

Petar Goshev: Some lessons from the crisis

Opening address by Mr Petar Goshev, Governor of the National Bank of the Republic of Macedonia, at the 23rd Annual Conference of the Group of Banking Supervisors from Central and Eastern Europe, Ohrid, 15 June 2010.

* * *

Ladies and Gentlemen, Dear Participants,

It is an honor for me to share these moments with you exchanging thoughts about, today, the most important questions in the domain of financial intermediation.

It is my special pleasure that my address will open the 23rd Annual Conference of the Group of Banking Supervisors from Central and Eastern Europe.

There is no doubt that the key words for every supervisory body are liquidity and solvency, as quantities and qualities which are permanently testing the resilience of the banking system in its functioning.

Therefore, the standards for liquidity and solvency are constantly being checked from two key aspects: (1) whether, amid various adverse shocks, they are set to maintain satisfactory resilience of the banking system and (2) whether the points of calibration of these key categories at the same time enable efficient, rational financial intermediation.

The financial crisis that began in August 2007 clearly shocked the world with its sharpness and, now we can say, its length. Liquidity vanished, many institutions turned insolvent, financial intermediation as the key link in the economic reproduction chain in a lot of places in the world, especially in the developed countries, at certain moments, almost entirely collapsed.

Everything was put in question: the current economic theories; monetary and fiscal policies; micro and macroprudential policies; the whole financial regulation.

Suddenly, no one was satisfied with the global financial framework. A gallop was started for its reexamining. The fear from recurrence of the crisis and its possible deepening, for almost three years has been keeping the eyes of the creators of the economic and financial policies wide open.

Why did this happen to us?

A lot has been written in search for the causes of the crisis, and a lot more will be examined and written.

One part of the relevant experts say:

(1) The so-called “great moderation” period in the GDP and inflation fluctuations was the reason, for which a wrong sense of comfort and illusion was settled, that the crisis period is behind us. Some relevant economic minds convinced us in that. Paul Krugman, in “The Return of Depression Economics” (2008) reminds us of the statement of the Nobel Prize winner Robert Lucas that “the central problem of depression-prevention has been solved, for all practical purposes” and the statement of Ben Bernanke in his famous speech named as “The Great Moderation”, where he claims more than Lucas that the modern macroeconomic policy has solved the business cycle problem or more precisely it has reduced the problem to a point that it is a mere shade rather than the most important economic question.

(2) Daniel K. Tarullo, member of the FED Board of Governors finds the reasons in replacing the basic regulatory framework established after the Great Depression 1929–1933, which mostly limited the commercial banks to traditional lending activities, with the regulatory framework that in the 1970s started to install deep changes in the organization and

regulation of the financial markets, culminating with the adoption of the Gramm-Leach-Bliley bill in 1999.

He says that “with the innovations, the traditional commercial banking business model was put under strong pressure on both sides: on the liability side in the balance sheet of the banks in the form of more attractive savings instruments, such as the funds for investing on the money market, and on the assets side, with the growth of public companies and international competition”.

Until the end of the century the restriction cluster on the commercial banks from the great depression era was replaced with a regulatory setting in which they could operate on a national level, to involve in a much broader set of activities and to practically join with every kind of financial companies.

Tarullo says, that is how the highly complex financial holding companies were started... the independent investment banks grew in a group of big, complex and highly indebted companies... the financial engineering was quickly changing the character of the entire financial services sector. Securitization and accompanying instruments united the capital markets and traditional lending activities, fueling the growth of the so-called shadow banking system.

(3) Allan Greenspan in his latest paper “The Crisis” wrote about the reasons for it:

a. “it was the global proliferation of securitized, toxic U.S. subprime mortgages that was the immediate trigger of the current crisis”. But, he says: “the roots of the crisis reach back, as best I can judge, to the aftermath of the Cold War”.

Later he explains actually the large increase of the aggregate demand which came from, formerly the third world nations, especially China, which replicated the export-oriented model of the so-called Asian tigers, arguing it with data that “the savings rate of the developing world soared from 24% of nominal GDP in 1999 to 34% in 2007, far outstripping its investment rate”.

b. that “subprime mortgages in the United States for years had been a small appendage to the broader U.S. home mortgage market, comprising only 7% of total originations as recently as 2002”...that “most such loans were fixed-rate mortgages, and only a modest amount had been securitized...” that “... starting in late 2003, began to accelerate the pooling and packaging of subprime home mortgages into securities...” that “subprime mortgages securities outstanding in 2007 totaled more than 900 billion USD, a more than six-fold rise since the end of 2001”.

c. that “a classic euphoric global bubble took hold”, “that by 2007, yield spreads in the overall debt markets had narrowed to a point where there was little room for further under pricing of risk”.

