

FRANKLIN COLLEGE SWITZERLAND
INTERNATIONAL ECONOMIC SYMPOSIUM

SYMPOSIUM PROCEEDINGS
APRIL 8, 2008



MECPOC, MOSLER ECONOMIC POLICY CENTER

Mecpoc is the Mosler Economic Policy Center newly established at Franklin College Switzerland. The center promotes and encourages education and research in new concepts and methods of economic policy analysis. Activities include an annual symposium, a summer scholarship, and other opportunities for undergraduate students to explore alternative views in economic policy making. Mecpoc is a member of EPIC—A Coalition of Economic Policy Institutions, a nonpartisan forum dedicated to promoting research and public discussion of issues related to macroeconomic and monetary policy.

Mecpoc was founded thanks to the generous support of Warren Mosler, who is the president of Valance Co., Inc., and founder and principal of AVM, a broker/dealer that provides advanced financial services to large institutional accounts. He is also the founder of EPIC.

The proceedings of the Mecpoc Symposium consist of papers submitted by the guest speakers and transcripts of the speakers' remarks.

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 Christian de Boissieu,
 Université Paris 1 Panthéon-Sorbonne

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 Giacomo Vaciago,
 Università Cattolica del Sacro Cuore

SYMPOSIUM PARTICIPANTS

THE GUEST SPEAKERS

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Korkut A. Ertürk is a Professor and Chair of the Department of Economics at the University of Utah and a Research Associate at the Levy Economics Institute. He holds a Bachelor's degree from New York University and an M.A. and Ph.D. from the New School for Social Research. Ertürk's recent publications include: "Asset Price Bubbles, Liquidity Preference, and the Business Cycle," *Metroeconomica*, May 2006; "On the Minskyan Business Cycle," in P. Arestis and G. Zezza, eds., *Advances in Monetary Policy and Macroeconomics*, 2007; "Speculation, Liquidity Preference, and Monetary Circulation," in P. Arestis and M. Sawyer, eds., *A Handbook of Alternative Monetary Economics*, 2007; and "The Turkish Currency Crisis of 2000-01, Revisited," *International Review of Applied Economics*, Jan. 2007.

JÉRÔME CREEL

Jérôme Creel is a Professor of Economics at ESCP-EAP European School of Management and a Deputy Director at Observatoire Français des Conjonctures Economiques (OFCE, Sciences Po) in Paris. Since 2006 he has been the Academic Dean of the European Studies Program at Sciences Po and was a junior and then senior economist at OFCE (1998-2003). He holds a Ph.D. from the Université Paris-Dauphine in macroeconomics. Creel's works, published in leading journals in the field of macroeconomics, have dealt with monetary and fiscal policies in the EMU, including coordination issues, the economics of EU enlargement and institutional economics, notably related to the constitutional treaty and delegation issues.

BENOÎT MOJON

Benoît Mojon is an economist visiting the economic research department of the Federal Reserve Bank of Chicago for 2007 and 2008, on leave from the European Central Bank. He conducts research on the transmission mechanism of monetary policy and on the dynamics of inflation. Prior to joining the European Central Bank, Mojon worked as an economist at the Centre d'Etudes Prospectives et d'Information Internationale (CEPII) in Paris. He earned his undergraduate degree and his Ph.D. in economics from the Université Paris-Nanterre. Mojon's research has been published in peer-reviewed journals including the *European Economic Review*, the *Journal of Money, Credit and Banking*, the *Journal of the European Economic Association* and the *Journal of Banking and Finance*.

CHRISTIAN DE BOISSIEU

Christian de Boissieu is a Professor at the Université 1 Panthéon-Sorbonne. Formerly a consultant to the World Bank and to the European Commission, he has also been in charge of a TACIS program mission in Russia on domestic arrears, monetary policy and banking regulation. He is an economic adviser to the Paris Chamber of Commerce and Industry, a member of CECEI (Comité des Etablissements de Crédit et des Entreprises d'Investissement) and honorary President of the French Finance Association and of the Société d'Economie Politique. Since January, 2003, he has been Chairman of the Conseil d'Analyse Economique attached to the French Prime Minister. De Boissieu received his Ph.D. in economics in 1973 (Université de Paris) after which he was a post-doctoral fellow at Northwestern University and Harvard University (1973-1974) and a visiting scholar at the University of Minnesota (1978) and at the Board of Governors of the Federal Reserve System in Washington, D.C. (1982). He has published many books and articles in the fields of monetary analysis and economic policy and is a regular columnist for *Le Figaro*, *Le Monde* and *Investir*.

GIACOMO VACIAGO

Giacomo Vaciago is a Professor of Economic Policy and Director of the Institute of Economics and Finance at the Università Cattolica del Sacro Cuore in Milan. From January, 2003, to March, 2005, he was scientific advisor to the Italian Ministry of Cultural Heritage. He has been a member of the Italian Economists Society since 1976 and was Chairman of REF (Ricerche per l'Economia e la Finanza) from 2000 to 2004. Vaciago holds an economics degree from the Università Cattolica (1964) as well as a Master of Philosophy degree in economics from Oxford University (1968). A regular columnist for *Il Sole 24 Ore*, he has also published many books and articles concerning monetary analysis and economic policy.

ANTONIO FOGLIA

Antonio Foglia is Chairman of the Executive Committee of the Banca del Ceresio, a private bank in Lugano, Switzerland. After earning a degree in economics from the Università Bocconi in Milan, he worked in Tokyo, New York and London to complete his training and has been professionally involved in private banking and with hedge funds since the mid-1980's. In addition to co-managing several leading multi-manager hedge funds, including Leveraged Capital Holdings N.V., the world's oldest offshore multimanager fund, Foglia is also a director of several hedge funds, including some belonging to George Soros' Quantum Group. Foglia, the representative of the Ticino Banking Association on the Foundation Board of the Swiss Finance Institute, which coordinates cooperation among Swiss universities in the field, is also a member of the International Advisory Board of the Central European University Business School.

ANDREA TERZI, MODERATOR

Andrea Terzi is a Professor of Economics at Franklin College Switzerland and coordinator of Mecpoc.

WELCOME AND INTRODUCTION

I am delighted to welcome you to the 1st Mecpoc Economic Symposium “Can Central Banks Alone Win the Global Challenge?”

This title, phrased as a question, is based on two assumptions: one, that there is a significant challenge ahead for financial markets and the world economy following the turmoil in the US in the past few months; and two, that central banks are on the spot as the main actors who are expected to provide responses and solutions.

Less than a year ago, the world economy looked in much brighter conditions than today, and yet, there were a number of rising concerns. One common apprehension was related to the possible dire consequences of an ever-expanding US external deficit, with the biggest fear being that a growing trade deficit would cause a flight away from the dollar, causing a dollar meltdown, followed by a painful period of adjustment that would finally mark a transition to a new era where the euro would replace the dollar as the new global currency. Other scholars were simply pointing their finger at the increasingly asymmetrical macro-economic and financial conditions with virtually one single country, the US, financing world growth thanks to a combination of public and private debt.

World economic conditions today are shaped by two major events that have hit the world economy: one, a financial crisis that did not originate from the US external deficit, but rather from within the US financial system, sending waves across the world; and two: a tendency of the prices of energy and food to rise globally. These two events take us directly into today’s symposium: central banks are dealing simultaneously with rising inflation and fears of systemic breakdown. Can they win this dual challenge?

With respect to price stability, inflation rates have been low and stable almost worldwide since the mid-1990s. Central banks have been praised for adopting effective strategies to keep inflation in check, and not only they have been effective, they have also been lucky. Until now, globalization has been keeping prices and costs down, and the job of central banks has been facilitated by their operating in a favorable environment for maintaining price stability. With the current reversed global price trend, a major challenge to central banks’ ability to keep prices in check could now be in the cards.

With respect to financial stability, this was meant to be strengthened thanks to the implementation of new international regulations and provisions, recommended by the Basle Committee, that seemed to paving the way to a more secure banking and financial environment. Yet, as a few scholars had timely observed, more strict capital ratios for banks do not make the banking system less prone to liquidity crises, and the subprime mortgage mess that started in the US is taking a toll beyond the US borders and irrespectively of banks’ compliance to Basle rules.

Interesting times are when our ideas get tested. And these may indeed be interesting times, especially for central bankers, dealing with an inflation threat that comes along with concerns for financial stability. Central bankers are used to facing trials like these. The problem, this time, is that they come at the same time, and—at least according to standard policy recipes—require opposite responses. Although accustomed to taking more than one exam on the same day, even college students would balk at taking tests that require totally contradictory answers for a passing grade!

How serious is this challenge? And, if it is serious, how well can central banks alone manage the emergency? For the answers to these questions we look forward to hearing our speakers and the knowledge that they will be sharing with us today. Whether central banks can effectively pass this dual test of maintaining price stability in a financially stable environment while successfully handling the global challenge with little or no additional government involvement is our topic today.

To help us disentangle these issues I'm truly honored to introduce our speakers, who will provide a unique combination of expertise ranging from academic research to banking, managerial and policy-making experience. I wish to express my gratitude to our speakers for accepting our invitation to this symposium in Lugano.

Andrea Terzi,
Professor of Economics, Franklin College Switzerland
Coordinator, Mecpoc

WHERE ARE WE IN THE CRISIS AND WHAT TO EXPECT NEXT?

KORKUT A. ERTÜRK

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1. Introduction

From the mid-1990s until 2007 the world economy lived through a long asset-price-driven boom. Ever-rising levels of liquidity increased the search for return and steadily lowered risk aversion over time. In the US, a new shadow credit system came into existence, eclipsing the role of traditional banking in the credit creation process. New financial instruments proliferated and were absorbed with rapidly increasing levels of leverage, raising the financial system's capacity to finance ever larger quantities of long-term illiquid assets with short-term liabilities. But, that meant that levels of financial fragility in the system also rose steadily, exposing many of the world's largest financial institutions to increased risk of a recession. When finally risk aversion returned and investors pulled back, a self-reinforcing cycle of deleveraging forced a mass liquidation of assets, shaking the system to its very core.

The financial crisis that began with the subprime debacle in August, 2007, has undoubtedly been the most serious crisis of its kind since the Great Depression. Many financial institutions on both sides of the Atlantic have been hit harder than anyone ever thought possible, forced to write off billions of dollars in bad credit and raise large amounts of new capital to remain solvent. Yet, despite the relative semblance of financial calm restored since the dramatic rescue of Bear Stearns by the Federal Reserve in March, banks might not have seen the worst of it yet. In the US, housing prices continue to fall, signs of recession multiply and rising inflation threatens to take the wind out of central banks' sails in their fight against the crisis. Just as the fallout from the housing bust and credit crunch is weakening final demand, the sharp run-up in prices of oil, food and commodities is raising inflation and beginning to cause an uptick in inflationary expectations as well. Thus, stagflation might once again push central banks up against a wall. Already getting blamed for letting the beast slip out of its cage by lowering interest rates too much in the US, it is likely that the Fed will find itself under increasing pressure to tighten in the face of rising oil prices, the weak dollar and, above all, a European Central Bank that is more nervous about inflation than the Fed itself.

Falling home prices and illiquid securitized assets have been the two crucial hallmarks of the present crisis. Both are but a legacy of a credit system that financial liberalization and deregulation brought about, a system that is now in the process of unraveling. How this system worked and why it collapsed when it did hold the key for what needs to be done to contain the complex contractionary dynamics the crisis has unleashed. Much of the following discussion is oriented towards the US—admittedly because that is what the author is more familiar with—but also because, arguably, what happens there is likely to be more decisive in terms of its impact on the world economy than what happens in any other single region or country. The discussion turns next to the credit system that emerged under financial liberalization in Section II below and is followed by an examination of the US policy response to the crisis in Section III and how that policy package is now being threatened by rising inflation in Section IV. The paper ends with a few concluding remarks.

2. Financial liberalization and the rise of the shadow credit system

It is well known that since financial deregulation, commercial banks lost many of their advantages in attracting savings and were forced to innovate, transforming the role banking played in money and credit creation mechanisms along the way. Not only have commercial and industrial loans decreased in importance in the overall credit supply in the economy, but their relative importance in banks' total assets has experienced a steady decline as well. Traditional banking, as a result, has ceased to be central to credit creation as it once was before the era of financial liberalization (Ozgur and Ertürk, 2008).

By the late 1980s, liability management had acquired a level of importance unimaginable just a few years earlier with the emergence of certificates of deposit, increased access to the federal funds markets and use of credit market instruments. Whatever constraint deposits might still have imposed on bank credit was further relaxed by the drastic easing of reserve requirements by the mid-1990s. The Fed had abolished reserve requirements for time deposit accounts and reduced them for checkable deposits in 1992, and later, in 1994, retail sweep accounts were introduced, after which required reserves for all intents and purposes ceased to be an issue. This made it possible for banks to manage their assets with a level of discretion that was unprecedented. Finally, with asset securitization, eased by the shift of lending towards loans collateralized by real estate in part because of Basel I, new layers of intermediation emerged, expanded and multiplied, all unreflected in banks' balance sheets so that constraints imposed by their capital base could now be sidestepped. Thus, in this new system, banks have acquired almost total independence from required reserves and core deposits, while the kind of asset maneuverability securitization provided helped them circumvent the constraints posed by their capital base (Samolyk, 2004). When they lacked enough capital to put loans on their balance sheets, they went on to create off-balance sheet vehicles—often called “securitized investment vehicles” (VICs)—to carry them anyway, giving rise to an explosive increase in credit in the economy as a whole. The VICs, subsidiaries of the banks that set them up in everything but the name, worked like investment trust. (Kregel, 2007)¹.

Banks would make mortgages only to offload them onto these off-balance sheet entities, generating their income not from holding assets with an interest rate spread but originating and moving them for a fee just like a broker would. The vehicle, in turn, issued liabilities and used the proceeds to buy the assets (mostly mortgages) the banks did not want to keep on their balance sheets. Using them as collateral to issue more liabilities of its own, it grouped these assets into different batches, called tranches, to generate some desired earning stream and risk combination. The liabilities issued against the “senior” tranche received the lion's share of income at lowest risk and were given the investment grade by the rating agencies for being “overcollateralized,” making them palatable to all institutional investors. The income that was left after what the senior tranche received then went to the residual tranche, which got a lower grade and the liabilities issued against it were sold to those with lower levels of risk aversion such as hedge funds. Over time, residual tranches would themselves be regrouped to generate their own “overcollateralized” senior tranches and be insured—either implicitly by the sponsoring banks by means of some buyback guarantee or explicitly by some credit default swap written by the monolines or some other financial institution—to increase their attractiveness to investors (Engdahl, 2008; Kregel, 2007). The organizing principle of the whole idea, that any credit risk of the assets in the structure could be compensated by overcollateralization of the collateralized obligation itself, soon began to work like a Ponzi scheme—seemingly palatable CDOs could be issued ad infinitum from increasingly riskier assets as long as a larger pool of even riskier assets could be found. Self-fulfilling asset-price expectations were the driving force behind the scheme. As long as home prices kept rising, capital gain expectations made it easier for banks to push mortgages on increasingly higher risk households and the credit increase that resulted from it fueled demand and thus the increase in home prices.

But, once investors started to pull back and deleveraging began, these assets found their way back in one way or another to banks' balance sheets en masse, threatening the very integrity of the banking system. As a result, policy response understandably aimed at preventing distress sales of classes of assets for which market liquidity had dried up and mitigating the downward pressure on home prices from deleveraging.

3. Policy response to the crisis in the US

The overall US policy response to the financial crisis simultaneously targeted (I) banks and the credit system,

¹The Gramm-Leach-Bliley Bank Reform Act, enacted in 1999, expanded the scope of capital market activities allowed for commercial banks, permitting them to own subsidiaries that could engage in the type of financial activities they could not.

(II) the housing market and (III) final demand, where the effectiveness of one component rested on and bolstered that of the other. The first component was based on—in addition to lower rates—enabling banks to borrow against collateral of dubious market value all the while helping and urging them to recapitalize; the second involved direct and indirect use of public funds to buy off shaky mortgages; while the third relied on both fiscal and monetary easing to counteract the negative shock on aggregate demand.

