Monetary and Fiscal Policies: Ordinary Recessions and Financial Crises

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May 5th, 2011

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Submitted to the Department of Economics at Gettysburg College in partial fulfillment of the requirements for the degree of Bachelor of Arts with honors.

Acknowledgements

Abstract

This paper uses a yearly-data dataset of 99 financial crises and 202 ordinary recessions from 96 countries to study how much monetary and fiscal policies contribute to sluggishness of these two types of crises. Several results emerge from the analysis presented. First, I find that even though financial crises are more severe than ordinary recessions fiscal and monetary policies in financial crises are generally not more expansionary than these in ordinary recessions. Second, I find that expansionary fiscal policy appears to be more strongly associated with higher recovery growth rates during financial crises. Finally, I find that expansionary monetary policy seems to be a potent tool during ordinary recessions and financial crises in OECD countries. However, in non-OECD countries increases in interest rates during financial crises lead to higher recovery growth rates. This is most likely associated with a defense of the currency and a prevention of huge capital outflows.

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I.   Introduction

The Global Recession of 2008-09 sparked renewed interest in systemic financial crises. A key observation, first documented by Kaminsky and Reinhart, was that recessions associated with such crises turn out to be particularly severe and protracted (1999). Most of the work on financial crises has concentrated on documenting the main features of these crises – output loss, length, depth etc. (Reinhart and Rogoff, 2009; Claessens et al., 2004). Research that directly contrasts them with ordinary recessions is scant and mostly concentrated on advanced economies (Kannan, 2010). Furthermore, the effectiveness of monetary and fiscal policies in financial crises has not been extensively studied with the exception of a 15-country study in the latest issue of the World Economic Outlook (IMF, 2009).

In this paper, I argue that monetary and fiscal policies could be one reason why financial crises turn out to be particularly protracted. In particular, such a hypothesis would be supported by evidence that these policies have not been as expansionary during financial crises as they were during ordinary recessions. Furthermore, it would be corroborated by evidence that policies have different effectiveness in the two types of environments. I use a yearly database I have constructed of 99 financial crises and 202 ordinary recessions to test these claims.

Several results emerge from the analysis presented. First, I find that even though financial crises are more severe than ordinary recessions fiscal and monetary policies in financial crises are not more expansionary than these in ordinary recessions. This is certainly the case in non-OECD countries. Furthermore, it holds for fiscal policy implementation in OECD countries. Second, I find that expansionary fiscal policy appears to be more strongly associated with higher recovery growth rates during financial crises than during ordinary recessions. This agrees with the implications of New Keynesian models with heterogeneous agents stating that fiscal policy is more effective during financial crises, because of the higher proportion of debt-constrained agents (Krugman and Eggertsson, 2010).

Third, I find that monetary policy during recessions does not seem to have different effects on recovery growth rates in "ordinary" and financial crises when OECD countries are concerned. In both cases, an increase in interest rates is associated with slower recoveries. However, the results from the non-OECD sample suggest that following financial crises, countries that increase interest rates recover faster. Such a result is supported by the existence of a "reverse transmission mechanism" during banking crises in developing economies (Christiano et al., 2004). The intuition behind this mechanism is that an initial increase in interest rates prevents a sharp depreciation of the currency that could hit the balance sheets of consumers and businesses, because of the currency mismatches in the economy. This is important since currency depreciations are widespread during financial crises because of the associated capital outflows.

Finally, in this paper, I go beyond looking at the data. I provide possible political reasons for the "contractionary" policies that some countries seem to have undertaken in the past. In addition, I closely analyze the policy response in twelve financial crisis episodes. These case studies provide a historical perspective on some of the political considerations behind particular policy actions.

Five sections follow. Section II presents a graphical interpretation of a linearized New Keynesian model with a risk premium. Within this framework, I explain the difference between financial crises and ordinary recessions. Furthermore, I illustrate the important role of monetary and fiscal policy. In addition, in Section II, I provide a concise analysis of the policy response in

twelve financial crises and I argue that contractionary policies are the norm rather than the exception. Finally, section II reviews other cross country studies that examine the profiles of recessions and recoveries associated with financial crises. Section III describes the data, on which the analysis will be based and its sources. Furthermore, it contrasts the policy response in financial crises and ordinary recessions. Section IV specifies the econometric model to be used. Section V presents evidence on the effectiveness of monetary and fiscal policies in both ordinary recessions and financial crises. Finally, Section VI summarizes the results and discusses their policy implications.

II.   Financial Crises and Past Policy Responses

I start this section by explaining the widely accepted view for why financial crises turn out to be especially protracted. In particular, I analyze various studies that link the financial sector and the real economy (Bernanke, 1983; Bernanke and Gertler, 2000; Kiyotaki and Moore, 1997) within a graphical version of a linearized New Keynesian Model with financial frictions (Weise and Barbera, 2009). The financial sector is shown to be able to amplify output shocks, making a recession deeper and more prolonged. Then, I propose an alternative explanation for the severity of financial crises – the policy response (Weise, 2010). I argue that financial crises are often a time of immense political and economic turmoil, something that often leads to the pursuit of "non-expansionary" policies. I review, in detail, the policy response in twelve systemic banking crises in search of the particular policies countries have undertaken in the past and the reasons for doing so. In addition to those examples, I explain some of the contrasting views on policy effectiveness during a financial crisis within a New Keynesian Model with financial frictions and use those to motivate some of the particular policy actions undertaken in the past.

The Conventional Wisdom on Why Financial Crises are Different from Ordinary Recessions

This section discusses the "inherent" differences between financial crises and ordinary recessions. In particular, it reviews some of the literature on the "financial accelerator" and links it to a graphical version of a New Keynesian model with a risk premium.

Some evidence has been found for Milton Friedman's "plucking model" which says that cyclical contractions tend to dissipate more quickly the larger the size of the contraction (Sinclair, 2005). However, financial crises do not seem to follow this pattern. They serve as an amplification mechanism that magnifies and accompanies other types of shocks like exchange rate, domestic and foreign debt crises (Reinhart and Rogoff, 2009a). An essential part of this amplification mechanism is the asymmetric information problems that arise during a financial crisis (Bernanke, 1983). Bernanke claims that the loss of confidence in financial institutions and the widespread insolvency of debtors lead to increased cost of credit intermediation, because banks cannot differentiate between good and bad borrowers. Consequently, potential worthy

borrowers cannot undertake their projects; also savers have to devote their funds to inferior uses. As a result, there is a contraction in economic activity.

Bernanke and Gertler (2000) formulated a model that explains how the financial system serves as an amplification mechanism to negative shocks that hit the economy. The initial output shock leads to a decrease in wealth, which makes firms more dependent on external financing. A weak banking system cannot provide that financing, leading to a decline in investment. Kiyotaki and Moore trace a similar dynamic in a richer intertemporal model (1997). A collapse in land prices undermines a firm's collateral, something that decreases its credit limit. This causes it to pull back investment in assets and hurts it even more in the next period.

The dynamics described above can be analyzed within an otherwise standard New Keynesian model that includes a risk premium. The model has the following equations (Weise and Barbera, 2009):

AS: $\qquad \pi - E_t\pi_{t+1} = \alpha(Y_t - Y_t^n) + u_t$

IS: $\qquad Y_t - Y_t^n = -\gamma[i_t - E_t\pi_{t+1}] + E_t(Y_{t+1} - Y_{t+1}^n) + g_t$

TS: $\qquad r = f - E_t\pi_{t+1} + \sigma$

This is a linearized version of a New Keynesian model. The AS curve is derived from the Euler equation of firms. It is referred to as the New Keynesian Phillips curve. It shows a positive relationship between prices and output, because an increase in output leads to higher real marginal costs, which in turn make firms increase their prices. The parameters π, π^e, Y_t, Y_t^n represent inflation, expected inflation, output and the natural level of output (the level that will arise if prices are perfectly flexible). The parameter α refers to the fraction of sticky-price firms. The larger this fraction is, the flatter the AS curve, and correspondingly, the smaller change in price level economic fluctuations produce. The last term of the AS curve, u_t, is referred to as "cost push", i.e. anything else that might affect marginal costs. In addition, it is a random disturbance term that follows an autoregressive pattern.

The IS curve is derived from the consumption Euler equations of households, that is the household's optimal saving decision. In this equation the current output gap depends on expected future output, $E_t(Y_{t+1} - Y_{t+1}^n)$, and the real interest rate $- (i_t - E_t\pi_{t+1})$. Higher expected future output raises the current output, because consumers want to smooth consumption, and, therefore, consume more today. In addition, the negative effect of the real interest rate reflects the intertemporal substitution of consumption. The last term of the IS curve, g_t, is a function of expected changes in government purchases relative to expected changes to potential output. Since g_t shifts the IS curve, it is interpretable as a demand shock (Clarida et al., 1999). Also, g_t is a random disturbance term that follows an autoregressive pattern.

Finally, the TS curve links the real risky rate, r, and the federal funds rate, f. The parameter σ is the risk premium. Although, the optimization of the monetary authority's loss function is not a part of the model, it implicitly enters the selection of the appropriate level of the federal funds rate f. The Fed's stabilizing policy rule makes it offset shocks to the risk premium or to expected inflation. The graphical version of the model is shown below:
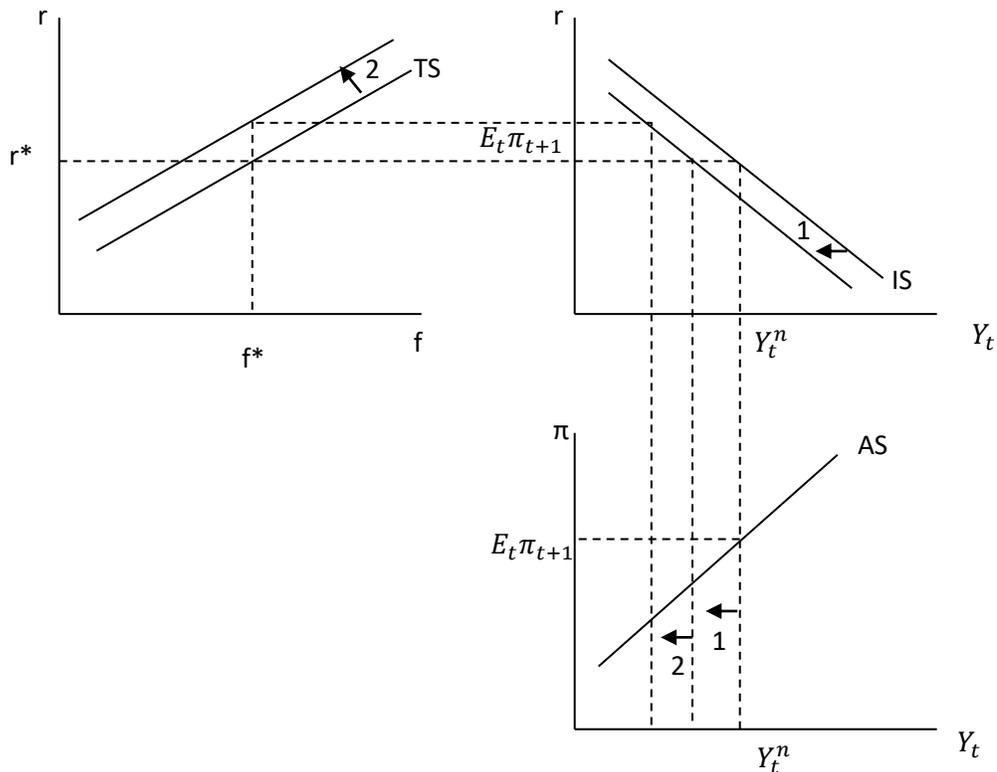
Recessions associated with financial crises can be analyzed within this model (Weise and Barbera, 2009). More importantly, the difference between those recessions and "ordinary" recessions can be illustrated. In the model normal recessions are usually caused by a leftward shift in the IS curve – a demand shock. For example, the demand shock in the financial crisis of 2008 was the collapse of the housing market that caused residential investment and consumption to fall. During times of financial distress there is an additional factor at play – the risk/liquidity premium σ. A jump in its value shifts the TS curve up, raising real interest rates on corporate bonds, mortgages, and other risky assets. This is consistent with Bernanke's claim that higher cost of credit intermediation leads to increased interest rates or to a curtailment of credit (1983). In the model, the increased interest rates are represented by the risk premium. The shift of the TS curve is also consistent with the lowering of borrowers' credit limits in Kiyotaki's model, something that also leads to higher interest rates (Kiyotaki and Moore, 1997).

For example, at the start of the financial crisis of 2008 there was an uncertainty associated with the solvency of various financial institutions. Also, there was a huge fire sale of risky assets in an effort to raise cash. Such events cause the TS curve to go up (the movement of the curve could be observed in the equations above – as σ increases, r rises as well). An upward shift in the TS curve leads in turn to a decrease in investment and consumption, causing output to fall even further (illustrated by an upward movement along the IS curve). The graphs below illustrate these dynamics. In step (1) the economy is hit by a demand shock often responsible for ordinary recessions. In cases of financial distress, there is an additional force, illustrated in step

(2), which is exacerbating the recession. This amplification mechanism in the model is the rising risk premium.