... “that the bubble has reached such a size partly due to the fact that the dot-com bubble burst with very little footprint on global GDP”...that as late as April, 2007 the IMF noted that “global economic risks have declined, the overall U.S. economy is holding up well”; that “many quantitative firms whose number crunching sought to expose profitable market trading principles were successful so long as risk aversion moved incrementally (which it did much of the time)”; that “the risk management paradigm nonetheless, harbored a fatal flaw” i.e. that “in the growing state of high euphoria, risk managers, the Federal Reserve, and other regulators failed to fully comprehend the underlying size, length, and impact of the negative tail of the distribution of risk outcomes that was about to be revealed as the post-Lehman” that “for decades, with little, to no data, most analysts, in my experience, had conjectured a far more limited tail risk” and that “this is arguably the major source of the critical risk management system failures”.

“In despair, says Greenspan, an inordinately large part of investment management subcontracted to the ‘safe harbor’ risk designations of the credit rating agencies.” But the

analysts of the credit rating agencies proved no more adept and no more proficient at anticipating the onset of crisis than the investment community at large.

(4) Oliver Blanchard and other authors, in their paper “Rethinking Macroeconomic Policy” stated:

“With the neglect of financial intermediation as a central macroeconomic feature, financial regulation and supervision focused on individual institutions and markets and largely ignored their macroeconomic implications. Little thought was given to using regulatory ratios, such as capital ratios, or loan-to-value ratios, as cyclical policy tools.”

By analyzing the reasons we came up with many lessons, which it has delivered up to this moment. For some of the questions there is already a global consensus. For others, it still has to be constructed. For some questions there is a general consensus, but the devil is in the details and therefore there are and there will be confronting opinions that demand time for adjustment until they become operative and applicable.

What lessons could be, at the moment, more relevant?

I. There is an agreement that a global crisis in a highly interdependent world needs a global response. A global response needs global institutions, a global economic and financial architecture. Current institutions have proved to be insufficient and inefficient.

Generally, the structure of that global architecture is already drawn and its shaping is moving in a good direction.

- The G20 group was constituted early during the crisis, as a main forum for international discussion on the global economic stability;
- Under the patronage of the G20 the Financial Stability Board, previously the Financial Stability Forum, increased the number of its member states from 12 to 24, and the area of competence as well. Now it secures unprecedented degree of international coordination in the field of the regulatory questions, as an addition to the old mandate as the Financial Stability Forum. FSB is now empowered with additional assignments, including:
 - (i) undertaking joint strategic reviews of policy development of the international standard setting bodies;
 - (ii) setting guidelines for, and supporting, the establishment of supervisory colleges;
 - (iii) supporting contingency planning for cross-border crisis management.
- The International Monetary Fund has refocused its activity on monitoring the international financial system, identifying threats to the global financial stability;
- In Europe, based on current draft legislation, the financial supervision will be characterized by a two-pillar structure. The European Systemic Risk Board (ESRB) will be responsible for macro-prudent supervision of the European financial system as a whole, while the European System of Financial Supervisors (ESFS) will be focused on micro-prudent supervision. ESRB will be especially focused on the potential threads to the financial stability arising from the macro-economic developments, as well as the developments in the financial system as a whole. It will issue general warnings or warnings for specific aspects (e.g. on a country level or on a specific industry level, in every case when the risks seem significant). When necessary, it will give recommendations for action to deal with the risks and it will monitor the compliance with the given recommendations.

ESFS will maintain the dialog with ESRB and it will deliver the recommendations to the national supervisors, who will adhere to the principle “act or explain”.