The main challenge the Fed faced in the credit market was to prevent a panic-driven distress sale of assets—definitely by commercial banks on top of the credit hierarchy, but also, preferably, by all players at lower layers of the system as well—that could cascade into a financial meltdown. But, as the crisis hit, it became clear that the Fed’s traditional instruments of control over depository institutions were quite useless in fighting a major disruption in the credit system of the new era. First, the Fed could not track the credit flow and the leveraging that had built up—its monitoring ability was impaired by the new opaque and circuitous layers of financial intermediation that emerged outside banks. Thus, no one really knew where—and how many— bad apples were in the barrel. Second, much of the credit supply in the past originated from banks, and thus any liquidity shortages that threatened the supply of credit could be dealt with relatively easily by injecting liquidity directly to banks—the primary dealers in government securities. As discussed in the previous section, financial intermediation had been transformed—not only had banks sold many of their loans to others; much lending originated with nonbank institutions in the first place. Thus, even though the Fed stood ready to bail out banks directly by providing credit as needed, it was not easy to get them to rescue nonbank firms when the latter ran into trouble meeting margin calls from the banks. At the bottom of the food chain were many nonbank institutions that were deemed to possess portfolios of securities whose underlying mortgages were sound. But, when the crisis hit, loss of confidence drastically reduced the willingness to hold even the sound securitized assets, obliterating much of their value. Falling prices of securities eviscerated the collateral of many such institutions, triggering margin calls from banks. Failing to meet them threatened distress sales of assets and yet more margin calls and yet another bout of decreases in asset prices until the whole system faced collapse.

Finally, in the dramatic Bear Stearns rescue in March—we will probably never know how close the system came to a meltdown—the Fed bent rules in a desperate dash to make liquidity “directly” available to a nondepository institution. Prior to the Bear Stearns rescue, the Fed’s brand-new facilities to auction liquidity—the Term Action Facility (TAF) and Term Securities Lending Facility (TSLF), accessible respectively to depository institutions and primary dealers only (Bernanke, 2008)—had broadened the types of securities it accepted as collateral, but not the types of institutions that could take part in these auctions. Clearly, that was not enough; something more had to be done.

In the market a large swath of mortgage-backed securities had become next to worthless even though the underlying mortgages over which they represented claims were still performing and the Fed was finding it hard going to prod banks to stake a position in them. Bank or nonbank, private firms were balking at a profit opportunity, ostensibly because they could not tell if the sound mortgages would also rapidly deteriorate as the slump deepened. Something had to be done to carve out the good assets from the bad before contagion from what was going on in the financial side harmed them. In a nutshell, this was the problem that needed to be addressed. One strategy was to have the Fed act not only as the lender of last resort but also as the “market maker of last resort” in the hope that market evaluation would return to normalcy as panic subsided. Thus, letting nonbank institutions use the Fed’s TAF would have been a step in this direction. The more drastic alternative was, of course, some form of socialization—the use of public funds directly or indirectly to buy outright either the securities or the underlying mortgages. The latter was the course taken in the US while the Europeans appear to have opted for the former. In the US, the government-sponsored enterprises (GSE) Fannie Mae and Freddie Mac, along with Federal Home Loan Banks, were directed to purchase and securitize home mortgages and refinance subprime mortgages. Likewise, Federal Housing Administration (FHA) guarantees to refinance subprime mortgages were expanded,

with legislation pending to ease payment requirements on guaranteed loans and raise FHA loan limits.

We still do not know what exact institutional configuration will emerge at the end as the political process is still unfolding and is likely to be in flux for some time. Though chartered by Congress, GSEs are nominally private companies, and that tends to obscure what really has been taking place. However, it will not be surprising if GSEs require an infusion of public funds themselves pretty soon—they have come under severe financial strain as their market share has ballooned since last year. In any event, proposed legislation is now in Congress which aims at establishing a new federal corporation similar to what was put in place in the 1930s to use public money to purchase distressed mortgages directly without any intermediaries such as the GSEs (Wheelock, 2008). Otherwise, one might expect that it will only be a matter of time before it is generally recognized that much of the mortgage market in the US has already been socialized.

But, be that as it may, banks' losses can mount again if house prices fall another 20 percent.² Although public control or, better yet, ownership of home mortgages will no doubt give greater flexibility in preventing or slowing down foreclosures, no one can tell what effect an additional 20 percent fall in house prices could have. If bankruptcies by firms and households begin to increase in the near future as expected, how much banks will have recapitalized and thus won't have to curtail credit is still the big unknown that will be decisive in how much deeper the slump will get. US corporate profits have been falling for the last four quarters, unemployment is on the rise and personal income is stagnant or falling. Thus, clearly demand stimulus could play a very helpful if not decisive role in the period ahead of us. But now stagflation is a threat both to demand management and to what has been achieved so far. Higher rates, if the Fed is forced to reverse course as the market now expects, will only worsen conditions in the housing market and increase bankruptcies, making it harder to keep the pieces glued together in the credit system. If banks falter again, that will make contraction of demand all the more severe and a downward spiral will ensue. The threat of a deep and long lasting recession is not over.

4. Will the Fed reverse course?

After few months of relatively small increases, the producer price index for finished goods jumped 7.2 percent in May over the past year, while the increase in the core index was 3.4 percent. Clearly, if this continues—difficult to think it would not with oil remaining around \$140 a barrel—what can the Fed do but raise rates? The sanguine view holds that strong growth in large emerging economies like China and India is what is primarily behind the price inflation, and whatever supply problems Nigeria, Mexico and other oil exporters are facing hardly amount to the kind of supply shock the world lived through in the 1970s. Likewise, unlike during the 1970s, workers today are not strong enough to protect themselves against price increases, and, in any case, rising unemployment stipulates against real wage pressure. Also, if “decoupling” is not going to happen, as everyone now seems to agree, emerging economies are bound to slow down as the US recession deepens. So, barring a new political adventure in Iran the Bush administration might bequeath the world on its way out, this means that the high oil and commodity prices will soon moderate and if they don't, that will be a blessing in disguise as it will mean that the worst is averted.

But, then, it is disconcerting that future prices of oil have been steadily rising just as the signs that the US recession will not be short-lived are becoming stronger. This seems to point at another explanation for rising global inflation that is much less sanguine because it involves falling confidence in the dollar as the world reserve currency. In a nutshell, the effectiveness of the expansionary fiscal stance and monetary easing in the US is predicated not only upon foreigners holding onto their dollar reserves but also upon their willingness to keep accumulating them. While they do not seem to be diversifying out of their dollar reserves in droves, they seem to be losing their appetites for accumulating more at a faster clip.

²The latest figures of the Case-Schiller index show that housing prices have fallen more than 16 percent from their 2006 peak (FT, 5/28/08). In an August, 2005, interview, Robert Schiller predicted that US housing prices could fall by 40 percent (Leonhardt, 2005).

Looked at from this point of view, the emergence of commodities as a new asset class—and rapid growth of investment in them by hedge funds, pension funds and sovereign wealth funds along with investment banks—is but a sign of the increasing flight from the dollar. Much of the usual focus on the dollar peg in the so-called dollar-zone countries in Bretton II thus misses the fundamental point about dollar-denominated financial assets losing their effectiveness in mopping up the excess liquidity the US is continuing to create in the world economy. When a reserve currency begins to cease to function as a reserve currency, reserves—whether of countries that peg their currencies or not—fail to function as a sink for whatever excess money increase there is. Thus, in the absence of such a sink, the larger dollar reserves the increasing supply of dollars gives rise to around the world raise the domestic money supply in the countries where they are accumulating and bid up the prices of oil and commodities overseas, only to return to the US like a ping pong ball in the form of higher-priced imports. That these countries peg their currencies to the dollar matters little. If they did not, the inflationary shock and thus the pressure to raise rates in the US would only be stronger. If one were to think of a one-liner to summarize it all, it would go something like this: Output can be increased steadily by raising the money supply with a currency that enjoys the full confidence of agents in an economy, but if overdoing it eventually busts the currency it will cause inflation.

Conclusion

The Fed today is probably right where it ought to be if the former view holds true. It successfully averted a financial meltdown by acting decisively and boldly just at the right time and helped mitigate the negative demand shock by keeping interest rates low by just the right amount. Signs of rising inflation should not cause it to panic into raising rates hastily, which can create great harm in the real economy. Instead, shaping market expectations by speaking to the problem as it has already begun to do is the right approach to take. Likewise, the weak dollar can be finessed higher by better coordination with the Treasury even if the Europeans do not cooperate much. The prognosis is bleaker, however, if the latter view on inflation is true. In this scenario, keeping rates lower is not going to be much of an option because inflation and flight from the dollar will dynamically feed on each other and keep getting worse. But, raising rates will not necessarily fix the problem either because it will risk worsening the housing bust, hastening bankruptcies and thus deepening the slump. The financial system then will come under strain again, in all likelihood at a time of increased exchange rate volatility that will make a dollar overhang a much more serious threat. If that happens, let's hope it will not be too late to give a chance to Fred Bergsten's insightful suggestion (Bergsten, 2007) about the creation of a substitution account at the IMF through which unwanted dollars can be converted into special drawing rights.

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MONETARY POLICY: WHAT CAN BE LEARNED FROM RECENT HISTORY?

JÉRÔME CREEL

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1. Introduction

The financial crisis which began in 2007 in the United States has piqued interest in its causes and consequences for the domestic economy and for the rest of the world as well. Contagion effects are expected to arise not only in the financial markets but also in the fields of goods and services. The ongoing crisis may be worldwide.

Although globalization has long been associated with competitiveness and its resulting lower prices, this crisis has arrived at a moment when inflation has reappeared. Nevertheless, determinants for the return of inflation are not similar to those of the early 1970s where external factors—e.g., the oil shocks—were associated with internal ones—e.g., sharply declining productivity and rising wages. In the mid-2000s, external factors have been prominent determinants of inflation in the so-called rich countries. Despite a recent rising trend, core inflation reflecting domestic factors and therefore corrected for the incidence of volatile prices for items such as raw materials remains at relatively low levels, for example, below 2% per year in the Euro area. Globalization seems to be associated with rising inflation because of the growth of emerging economies and related high overall demand.

In this context of financial crisis and soaring inflation, central bankers are facing a trade-off: should they cushion the crisis at the risk of pushing inflation upwards or of creating another financial bubble; or should they curb inflation at the risk of deepening the crisis? Surely, the trade-off is not so simple. Curbing inflation may retain competitiveness and low interest rates, helping firms and the financial sector to avoid the crisis, whereas cushioning the crisis may remove the threat of depression and boost production above demand, pushing inflation downwards.

The specificity of the current inflation is its external origin, as far as rich countries are concerned. Therefore, central banks' reactions may be useless insofar as they are set unilaterally. Depressing domestic activity with a restrictive monetary stance may not depress the emerging economies' insatiable demands. Central banks should therefore implement coordinated policies that would put an end to inflation pressures worldwide.

However, coordination is not an easy task and central banks are generally left with a single possible strategy: doing it on their own. Nash equilibria, to introduce some economics jargon, are the rule and coordination the exception.

Taking this general—though still debatable—principle as a given, one has to answer the following question: in the present context, what is the best strategy? I will endeavor to address only the cases of the Federal Reserve (Fed) and the European Central Bank (ECB), though the reactions of all other important central banks such as the Bank of Japan, the Bank of England, the Bank of Canada, the Bank of China and the Bank of Switzerland are important in that they may dampen or deepen the crisis through interest rate and exchange rate channels.

Many theories compete as to which policy is optimal given the context. I will briefly mention three, from the old Keynesian-Monetarist controversy to the new Inflation Targeting (IT) framework. It seems rather obvious that the ECB is influenced by Monetarism and its sequel, the so-called New Keynesian framework, whereas the Fed embraces the IT framework. Although not a novelty in itself, it should be kept in mind because it can be used as an anchor for expectations. Ben Bernanke is not only the chairman of the Fed, he is also among the top economists who have long promoted IT. Remembering his academic work should

help forecast his actions. Jean-Claude Trichet, the ECB's chairman, is in a different position as far as predicting his future actions is concerned: he must fulfill the primary objective laid down in the Maastricht Treaty, i.e., price stability. In addition, his institution relies on monetary aggregates, although not exclusively.

Recalling the theoretical backgrounds of US- and euro-area monetary policies has another advantage: the different theories have been assessed empirically, and it is possible to see whether Monetarism and/or IT deliver efficient strategies and to what extent.

2. Some theoretical background

The nomination of Bernanke as the US Fed Chairman has relaunched the debate on the benefit of adopting an official Inflation Targeting (IT) framework in that country, since he was an early promoter of this kind of monetary strategy.

Recently, the US financial turmoil has sparked a debate about the optimal monetary strategy, the sharp decline in the US monetary policy rate being interpreted as a step backward in the struggle against inflation.

Figure 1. Monetary policy stance: US and the euro area



It is straightforward to show (*Figure 1*) that in the recent past, and after intervention rates had risen from a low 1%-level in May, 2004, to a peak of 5.25% in August, 2006, key short-run interest rates, in nominal terms, have sharply decreased in the US between the beginning of the crisis and mid-2008. After a 25-basis-point decrease on April 30, 2008, interest rates in the US have been decreased on the whole by more than 300 basis points, and it has happened over a short horizon of three quarters. In contrast, the key interest rate of the ECB has remained flat.

It is argued that these contrasting strategies stem from contrasting theoretical frameworks regarding the management and efficiency of monetary policy. They are briefly sketched below.

Unsurprisingly, the Monetarist revolution appears as the first important strand in the literature. This is largely due to Monetarism being a historical prerequisite to that which followed. Monetarism arose as a

response to the Keynesian revolution of the mid-nineteenth century, along two different time horizons. In the short run, the Monetarists claimed the dominance of monetary policy over fiscal policy as a stabilization tool, although they admitted that monetary policy was plagued with “long and variable lags.” On the question of the reliable monetary policy instrument, they favored monetary aggregates over a short-term nominal interest rate. Therefore, in the long run, they claimed that the Quantity theory was valid.

The Quantity theory is usually presented under the following form:

$$(1) \quad MV=PY$$

where M is a monetary aggregate (whether M0, M1 or M3), V is money velocity, P is the general price index and Y is GDP at constant price.

The Quantity theory views money as a means of payment and does not give much attention to another prominent money function: savings or reserve of value for intertemporal transactions. Thus, the theory argues that all present transactions, assessed through nominal GDP, must be settled up with money, taking into account its availability and the many transactions for which a given amount of money can pay.

It has been possible to infer an optimal monetary rule from this logical setting. Under the following three assumptions—inflation is costly, V is constant in the long run and Y is at a steady state (i.e., non-voluntary employment has disappeared)—targeting a zero-inflation rate seems optimal. In order to attain such a target, it is necessary to limit money growth gradually until it reaches zero. Differentiating equation (1) leads to the well-known expression:

$$(2) \quad \Delta M/M=\Delta P/P$$

Finally, a zero-money-growth rate is an optimal monetary rule in so far as inflation is always a monetary phenomenon, a strong assumption in itself as it is also well-known that inflation can be attributable to demand factors, to shocks on productivity and to external determinants like the price of oil.

Beyond this optimal monetary rule, Friedman (1969) also promoted deflation, building upon two different ideas. First, liquidity preference is a costless device, in comparison with the issuance of bonds and stocks which give rise to the payments of yields or dividends. Promoting money demand is crucial in this respect as it minimizes welfare costs. In order to do so, fixing the short-run *nominal* interest rate at zero is optimal. Second, a positive Wicksellian *real* interest rate is also optimal, unless investment is too high and fuels inflation expectations. Using the usual Fisher equation, the consistency between these two ideas makes it necessary that prices always decrease or that a constant deflation occurs in the economy.

These two monetary strategies—declining money growth rates or the achievement of deflation—were complemented by another macroeconomic revolution: the rational expectations (RE). After Phelps (1967) and Friedman (1968) criticized the downward sloping Phillips curve on expectations grounds, the conclusion that no trade-off was possible between inflation and unemployment even in the short run led to the dismissal of economic policies.

After the consecutive re-emergence of general equilibrium in macroeconomics, within the so-called new classical framework, increasing importance has been attributed to stability and expectations, to be opposed with the stabilization issue of the 1950s and 1960s. The necessity of achieving a stable economic environment for firms and households was concomitant to the idea that governments were destabilizing private behaviors, notably because their objectives were alleged to go beyond the steady state (lower unemployment than the NAIRU; higher economic growth than potential growth) for electoral reasons.