This model can be further used to illustrate how the policy response can add to the severity of a financial crisis. Expansionary monetary policy is represented by downward movements along the TS curve (the Fed optimizes its loss function, choosing the appropriate level of *f*), which lead to downward movements along the IS curve and correspondingly to higher output. Fiscal policy acts through the IS curve – an increase in government spending shifts the IS curve to the right, leading to an increase in output. Unconventional policies, like measures to calm down financial markets, go through the TS curve. For example, stress tests of the banking system lead to a decrease in σ, the risk premium, and a downward shift of the TS curve. Also, quantitative easing can target the term premium and also shift down the TS curve. However

Cross Country Studies of Financial Crises

An alternative explanation for the severity of financial crises could be an "inappropriate" policy response (Weise, 2010). I argue that monetary and fiscal policies could be one reason why financial crises turn out to be particularly protracted. Such a hypothesis would be supported by evidence that these policies have not been as expansionary during financial crises as they were during ordinary recessions. Furthermore, it would be corroborated by evidence that policies have different effectiveness in the two types of environments.

Most empirical studies examining recoveries and recessions associated with financial crises look at outcomes (output loss, duration of recession, sluggishness of recovery) without explicitly answering the question what it is that causes financial crises to be such protracted affairs. In addition, they do not include the policy response in the analysis and if they do the focus is on advanced economies. Finally, past cross country studies of financial crises tend to analyze these in isolation, without providing a direct comparison with ordinary recessions.

For example, Reinhart and Rogoff conduct a comparative historical analysis of the aftermath of systemic financial crises (2009a). The countries under consideration are both developed and emerging economies that have experienced financial distress in the after-war period. Reinhart and Rogoff's analysis shows deep and lasting effects on output and employment. Unemployment rises for five years and output declines last on average for two years following the peak of economic growth. However, the authors do not provide any explanations for why this might be the case. Furthermore, their analysis lacks a direct comparison with a representative group of "ordinary" recessions.

Boysen-Hogrefe et al. use a parametric framework to test whether the size of the bounce-back of GDP following an ordinary recession is larger than that following a recession associated with a banking crisis or housing crisis. The study covers 16 industrialized countries from 1970 to 2006. The results indicate that the output loss during an ordinary recession is completely offset in the following recovery. This is not the case when the recession was triggered by a banking crisis or a housing crisis. Again, this study does not offer explanations for why this might be the case. The analysis provided does provide a direct comparison between financial crises and ordinary recession. However, the evidence is based on a limited sample of financial crises in advanced economies.

Kannan offers one possible reason why recoveries from banking crises might be more protracted (2010). Using a sample of 21 industrialized economies from 1970 to 2004, the author documents that it takes 5 ½ quarters for output to recover following a banking crises, while it takes only 3 quarters following a normal recession. Evidence is presented that stressed credit conditions are an important factor containing the pace of the recovery. Industries that are more reliant on external finance, or more subject to financial frictions, are found not to recover as fast as other industries following all kinds of recession. The author finds strong evidence that the differential growth patterns across industries is much more pronounced in the aftermath of a financial crisis than it is for other recessions.

One potential drawback of this study is the small sample. The author relies on just 15 financial crisis episodes, not all of which are systemic. Furthermore, developing countries are not included in the analysis.

In addition, financial crises might turn out to be more sluggish than ordinary recessions if monetary and fiscal policies were not appropriately and/or sufficiently used. The effect of monetary and fiscal policies in financial crises is explored in the most recent World Economic Outlook (IMF, 2009). The authors find that these policies tend to shorten the duration of all types of recessions. Both increases in government consumption and decreases of interest rates beyond what is warranted by a Taylor rule positively and significantly affect recovery growth rates. However, when only financial crises are analyzed the effect of monetary policy is found not to be statistically significant.

One drawback of this study is that the sample of banking crises is limited to only fifteen episodes in developed countries. Furthermore, the authors do not look at recovery growth rates but rather at the duration of recessions. This approach has the downside that the dependent variable is less variable as duration is measured in quarters and ordinary recessions are up to a couple of quarters long.

This paper adds to the discussion of the sluggishness of financial crises. In particular, it tests to what extent fiscal and monetary policies were responsible for the length of such crises. First, a direct comparison between the policy response in financial crises and ordinary recessions is provided. Specifically, I explore how expansionary monetary and fiscal policies were during the two types of crises; that is how much were they used. Such a comparison has not been previously made. Second, I test whether there is any difference in the effectiveness of monetary and fiscal policies during the two types of recessions. This could provide insights into how costly non-expansionary policies could be in the two different environments. Furthermore, such a direct juxtaposition has not been previously made. Third, I provide possible reasons for why countries have chosen to pursue less expansionary policies during financial crises and give examples from past episodes that support these reasons.

Past Policy Responses in Financial Crises: Lessons from Twelve Case Studies

In this section, I analyze the policy response in twelve systemic banking crises. In addition to observing some of the particular policies countries have undertaken, I also examine their reasons for doing so. "Contractionary" policies seem to be the norm in both developed and developing economies.

In the *Aftermath of Financial Crises,* Reinhart and Rogoff select 21 systemic banking crises in order to illustrate the dynamics of output, unemployment and asset prices following such events (2009a). In this paper, I include an analysis of the policy response in twelve out of those 21 episodes. The crises I do not discuss are several recent episodes (Hungary, 2008; Austria, 2008; UK, 2007; Ireland, 2007; US, 2007), the Great Depression in the U.S. and Norway's financial crisis in 1899. The particular policies undertaken in the countries I analyze confirm Reinhart and Kaminsky's claim that "when it rains, it pours"; that is in the worst of times, crises implement the most contractionary policies (2004).

The case studies demonstrate instances of advanced and developing economies pursuing "contractionary" policies in past financial crises. For example, money market rates were often increased in developed countries during a financial crisis. This was the case in Finland (1991), Norway (1987) and Sweden (1991), all of which had fixed exchange rate systems. The credibility of their pegs was not firmly established due to past devaluations. As a result, there was a strong political unity associated with the defense of the exchange rate system. Another case in point is Spain (1977). The country experienced a break-down of labor relations that led to high inflation rates. The "Moncloa agreements" of 1978 gave Banco de Espana, the political backing needed to tighten monetary policy and address the inflation problem. Finally, Japan in the early 1990s initially increased interest rates so that it "pricks" a perceived stock market bubble, and, subsequently, failed to ease monetary policy sufficiently during 1991-1994.

In contrast, fiscal policy has mostly been expansionary during the considered financial crises in developed countries. However, its use has not been without problems. For example, policy was sometimes reversed – between 1991 and 1996 fiscal policy in Japan was expansionary; however in 1997 voices of fiscal responsibility prevailed and the deficit was reduced. At other times, discretionary government spending was not implemented and only automatic stabilizers were left to stimulate the economy – this was the case in Finland (1991) and Sweden (1991). Finally, the timing of fiscal policy was not always optimal – for example, in the 1987 crisis in Norway, fiscal policy became countercyclical only in 1991. In sum, while fiscal policy was used in most of the developed country financial crises that were analyzed, concerns about deteriorating public finances sometimes led to reversals and poor timing of usage. In addition, automatic stabilizers were in most cases the only means of expansion.

Monetary policy in the developing countries analyzed has been mostly contractionary. This was the case in Argentina (2001), Colombia (1998), Indonesia (1997), Philippines (1997), Malaysia (1997) and Thailand (1997), all of which had fixed exchange rate systems at the time. In all of these examples, the countries were attempting to defend their currency prior to its floating or to

support it after the floating. It is an open debate as to what the right policy was (Christiano et al., 2004). On the one hand, a decrease in interest rates would lead to a depreciation of the domestic currency, worsening the balance sheets of consumers and businesses because of the currency mismatches. On the other hand, an increase in interest rates would hurt the real economy. In Argentina, Colombia and Malaysia, the action of raising interest rates was the choice of the monetary authority while in the rest of the countries it was a part of the requirements that came with the IMF help that the governments sought. The extent of the tightening was smallest in Malaysia, which was one of the few countries which did not seek help from the IMF during the Asian financial crisis.

Finally, fiscal policy in the developed country crises that were analyzed was mainly procyclical. The reasons for this were the perceived debt problems – such was the case in Argentina (2001) and Colombia (1998). In Indonesia (1997) and Thailand (1997) fiscal policy was used, but only after a year into the crisis – again because of perceived debt problems. In contrast, in Malaysia, whose government did not go to the IMF, and in the Philippines, whose economy was not hit hard by the crisis, expansionary fiscal policy was implemented.

Why have Countries Pursued "Contractionary" Policies during Past Financial Crises: Different Beliefs about the Effectiveness of Policy

In this section, I analyze the potential differences in the effectiveness of fiscal and monetary policies during financial crises and during ordinary recessions. This is done within the New Keynesian model with financial frictions introduced above. Furthermore, those supposed differences are used to explain some of the justifications countries have used in the past to pursue "contractionary" policies.

The divergent policy responses to financial crises have their basis in the fundamental theoretical disagreement about the effectiveness of stabilization policies that exists in the economic profession. Starting in the 1970s there was a shift in economic thinking led in part by Edward Prescott that resulted in the formation of New Classical economics. A main part of this shift was the idea that activist policies to fight the business cycle are undesirable. This was because recessions result from the rational decision of workers to work less when the economic conditions are less favorable and, therefore, are the natural course of events. However, there were still economists who believed that recessions are caused by demand side of the economy – the New Keynesians. They worked to incorporate enough frictions into the Real Business Cycle models of New Classical economists so that they can bring the two camps closer together.

As Krugman argues, during the period 1980 – 2007 the clash between the New Keynesians and New Classical economists was mainly on the basis of theory and not action, because in the U.S. there was not much need to implement expansionary policies, since recessions were relatively mild over that period. New Keynesians thought that monetary policy was sufficient in managing the business cycle. In contrast, New Classical economists thought that both expansionary fiscal and monetary policy are ineffective, but did not mind the use of monetary policy.

A case in point of why disagreements in the economics profession matter for policy is the recent global financial crisis. Farell (2011) argues that there were noticeable shifts in the policy debate and implementation in the U.S. starting in early 2010 that are attributable to the sovereign debt crises of Iceland and the Baltic states. In particular, these crises provided conservative policy makers the rhetorical fodder in the debate for more stringent fiscal policy. The intellectual support those policy makers needed was, in turn, sought from economists; and the disunited profession had what to offer. At the time various prominent economists put forward arguments against further extending the stimulus. Examples of such arguments are the work of Alesina and Ardagna (2010) supporting expansionary austerity and the work of Rogoff and Reinhart (2009) on admissible government debt thresholds.

The theoretical divide responsible for different approaches crisis countries have undertaken in the past can best be illustrated by analyzing both sides of the debate on the appropriate policy response during the Asian Financial Crisis. On the one side of the debate was the IMF, which advised some of the crisis-stricken countries to pursue "contractionary" fiscal policies. The intention was to "restore confidence" by convincing the markets that irresponsible behavior is a thing of the past. In the language of the New Keynesian model introduced above such a policy could be justified by rising risk premiums due to the perceived debt problems that can result from big increases in government spending:
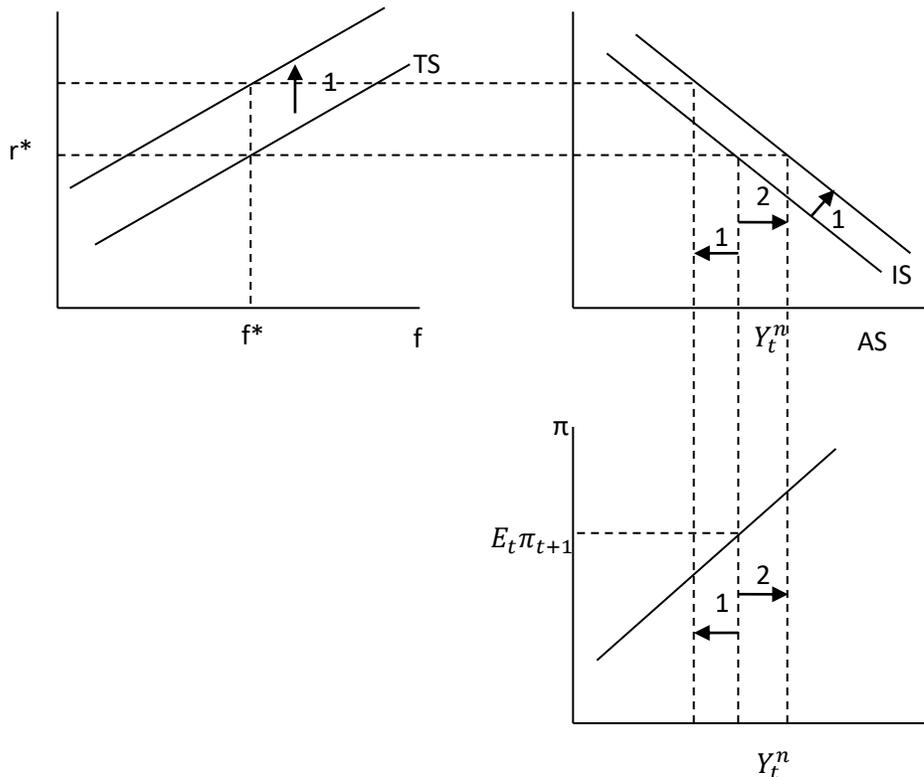
The argument of the IMF would be that the TS curve in the figure above is shifting upwards as the IS curve is shifting rightwards (step 1). This means that any beneficial effect on the real economy of increased government spending is wiped out by the rise in the risk

premiums. While such dynamics between the TS and IS curves might give a justification against expansionary fiscal policy, they do not necessarily justify "contractionary" policies. The IMF embraced an even stronger version of this argument; that a leftward shift in the IS curve would bring down the TS curve.