II. After the crisis there is a strong consensus concerning the weaknesses of the prudential policy and the imperative for its fundamental improvement. Nobody disputes the fact that the prudential policy should be characterized by two dimensions: the micro-prudential, designed to limit the instability of the individual banks; and macro-prudential, designed to limit the risk of the financial stability as a whole, meaning, to limit the so-called systemic risk. The macro-prudential dimension becomes increasingly important. The Bank for International Settlements defines the macro-prudential policy as “the use of prudential tools with the explicit objective of promoting the stability of the financial system as a whole, not necessarily of the individual institutions within it”. (BIS Quarterly review, March 2010)

“The objective of macro-prudential policy is to reduce systemic risk by explicitly addressing the interlinkages between, and common exposures of, all financial institutions, and the procyclicality of the financial system. That is, systemic risk is to be reduced in its cross-sectional dimension and its time dimension, respectively.” (Jaime Caruana, 2010)

The recent BIS papers, designed to create operating macroprudential approach, suggest several leading principles for designing the macroprudential tools.

Firstly, they need to be calibrated according to the contribution of each individual institution to the potential systemic risk, regardless of the institution’s legal form, meaning that every important company must be included in the perimeter of the regulation.

Secondly, a way should be found to reduce the procyclicality of the financial system.

Thirdly, a thorough study of the various available (macroprudential) tools should be conducted, to their potential usefulness and to the empirical evidence of their impact and effectiveness.

The BIS analyses have registered many tools used by the Asian countries:

- (i) countercyclical capital buffers linked to credit growth (China); countercyclical provisioning (China, India);
- (ii) loan-to-value (LTV) ratios (China, Hong Kong SAR, The Republic of Korea, Singapore);
- (iii) direct controls on lending to specific sectors (The Republic of Korea, Malaysia, Philippines, Singapore) oriented toward managing the aggregate risk throughout the business cycle (i.e. procyclicality);

furthermore,

- (iv) capital surcharges for systemically important banks (China, India, Philippines, Singapore);
- (v) liquidity requirements funding (India, The Republic of Korea, Philippines, Singapore);
- (vi) limits on currency mismatches (India, Malaysia, Philippines);
- (vii) loan to deposit requirements (China, The Republic of Korea), as a tool for managing the aggregate risk in every point in time (systemic oversight).

These examples show that the macroprudential tools could have an effect on the vulnerabilities by increasing the financial sector resilience.

The Basel Committee has already proposed the following tools:

- countercyclical capital framework. This will require from the financial institutions to build up capital in good times, that can be drawn upon in periods of stress;
- forward looking provisioning. Banks are encouraged to allocate provisions based on expected losses, as opposed to allocating provisions on the basis of incurred loss. This approach is less procyclical than the so-called “incurred loss” provisioning model.

- capital conservation measures. This measure includes activities aimed at restricting oversized payments of dividends, share buy backs and generous compensation payments by financial institutions.

Capital requirements are undoubtedly the foundations of the microprudential regulation, but they also have a macroprudential dimension related to the procyclicality of the financial sector. Capital buffers which should confront procyclicality should meet two objectives: first, they should help the banking system handle the risks which could materialize in periods of crisis, and second, they should mitigate the reduction of the economic activity in a situation of downward movement of the economy. Nevertheless, several key issues remain open for discussion. Should the discretionary interventions on the buffers be reduced to the minimum, in order to prevent regulatory capture? On which geographical level should the aggregation be adopted in order to calibrate the buffers? "For example (Giovanni Carosio, June, 2010) says, in the euro area should it be linked to area-wide variables (credit growth), to address level playing field concerns, or should we leave the door open to disaggregated measures, as I will argue below? And would market pressures allow banks to run down the buffer in a downturn?"

As for the systemic risk which arises from the liquidity dry-ups, Carosio writes that no uncontroversial solution has been found yet.

The Basel Committee proposed new standards (for example, The liquidity coverage ratio and Net stable funding ratio).

It seems, Carosio says, that they are powerful instruments, but are still very micro-prudential in nature and do not necessarily address the "fallacy of composition" that is typically of liquidity...In principle (he continues) the systemic dimension of liquidity risk could be addressed by designing a countercyclical liquidity buffer, similar to the capital buffer ..., possibly without raising overall liquidity requirements. An important advantage of this option would be to eliminate the procyclicality of the micro-prudential liquidity regulation in its current formulation; a disadvantage would be an added layer of complexity." (Tobias Adrian and Markus Brunnermeier)

According to Carosio, another solution would be the one proposed by Perotti, Enrico and Javier Suarez (2009) "to levy charges on banks funding maturity, a proxy for systemic liquidity risk" and the one proposed by Tobias Adrian and Markus Brunnermeier, "to tie levies to measures of systemic risk" or the one proposed by Nicoletti Alltimari, Sergio and Salleo (2010), "to devise market instrument that make liquidity available on a contingent basis, when a systemic trigger is activated". Undoubtedly, these issues require additional analysis and work.

