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ABSTRACT

Debtors bear the brunt of a decline in asset prices associated with financial crises and policies aimed at partial debt relief may be warranted to boost growth in the midst of crises. Drawing on the US experience during the Great Recession of 2008-09 and historical evidence in a large panel of countries, we explore why the political system may fail to deliver such policies. We find that during the Great Recession creditors were able to use the political system more effectively to protect their interests through bailouts. More generally we show that politically countries become more polarized and fractionalized following financial crises. This results in legislative stalemate, making it less likely that crises lead to meaningful macroeconomic reforms.

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I. Introduction

Financial crises lead to severe economic downturns because of their asymmetric impact on debtors.[1] The reason behind this empirical observation is that most external finance in the world is raised through non-contingent debt. Hence the amount that debtors owe to creditors is not made contingent on the aggregate state of the economy. Consequently, in the event of a financial crisis such as an economy-wide decline in asset prices, the brunt of the losses are borne by debtors. A reduction in the net worth of borrowers can lead to a reduction in real activity via either the investment or consumption channel.[2]

There is substantial evidence that policies aimed at better ex-post risk sharing between debtors and creditors after a financial crisis lead to superior economic outcomes. For example, Kroszner (1998) shows that large-scale debt relief related to repudiation of gold-indexation in debt contracts benefitted both equity and debt holders of firms. Countries that left the Gold Standard earlier in the Great Depression--which resulted in inflation and reduced debt burdens for nominal debt contracts--escaped the downturn more quickly (Eichengreen and Temin, 2000).

We begin with the observation that there are a number of scenarios in which an ex-post transfer of resources--in the form of debt forgiveness, debt moratoria, or inflation-- from creditors to debtors in response to a financial crisis is welfare improving.[3] However, such

[1] The evidence goes back to at least Fisher (1933), and supporting evidence has been found in Mishkin (1978), King (1994), Olney (1999), Koo (2009), Mian and Sufi (2010, 2011a, 2011b), Mian, Rao, and Sufi (2011), and Glick and Lansing (2010). Jorda, Schularick, and Taylor (2011) study 200 recessions in 14 advanced countries from 1870 to 2008 and show a very strong relation between the ex ante increase in private debt and the ex post severity of the recession.

[2] For example, Bernanke and Gertler (1989), Kiyotaki and Moore (1997) on investment and Eggertsson and Krugman (2011) and Guerrieri and Lorenzoni (2011) on consumption.

[3] This of course is a strong assumption, but we feel it is justified given the substantial empirical and theoretical evidence discussed above. A very large number of commentators have argued that debt forgiveness would give a boost to growth. See: Kenneth Rogoff (http://www.mckinseyquarterly.com/Understanding_the_Second_Great_Contraction_An_interview_with_Kenneth_Rogoff_2871), the editorial board of Bloomberg (http://www.bloomberg.com/news/2011-09-06/for-the-u-s-economy-the-real-slam-dunk-answer-is-debt-forgiveness-view.html), and Nouriel Roubini (http://www.project-syndicate.org/commentary/roubini42/English)

transfers can only be approved and mediated by the political process. For example, Bolton and Rosenthal (2002) build a model in which ex-post debt forgiveness is optimal and must be approved via a voting mechanism. In this paper we investigate if such political mechanisms are feasible.

Even if partial debt forgiveness is option in the aftermath of a financial crisis, creditors are going to fight any such policy. There is thus a likely political tug-of-war between creditors and debtors in the aftermath of a financial crisis.[4] We investigate the political economy of the creditor-debtor conflict using data from both the United States and other countries.

Relative to European countries, the US has more lenient bankruptcy regulations allowing for a greater sharing of risk when a negative aggregate shock occurs. There is some evidence that for a given decline in house prices and a given initial leverage ratio, indebted households in the US are more likely to declare default and partially relieve their debt burdens compared to households in Europe. Nonetheless, in all of these countries, debtors are much more severely impacted than creditors in a financial crisis.

We investigate the political conflict between debtors and creditors using historical cross-country data on financial crises, as well as data from the recent US financial crisis. Mian, Sufi and Trebbi (2010a) show that both debtors (homeowners with mortgage debt outstanding) and creditors (shareholders and creditors in US financial institutions) actively lobbied their respective legislators to push for bailout legislation that would transfer resources from tax-payers to themselves. While both debtors and creditors were successful in getting their respective

[4] While the analysis of this paper mostly focuses on the clash between creditors and debtors in the aftermath of a financial crisis, another interesting topic is the alignment of creditors, debtors, and political facilitators (e.g. Congress) in the expansion of debt that leads to financial crises. These are recurring observations. Romer and Weingast (1991) in their analysis of the buildup to the Savings and Loans crisis discuss the role of constituent interests and Congress in facilitating S&L gambling for resurrection through sparse and ineffective legislative and regulatory effort. Mian, Sufi, and Trebbi (2010b) present similar evidence for the 2000-2006 housing boom. Nunez and Rosenthal (2004) discuss bankruptcy reform in the early 2000's.

legislation passed in 2008, the mortgage relief legislation desired by debtors was smaller in magnitude and was a failure in terms of implementation. In contrast, the bailout of US financial institutions was implemented quickly with a massive injection of government funds into banks.

