave the way for two-way interaction between the overseas Sri Lankan community and our local institutions and businesses. Such relationships could then act as focal points to promote remittances and investments into the domestic economy, as well.

My dear friends, today, we meet in the midst of a significant change in our country's economic and political landscape. The end of the decades long conflict has resulted in the creation of a significant positive impact, not just in the Northern Province, but also in the entire country. To benefit by this positive outlook, it is crucial that we start new businesses and expand on-going ventures. In this regard, I am happy to note that the HSBC, which brands itself as the "World's Local Bank", could now offer both corporate and small customers a full range of financial products and services. In doing so, they, as well as all other banks who are doing business in these emerging areas, will face the challenges of borrowers not possessing long credit histories or not possessing adequate collateral. This situation will certainly pose challenges, but we would like to urge all bankers that they should practice innovative cash flow based lending methods at least for 2 to 3 years, and not to be too constrained by security based lending only. I also urge financial institutions to lend the money mobilized from the region for the development of this region.

Finally, let me place on record my appreciation of the presence of the High Commissioner of the UK, Dr. Peter Hayes at this opening ceremony. Your support to this effort would certainly encourage the business community both here in Jaffna and elsewhere in Sri Lanka, and I thank you for your gesture. Let me also congratulate HSBC on this auspicious occasion of opening the first foreign bank branch in Jaffna. The HSBC Bank with its global connections could now facilitate financial transactions in the North with all parts of the world, while HSBC's presence in the Jaffna Peninsula from today onwards, would convey an important signal to the world that tangible progress is being made in post conflict Sri Lanka. I wish Mr Nick A Nicolaou, his team in Sri Lanka the HSBC and all their customers, especially the ones in this area, all success.

Thank you.

Lars E O Svensson: Inflation targeting after the financial crisis

Speech by Prof Lars E O Svensson, Deputy Governor of the Sveriges Riksbank, at the International Research Conference “Challenges to Central Banking in the Context of Financial Crisis”, Mumbai, 12 February 2010.

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I thank Charles Bean, Claes Berg, Alan Blinder, Stephen Cecchetti, Chuck Freedman, Charles Goodhart, Lars Nyberg, Irma Rosenberg, Hyun Shin, Frank Smets and Staffan Viotti for discussions of these issues. The views expressed here are my own and not necessarily those of other members of the Riksbank’s executive board or of the Riksbank’s staff. Hanna Armelius and Hans Dellmo of the Riksbank’s staff contributed to this speech.

As the world economy begins to recover from the financial crisis and the resulting deep recession of the global economy, there is a lively debate about what caused the crisis and how the risks of future crises can be reduced. Some blame loose monetary policy for laying the foundation for the crisis and there is a lively debate about the future of monetary policy and its relation to financial stability. Here I will discuss the lessons for inflation targeting after the crisis. My view is that the crisis was not caused by monetary policy but mainly by regulatory and supervisory failures in combination with some special circumstances. Ultimately, my main conclusion for monetary policy from the crisis so far is that flexible inflation targeting, applied in the right way and using all the information about financial factors that is relevant for the forecast of inflation and resource utilization at any horizon, remains the best-practice monetary policy before, during, and after the financial crisis. But a better theoretical, empirical and operational understanding of the role of financial factors in the transmission mechanism is urgently required and needs much work, work that is already underway in academia and in central banks.

So I will focus on two particular issues: whether monetary policy caused the crisis and what the possible lessons for future monetary policy are.¹

Best practice before the crisis: Flexible inflation targeting

It is probably not a surprise to hear that I consider flexible inflation targeting the best-practice monetary policy. The Riksbank and all the other inflation-targeting central banks conduct *flexible* inflation targeting rather than *strict* inflation targeting. Flexible inflation targeting means that monetary policy aims at stabilizing *both* inflation around the inflation target and the real economy, whereas strict inflation targeting aims at stabilizing inflation *only*, without regard to the stability of the real economy, what Mervyn King (1997) has described as being an “inflation nutter”. By stabilizing the real economy I mean stabilizing resource utilization around a normal level, keeping in mind that monetary policy cannot affect the long-term level of resource utilization.²

Because of the time lags between monetary-policy actions and their effect on inflation and the real economy, flexible inflation targeting is more effective if it relies on forecasts of inflation and the real economy. Therefore, flexible inflation targeting can be described as “forecast targeting”: the central bank chooses a policy-rate path so that the forecast of inflation and resource utilization “looks good.” By a forecast that looks good I mean a forecast for inflation and resource utilization that effectively stabilizes both inflation around

¹ I have previously discussed these issues in Svensson (2009 b).

² The term “inflation nutter” for a central bank that is only concerned about stabilizing inflation was introduced in a paper by Mervyn King at a conference in Gerzensee, Switzerland, in 1995 and later published as King (1997). The terms “strict” and “flexible” inflation targeting were to my knowledge first introduced in a paper of mine presented at a conference at the Bank of Portugal in 1996, later published as Svensson (1999).

the inflation target and resource utilization around a normal level. In the event of conflicting objectives, it achieves a reasonable compromise between the stability of inflation and the stability of resource utilization. Different central banks express this in slightly different words. The Riksbank has often used the term “well-balanced” monetary policy.³

The forecasts of inflation and the real economy are then conditional on the central bank’s view of the transmission mechanism, an estimate of the current state of the economy and a forecast of important exogenous variables. The central bank uses all relevant information that has an impact on the forecast of inflation and the real economy. In this framework, the central bank takes financial conditions such as credit growth, asset prices, imbalances, potential asset price bubbles and so on into account only to the extent that they have an impact on the forecast of inflation and resource utilization. Inflation and resource utilization are target variables, that is, variables that the central bank tries to stabilize. Financial conditions are not target variables. Instead, they are only indicators, as they provide information to the central bank about the state of the economy, the transmission mechanism and exogenous shocks. Financial conditions then affect policy rates only to the extent that they have an impact on the forecast of inflation and resource utilization.⁴

Now, is there any reason to modify this view of monetary policy given the experience of the financial crisis so far? Let me approach this question by first asking what the causes of the financial crisis were, whether monetary policy contributed to the crisis, and whether a different monetary policy was warranted and could have prevented or reduced the size of the crisis.