In the area of the microprudential regulation, the Basel Committee, as we all know, in December last year proposed an impressive collection of reforms aimed at increasing the resilience of the individual financial institutions in case of panic and stress.

Without elaboration, I would only mention the following:

First, increasing the quality and the quantity of the capital;

Second, increasing the capital charges on the basis of the trading portfolio;

Third, introducing of a leverage ratio for the financial institutions.

Fourth, improvement of risk management and disclosures, as the crisis has revealed the weaknesses of the so-called "improved" risk management techniques on the basis of the internal risk models.

Fifth, special attention should be paid to the so-called counter party credit risk from OTC derivatives. It became evident that these markets bear risks both for the individual financial institutions (microprudential) and for the financial system (macroprudential). Namely, OTC derivatives are traded bilaterally between banks, other financial institutions and

corporations. They are not traded through the stock exchange, making difficulties in discovering where the last risk is located, i.e. who bears the last risk.

Another set of tools should find a solution for the systemically important financial institutions, extremely complex question, extremely important for the systemic stability of the financial sector.

Except for the general agreement about the need of adequate harmonization of the prudential regulation, as the systemically important financial institutions are almost all “cross-border” by their nature, so far no higher consensus on solutions regarding this matter has been reached.

In the current discussion, basically there are two distinctive approaches, starting from three key features of the systemically important financial institutions (SIFIs): their size, complexity and inter-linkedness.

According to one of the approaches, no institution is too big, complicated or linked to fail. In this sense, there are proposals to limit the size of the banks and to separate commercial from investment banking, disintegrate conglomerates by living wills, etc.

Some argue that “this reasoning is controversial as the effectiveness of these measures depends on the specific features of a relatively small number of SIFIs; different countries will probably come up with different solutions”. (Carosio)

Although it is possible, he says, to reach an agreement on some of these proposals, in particular on resolution mechanisms, others (e.g. breaking up institutions according to some criterion) would require a broad international political consensus, which seems unlikely at this stage.

The second approach would be directed toward seeking additional capital requirement, or a tax, according to the measure for systemic relevance. Taxation seems, according to Carosio, more adequate in a burden-sharing perspective.

“The solution, in my judgment”, says Greenspan “that has at least a reasonable chance of reversing the extraordinarily large ‘moral hazard’ that has arisen over the past year is to require banks and possibly all financial intermediaries to hold contingent capital bonds, that is, debt which is automatically converted to equity when equity capital falls below a certain threshold”.

“However, should contingent capital bonds prove insufficient, we should allow large institutions to fail, and if assessed by regulators as too interconnected to liquidate quickly, be taken into a special bankruptcy facility”.

So, he supports the second approach, and in that light is the latest legislation in the USA which is about to be adopted, as well as the proposals in Europe which envisage measures of this kind.

Namely, “Restoring American Financial Stability Act”, which was passed in the US Senate on May 20, would impose significant new obligations and restrictions for the SIFIs, envisaging a possibility for the FED to introduce rising strict rules for capital, leverage and liquidity. On the other hand, on May 26, the European Commission proposed the Member States to establish national funds, financed from taxes imposed on the financial sector, in order to assist in closing or reorganizing the unsuccessful banks.

The macroprudential tools mentioned so far, do not by any means exhaust the list of suggestions. Exploring adequate instruments continues, and we are all waiting to see what will be delivered both in the form of ideas and in the form of operational tools.

III. The crisis has proved that the price stability is not sufficient to achieve financial stability.

Basically, with small exceptions that have no impact on the adoption of political decisions, the dangerous influence of the growing imbalances in the financial system was not conceived. The central banks were happy for registering low inflation rates, so it seemed to sidetrack the rapid credit growth; the lower risk aversion; the increase in asset prices, and consequently, the mounting vulnerability on the financial market.

That is why, O. Blanchard and others, (2010) say that: “the crisis has made clear that policymakers have to watch many targets, including the composition of output, the behavior of asset prices, and the leverage of different agents. It has also made clear that they have potentially many more instruments at their disposal than they used before the crisis. The challenge is to learn how to use these instruments in the best way.”