This last argument was severely criticized by Krugman (2008). He called such actions "policy perversity" claiming that decreases in government spending could not calm down markets (shift downwards the TS curve). On the contrary, Krugman asserted that decreases in government spending would actually hurt the real economy. His preferred action was expansionary fiscal policy. Such a response to a financial crisis could be justified within a New Keynesian model with heterogeneous agents. For example, Eggertsson and Krugman (2010) show that during times of financial crises the number of credit constrained agents increases and, therefore, government spending is more effective, because a bigger portion of the increased disposal income of those agents is spent.

However, implementing expansionary fiscal policies could not always be possible. Kaminsky et al. argue that developing countries face credit constraints during bad times that prevent them from borrowing (2004). Furthermore, developing countries tend to also follow procyclical policies during good times, meaning that they do not have the necessary cushion to fight recessions. This could also strengthen the case for an upward shifting TS curve following big increases in government spending.

The IMF also advised the crisis stricken countries to tighten monetary policy. The goal was to convince the markets that the pegged exchange system will be preserved. It was also aimed at alleviating some of the shocks to the balance sheets of consumers and businesses following a depreciation of the currency. These shocks resulted from the large currency mismatches in the respective countries.

Such an effect of monetary policy was formalized by Christiano et al. (2004). It applies particularly to developing and emerging economies subject to reversals in capital flows. The authors have argued for the existence of a "reverse accelerator effect" that financial frictions cause following a sudden stop (a huge reversal in capital flows) in an open economy model with a collateral constraint that becomes binding during a financial crisis. The model says that the optimal monetary policy is an initial increase in interest rates followed by a gradual decrease. The intuition behind this policy action is that the initial interest rate spike slows the depreciation of the exchange rate and allows for a more gradual adjustment of resources in the economy.

Within the New Keynesian model with a risk premium presented above, a decrease in interest rates leads to a downward movement along the TS curve. However, the prospect of a depreciating domestic currency and failing businesses and households due to foreign currency denominated debt leads to an upward shift in the TS curve. Those two movements are shown in the graph below:
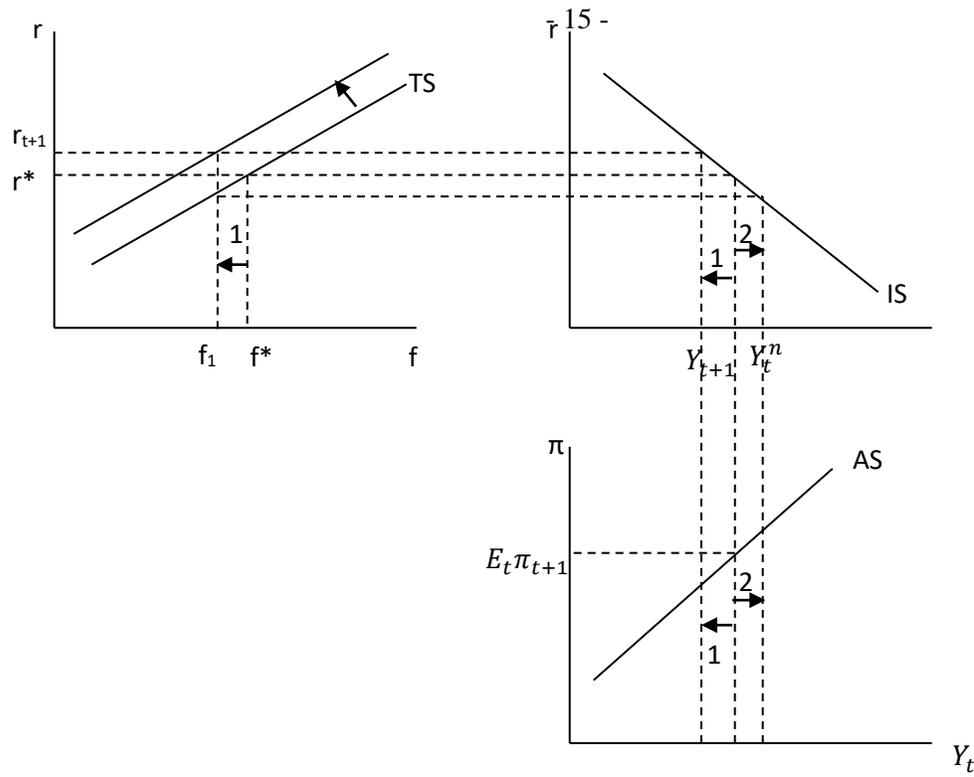
Again as in the case of fiscal policy, such a response of the risk premium to changes in interest rates was met with skepticism by many. For example, Jeffrey Sachs (2001) and Krugman (2008) claimed that the effect on the real economy from a change in money market rates is the only channel through which policy would work.

So far the analysis in this section has focused on explaining why the effectiveness of fiscal and monetary policies might change during a financial crisis mainly through the risk premium. In the remaining part of this section, I analyze two other features of the policy response in financial crises that may be explainable by the sheer severity of these crises.

The first one deals with the increased likelihood of a liquidity trap during a financial crisis. When the economy is in such a situation, the effect of monetary policy is diminished. Furthermore, liquidity traps are more likely to arise during a severe recession such as most financial crises. The graph below illustrates a liquidity trap within the New Keynesian model with a risk premium from above. The TS curve has shifted up so much that a decrease in interest rates to zero is not enough to bring the economy to full employment. Furthermore, it is important to note that since financial crises in this model are often a combination of an upward shifting TS curve and a downward shifting IS curve, a liquidity trap is more likely to occur. Therefore, it is more likely that the monetary authority would be unable to bring the economy to full employment by manipulating short-term interest rates.
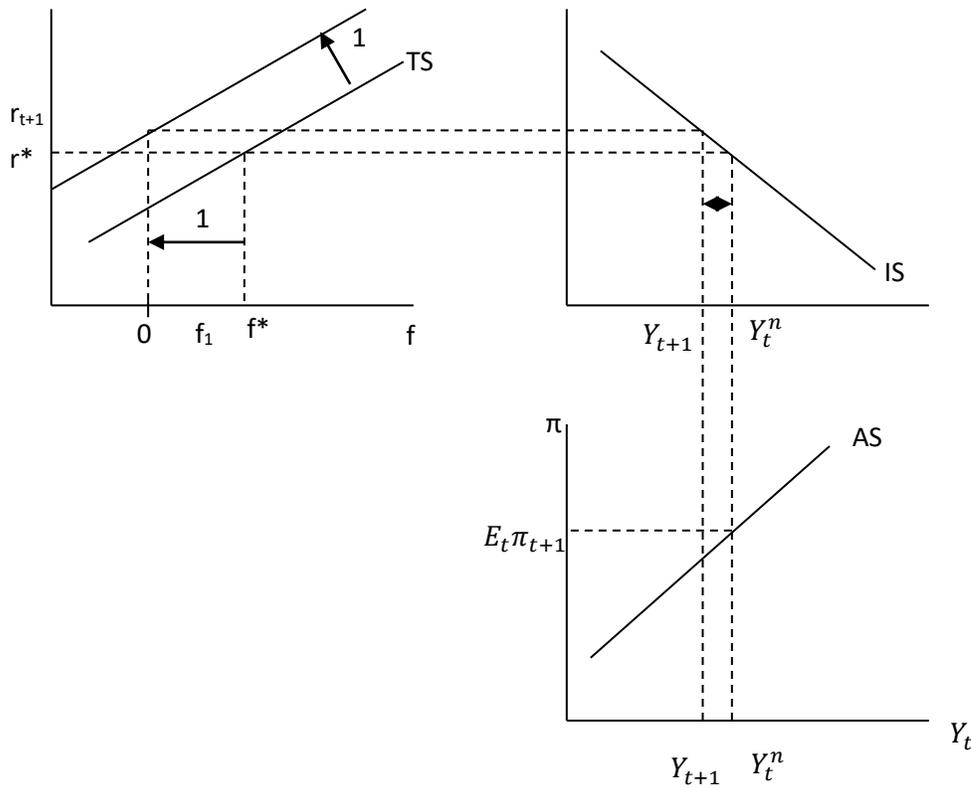
There is a second feature of the policy response that is more likely to emerge during a deep recession such as the typical financial crisis. Central banks in some developed countries have become increasingly conservative in the past two decades, focusing too much on inflation, and this might have its consequences particularly during severe recessions (Krugman, 2010). A recent IMF study of 25 severe recessions in advanced economies finds that prolonged periods of economic weakness are associated with falling inflation rates (Meier, 2010). However, it also finds that as the inflation rate goes toward zero, it becomes sticky. This means that a severely depressed economy can still have a positive inflation rate – most likely because of downward nominal rigidities and well-anchored inflation expectations. A central bank that is overly focused on inflation might miss the urgency of the situation and not act as aggressive as necessary (Krugman, 2010). Again, this is more likely to occur during a financial crisis.

III.   Data and Some Stylized Facts about the Policy Response in Financial Crises

Data

This paper focuses on the period 1970-2005. A yearly-data sample of 99 financial crises and 202 ordinary recessions is used to study the effects of monetary and fiscal policies on the profiles of recessions and recoveries. There are 31 high-income countries, 44 middle income and 21 low-income countries in the sample. The classification of the countries is taken from the World Bank website. The countries to be included in the sample were selected based on a number of conditions. First, they have to have a population of more than 2 million people. Second, they have to have had a recession during the period under consideration. Third, they have to be members of the IMF and to have provided data for the inclusion in the International Statistics database of the IMF. Data on real GDP, inflation, government consumption and interest rates is collected. The policy variables are measured by the change in real money market rates and the percentage change in real government consumption.

The 99 financial crisis episodes in both developed and developing countries are identified by Laeven and Valencia (2008). To be specific, the authors identify 124 systemic banking crises between 1970 and 2007. However, data was unavailable for all of those countries. Financial crises are often associated with ordinary recessions. However, these do not perfectly coincide. For that purpose, the peaks of the economic recessions are identified using a one-year window around the start of the financial crisis. In this way, it is ensured that the recessions under consideration are, in fact, associated with the financial crises identified in the literature. Note, however, that some of the financial crisis periods are not associated with negative output growth. Following the methodology of IMF (2009), those episodes are not considered.

The procedure for identifying business cycles is an algorithm called BBQ (Bry and Boschan procedure for quarterly data; see Harding and Pagan, 2002). A MATLAB version of a program that imitates the algorithm can be found at www.ncer.edu.au. The original procedure uses quarterly output data to identify peaks and troughs. I modify the algorithm for yearly data. A complete cycle goes from one peak to the next peak with its two phases the contraction phase (from peak to trough) and the expansion phase (from trough to peak). The algorithm requires that the minimum duration of the complete cycle must be at least two years.

Some Stylized Facts about Ordinary Recessions and Financial Crises

Figures 1 and 2, in the appendix, show the frequency of financial crises and ordinary recessions in the countries included in the sample. Non-OECD countries have on average 1.1 financial crises and 2.5 ordinary recessions, while OECD countries have on average 0.7 financial crises and 1.8 ordinary recessions. This somewhat agrees with the claim of Reinhart and Rogoff that financial crises are an "equal opportunity menace". The same might be said of ordinary recessions – non-OECD countries have them more frequently than OECD ones, but the frequency is not substantially higher.

Figures 3, 4 and 5 illustrate the dynamics of output, government consumption and real money market rates in OECD countries. A direct comparison of financial crises and ordinary recessions is made. This is to be contrasted with previous studies, which look only at financial

crises   (Reinhart and Rogoff, 2009). [1] Figure 3 shows that the economy contracts on average by 3.6 percent during financial crises and by 1.6 percent during ordinary recessions. The subsequent recovery is estimated to be about 3 percent for both types of crises. In other words, the economy does not seem to rebound faster following financial crises. Note that these estimates simply record growth rates and they do not account for other factors.

Figure 4 shows the average percentage change in government consumption during the first four years from the time at which a crisis hits. The policy response in financial crises seems to be less expansionary even though these crises are more severe than ordinary recessions. The cumulative change of government consumption over the course of a recession associated with a financial crisis is about one percent of GDP. In contrast, the cumulative change of government consumption during an ordinary recession is about 3 percent of GDP. This observation may seem counterintuitive at first given that OECD countries are thought to be implementing sophisticated monetary and fiscal policies. However, in light of the claim by Kaminsky and Reinhart (2004) that "macroeconomic policies in OECD countries seem to be mostly aimed at stabilizing the business cycle (or, at the very least, remaining neutral)", it makes sense. [2] As the previous sections suggest such policy behavior is most likely explained by greater concerns about the government debt during times of financial crises.