The financial crisis was not caused by monetary policy

Many have claimed that excessively easy monetary policy by the Federal Reserve after 2001 helped cause a bubble in house prices in the U.S., a bubble whose inevitable bursting proved to be a major source of the financial crisis.⁵ However, as I see it, the crisis was mainly caused by factors that had very little to do with monetary policy and were mostly due to background macro conditions, distorted incentives in financial markets, regulatory and supervisory failures (also when central banks have been responsible for regulation and supervision), information problems and some specific circumstances, including the U.S. housing policy to support home ownership for low-income households.⁶

The *macro conditions* preceding the crisis included low world real interest rates associated with global imbalances, as well as the Great Moderation, with a long period of very stable growth and stable low inflation, which led to a systematic underestimation of risk and very low risk premia in financial markets. There were *distorted incentives* for commercial and investment banks to increase leverage that were made possible by lax regulation and supervision and the lack of an appropriate bank resolution regime. There were also distorted

³ The idea that inflation targeting implies that the inflation forecast can be seen as an intermediate target was introduced in King (1994). The term “inflation-forecast targeting” was introduced in Svensson (1997), and the term “forecast targeting” in Svensson (2005). See Woodford (2007a, b) for more discussion and analysis of forecast targeting.

⁴ Several central banks that do not call themselves inflation targeters effectively do conduct flexible inflation targeting, although they may not be quite as transparent about their inflation target, the role of stability of the real economy, etc.

⁵ See, for instance, Taylor (2007).

⁶ See Bean (2009) for an extensive and excellent discussion of the crisis, including the credit expansion and housing boom, the macroeconomic antecedents, the distorted incentives, the information problems, the amplification and propagation of the crisis into the real economy, the policy responses and the lessons for monetary policy and economics generally. The Bank for International Settlements (2009) provides a more detailed account of the possible macro- and microeconomic causes of the crisis.

incentives to exercise less due diligence in loan origination because of securitisation and to conduct regulatory arbitrage by setting up off-balance-sheet entities, which for various specific reasons ended up still effectively remaining on the balance sheet. There were also distorted incentives for traders and fund managers to take excessive risks because of myopic and asymmetric remuneration contracts. There were eventually enormous *information problems* in assessing the risks of extremely complex asset-backed securities, and there was a huge underestimation of the potential for correlated systemic risks. None of these causes had anything to do with monetary policy, except that monetary policy may have contributed to the Great Moderation.

Regarding the role of Federal Reserve monetary policy in the crisis, there are two relevant questions. First, was the low interest rate reasonable given the information available at the time? Second, could a different monetary policy with higher interest rates have prevented the crisis? The first question, whether the low interest rate was reasonable given the available information, is the relevant one when evaluating monetary policy. It is more relevant to evaluate policy taking into account the information available *ex ante* to the policymaker rather than information *ex post* that was unknown to the policymaker at the time (see Svensson, 2009a, on evaluating monetary policy *ex ante* and *ex post*).⁷ During the period in question, given the information available, there was a genuine and well-motivated fear of the U.S. falling into a Japanese-style deflationary liquidity trap, and the optimal policy in such a situation is a very expansionary monetary policy.⁸ It may be that, in retrospect, the risk of deflation was exaggerated, but there was no way to know this *ex ante*. Hence, I consider the expansionary policy very appropriate. Adding some *ex post* evaluation, one can note that it did not lead *ex post* to very high inflation or an overheated economy.⁹

The second question, whether a different monetary policy could have prevented the crisis, is relevant when assessing to what extent monetary policy can be blamed for causing the crisis, notwithstanding if it was reasonable from an *ex ante* perspective. The credit growth and the housing boom in the U.S. and elsewhere were very powerful. Real interest rates were low to a large extent because of global imbalances, the global saving glut and investment shortage. I believe that somewhat higher interest rates would have made little or no difference. Empirical evidence indicates that only a small portion of house-price increases can be attributed to monetary policy.¹⁰ Bernanke (2010) shows that the recent phenomenon of a higher share of adjustable-rate mortgages was unlikely to have significantly increased the sensitivity of house prices to monetary policy. The availability of new, more exotic mortgage types mattered much more for initial mortgage payments than the level of short-term interest rates. In my view, interest rates would probably have had to be raised very high so as to cause considerable damage to the real economy in order to stop the credit growth and housing boom.¹¹ That could have thrown the U.S. right into Japanese-style deflation and eventually a liquidity trap. Certainly, higher interest rates would have had no impact on the regulatory problems, distorted incentives and information problems mentioned above

⁷ I remember this period very vividly, because I was fortunate to have the opportunity to discuss and debate the problems of current monetary policy, deflation and liquidity traps in a group of great economists at Princeton University that included Ben Bernanke (before he left to be a Governor on the Federal Reserve Board), Alan Blinder, Paul Krugman, Chris Sims and Michael Woodford.

⁸ See Svensson (2003) for a discussion of policy options before and in a liquidity trap.

⁹ Bernanke (2010) shows that Fed policy rates do not seem excessively low given real-time FOMC forecasts.

¹⁰ See Del Negro and Otrok (2007), Jarocinski and Smets (2008), Edge, Kiley, and Laforte (2008), and Iacoviello and Neri (2008).

¹¹ See Nyberg (2010) for similar arguments.

(although they could have ended the Great Moderation with a deep recession and deflation).¹²

However, going beyond the Fed's actual monetary policy, perhaps it is possible that the Fed's emphasis on its readiness to relax monetary policy aggressively in the wake of a sharp fall in asset prices, as expressed by Greenspan (2002) for example, may have induced expectations of a floor under future asset prices and contributed to the asset-price boom, the so-called Greenspan put (Miller, Weller and Zhang, 2002). Arguably, this is more of a communication issue than one of actual policy, and less emphasis on the readiness to clean up after a sharp fall in asset prices might have been a preferable alternative.

The International Monetary Fund (2009, Chapter 3) has investigated the role of monetary policy in causing financial crises. A large number of countries and financial crises were included in the sample. The conclusion is that "the stance of monetary policy has not generally been a good leading indicator of future house price busts... There is some association between loose monetary policy and house price rises in the years leading up to the current crisis in some countries, but loose monetary policy was not the main, systematic cause of the boom and consequent bust." Further-more, the overall relationship between the stance of monetary policy and house-price appreciation across countries in the years before the current crisis is statistically insignificant and economically weak, and monetary policy differences explain only about 5 percent of the variability in house price appreciation across countries.¹³

Lessons for flexible inflation targeting

What conclusions can we draw so far from the financial crisis about the conduct of monetary policy and any need to modify the framework of flexible inflation targeting? One obvious conclusion is that price stability is not enough to achieve financial stability (Carney 2009, White 2006). Good flexible inflation targeting by itself does not achieve financial stability, if anyone ever believed that. Specific policies and instruments are needed to ensure financial stability.