The emergence of the notion of stability and the conditions needed for reaching it, led to the emergence of new concepts in the macroeconomic literature: discipline, commitment, credibility, reputation, delegation and conservatism became the master words of the profession. All these words originated in the introduction of RE in all behaviors. As Robert Lucas (1976) stated with regard to control theory: unlike rockets, people try to understand and predict the actions of their controllers. Control theory therefore had to be replaced with time consistency and credibility issues in economics. Tying the hands of governments with rules was advocated as a good solution to the time inconsistency of policy management. Delegating monetary policy to conservative central bankers was another solution.

At least this strand of the literature had in common with the Monetarist revolution the assumption that inflation is costly, whatever the level. Unlike this revolution, however, the optimal instrument of monetary policy is the interest rate rather than a monetary aggregate. It has led to the rise and adoption of an interest rate rule, like the Taylor rule, to monitor key macroeconomic indicators: inflation and growth. The rule generally states that the short-run nominal interest rate is set according to three targets: a long-run real equilibrium interest rate, an inflation target and an output growth target. Central banks would be urged to trade off between the two latter targets, generally giving more weight to inflation than to output. Adopting such a rule would improve the transparency and efficiency of monetary policy, minimizing the biases economic policies might produce in the economy. Such a rule would be “expectable” and would help to dampen the economy but not create shocks to it.

3. Old stories: dealing with Monetarist and Rational Expectations empirical validity

These two monetary revolutions—Monetarism and interest rate rule in an RE environment—have been disputed on many grounds (see Gertler, 1988) and most certainly on empirical grounds.

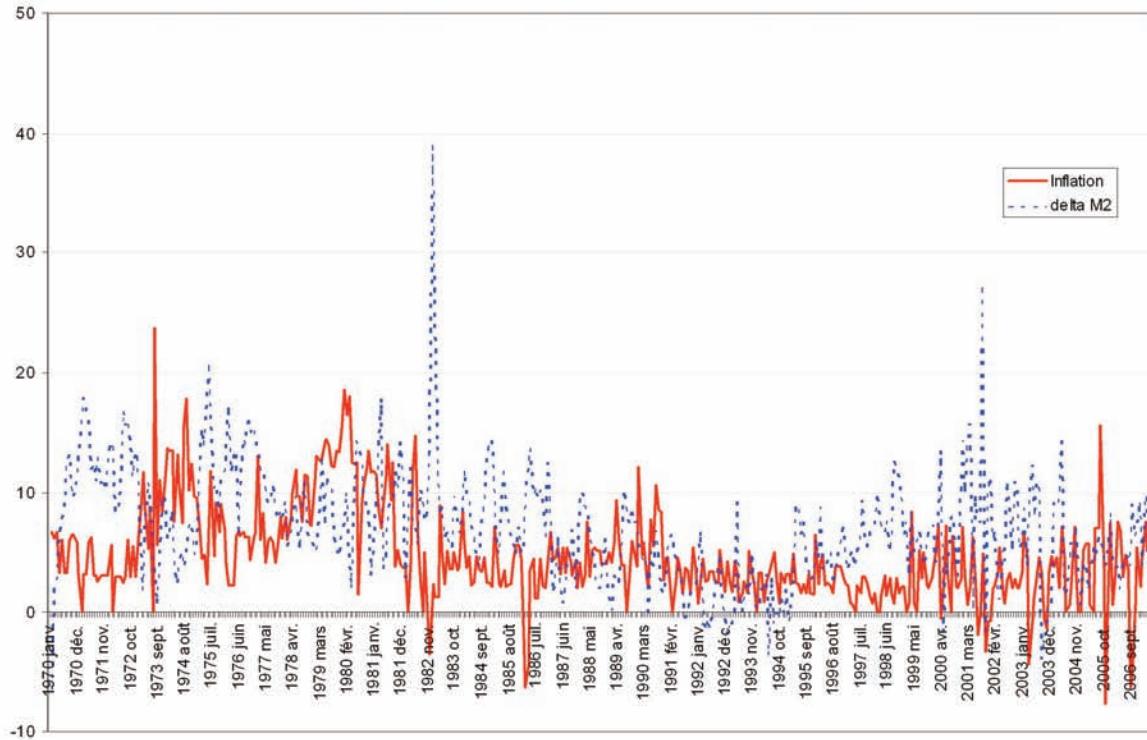
The deflation strategy advocated by Friedman (1969) has been largely weakened since the long and devastating deflation era which Japan has gone through from the late 1990s to the 2000s (see Hamada, 2004). It has always been well-known, on microeconomic grounds, that periods of declining prices are self-fulfilling, in the sense that urgency by consumers to wait for lower prices leads to ever higher discrepancy between supply and demand, until supply stocks disappear. Thus, on macroeconomic grounds, deflation produces disincentives to produce until the whole process reaches an end; hence a long recession is expected to occur.

As for the Quantity theory, although some papers still give credit to its reliability to gauge (future) inflation (see, e.g., Morana and Bagliano, 2007), evidence of proportional relationship and causality between monetary growth and inflation is weak in developed economies where money has been competed against by more sophisticated non-zero-yield financial instruments (see, e.g., De Grauwe and Polan, 2005; Herwartz and Reimers, 2006). A simple plot of inflation and M2 growth rates in the US between 1970 and 2008 (*Figure 2*) shows that there has never been an identity between both rates. Moreover, the correlation between both series is extremely low in the whole sample (.05) and even lower in a shorter sample excluding the years prior to the 1990s (.008). Endorsing a monetary strategy that would largely depend on this theoretical setting is doomed to failure. Notwithstanding the fact that actual inflation is not a purely monetary phenomenon, monetary aggregates may not be a good indicator of future inflation. Thus, money cannot be presented as an anchor for future expectations.

The weak reliance on money as an efficient tool for monetary policy is evidenced by a vector auto-regressive (VAR) model performed on U.S. monthly data in the sample taken from 1970:1-2007:6. The model includes real GDP, core price index and M2. All variables have been first-differenced and therefore the variables included in the VAR model are stationary. Optimal lags are equal to 9 according to the Akaike criterion.

Results (*Figure 3*) show that a shock to monetary growth has absolutely no significant effect on either

Figure 2. The Quantity Theory in the US?

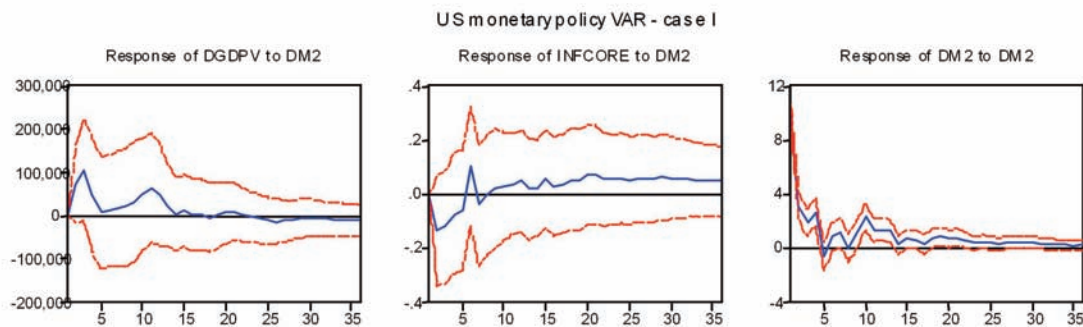


output growth or core inflation. Monetary policy seems rather impotent in this framework, quite at odds with the abundant empirical literature on monetary VARs (see Christiano *et al.*, 2000). Replacing M2 with the fed funds rate gives a different picture where monetary policy is potent (Figure 4, optimal lags are equal to 13). Despite a rather usual “price puzzle,” it is shown that a shock to the interest rate produces a negative and significant response of output growth at a 6-to-9-month horizon; the response is significantly persistent until two years after the shock.

These latter results are at odds not only with the Monetarist revolution, but also with the RE monetary policy recommendations. Shocks to monetary policy are not rapidly embedded in future expectations, provoking only marginal short-run fluctuations to economic activity: they produce long-lasting changes to growth. Thus, monetary policy remains potent.

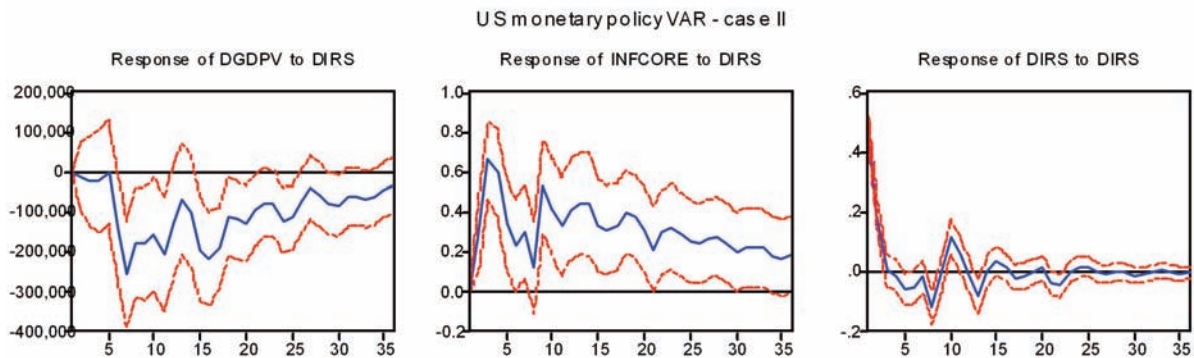
The interest rate rules which have developed along the RE recommendations, within the “rules vs. discretion” debate launched by Kydland and Prescott (1977), have also revealed their limits. First, the

Figure 3. US monetary policy, VAR 1



N.B.: GDPV is GDP at constant prices, INFCORE is core inflation, IRS (or FFR in the following) is the fed funds rate, INF is CPI inflation, LOAN_R is the interest rate on bank loans; variables preceded by “D” are stated in first-difference.

Figure 4. US monetary policy, VAR 2



constant-coefficient specification is cumbersome: it cannot respond to shocks if the rule is applied in a mechanical way, without leaving much leeway for compensating unexpected economic conditions.

Second, the rule is very sensitive to the assessment of the output gap which remains an open issue in a world of rapid technological progress which is likely to modify the production frontier. Moreover, in the short run, potential output depends on the degree to which tensions between actual and maximum use of inputs are accommodated by agents. High inflation aversion, i.e., a low degree of accommodation, may lead to underestimating potential output.

Third, the performance of a Taylor rule in the U.S. economy is poor. Qin and Enders (2008) have recently shown that the out-of-sample forecasting performance of the rule was better than univariate (AR) models only before 1979, though Taylor rules have long been said to characterize the post-1980s rather than the 1970s (see Clarida *et al.*, 2000). Thus the relevance of the Taylor rule for anchoring monetary expectations is disputable.

4. Inflation targeting

A great deal of attention has been paid to Inflation Targeting (IT) in the recent literature devoted to monetary policy. In the words of its promoters, e.g., Bernanke *et al.* (1999), (flexible) inflation targeting should be viewed as a “framework” rather than as a recommendation for the adoption of mechanical rules like the Taylor rule. As such, it goes well beyond the monetary recommendations embedded in the two above-mentioned revolutions: in fact, this relatively recent strand of the literature has advocated a general framing of monetary policymaking, encompassing clear targets, accountable policymakers and a flexible strategy.

The essence of IT lies somewhere between rules and discretion, and has been labelled: “constrained discretion.” In the words of its promoters: “*Inflation targeting is a framework for monetary policy characterized by the public announcement of official quantitative targets (...) for the inflation rate (...); by explicit acknowledgment that low, stable inflation is monetary policy’s primary long-run goal; (...) (by) vigorous efforts to communicate with the public about the plans and objectives of the monetary authorities, and (...) mechanisms that strengthen the central bank’s accountability for attaining those objectives*” (Bernanke *et al.*, 1999, p.4). Later they add: “*By imposing a conceptual framework and its inherent discipline on the central bank, but without eliminating all flexibility, IT combines some of the advantages traditionally ascribed to rules with those ascribed to discretion*” (Bernanke *et al.*, 1999, p.4).

The IT framework can be related to discipline in that it anchors expectations thanks to the publicly announced inflation target range, but it permits some flexibility: deviations from the target do not incur a loss of credibility and reputation provided the reasons for the deviations are explained to the people. This flexibility gives some leeway to monetary policy and gives the IT framework a specific feature that the Taylor rule, for example, cannot fully retain.

In the recent past, some OECD countries turned formally to an IT regime: between New Zealand, which did so in 1990, and Spain, which did so in 1995, five others, including Canada, Sweden and the UK, took part. These institutional regime shifts raised questions about their direct incidence on the optimality of implemented monetary policy: for example, have (expected) interest and inflation rates been lower there than in non-IT countries?

Empirical literature has been mixed so far, mainly because non-inflation-targeting countries have endorsed relatively similar policies to inflation-targeting countries or have benefited from the overall “Great Moderation” era. Inflation-targeting promoters generally argue that this framework is conducive to low inflation and low inflation expectations, although worldwide inflation has been decreasing since the mid-1980s. They also make a point on the small pass-through in the inflation rate from shocks to the price level in IT countries, although other countries decided to curb inflation and to disinflate in order to gain competitiveness, irrespective of a pure IT framework (e.g., the EMU, where the ECB does not target inflation in the sense given by Bernanke *et al.*, 1999). Promoters finally point out that IT is a transparent nominal anchor, likely to improve policy effectiveness regardless of the fact that other possible transparent anchors exist in non-targeting countries: monetary aggregates in the case of the ECB or the nominal exchange rate in the cases of China, Norway, Japan, etc.

In order to disentangle the monetary effects which are specific to IT countries from those pertaining also to non-IT countries, Angeriz and Arestis (2008) use an Unobserved Component Model in the vein of Harvey (1989) to assess the lock-in effects in IT OECD countries in comparison with the US and the EMU which are chosen as the control group. Their conclusion is that non-IT central banks have been as successful as IT central banks in locking in inflation expectations.

Creel and Hubert (2008) use a Markov-Switching VAR in the vein of Hamilton (1989) to gauge regime switches in major IT countries. They escape the control group problem and conclude that switching to an IT regime has permitted countries to improve the effectiveness of monetary policy: better predictability of policy responses and higher monetary leeway, under the form of low real interest rates, are among the characteristics of an IT regime.

Both approaches are complementary. As a matter of fact, conclusions from a mix of these two papers are twofold. On the one hand, according to Angeriz and Arestis (2007), viewing the US as a non-IT country leads to the conclusion that it has succeeded as well as IT countries in curbing inflation and future expectations. This conclusion would apply to the ECB as well. Thus, the Fed and the ECB would be comparable. On the other hand, according to Creel and Hubert (2008), the effectiveness of monetary policy in IT countries is strong and should help to promote its generalization around the world. In this respect, however, the Fed and the ECB are not comparable: the Fed is governed by a promoter of IT, which makes the above-mentioned generalization to the US likely, and the objectives of US monetary policy embed inflation and growth; hence, they pertain to discipline and flexibility. On the contrary, the ECB has a superior objective: price stability, hence, it gives a heavy weight to discipline. Moreover, officials at the ECB have regularly refused to follow an IT strategy, making it unlikely that they change their minds in the near future.

All in all, the closeness of the Fed’s monetary strategy with an IT strategy facilitates expectations by the public on the actual and future monetary reactions decided upon at the Federal Open Market Committee (FOMC) as the public knows the overall framework the FOMC is likely to follow. The Monetarist/New Keynesian with RE framework that the ECB is following is also well known to the public. The main difference between the two central banks however is in the empirical potency of their underlying models: whereas IT has proved efficient, the Monetarist world with RE has proved inefficient in that it was unable to reproduce the data (*see Figures 3 and 4*).

5. Beyond IT: the credit channel

Beyond IT, Bernanke also improved knowledge on the links between monetary policy and banks. In two papers with A. Blinder (Bernanke and Blinder, 1988, 1992), he showed that bank reserves and therefore reserve requirements not only impinge on bank deposits, i.e., money, but also on bank loans; hence, bank credit impinges on aggregate demand and monetary policy has real effects.

This view is based on the assumption that bank loans and bonds are not perfect substitutes, at odds with the perfect substitution assumption in the usual IS/LM model. Thus, private agents have to trade off between bonds and credit for financing their investments. During a monetary contraction, the financing composition is changing towards more bonds, at the expense of bank credit. However, smaller firms are more badly hurt than bigger ones because they remain more sensitive to bank credit than to bonds; stated differently, their reliance on bond financing is small.

