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A TAXONOMY OF GOOD AND BAD POLICIES
DURING FINANCIAL
CRISES

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A taxonomy of good and bad policies during financial crises

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Abstract:

There have been many papers dedicated to the causes of banking and financial crises, but certainly fewer (and older) strictly dedicated to the management of crises. In this contribution, we do not claim originality in evoking good and bad policies during a crisis but we endeavor to circumscribe the different resolution mechanisms to banking, financial and economic crises after having shed light on the historical and scope dimensions. The analysis helps drawing lessons about strategies to adopt and pitfalls to avoid a collapse of the financial system and a worsening of the global crisis, unprecedented since 1929. We highlight the need to stabilize the sector where the crisis originated and to "strike hard".

Key words: banking crisis, financial crisis, economic policies, recapitalization, backloading, frontloading

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There have been many papers dedicated to the causes of banking and financial crises, including the latest ones (e.g. Allen, Babus and Carletti, 2009, Caballero, Fahri and Gourinchas, 2008, Claessens and Kose, 2013, Furceri and Mourougane, 2010, Gorton, 2008, Hoggarth, Reidhill and Sinclair, 2004, Kindleberger, 1978, Reinhart and Rogoff, 2008a, and Wheelock, 2008) but certainly fewer (and older) strictly dedicated to the management of crises (e.g. IMF, 2003; Calomiris, Klingebiel and Laeven, 2004). There are yet some comparative analysis related to management of “old” crises: Borio, Vale and von Peter (2010) , Laeven and Valencia (2010), Claessens et al. (2011)

There are at least three different dimensions to study the relevance (or irrelevance) of crises' management. The first one is the historical dimension, which compares past crises with current ones, like Hoshi and Kashyap (2008) who study the global financial crisis in relation to the Japanese crisis of the early 1990s, or Reinhart and Rogoff (2008b) who put to the forefront no less than eight centuries of banking and financial crises. The second dimension relates to the appropriate (or inappropriate) scope of policies and regulations. Macroeconomic and microeconomic policies draw on different causes and consequences of the crises where macro policies are meant to dampen real (or economic) crises whereas microeconomic polices are meant to dampen the banking and financial crises. Hence, a question arises: have macro (resp. micro) policies been managed appropriately regarding the nature of the crisis? It is noteworthy that a close cooperation between both spheres (macro vs. financial/micro) certainly contribute to the good management of a crisis. To these two dimensions, a third one could be added: the time dimension. The management of crises certainly requires a look at past crises and at their genuine determinants, but it can also require a roadmap of all possible measures to counter these crises at different horizons. In the short run, we may even disentangle between emergency measures (dealing with liquidity issues) and other measures aiming at resolving the crisis (dealing with solvency issues). As a matter of fact, remedies to a crisis differ from the short to the long run. In the short run, emergency measures need (or need not) be undertaken. AIG is the typical example of an emergency rescue, whereas Lehman Brothers is a typical example of no-rescue. In the short run, these measures do not involve an immediate change in financial or banking regulation, or in fiscal and monetary policy settings; rather, they may bend current principles in law and regulations, like limiting moral hazard for instance. In the long run, measures need not only deal with past troubles, but also with the necessity that the past will not resume: after restoring the proper functioning of the financial, banking and economic systems, time can be ripe for a possible change of regulation and governance, e.g. to make sure that moral hazard

will not be trampled by the “too-big-to-fail” principle. Though important, this latter dimension will not be dealt with in this contribution. The reason is relatively simple: this contribution focuses on policies during a crisis, not after a crisis.

In this contribution, we do not claim originality in evoking good and bad policies during a crisis but we endeavor to circumscribe the different resolution mechanisms to a banking, financial and economic crisis after having shed light on the historical and scope dimensions. As regards the historical dimension, the description of the mechanisms having led to the crisis has already been dealt with at length by, e.g. Blot et al. (2009), Dodig and Herr (2014), and Reinhart and Rogoff (2008b). For this reason, we will relate to the historical dimension only through the policies which were implemented during the crises.

1. Managing crises: a matter of history

The resurgence of financial crises since the collapse of Bretton Woods (Bordo et al., 2001) resulted in the implementation of multiple strategies to stop the crisis. Despite these experiences, it is difficult to propose a simple road map, clear and indisputable. Indeed, there is no optimal strategy. First, the solution necessarily stems from a complex trade-off between the risk of collapse of the financial system, the risk of economic slump and the costs in terms of budget or moral hazard. On the other hand, the history of financial crises shows that not only the context and course of the crisis have implications for strategies to be followed but also that countries have often resorted to a basket of measures rather than a single, clearly identified strategy. There are surely common features between financial crises as emphasized by Reinhart and Rogoff (2008b) but there are no exit or rescue strategies that can be exactly replicated from one crisis to another (Hautcoeur, 2010). Here, we make use of four crises (the Great Depression; the Japanese crisis; the US savings and loans' crisis; and the Nordic crises) to shed light on some successful and some failed strategies. The list of financial crises is much longer as recalled by Laeven and Valencia (2012) for the period since 1970 or by Kindleberger (1978) for longer historical perspectives. The aim here is not to provide a comprehensive analysis of these crises but rather to focus on some key points, regarding solutions that have been implemented, which are well emphasized by those four episodes of financial crises.

It is certainly undisputable that the current global financial crisis has common features with the Great Depression (the current crisis has been labelled the Great Recession!) and with the Japanese crisis. The former crisis has started as a financial and banking crisis in the US, which has spread all over the world and produced a sharp economic crisis. The more recent Japanese crisis has been caused by mismanagement of private balance sheets, with high leverage, and has been followed by a protracted period of low growth and low inflation, sometimes deflation. The US savings and loans' crisis has been, in contrast, a less dramatic crisis, without an international dimension, but it has paved the way for changes of regulation in the US economy. As for the Nordic crisis, it has been cited in the literature as the case for a successful resolution. One interesting element is also the reliance on the flexibility of the exchange rate; another one is the creation of bank entities devoted to acquiring toxic assets, namely "bad banks". It is certainly worth mentioning that balance-of-payments crises which occurred in developing and emerging economies are out of the scope of the current contribution, which emphasizes exit strategies from financial crises sharing common features with the global financial crisis.

1.1. 'Tops and flops' of past exit strategies

The 1929 crisis is well-known for the collapse of the American financial system and bank failures, resulting from both contagion between banks and many runs on deposits. But also, it lays the foundation for a new approach to the economy marked by an interventionist policy through the New Deal program conducted between 1933 and 1938. In banking, the first major step was made through the vote of the Emergency Banking Act which imposed the closure of insolvent banks for several days in order to stop the massive withdrawals of deposits by investors and control and recapitalize banks to restore confidence. Comprehensive structural reforms are put through the Glass Steagall Act of 1932 and 1933, followed by the Banking Act of 1935 with a split between the activities of commercial banks (commercial banking) and capital (investment banking) to curb speculation, the creation of the Federal Deposit Insurance Corporation (FDIC) responsible for guaranteeing deposits in commercial banks up to \$ 5,000 in 1935, and empowering authorities to improve regulation and supervision of banking and credit. In the housing sector, new laws were adopted to improve mortgage conditions. The Board of control and supervision of financial markets and the Securities and Exchange Commission (SEC) were established in 1934 to put an end to abuses by companies and ensure more transparency in financial markets. In the EMU context, it may also be interesting to

recall that the Great Depression has paved the way for a step through further fiscal integration (Bordo, Jonung and Markiewicz, 2015, or Wallis and Oates, 1998).

Overall, the main macro lesson of this period, in terms of crisis' management, is the weakness of reaction by the public authorities until the arrival in power of F.D. Roosevelt in 1932. The absence of strong reaction from fiscal and monetary authorities until then has undoubtedly exacerbated the crisis of confidence, and promoted the collapse the banking and credit system. Nevertheless, despite the scale of reforms undertaken since 1933 to stop the financial meltdown, ensure system stability and revive the economy, the years that followed were marked by the Great Depression. It remains that the Roosevelt era put an end to the recurrence of banking crises and helped stabilize the system over the following decades, through a global wave of regulation of the financial system and the creation of a new monetary regime (Bretton-Woods).