Another conclusion is that interest-rate policy is not enough to achieve financial stability. Other instruments like supervision and regulation, including appropriate bank resolution regimes, should be the first choice for financial stability. In many countries, the responsibility for these instruments rests on authorities other than the central bank. Generally, to the extent financial instability depends on specific distortions, good regulation should aim to attack these distortions as close to the source as possible. To counter the observed procyclicality of existing regulation, macro-prudential regulation that is contingent on the business cycle and financial indicators may need to be introduced to induce better financial stability. Possible macro-prudential regulation includes variable capital, margin, and equity/loan requirements. As expressed by Bean (2009), "the best approach is likely to involve a portfolio of instruments".¹⁴

More generally, what is the relation between financial stability and monetary policy? Financial stability is an important objective of economic policy. A possible definition of financial stability is a situation when the financial system can fulfil its main functions (of submitting payments, channelling saving into investment and providing risk sharing) without disturbances that have

¹² Kohn (2008), after extensive discussion, concludes that there is insufficient evidence that low interest rates would have contributed much to the house-price boom and that higher interest rates would have had much dampening effect on it.

¹³ The relationship for the Euro area countries is less weak, but for reasons explained by Bernanke (2010) it is potentially overstated.

¹⁴ Nyberg (2010) provides more discussion of macroprudential regulation and regulation reform.

significant social costs. I find it helpful to conceptually distinguish financial-stability policy from monetary policy. Different economic policies and policy areas, such as fiscal policy, labor market policy, structural policies to improve competition, etc., can be distinguished according to their objectives, the policy instruments that are suitable for achieving the objectives, and the authority or authorities controlling the instruments and responsible for achieving the objectives. Monetary policy in the form of flexible inflation targeting has the objective of stabilizing both inflation around the inflation target and resource utilization around a normal level. The suitable instruments are under normal circumstances the policy rate and communication, including possibly a published policy-rate path and a forecast of inflation and the real economy. In times of crisis, as we have seen during the current crisis, other more unconventional instruments can be used, such as fixed-rate lending at longer maturities, asset purchases and foreign-exchange intervention to prevent currency appreciation. The authority responsible for monetary policy is typically the central bank.

Financial-stability policy has the objective of maintaining or promoting financial stability. The available instruments are under normal circumstances supervision, regulation and financial-stability reports with analyses and leading indicators that may provide early warnings of stability threats. In times of crisis, there are instruments such as lending of last resort, variable-rate lending at longer maturities, special resolution regimes for financial firms in trouble, government capital injections and so forth. The responsible authority or authorities vary across countries. In some countries it is the central bank, in other countries there is a separate financial supervisory authority, sometimes the responsibility is shared between different institutions. In Sweden, the Financial Supervisory Authority is responsible for supervision and regulation, the Riksbank is responsible for lending of last resort to solvent banks and for promoting a safe and efficient payment system, while the National Debt Office is responsible for the resolution of failed banks. During times of crisis, these authorities cooperate closely with the Ministry of Finance.

My point here is that financial-stability policy and monetary policy are quite different, with different objectives, instruments and responsible authorities, the latter with considerable differences across countries. This does not mean that there is no inter-action between them. Financial stability directly affects the financial markets, and financial conditions affect the transmission mechanism of monetary policy. Problems in financial markets may have a drastic effect on the real economy, as the current financial crisis has shown. Monetary policy affects asset prices and balance sheets and can thereby affect financial stability. But the fact that financial-stability policy and monetary policy are conceptually distinct, with distinct objectives and distinct suitable instruments, has to be taken into account when considering the lessons of the financial crisis for monetary policy. In particular, it makes little sense to extend the mandate of monetary policy to include financial stability.¹⁵

What are the specific conclusions for flexible inflation targeting? One important lesson from the financial crisis is that financial factors may have a very strong and deteriorating effect on the transmission mechanism, making standard interest-rate policy much less effective. This motivates more research on how to incorporate financial factors into the standard models of the transmission mechanism used by central banks. A rapidly-increasing volume of such research is now being produced by academic and central-bank researchers and presented at an increasing number of conferences on financial factors and monetary policy. Important and challenging questions include how potential output and neutral real interest rates are affected by financial factors and financial distortions (Curdia and Woodford 2009, Walsh 2009), and

¹⁵ However, conceptually distinguishing the two policy areas does not rule out that there might be advantages of to keeping a large part of the responsibility for financial-stability policy within the central bank, as argued by, for instance, Blinder (2010) and Nyberg (2010).

what impact financial factors have on the general equilibrium effects of alternative policy-rate paths on inflation and resource utilization forecasts.¹⁶

Even with much better analytical foundations concerning the role of financial factors in the transmission mechanism, there will of course, as always, be considerable scope for the application of good judgment in monetary policy.

Another conclusion, which is not new, is that consideration of the impact of financial factors on the forecast of inflation and resource utilization may require longer forecast horizons. Several inflation-targeting central banks (including the Bank of England, Norges Bank and the Riksbank) have for other reasons already extended their forecast horizon from the previously common two years to three years. There is nothing that in principle prevents an inflation targeter from considering forecasts beyond a three-year horizon, but in practice there is usually little information about anything at longer horizons except the tendency to revert to the long-term average.

What about “leaning against the wind” (as advocated by, for instance, Borio and White, 2003, and Cecchetti, Genberg and Wadhvani, 2002), the idea that central banks should raise the interest rate more than what appears to be warranted by inflation and resource utilization to counter rapid credit growth and rising asset prices? It has sometimes not been quite clear whether advocates of leaning against the wind mean that credit growth and asset prices should be considered targets and enter the explicit or implicit loss functions alongside inflation and resource utilization, or whether they mean that credit growth and asset prices should still be considered just indicators and are emphasized only because credit growth and asset prices may have potential negative effects on inflation and resource utilization at a longer horizon. In the latter case, leaning against the wind is a way to improve the stability of inflation and resource utilization in the longer run. Then it is completely consistent with flexible inflation targeting.¹⁷

However, in line with the previous discussion, instruments other than interest rates are likely to be much more effective in avoiding excessive credit growth and asset-price booms, and should thus be used as a first best alternative. Interest rates that are high enough to have a noticeable effect on credit growth and asset prices may have strong negative effects on inflation and resource utilization, and a central bank will probably rarely have sufficient information about the likely beneficial longer-horizon effects on inflation and resource utilization for the trade-off to be worthwhile and motivated.¹⁸

¹⁶ Walsh (2009) points out that when financial factors cause distortions, these distortions will in general introduce corresponding terms in a loss function for monetary policy that is a second-order approximation to household welfare. Curdia and Woodford (2009) present a model where the second-order welfare approximation is a standard quadratic loss function of inflation and the output gap between output and potential output, but where potential output is affected by financial factors. Then inflation and the output gap remain the target variables, with and without financial factors. The neutral rate in the model, that is, the real rate consistent with output equal to potential output, is then also affected by financial factors.