In this respect, monetary policy is highly potent: through the credit channel, it can produce real effects, either contracting or expansionary. Tight money in this conceptual framework would have more negative effects on the output than in the IS/LM model.

In the following, we have assessed the credit channel in the US. We show that integrating the interest rate on loans in a VAR comprising GDP, inflation and the federal funds rate improves the overall interpretation of the model.

The sample runs from the fourth quarter of 1982 to the second quarter of 2007. Studies dedicated to monetary policy rules usually show that a change in the conduct of US monetary policy occurred under Paul Volcker's chairmanship (see Clarida *et al.*, 2000). Volcker was appointed in 1979. However, Boivin (2006) reports a break in the conduct of monetary policy in October, 1982, and recalls that the fed funds rates between 1979:10 and 1982:10 were not a good measure of monetary policy stance, being replaced during that period by non-borrowed reserves. Clarida *et al.* (2000) also mentions this breakpoint. Therefore, our sample begins right after the fed funds rate started being a good measure of the monetary stance. By limiting the sample to the second quarter of 2007, we escape the noise introduced by the management of the "subprime" financial turmoil.

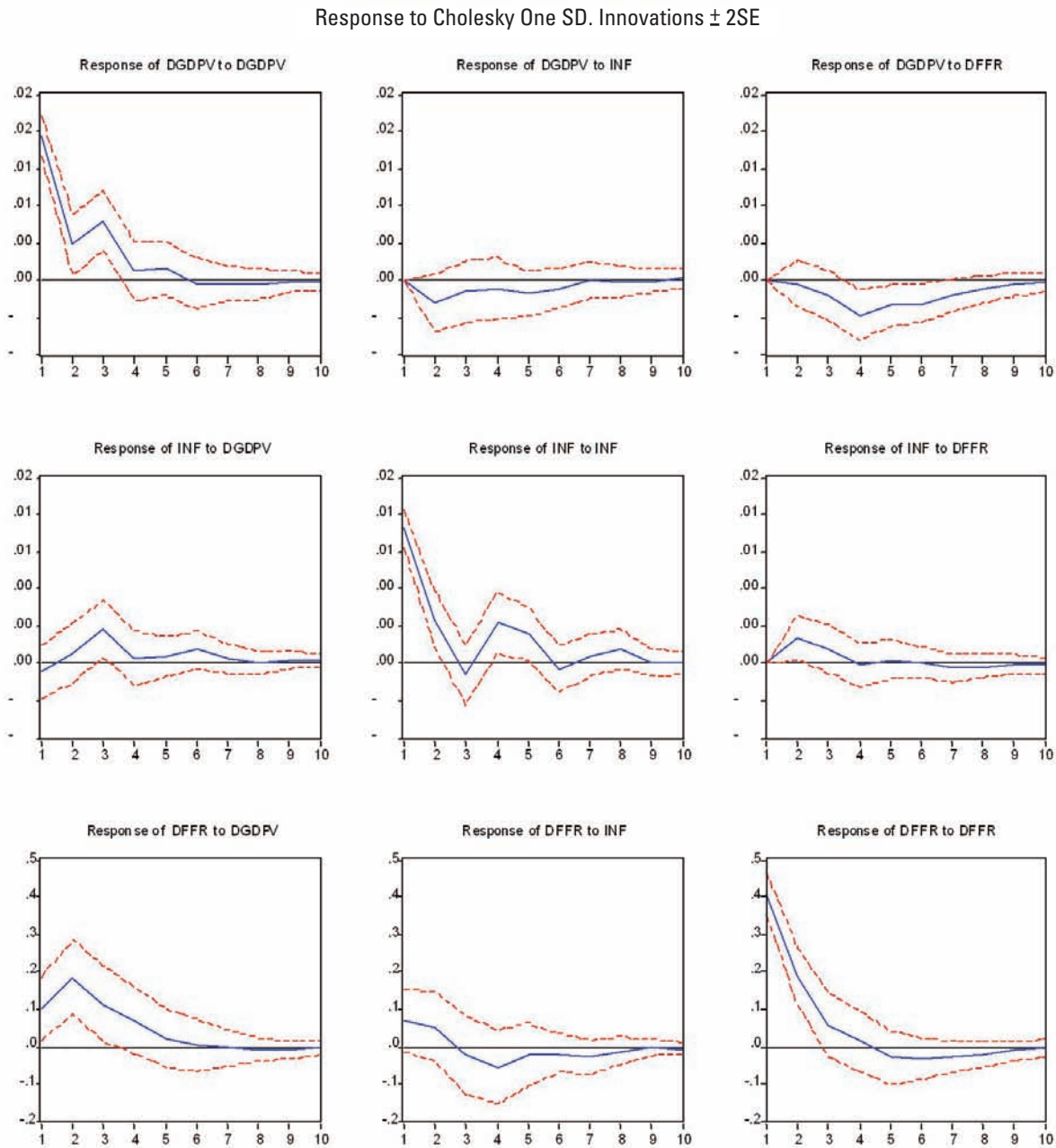
All quarterly data come from the Federal Reserve website except GDP, which comes from the OECD database. Unit-root tests have been performed. All data are I(1). They have been transformed in first-difference before being introduced in the VAR models.

Three models have been assessed. First, a three-variable VAR was studied, comprising GDP, inflation and the federal funds rate. Using the LM estimator, three lags have been chosen. Responses of the fed funds rate to a shock to production and inflation have the usual features in the short run (*Figure 5*). However, the fed funds rate decreases three-quarters after the shock to inflation, although not significantly. This decrease can be linked to the decrease in production.

It is also noteworthy that the response of the fed funds rate to a production shock is more substantial and long-lasting than to an inflation shock. It is in contrast with all the above-mentioned literature on US monetary policy rules and points to the fact that the Fed has been able to trade off between its three objectives—low unemployment, low inflation and low long-term interest rates—to the benefit of the former. It remains to be said that the Fed's response to GDP deviations is in sharp contrast with the strategy generally attributed to the ECB.

Following Bernanke and Blinder (1992), it can be argued that the responses of the fed funds rate to inflation and GDP deviations show that the Fed follows a reaction function. Finally, *Figure 5* shows that

Figure 5. Impulse response functions, 3-variable model, no exogenous variable



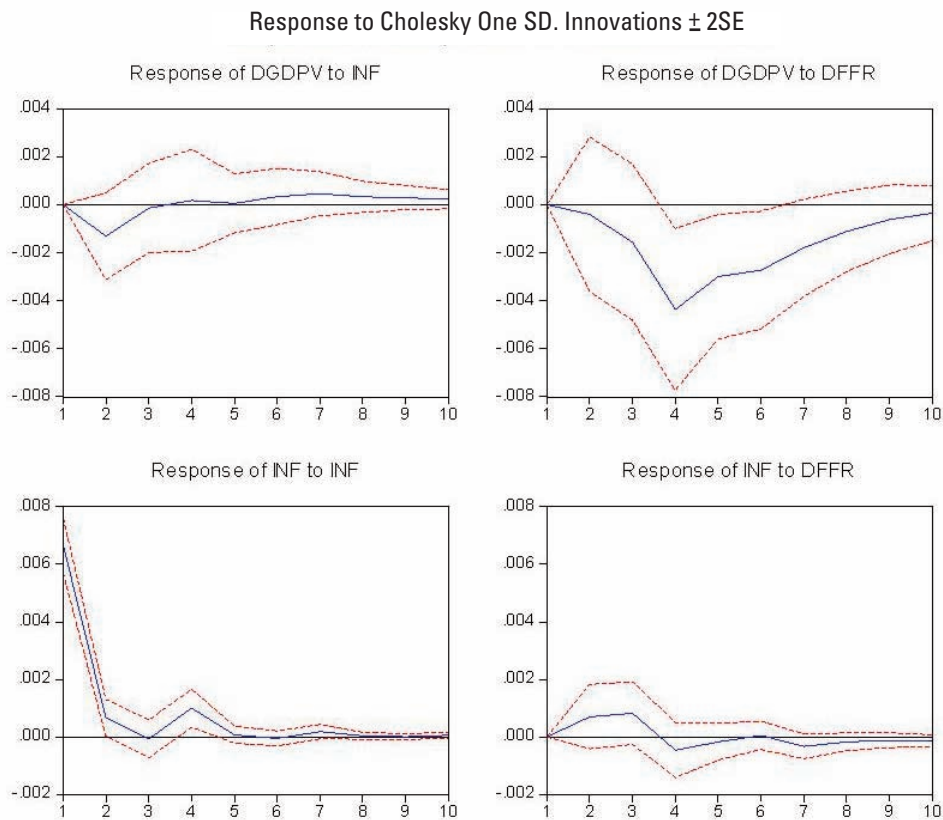
N.B.: name of the variables given below figure 3; DGDVP and INF are expressed in percent.

a shock to the fed funds rate produces the expected GDP decrease in the mid-run; however, it produces an increase in the inflation rate, hence a so-called “price puzzle.”

In the second model (Figure 6), we use the commodity prices as an exogenous variable and the “price puzzle” is no longer statistically significant: consumer prices no longer catch future expectations which are now embedded in commodity prices. The pass-through argument is also confirmed because a shock to prices does not lead to a sharp move in the inflation rate: the inflation rate has returned to its before-shock level five quarters after the shock.

In a third model, we have introduced the bank prime loan rate among the endogenous variables of the model. Results are striking (Figure 7). A shock to the fed funds rate has no significant effect on GDP;

Figure 6. Impulse response functions, 3-variable model, commodity price inflation as an exogenous variable



rather, it produces a significant rise in the interest rate on loans, hence a “credit channel.” Moreover, a shock to the bank prime loan rate accompanied by an increase in the fed funds rate produces a GDP decrease in the mid-run, without any effect on the inflation rate that remains at its before-shock level. The assertion that a shock to the bank prime loan rate is “accompanied” by an increase in the fed funds rate is not an assumption: a Granger-causality test leads to the conclusion that causality goes from the fed funds rate to the bank prime rate (*Table 1*).

This empirical investigation has had two main outcomes. First, it has shown that monetary policy is potent (*model 2*) in that it has had real and stabilizing effects: the fed funds increase if GDP increases; and a rise in the fed funds rate reduces GDP. Second, within an expanded model incorporating a bank rate, it has shown that the real impact of monetary policy is indirect, in that it has gone through the bank lending rate. Therefore, it can be concluded that the potency of monetary policy in the US is enhanced if the monetary policy stance gives way to a shock to the interest rate on loans.

6. Conclusion

The Monetarist and RE revolutions led to viewing monetary policy as having a bigger impact on expectations than on actual variables. This view is now shared by the New Keynesian framework. In this paper, we have shown that the ability of well-known monetary rules pertaining to these frameworks and meant to anchor expectations, was weak: the Friedman rule and the Taylor rule have weak out-of-sample forecasting properties.

There are other means of anchoring expectations, and in this paper we have endeavoured to go back to Bernanke’s papers. We have found evidence that US monetary policy has been consistent with the views he has expressed in various papers and communications. We have also found evidence that US monetary policy has been potent. Therefore, we claim that reading Bernanke’s papers helps not only to understand his past actions but also to forecast his future decisions.

Figure 7. Impulse response functions, 4-variable model, commodity price inflation as an exogenous variable

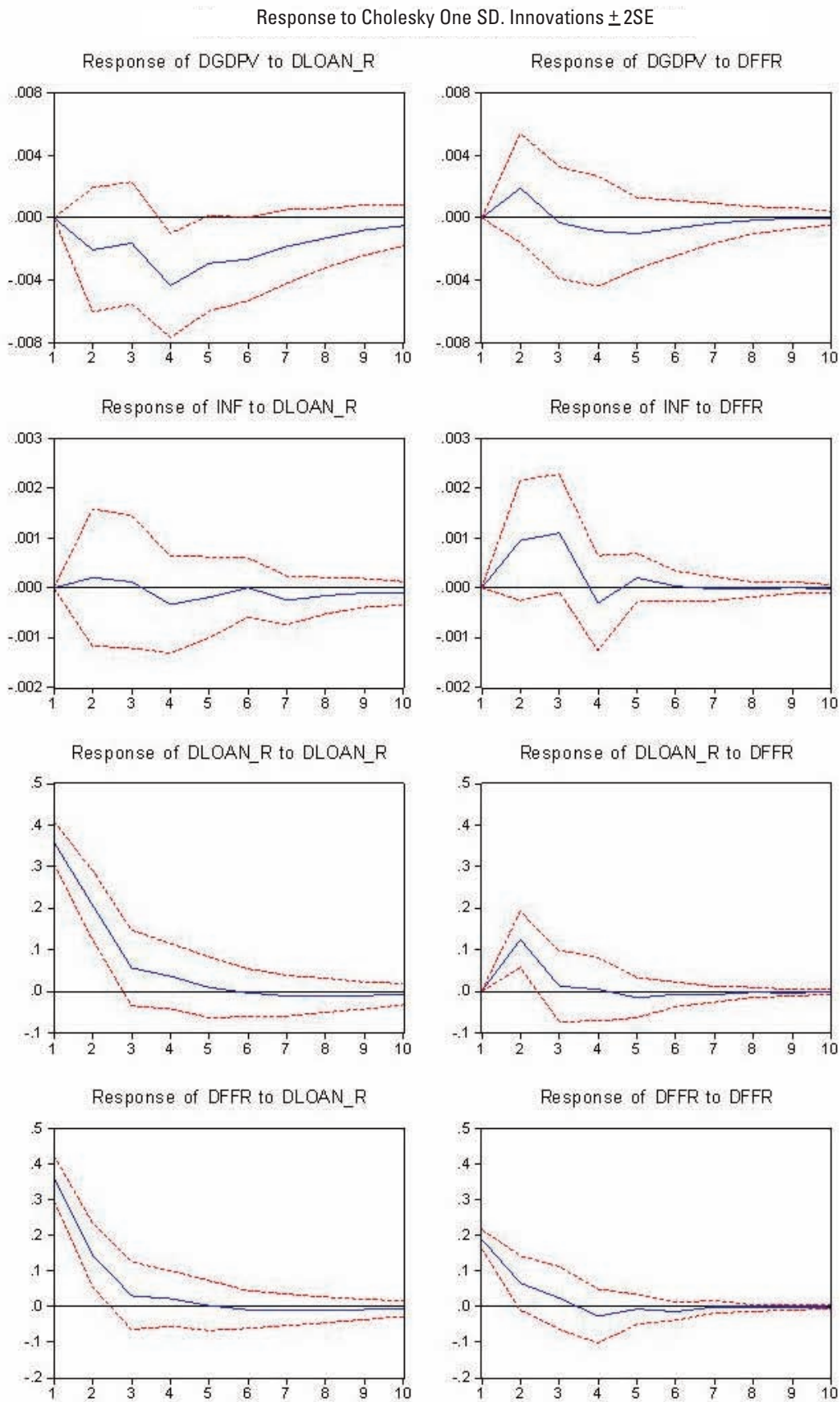


Table 1. Granger causality tests

Pairwise Granger Causality Tests

Sample: 1982Q4 2007Q2

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
LOAN_R does not Granger Cause FFR	99	0.54327	0.58266
FFR does not Granger Cause LOAN_R		20.7103	3.5E-08

In contrast, the cautious ECB has stuck to a monetary strategy whose main arguments are related to Monetarism and its sequels. Although this strategy is easily predictable, its efficiency is debatable. The Quantity theory has been shown to be invalid. Moreover, since the beginning of the “subprime” crisis, the ECB has not made a move on the interest rate, remaining tough on inflation, although it has flooded financial markets with easy money. Therefore, long-term interest rates have moved upward, and the ECB has taken the risk of increasing further the risk premium. In the meantime the Fed has tried to lead bank rates downward. A monetary strategy consisting in indirectly modifying interest rates on loans has been shown to have real and stabilizing effects. Fed funds rates increase when GDP is above its before-shock level, and the ensuing increase in the interest rate on loans dampens GDP fluctuations. A symmetric move is expected to produce symmetric effects.

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GLOBALIZATION AND INFLATION DYNAMICS¹

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I. Summary and conclusions

This paper discusses the dynamics of inflation in the OECD countries over the last four decades, and it evaluates whether globalization may have modified inflation dynamics. Globalization is a loosely defined concept. In this paper, we mean by globalization the emergence of China and India as major players in world trade. This process started in the 1990s and should carry on as these two countries reach, in one or two generations, the per capita GDP of OECD countries. The rise of China, and to a lesser extent, India, can be seen as a major positive shock to labor supply. Being currently at the beginning of this process, the supplied labor is cheap relative to labor costs in OECD countries, and the prices of goods produced by China may be an order of magnitude lower than if these goods were produced in more recent OECD members (South Korea, Mexico) or older ones (Europe, North America, Australia and New Zealand).