Figure 5 illustrates the behavior of real money market rates. These are, on average, decreased by more during financial crises, as shown by the change in the cumulative rates (those over the whole recession). However, there is a caveat to this "more expansionary" monetary policy during financial crises. We can see that money market rates are initially (during the first year) increased over the course of a financial crisis. This increase most likely reflects the initial defense of a peg, the "pricking of a bubble", or the attempt to dampen inflation, as reflected by the case studies.

Figures 6, 7 and 8 illustrate the dynamics of output, government consumption and real money market rates in non-OECD countries. These tell the same story as in the case of the OECD countries, albeit a more dramatic one. Financial crises are, on average, more severe than ordinary recessions – the economy contracts by 4 percent in the former and by 8 percent in the latter. Government consumption decreases by 8 percent during financial crises and is slightly positive during ordinary recessions. In addition, real money market rates are actually increased by 0.7 percent over the course of a financial crisis, while they are decreased by about 3 percent during an ordinary recession.

Note that money market rates and government consumption are quite volatile in non-OECD countries. This is mainly due to frequent inflationary periods. For that reason, following other studies (IMF, 2009), 5 percent of the observations, the most extreme ones, are dropped

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[1] An exception to that is the *World Economic Outlook, 2010.* However, it merely looks at advanced economies. Furthermore, the direct contrast between the two types of crises is made only regarding output dynamics. The authors do not document the extent to which the policy variables change during the two types of recessions.

[2] The authors estimate monetary and fiscal policy rules for OECD and non-OECD countries. They differentiate only between expansionary and contractionary periods.

when the average changes in those variables are estimated. Therefore, it is unlikely that the changes in those variables are influenced by outliers.

IV.   Empirical Framework

The effects of monetary and fiscal policies on the strength of the recovery following financial crises and ordinary recessions are analyzed. Yearly data is used. Monetary and fiscal policies are interacted with a dummy variable for a financial crisis to test whether there is a difference in their effectiveness in the two environments. In particular, the following model is estimated over two different samples, one with OECD countries and one with non-OECD ones:

$RecGrowth_{i,t} = c_0 + c_1 * RealRate_{i,t} + c_2 * RealRate_{i,t} * Fin.Crisis + c_3 * GC_{i,t} + c_4 * GC_{i,t} * Fin.Crisis + c_5 * Fin.Crisis + c_6 * Amplitude_{i,t} + c_7 * GDP_{i,t}(-1) + c_8 * Duration_{i,t} + e_{i,t}$ (1)

The variables *RecGrowth, Amplitude,* and *Duration* measure the recovery growth rate one year after the trough of the recession, the sum of GDP growth rates during the recession (a negative number), and the duration of the recession in quarters. *Fin.Crisis* is a dummy variable that indicates whether a particular observation is a financial crisis. *GDP(-1)* represents the growth rate of the economy in the year before the crisis hits.

The variable *RealRate* is the change in real money market rates over the course of the recession. A decrease in interest rates would mean that there is a negative change in real money market rates. Therefore, we are testing if c_1, the coefficient estimate on the monetary policy measure, is negative. Furthermore, we are testing if the effectiveness of monetary policy is reduced when the banking system is under stress. Previous research has suggested that this might be the case, because the bank-lending and interest rate channels of the transmission mechanism of monetary policy are damaged (IMF, 2009). Furthermore, the effect monetary policy might be reversed in developing and emerging economies, because they are subject to fluctuations in capital flows (Christiano et al., 2004). In such a case the optimal policy response would be to increase the interest rates initially and then gradually decrease them. This is because an initial interest rate spike slows the depreciation of the exchange rate and allows for a more gradual adjustment of resources in the economy. Therefore, if that is to hold we would expect that c_2 would be positive in the developing economies sample.

The variable *GC* measures the percentage change in government consumption over the course of the recession. An increase in that percentage would lead to an increase in *GC*. Therefore, we would expect that c_3 would be positive. Furthermore, we would expect that c_4 is also positive. This is because during financial crises the proportion of credit constrained agents grows. As a result, for a given increase in government spending those agents spend a bigger portion of the increase in their disposable income (Krugman and Eggertsson, 2010). In other words, the coefficient estimate c_3 tests whether fiscal policy is more effective during financial crises.

Note that the dependent variable (the recovery growth rate) is at least one year after the implementation of the policies. This would eliminate endogeneity problems, because the authorities do not observe the recovery growth rate when they are making a decision as to what policies to undertake. However such an approach has its disadvantages – it puts extra demands on the policy-variables, since their effects must be long-lasting – certainly more than a year from their implementation – if they are to show up in the regression results.

Finally, the model estimated does not use fixed effects. This makes sense for a number of reasons. First, even though there are a couple of observations per country, those are often years apart. As a result, it is unlikely that country-specific characteristics would matter over the whole sample of data – from 1970 to 2005 – especially when the sample is broken down according to the level of development of the countries. Second, the regressions correct for the GDP growth rate in the respective crises prior to the recession. This is likely to capture some of the country-specific effects. Third, robustness checks are included, in which decade dummy variables are included. This is because it is more likely that a recession in 1975 in France is more similar to a recession in 1976 in Germany than to a recession in 2005 in France. Finally, past studies that have addressed similar questions have also used a pooled regression. For example, Alesina and Ardagna (2009) use such a regression to examine how the composition and the quantity of fiscal stimulus affect growth in OECD countries from 1970 to 2007 (2009). They first identify episodes of huge fiscal adjustment/stimulus across the countries in their sample and then examine how these affect growth in the years the respective changes have occurred.

V.   Results

The effects of monetary and fiscal policies during recessions on the ensuing recoveries are first analyzed in the sample of OECD countries. Then, the effectiveness of these policies is examined in the sample of non-OECD countries. The non-OECD sample is further broken into middle-income and low-income countries. The results from those regressions are presented in Appendix 2. In addition, Appendix 2 contains regressions that include dummy variables for the decades the respective crises occurred in. These results are presented in the appendix, since they do not substantively alter the effects of the variables of interest.

Monetary and Fiscal Policies in OECD Countries

The results from estimating equation (1) over the OECD sample are shown in Table 1 below:

Table 1. Policy Effectiveness in **OECD Countries**: Financial Crises and Ordinary Recessions
(Dependent variable: recovery growth rate one year after the trough of the recession)

	(1)	(2)	(3)	(4)
Real rate			-0.13**	-0.14**
			(-2.05)	(-2.10)
Real rate*Fin Crisis			0.06	-0.03
			(0.39)	(-0.21)
GC		-0.01		0.001
		(-0.14)		(0.01)
GC*FinCrisis		0.12		0.26**
		(1.56)		(2.17)**
Financial Crisis	-0.95***	-1.33***	-0.85**	-1.98***
	(-2.28)	(-3.61)	(-2.08)	(-3.46)
Amplitude	-0.32***	-0.30**	-0.03	0.09
	(-2.25)	(-2.04)	(-0.17)	(0.48)
GDP(-1)	0.23*	0.25*	0.13	0.10
	(1.92)	(1.97)	(0.75)	(0.56)
Duration	-0.08	-0.10	0.12	0.19
	(-0.70)	(-0.79)	(0.86)	(1.16)
Constant Term	2.47***	2.55***	1.95***	1.83***
	(4.22)	(4.12)	(3.08)	(2.6)
Observations	64	64	51	51
R-squared	0.24	0.27	0.15	0.21

Notes: t-statistics are in brackets. *, **, *** denote level of significance indicating 10%, 5% and 1% respectively. Robust standard errors are used.

A number of results emerge from those regressions. First, we see that the effect of changes in real money market rates on recovery growth rates is statistically significant in difference from zero at the five percent level of significance. A one percent increase in real money market rates leads to 0.14 percentage points decrease in recovery growth rates. However, there does not seem to be any indication that the effect of monetary policy differs when the economy is in a financial crisis.

Second, we see that changes in government consumption during an ordinary recession do not significantly affect recovery growth rates. There might be two possible explanations for this – fiscal policy could be effective; however its effects could not be so significant as to affect growth rates one year after its implementation. Also, the regression does not correct for the level of debt and some research on OECD countries has found that fiscal stimulus reduces private consumption in periods during which the level of debt is very high (Perotti, 1999). However, the

regression results suggest that fiscal policy positively and significantly affects recovery growth rates during a financial crisis. This result is observed in the regression (4). A one percent increase in government consumption leads to a 0.26 percentage point increase in recovery growth rates. Such an effect of fiscal policy agrees with the hypothesis that during banking crises, liquidity constrained agents are more likely to spend the increase in disposable income they get from higher government spending.

Third, the regressions suggest that financial crises are associated with lower recoveries as indicated by the significance and negative sign of the financial crisis dummy variable. In addition, we can see that GDP growth rates prior to the recession periods are associated with stronger recoveries. The coefficient estimate on *GDP(-1)* is statistically significant in difference from zero in two out of the four regressions estimated. There is some mixed evidence for the effect of the amplitude of the recession on the recovery growth rate. Regressions (1) and (2) suggest that the deeper the recession, the faster the recovery. However, this is not supported by regression (4), in which the sign of the amplitude variable is reversed.

Finally, the regression results agree with most of the findings of the duration analysis performed in the 2010 *World Economic Outlook* (also cited in the literature review) with quarterly data.

Monetary and Fiscal Policies in Non-OECD Countries

Table 2 below shows the regression results from estimating model (1) for non-OECD countries. A number of results emerge from those regressions. First, we see that an increase in interest rates leads to a slower recovery in the cases of ordinary recessions. The coefficient estimate on *RealRate* is statistically significant in difference from zero at the ten percent level of significance in one of the two regressions the variable is included. An increase in interest rates by one percent leads to a decrease in recovery growth rates by 0.06 percentage points. Furthermore, there does seem to be an indication that the effect of monetary policy differs when the economy is in a financial crisis. In those cases, the effect of an increase in money market rates on recovery growth rates is reversed. This finding seems to confirm the claim by Christiano et al. (2004) of the existence of a "reverse accelerator effect" that occurs when monetary policy is used to stabilize exchange rates. In other words, the optimal policy during some financial crises in non-OECD countries might turn out to be an initial increase in interest rates that protects households and businesses that are exposed to sharp declines in the domestic currency.

Second, the regression results seem to confirm the finding from the OECD sample that fiscal policy is more effective during financial crises. In such episodes an increase in government consumption by one percentage point during the recession leads to a 0.06 percentage point increase in the recovery growth rate. The effectiveness of fiscal policy during financial crises is observed in both of the regressions, in which the government consumption variable is included. One surprising result is that expansionary fiscal policy during ordinary recessions is associated with slower recovery growth rates. Again this finding could most likely be attributed to the deleterious effects of high levels of debt on the effectiveness of fiscal policy (Perotti, 1999). Such a claim, however, is not testable as data on government debt is unavailable for most of the developing country crises included in the sample.

A third result that emerges from the analysis is the importance of pre-recession growth. In all of the four estimated regressions, higher pre-crisis GDP growth is associated with faster recoveries. The coefficient estimate on *GDP(-1)* is significant at the one percent level of significance.

Table 2. Policy Effectiveness in **Middle and Low-Income Countries**: Financial Crises and Ordinary Recessions
(Dependent variable: recovery growth rate one year after the trough of the recession)

	(1)	(2)	(3)	(4)
Real rate			-0.08*	-0.06
			(-1.79)	(-1.53)
Real rate*Fin Crisis			0.21***	0.16***
			(3.15)	(2.86)
GC		-0.02		-0.11
		(-0.77)		(-1.37)
GC*FinCrisis		0.10*		0.17*
		(1.93)		(1.74)
Financial Crisis	0.03	0.59	0.61	0.94
	(0.06)	(1.01)	(0.77)	(1.25)
Amplitude	-0.003	-0.06	-0.09	-0.11
	(-0.06)	(-0.84)	(-1.20)	(-1.32)
GDP(-1)	0.32***	0.35***	0.37***	0.39***
	(4.62)	(4.64)	(3.30)	(3.35)
Duration	-0.12	-0.15	-0.21	-0.23
	(-1.38)	(-1.50)	(-1.36)	(-1.38)
Constant Term	3.90***	3.65***	3.37***	3.15***
	(6.73)	(5.82)	(3.32)	(2.84)
Observations	198	179	90	84
R-squared	0.11	0.13	0.22	0.26

Notes: t-statistics are in brackets. *, **, *** denote level of significance indicating 10%, 5% and 1% respectively. Robust standard errors are used.

Finally, while the regressions for the non-OECD sample are based on a bigger number of financial crises and ordinary recessions than those in the OECD sample, data deficiency is endemic. Government consumption data is available for most of the periods under consideration. However, money market rates are not. That is why the sample decreases substantially in the two regressions in which interest rates are included. The results from the other two regressions were confirmed over the smaller sample as well. The effect of the main variables of interest does not change substantially.