Recently, Petra M. Geraats (May 2010), concluded in the same direction:

“Recent financial crises have revealed that a ‘nice’ (non-inflationary, continuously expanding) economy can mask the build up of toxic imbalances that threaten the financial system. So it is vital for policymakers to proactively pursue not only price but also financial stability. Although the pursuit of both objectives could give rise to uncomfortable trade-offs, these can be bypassed by supplementing the main instrument of monetary policy, with tools for prudential policy, in line with the Tinbergen rule.”

Accordingly, asking whether the central banks should have double mandate and answering affirmatively, she (Petra M. Geraats) says: “Although the twin goals sometimes give rise to dueling demands, with an appropriate policy framework central banks can accomplish both and achieve a dual mandate of price and financial stability”.

Definitely, the consensus for this point of view is mounting, since larger number of authors are basically on the same line.

This highlights the importance of ongoing efforts to strengthen the macro-prudential supervision role of central banks (de Larosiere, 2009).

Macro-prudential policies could aim to contain the build up of financial imbalances and ensure that the financial system is sufficiently resistant to withstand a disorderly unwinding (Papademos, 2009).

Considering the important informational synergies between micro-prudential supervision and systemic risk analysis, bringing micro-supervision under the same roof as other central bank functions seems an attractive proposition. Central banks can benefit from, and rely on, extended access to supervisory information and intelligence, especially on systemically relevant intermediaries, in order to better assess risks and vulnerabilities of the financial system as a whole (A. Orphanides, May 2010).

It is not necessary to say, because it is obvious, that I share the same opinion.

IV. The crisis also showed that there is no financial stability by pursuing profligate fiscal policy.

The latest developments in Europe whetted this issue. The decisions of the governments, as one of the basic economic actors, have enormous influence on the aggregate demand. Therefore, the fiscal policy has key role as a shock absorber, contributing to the maintenance of the financial stability. However, we witness that many governments are ignorant to that. Why it is so, is not hard to guess, but watching this “sobering” in Europe, it is obvious that the crisis helped to firm up the following perspectives:

- 1) The fiscal policy should be countercyclical. It should have cyclically adjusted balanced budget rules adopted;
- 2) The fiscal policy must not be a source of shocks. If looking over the fiscal deficits in certain countries, it can be perceived that, there, it is far from that;

That is why the old ideas for the need of establishing independent fiscal agencies and minimal framework which will guarantee independence to the statistical agencies competent for the national accounts, resurrected.

It is impressive what Germany commenced. To incorporate fiscal stability through the highest act in the country, the constitution.

V. As usual, the establishment of a new action framework is one thing, while whether this framework will become operational, functional, and to what extent, is another thing.

It is obvious that the bunch of new ideas, new tools we talk about forced by the crisis, are focused on establishing a concept for managing systemic risk. Therefore, the questions whether it will function, on what the result depends most, are logical.

1) First, the systemic risk is not too hard to define. It is harder to provide operative contents, because of its different dimensions: procyclicality; contagion risk; the spillover effects of a single institution's distress to the rest of the financial system; correlation risk; concentration risk; then, due to the fact that the risk can originate from several sources, etc.

2) Even when the source is identified, the history shows that there is no action at all, or the action is delayed, or the seriousness of the threat is underestimated.

For example, the false reports of the Greek government for the real fiscal deficits were not unknown. And not only for theirs.

It is not untrue that the Federal Reserve and the Treasury have proposed to the Congress a gradual reduction or possible extinction of the GSEs portfolio (Fannie Mac и Freddy Mac), quite before 2004 when their assets were several times smaller than US Dollar 3.2 trillion at the end of 2007.

I would like to say that the matters always crucially depended on the competence, potential and the positive political will of those who represent and manifest the people's sovereignty.

It will be so in future, as well.

3) In the globalized world, when it became apparent that the systemic crises exceed the borders of one national jurisdiction easily, the issue of the global financial architecture and the issue of coordination, gain extremely high significance.

The new regulatory architecture I spoke about at the beginning, the examples for cooperation of the concerned governments and central banks during this crisis are truly encouraging. However, this path is full of scyllas and haribdas. Many obstacles need to be overcome. The paradigm "think globally, act locally" was and it still is very much manipulated by the local leaders who need the votes of the local voters to be as they like it. This mentality guarantees no financial stability. This path needs a lot of work.