For Japan, it is clear from the data that the crisis was characterized by a slowly progressive deterioration of balance sheets that public authorities have been slow to realize and dampen. From 1991 to 1995, Japan did not experience a major bank failure and avoided systemic risk. The bursting of the housing and stock market bubble certainly weakened bank balance sheets, but the accounting standards in force at that time (valuation of assets at acquisition cost) masked insolvency of financial institutions and let the disease get forward. Moreover, high opacity on outstanding loan impairment in different financial institutions led to inertia by public authorities and banks. Thus, the lack of transparency of financial institutions allowed them to defer consolidation of their accounts without incurring market sanctions or deposits withdrawals. Financial institutions made a guess that the economic recovery would reverse the course of the stock and real estate markets, which would in turn allow painless clearance of balance sheets, without incurring the costs of restructuring necessary to improve profitability. Consequently, banks continued to accumulate non-performing loans. Despite the creation of a structure of private confinement in 1992 (Cooperative Credit Purchasing Company) to outsource bad debts in return for a tax deduction, the stock of non-performing loans remained high because banks have used the cash generated by the resale of new loans to "friend" troubled companies. This first fully decentralized approach to manage the Japanese crisis did not solve the crucial problem of institutions desperately lacking capital funds (Calomiris, Klingebiel and Laeven, 2004). Under these conditions, the health of the financial system logically deteriorated between 1994 and 1998, involving first bankruptcies by the end of 1994. Gradually, depositors turned out to be aware of the badly state of their credit institutions, causing the first bank runs. The Asian crisis, which broke out in 1997, left the Japanese financial system astray. Four major

institutions went bankrupt and the interbank market completely paralyzed. Public intervention remained subdued, despite the creation of the Housing Loan and Administration Corporation (HLAC) in 1996, funded equally between the public and private sectors. This “bad bank” was intended to address the problems of non-banking credit institutions specialized in real estate (Jusen). Despite a commitment of 680 billion yens (\$ 6.8 billion), covering 10% of Jusen’s losses, the government did not take the full extent of the problems not only affecting the real estate sector but also the assets of the banking system.

The government waited until 1998 to commit to the management of the banking system. This phase is marked by the creation of a new body in charge of banking supervision (the Financial Supervisory Authority - FSA) which limits the authority of the Ministry of Finance in this area. The first nationalizations occurred in October (Long Term Credit Bank, LTCB) and December (Nippon Credit Bank). Institutions are restructured, the leaders of the LTCB are laid off and its shareholders are summoned to cover the losses. Bad debts are transferred to a new hive created by the Act of October 1998, the Resolution and Collection Corporation (RCC), born from the fusion of the BCR and HLAC. Unlike its predecessors, the RCC has the option to repurchase bad loans to “healthy” institutions in addition to managing the claims of failing institutions. Despite these efforts, improving capital ratios of banks was only transient (Calomiris et al. 2004), lack of incentives for banks to adopt safer behaviors. This plan does not allow either to reverse the credit crunch: the private credit to GDP ratio increased from 203% in 1996 to 176% in 2002 operation clean finishes between 2003 and 2007 with the creating the ultimate hive, the Industrial Revitalization Corporation of Japan (IRJC). This time the government commitment is real: the IRJC is funded entirely by public funds and debts are guaranteed by the state. In addition, the new Prime Minister Junichiro Koizumi gives impetus to the FSA forcing big banks to absorb bad loans and cut their ties with “friendly” unable to pay their debts companies. The results are spectacular: from 9% in late 2001, non-performing loans of major banks fell to 1.8% of total bank credit in March 2006. In 2006, systemic risk has disappeared but the banks operating profitability remains below expectations.

Because of the multiplicity of strategies followed, the Japanese crisis is instructive. It shows that it is illusory to hope that the problems can be resolved spontaneously. It shows the limits of private solutions by which private actors show themselves unwilling to absorb heavy losses as soon as the crisis because a systemic one. The corollary is that public commitments should be substantial and at the height of the problem. In fact, the Japanese structures originally set up have not been provided with sufficient resources to support a stock of bad debts estimated ex post to 19% of GDP. Finally,

they have long served as "warehouses" in bad loans, and loans' restructuring truly began late, in 2001-2002. The repurchase of bad loans happened at deeply depreciated prices, which did not allow the banks to restore their capital ratios. Although the transfer of non-performing loans allows a temporary alleviation of their balance sheets, banks have remained largely under-capitalized (Hoshi and Kashyap, 2008). It took a profound change in bank behavior before the non-performing loan problem can be solved: it was only after banks agreed to cut their ties with their (insolvent) debtors that their balance sheets were permanently improved and after government provided a comprehensive plan (with the setup of credible regulations and a significant rescue package). But it took a long time so that the crisis was not resolved until the beginning of years 2000 when Japan finally fell into a new recession and was caught in the deflation trap. The resolution of the crisis of American Savings Bank was also left to the market. As in Japan, banks hoped that improving the economic and financial situation would lead to a spontaneous improvement of the situation, especially as at the same time, the relaxation of regulations on capital allowed to hide problems of under capitalization of institutions and delayed the necessary restructuring. In fact, the problems were compounded when the savings banks invested in increasingly risky projects which accelerated bankruptcies. It was not until 1989, 10 years after the start of the crisis, that a comprehensive plan to restore stability of the financial system was launched. The rescue plan announced in February 1989 provided in particular the abolition of the FSLIC, the creation of two regulators of federal banks specializing in mortgage credit (FHFB- Federal Housing Finance Board) and savings banks (Office of Thrifts supervision OTS) and especially the creation of the Resolution Trust Corporation (RTC), owned by the state and intended to restructure the assets of failed savings banks. The RTC has restructured nearly 8.5% of the total assets of the financial system of which almost half were loans related to real estate and mortgage market. The existence of an appropriate legal framework and of deep financial markets has been effective in liquidating assets. In the end, the crisis was handled efficiently but at the expense of a high fiscal cost, estimated at \$ 124 billion (2.4% of 1989 GDP), which would have no doubt been largely reduced had the management of the crisis come earlier. It has then clearly showed that regulatory forbearance may not be a viable option.

The speed of reaction is precisely the defining trait of the resolution of banking crises in the Scandinavian countries. The strategies implemented by each country were not similar in all respects (see Drees and Pazarbasioglu, 1998, or Honkapohja, 2009), but they are similar in interventionism shown by the three governments. Norway favored recapitalization or public loans through two public funds created on that occasion. The aid was made conditional on the implementation of cost

reduction plans. Sweden and Finland have instead chosen the path of cantonment structures, having nationalized insolvent institutions. In Sweden, initial fears about the solvency of the two institutions emerged in the fall of 1991. By spring 1992, the government nationalized Nordbanken Bank, and Gota Bank in December. Non-performing assets of these two entities were then transferred to two defeasance fund Securum (for Nordbanken) and Retrieva (for Gota Bank), created respectively in November and December 1992. These two structures then merged. The transferred assets (at accounting value) represented 4.4% and 3% of the total assets of both banks and were quickly liquidated. The homogeneity of the asset portfolio, consisting essentially of debts related to the real estate market (80%), and the effectiveness of institutional procedures for recovery have significantly reduced the cost of solving the crisis. Before being sold to the private sector, both nationalized institutions were restructured and their management replaced. As a total, the cost of rescue operations is estimated at 3.6% of GDP (Sandal, 2004), but subsequent disposal of participations in banks and the liquidation of assets allowed to recover almost all of the funds committed to their rescue and the net cost was finally estimated at 0.2 percent of GDP. The Finnish strategy is very similar to that followed in Sweden. The government took control of the most affected banks, organized the restructuring of the banking sector and the transfer of non-performing assets to a bad bank funds. However, the heterogeneity of the transferred assets and political prevarication on the adoption and implementation of the bailout likely contributed to increase the cost of the crisis.