The major inflow of inexpensive labor in world trade has had many consequences that have received a lot of attention in the media as well as from international organizations (see the *IMF World Economic Outlook*, spring, 2005; or the *BIS Annual Report*, 2006). In this paper we review the theoretical debate and the empirical evidence about the potential impact of globalization on inflation. In so doing we draw on existing research including our own. We also report some preliminary exploration on the possibility that globalization has changed the response of unit labor costs to oil prices.

We proceed in two steps. First, we show that the dynamics of inflation have been generally common across OECD countries way before anybody cared about globalization. This allows us to cast doubt on the conjecture that the stability of inflation, a trend that was strikingly broad-based in the world economy from 1990 to 2007, is the only common factor influencing inflation. In my view, monetary policy and its shift over time have been the dominant force.

Second, we propose a critical review of three potential channels through which globalization may have influenced the dynamics of prices. We call these:

- the “China and Wal-Mart” channel,
- the “foregone bottleneck” channel, and
- the “China and wage-bargaining power” channel.

The first one refers simply to the possibility that importing lower-priced goods, like those typically sold in large retail stores such as Wal-Mart, lowers inflation. The second one was first put forth by Borio and Filardo (2007), who argued that the organization of production on a world scale reduced the relevance of domestic Phillips Curves. A well-known sequence of the business cycle prior to globalization would see inflation accelerating during booms as the national base for factor inputs, such as labor, approached full capacity. These adjustments become less likely if national producers can match surges in demand by drawing on foreign labor. Finally, the third channel relies on changes in the bargaining power of workers in the North, who fear the threat of relocation of production to countries where wages are lower. This threat, which may have become more palatable with the rapid emergence of China, could induce workers to accept fewer wage increases.

We show that the first two channels are weak at best, while a first exploration of the data is somewhat supportive of the third, at least in the manufacturing sector. The effects of terms of trade shocks on unit labor costs have changed in the last 15 years with respect to the 1970-1990 period. Increases in oil prices have not translated into higher unit labor costs (ULC thereafter) since 1991. We also show, however, that, looking at the economy as a whole, ULC, which have also ceased to increase following increases in oil price shocks, have become negatively correlated with decreases in oil price shocks. Hence, in such periods

¹ This is the background paper for a presentation made at Franklin College, International Economic Symposium, Lugano, April 8, 2008. The opinions expressed are the author’s own and do not reflect the views of the Federal Reserve Bank of Chicago or the Federal Reserve System.

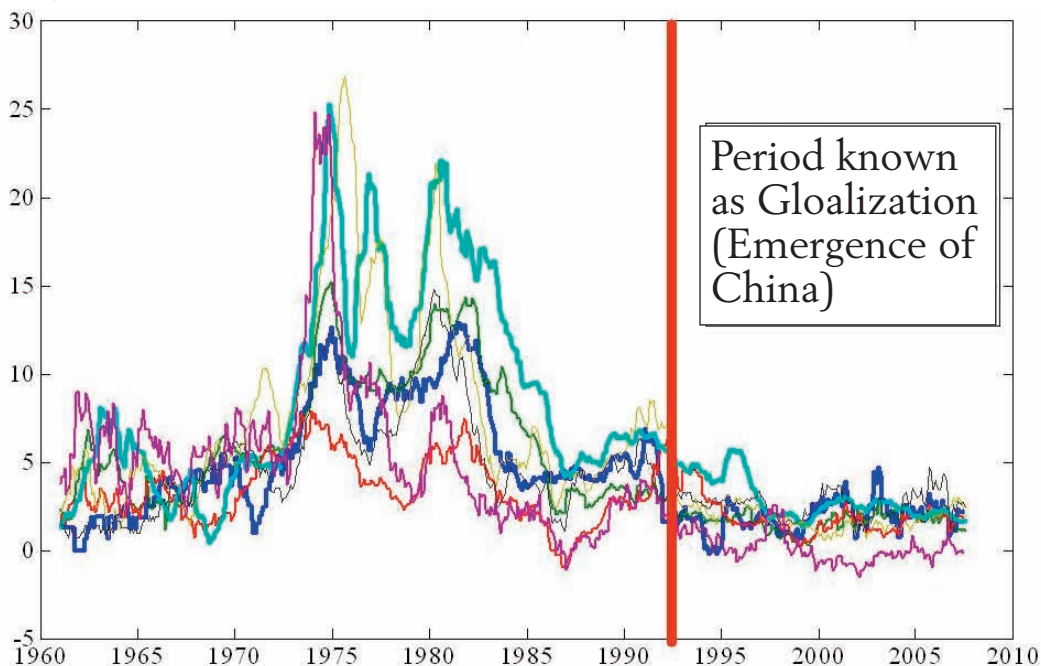
workers rebuild their share of productivity gains. This result may reinforce the view that it is not globalization but monetary policy that explains the lower pass-through of oil prices to core inflation that we have enjoyed since the 1990s. Indeed, one interpretation of our results is that workers may accept temporary deterioration in purchasing power because they expect that inflation will not deviate persistently from the central bank inflation objective. They expect, and actually have, enjoyed higher real wage growth relative to productivity when oil prices have declined.

2. The dynamics of inflation since 1960

A first look at inflation rates over the last 50 years is very informative. I gather in *Figure 1* the time series of CPI inflation rates in the G7 countries (Canada, France, Germany, Japan, Italy, the United Kingdom and the United States). The co-movement in these time series is very striking. All countries, including Germany, experienced a “Great Inflation” in the second half of the 1970s. Beyond this common trend, up from 1960 to 1980, and down from then on, a closer look also indicates that inflation in these countries also shares some cyclical fluctuations. We also notice common cycles that peak in 1962, 1970, 1975, 1980, 1992 and 2002. In a previous paper, Ciccarelli and Mojon (2005, 2008) show that a common factor, i.e., a linear combination of these time series, which can be assimilated to their mean, accounts for more than 70 percent of the variance of inflation rates in OECD countries.

These statistics naturally lead one to wonder why inflation rates have moved together and what the forces are that govern their co-movement. This discussion is undertaken in detail in Ciccarelli and Mojon (2008). We conclude in particular that inflation co-movement is due to common shocks rather than to spillovers across countries.

Figure 1. Consumer Price Inflation in the G7



For what concerns us here, is it the case that globalization, which is a common shock for all OECD countries, has helped to bring inflation down and keep it there? The answer to this question is probably yes, in the sense that importing lower-priced goods can only help bring the general price level down. However, the perhaps more interesting question is the relative importance of this one factor when compared to other forces. Among these, monetary policy is the main suspect. Some argue that the low level of inflation reflects changes in the monetary policy regime². This is quite clear for the 1990s, a period when 16 OECD countries converged to the low inflation standard of the Bundesbank before adopting the euro.

² See Levin and Piger (2004), Benati (2003, 2004), Benati and Wood (2004), Altissimo (2003), Gadzinski and Orlandi (2004) and Goodhart and Hofmann (2003), Cecchetti and Debelle (2004), Robalo Marques (2004) and Dias and Robalo Marques (2004) and Ahmed *et al.* (2002), who review the literature that has debated which share of output and inflation stabilization is deserved by policymakers.

Aside from the countries that are now in the euro area, the 1990s also saw the spreading of “inflation targeting” in such Commonwealth countries as Canada, the UK, Australia, New Zealand, and, beyond, in Sweden, Norway and Brazil to name a few. These monetary policy regimes rest on the objective of maintaining inflation near a point target (typically 2 percent) or within a target range. In the case of the euro area, the European Central Bank, which is not an inflation “targeter,” uses a numerical value for its definition of price stability: inflation should remain close to 2 percent from below over the medium term. These objectives put inflation stability at the center of the mission of monetary policy. They are meant to anchor inflation expectations so that economic agents have a better sense of the real terms of their nominal contracts. The success of these monetary policies is an alternative explanation to globalization for the stability of inflation that we have enjoyed over the last 15 years. Hence the next section will try to assess the contribution of globalization to the stabilization of inflation.

3. Three channels from globalization to inflation

3.1 The “China and Wal-Mart” channel

The first channel through which globalization may have impacted inflation is trade and the growing substitution of home-produced goods by goods imported at a much lower price. Let’s take the example of one item to fix ideas. If domestic-made T-shirts cost 10 euros and those made in China cost 2 euros, and the market share of those made in China increases from 10 percent to 90 percent, the average price for T-shirts will go from 9.2 euros to 2.8 euros. If this transition takes 20 years, the associated average yearly deflation would be about 5.6 percent. Hence, to the extent that the market share of imported products at a much lower price level increases gradually, trade of these products would have a negative impact on CPI inflation. However, the consumer basket is composed of a large variety of products, and the retail price of imported ones includes local transportation and retail infrastructure costs. Altogether, this channel is thought to have been limited on the order of 0.2 percent a year on average over the last 15 years³.

This is relatively small if compared to the magnitude of the changes in the mean of inflation in OECD countries. Courvoisier and Mojon (2005) show in particular that most OECD countries experienced a drop in the mean of their CPI inflation in the early 1990s on the order of 4 to 5 percent, from 6.6 percent on average before to 2.1 percent on average after the estimated break in the mean of inflation. Hence it seems fair to conclude that the “China and Wal-Mart” channel accounts for only a small share (0.2 in 4.5 percent) in the drop of inflation levels in OECD countries.

3.2 The “foregone bottleneck” channel

A second view of the influence of globalization on inflation dynamics was put forth by Claudio Borio and Andrew Filardo (2007). These economists from the Bank of International Settlements have formulated the hypothesis that the world-wide organization of production has weakened one of the key cyclical engines of inflation. The typical US business cycle used to involve an acceleration of output, which in turn increased the demand for commodities and labor. When unemployment reached below the NAIRU (Non-Accelerating Inflation Rate of Unemployment), i.e., the long-term equilibrium of unemployment, real wages would increase faster than productivity gains in order to attract new workers. This would trigger inflation and, eventually, the Fed would lower money supply and trigger a recession to cap inflation.

Borio and Filardo (2007) have argued that the integration of the world economy raises the ability of firms to draw on labor abroad in case of domestic capacity constraints. They showed in a given specification of an empirical model of inflation that measures of the world-level output gap were better predictors of country-level inflation than measures of the domestic output gap, a result that would support their hypothesis.

This view and these empirical estimates have actually received a lot of attention and have been refuted. On a theoretical ground, Ball (2006) and Woodford (2007) have both shown that the integration of output (i.e., the increase in the opening of the economy) does not imply that the slope of the domestic Phillips Curve would change. On an empirical ground, Ihrig *et al.* (2007) have shown that the significance of the global-output-gap variable in the inflation equations estimated by Borio and Filardo was very sensitive to the specification chosen and, effectively, not robust.

³ See the *IMF World Economic Outlook* (April, 2006).

3.3 The “China and wage-bargaining power” channel

A third channel through which globalization may influence inflation dynamics that has received little attention so far is the indirect impact that the threat of delocalization of jobs has on wage bargaining. Two features of the last 15 years are remarkable, even if few people have stressed their possible connection. First, inflation has become much less responsive to oil prices than in the 1970s and 1980s. Several episodes of oil price acceleration since the trough of oil prices of 2002, when a barrel amounted to as low as \$25, until the peak in July, 2008, of almost \$150, have not triggered persistent and rising inflation such as we observed in the 1970s.

The second troubling fact is that the number of days of strikes in OECD countries has followed a hump shape with a peak in the mid-1970s. Cecchetti *et al.* (2007) report evidence that the number of days lost in strike has become very small since 1990. This observation may reflect a structural evolution whereby wage earners have lost bargaining power with respect to what they enjoyed before 1985. To some extent, this loss of bargaining power may itself be rooted in the threat of moving jobs toward lower-salary countries. This threat has been reflected both in the media and in political debate in Europe and the US since at least the mid-1990s. Delocalization may actually not involve China so much as Mexico and Eastern Europe. Still, political debate in rich countries has been overwhelmed with the “risk” of large erosions of domestic production. Hence the possibility that the smaller impact of “essentially” positive oil price shocks on nominal wages and core inflation is due indirectly to globalization, which reinforces the risks of losing jobs if not accommodative to terms of trade shocks.

4. The other main dominant factor of inflation dynamics: monetary policies

All these conjectures about the effects of globalization on inflation should be put in the broader context of inflation determination. Both theoretical and narrative evidence strongly point to monetary policy as the single determinant of trend inflation. Ball (2006) argues that even in small open economies, central banks retain the ability to stabilize inflation at the level of their choice. Moreover, the narrative evidence on shifts in the practice of monetary policies is compelling. We know for instance that major changes in monetary policies clustered in two periods of a few years in a majority of OECD countries. First, the early 1980s saw both the US disinflation and the European-Monetary-System-based disinflation in Europe. Ten years later, most OECD countries were either embarking on the low-inflation single currency planned by the Maastricht treaty or adopting inflation-targeting at lower inflation rates than those that prevailed in the 1980s. Turning to the United States, Goodfriend (2007) argues that a common understanding that core inflation should be kept near 2 percent arose in the Federal Open Market Committee in 1995. Hence, the 1990s witnessed all countries of our sample setting up monetary policy regimes with an inflation objective gravitating around 2 percent and the central banks adopting an explicit or implicit commitment to keep it there. Ex-post, notwithstanding the acceleration of world inflation in 2007 and 2008, inflation has remained remarkably close to the quantified inflation objective or target of the central banks.

The higher credibility of inflation objectives, either explicit or implicit, at or near 2 percent also provides an alternative explanation for the low pass-through from oil price shocks to core inflation. If wage earners believe that overall inflation will be maintained on average at the inflation target/objective, they can better accept temporary losses in purchasing power due to negative terms of trade shocks (such as oil price increases).

Changes in monetary policies such as inflation targeting and the Maastricht treaty commitment to reach low levels of inflation and stay there after the adoption of the euro can then explain certain features of inflation: its lower mean level that is documented in Courvoisier and Mojon (2005) and the lower pass-through from oil price shocks to core inflation.

5. Monetary policy or globalization

In this section, I propose a simple preliminary test of this conjecture. In case wage earners have lost bargaining power, positive oil price shocks can be absorbed by lowering real wages relative to productivity gains. In other words, unit labor costs should become less sensitive to positive oil prices than they used to be. However, negative oil price shocks translate into lower unit labor costs because wage earners cannot get back a higher labor share in such circumstances in order to rebuild their purchasing power.

If, on the contrary, the lower pass-through from oil prices to core inflation is due to better credibility of

the inflation target, then the effects of oil prices on unit labor costs should be nil when oil price shocks increase and negative when oil prices decrease. The larger the drop in oil prices, the larger the share of productivity gains that ends up in real wage increases.

Table 1 compares the effects of positive and negative changes in oil prices on unit labor costs before and after 1991 in Germany, the euro area and the United States. For each of the three economies, we further analyze the response of ULC for the manufacturing sector and for the services sector.

Table 1.