VI.   <u>Conclusion</u>

In this paper, I use a yearly dataset of 99 financial crises and 202 ordinary recessions to study the role of monetary and fiscal policies. In particular I test whether the effectiveness of monetary and fiscal policies in past financial crises is any different from that in past ordinary recessions. I start by providing a direct comparison of the two types of crises during the period 1970-2005. Financial crises are, indeed, more severe in both OECD and non-OECD countries. Despite that in non-OECD countries fiscal and monetary policies during financial crises are not more expansionary than these during ordinary recessions. The same applies to fiscal policy in OECD countries.

In addition, the empirical results suggest that there are some differences between the effect of monetary and fiscal policies on the strength of recoveries in ordinary recessions and in systemic financial crises. The difference in fiscal policy seems to be the more robust; it is observed in both the OECD and non-OECD sample. In particular, increases in government consumption are more strongly associated with a stronger recovery during a financial crisis than they are during an ordinary recession. This result agrees with the conclusions of New Keynesian models with heterogeneous agents, in which one type of economic actors are credit constrained (Krugman and Eggertsson, 2010).

Monetary policy does not seem to have different effects on recovery growth rates in ordinary recessions and in financial crises when the OECD sample is analyzed. However, the results from the non-OECD sample suggest that during financial crises, the optimal monetary policy response is an increase in interest rates. In contrast, that would not be the right policy during an ordinary recession. This result agrees with the conclusions of Christiano et al. (2004), who show within an open economy model with a collateral constraint that an initial interest rate spike is the optimal policy during a financial crisis. The reason for such a counterintuitive policy response in non-OECD countries is the even more dreadful alternative – a depreciation of the exchange rate that strongly hits the balance sheets of households and businesses.

Insufficiently expansionary policies in the face of a financial crisis are not a thing of the past. A number of advanced economies have pursued contractionary policies in the most recent financial crisis. This has certainly been the case in Europe. Many countries there embraced austerity in the face of a slumping economy – Portugal, Ireland, Greece, Spain and Britain, for example. The first four were forced to do so. Even though they are developed countries, they were shut out from debt markets in the way developing countries often are (Kaminsky and Reinhart, 2004). However, Britain voluntarily chose to pursue a fiscal contraction. According to the results of this paper, such a policy action is unwarranted and especially damaging during a financial crisis.

In addition, some EU members had to settle with insufficiently expansionary monetary policies, because of the outsized influence of Germany over the European Central bank and the better performance of the German economy. The results of this paper suggest that monetary policy during financial crises in OECD countries is effective and, therefore, these countries would have been better off if they were pursuing more expansionary monetary policy.

While policies in the U.S. have been more favorable towards sustaining a recovery, this has come with much debate. Ideas and arguments supporting fiscal retrenchment have abounded.

This is exemplified in the work of some prominent economists like that of Alesina and Ardagna (2009) espousing expansionary austerity. The political climate has also been antagonistic towards some of the actions the Fed has tried to undertake. For example, there was a huge backlash against the quantitative easing program the Fed started in late 2010. The theory and the empirical results presented in this paper suggest that such antagonism towards expansionary policies is unwarranted.

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Figure 1: Number of Financial Crises and Ordinary Recessions per Country (OECD)
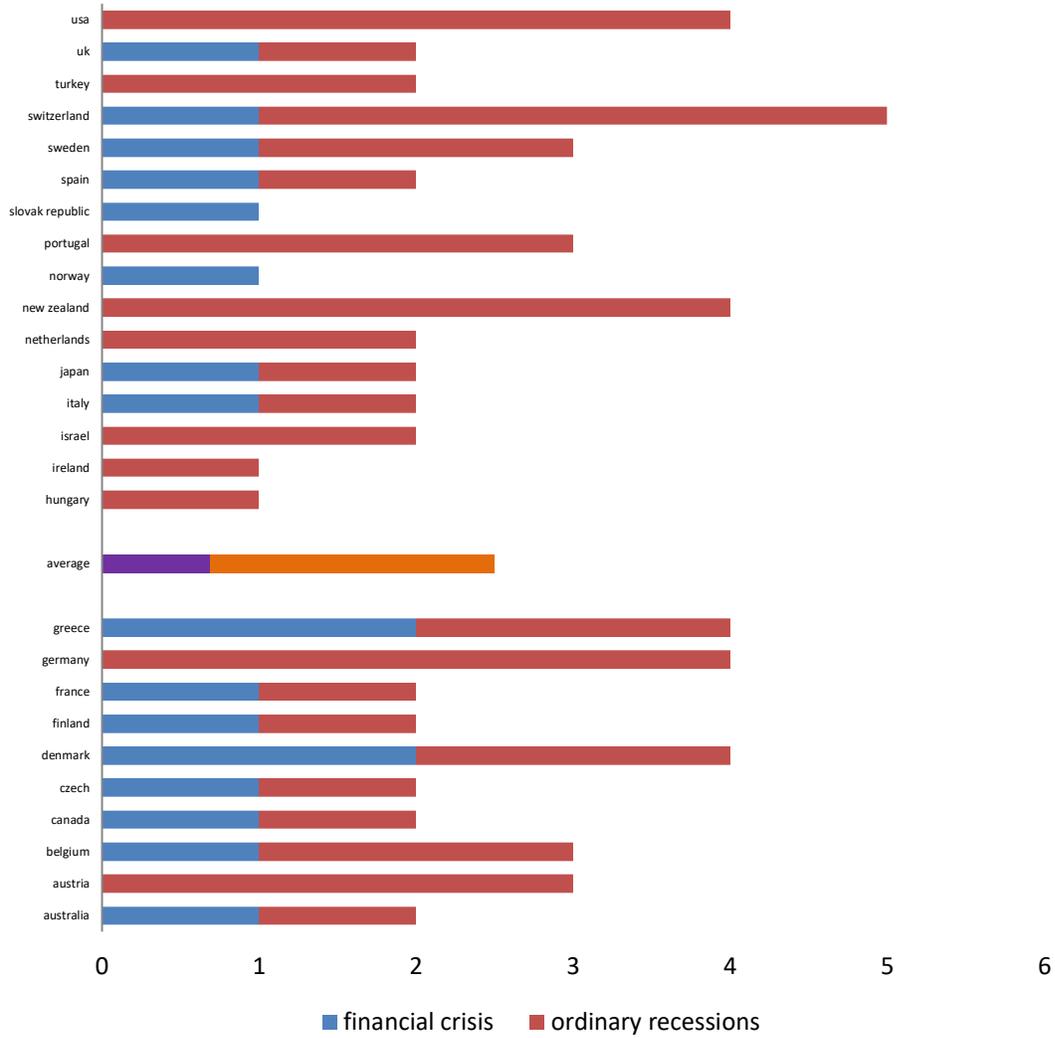
Figure 2: Number of Financial Crises and Ordinary Recessions per Country (Middle-Income and Low-Income Sample)

Figure 3: Output Dynamics in OECD Countries (average percentage change in GDP)

Figure 4: Government Consumption in OECD Countries (average percentage change)
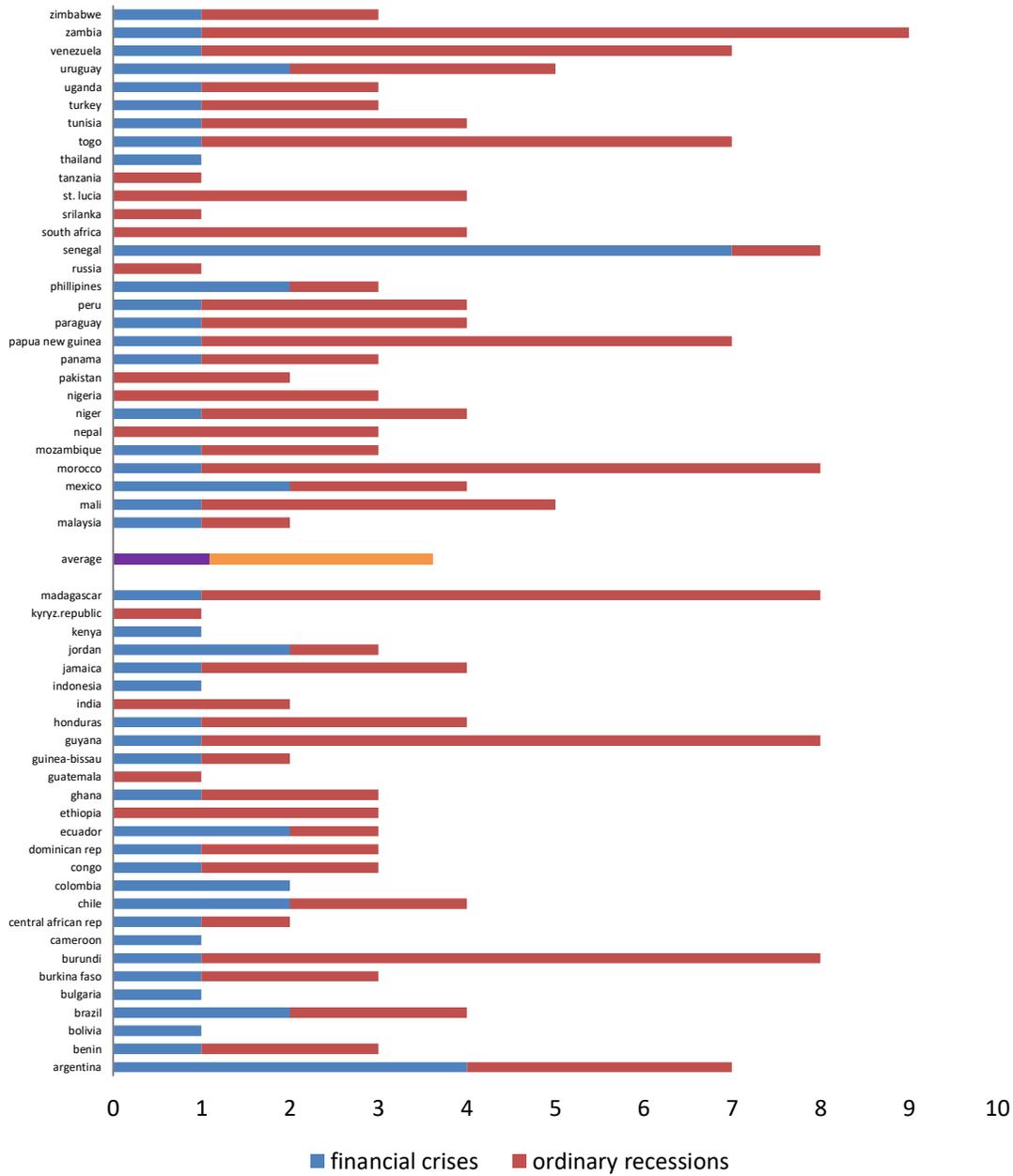
Figure 5: Change In Real Money Market Rates in OECD Countries (Average)
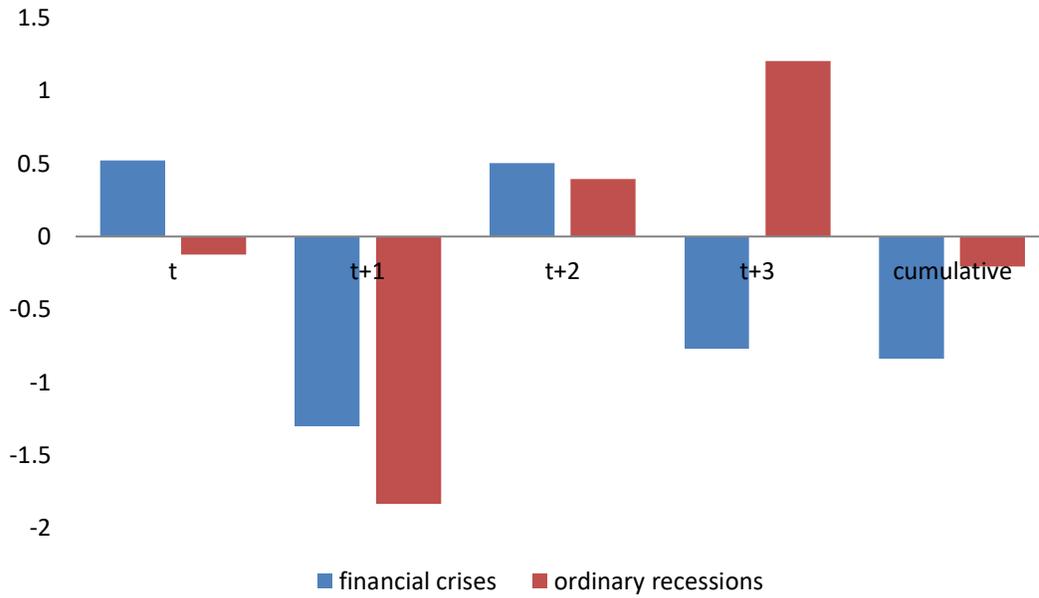
Figure 5: Output Dynamics in Middle-Income and Low-Income Countries (average percentage change in GDP)

Figure 6: Government Consumption in Middle-Income and Low-Income Countries (average percentage change)

Figure 7: Change in Real Money Market Rates in Middle-Income and Low-Income Countries (average)