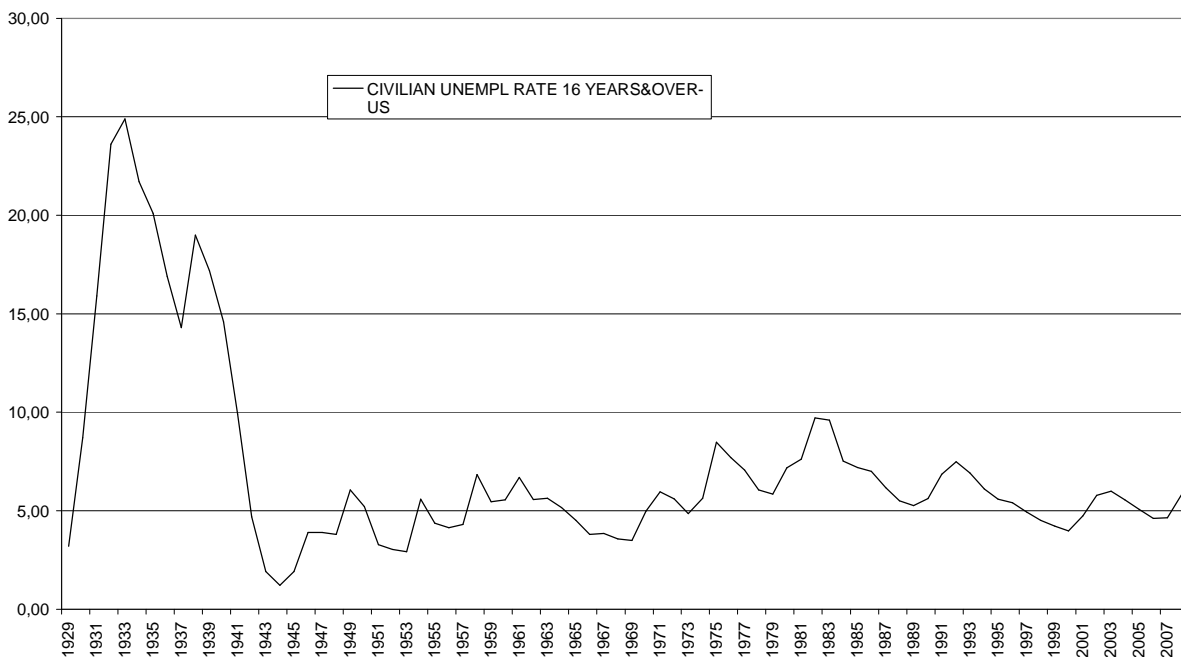
1.2. Fiscal stimulus and monetary policies over the past crises

The policies implemented during the crisis of 1929, which had no historical precedent, can now be said to have been inadequate and come late. Indeed, following the Pigovian recommendation of higher real balances through lower prices, the Federal Reserve long implemented a restrictive monetary policy that has both amplified the crisis and its impact on bank lending (Bernanke, 1983), and pressured on the fiscal capacity of the federal state, subjected to higher interest spending and smaller room for maneuver. In addition, the Smoot-Hawley Act, enacted in 1930 to increase tariffs in the United States, has degenerated into international protectionist retaliation that detracted from world trade.

It was not until the election of President Roosevelt that a discretionary action with massive government spending allowed both to clean up the banking system and boost demand. The New Deal measures implemented by the Roosevelt administration (1933 and 1934-1938) required minimum credit criteria from banks, and curbed the proliferation of banking actors and institutions; measures also included guarantee on deposits (up to \$ 5,000), the creation of the Securities and Exchange Commission to supervise and better regulate the activity in the financial markets and the exit from the gold exchange standard, which allowed the US economy to implement a so-called policy of "reflation ", i.e. a discretionary policy to support growth and employment, free from external constraints.

To curb unemployment, which reached a ceiling at 25% of the workforce (see chart), a major construction policy was implemented, while farmers received compensation in exchange for a reduction in agricultural production capable of reversing the price trend.

CIVILIAN UNEMPL RATE 16 YEARS&OVER-US

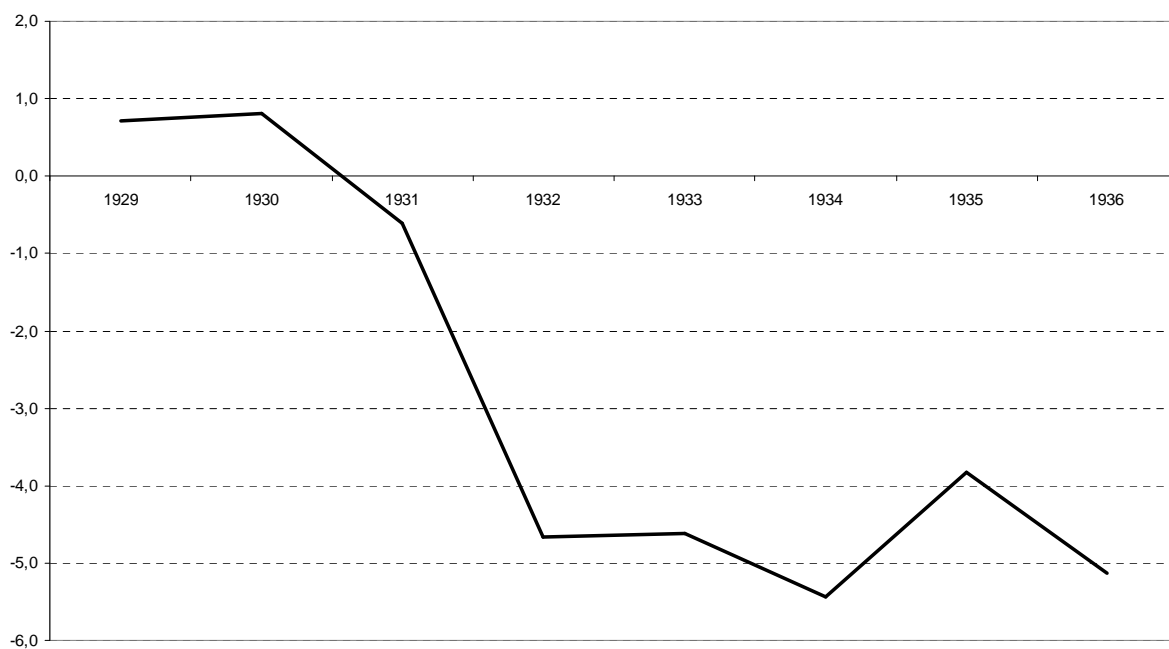


The budgetary impact of the stimulus policy can be evaluated on the next figures. From 1931, before the New Deal, public finances came into deficit; it literally plunged in 1932 to nearly 5 percentage points of GDP. The deficit plunged a little more in 1934 and 1936. The fiscal impulses years 1931 and 1932 are in the order of \$ 3.5 billion, or the equivalent of \$ 50 billion in 2008, hence another impulse of 5 percentage points of GDP. They can be split (see chart) into a two-thirds drop in

revenue and the remaining third in higher costs. In 1934, then in 1936, the positive fiscal impulse is due to budgetary expenditure, for an additional \$ 2 billion, or the equivalent of \$ 30 billion in 2008. Given the negative impulse 1935 the total impetus between 1934 and 1936 is around 2 percentage points of GDP only.