¹⁷ Adrian and Shin (2007, 2009) argue, in a model with a risk-taking channel as in Borio and Zhu (2008), that short interest-rate movements may have considerable effects on the leverage of securities broker-dealers in the market-based financial sector outside the commercial-banking sector. However, new regulation may affect the magnitude of these effects, and the size of the market-based financial sector may end up being smaller after the crisis. In Europe, the commercial banks dominate the financial sector.

¹⁸ Kohn (2006, 2008) specifies three conditions that should be fulfilled for central banks to take “extra action” to deal with a possible asset-price bubble: “First, policymakers must be able to identify bubbles in a timely fashion with reasonable confidence. Second, a somewhat tighter monetary policy must have a high probability that it will help to check at least some of the speculative activity. And third, the expected improvement in future economic performance that would result from the curtailment of the bubble must be sufficiently great.” He concludes, also in 2008 and after thorough considerations, that those conditions would rarely be met. See also Kohn (2009).

In particular, if there is evidence of rapidly-rising house prices and mortgage loans, and these developments are deemed to be unsustainable and a possible bubble, there are much more effective instruments than policy rates. Restrictions on loan-to-value ratios and minimum mortgages and requirements of realistic cash-flow calculations for house buyers with realistic interest rates are much more effective in putting a break on possible unsustainable developments than a rise in the policy rates. In particular, more transparency about future policy rates, in the form a policy-rate path published by the central bank, may help in providing realistic information about future interest rates.

Ultimately, my main conclusion from the crisis so far is that flexible inflation targeting, applied in the right way and using all the information about financial factors that is relevant for the forecast of inflation and resource utilization at any horizon, remains the best-practice monetary policy before, during, and after the financial crisis. But a better theoretical, empirical and operational understanding of the role of financial factors in the transmission mechanism is urgently required and needs much work, work that is already underway in academia and in central banks.

The outcome might very well be that financial factors are considered to have a larger role in affecting the transmission mechanism and as indicators of future inflation and resource utilization. If so, central banks would end up responding more to financial indicators, in the sense of adjusting the policy rate and policy-rate path more to a given change in a financial indicator. However, this would not mean that financial factors and indicators have become independent targets besides inflation and resource utilization in the explicit or implicit central-bank loss function. Instead, it would be a matter of responding appropriately to financial indicators in order to achieve the best possible stabilization of inflation around the inflation target and resource utilization around a normal level over time.

References

Adrian, Tobias and Hyun Song Shin (2007) "Liquidity and Leverage", *Journal of Financial Intermediation*, forthcoming. Available as Federal Reserve Bank of New York Staff Reports 328.

Adrian, Tobias, and Hyun Song Shin (2009), "Financial Intermediaries and Monetary Economics", in Friedman, Benjamin M., and Michael Woodford, eds., *Handbook of Monetary Economics, Volume 3a and 3b*, forthcoming.

Bank for International Settlements (2009), *79th Annual Report*, www.bis.org.

Bean, Charles R. (2009), "The Great Moderation, the Great Panic and the Great Contraction", Schumpeter Lecture, Annual Congress of the European Economic Association, www.bankofengland.co.uk.

Bernanke, Ben S. (2010), "Monetary Policy and the Housing Bubble," speech on January 3, 2010, www.federalreserve.gov.

Blinder, Alan S. (2010), "How Central Should the Central Bank Be?" CEPS Working Paper No. 198.

Borio, Claudio and Haibin Zhu (2008), "Capital Regulation, Risk-taking and Monetary Policy: A Missing Link in the Transmission Mechanism?" Bank for International Settlements Working Paper 268.

Borio, Claudio and White, William R. (2003), "Whither Monetary and Financial Stability? The Implications of Evolving Policy Regimes", in *Monetary Policy and Uncertainty: Adapting to a Changing Economy*, Federal Reserve Bank of Kansas City Jackson Hole Symposium, 131–212.

- Carney, Mark (2009), “Some Considerations on Using Monetary Policy to Stabilize Economic Activity”, in *Financial Stability and Macroeconomic Policy*, Federal Reserve Bank of Kansas City Jackson Hole Symposium.
- Cecchetti, Stephen, Hans Genberg, and Sushil Wadhvani (2002), “Asset Prices in a Flexible Inflation Targeting Framework”, in Hunter, W., G. Kaufman, and M. Pomerleano, eds., *Asset Price Bubbles: The Implications for Monetary, Regulatory and International Policies*, Cambridge, 427–444.
- Curdia, Vasco, and Michael Woodford (2009), “Credit Frictions and Optimal Monetary Policy”, working paper.
- Del Negro, Marco, and Christopher Otrok (2007), “99 Luftballons: Monetary Policy and the House Price Boom across U.S. States”, *Journal of Monetary Economics* 54, 1962–1985.
- Edge, Rochelle M., Michael T. Kiley, and Jean-Philippe Laforte (2008), “The Sources of Fluctuations in Residential Investment: A View from a Policy-Oriented DSGE Model of the U.S. Economy”, paper presented at the 2009 American Economic Association annual meeting, January 3–5.
- Greenspan, Alan (2002) “Opening Remarks”, in *Rethinking Stabilization Policy*, Federal Reserve Bank of Kansas City Jackson Hole Symposium, 1–10.
- Iacoviello, Matteo, and Stefano Neri (2008) “Housing Market Spillovers: Evidence from an Estimated DSGE Model”, working paper, Boston College.
- International Monetary Fund (2009), *World Economic Outlook, October 2009*.
- Jarocinski, Marek, and Frank R. Smets (2008), “House Prices and the Stance of Monetary Policy”, *Federal Reserve Bank of St. Louis Review* 90, 339–365.
- King, Mervyn (1994), “Monetary Policy in the UK”, *Fiscal Studies* 15(3), 109–128.
- King, Mervyn, (1997), “Changes in UK Monetary Policy: Rules and Discretion in Practice”, *Journal of Monetary Economics* 39, 81–97.
- Kohn, Donald L. (2006), “Monetary Policy and Asset Prices”, speech on March 16, 2006, www.federalreserve.gov.
- Kohn, Donald L. (2008), “Monetary Policy and Asset Prices Revisited”, speech on November 19, 2008, www.federalreserve.gov.
- Kohn, Donald L. (2009), “Policy Challenges for the Federal Reserve”, speech on November 16, 2009, www.federalreserve.gov.
- Miller, Marcus H., Paul A. Weller, and Lei Zhang (2002), “Moral Hazard and the U.S. Stock Market: Analysing the Greenspan Put”, *Economic Journal*. 112, C171–C186.
- Nyberg, Lars (2010), “After the Crisis”, speech on February 5, 2010, www.riksbank.se.
- Svensson, Lars E.O. (1997), “Inflation Forecast Targeting: Implementing and Monitoring Inflation Targets”, *European Economic Review* 41, 1111–1146.
- Svensson, Lars E.O. (1999), “Inflation Targeting: Some Extensions”, *Scandinavian Journal of Economics* 101, 337–361.
- Svensson, Lars E.O. (2003), “Escaping from a Liquidity Trap and Deflation: The Foolproof Way and Others”, *Journal of Economic Perspectives* 17(4), 145–166.
- Svensson, Lars E.O. (2005), “Monetary Policy with Judgment: Forecast Targeting”, *International Journal of Central Banking* 1(1), 1–54.
- Svensson, Lars E.O. (2009a), “Evaluating Monetary Policy”, in Koenig, Evan, and Robert Leeson, eds., *From the Great Moderation to the Great Deviation: A Round-Trip Journey Based on the Work of John B. Taylor*, forthcoming, www.larseosvensson.net.