Effects of positive and negative oil price changes on unit labor costs												
1970-1990							1991-2007					
Germany							Germany					
	Total		Manufacturing		Services		Total	Manufacturing		Services		
	Coef	Stu.T	Coef	Stu.T	Coef	Stu.T		Coef	Stu.T	Coef	Stu.T	
own lag	0,8	16,0	0,7	9,3	0,8	18,1	0,9	19,2	0,8	10,8	0,9	15,0
positive dOP	0,04	3,5	0,1	3,0	0,04	4,0	0,01	0,4	0,0	-1,0	0,0	0,4
negative dOP	0,0	-1,2	-0,1	-1,7	0,0	-1,1	-0,04	-1,9	-0,1	-0,9	-0,1	-2,5
Constant	0,1	0,5	0,2	0,4	0,0	0,1	-0,1	-0,6	0,1	0,3	-0,1	-0,4
Euro area							Euro area					
	Total		Manufacturing		Services		Total	Manufacturing		Services		
	Coef	Stu.T	Coef	Stu.T	Coef	Stu.T		Coef	Stu.T	Coef	Stu.T	
own lag	1,0	45,4	0,9	27,7	0,9	46,5	0,9	24,5	0,9	17,6	0,9	24,8
positive dOP	0,0	4,1	0,0	4,0	0,0	5,0	0,0	1,2	0,0	-0,6	0,0	1,4
negative dOP	0,0	-0,5	0,0	-1,0	0,0	-1,1	-0,04	-2,69	0,0	-0,4	-0,05	-3,21
Constant	0,0	0,3	0,1	0,3	0,0	0,2	-0,1	-0,7	0,0	0,2	-0,1	-0,8
United States							United States					
	Total		Manufacturing		Services		Total	Manufacturing		Services		
	Coef	Stu.T	Coef	Stu.T	Coef	Stu.T		Coef	Stu.T	Coef	Stu.T	
own lag	0,9	25,1	0,9	20,3	0,8	9,9	0,8	10,9	0,9	16,1	0,6	5,8
positive dOP	0,03	3,4	0,06	3,4	0,04	1,8	0,0	1,0	0,0	0,4	0,0	-0,9
negative dOP	0,0	-0,3	0,0	-0,2	0,0	-0,2	0,0	0,3	0,0	0,8	0,1	2,1
Constant	0,2	0,7	-0,1	-0,2	0,8	1,3	0,4	1,9	-0,1	-0,4	1,5	2,8

Author's OLS estimates

The first striking result of these estimates is the drop in the effects of positive changes in oil price on ULC from the first sample to the second one. It is all the more striking that this feature is observed for all the nine tests I estimated (three sectors in each of the three economies). Hence, prior to 1991, increases in oil prices triggered an increase in unit labour costs, most likely because wage earners would require and obtain an increase in nominal wages that would maintain their purchasing power. This has no longer been the case since 1991.

However, the effects of decreases in oil prices have also changed over time, though not so unilaterally across countries and sectors. In the euro area and in Germany, ULC in services, and also for the total economy, increase more the larger the drop in oil prices. This is consistent with the view that "what is lost" following adverse shocks to the terms of trade, has been regained when these terms of trade have been more favourable. In other words, these results are compatible with an improved credibility of monetary policy and not so compatible with the hypothesis that wage earners have lost bargaining power.

This however is not the case for the manufacturing sectors in Europe and in the US that are more likely to produce tradable goods and possibly more subject to the threat of low-priced imports. For this sector of the economy at least, we cannot reject that the low pass-through from oil prices to core inflation is in part due to the limited ability of workers, since 1991, to defend their share of productivity gains following adverse terms of trade shocks. Lastly, the coefficients of negative oil price changes on services ULC in the US do not so easily lend themselves to interpretation.

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HAS GLOBALIZATION TURNED INFLATIONARY?

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I am glad to be with you this afternoon. Thank you very much, Andrea, for the invitation. In my presentation, I will be dealing with the main topic of this session, i.e., the question of the effects of globalization on inflation, as well as with the twin and topical question of this symposium, i.e., the ongoing financial crisis.

This afternoon, Benoît Mojon has given a very nice presentation on the topic of inflation and globalization. His main conclusion is that disinflation has been mainly due to monetary policy. I agree with this, but I would also stress that globalization has also played a significant role.

With regard to this question, it is important to study the channels of transmission, because I think that you could implement any kind of econometric work, but if it is a black box, or something close to a black box, you show nothing. And one ought to study carefully the channels of transmission between globalization and the level, the dynamics, the content of prices, as well as what I think is becoming the main problem, i.e., changes in relative prices.

I will begin with a few words about the channels of transmission. In the early 1990s, we had the feeling that globalization was helping monetary policy through four channels: First, price competition. Price competition introduced by globalization puts a cap, a ceiling on the rate of inflation. This was the nice story of the 90s: "Inflation is capped due to globalization." We have entered a world where all firms are price-takers. When I look at the current situation, I think that even monopolies are price-takers. One way to see this is to compare the way the current oil shock was accommodated. This oil shock was accommodated with a fairly low impact on wholesale and retail prices.

This was rather surprising, because if three years ago we had known that we would be facing such an energy shock, we would have anticipated a higher rate of inflation in most of our economies. In fact my view is that inflation, despite the fact that it has somewhat accelerated, has been kept under control. During the first two oil shocks of the 70s, there were a lot of firms that were price-makers. Now there are very few. I think that this has been used as a shield against the contamination from oil to global inflation, not a 100-percent effective shield, but a partial shield against a true rebound in inflation.

When we talk about competition introduced by globalization, there is a second argument which is very difficult to introduce into econometric works: the fact that globalization has increased overcapacity in many sectors of the economy. I am thinking of computers, automobiles, banking and finance. Generally speaking, banking and finance are not facing overcapacity at world level, but I think that in many banking and finance activities today, there is some overcapacity. Overcapacity is also introducing a cap on inflation and the possibility for some prices to decrease.

A third channel must also be considered: innovation, and therefore productivity gains. If we want to study the channel of transmission from globalization to inflation, we have to pass through the impact of globalization on competition and therefore on innovation and the fact that innovation is fuelling productivity gains.

This is the argument that was given in the US: when Alan Greenspan was talking about the new disinflation world for the US in the 90s, he was referring to Paul David's work on the industrial revolution at the end of the 19th century and in the early 20th century. He followed a Schumpeterian view of innovation where each wave of innovation (with a lag, called the Solow paradox) fuels productivity gains. I think that even if the Greenspan-David story is not directly linked to globalization, it is still somewhat relevant.

With reference to price competition, Dr. Mojon has discussed earlier wage competition and wage adjustment. By the way, if you look at the figures, wages in China have been adjusting rather quickly over the past couple of years. If the important variable here is the evolution of unit labor cost, when we look at the evolution of wages and wage policies in China it is really important to compare the adjustment of real wages with labor productivity gains. Once the increase in real wages in China is adjusted for productivity

gains due to both product and process innovation, you will see that wage adjustment is partially granted by the productivity gains.

The last channel, which links competition, globalization and prices, has to do with another aspect that we have not been talking about: tax competition. Globalization means tax competition, with adjustments on the low side of the tax. This could also, in some cases, be a way through which globalization is capping the rate of inflation in the economy. These are the positive effects of globalization on price stability.

But there is another very important aspect, which I think is at the core of the debate: the difference between global effects and relative prices. If we look at what is occurring today, we see a very dramatic increase in the relative prices of energy and food. This is the world in which we are living and in which we will continue to live for some time, for years perhaps. By the way, the relative prices of energy and food are the successor of another relative price which was important before, the relative price of services versus industry. Because productivity gains are generally smaller in services than in industry, for the past twenty years we have been seeing an increase in the relative prices of services as opposed to industry prices. This could continue, but for me today when we look at the dynamics of our economies the main relative prices are those of energy and food. The problem is that there is no self-regulation for these products. In the case of energy products (including oil), food and at least some raw materials, both demand and supply elasticity are low, even with a long lag.

I believe that if ten years ago we had thought that a barrel of oil would reach \$100 and more we, as economists, would have anticipated that a supply reaction would stabilize prices. Did we see those reactions over the last five years? If you look at the scale of new capacity, very little was put in place as a way to benefit from these high price levels. What we saw is some kind of substitution effects among energy sources rather than a capacity effect.

All the debate about short-term versus long-term elasticity, for both demand and supply, means, to me, that both elasticities will stay rather sticky and we are going to live in a world where the relative prices of energy and food and some other raw materials will stay very high.

To explain why this is important, I need to introduce something that is crucial when you ask people about their perception of inflation. What is it in people's minds? When we look at the data for all countries, there is a gap between perceived inflation and actual inflation. Consider my country, France, where perceived inflation is about two times actual inflation. I think that the increase in the relative prices of food and energy, which are substantial products, plays a very important role in maintaining this gap or even, in some cases, increasing the gap between perceived inflation and actual inflation.

For the eurozone countries, it is often said that the launch of the euro has created such a gap. It is true if you take France, Italy, Germany, Slovenia and perhaps Malta and Cyprus, to include the last two countries that joined the eurozone. In all eurozone countries the launch of the euro has created or increased the gap between perceived inflation and actual inflation. Why? Because people, partially rightly, had and still have a feeling that the transition to the new currency was used to increase some prices, especially what I would call high-frequency purchases. You buy bread every day, but you do not buy a car every day. And if we look at the impact of the euro on absolute prices and relative prices in most eurozone countries, we see an increase in prices of high-frequency consumption and a possible decrease, due to the competition introduced by the euro, in the prices of low-frequency purchases such as cars, electronics, etc.

Therefore, when you look at the official measure of inflation, the euro effect was very small compared to consumers' perceptions of that effect. I remember the data that were published in 2002-2003 after the launch of the euro notes and coins which revealed that the impact of the euro on inflation was then 0.2-0.3 percent in annual terms. But in people's minds it was much more than this amount, due to the distinction that I have made between high-frequency consumption and low-frequency consumption. This is a very important distinction, and I do not know of any econometric model that uses it in order to understand the reaction of the public opinion in our countries after the launch of euro coins and notes.

I must make two additional remarks on this topic before I conclude with some comments on the financial crisis. The first remark is on asset inflation. I believe that there is a gap between the central bank speech

and the reality in which we are living. We live in a world where the main inflation and deflation forces are in asset markets, such as real estate, raw materials, gold, the bond market and in some cases the stock market. We have been passing, over the last fifteen years, from one bubble to the next, and we will continue to pass from one bubble to the next. The burst of the internet bubble launched the development of the real estate bubble. The burst of the real estate bubble led to the development of the bubble on emerging financial markets, raw materials, oil, etc. We will continue to pass from one bubble to another.

For me the problem of inflation is now more serious with assets than with goods and services. And it is very difficult for central bankers to acknowledge this transition. Central bankers of course know we are living in this brave new world where asset inflation and deflation generate all the wealth effect, positive or negative, that we have been talking about. But it is very difficult for central bankers to acknowledge it fully: it is already very difficult for any central bank to monitor and control prices of goods and services indirectly, but it is much more difficult to try to monitor and control asset prices indirectly. Therefore, I think there is a gap between the speech and the reality of monetary policy. At some point this gap will have to be closed—if I may say so—for the sake of the credibility of monetary policy and monetary governance of our system.

As I have said earlier, my view is that the main question has to do with relative prices rather than with global inflation. It is very difficult for monetary policy to care about relative prices. Also, it is not the goal of monetary policy to do so. In terms of impact on public opinion, relative prices, especially in a situation where the rising prices are energy and food prices, are more important in the minds of the people than some other prices.

In terms of the ability of central banks to control and monitor this situation, I remind you of a statement by Paul Samuelson which I like very much: "If we have two eyes"—he said—"it is because we ought to look at at least two indicators." I think that central bankers must not look at only one definition of inflation. They must look at and monitor several definitions of inflation. There is the debate of core versus headline inflation. But they ought to look more and more at asset prices and the wealth effect generated by those asset prices, even though they do not control asset prices.

Just a few words on the crisis. About the dollar: I am rather pessimistic about the evolution of the dollar, for the same reasons given by Korkut Ertürk. My question is: Do we have any other option besides Dr. Ertürk's SDR solution?

I believe that the main issue here is whether, at some point, the US administration is going to become concerned about the fall of the US dollar. Is there an exchange rate threshold beyond which Americans will think that the cost of a falling dollar would be greater than its benefits? This is for me the main problem, because if the answer is yes, there could be a threshold: \$1.60, \$1.65 per euro, or more, I do not know where the threshold is. If we could say that there is a threshold above which the cost of the falling dollar is too high for the US, we could envisage a coordinated intervention by the G-7 central banks.

You must recall that the situation with exchange rates in October, 2000, was the reverse of the present one: the dollar was too strong and the euro too weak. At that time, we had rather effective central bank intervention. Why was it effective? Because the Fed supported the ECB initiative. Indeed, we had the ECB, the Fed, the Bank of Japan, the Bank of Canada, the Bank of England: the G-7 central banks.

It would be totally ineffective for the ECB to intervene in the foreign exchange market without the Fed. This is the reason why, for me, the big question is when the falling dollar will become too costly for the US. Why could it become costly for the US? The US must import 700-750 billion dollars per year to finance its current deficit, either through direct investment or portfolio investment. Direct investment is going to be fuelled by the falling dollar. But what about portfolio investment? If the US wants to continue to attract portfolio investment in a situation where the Asian central banks do not want to accumulate more US dollars, the only possibility for the US to attract more portfolio investment is an increase in US long-term rates. Therefore, we must couple the possibility that the US dollar will continue to go down with a scenario where US long-term rates will go up. This will be bad for US growth. This is one cost for the US if the dollar continues to fall.

The second cost is the loss of the reputation and image of the dollar as a currency. The third cost is the financing of the US current deficit. Deficits are always financed, and the problem is to know by whom and at what price. This is why I was talking about US long-term rates. Perhaps I am less pessimistic than Dr. Ertürk in saying that there will be a threshold above which the Fed will be with us in order to intervene on the foreign exchange market if it is necessary. The problem for Europe is that we must not be dead before reaching this threshold, dead in terms of price competitiveness and growth. The question is whether the tolerance threshold is about the same for Europe and for America. Apparently we cannot assume that it is the same.

Concerning the other aspect of the financial crisis, I want to make the following comment. If you look back at international coordination over the past 30 years, the only field where we have had an effective international coordination is banking regulation. For me, all the G-7 - G-8 exercises have been, in terms of effectiveness, useless including the Louvre agreement (1987) when they decided to implement a target zone for the dollar and the Deutsche mark (and the yen). This was effective for a few weeks. In the medium term, it was totally ineffective.

Again, the only field where, at the world level, we have been able to agree on an effective coordination has been the Basel Banking Supervision Committee (Basel I and Basel II).

In a report to be presented to the French Prime Minister in a few weeks, I have been dealing with the way to improve the working of rating agencies, which is a topical subject. Is it necessary to implement a standard for bank liquidity? As Dr. Terzi said, Basel I and Basel II deal with solvency, not with liquidity.

There was a meeting in January, 2008, in London between Mr. Brown, Mr. Prodi, Mr. Sarkozy and Ms. Merkel about exactly these topics: Must we implement an international standard for banking liquidity? It will be difficult to find an agreement. Even within Europe there is no convergence on banking liquidity ratios. If you look at the 27 members of the EU today, only two-thirds of them, or 18 countries, have some banking regulations for bank liquidity, and they are totally different from one country to the other. If you compare France, Germany and Italy for liquidity ratios, there is no harmonization at all. Before talking about a possible world-wide harmonization at world level concerning bank liquidity, it would perhaps be nice to start in Europe and to see if it is desirable and possible, given the fact that we want to implement a true single market for banking and financial services.

There are also other topics on which our report for the French Prime Minister is making proposals. Today, we have not discussed sovereign wealth funds, which are part of both the solution and the problem. The rise of sovereign wealth fund is a solution for banks that today need more capital. Even in Switzerland, Germany, France, the UK and the US, many banks are searching for recapitalization through the money brought by sovereign wealth funds. Therefore, it is a solution in the short term. It could be a problem, a geopolitical problem, for the medium and long term, however, and we must define the rules of the game here. It is a problem that must be dealt with at world level, not only by the G-7 - G-8. I frankly think that the G-7 - G-8 is dead, because it is no longer representative of the world economy. Why have Russia at the table and not China? Even when China is invited, it is not a full member, as opposed to Russia. This cannot continue; we have to move to the G-13, G-15 or G-18 (I do not know what the optimal number is) to implement a better and more representative international coordination.

Concerning sovereign funds, the debate that is going to be taken up in April, 2008, in Washington, D.C., is about a code of conduct for sovereign wealth funds. In such a code of conduct what could we agree on? We could agree on at least three topics: transparency of the sovereign wealth funds concerning their investment policy, governance of the funds and reciprocity. If we allow China to buy our banks or part of our banks, we must ask China to be as open as we are: reciprocity.

What I am saying is that when we look at all these debates we have to give concrete answers. I think we could build a matrix to answer the topical subjects in light of this financial crisis. At what level must we deal with the issues: the world, Europe or the national level? Through what kind of answers? Again, three options: formal regulation, code of conduct ("soft" regulation) and self-regulation.

With self-regulation we rely on market answers. Formal regulation is of the kind of Basel I, Basel II. And it will soon be necessary to adapt it, in two-three years, to a new Basel III. It is like the movie sequels Rocky I, Rocky II, etc. In Europe, Basel II started in January of this year. In the US, Basel II will start next year. We cannot change Basel II today, even though we know that there are already some changes to introduce into banking regulation in light of the current financial crisis. We have to wait some time until the crisis is over.