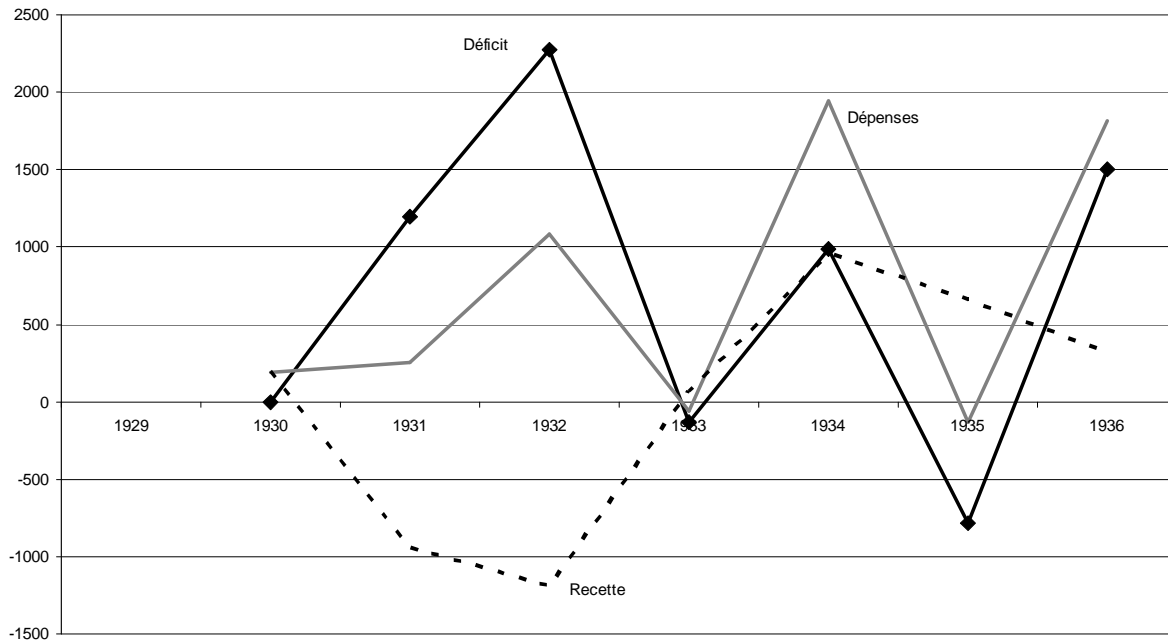
Ultimately, fiscal impulses were undoubtedly welcome to support demand. However, their lateness has not allowed the US economy to curb mass unemployment before the US intervention in World War II. Better coordination between monetary and fiscal policies and better timing for it would probably have led to improved US economic performance. In addition, and contrary to recent recommendations (3T, see above), the second New Deal did not produce a temporary policy: from August 1935, with the adoption of the Social Security Act, the basis of the welfare state is laid, pension systems, unemployment insurance and disability support are created. The lesson to be learned from this US strategy to exit the Great Depression is: cyclically-adjusted fiscal policies are necessary and legitimate as the crisis persists. The Great Depression has then clearly demonstrated the loopholes of a laissez-faire strategy in terms of macroeconomic stabilization. Nevertheless, Roosevelt's impetus was not devoid of errors like in 1937 when premature actions to curb the public deficit and normalize monetary policy put the American recovery to a halt.

Solde public sur PIB, Etats-Unis, en %



Source : Office of Management and Budget, authors' computations.

Impulsions budgétaires US (en millions de \$)



Source: Office of Management and Budget, authors' computations.

Quantitative assessments of the Japanese fiscal policy during the 1990s have been the subject of much debate among economists. At first glance, given the magnitude of the committed funds - which officially amounted to 22 percentage points of GDP from 1992 to 1999 - and the long stagnation experienced by the Japanese economy, one is tempted to conclude that the effectiveness of Keynesian stimulus was small, to say the least. A more detailed analysis shows that the Japanese authorities have pursued a policy of "back and forth" to the budget, according to which the announcement of expansionary measures were often accompanied by a promise of future restrictions of public finances. Moreover, official figures were inflated in the announcements and stimulus packages were sometimes made of already existing or planned measures. For example, the first two stimulus packages (in August 1992 and April 1993) - mainly public works - accounted for a total expenditure of 2 percentage points of GDP instead of the 5 announced. The following plan, passed in November 1994, was the first to include a tax cut on income for an estimated cost of 0.6 percent of GDP. But this tax cut would only be temporary and was accompanied by a commitment to increase by 2 points the VAT rate (from 3% to 5%) in 1997. The expected effect of these "back and forth" measures must be small if households and firms have forward-looking expectations. In April 1997,

the VAT was actually increased, together with social contributions and income taxes have regained their original level. The tax package meant an increase in the overall tax charge of 2 percentage points of GDP. Entered into force a few months before the outbreak of the Asian crisis, and concomitant with the deepening of the banking crisis, the plan was considered ex post as one of the worst policy mistakes in Japan during the crisis. In 1998, Japan plunged into a deep recession that lasted two years, followed by a period of deflation during which the GDP deflator has lost nearly 12% between 1999 and 2008. In April and November 1998, the government announced massive stimulus packages including permanent tax cuts and public works, for a total expenditure estimated at 4 percent of GDP by the IMF. A new plan was announced in November 1999 - estimated at 1.5 percent of GDP - but was only partially implemented. Between 1991 and 1999, Japan's public debt rose from 65% to almost 130% of GDP. The share of public investment in total spending in 1999 regained its 1991 level (15%) after peaking at 18% in 1993. It then declined steadily to 8% in 2008, while public debt now stands at over 180% of GDP. Government revenues have stagnated since 1992, because of the deterioration of the economic environment (declining profits, deteriorating labor market, etc.).

Kuttner and Posen (2001) argue that one cannot conclude that stimulus policies in Japan were ineffective, simply because there was no such thing as a stimulus policy at that time. Too much focused on construction spending, not enough on direct aid to households, coming too late and punctuated by fiscal restraint episodes, they do not reflect a sufficiently strong government commitment to bring the country out of the abyss.

The slowness and lack of responsiveness of the Japanese authorities also characterize the conduct of monetary policy (see Ueda, 2007). Until June 1991, high interest rates are maintained while the stock prices have plummeted for 18 months. It will take five years at the Bank of Japan to reduce the discount rate from 6% to 1%. In 1994, the rates were maintained at 1.75% throughout the year and into the first quarter of 1995, despite the Mexican crisis and the Kobe earthquake in February. The consequent yen appreciation to 79 yen per dollar in April reinforced deflationary trends. It was only in February 1999, 9 years after the start of the crisis that interest rates are set at zero. Using a Taylor rule based on the past behavior of the Bank of Japan, it appears that Japanese rates should have been close to 0% in mid-1993. A comparison with the US during the global financial crisis testifies for the slow response of the Japanese authorities: it only took 13 months to the Fed to reduce its rate from 5.25 % to 0.25%. The Japanese case therefore illustrates the strong interconnection between financial crisis and economic crisis. Recovery may not happen as long as authorities do not tackle banking

troubles (Caballero, Hoshi and Kashyap, 2008 or Ueda, 2007). And banking troubles are amplified by economic slowdown. A comprehensive action must then be undertaken.

Fiscal policies implemented after the crises in the Scandinavian countries seem quite atypical as regards the wave of Keynesian policies which were endorsed shortly after in the wake of the global financial crisis. The restrictive fiscal stance which was implemented in Scandinavian countries satisfied the paradigm shift in policymaking which occurred in the 1980s in support of disinflation policies. Despite the slowdown, the Scandinavian countries have pursued a restrictive fiscal stance, except the full play of automatic stabilizers, in economies where they were certainly powerful. The support of Scandinavian economies mainly came from exchange rate depreciation and the easing of monetary policies allowed by the abandonment of the exchange rate regime in late 1992 after the crisis of the European Monetary System. Yet, they consequently did not escape the recession and it took them several years to fully recover from the crisis.

2. Managing crises: a matter of scope

According to Spilimbergo et al. (2008), the policies implemented to overcome a crisis should necessarily bear on its two sides: financial and real. This point has also been clearly emphasized by the historical experiences of severe and systemic financial crises. Financial turmoil and economic distress are interconnected, as it was also reminded more recently with the European sovereign debt crisis (Shambaugh, 2012). Overcoming the banking and financial crisis may come first, hence achieving a "normal" functioning of the financial system. On the other hand, implementing a set of macroeconomic measures would deal with the real effects of the financial crisis. It is then necessary to evaluate beforehand the length and breadth of the expected crisis in order to implement appropriate fiscal policies: temporary and targeted if the crisis seems cyclical; permanent and wide if the crisis is structural.

2.1. An action plan to deal with financial crises

The objective is to give an overview of the possible forms of action to resolve banking crises ex-post, once they have burst. Ex-ante measures are certainly crucial. But defining a safe and comprehensive set of financial regulation to this end goes beyond the scope of this paper. In all cases, these measures should be designed to restore the "normal" functioning of the banking and financial system (efficiency of the payment system, restoring financial intermediation in order to promote an efficient allocation of capital). Indeed, banking crises result from significant losses that threaten the solvency of many banks. They also generate a stressful situation that can lead to bank runs. These problems of solvency and liquidity affect the activity of the banking system and limit its ability to provide appropriate intermediation. The measures adopted should therefore aim to restore the solvency of the financial system and ensure the maintenance of an appropriate level of banking services (Dziobek & Pazarbasioglu, 1997 and Brei, Gambacorta and von Peter, 2011 for an assessment of the impact of different rescue packages on bank lending).