Table 3: Financial Crises included in the sample (Laeven and Valencia, 2008)

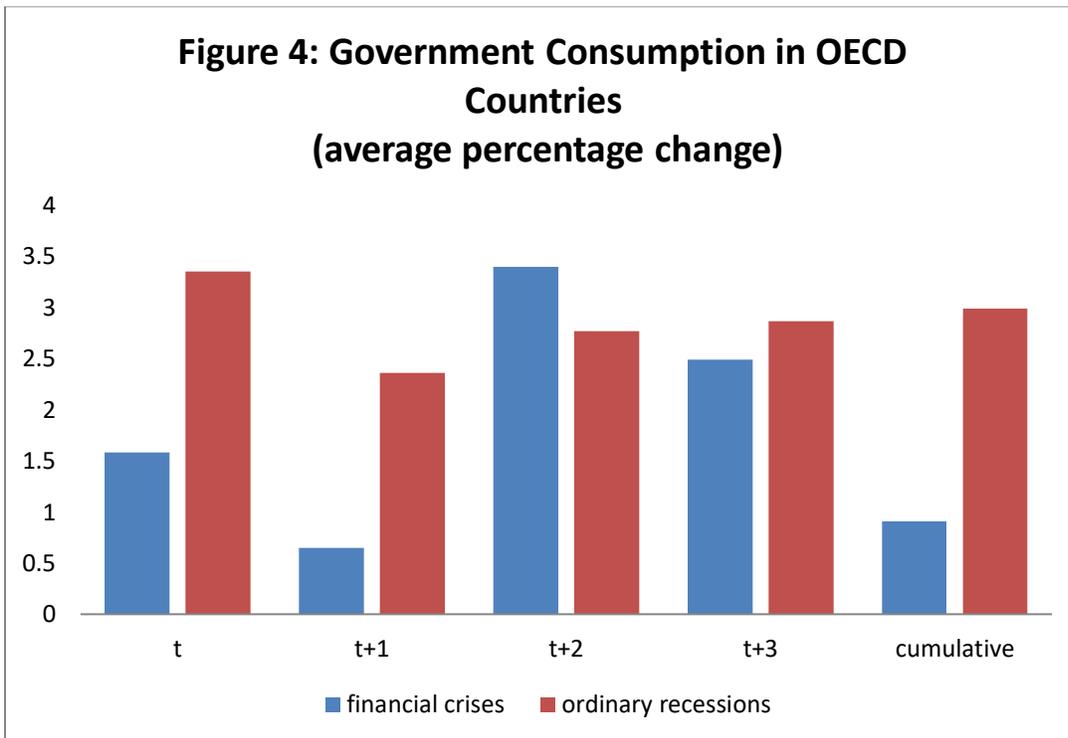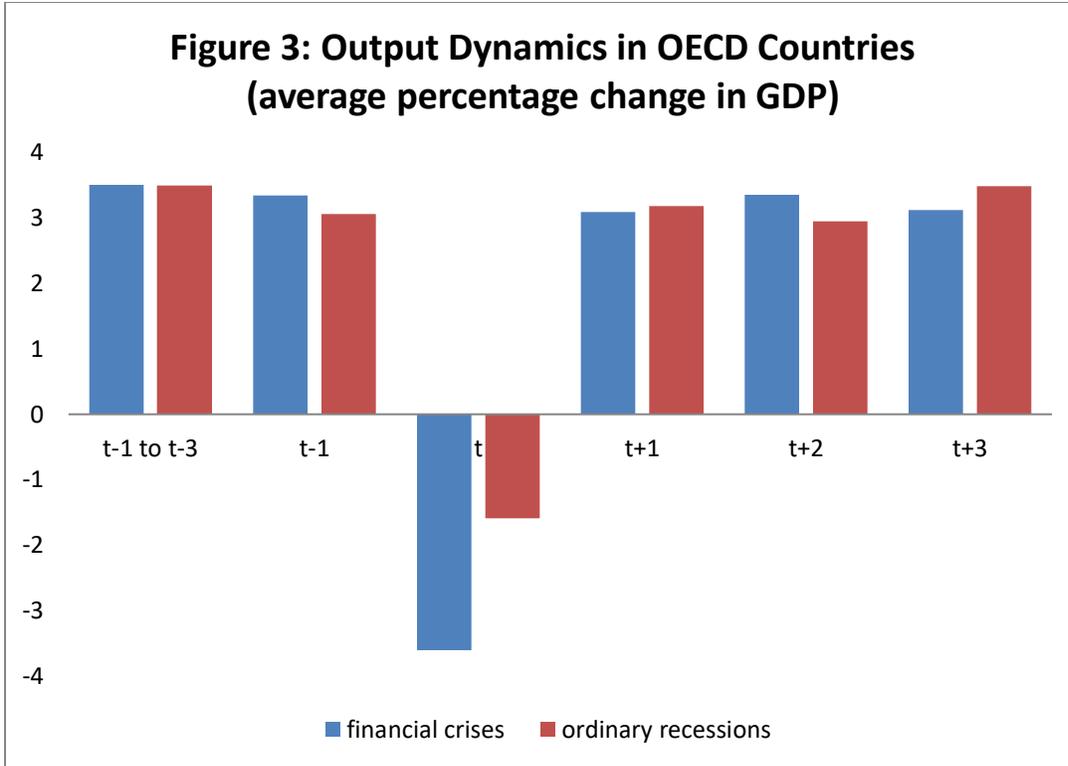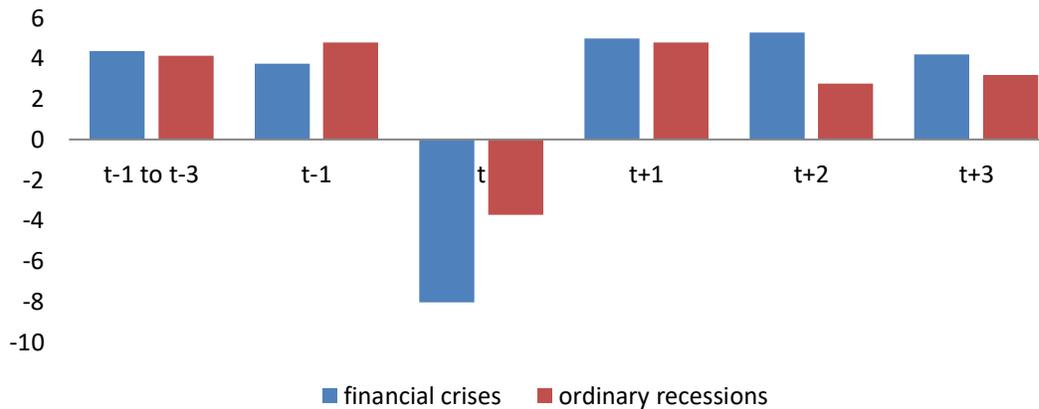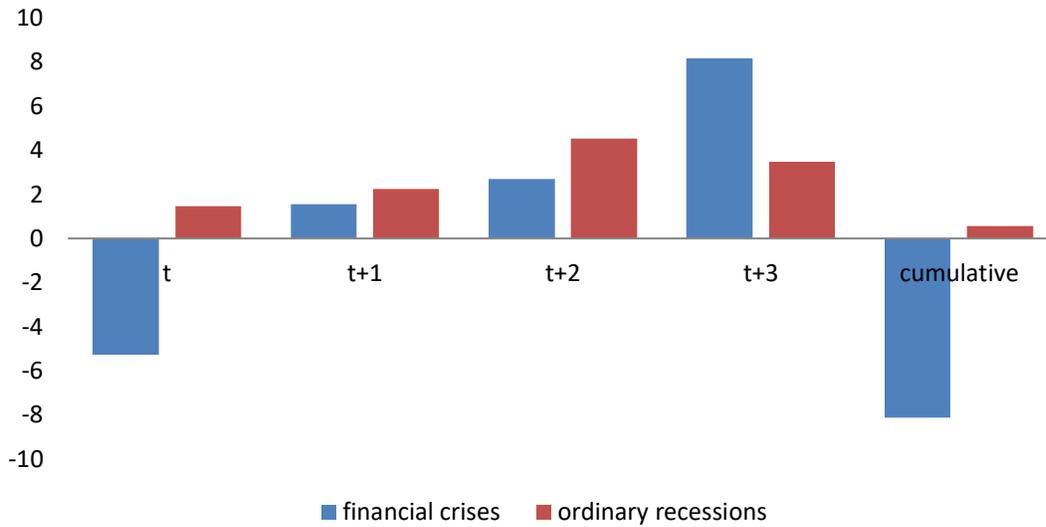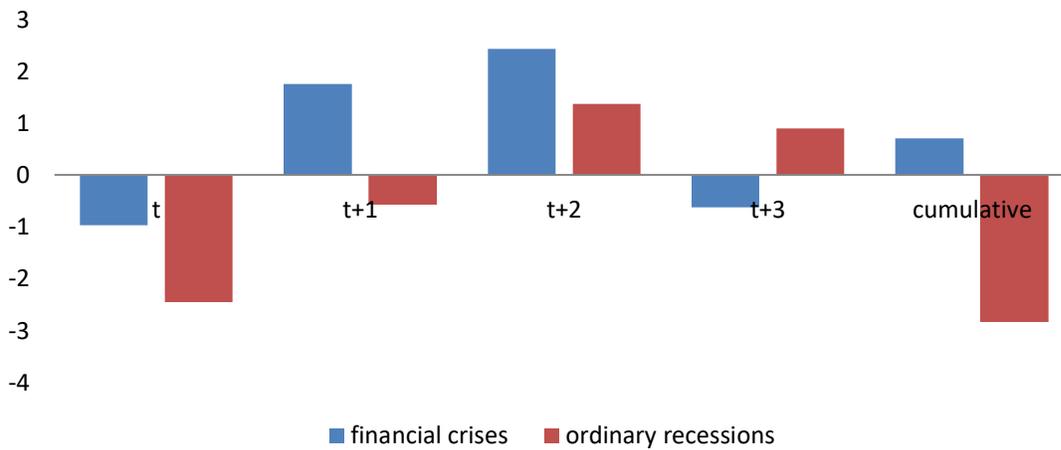| Country	Start of Financial Crisis
Argentina	2001
Argentina	1995
Bangladesh	1987
Benin	1988
Bolivia	1986
Bolivia	1994
Brazil	1990
Brazi	1994
Bulgaria	1996
Burkina Faso	1990
Burundi	1994
Cameroon	1987
Cameroon	1995
Cape Verde	1993
Central African Rep.	1995
Chad	1992
Chile	1981
Chile	1976
China, P.R.	1998
Colombia	1998
Colombia	1982
Congo, Republic of	1992
Costa Rica	1987
Costa Rica	1994
Croatia	1998
Czech Republic	1996

Dominican Republic	2003
Ecuador	1998
Ecuador	1982
Finland	1991
Ghana	1982
Guinea-Bissau	1995
Guyana	1993
Hungary	1991
India	1993
Indonesia	1997
Jamaica	1996
Japan	1997
Jordan	1989
Kenya	1985
Kenya	1992
Korea	1997
Kuwait	1982
Latvia	1995
Lithuania	1995
Madagascar	1988
Malaysia	1997
Mali	1987
Mexico	1994
Mexico	1981
Morocco	1980
Mozambique	1987
Nepal	1988
Nicaragua	2000
Nigeria	1991

Norway	1991
Panama	1988
Paraguay	1995
Peru	1983
Philippines	1983
Philippines	1997
Poland	1992
Russia	1998
Senegal	1988
Slovak Republic	1998
Spain	1977
Sri Lanka	1989
Swaziland	1995
Sweden	1991
Thailand	1997
Thailand	1983
Togo	1993
Tunisia	1991
Turkey	2000
Uganda	1994
United States	1988
Uruguay	1981
Uruguay	2002
Venezuela	1994
Vietnam	1997
Yemen	1996
Zambia	1995
Zimbabwe	1995

Table 4. Policy Effectiveness in **OECD Countries**: Financial Crises and Ordinary Recessions
(Dependent variable: recovery growth rate one year after the trough of the recession)

	(1)	(2)	(3)	(4)
Real rate			-0.09	-0.11
			(-1.29)	(-1.41)
Real rate*Fin Crisis			0.02	-0.01
			(0.19)	(-0.09)
GC		-0.05		-0.06
		(-0.90)		(-0.80)
GC*FinCrisis		0.15**		0.25***
		(2.24)		(2.93)
Financial Crisis	-0.83*	-1.30***	-0.46	-1.48**
	(-1.91)	(-3.14)	(-1.04)	(-2.47)
Amplitude	-0.26	-0.24	0.14	0.18
	(-1.67)	(-1.54)	(0.79)	(0.97)
GDP(-1)	0.20*	0.21*	-0.01	0.01
	(1.78)	(1.94)	(-0.05)	(0.08)
Duration	-0.06	-0.08	0.23*	0.24*
	(-0.53)	(-0.66)	(1.84)	(1.74)
seventies	2.15***	2.38***	2.91***	2.96***
	(2.86)	(3.06)	(4.42)	(4.44)
eighties	1.16*	1.12*	1.03	1.02
	(1.74)	(1.76)	(1.35)	(1.27)
nineties	1.17*	1.32*	0.79	0.91
	(1.68)	(1.88)	(1.07)	(1.17)
Constant Term	1.19*	1.33*	0.59	0.64
	(1.69)	(1.90)	(0.77)	(0.78)
Observations	64	64	51	51
R-squared	0.33	0.36	0.37	0.42

Notes: t-statistics are in brackets. *, **, *** denote level of significance indicating 10%, 5% and 1% respectively. Robust standard errors are used. Dummy variables for the decades in which the recessions occurred are included.