The code of conduct is something between self-regulation and formal regulation. The code-of-conduct approach is proposed by public authorities, but it must ultimately be accepted by the market, by the practitioners. When we discuss how to improve the working of rating agencies and how to fix the rules of the game for sovereign wealth funds, we have to push the idea of an effective code of conduct, because in this area self-regulation will not be sufficient and formal international regulation is impossible.

It is not feasible to enact any kind of formal regulation to regulate rating agencies at world level. On this point, I think the IMF has to update its agenda. Dominique Strauss-Kahn was elected to manage the IMF, I guess, to give a new impetus, a new role to the IMF, in relationship with the management of the financial crises. May I say that this work is very interesting, but, by definition, very difficult. If you look back at all the works implemented by the IMF over the last fifteen years concerning the possibility of forecasting financial crises, the results are somewhat disappointing. We even have some difficulty to "forecast" the crises of the past, when we look at the econometric sample.

I think this is going to be a very tough political debate. Do we create for finance something similar to the World Trade Organization? We are still talking about the WTO, even though today it is rather weak. But despite the fact that today it is weak, its purpose was not weak: to create rules, discipline and ways to implement this discipline. The problem for the next couple of years is whether we can transform the IMF into a financial WTO. Do we create a world finance organization which is not added to the IMF, but which would be a way to renovate the IMF? Despite the fact that I am French, I do not like "institution inflation," and therefore I think that the problem is not to create new institutions but rather to regenerate existing institutions. Thank you very much.

PANEL DISCUSSION

GIACOMO VACIAGO

Università Cattolica del Sacro Cuore

I think we live in interesting times, since the world has become global and therefore anything can happen. My definition of globalization is a world where there are no rules, no definite markets and individuals are rational but sometimes ignorant as they do not master all the variables they are subject to. Globalization to me means interdependence of unknown scale. What happens somewhere in the world – you do not know where – can have an impact on your life, on your wealth, on your well-being, etc.

More so, the world is running faster than the laws and authorities can cope with. One can see that the main characteristics of some of the financial instruments which have been partly the cause of the present crisis are precisely due to regulatory arbitrage by intermediaries, i.e., the creation of financial instruments which are not closely regulated by a single authority. The mixture of bank credit, securitized and covered with insurance, and default swaps was done precisely to avoid any single authority being responsible for it. It is what we have been calling, in technical terms, arbitrage among regulations, i.e., zigzagging among the various authorities, none of them being capable of having a complete picture of what is going on, and this has been the market and government failure of the last two to three years.

There has been a long debate in the *Economist* concerning whether you should study market failures and ask governments to take care of them or, according to a famous paper by Joseph Stiglitz, you normally have government failures and hope that the markets will solve the problems.

In fact, what we see is a mixture of government and market failures, and you do not know which is first, which is at the origin of the problem. You remember that Sir Winston Churchill once said that each peace treaty solves the problems of the previous wars and creates the origins of future wars. By the same token, and this is the risk we are experiencing presently, by trying to solve a crisis, you may actually start a new bubble, a new problem developing in the future.

Coming back to the question of markets versus governments and whether in the global economy we tend to have more market failures and then need rules, authorities, governments and policies to cope with such failures, or vice versa, I will now make two points on a broader perspective.

First of all, which countries have been more successful in Europe so far? I have been making a list of features for which to give prizes to the various members of the European Union and, not surprisingly, the countries that have had more growth in the last 20 years are small, open economies. This, by the way, is another definition of what global economy means. In a global world we are all small, open economies, more so than in the past, even America; if you see what is going on in America, it is very difficult to have recession in one single country. We have been discussing the American recession for over a year, and you get the impression that even the US cannot have its own needed recession, precisely because in a world that grows a lot, it is difficult to have a recession. You may succeed in avoiding growth (this is the Italian experience: we are very good at avoiding growth!), but you can't have recession in one single country, if the other 189 are all growing. It is very difficult because we are all small, open economies nowadays.

In this respect, all the debate of Keynesian versus neoclassical models based on closed economy models deals with a world that no longer exists. The big conflict between neoclassical and Keynesian had to do first of all with government sovereignty. It was assumed that when a government says something will occur, it occurs. Normally (and apart from Italy where it is different!) we think that a government statement is followed by a policy and an effect of that policy: in Keynesian terms, a multiplier greater than 0 was the outcome of a policy. Nowadays, all the multipliers have gone down dramatically, because in small open economies the government can influence behavior but cannot guarantee outcomes, because the amount of external influence is overcoming the capacity of the government to deliver on its promises.

In a sense, we are all becoming Italians, i.e., without a government, even after voting one in, which is our experience. We vote more and more often, with the idea of having a government sooner or later. But if you

see, for instance, the line for public spending in Italy, it is a perfect straight line going up continuously and you do not see any change in the inclination of this line. Growth of public spending increases with the age of the population, which is obviously what happens in a normal country if you do not react with policy. The amount of social spending on a person of my age is three times the amount of spending on a person 20 years of age. By the sheer effect of age, public spending goes on, on a straight perfect line. This is what you see in Italy.

But, coming back to more serious problems and leaving aside these comments on Italy: what is my view on the present situation in terms of this mixture of globalization, the dollar, and inflation and the risks associated with the image that central banks are so powerful?

In my view, one of the reasons we have had so much financial fragility accumulating in the last ten years was precisely because the consensus was that central bankers had become so capable of guaranteeing monetary stability forever and very low long-term interest rates that this somehow led us to think that risk was no longer there.

There were no more risks in the world of “Great Moderation” after the paper by Benjamin Shalom Bernanke in 2004. Thanks to the virtues of central bankers, we will have monetary stability, no variance, i.e., no risks, forever. This meant you could borrow without collateral, you could borrow any amount of money without caring about long-term financial risks. The crisis was built on the assumption that there were no longer any risks and therefore you could take any risk; if risk doesn’t exist, you can borrow unlimited amounts of money and who cares!

But let us go back to the question of today’s globalization. We live in an industrial-revolution kind of world. More and more countries are becoming industrial countries, and so you have to go back to the classics, Adam Smith and David Ricardo. We know how Adam Smith explains growth: it is the capacity of a country to benefit from a greater market. Reduction in costs, economies of scale and innovation come from the enlargement of the extent of the market, says the original 1776 Adam Smith book. David Ricardo’s idea is that through comparative advantages you can always benefit from more and more countries competing in their own capacities, according to their comparative advantages.

This is exactly what we have seen. Not surprisingly, the most successful countries in the last 20 years have not been the big ones, Germany, France, Italy. We didn’t realise how small and open we had become, and we spent time trying to use our bits of remaining sovereignty to maintain our virtues of the past.

We invented “national champions” to protect our defects. We assumed that having had a glorious past—this is typical of France, but also to some extent of Italy and Germany—we could hope to maintain this past and to have it as a model for the emerging countries, which, however, were moving along different lines.

If, however, you see the countries where growth of productivity, innovation, investment in new industries and so on have been higher in the last 20 years or so, you will discover, not surprisingly, that it is small countries, like Switzerland that, having a long experience of being small, were already prepared to become “small and open.” I also mention Ireland and Finland—one of the most successful of the last 20 years in terms of productivity, innovation, specializing in few things in which you are number one in the world.

Italy, France and Germany have not been the best in Europe in terms of growth of productivity and so on, precisely because we had this idea of still having a national state, a national champion. And we were not prepared to go through the Thatcher–Reagan recipe of dissolving the past and leaving room for an entirely different future.

In Italy, for instance, we are still having new technology, like the Internet, simply added to the technologies of the past: we have been able to spend millions to protect our Post Office (we are still using stamps!).

These are two lessons we have learned: Small, open economies perform better than large economies; and the success of monetary stability has been effective in leading financial markets to take on excessive risks.

Prof. de Boissieu recommended that “two eyes look at two things.” But the central banks’ two eyes were meant to look, one, at monetary stability, and two, at financial stability. Most central banks had in their statutes, originally, the idea of having two targets, monetary and financial stability. Then, in the '90s, reforms removed the second eye and we started to have central bankers with one eye only, like Polyphemus. We now have central bankers in Europe who are capable of delivering on one thing, monetary stability. The Bank of England was reduced (by Tony Blair, ten years ago) to a central bank that cares only about monetary stability, and this has been influential in causing the Northern Rock flop.

The ECB is very effective in liquidity management but has no instrument for financial stability — will they simply go to church every morning and pray that no major problem of solvency happens, because we have no authority in charge capable of guaranteeing what the Fed, luckily, still does, i.e., manage its problems in an effective way, perhaps because of the influence of Benjamin Shalom Bernanke.

Most of the problems which Benjamin now has to tackle, of course, were caused by his predecessor. If you go back to the “conundrum testimony” (February 16, 2005), it makes interesting reading, because in that Congress presentation the previous Chairman, Greenspan, said that long-term rates falling when short-term rates were increasing was a conundrum. In the following days everybody went to Google, trying to understand what a “conundrum” is. Conundrum means enigma, something you cannot rationally explain. There is now a huge amount of literature, if you go on Google, hundreds of pages on conundrum now, but no one knew it then in 2005.

It was a kind of mystery. Inflation was starting to rise, the Fed was increasing short-term rates but, notwithstanding the Fed’s move, the curve didn’t shift, but it twisted: the long-term term rates were declining as much as short-term rates were increasing. Greenspan made a point that intermediaries and authorities should be aware that they should not take this as an indicator of their success. The explanation was that central banks are so effective that when they increase short-term rates, expected inflation disappears and long-term rates already go down. It was thought to be a positive consequence of their success.

Three years later, this year, short-term rates have gone down exactly to where long-term three-year rates were in February, 2005. In other words, after all, it was a perfect explanation by rational people that if central banks increase rates, that will cause problems and therefore rates will come back — not a success indicator but a mess indicator! This is exactly what we have seen. The reaction of the financial market, according to rational expectations, in February, 2005, was, “You are increasing rates to 5 percent and then they will come back to 2 percent in three years’ time, because that will cause all the problems you will see in three years’ time.”

This is my explanation: financial markets knew more and better than the authorities the mess they were making. Do not tell the bankers they are causing problems. They know it. Thank you.

ANTONIO FOGLIA

Banca del Ceresio

First, a disclaimer: we have a roster of professors and central bankers here, and I am the ignorant practitioner from a small local bank, with self inhibiting brakes worn out enough to be able to face them and you this evening.

I think we have first to remember that we are in the midst of a huge fire, a global credit crisis, and we are talking about the central bankers, who are the fire-fighters right now. So, the first thing that you do not do is to badmouth the fire-fighters or try to change the head of the fire department during the fire. Let them do the work!

By the way, as a practitioner, I am very surprised by the way they are carrying out their work with fantasy, also in the kind of instruments they are inventing by the day to solve the crisis, and by the way they face problems they had not anticipated and that vex them day after day. I find their behaviour actually quite extraordinary.

We have talked a lot about how good the Fed has been at that. But, in a way, the ECB has been even better, if I may say so, because they did the exact same thing without hitting the front page of the *Wall Street Journal*. They have been throwing hundreds of billions of euros into the market without having any politician cry fool or warn of moral hazard or other similar things such as have been discussed on the other side of the Atlantic but that are just as valid on this side.

Now the question is, "Can central banks alone win the global challenge?" No chance!

First of all, because they do not understand it. The ECB, for one, ten years after its establishment, has not yet sorted out how to deal with its role as lender of last resort. This is amazing and should be a big warning about relying too much on bureaucrats. These guys have had ten years to work out how to operate their most important and critical function and have done nothing about it.

Another indicator that they have no clue of what they are facing is in the 500-page Greenspan autobiography and in the 300-page Rubin autobiography (who was at the Treasury during the 1998 LTCM crisis). You put these two books together and you have 800 pages of biographies of the two leading protagonists of the 1998 big banking crisis. Guess how many pages are dedicated to that crisis out of 800 pages? Less than three! Basically half a page in Rubin's and two-and-a-half in Greenspan's. This is just simply mind-boggling.

Every crisis has a different catalyser, and subprime was the catalyser this time. Last time it was LTCM, but basically what crises uncover is the same thing. What we discovered last time was basically that the banking system was overleveraged and that banks were dealing in extremely opaque markets where nobody had any clue of what risks are being run by them or by the counterparties and so on and so forth.

The fact that nobody did anything about it and, to the contrary, that the rules the banks were operating under then have been relaxed (now Basel II) to give still greater leverage to the banks is totally amazing. Again, this should be a big warning that relying on central bankers is not the safest thing in the world.

Thank God, we do not need to. We do not need to because of how financial intermediation has changed, to a larger degree than what Professor Ertürk has shown. We are used to textbooks describing a world where households save, industries invest and government spends. Well, government spending seems to be pretty classic and does not change over the millennia. But today you have in the US households that invest and companies that save. The kind of financial intermediation that you need in an environment like that is radically different. A lender of last resort that basically guarantees the depositors who themselves cannot know whether a bank is really good or bad is not necessarily needed if the ones who are actually accumulating the savings are sophisticated treasury managers in large corporations. Those guys should know one bank from another and choose the way they invest their money.

Not only that: by and large, credit does not flow through the banking system the way it used to. You have huge financial intermediaries today, insurance companies or hedge funds, which are as important as the banks are. In this respect, I think it is amazing that during this crisis nobody has focused yet on the difference in managing a credit crisis and a debt deflation crisis in an environment dominated by banks versus an environment dominated by a multitude of financial intermediaries.

You remember that in August, 2007, when people began to fear that the crisis was taking a nasty turn, Treasury bill rates fell to very low levels, while the interest that the banks were ready to pay for overnight or three-month deposits shot up greatly. All market participants were very afraid at the time, because the US Treasury bill market had become totally illiquid. It was impossible to find paper. This is in a way pretty silly, because the US Treasury bills are, in today's world, the ultimate risk-free security, and what you should do in a situation of crisis is flood the market with as many risk-free securities as people are willing to buy. So, it makes sense that they should pay no interest or that the interest should fall, but it makes no sense that they should become such a scarce commodity as they did.

Had people been able in August and in the subsequent months to actually decide to sell whatever risky assets they had and buy as many Treasury bills as they wanted or needed to sleep properly, probably after

a couple of nights of good sleep they would have come back and bought back what they had just sold, because they had sold it at a crazy price.

So, we are still focusing on managing a liquidity and credit crisis on the banks' side, and we do not realise that it is actually a much more diversified market where you also need to take a portfolio approach and think about all the other financial intermediaries that are non-bank.

I will now come to other aspects that came up in today's discussion where I think that the perception is somewhat different from what my sense of reality is.

We tend to assume that if a country runs a current account deficit it means that country is in fact spending too much. But as the equations that were presented earlier showed, and I myself had to be convinced to the contrary by professors, this could just as well mean that some other country is saving too much. There is actually no way of telling before or during the fact how much of the deficit is due to the fact that Americans are profligates and have been spending like crazy or how much they were actually pushed into spending like crazy by the fact that the Chinese had decided to accumulate a nonsense amount of foreign reserves.

To that extent, if you think they were totally crazy to accumulate that kind of foreign reserves as a percentage of GNP never before seen in history, a falling dollar is their own problem. We shouldn't really care. They created the problem, they suffer from it. It will teach them a lesson next time around. In a way, the same applies to the countries accumulating a huge oil-related surplus.

In part, the subprime crisis has been caused by China and oil-exporting countries in the sense that this huge accumulation of dollar-based reserve has basically bought US Treasury bonds, explaining in a certain sense the "conundrum" of why interest rates of US government securities were so low, but by doing so they have crowded out the local US institutional investors, who are by regulation forced to buy investment-grade securities. Since there were not enough around at an interesting price because foreigners had bought all the government paper available, what did Wall Street do? It invented new securities to which it could attach an AAA rating, make them investment grade and shuffle them off to US pension funds, insurance companies and other regulated US institutions. So, there is always another radically different way of looking at things.

This is also true with respect to the way monetary policy has been used in Europe and in the US in this crisis. We must remember that the effect of interest rates on the two sides of the Atlantic is radically different, particularly when you consider continental Europe versus the US.

In the US, consumers are heavily into debt and very sensitive to interest rates. In Europe, it is actually the reverse. In Italy, for instance, we have seen that when interest rates fell from 12 to 3 percent, thanks to the fact that Italy joined the euro, there was a huge slowdown in consumption because people have savings and they do spend a little bit of the return on their savings. So, the fact that the ECB has kept the rate at the level it has might not have had the same effect in Europe that could be expected on the other side of the Atlantic.