Different approaches can be considered for this purpose. They differ mainly in the importance of the committed public funds as well as in changes in the statute of financial institutions resulting from a bailout. Honohan and Laeven (2005) distinguish the containment phase (the first emergency measures), the main objective is to put an end to the liquidity crisis and avoid bank runs; the resolution of the crisis when it comes to take load solvency problems by dealing with troubled institutions; and the cleanup of the financial system by dealing with troubled assets . The containment measures are usually based on two types of action (Laeven and Valencia, 2008): deposit guarantee and liquidity injections, though lender of last resort operations. The temporary closure of banks is rarely used. In practice, it is difficult to oppose liquidity crisis and solvency as they are intertwined. The containment measures play the role of first aid, necessary but whose benefits are fully felt in the context of a comprehensive plan to rescue the financial system.

The applied solutions are very heterogeneous and are contingent to the characteristics of countries - including the nature of banking and legal systems - and crises. It is therefore difficult to provide an exhaustive, detailed and non-contingent list of measures since the bailouts usually combine different approaches. We therefore favour a broad presentation and draw policy options that can be selected. We are interested in bailouts and disregard the bankruptcy of institutions in difficulty. If this solution

may be considered for an isolated attack or for some institutions not subject to the doctrine of "too big to fail" , it is obviously not suitable as a global solution to a systemic crisis. The first step is to analyse the situation of financial institutions (Mayes, 2009 or Borio, Vale and von Peter, 2010). An early diagnosis should be made to disentangle between safe institutions, troubled institutions or institutions that may need an action, insolvent institutions that should be resolved. Thereafter, four possible answers to a banking and financial systemic crisis may be considered. They differ in particular by the degree of public intervention and financial support of the crisis by the budgetary authorities. It must be made as clear as possible what will be the costs of interventions and who would bear those costs. In all cases, the problem is twofold: it is to provide solutions that will restore the solvency of the financial system and will absorb losses related to non-performing loans and toxic assets.

1. The response to the crisis may remain within the private sector, whether through a capital increase subscribed by the shareholders or by capital inflows from new domestic or foreign private actors. Distressed institutions can also be merged. The financial cost is borne entirely by private actors, sometime at the initiative of governments. This approach allows to provide the capital required during financial crises which is most often necessary (Honohan, 2005). The budgetary cost of the measure is zero but this assumes that private actors accept to hold the risks associated with the recovery of all or part of the acquired institution's activities.

2. The government can commit public funds through tax or fiscal measures, and the objective is to bring the aided institutions to disclose losses and liquidate non-performing assets. In this case, the losses are shared between public and private actors, but there is no amendment to the statutes of the aided institution. Tax measures should be binding so that the incentive to resolve the crisis be strong and prevent institutions benefiting from tax cuts from continuing to accumulate non-performing assets. This type of measure makes sense in a weakly transparent system. Otherwise, the losses will be more easily and systematically revealed and it will be more appropriate to ensure the solvency of the institution through recapitalization measures or to liquidate non-performing assets by creating a suitable structure like a bad bank (see below).

3. In the case of cantonment structures, called bad banks, the government commits financial resources by buying non-performing assets in order to place them in a public structure. The public entity is created specifically to redeem the bad debts of troubled institutions and brings in (collateral) assets of good quality (like government bonds). The fund then ensures the recovery of assets. The

management of rescue is left at the cost of taxpayers. This cost can be measured ex ante since it depends on both the bad debt redemption price and their expected sale price. The lower (higher) the redemption price, the lower (higher) the fiscal cost, but the lower (higher) the incentive for the troubled institution to quickly get out of its solvency issue. The approach generates moral hazard if there are no conditions to be fulfilled by shareholders and managers. In this case, they do not undergo consequence of their past mistakes and they can be bailed out by the injection of quality assets.

4. Finally, the rescue can go through public recapitalization measures, by which the government injects capital, either through purchases of subordinated debt securities, or by buying shares. In the case of purchases of subordinated debt, shareholders retain full discretion in the management of the company although the government or public institution created for this purpose may play a role in the management of the group if it becomes a shareholder. Its influence may be limited if its participation is not a majority one. Holding a majority of shares or nationalizing the establishment, the public authority can therefore organize the restructuring of the institution, including changing its management team. This type of measure can support the establishment of a bad bank funds. The establishment is then split into two entities, each subject to public supervision. Non-performing assets are isolated in the bad bank and profitable activities are taken over by the state. Public recapitalization or nationalization is usually temporary. As in the previous point, the burden of rescue measures is borne by taxpayers. Compared to the establishment of a bad bank, shareholders in place are penalized by a public authority taking control of the company; and the management team can be replaced. As for the cost of the operation, it cannot be assessed ex ante because it depends on the resale price of the shares acquired or on the duration over which the State holds subordinated debt securities.

2.2. Macro stabilization requires appropriate macroeconomic policies

In addition to the bailouts implemented to curb the financial crisis, macroeconomic stabilization policies appear necessary to counter the recessionary effects of the crisis and neutralize the effects of renewed recession in the financial markets. To the extent that the financial crisis caused a deep economic recession, it is necessary to support the economy to prevent it from falling into a

recessionary or depressed spiral, which would be detrimental to the population and delay the resolution of the financial crisis. The decline in the value of real and financial assets held by financial and non-financial agents would continue if the economy remained continually in crisis because of the continued deterioration of private agents financing conditions. The situation of the financial institutions would deteriorate even further, which would offset the measures taken by central banks to restore the system.

Therefore, macroeconomic policies provide the countercyclical effects which will help to cushion the impact of the crisis on the real economy and also to contain its second-round effects on the financial sphere. Given the assessment made as to the duration of the crisis, macroeconomic stabilization policies should be more or less long term, i.e. they should be granted a structural and not only counter-cyclical dimension.

These policies are based on two main areas: monetary policy and fiscal policy whose transmission delays are shorter than those of monetary policy.

2.2.1. Conventional and unconventional monetary policy

Interest rates changes are the main instrument a central bank has to intervene. During downswings and the absence of inflationary risk, the rate cut is passed on to all financial institutions via the primary money market which a number of institutions have privileged access. This expansion is intended to ease the credit conditions of the non-financial sector to encourage them to consume or invest. It may then dampen the slowdown and help the banking system to cushion the shock. In an economy where public debt is indexed to short rates, lower rates can also reduce the financial burden of debt.

During a financial crisis, this strategy is nevertheless bound by its limits:

- If the rooms for maneuver on the rise are unlimited, they are forced downward when nominal interest rates are close to 0 (zero-lower-bound). This has been the case for many years now in the US, the UK and Eurozone and earlier in Japan.
- In times of financial crisis, the transmission channels of monetary policy are blurred. The banks' funding conditions in the interbank markets remain extremely tense due to ill health (in terms

of assets) of banks. Maintaining risk premiums at high levels clears the advantage of the easing of interest rates in the primary market. Therefore, in addition to a tightening of credit allocation, the rates offered are very high.

- Also, in order to escape these dysfunctions of the transmission channels of monetary policy, on the interest rate and / or credit, monetary authorities may conduct measures called "unconventional", mainly consisting of a massive assets purchases (measures called quantitative easing or QE) or direct securities market purchases in order to influence the risk premium (say measures of easing credit conditions). Both types of relaxation pose new risks both in financial and economic crisis: first, quantitative easing is usually implemented through purchases of government securities by central banks; it is crucial ex ante that central banks undertake to sell these government securities when the banking, financial and economic activity has resumed. If this is not the case, the yields on government debt will remain at levels too low, generating additional inflationary pressures in a recovery phase. On the other hand, the easing of credit conditions does not eliminate the risk: it transfers it to the central bank, whose role is not to manage it. It follows that the central bank runs the risk of capital losses.

The potential effects of QE are well summarized by Joyce et al. (2011), Krishnamurthy et al. (2014) and Blot et al. (2015). They point out to several channels through which QE asset purchases could potentially affect economic activity:

1. Policy signalling effect (or forward guidance): an announcement of large-scale asset purchases may be perceived as a signal of a more accommodative monetary policy and send the signal that monetary policy rate will remain low for a long period, at least until the end of the asset purchase program. Considering that long-term interest rates reflect expectations of future short-term interest rates, announcing large-scale purchases of government bonds should trigger a decline in long term rates, through the expectations channel.
2. Portfolio balance effect: if the central bank buys assets, portfolio arbitrage generates an increase in the prices of the assets concerned as well assets which are close substitutes, lower yields and, thus, borrowing costs.
3. A liquidity effect: in creating money and buying assets, the central bank can quickly inject liquidity into the financial system.