Table 5. Policy Effectiveness in **Middle- and Low- Countries**: Financial Crises and Ordinary Recessions
(Dependent variable: recovery growth rate one year after the trough of the recession)

	(1)	(2)	(3)	(4)
Real rate			-0.08*	-0.07
			(-1.83)	(-1.70)
Real rate*Fin Crisis			0.20***	0.15
			(3.02)	(2.71)
GC		-0.03		-0.13
		(-0.84)		(-1.53)
GC*FinCrisis		0.10*		0.20
		(1.91)		(2.00)
Financial Crisis	0.05	0.61	0.81	1.28
	(0.09)	(1.04)	(1.02)	(1.72)
Amplitude	0.004	-0.05	-0.07	-0.08
	(0.08)	(-0.68)	(-1.02)	(-0.96)
GDP(-1)	0.32***	0.35***	0.40	0.44
	(4.52)	(4.61)	(3.44)	(3.69)
Duration	-0.11	-0.14	-0.21	-0.22
	(-1.19)	(-1.33)	(-1.43)	(-1.33)
seventies	0.57	0.59	3.11	3.78
	(0.65)	(0.61)	(2.44)	(2.81)
eighties	0.64	0.51	2.29	2.99
	(0.90)	(0.65)	(2.21)	(2.72)
nineties	0.21	0.10	2.48	2.64
	(0.28)	(0.13)	(2.36)	(2.67)
Constant Term	3.47***	3.30***	0.89	0.07
	(3.79)	(3.30)	(0.72)	(0.05)
Observations	198	179	90	84
R-squared	0.12	0.13	0.25	0.3

Notes: t-statistics are in brackets. *, **, *** denote level of significance indicating 10%, 5% and 1% respectively. Robust standard errors are used. Dummy variables for the decades in which the recessions occurred are included.

Table 6. Policy Effectiveness in **Middle-Income Countries**: Financial Crises and Ordinary Recessions
(Dependent variable: recovery growth rate one year after the trough of the recession)

	(1)	(2)	(3)	(4)
Real rate			-0.10	-0.09
			(-1.65)	(-1.64)
Real rate*Fin Crisis			0.24***	0.15**
			(2.72)	(2.47)
GC		-0.008		-0.15
		(-0.22)		(-1.46)
GC*FinCrisis		0.12**		0.29**
		(2.01)		(2.30)
Financial Crisis	-0.18	0.54	0.72	1.62*
	(-0.27)	(0.89)	(0.71)	(2.08)
Amplitude	-0.0002	-0.05	-0.16	-0.15
	(0.00)	(-0.55)	(-1.22)	(-1.38)
GDP(-1)	0.37***	0.34***	0.55***	0.52***
	(4.29)	(4.04)	(3.25)	(3.36)
Duration	-0.05	-0.16	-0.14	-0.26*
	(-0.44)	(-1.48)	(-0.67)	(-1.72)
Constant Term	3.17***	3.43***	1.56	1.63
	(4.63)	(5.46)	(1.15)	(1.26)
Observations	130	118	58	54
R-squared	0.13	0.19	0.29	0.46

Notes: t-statistics are in brackets. *, **, *** denote level of significance indicating 10%, 5% and 1% respectively.
Robust standard errors are used.

Appendix A

Case Studies of Twelve Financial Crisis Episodes

I.   Advanced Economies

Finland, 1991

Exchange Rates and Monetary Policy: The crisis was both a financial and a currency one. Finland had a fixed exchange rate system. The currency crisis in 1991-92 was politically regarded as an opportunity to prove the will to stick to the pegged *markka* policy (Johnung). The markka was under speculative pressure from the end of 1989 onwards. The policy response was to uphold a strong markka regime, which led to high real and nominal money market rates. Thedefending of the currency was eventually abandoned in two steps – the November, 1991 devaluation and the September, 1992 floating. After the floating, money market rates were decreased from about 16 to five percent.

Fiscal Policy: During the early 1990s the budget deficits increased dramatically, mainly as a result of higher transfers, especially unemployment compensation, and falling tax revenues (Honkapohja). At the outset of the bust period, in 1991, fiscal policy was countercyclical but it tightened in 1992 despite the increase in unemployment, and remained tight in 1993. The government cut spending and increased taxes. However, the deficit still rose – mainly through the falling revenue and non-discretionary social spending (Honkapohja).

Economic Conditions and recovery: The economy was overheated during the period 1987-1989, growing at a pace of 4.6 percent on average annually (this was fueled by a lending boom). The growth rate of real GDP was negative in each of the years over the period 1990-1993. Growth resumed in 1994. The recovery was mostly concentrated in export industries.

Financial System and Reforms: In the second half of the 1980s there was pronounced financial deregulation that led to a lending boom through expansion of bank credit and capital inflows. The banking crisis was mainly caused by effects of the high interest rates on indebted businesses and households and through the devaluations of the currency that led to non-performing foreign-currency denominated loans. Once the crisis hit, government intervention in the banking system was fast and strong-headed. There was a large-scale reorganization of the banking system. The bank assumed control of bad bank assets through asset management companies.

Japan, 1992

Before the crisis, bank loans and import licenses flowed to favored industries and firms. It was especially blurry what is subject to government guarantee and what not. Banks lent incredible amounts with little regard of the quality of the borrower. This helped inflate the bubble economy to grotesque proportions (Krugman, 2010).

Exchange Rates and Monetary Policy: Among the more important monetary-policy mistakes were 1) the failure to tighten policy during 1987-89, despite evidence of growing inflationary pressures, a failure that contributed to the development of the "bubble economy"; 2) the apparent attempt to "prick" the stock market bubble in 1989-91, which helped to induce an asset-price

crash; and 3) the failure to ease adequately during the 1991-94 period, as asset prices, the banking system, and the economy declined precipitously (Bernanke, 2001).

Fiscal Policy: Between 1991 and 1996 fiscal policy was expansionary. In 1991, the government was running a hefty fiscal deficit of 2.9 percent of GDP. By 1996 the deficit was 4.3 percent of GDP. This applied to most of the 1990s. Except in 1997 when voices of fiscal responsibility prevailed and taxes were increased to reduce the budget deficit.

Economic Conditions and recovery: In the 1990s Japan experienced a decade-long "growth recession". The economy finally began to show some signs of improvement around 2003. The driving force behind the recovery was mainly exports (Krugman, 2009).

Financial System and Reforms: The health of the banking system deteriorated as a result of the burst of the asset bubble in late 1980s. Between 1990 and 1995, the authorities did very little to arrest the decline in the conditions of the banking system. This was due to a false hope that the economy would soon turn around. And after 1995, regulators hesitated to take strong action because of their fear of triggering a public panic, especially in the absence of an adequate deposit insurance scheme and a legal framework for bank restructuring to deal with a full blown banking crisis. (Japanese Banking Crisis of the 1990s: Sources and Lessons, IMF).

Korea, 1997

Korea looked for help with the IMF. The help it got meant that the country had to follow the policies the IMF prescribed for it. What the IMF advised was "rebuilding confidence".

Exchange Rates and Monetary Policy: Following the advice of the IMF, Korea acted to defend the exchange rate through tight monetary policy. There was a huge interest rate hike aimed at stabilizing the won. Money market rates were increased starting M11, 1997. They peaked at 25.6 percent in M1, 1998. The money market rate reached pre-crisis levels by July, 1998, when it was 12.7 percent. As the currency started to appreciate the monetary policy was eased in order to provide stimulus to the economy.

Fiscal Policy: As suggested by the IMF there was an initial tightening to calm down markets, but as the severity of the economic situation was recognized this was reversed within a few months. This reversal of policy is reflected in cash surplus/deficit – in 1997 (the crisis year) the budget was balanced – there was a meager deficit of 0.01 percent of GDP. In 1998 and 1999 the budget deficits were 2.6 and 2.8 percent of GDP respectively.

Economic Conditions and recovery: In the five years before the crisis, the economy grew at an average rate of 7 percent of GDP. In 1997, it contracted by 6.8 percent of GDP. Growth was quickly restored the following years – 10.7 percent in 1998, 8.8 percent in 1999 and 4 percent in 2000. The inflation rate average 4.9 percent in the 5 years before 1997. It was 7.5 percent in 1997. Then, it slowed dramatically to 0.8 percent in 1998.

Financial System and Reforms: Korea's restructuring sought to restore stability to the financial system quickly through liquidity support, a time-bound blanket guarantee, and closures of nonviable institutions. The restructuring effort also aimed at resolving the problem of non-performing loans, recapitalizing banks, and strengthening the institutional framework by bringing prudential regulations and supervision in line with international best practices.

Norway, 1987

Restrictions on bank lending were lifted in 1984. This led to a credit boom.

Exchange Rates and Monetary Policy: Norway had a fixed exchange rate system. The credibility of this policy had, however, not been established yet due to a series of devaluations between 1977 and 1986 and consequently interest rates had to be kept relatively high in the late 1980s and early 1990-s even when the economy was in a recession. In 1987 and 1988 in the face of a slowing economy monetary policy was not relaxed – the money market rates averaged 14.3 and 13.2 percent. Moreover, this was on the background of falling inflation. During the first years of the economic recovery (1989-1990) money market rates were still kept high. This was due to the tight German monetary policy after 1989 – due to the inflationary consequences of the German unification.

Fiscal Policy: Fiscal policy turned around too late to have any strong countercyclical effects on the economic crisis in 1988.The budget deficit was about 0.1 percent of GDP in 1987 and 1988. 1989 and 1990 were also not characterized by active countercyclical fiscal policy. It was only in 1991 and 1992 that fiscal policy was actively used – a deficit of 2.9 percent of GDP in 1991 and one of 6.6 percent in 1992. This was at the height of the financial crisis. However, the economic crisis was most severe in 1988.

Economic Conditions and recovery: Growth slowed to 1.8 percent in 1987. In 1988, the economy contracted by 0.2 percent. The recovery that started in the following year was tepid initially – 1 percent, but then began to accelerate.

Financial System and Reforms: The problems in the banking sector started in 1988. Initially, only small banks suffered losses and they were supported by a common bank-fund. The crisis peaked in the autumn of 1991 – with major banks failing. Norway handled the crisis quickly and resolutely and in a transparent way. Government support had severe strings attached, which ensured that costs were cut. Private shareholders bore the brunt.

Spain, 1977

The main causes of the crisis were a weak regulatory framework in the process of financial liberalization, and most importantly bank mismanagement. Banks lent many of the funds to the same group of non-financial firms (the last became excessively indebted), which later represented the biggest drag on their balance sheets. When the economic environment turned sour, partly because of the oil shocks of the 1970s, partly because of the transition to democratic rule, many loans became non-performing and banks cash flows collapsed.

Exchange Rates and Monetary Policy

There was a rapid increase in inflation in the second half of the 1970s. Monetary policy was accommodative up to 1977. However, the "Moncloa agreements" of 1978 included a major change – monetary policy would no longer accommodate inflation (this pact was attempting to reconcile disagreements between unions, politicians etc.). The Banco de Espana duly obliged. Consequently, money market rates were particularly high in the second half of 1988, reaching 40 percent at times.

Fiscal Policy

Government spending in terms of GDP doubled in the period from 1975 to 1985. This was the result of an approximation to European standards of social welfare that commenced with the restoration of democracy. In addition, this long-term trend was reinforced by the economic crisis in the second half of the seventies, which led to an increase in transfer payments to households and firms.

Economic Conditions and recovery

At the end of the 1970s and beginning of 1980s, growth was sluggish – less than 1.5 percent. It was lowest in 1979 – 0.042 and 1981 – -0.13. In 1972, inflation was 8.2 percent and by 1977 it has reached 24.5 percent. The reason for this was the explosion of wages as a result of a breakdown of labor relations (Blanchard). By 1985, it had come down to 8.8 percent.

Financial System and Reforms

From 1977 to 1983, Spain suffered a large banking crisis, with the closure, merge or acquisition of 52 banks out of 116 existing at the start of the crisis. When the severity of the crisis was recognized, an institution was created that could write-off losses, recapitalize and restructure banks and finally sell them to the private sector. Regulators spent the following years establishing a stronger framework for bank supervision and regulation.

Sweden, 1991

The second half of the 1980s saw financial liberalization that was not paralleled with increased supervision. A lending boom ensued. The period of easy borrowing created enormous asset price bubbles. Furthermore, there was a significant increase in household debt, a huge part of it being in foreign currency (Englund).