Svensson, Lars E.O. (2009b), “Flexible Inflation Targeting: Lessons from the Financial Crisis”, speech on September 21, 2009, www.riksbank.se.

Taylor, John B. (2007), “Housing and Monetary Policy”, in *Housing, Housing Finance, and Monetary Policy*, Federal Reserve Bank of Kansas City Jackson Hole Symposium, 463–476.

Walsh, Carl E. (2009), “Using Monetary Policy to Stabilize Economic Activity”, in *Financial Stability and Macroeconomic Policy*, Federal Reserve Bank of Kansas City Jackson Hole Symposium.

White, William R. (2006), “Is Price Stability Enough?”, BIS Working Paper No. 205, www.bis.org.

Woodford, Michael (2007a), “The Case for Forecast Targeting as a Monetary Policy Strategy”, *Journal of Economic Perspectives*, Fall 2007.

Woodford, Michael (2007a), “The Case for Forecast Targeting as a Monetary Policy Strategy”, *Journal of Economic Perspectives*, Fall 2007.

Woodford, Michael (2007b), “Forecast Targeting as a Monetary Policy Strategy: Policy Rules in Practice”, in Koenig, Evan, and Robert Leeson, eds., *From the Great Moderation to the Great Deviation: A Round-Trip Journey Based on the Work of John B. Taylor*, forthcoming.

Daniel K Tarullo: Equipping financial regulators with the tools necessary to monitor systemic risk

Testimony by Mr Daniel K Tarullo, Member of the Board of Governors of the Federal Reserve System, before the Subcommittee on Security and International Trade and Finance, Committee on Banking, Housing, and Urban Affairs, US Senate, Washington DC, 12 February 2010.

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Chairman Bayh, Ranking Member Corker, and other members of the Committee, thank you for inviting me to testify today. I also want to thank all of you for taking the time to explore a subject that is easily overlooked in the public debate around financial reform, but that will be central to ensuring a more stable financial system in the future.

The recent financial crisis revealed important gaps in data collection and systematic analysis of institutions and markets. Remedies to fill those gaps are critical for monitoring systemic risk and for enhanced supervision of systemically important financial institutions, which are in turn necessary to decrease the chances of such a serious crisis occurring in the future. The Federal Reserve believes that the goals of agency action and legislative change should be (1) to ensure that supervisory agencies have access to high-quality and timely data that are organized and standardized so as to enhance their regulatory missions, and (2) to make such data available in appropriately usable form to other government agencies and private analysts so that they can conduct their own analyses and raise their own concerns about financial trends and developments.

In my testimony this morning I will first review the data collection and analysis activities of the Federal Reserve that are relevant to systemic risk monitoring and explain why we believe additional data should be collected by regulatory authorities with responsibility for financial stability. Next I will set forth some principles that we believe should guide efforts to achieve the two goals I have just noted. Finally, I will describe current impediments to these goals and suggest some factors for the Congress to consider as it evaluates potential legislation to improve the monitoring and containment of systemic risk.

The Federal Reserve and macro-prudential supervision

The Federal Reserve has considerable experience in data collection and reporting in connection with its regulation and supervision of financial institutions, monetary policy deliberations, and lender-of-last-resort responsibilities. The Federal Reserve has made large investments in quantitative and qualitative analysis of the U.S. economy, financial markets, and financial institutions. The Federal Reserve also has recently initiated some new data collection and analytical efforts as it has responded to the crisis and in anticipation of new financial and economic developments.

For supervision of the largest institutions, new quantitative efforts have been started to better measure counterparty credit risk and interconnectedness, market risk sensitivities, and funding and liquidity. The focus of these efforts is not only on risks to individual firms, but also on concentrations of risk that may arise through common exposures or sensitivity to common shocks. For example, additional loan-level data on bank exposures to syndicated corporate loans are now being collected in a systematic manner that will allow for more timely and consistent measurement of individual bank and systemic exposures to these sectors. In addition, detailed data obtained from firms' risk-management systems allow supervisors to examine concentration risk and interconnectedness. Specifically, supervisors are aggregating, where possible, the banks' largest exposures to other banks, nonbank financial institutions, and corporate borrowers, which could be used to reveal large exposures to individual borrowers that the banks have in common or to assess the credit impact of a failure of a large bank on other large banks. Additional time and experience with these data will allow us to assess the approach's ability to signal adverse events, and together they will be a critical input to designing a more robust and consistent reporting system.

Furthermore, we are collecting data on banks' trading and securitization risk exposures as part of an ongoing, internationally coordinated effort to improve regulatory capital standards in these areas. Moreover, analysis of liquidity risk now incorporates more explicitly the possibility of marketwide shocks to liquidity. This effort also is an example of the importance of context and the need to understand the firms' internal risk models and risk-management systems in designing data collection requirements. Data that only capture a set of positions would not be sufficient since positions would not incorporate behavioral assumptions about firms, based on information about firms' business models and practices.

The Federal Reserve's responsibilities for monetary policy are also relevant for systemic risk monitoring. Systemic risk involves the potential for financial crises to result in substantial adverse effects on economic activity. As the nation's central bank, the Federal Reserve assesses and forecasts the U.S. and global economies using a wide variety of data and analytical tools, some based on specific sectors and others on large-scale models. In the wake of the crisis, research has been expanded to better understand the channels from the financial sector to the real economy. For example, building on lessons from the recent crisis, the Federal Reserve added questions to the Survey of Professional Forecasters to elicit from private-sector forecasters their subjective probabilities of forecasts of key macroeconomic variables, which provides to us, and to the public, better assessments of the likelihood of severe macroeconomic outcomes.