4. A confidence effect: if economic agents think that the QE is a useful policy that can improve economic perspectives, its sole announcement can boost consumers and firms' confidence. They can consequently increase their spending. A confidence effect may also generate an increase in asset prices and decrease risk premia.

5. A bank lending channel: if QE's modalities allow the central bank to buy assets from non-banks (directly or indirectly), the bank-lending channel improves. Indeed, the banking sector will observe a rise of its reserves at the central bank, matched by a corresponding rise of deposits. Meanwhile, if non-banks' assets become more liquid, it could encourage the banks to grant more new loans than they would have done without QE.

6. A default channel: especially in the Euro area case, if QE affects both the long-term bond yield and improve macroeconomic perspectives, risk premia may decrease and thus lower even more the long-term bond yield. This will decrease the risk of sovereign default and give leeway for a more accommodative fiscal policy as investors realise that there is a buyer-of-last-resort.

7. An exchange rate channel: money creation also weakens the exchange rate, favouring net exports.

A large body of literature exists about the effects of unconventional monetary policy measures, which largely focusses on financial market reaction. The overall conclusion that can be drawn from these studies is that unconventional measures have usually had a significant impact on sovereign and private yields (portfolio balance effects), though this impact has been relatively short-lived. Impacts on inflation and real GDP have been less common, and of an insufficient size to compensate for the real costs of the global financial crisis.

It must be acknowledged that empirical research on this topic is not an easy task because it is difficult to disentangle the contribution of unconventional monetary measures from other simultaneous policies or shocks.

Hereafter, we classify the different studies according to the transmission mechanisms of unconventional monetary measures that they investigate.

Portfolio balance and signalling effects

For the US, Gagnon et al. (2011) show that Fed's assets purchases between 2008 and 2010 reduced 10-year interest rate from 30 to 100 basis points. Other studies confirm that asset purchase

programmes reduced medium and long-term interest rates (D'Amico and King, 2010; Krishnamurthy and Vissing-Jorgensen, 2011; Altavilla and Giannone, 2014). Comparatively, Hamilton and Wu (2012) conclude on rather small effects whereas Wright (2012) reports very short-lived effects.

Gagnon et al. (2011) also report effects in the UK similar to the US, but only small effects in the case of the Japanese QE. Oda and Ueda (2007) report a similar low, though significant, impact on Japanese government bonds yields.

For the UK, Meier (2009), with an event-study, shows that the announcement of the QE reduced the gilt yields by at least 60 basis points. Joyce et al (2011a) find similar results and estimate that long-term gilt yields fell by 100 basis points after the first announcement. They also find similar results on corporate bond yields and small reaction on the sterling exchange rate. Breedon et al. (2012) highlight a similar portfolio balance channel, but limited pass-through to corporate bond yields. Joyce and Tong (2012) use high-frequency data and show that QE measures have had long-lasting effects on gilt yields.

Macro effects

Baumeister and Benati (2013) estimate that unconventional measures diminish both deflation risks and output recession in the US and in the UK.

Kapetanios et al. (2012) emphasize that in the UK, QE had a positive effect both on real GDP (around 1.5%) and on annual CPI inflation (around 1.25 percentage points). Bridges and Thomas (2012) reach similar results. Joyce et al. (2011b) also find similar effects.

Schenkelberg and Watzka (2013) provide estimates of the Japanese QE at the zero-lower bound. They conclude that policy measures had a transitory effect on long-term interest rates, output and inflation and that QE was not successful at combating deflationary trends.

Bank lending channel

Bowman et al. (2011) report a bank lending boost after the Japanese QE of 2001, although the boost is found to be small.

Butt et al. (2014) find no evidence to suggest that QE operated via a traditional bank lending channel

Exchange rate channel

Neely (2015) finds that the US QE announcements of 2008-2009 weakened the spot price of the US dollar, and that these jump depreciations of the USD are fairly consistent with estimates of the impacts of previous equivalent monetary policy shocks. QE also had spill over effects via the reduction of international long-term bond yields. Fratzscher et al. (2013) also deal with the international spill over effects of US monetary policy. They assess the impact of US QE1 and QE2 on several financial variables to gauge whether the US unconventional measures have triggered capital inflows in emerging markets and other industrial countries. Three conclusions emerge. First, QE measures have had more effects when they were actually implemented than when they were announced, meaning that communication (and henceforth signalling channel) matters but implementation is crucial to trigger the portfolio rebalancing. QE1 and QE2 did not have the same impact on dollar exchange rate. Actually, QE1 triggered a global rebalancing effect in favour of US equity and bond funds. Thus, the dollar appreciated against other currencies. The aim of the measures was indeed to provide short-term funds in dollars to address liquidity needs of international banks, which were short in dollars. Conversely, QE2 have triggered outflows and dollar depreciation. Clearly, in the case of QE2, the Fed's purchases pushed investors to substitute Treasuries for more risky assets. This has triggered a portfolio rebalancing effect in favour of foreign assets.

2.2.2. Fiscal impetus is required and backloading strategy is preferable once growth starts resuming

If the relaxation of monetary policy is needed to loosen the financial noose hanging over the economic agents, support of the application must also be able to go through fiscal policy. The economic impact is faster than a rate cut and may even be immediate when fiscal policy transfers includes measures towards targeted populations (increased unemployment benefits, minimum income or bonuses for working poor, etc.).

The range of measures that a state can implement is particularly wide: lower taxes, transfers, operating expenses, capital expenditures, and reallocation of resources and expenditure between different administrative levels. As such, the conventional fiscal policy leaves a lot of leeway to States; monetary policy, with lower rates and / or increasing the amount of cash, has fewer choices that have brought some of them, particularly the Federal Reserve and the Bank of England, to adopt "unconventional " measures (see above).

However, fiscal policy is still sometimes criticized insofar as it is deemed ineffective or even harmful because it causes distortions in the economy that would slow the market adjustment. In addition to the effects of fiscal policy on incentives to work and produce, the main arguments of the critics of fiscal policy relates to Ricardian equivalence, the opening of economies, and the crowding out effects. Schematically, the Ricardian equivalence poses a temporary fiscal policy has no effect on consumption and investment, but only on savings; open economies undergo a leak of expenses, driven by fiscal policy, to foreign goods and services, limiting the effectiveness of national policy; and the increase in public spending, financed by debt, produces a rise in inflation and long-term interest rates.

These three arguments are not valid in phase of recession and financial crisis. First, the argument against Ricardian equivalence, namely the existence of households constrained in their consumption choices through their present income (liquidity constraint) is increasing. Second, the large symmetry of the shock that hits the economies enhances the effectiveness of coordinated fiscal policies: the coordination of budgetary reactions to the crisis optimizes efficiency without producing unilateral leaks to a particular trading partner. Third, the maintenance of expansionary monetary policy and quantitative easing temporary help prevent soaring public debt from producing a rise in long-term interest rates. In any event, in phase of recession and financial crisis, the States substitute for private companies in the financial markets: total outstanding debts, public and private, do not increase and rates have therefore no reason to increase.

It remains to remember that the use of fiscal policy is constrained by the initial state of public finances and the credibility of governments to pursue policies suited to the circumstances, therefore, subject to change if circumstances were themselves changed.

Schematically, fiscal policy works through two channels. As the name implies, automatic stabilizers play automatically during the downturn. They spontaneously reduce the risk of recession when the economy slows down and reduce the magnitude when the recession has proven, as the slower growth of taxes from income and production weighs on state revenue while spending related to unemployment and other social transfers increase. These stabilizers are used to support the effective demand offsetting the weak economy. In the United States, automatic stabilizers have thus widened the deficit of 1 to 2.5% of GDP since 1968 during every recession (CBO, 2008). Their advantages lie in the fact that there is no shift in the decision, since they are automatic and do not incur application

delays. Their counter-cyclical properties, however, vary according to the size of transfers (extent and level of unemployment benefits, etc.) and how much progressive taxes are.

However, in developed economies which have gradually reformed their economies following an agenda of structural reforms, the weight of the automatic stabilizers have tended to decrease (see Creel and Saraceno, 2009). The loss of effectiveness of automatic stabilizers requires another instrument to strongly support the economy, namely stimulus measures, i.e. discretionary policies.