Exchange Rates and Monetary Policy: Interest rates were generally higher – the country had joined the EMU and had to follow the tight German monetary policy. In addition, the *krona* was subject to several speculative attacks, which led the *Riksbank* to raise the rates in Sweden by more than those in the rest of Europe. The biggest attack of the krona came in the summer of 1992. There was an extraordinary defense of the exchange rate regime in September 1992. For a very brief period the money market rates reached 500 percent. There was a unique political unity around the defense of the currency (Jonung). A hard peg came to be seen as an inflation-stabilization policy. The defense broke down in November 1992. The exchange rate depreciated considerably in the next year. By the end of 1993, money market rates were somewhat decreased, supporting the recovery.

Fiscal Policy: As a consequence of the decline in economic activity, the rise in unemployment and government support to the financial sector, the budget deficit increased alarmingly. In 1990, there was a surplus of 1 percent of GDP. In the next two years there were deficits of 2.5 and 5.1 percent. In 1993, the deficit shot up to 16 percent. This increase in the debt was not caused by discretionary measures, but rather by automatic stabilizers (Jonung). A new government was elected in the fall of 1994. It launched a program of fiscal austerity.

Economic Conditions and recovery: Over the period 1986-1989, GDP grew on average by 2.9 percent per year. During 1991-1993 the economy contracted on average by about 1 percent per year. The downturn was halted by the large depreciation of the *krona* and the Swedish economy turned upward during 1993. Inflation has been increasing up to 1991 – it increased from 4.8 to 8.9 percent. Suddenly, in 1992 it dropped significantly – reaching 1 percent.

Financial System and Reforms: Problems with two of the six biggest banks appeared in the fall of 1991. Broad and decisive actions were taken. The government made a general bank

obligations' guarantee. Also, heavy capital injections were made (Englund). A government asset management company, Securum, was established that freed banks of bad assets (those assets were years later disposed of). There were also some restructuring – four of the six major banks remained.

II.   Developing Economies

Argentina, 2001

Exchange Rates and Monetary Policy: Argentina abandoned its currency board in the middle of the crisis – the end of 2001. The peso fell precipitously – from one dollar to 30 cents. This largely exacerbated the crisis, because of the huge private debts in dollars. Monetary policy was not an available tool, because of the currency board. A monetary conditions index shows a tightening beginning in 1998 with an even sharper increase in 2001 (IMF, 2001). This was to preserve the currency board.

Fiscal Policy: Fiscal policy did not provide substantial positive stimulus to the economy and there were constant attempts to put the government finances into order by meeting IMF-guided targets, which were never exactly met (IMF, 2001).

Economic Conditions and Recovery: During the period 1999-2002, the economy was contracting with the biggest contraction in 2002 – 10.9 percent. The economy reached the bottom by mid-2002. The recovery was fuelled by the favorable exchange rates (IMF, 2003). The bounce back effect from the slump was also crucial in the strength of the recovery (Zarazaga, 2006).

Financial System and Reforms: The banking crisis broke out in November 2001, with a run on private sector deposits. The government took drastic measures to stop the run. The most severe measure was the 'pesoization' of banks' assets and liabilities. The main effect of this was to curtail severely the supply of credit by hurting the banks (IMF, 2001). There do not seem to be any substantive long-term structural reforms beyond the ones implemented to stop the bank run (Gallo, 2005).

Colombia, 1998

Exchange Rates and Monetary Policy: The contagion from the Asian-Brazilian crisis forced the BR to increase the money market rates substantially in mid-1998 in an attempt to defend the currency. On average for the whole year nominal money market rates were increased by more than 10 percent even though there was a decrease in inflation from the previous year. The central bank was forced to devalue the crawling band first in September 1998 and then in June 1999 in response to speculative attacks. Finally, in September 1999 the central bank allowed the peso to float. Between Jan 1998 and Sept 1999, the nominal dollar exchange rate depreciated 53 percent. After the crisis the BR started to relax monetary policy (Clavijo).

Fiscal Policy: The deficit increased to 4.9 percent of GDP in 1998. The administration took steps to respond to this fiscal worsening by adopting spending cuts, widening of the tax base, and strengthening tax enforcement. The deficit increased in 1999 as well, reaching 5.9 percent of GDP. This was mainly due to the effects of the recession on tax revenue, but also on reconstruction of the main coffee producing region that was hit by an earthquake early in the year. The IMF reports that only in 2000 did Colombia deliberately spend on the financial difficulties of territorial governments, and on unemployment (2001). However, since 2001,

following the advice of the IMF, the government has again turned to a fiscal consolidation (IMF, 2002).

Economic Conditions and recovery: In 1997, the economy was hit by the international financial crisis that erupted in that year. Growth slowed down markedly in 1998 to 0.5 percent. In 1999, the economy contracted by 4.2 percent. The economy started to recover in 2000 when growth was about 3 percent.

Financial System and Reforms: Beginning in the 1990s there was a liberalization of the financial system. This led to a bubble in asset prices. When the crisis hit asset prices dropped precipitously. The Savings and Loan corporations were particularly hard hit. However, the government intervened in this market by starting to help borrowers in good standing. There was also an intervention with state-owned banks – their balance sheets were carefully evaluated and strengthened. Finally, there was a consolidation of the financial system (Uribe and Varagas).

Indonesia, 1997

When the crisis hit Indonesia sought help from the IMF, which dictated the policies to be taken.

Exchange Rates and Monetary Policy: The floating of the Thai baht in July 1997 soon intensified pressures on the Indonesian rupiah. After a brief period of widening the intervention band and an attempted defense of the currency, the rupiah was floated. The nominal money market rates were increased sharply beginning in August 1997. In the year before that they averaged 13.6 percent, while throughout the last months of 1997 and 1998 they were consistently above 50 percent. The high nominal money market rates in 1998 were somewhat justified by inflation rates of about 20 percent in the first three quarters of 1998. However, inflation in the last quarter of 1997 was only 4 percent. There were reversals of policy as at times the control of the money supply was lost and it exploded – mainly during 1998 (Singh, 2000).

Fiscal Policy: The deficit for the consolidated central government was 0.7 percent of GDP in 1997. As the severity of the economic situation was recognized this was soon revised (IMF policy paper). The deficit for 1998 was 2.8 percent of GDP. Fiscal policy was allowed to become expansionary – the goals was to support domestic demand, cushion the output decline, and expand support for the poor (Singh, 2000). The IMF claims that there was unused room for fiscal expansion that did not materialize because of the conservatism of the authorities and because of administrative difficulty of implementing changes in spending and taxation. In 1999 the deficit shrank to 1.1 percent of GDP.

Economic Conditions and recovery: GDP was growing at an average pace of 7.5 percent from 1993 to 1996. It slowed to 4.7 percent in 1997 and the economy contracted by 13.1 percent in 1998. Growth resumed in 1999 when the economy grew at 0.8 percent. In the following five years growth averaged 4.6 percent. In the five years before 1998 inflationaveraged 8.4 percent. In 1998 it jumped to 58 percent. Then, it fell somewhat – 20 percent in 1999 and 4 percent in 2000.

Financial System and Reforms: Successive banking system reforms have been implemented, backed by a comprehensive guarantee on banking system liabilities, especially the closure of insolvent banks, and the recapitalization of virtually all the remaining banks (Singh, 2000).

Malaysia, 1997

Malaysia took a different path. Instead of going to the IMF, the Malaysian authorities imposed sweeping controls on capital-account transactions and fixed the exchange rate at RM3.80 per US$.

Exchange Rates and Monetary Policy: Although downward pressures on the currency were not fully resisted, concern for the continuing exchange market pressures led the stance of policy to be progressively tightened starting M12, 1997 and into early 1998. However, this tightening was not as sharp as in some of the other countries hit by the Asian financial crisis – policy rates increased from 7 to 10 percent. By mid-1998 as evidence emerged of a very sharp contraction of activity monetary policy began to be eased. The money market rates were about 5 percent at the end of 1998 and beginning of 1999. The monetary policy stimulus was continued through 2000 (2001, IMF).

Fiscal Policy: Over the period 1993-1997, the federal government has been running surpluses. The government implemented expansionary fiscal policy in 1998. However, the magnitude of the stimulus was lower than planned, a deficit of 1.7 percent of GDP, reflecting higher-than-anticipated collection of taxes and delays in project implementation. Fiscal policy was still expansionary in 1999 (a deficit of 3.1 percent of GDP and 2000 (a deficit of 3 percent).

Economic Conditions and recovery: The economy grew at an average rate of 9.2 percent in the six years prior to 1998. Then the economy contracted 7.3 percent in 1998. Growth quickly resumed. In 1999 and 2000, it was a 6.1 and 8.8 percent respectively.

Financial System and Reforms: The financial institutions in Malaysia had lower NPLs and higher capital than the other Asian countries hit by the crisis. The banking culture was also stronger with a better control environment and superior prudential supervision. However, credit quality, profitability and capital adequacy were severely affected by the crisis. The authorities responded by restructuring and revitalizing the banking system. Two companies were created to acquire NPLs and to provide fresh capital. Also, a committee was established to negotiate the restructuring of big corporate loans. The supervision of the financial sector was tightened.

Philippines, 1997

The Philippines was less hit by the crisis than most other East Asian economies. In particular, the period of rapid credit expansion and debt accumulation was much shorter than elsewhere, resulting in lower levels of corporate leverage; major banks were well capitalized (IMF, 1999).

Exchange Rates and Monetary Policy: The Philippines' currency came under severe pressure in mid-1997. Consequently, on July 11, the peso was floated. After the floating the peso depreciated significantly, from about 26 pesos/dollar to 43 pesos/dollar. The focus of monetary policy in the initial period after the floatation was on restoring confidence in the peso and containing inflation – money market rates were increased significantly reaching 33.8 percent in M10, 1997 (they averaged 12 percent in the previous year). Beginning early 1998, attention has shifted toward supporting a recovery in the real economy (IMF, 1999).

Fiscal Policy: The extent to which fiscal policy was used reflected the more modest economic slowdown compared with other crisis countries, as well as constraints imposed by the high level

of public debt.In 1998, when the economic crisis hit, the budget deficit increased to 1.9 percent of GDP (the budget was balanced in 1997). In 1999, as prospects for recovery remained uncertain, the government decided not to withdraw the fiscal stimulus. The overall result was a deficit of 3.8 percent of GDP. Fiscal policy shifted toward consolidation in 2000 given the need to reduce the debt (IMF, link).

Economic Conditions and recovery: The Philippines managed to escape the Asian crisis relatively unscathed. In particular, output experienced only a minor contraction in 1998 – by 0.6 percent of GDP. The fall in GDP was mainly attributable to the weather conditions. Inflation in the four years prior 1997 averaged 7.6 percent. In 1997, it slowed to 5.6 percent. In 1998, it was 9.3 percent.

Financial System and Reforms: The Philippine banking system weathered the Asian crisis relatively well. Structural reforms regained momentum in early 2000. A General Banking Law, Securities Regulation Code, and a Retail Trade Liberalization Act were enacted.

Thailand, 1997

Thailand looked for help with the IMF. The help it got meant that the country had to follow the policies the IMF prescribed for it. What the IMF advised was "rebuilding confidence".

Exchange Rates and Monetary Policy: The bath was floated on July 1997. It went into a freefall. Monetary policy focused on supporting exchange-rate stability. There was a big spike (from about 10 to 20 percent) in money market rates from Q3, 1997 to Q2, 1998, designed to support the currency after the unexpected magnitude of its depreciation upon floating. However as the monthly data indicates, the policy response was stop-go. Money market rates were lowered at a number of times throughout 1997 at some signs of stabilization of the exchange rate. As the baht began to steady, the Thai authorities reduced interest rates. By mid-1998, money market interest rates began to approach pre-crisis levels.

Fiscal Policy: Fiscal policy was at first contractionary. As advised by the IMF, the government was aiming at a budget surplus, because of perceived debt problems. This reversed after six months as it became apparent that the economic slowdown would be more severe than expected. The budget deficit in 1997 was a mere 0.7% of GDP. In 1998 and 1999 the deficits were 2.5 and 2.9 percent of GDP respectively. Much of the increased spending focused on boosting social safety net programs to ensure the protection of Thais affected by crisis. However, the IMF claims that there was unused room for fiscal expansion that did not materialize because of the conservatism of the authorities.

Economic Conditions and recovery: In the four years before 1997, Thailand's economy grew at an average rate of 8.1 percent. In 1997 and 1998 the economy contracted at the rates of 1.4 and 10.5 percent of GDP. Growth retuned to positive in 1999 – 4.4 percent. Despite dramatic devaluations of currency, inflation did not pick up, reflecting mainly the weakness in domestic demand. The inflation rate was 8 percent in 1998, having been about 5 percent in the previous four years. It slowed dramatically to 0.3 percent in 1999.

Financial System and Reforms: In the early stages, the program concentrated on the liquidation of finance companies, government intervention in the weakest banks, and the recapitalization of

the banking system. In 1998, the reform effort accelerated, with a focus on privatizing the intervened banks, disposing of assets from the finance companies and restructuring corporate debt. The authorities made great strides by strengthening the institutional framework, including through the reform of the bankruptcy act, foreclosure procedures and foreign investment restrictions.