VI. Where is the Republic of Macedonia with respect to these trends?

Our general policy is to adhere to the suggestions and the recommendations of the Basle Committee. Regarding the modification in the defining of the core capital, the current methodology on determining the banks' capital adequacy already contains the approach proposed by the Basle Committee as regards to the deductible items. The requirement to make analysis in the following period of the need of modification to the other elements of the own funds, the capital quality, which can be qualified for risk coverage, as well as the introduction of countercyclical capital protection mechanisms remains. Also, the proposals for introducing the leverage ratio are in the process of analysis.

The Basle Committee and the International Board for Accounting Standards in the MSFI 9 proposal support the creation of impairment based on the anticipated loss principle, and not on the incurred loss principle, as the current International Accounting Standards envisage. In the regulations pertaining to the credit risk management we apply the anticipated loss principle.

Despite the intentions for accepting the International Accounting Standards, our valid methodology for classifying the credit risk exposure contains prudent filter, which requires from the banks primarily to know the debtor's characteristics, its credit history and expectations regarding the payment of its liabilities.

Such a solution in the regulations in line with the Basle recommendations, enabled our banks to have relatively sufficient amount of impairment for covering the incurred credit losses during the entire turbulent period, which prevented serious pressures on their capital base.

The crisis showed that even well capitalized banks can be seriously affected, if they fail to have adequate level of liquidity. The Basle Committee developed two minimal liquidity ratios, short-term liquidity up to 30 days and second ratio with longer term character and represents structural liquidity ratio.

As a supplement to the proposed minimal liquidity ratios, the Basle Committee published a revised version of the principles for safe management and supervision of the liquidity risk.

We have proactive role also regarding this measure. Last year we prepared and adopted a regulation that requires from the banks to adhere to two liquidity ratios: (1) up to 30 days and (2) up to 180 days, in Denars and foreign exchange, individually. In that way, we encompassed both, the short-term and the long-term aspect of the liquidity.

The results from the application of this measure are good. At the end of 2009, we have registered the following: the volume of the liquid assets is significantly over the level registered at the end of 2008; all liquidity indicators improved; the gap between the assets and liabilities from the aspect of their contractual maturity and the high percentage of stable deposits decreased.

The history showed again that the financial stability is precious and it represents public good for society.

Let us try to learn the true lessons from the latest crisis.

I wish you a successful work and pleasant stay in Macedonia.

References

1. Blanchard Olivier, Giovanni Dell'Ariccia and Paolo Mauro (2010), "Rethinking Macroeconomic Policy", IMF.
2. BIS Quarterly review, (March 2010).
3. Caruana Jaime (2010), "Macroprudential policy: working towards a new consensus" (Remarks at the high-level meeting on "The Emerging Framework for Financial Regulation and Monetary Policy", Washington DC, 23 April 2010).
4. Caruana Jaime, "The great financial crisis: lessons for the design of Central banks" (2010), (Speech given at Colloquium in honour of L.Papademos, ECB, Frankfurt).
5. Carosio Giovanni, (2010), "Financial Stability and Macro-Prudential Supervision: Challenges for Central Banks" (OeNB – 38th Economic Conference).
6. Geraats M. Petra (2010), "Price and Financial Stability: Dual or Duelling Mandates?" (Paper for the 38th Economics Conference of the Oesterreichische Nationalbank).
7. Greenspan Alan (2010), "The Crisis" (Second Draft paper).
8. Hannoun Herve (2010), "Towards a Global Financial Stability Framework", (speech prepared for 45th SEACEN Governors Conference, Siem Reap province, Cambodia).
9. Haldane G. Andrew (2010), "The \$100 billion question" Bank of England.

10. Krugman R. Paul, The Return of Depression Economics and Crisis of 2008.
11. Miles David (2009), Bank of England, "The Future Financial Landscape".
12. "Macroprudential instruments and frameworks: a stocktaking of issues and experiences" (CGFS Papers, No 38, 2010).
13. Orphanides Athanasios (2010), "Monetary Policy Lessons from the Crisis" (Paper for the 38th Economics Conference of the Oesterreichische Nationalbank).
14. Tarullo K. Daniel (2010), "Financial Regulatory Reform" (remarks given at the U.S. Monetary Policy Forum, New York).
15. White William (2009), "Modern Macroeconomics is on the Wrong Track", (Finance and Development, December 2009).