The IMF (see Spilimbergo et al., 2009), however, emphasizes the long delays in decision-making of discretionary policies, averaging two quarters after the economic upturn and three quarters if investment expenditures are implemented. In addition, a number of discretionary measures do not correspond to a counter-cyclical policy. This may be the case for tax cuts which come too late or are perpetuated beyond the appropriate period.

Thus, to be effective, always according to the IMF, a specific recovery plan should be timely, temporary, and targeted (hence the 3T).

- **Timing:** This condition implies to anticipate the magnitude of the coming slowdown, to reduce time spent to recognize the slowdown and to implement the counter-cyclical policy measures. Thus, most studies highlight the delays in implementing discretionary fiscal policies in the 1960s and 1970s, which finally caused high levels of inflation and prompted destabilizing impacts on the economy. One of the proposals made by the CBO is to include in the legislation crisis indicators that automatically trigger budget support program.
- **Temporary:** measures must remain temporary to encourage beneficiaries to act during the application period. They support demand because of the expenditure for the extra income they produce (e.g. higher transfers), or because of the direct effects for households and businesses (e.g. lower VAT over a certain period). In the latter case, the expenditures that were only planned are advanced and in addition to these, new expenses arise when the income effect activates. Should measures be maintained, the aim of the countercyclical stimulus would be diverted to a procyclical policy as supporting demand would continue during the growth phase. In addition, long-term effects of the stimulus packages on public finances could lead to creating an unsustainable imbalance, if new spending and new tax cuts would be converted into permanent measures. The advantage of a temporary stimulus also lies in the windfall gains it can temporary produce: a temporary reduction in

VAT should result in an immediate boost to consumption, provided of course that the rate cut was reflected in prices.

- Targeted: Most studies on temporary tax cuts conclude on a low impact on household consumption, hence a very low fiscal multiplier effect. Non liquidity-constrained households generally save these tax cuts. It is therefore crucial to choose the people who benefit from tax cuts and higher transfers. The latter may have a high multiplier effect if they directly target liquidity-constrained households and impinge on their capacity to increase consumption. Finally, targeted assistance to industries (e.g. automotive) must be handled sparingly and cautiously because they can lead to retaliatory protectionist measures by other countries.

As an example, the Obama stimulus package (American Recovery and Reinvestment Act, 2009) was performed on the basis of a multiplier of 1 on taxes and 1.6 over expenditure (Romer, 2009). Unlike the 3T however, Christina Romer promotes a dispersed stimulus rather than a targeted one, and sustained rather than temporary. According to her, the dispersion prevents massive spending on a targeted project inducing diminishing returns, while a sustained stimulus will produce a durable recovery. In addition, the long-term dimension should not be monopolized by the issue of financing expenses. A real long-term impact of expenditures is possible. In a situation where the economic crisis is not cyclical, a structural fiscal impetus, via public investment, should be the appropriate answer.

As regards the composition effect, which is related to the targeted property of appropriate (if not optimal) fiscal policy during a crisis, the seminal contribution of Alesina and Perotti (1995) concluded that spending-based consolidation had smaller adverse effects than tax-based consolidation. Stated differently, the spending multiplier appeared smaller than the tax multiplier. While Erceg and Lindé (2012) achieve a similar result in a two-country Dynamic Stochastic General Equilibrium (DSGE) model with independent monetary policy, they obtain the contrary once they introduce either a monetary union or a zero-lower-bound on monetary policy. Their argument is that spending cuts require sharp falls in interest and exchange rates to crowd-in private demand. In a monetary union and under the ZLB, both channels disappear and a spending-based consolidation is costlier than a tax-based one. This is consistent with the empirical findings of, e.g. Batini et al. (2012) who conclude that spending multipliers are significantly larger than tax multipliers during downturns. According to Gechert and Rannenberg (2014, baseline estimation, figure 2), the tax multiplier is only weakly different between downturns and upturns, whereas the spending multiplier

can be multiplied by 3; during downturns, the spending multiplier can therefore be on average 5 times higher than the tax multiplier. in't Veld (2013), with consideration of spillover effects of fiscal consolidation in the Eurozone, and Coenen et al. (2012), without consideration for the time-varying property of fiscal multipliers, also showed that spending multipliers were higher than tax multipliers.

The recent crisis in the Eurozone, usually referred to as the sovereign-debt crisis, has also shed light on the frontloading vs. backloading strategies of limiting deficits to make public debt sustainable. The superiority of one strategy over the other depends extensively on the multiplier effect. In a chapter of the World Economic Outlook (2010), the IMF had concluded early that the costs of fiscal consolidation would be important, though not substantial. A fiscal multiplier around 0.5 was found at this time. In 2012 however, in the new issue of the Outlook, the tone was radically different. Assertions were made that fiscal multipliers had been formerly underestimated and were in a range of [0.9;1.7]. Blanchard and Leigh (2013), in a sequel of their box in WEO 2012, acknowledged that during downturns, fiscal multipliers were certainly above unity. While the former value of the fiscal multiplier urged a frontloading strategy, the latest one rather urged a backloading one. As a matter of fact, the growing body of evidence on the time-varying properties of the fiscal multiplier along the business cycle highlighted the importance in the timing of fiscal consolidation: a frontloading strategy when the output gap was widely and negatively open would become a "self-defeating strategy" (Holland and Portes, 2012). Not only would there be large real incurred costs but the debt to GDP ratio would not fall and debt sustainability would recede.

The list of factors which make the fiscal multiplier non-linear includes the zero-lower bound (e.g. Eggertsson, 2010), financial stress for households and firms (e.g. Corsetti et al., 2012), unemployment and the business cycle (e.g. Auerbach and Gorodnichenko, 2012), and public debt thresholds (Corsetti et al., 2013). A general conclusion of this literature is that the fiscal multiplier is higher in times of crisis than in good times (see the recent meta-analysis by Gechert and Rannenberg, 2014).

3. What lessons can be drawn for the management of the Global financial crisis?

The experience of the Great Depression showed that the social costs of a collapse of the banking system are too high for bankruptcy to be considered as an exit strategy. The bankruptcy of Lehman Brothers in September 2008 showed that the financial system could not easily absorb such a shock. Whereas the Great Depression witnessed panics of depositors, the Great Recession witnessed panic on the interbank leading to a liquidity crisis that forced central banks to intervene massively playing their role of lender of last resort. Bankruptcy of banks remains a possible regulatory instrument, necessary in case of mismanagement. But it must be implemented in a framework that protects depositors and ensures that it does not create systemic risk.

We have also seen that private solutions quickly reach their limits when the crisis is systemic. These solutions, whether totally decentralized or assisted by the government, are often the first envisaged route. The British bank Barclays asked its reference shareholders - China Development Bank and Temasek – to be part of a capital increase operation in June 2008, while the Bradford & Bingley bank's activities were acquired by the Spanish bank Banco Santander. This type of measure has the advantage not to bear the cost of recapitalization onto taxpayers. But these operations were quickly proved inadequate. Once the solvency of many institutions is threatened, trust erodes and private investors willing to absorb uncertain losses are becoming increasingly rare. Public intervention is therefore essential. The USA and Japan in the 1980s and 1990s showed that these interventions should be fast. Denying the problems in the hope they resorb themselves rather leads to cumulative difficulties and a higher future burden of the crisis. Although they were sometimes slow to realize the magnitude of the crisis, European and US authorities have been more vigilant. Central banks ensured the liquidity of the financial system. In terms of budget, the initial responses were organized in haste to meet the urgency of the situation, as episodes of Northern Rock and the US agencies Fannie Mae and Freddie Mac demonstrated. By the end of 2008, comprehensive strategies for resolving the crisis were finally undertaken.

The above developments on past experiences in solving banking and financial crises provide some lessons on the strategy to be implemented as well as the conditions for successful rescue plans:

Act fast: the passivity of the Japanese authorities during the “lost decade” and US during the crisis of the savings banks is recognized as an aggravating factor in both crises. From this standpoint, the initiatives have proliferated in Europe and the United States showing that the budgetary authorities were this time not willing to let the situation deteriorate. From guarantees on deposits to interbank loans and capital injections, solutions have been very numerous. No doubt it would have been preferable to propose soon a coherent and comprehensive solution, but given the complexity of the assets concerned and the close relationship between liquidity and solvency problems, it was difficult to gauge the extent of the crisis and solutions to get out.