The Federal Reserve has made substantial investments in data and analytical staff for financial market monitoring. Each day, the Trading Desk at the Federal Reserve Bank of New York analyzes and internally distributes reports on market developments, focusing on those markets where prices and volumes are changing rapidly, where news or policy is having a major effect, or where there are special policy concerns. Those analyses begin with quantitative data, supplemented with information obtained through conversations with market participants and reviews of other analyses available in the market. Over the past few years, the Desk has worked closely with our research staff in developing new quantitative tools and new data sources.

This ongoing monitoring requires continual evaluation of new data sources and analytical tools to develop new data as new markets and practices develop. For example, information on market volumes and prices can be collected from new trading platforms and brokers, data on instruments such as credit default swaps, or CDS, are provided by vendors or market participants, and fresh insights are gained from new methods of extracting information from options data. In some cases, publication of data by the private sector may be mandated by legislation (such as, potentially, trade data from over-the-counter derivatives trade repositories); in other cases, the Federal Reserve or other government agencies or regulators require or encourage the gathering and publication of data.

Our experiences with supervision, monetary policy, and financial market monitoring suggest that market data gathering and market oversight responsibilities must continuously inform one another. In addition, efforts to identify stresses in the system are not a matter of running a single model or focusing on a single risk. Rather, it is the assembly of many types of analysis in a systematic fashion. The Supervisory Capital Assessment Program (SCAP) for large financial institutions – popularly known as the “stress test” when it was conducted early last year – illustrates the importance of combining analysis by credit experts, forecasts and scenario design by macroeconomists, and hands-on judgments by supervisors in assessing the financial condition and potential vulnerabilities of large financial institutions.

While considerable steps have been made in the wake of the financial crisis, the Federal Reserve intends to do a good deal more. The Federal Reserve also will continue to strengthen and expand its supervisory capabilities with a macro-prudential approach by drawing on its considerable data reporting, gathering, and analytical capabilities across many disciplines. In the areas in which we are collecting data through the supervisory process on measures of interlinkages and common exposures among the largest financial firms we supervise, we are developing new analytical tools that may lead us to change our information requests from supervised firms. The Federal Reserve is exploring how to develop analytically sophisticated measures of leverage and better measures of maturity transformation from information that we can collect from the supervised firms in the supervisory process and from other available data and analysis. We envision developing a robust set of key indicators of emerging risk concentrations and market stresses that would both supplement existing supervisory techniques and assist in the early identification of early trends that may have systemic significance and bear further inquiry. This kind of approach will require data that are produced more frequently than the often quarterly data gathered in regulatory reports, although not necessarily real-time or intraday, and reported soon after the fact, without the current, often long, reporting lags. These efforts will need to actively seek international cooperation as financial firms increasingly operate globally.

The potential benefits of additional data

Improved data are essential for monitoring systemic risk and for implementing a macro-prudential approach to supervision. The financial crisis highlighted the existence of interlinkages across financial institutions and between financial institutions and markets. Credit risks were amplified by leverage and the high degree of maturity transformation, especially outside of traditional commercial banking institutions. Moreover, supervision traditionally has tended to focus on the validity of regulated firms’ private risk-management systems, which did not easily allow comparisons and aggregation across firms.

One key feature of the recent crisis was the heavy reliance on short-term sources of funds to purchase long-term assets, which led to a poor match between the maturity structure of the firms’ assets and liabilities. Such maturity transformation is inherently fragile and leaves institutions and entire markets susceptible to runs. Indeed, a regulatory, supervisory, and insurance framework was created during the Great Depression to counter this problem at depository institutions. However, in recent years a significant amount of maturity transformation took place outside the traditional banking system – in the so-called shadow

banking system – through the use of commercial paper, repurchase agreements, and other instruments. Our ability to monitor the size and extent of maturity transformation has been hampered by the lack of high-quality and consistent data on these activities. Better data on the sources and uses of maturity transformation outside of supervised banking organizations would greatly aid macro-prudential supervision and systemic risk regulation.

Another feature of the recent crisis was the extensive use of leverage, often in conjunction with maturity transformation. The consequences of this combination were dramatic. When doubts arose about the quality of the assets on shadow banking system balance sheets, a classic adverse feedback loop ensued in which lenders were increasingly unwilling to roll over the short-term debt that was used as funding. Liquidity-constrained institutions were forced to sell assets at increasingly distressed prices, which accelerated margin calls for leveraged actors and amplified mark-to-market losses for all holders of the assets, including regulated firms. Here, too, government regulators and supervisors had insufficient data to determine the degree and location of leverage in the financial system.

More generally, the crisis revealed that regulators, supervisors, and market participants could not fully measure the extent to which financial institutions and markets were linked. A critical lesson from this crisis is that supervisors and investors need to be able to more quickly evaluate the potential effects, for example, of the possible failure of a specific institution on other large firms through counterparty credit channels; financial markets; payment, clearing, and settlement arrangements; and reliance on common sources of short-term funding.

A better system of data collection and aggregation would have manifold benefits, particularly if the data are shared appropriately among financial regulators and with a systemic risk council if one is created. It would enable regulators and a council to assess and compare risks across firms, markets, and products. It would improve risk management by firms themselves by requiring standardized and efficient collection of relevant financial information. It also would enhance the ability of the government to wind down systemically important firms in a prompt and orderly fashion by providing policymakers a clearer view of the potential impacts of different resolution options on the broader financial system.

Additional benefits would result from making data public to the degree consistent with protecting firm-specific proprietary and supervisory information. Investors and analysts would have a more complete picture of individual firms' strengths and vulnerabilities, thereby contributing to better market discipline. Other government agencies, academics, and additional interested parties would be able to conduct their own analyses of financial system developments and identify possible emerging stresses and risks in financial markets.

One area in which better information is particularly important is the web of connections among financial institutions through channels such as interbank lending, securities lending, repurchase agreements, and derivatives contracts. Regulators also need more and better data on the links among institutions through third-party sponsors, liquidity providers, credit-support providers, and market makers. Knowledge of such network linkages is a necessary first step to improve analysis of how shocks to institutions and markets can propagate through the financial system.

Principles for developing a system of effective data and analytical tools

Moving from the recognition of the need for more data to an efficient data system is not an easy task. Data collection entails costs in collection, organization, and utilization for government agencies, reporting market participants, and other interested parties. Tradeoffs may need to be faced where, for example, a particular type of information would be very costly to collect and would have only limited benefits. The Internet and other applications of information technologies have made us all too aware of the potential for information overload, a circumstance in which relevant information is theoretically available, but the time and expense of retrieving it or transforming it into a usable form make it unhelpful in practical

terms. Collection of more data just for its own sake also can raise systemic costs associated with moral hazard if investors view data collection from certain firms, products, and markets as suggesting implicit support. It is thus particularly worth emphasizing the importance of having data available readily and in a form that is appropriate for the uses to which it will be put. With these considerations in mind, we have derived a number of guiding principles for a system of new data and analytical tools for effectively supervising large institutions and monitoring systemic risk.