Another point is about Prof. de Boissieu's comments on banking regulations as the only effective international coordinated action. Well, from my point of view, effective is a big word, because they created an amazing mess. The mess was, as Professor Vaciago pointed out, created by the fact that Basel II basically creates a risk-based system to control banks and to determine the amount of capital banks must have. And once the central banks had defined risk as volatility, they went on to suppress volatility in every possible way, without realising that in today's financial world the leverage effect that you get by suppressing volatility is much higher than that of lowering interest rates. The explosion that we saw in banks' balance sheets following the adoption of this risk-based modelling for assessing capital needs is directly related to this effect.

There are a number of other points, but time is running short, so I better stop here. Thank you.

CHRISTIAN DE BOISSIEU

I will comment on three points.

First point, about the conundrum, as discussed by Prof. Vaciago: I also think that the regime of long-term rates has been very important in the dynamics of our economies over the last couple of years. It has to do with excess liquidity and also excess savings at world level. By the way, when Greenspan first talked of the conundrum, he was giving the explanation of the conundrum, and I think that his explanation is still the right one: excessive liquidity, excess savings and the fact that institutional investors are keen to buy bonds and other securities explain why we have been living in this world of low long-term rates and why this has induced many investors to take more risks, in order to get more returns.

From this point of view, when I say that the regime of long-term interest rates has been instrumental in the dynamics, both positive and negative, of our economies, for the past couple of years, I believe that this regime of low long-term rates has also induced many people to take more risks in order to make more returns. This is portfolio theory, as all the students in the room know.

What we have seen since August, 2007, is a dramatic price assessment of the risk and the increase in risk premia. Perhaps in some cases you can say that there is some overshooting of the price assessment of the risk premia. When we talk about long-term rates we are better than ever to make a big distinction between the risk-free long-term rates versus the corporate rates. The risk-free are still very low, if you look at the US and Europe, not speaking of Japan.

Second point, about the ECB: I am somewhat critical of the ECB, but for the sake of the debate I will defend the ECB when Mr. Foglia was talking about ECB as a lender of last resort. It is clear that nothing was put in the Maastricht Treaty about this. But it is also true that empirically I was rather positively impressed by the way the ECB has found a way to provide liquidity to banks, by extending the time horizon, the refinancing of banks, up to six months, and by expanding the collateral that has been and is being accepted. From this point of view, I have a feeling that the ECB is building its own jurisprudence about the way it wants to implement its role as lender of last resort, even if nothing is clear, nothing is explicit in the Maastricht Treaty about this.

To finish on this aspect of Europe, I am interested by the debate which was at the centre of Ecofin and Eurogroup meetings in Slovenia last weekend. The debate is the following. We want to have a single market (because the market is not single yet, even for banking and financial services), and we have implemented three committees at the European level which govern national supervisors and regulators, one for banks, one for financial markets and one for insurance. Do the 27 EU countries agree or not to improve coordination and to give more power to the three committees, which have been put in place according to what is called the Lamfalussy Process? The debate which has been open since the outburst of this crisis is whether the member countries are ready to transfer more power to those sector committees: banks, insurance and financial markets.

There is no agreement, and I am not astonished by the fact that the UK government does not want to transfer more power to those committees. But what is surprising is that the Germans do not want to transfer what remains of their national sovereignty in those fields, or part of what remains of their national sovereignty. Despite the fact that Merkel and Sarkozy are writing to each other every two weeks, they did not agree on this in Ljubljana, Slovenia, and I think that from this point of view the meeting which took place last weekend was a failure.

Now they are going to Washington, D.C., to discuss with the US, the Japanese and the emerging countries. If we do not agree among ourselves in Europe, how can we be credible vis-à-vis the rest of the world? How can we push our own ideas? When you look at the debate concerning governance, the articulation between world-wide governance and European governance could be important. As a European—and I am a European – I must acknowledge that Europe as such has been very weak facing these financial crises.

In a meeting in Paris in November, Mr. Almunia, the European Commissioner for Economic and Monetary Affairs, was asked, "What is Europe doing to face this crisis?" He said, "We are organising committees." The

answer was purely based on committology. But we have enough committees, and we need action, we need recommendations and we need convergence.

One last point, following up on Prof. Vaciago's comment on market versus government, when he said it is not "versus," it is both, market and government failures. There is one aspect of this problem which we have not been explicit about this afternoon but which is important in the current debate.

We are implementing new accounting standards, new prudential rules. Those standards in many aspects represent progress. I would say for me the fair value is better than historical accounting, in general terms. I would say to have risk-based prudential ratios like Basel II could be better than growth estimates, which were in Basel I. And in general I think that Basel II, despite all its drawbacks, is progress compared to Basel I. But the problem that we are facing is that it is difficult to reap only the benefits of these progresses. We also have the drawbacks. And all the debate about the pro-cyclicality of the new standards is a very important debate, because if you look at fair value, market to market, if you look at Basel II the new accounting and prudential rules are introducing some pro-cyclicality into the system; that is, they increase the natural fluctuation of the economy. We do not have very precise answers to those challenges, how to keep the benefits of the new accounting standards, how to keep some of the benefits of Basel II without being exposed to so much pro-cyclicality.

In order to reduce the pro-cyclicality of Basel II, some people are saying we must pass to a new regime of provisioning, like dynamic provisioning. I do not know how this problem is felt in the US: the US is rather far from Basel II, they will join next year, and they will apply Basel II to only 20-25 international banks. In contrast, in Europe we are applying Basel II to all our banks in the 27 EU countries, and this is a big difference.

In conclusion, we know that it is difficult to have, as we say in French, "le beurre et l'argent du beurre," the butter and the money from the butter. How to keep the benefits of the innovation, of the new regime, the new standards, without being exposed to those big drawbacks? Thank you.

QUESTIONS FROM THE FLOOR

Benoît Mojon:

There is so much interesting material that it is difficult to react on all the things I would like to react on. But there are two main points in Prof. de Boissieu's presentation I would like to come back to.

About asset price inflation: The Bank of Spain did require that banks wanting to securitize some of their mortgage debt should put aside some capital. In the end they did not do it. When it comes to asset prices, most of the bubbles that we have seen and which are likely to have a bad impact on the economy, either in the ascending phase or the descending phase, have been fed by credit. A collapse is a possibility and this puts the banking system in danger. In my view, it is a supervision task to impose on banks that when they embark in this kind of credit, on a large scale, they would increase provisions accordingly. This is a personal point of view and I am not expressing the views of the ECB or the Federal Reserve system, but I think it should be put into debate.

Another point about relative prices: We do see oil and food prices increase; I do not see only bad news in this and I believe, as an economist, that it creates incentives for the economy to adapt. We are going to see cars that consume less oil, as we did after the first oil shock. OECD countries have effectively decreased their consumption of oil following the increase of oil prices in 2006. So, the volume of oil consumed has declined a lot. What we have seen is a surge of the consumption of coal in China, which is actually a very bad thing for global warming. But demand reacts to prices, and so does supply. And the price of food is also good news for those parts of the world that are not as effective as China in boosting the manufacturing sector, and I am thinking for example of Africa. We see growth in Africa and this is a good thing for the world. So, I am slightly more optimistic on this front than Prof. de Boissieu. Thank you.

Korkut Ertürk

Two quick comments in connection with Prof. de Boissieu's comments. I fully agree that it has to get much worse before something happens. Political pain has to be much worse, especially in the United States. I think

the question is: Will coordinated central bank intervention work at that point? It is a big question mark. If it does not work, what happens next? And I do not know the answer to that question.

Another quick comment about sovereign funds: It is true that potentially, on paper, it is the solution to the problem, because I think that we agree that it is not a liquidity crisis. It is a crisis that fundamentally has to do with the origin of capital in the banking sector. But is it a long-term political problem? I think it is a short-term problem. If you can't trust Dubai with the ports in the United States and the Chinese with the manufacturing firms, how can the Americans really trust these foreigners with their banking sectors? I think this is a serious problem.

One comment on Antonio Foglia's point about whether we have the Chinese over-saving or Americans over-consuming, you can tell the story both ways. It doesn't have to be one or the other. I think both stories are correct. But then, it does not follow that it is their problem. I think that it is as much America's problem and also the world's problem.

Nicholas Hasko:

I am a Franklin student. I have a question in regards to the stickiness of long-term elasticity, particularly in the US market, concerning energy. As an American, I am particularly concerned about it. I am bringing it back to the question of fiscal mechanisms on the part of governments. Are there opportunities that we are currently not seeing or not operating upon to provide both short-term fiscal solutions to the current crisis, but, at the same time, some sort of way to reduce the long-term dependence on energy? I am particularly thinking of redirection of government flows into sustainable energy resources, things of that nature. Is that a smart investment, given the current crisis?

Willem Pepler:

I'm glad to be in this theatre on this wonderful day. I am a trustee of this institution and I would like to confirm my thanks and respect for the institution that organized this today, with the help of the Mosler fund. I think it is vital. It is wonderful that there is one person here from Ticino on the panel of this meeting. That is a great thing and that opens up a little bit a platform here to the world, which we badly need. And one last thing, at some point it will be very interesting to examine one aspect of all this, that is the relationship with the media and the importance of the media and the psychology that has an effect on people's behaviour, which after all is quite fundamental. Thank you very much.

Zachary Levy:

I am Zachary Levy, and I am a student of international economics here at Franklin College. My curiosity is, this crisis brings up the question of regulation, which was moved away from with the Thatcher-Reagan deregulation movement. There is a lot of talk about changing the Fed into a more direct, controlling mechanism for the financial market. Is this going to be a long-term move for a short-term crisis? Or would it seem to be an effective measure?

Sanja Dudukovic:

I am Sanja Dudukovic and teach statistics at Franklin. My area is not monetary policy, but I have been reading research about how effective monetary policy is, and we heard this evening about several aspects of monetary policy and especially about the channels of transmission. My question is about central banks, which are supposed to define policy using money supply and interest rates, whether there is any change in the transmission channels that central banks actually can control. Is there any change in the channels of transmission of their own policy because of globalization?

REJOINDERS

Benoît Mojon:

As an answer to this last question on transmission mechanisms, I presented on Friday in a conference a new paper on the effect of monetary policy in the euro area. It was joint with Jean Boivin and Marc Giannoni and can be found on the NBER webpage. We do find some changes in the effect of monetary policy in the euro area in the following sense:

Before 1999, when Germany raised interest rates, interest rates increased by more in Italy and Spain, because market participants expected that this higher level of pressure from higher interest rates in Germany would trigger a depreciation of those two currencies. Therefore they were requiring an extra yield on bonds denominated in liras and pesetas. Since 1999, we observe that this has actually changed a lot. We interpret this as an increase in the credibility of monetary policy in Europe. Basically, when the ECB is raising interest rates, the transmission is working through the appreciation of the exchange rate, but long-term interest rates hardly respond or their response is much weaker than it used to be, because—according to our interpretation—market participants expect that the change in short-term interest rates is temporary and therefore long-term interest rates do not have to increase as much, and the transmission mechanism seems to have changed and goes in the direction of one of Prof. Vaciago's earlier comments, that the euro area seems to be very much an open economy in that respect.

Antonio Foglia:

Three points that I would like to take up. One is the need for further regulation. Of course, I know that the fire-fighters are out doing their work. In a way, I hope they are not too effective, because if they are too effective, the crisis is soon forgotten and nothing gets done. For several years, regulation has focused on market participants, rather than on markets themselves. Today, you have over 65 percent of what is traded in the world that is traded over the counter in unregulated markets, and that is, I think, where we have to switch a big light on and bring the vast majority of that activity back into markets that are properly transparent and where price formation is significant, which has proven not to be the way these markets operate now. Of course, that means breaking the oligopoly that today a dozen world-leading financial institutions have in those markets, where they act as hubs for every single transaction. We need forceful political action to do that and as long as the US Treasury is manned by Goldman Sachs, it is not evident that we will be able to get anything on that side.

I heard a lot of gloominess about the dollar. We have to remember, though, that for the last two-and-a-half years the US current account balance, excluding oil, has improved and it has improved today to the tune of 2 percent of GDP. So, if it weren't for the oil price increase, we would already see that the US has turned the corner, and I wouldn't discount the entrepreneurship of US exporters, who are indeed increasing the value and the volume of what they do at a huge speed. As soon as the oil price has been stabilized, we will see that there has already been a dramatic improvement in the external balance of the US, because the US, already at this rate, enjoys a fantastic currency advantage towards its trading partners.

One last point, in response to Dr. Pepler: I believe you are very right to point out that the influence of the media has been crucial. I have one anecdote on that: You remember that the crisis in early August, 2007, was precipitated by the news that a couple of money market funds of BNP Paribas had suspended redemption. That precipitated in Europe the fear that BNP was going under. If BNP was going under, no European bank was safe and so on. When these funds reopened at the end of August, they had lost only 5 percent from the top. So, this is a totally different issue from the one faced by Bear Stearns in July, when two of Bear Stearns' hedge funds just blew up and there was zero equity left.

The BNP Paribas funds were money market funds that are supposed to trade around par but couldn't trade around par because there was uncertainty about the price. The news (it was August, everybody was on holiday) was mishandled by the bank or by the media (it was probably the *Sole 24 Ore* that first blew the whistle on this one), and it blew out of proportion for something that was not a fact. Today, these funds trade at about 10 percent below the all-time high they reached in June, 2007. For a money market fund, sure, it is not fun to lose 10 percent, but it is no catastrophe either.

Giacomo Vaciago:

Just one further point on the dollar. On the very long term, if you think of international currencies in the last 2,000 years, basically it is not the value of the currency in foreign exchange markets which establishes the reputation of a currency. What matters are universities, pricing of raw materials and the like, and military bases all over the world. The dollar took over the previous dominance of the British pound 25 years later — 25 years later because of inertia.

When Britain lost military leadership, education leadership and the pricing of raw materials in British pounds, it took 25 years for America to cover the role. Now it will take at least 50 years before we see 70 Chinese military bases all over the world, before we see the best American students going to China to study and before we see all the raw materials listed in renminbi. We still quote all the most significant food and energy components of our lives in dollar terms. These are the basic fundamentals of the role of the dollar, not its current value today.

I remember the first time I went to America and asked an American citizen, "What is the value of the dollar today?" He thought for two minutes and then he said, "One dollar."

That is the only thing that matters to an American.

Christian de Boissieu:

With regard to Dr. Mojon's points on asset prices and central banks, and relative prices: I agree with your solution for improving banking supervision, i.e., to implement what is called the second pillar of Basel II, improving banking supervision. I agree it is necessary, but I do not know if it is going to be sufficient. This remains a question mark.

I also agree with your view on the effects of the change in relative prices of food and energy. I was not underestimating the need for relative prices to change. But, if you are working close to a prime minister, in a situation where topic number one today in most European countries is purchasing power, you cannot say, as an economist does, "Ok, no problem. Everything is adjusting." You have to say something in the short run. And this is the reason why this relative price effect is creating the fact or the perception that there is a loss of purchasing power in most countries today. And this is becoming a political problem. It is not only an economic perception that you have to take into account. Your answer will be: You'd better not be too close to a prime minister, but you know, nobody is perfect! There is no pure economics separate from applied economics.

Regarding central bank intervention: I agree with Dr. Foglia that we don't know if they are going to be effective. However, the necessary, not sufficient, condition for them to be effective is to be coordinated. If there is no other solution, at some point we will have to try. Better to try than to die.

Regarding a question raised by a student on supply elasticity: What to do? What kind of policies to implement? Consider not only the US, but also the Gulf countries. Why is Saudi Arabia not investing a proportion of its resources locally in order to increase capacity? This is not only an economic or technical argument; it is a geopolitical problem. I guess the whole debate about CO₂ emissions and the environment is introducing a new dimension, not so much in Saudi Arabia, but in developed countries.

About the Paulson proposal that the student was referring to, presented last week: May I say first that if any European country had announced such a plan, it would have been accused of Colbertism. As a Frenchman, I would never dare to present such a proposal which is rather interventionist and activist, if you look at the content of the Paulson plan. What could give an escape to US policymakers is the election: I guess this plan is not going to be adopted before the elections, and after, we will see. You will see. I think that we will see what is going on. I stop there.