Recapitalize: past failures and successes underscore the importance of capital requirements in the banking crises. From the moment that the problem goes beyond the issue of temporary liquidity, banks must collect sufficient capital to absorb losses. The deterioration of banks' results was brutal and a large part of rescue packages announced from October 2008 was designed to meet this need for own funds in different forms. In the UK, the government announced a plan of 50 billion pounds, allowing it to take stakes in banking groups in difficulty. In doing so, two banks were nationalized since the government owned, through a holding company, 43% of the Lloyds TSB group and 70% of Royal Bank of Scotland. In the United States, \$ 125 billion was allocated to the nine major banks. The injection of capital occurred in the form of preferred shares without voting rights. France also intervened on behalf of its banks through the Société de Prise de Participation de l'Etat (SPPE) to enable key institutions to consolidate their own funds. 10.5 € billion has been paid in the form of subordinated perpetual debt securities. Thus, the government does not participate in the capital of assisted firms but allows them to improve their solvency ratio. It should be added that the situations cannot always be regarded as stabilized. This aspect is a potential limitation of the recapitalization strategy since the government may have to intervene again if the first injections were not sufficient to absorb the emergence of new losses.

Remove some toxic assets from banks' balance sheet: Debates arose about the use of defeasance funds or bad banks. In the first version of the Paulson plan, the launch of a toxic asset purchase program was intended to remove them from their balance sheet and to put them in a specific entity. However, the inability to set a "fair" price for these assets has highlighted the difficulties inherent in the creation of such an entity. It is indeed necessary to determine a transfer price which, if it is too high will become a subsidy to the banking system paid for by taxpayers, and if it is too low will not relieve banks. Finally, the fund is responsible for liquidating the assets at the best price. However, the current crisis has involved more complex assets than in previous

experiments (see Klingebiel, 2000). In the Swedish case, often cited, the transferred assets were mainly related to the real estate market. The assets were bought at book value and the defeasance fund then treated directly with the debtor to get paid or recover the collateral, which could then be sold. The current situation has been significantly different as the securities have a very tenuous link with the original claim. This is the very principle of securitization which leads to mix debt claims (real estate, credit cards, bonds, etc.) within an asset. It is therefore impossible to trace the source of the claim in the hope of recovering collateral if the debtor is unable to pay its debt. In addition, the legal arrangements are as complex as financial arrangements, and stakeholders are numerous (originating bank credit, securitization conduits, credit enhancers, insurers, final investors), each playing a role in the distribution of earnings and above all of losses. Cantonment has the advantage of isolating the "toxic" assets in the hope of definitively fixing the loss of each institution. But the sale of assets will ultimately depend on the "fundamental" value of the asset and on the return of liquidity in the structured products market. The strategy proposed in March 2009 by the State Secretary of the US Treasury T. Geithner disregards pure cantonment in a public structure and rather favors a public / private partnership to buy toxic assets. Private investors are encouraged to buy assets from banks up to 7.15% of the acquisition. The Treasury is involved on an equal share, the remaining funding can be obtained or guaranteed by the Federal Reserve and the FDIC. This strategy should certainly help liquidate the banks' balance sheet assets, but it is also an unrequited grant to the financial system which artificially recreates a market for structured products. This type of plan makes a bet that the main problem is related to the liquidity of the market and not to the "fundamental" value of assets. If the price of products purchased by private investors increases, they will share the profit with the Treasury, enjoying the earning of a substantial leverage. If "fundamental" proves much less, the loss of private investors will be limited to 7.15% initially provided and the cost of rescuing the banks ultimately return to taxpayers, either directly via the Treasury and especially indirectly through the Reserve Federal and FDIC.

Backloading during a crisis is more appropriate than frontloading: the upsurge in public debt that recovery packages and automatic stabilizers have generated during a crisis pose rapidly a threat to its sustainability. However, fiscal austerity can prove self-defeating if spending cuts and/or tax hikes occur when the output gap is still substantially negative. When actual output falls below its potential, fiscal multipliers are positive and strong. In this situation, slowing down the pace of austerity or, better, postponing it until growth has already strongly recovered, should be a preferred strategy to an early and sharp consolidation policy, or frontloading strategy.

4. Conclusion

The analysis of past crises has drawn lessons about strategies to adopt and pitfalls to avoid a collapse of the financial system and a worsening of the global crisis, unprecedented since 1929.

Among these lessons, two were selected by policymakers: first, the need to stabilize the sector where the crisis originated and, second, the need to "strike hard". In the current situation, and contrary to what happened in Japan in the 1990s, public, monetary and regulatory authorities have acted to strengthen interbank liquidity and to try to better ensure banking and financial stability in the short term. That they have been perfectly managed to do so would probably be an exaggeration. However, these actions were necessary. The massive scale of stimulus packages in the US, UK and Japan and, to a lower extent, in some European countries should be welcomed as good news. These plans were accompanied by particularly rapid and significant rate cuts by central banks, acting cooperatively. However, one may argue that recovery plans were not substantial enough in the face of the sharp depression which followed the bankruptcy of Lehman Brothers and that these recovery plans should have last longer. Two reasons can be advanced to explain short-lived fiscal impetus: first, the risk of contributing to moral hazard and new bubbles; and the concern that fiscal policies may lead to unsustainable public finances. One may thus argue that fiscal impetus should have remained in place to prevent the crisis from turning into a deflation in the Eurozone where inappropriately, frontloading emerged.

Regarding moral hazard, the sharp decline in interest rates creates fears that other bubbles develop at the end of the current crisis, leading to a new succession of booms and busts once public policies have contributed to the socialization of bank losses, indeed encouraging banks to maintain practices that led to the disaster. The reluctance of the ECB to implement QE – it finally started in March 2015, almost 7 years after the onset of the Global financial crisis, can be attributed, at least partly, to the risk of promoting some moral hazard. To cope with it, a few solutions are possible:

- Liquidity injections to banks may be subject to bank liabilities to restructure (conservative lending policies, like in Japan; cost reduction, like in Sweden, limitations of dividends and

remuneration of officers or traders, like in the US or France); they can be performed at high interest rates (higher than market rates, like in France) and incremented each year in the event of default.

- The guarantee on deposits, essential to avoid bank runs, must be capped (see the European initiative in the fall of 2008) and the recent case of Cyprus.
- In case of bank bankruptcy, the rescue of the failed institution should be avoided if there is a systemic risk. To limit moral hazard, several possibilities exist: nationalize, lay off officers, subject losses to shareholders, etc.
- Finally, appropriate accounting standards and effective banking supervision are essential in times of crisis to limit the information asymmetries. It is essential that the authorities have recent and reliable information on the health of the banking system to take measures appropriate to the situation.

The second element of reluctance vis-à-vis public policy relates to the question of the sustainability of public finances. Fiscal stimulus is often interpreted as a sacrifice that future generations will have to bear the cost of. This argument has no place during a crisis. An influential part of the academic literature on unsustainable public finances presupposes the non-productive nature of public spending. Another part, however, either theoretical - the growth theories – or empirical – relating to the size and composition of fiscal multipliers -concludes instead that public spending can be productive. Hence, public spending can be self-financed and does not pose issues of sustainability.

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THE ABSTRACT OF THE PROJECT IS:

The research programme will integrate diverse levels, methods and disciplinary traditions with the aim of developing a comprehensive policy agenda for changing the role of the financial system to help achieve a future which is sustainable in environmental, social and economic terms. The programme involves an integrated and balanced consortium involving partners from 14 countries that has unsurpassed experience of deploying diverse perspectives both within economics and across disciplines inclusive of economics. The programme is distinctively pluralistic, and aims to forge alliances across the social sciences, so as to understand how finance can better serve economic, social and environmental needs. The central issues addressed are the ways in which the growth and performance of economies in the last 30 years have been dependent on the characteristics of the processes of financialisation; how has financialisation impacted on the achievement of specific economic, social, and environmental objectives?; the nature of the relationship between financialisation and the sustainability of the financial system, economic development and the environment?; the lessons to be drawn from the crisis about the nature and impacts of financialisation? ; what are the requisites of a financial system able to support a process of sustainable development, broadly conceived?'

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