First, the priorities for new data efforts should be determined by the nature of regulatory and supervisory missions. In particular, the data need to be sufficiently timely and to cover a sufficient range of financial institutions, markets, instruments, and transactions to support effective systemic risk monitoring and macro-prudential supervision, as well as traditional safety-and-soundness regulation. The events of the past few years have painfully demonstrated that regulators, financial institutions, and investors lacked ready access to data that would have allowed them to fully assess the value of complex securities, understand counterparty risks, or identify concentrations of exposures.

The data needed for systemic risk monitoring and supervision are not necessarily “real-time” market data – information about trades and transactions that can be reported at high frequency when the events occur – but certainly data would need to be “timely”. What is considered to be “timely” will depend on its purpose, and decisions about how timely the data should be should not ignore the costs of collecting and making the data usable. For many supervisory needs, real-time data would be impractical to collect and analyze in a meaningful way and unnecessary. For example, while supervisors may indeed need to be able to quickly value the balance sheets of systemically important financial institutions, very frequent updates as transactions occur and market prices change could lead to more volatility in values than fundamental conditions would indicate and would be extraordinarily expensive to provide and maintain. Certainly, real-time data could be needed for regulators responsible for monitoring market functioning, and daily data would be helpful to measure end-of-day payment settlements and risk positions among the largest firms. But for supervising market participants, real-time market data could require enormous investments by regulators, institutions, and investors in order to be usable while yielding little net benefit. As policymakers consider redesign of a system of data collection, the goal should be data that are timely and best suited to the mission at hand.

A second principle is that data collection be user-driven. That is, data on particular markets and institutions should be collected whenever possible by the regulators who ultimately are responsible for the safety and soundness of the institutions or for the functioning of those markets. Regulators with supervisory responsibilities for particular financial firms and markets are more likely to understand the relevance of particular forms of standardized data for risk management and supervisory oversight. For example, supervisors regularly evaluate the ability of individual firms’ own risk measures, such as internal ratings for loans, and of liquidity and counterparty credit risks, to signal potential problems. As a result, these supervisors have the expertise needed to develop new reporting requirements that would be standardized across firms and could be aggregated.

Third, greater standardization of data than exists today is required. Standardized reporting to regulators in a way that allows aggregation for effective monitoring and analysis is imperative. In addition, the data collection effort itself should encourage the use of common reporting systems across institutions, markets, and investors, which would generally enhance efficiency and transparency. Even seemingly simple changes, such as requiring the use of a standardized unique identifier for institutions (or instruments), would make surveillance and reporting substantially more efficient.

Fourth, the data collected and the associated reporting standards and protocols should enable better risk management by the institutions themselves and foster greater market discipline by investors. Currently, because the underlying data in firms’ risk-management

systems are incomplete or are maintained in nonstandardized proprietary formats, compiling industry-wide data on counterparty credit risk or common exposures is a challenge for both firms and supervisors. Further, institutions and investors cannot easily construct fairly basic measures of common risks across firms because they may not disclose sufficient information. In some cases, such as disclosure of characteristics of underlying mortgages in a securitized pool, more complete and interoperable data collection systems could enhance market discipline by allowing investors to better assess the risks of the securities without compromising proprietary information of the lending institution.

Fifth, data collection must be nimble, flexible, and statistically coherent. With the rapid pace of financial innovation, a risky new asset class can grow from a minor issue to a significant threat faster than government agencies have traditionally been able to revise reporting requirements. For example, collateralized debt obligations based on asset-backed securities grew from a specialized niche product to the largest source of funding for asset-backed securities in just a few years. Regulators, then, should have the authority to collect information promptly when needed, even when such collections would require responses from a broad range of institutions or markets, some of which may not be regulated or supervised. In addition, processes for information collection must meet high standards for reliability, coherence, and representativeness.

Sixth, data collection and aggregation by regulatory agencies must be accompanied by a process for making the data available to as great a degree as possible to fellow regulators, other government entities, and the public. There will, of course, be a need to protect proprietary and supervisory information, particularly where specific firm-based data are at issue. But the presumption should be in favor of making information widely available.

Finally, any data collection and analysis effort must be attentive to its international dimensions and must seek appropriate participation from regulators in other nations, especially those with major financial centers. Financial activities and risk exposures are increasingly globalized. A system without a common detailed taxonomy for securities and counterparties and comparable requirements for reporting across countries would make assembling a meaningful picture of the exposures of global institutions very difficult. Efforts to improve data collection are already under way in the European Union, by the Bank of England and the Financial Services Authority, and the European Central Bank, which has expressed support for developing a unified international system of taxonomy and reporting. The Financial Stability Board, at the request of the G-20, is initiating an international effort to develop a common reporting template and a process to share information on common exposures and linkages between systemically important global financial institutions.

Barriers to effective data collection for analysis

Legislation will be needed to improve the ability of regulatory agencies to collect the necessary data to support effective supervision and systemic risk monitoring. Restrictions designed to balance the costs and benefits of data collection and analysis have not kept pace with rapid changes in the financial system. The financial system is likely to continue to change rapidly, and both regulators and market participants need the capacity to keep pace.

Regulators have been hampered by a lack of authority to collect and analyze information from unregulated entities. But the recent financial crisis illustrated that substantial risks from leverage and maturity transformation were outside of regulated financial firms. In addition, much of the Federal Reserve's collection of data is based on voluntary participation. For example, survey data on lending terms and standards at commercial banks, lending by finance companies, and transactions in the commercial paper market rely on the cooperation of the surveyed entities. Moreover, as we have suggested, the data collection authority of financial regulators over the firms they supervise should be expanded to encompass macroprudential considerations. The ability of regulators to collect information should similarly be expanded to include the ability to gather market data necessary for monitoring systemic

risks. Doing so would better enable regulators to monitor and assess potential systemic risks arising directly from the firms or markets under their supervision or from the interaction of these firms or markets with other components of the financial system.

The Paperwork Reduction Act also can at times impede timely and robust data collection. The act generally requires that public notice be provided, and approval of the Office of Management and Budget (OMB) be obtained, before any information requirement is applied to more than nine entities. Over the years, the act's requirement for OMB approval for information collection activity involving more than nine entities has discouraged agencies from undertaking many initiatives and can delay the collection of important information in a financial crisis. For example, even a series of informal meetings with more than nine entities designed to learn about emerging developments in markets may be subject to the requirements of the act. While the principle of minimizing the burdens imposed on private parties is an important one, the Congress should consider amending the act to allow the financial supervisory agencies to obtain the data necessary for financial stability in a timely manner when needed. One proposed action would be to increase the number of entities from which information can be collected without triggering the act; another would be to permit special data requests of the systemically important institutions could be conducted more quickly and flexibly.

The global nature of capital markets seriously limits the extent to which one country acting alone can organize information on financial markets. Many large institutions have foreign subsidiaries that take financial positions in coordination with the parent. Accordingly, strong cooperative arrangements among domestic and foreign authorities, supported by an appropriate statutory framework, are needed to enable appropriate sharing of information among relevant authorities. Strong cooperation will not be a panacea, however, as legal and other restrictions on data sharing differ from one jurisdiction to the next, and it is unlikely that all such restrictions can be overcome. But cooperation and legislation to facilitate sharing with foreign authorities appears to be the best available strategy.

Significant practical barriers also exist that can, at times, limit the quality of data collection and analysis available to support effective supervision and regulation, which include barriers to sharing data that arise from policies designed to protect privacy. For example, some private-sector databases and bank's loan books include firms' tax identification (ID) numbers as identifiers. Mapping those ID numbers into various characteristics, such as broad geographic location or taxable income measures, can be important for effective analysis and can be done in a way that does not threaten privacy. However, as a practical matter, a firm may have multiple ID numbers or they may have changed, but the Internal Revenue Service usually cannot share the information needed to validate a match between the firm and the ID number, even under arrangements designed to protect the confidentiality of the taxpayer information obtained.

In addition, a significant amount of financial information is collected by private-sector vendors seeking to profit from the sale of data. These vendors have invested in expertise and in the quality of data in order to meet the needs of their customers, and the Federal Reserve is a purchaser of some of these data. However, vendors often place strong limitations on the sharing of such data with anyone, including among federal agencies, and on the manner in which such data may be used. They also create systems with private identifiers for securities and firms or proprietary formats that do not make it easy to link with other systems. Surely it is important that voluntary contributors of data be able to protect their interests, and that the investments and intellectual property of firms be protected. But the net effect has been a noncompatible web of data that is much less useful, and much more expensive, to both the private and the public sector, than it might otherwise be.

Protecting privacy and private-sector property rights clearly are important policy objectives; they are important considerations in the Federal Reserve's current data collection and safeguarding. Protecting the economy from systemic risk and promoting the safety and

soundness of financial institutions also are important public objectives. The key issue is whether the current set of rules appropriately balances these interests. In light of the importance of the various interests involved, the Congress should consider initiating a process through which the parties of interest may exchange views and develop potential policy options for the Congress's consideration.

Organization structure for data collection and developing analytical tools

In addition to balancing the costs and benefits of enhanced data and analytical tools, the Congress must determine the appropriate organizational form for data collection and development of analytical tools. Budget costs, production efficiencies, and the costs of separating data collection and analysis from decision-making are important considerations. Any proposed form of organization should facilitate effective data sharing. It also should increase the availability of data, including aggregated supervisory data as appropriate, to market participants and experts so that they can serve the useful role of providing independent perspectives on risks in the financial system.

The current arrangement, in which different agencies collect and analyze data, cooperating in cases where a consensus exists among them, can certainly be improved. The most desirable feature of collection and analysis under the existing setup is that it satisfies the principle that data collection and analysis should serve the end users, the regulatory agencies. Each of the existing agencies collects some data from entities it regulates or supervises, using its expertise to decide what to collect under its existing authorities and how to analyze it. Moreover, the agencies seek to achieve cost efficiencies and to reduce burdens on the private sector by cooperating in some data collection. An example is the Consolidated Reports of Condition and Income, or Call Reports, collected by the bank regulatory agencies from both national and state-chartered commercial banks. The content of the reporting forms is coordinated by the Federal Financial Institutions Examination Council, which includes representatives of both state and federal bank regulatory agencies.

A standalone independent data collection and analysis agency might be more nimble than the current setup because it would not have to reach consensus with other agencies. It might also have the advantage of fostering an overall assessment of financial data needs for all governmental purposes.

However, there would also be some substantial disadvantages to running comprehensive financial data collection through a separate independent agency established for this purpose. A new agency would entail additional budget costs because the agency would likely need to replicate many of the activities of the regulatory agencies in order to determine what data are needed. More importantly, because it would not be involved directly in supervision or market monitoring, such an agency would be hampered in its ability to understand the types of information needed to effectively monitor systemic risks and conduct macro-prudential supervision. Data collection and analysis are not done in a vacuum; an agency's duties will inevitably reflect the priorities, experience, and interests of the collecting entity. Even regular arms-length consultations among agencies might not be effective, because detailed appreciation of the regulatory context within which financial activities that generate data and risks is needed. The separation of data collection and regulation could also dilute accountability if supervisors did not have authority to shape the form and scope of reporting requirements by regulated entities in accordance with supervisory needs.

An alternative organizational approach would be available if the Congress creates a council of financial regulators to monitor systemic risks and help coordinate responses to emerging threats, such as that contemplated in a number of legislative proposals. Under this approach, the supervisory and regulatory agencies would maintain most data collection and analysis, with some enhanced authority along the lines I have suggested. Coordination would be committed to the council, which could also have authority to establish information collection

requirements beyond those conducted by its member agencies when necessary to monitor systemic risk.

This approach might achieve the benefits of the current arrangement and the proposed independent agency, while avoiding their drawbacks. The council would be directed to seek to resolve conflicts among the agencies in a way that would preserve nimbleness, and it could recommend that an agency develop new types of data, but it would leave the details of data collection and analysis to the agencies that are closest to the relevant firms and markets. And while this council of financial supervisors could act independently if needed to collect information necessary to monitor the potential buildup of systemic risk, it would benefit directly from the knowledge and experience of the financial supervisors and regulators represented on the council. The council could also have access to the data collected by all its agencies and, depending on the staffing decisions, could either coordinate or conduct systemic risk analyses.

Conclusion

Let me close by thanking you once again for your attention to the important topic of ensuring the availability of the information necessary to monitor emergent systemic risks and establish effective macro-prudential supervisory oversight. As you know, these tasks will not be easy. However, without a well-designed infrastructure of useful and timely data and improved analytical tools – which would be expected to continue to evolve over time – these tasks will only be more difficult. We look forward to continued discussion of these issues and to a development of a shared agenda for improving our information sources. I would be happy to answer any questions you might have.

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