The success in implementation of the financial bailout contrasts sharply with the ultimate impotence of the mortgage relief legislation. This is despite the fact that low net worth homeowners with mortgages bore the brunt of the financial shock. Using data from the Federal Reserve's Flow of Funds, we show that the collapse in house prices was much more dramatic than the decline in financial wealth. Thus while there was an active political tug of war between creditors and debtors, creditors were more effective in protecting their interests. A possible politico-economic explanation comes from collective action theory (Olson, 1965). Collective action is predicated on the fact that few, highly politically organized banks should be more effective than millions of unorganized mortgage holders.

Looking at historical cross-country data on financial crises, there is some evidence that reforms aimed at reducing creditor rights are more likely to take place in the aftermath of banking and currency crises. In fact most of the changes in creditor rights, excluding ex-Soviet bloc transition economies, in the last three decades have been in the direction of reducing creditor rights. Yet such changes are not very common and mostly involve changes in the bankruptcy code, which fail to significantly alter the debtor-creditor distribution of net wealth in the event of a financial crisis.

Political polarization may help to explain why legislation addressing ex-post risk sharing after a financial crisis is difficult to pass. We find robust evidence that politics after a crisis is plagued by polarized interests. Using the Reinhart and Rogoff (2009, 2011) comprehensive data set on financial crises, we show that banking, currency, inflation, or debt crises lead to greater

ideological polarization in society, greater fractionalization of the legislative body, and a decrease in the size of the working majority of the ruling coalition. The size of the governing coalition shrinks after almost any type of crisis (banking, currency, or inflation crises); at the same time, political fragmentation increases. These novel stylized facts have crucial implications for the study of macroeconomic response to crises.

Weaker governments mean political stalemate. Stronger opposition and more fragmented legislatures constrain the implementation of reforms of any kind. This *endogenous* response of political preferences and alliances in the face of financial crises may lead to political gridlock and makes it harder to achieve compromise on macroeconomic intervention and bailouts. The post-housing crisis US congressional gridlock of 2010-2011 appears the norm, not the exception.

In general, it is not theoretically obvious why individuals polarize systematically in the aftermath of a financial crisis. Perhaps large negative shocks change radically voters' beliefs about what good policy is. However, even abstracting from policy uncertainty, one can conjecture that creditors and debtors naturally polarize in the aftermath of a financial crisis. Debtors become insolvent precisely at the time creditors are more in need of seeing their outstanding credit is serviced. In fact, the same write-off that can be inconsequential to a creditor during an expansion may prove lethal in bad times.

The increase in polarization and political gridlock in the aftermath of financial crises is crucial in evaluating specific 'mechanism design' solutions after a financial crisis. For example, Bolton and Rosenthal (2002) argue that in the event an economy suffers collectively from a debt overhang problem, as was the case in the Great Depression and the Cotton Panic of 1819, legislatures may be relied upon to intervene and pass legislation calling for collective debt relief.

Evidence of this type of response is available. Alston (1984) studies the case of the role of farm foreclosure rates during the Depression and its importance as driver of state-wide debt moratoria.

However, our empirical findings suggest that relying on a voting mechanism to renegotiate financial contracts at a national level may not be feasible. More generally, voting outcomes are not necessarily driven by what is in the national economic interest. Instead, voting and political debate are driven by a complex interaction of shifting voter preferences, strategic lobbying, and special interest politics. For instance, the strategic delay of efficient reform with the goal of shifting costs of implementation on political counterparties has been documented both theoretically (Alesina and Drazen, 1991; Drazen and Grilli, 1993) and empirically (Alesina et al., 2006). It may thus be better to think of alternative mechanism design arrangements to resolve collective debt overhang problems. We discuss some of these possibilities in conclusion. Secondly, higher political polarization means higher thresholds to achieve policy support. This implies that of two different constituencies struggling for government support, possibly on equal merits but with different degrees of political organization (e.g. organized big banks versus diffused mortgage holders), only the politically organized group will get the bailout. From this selective intervention, additional economic inequality and political polarization may ensue, compounding and amplifying the initial political effects of the crisis.

This paper is related to recent political events in the aftermath of the global financial crisis. Many observers have commented on the heightened gridlock in politics in both Washington and Europe.[5] Our results suggest that political gridlock and polarization is more

[5] "[...] the 2012 election will be the most sharply ideological in at least a generation". Niall Stanage, 10/31/11 The Hill, http://thehill.com/homenews/campaign/190621-one-nation-two-camps-the-most-ideological-election-in-a-generation ; "these growing socio-economic gaps are contributing to the rising polarization of our politics and declining trust in government---developments that will make it even more difficult to forge agreements on the policies we'll need to get out of this deep hole." William A. Galston, 07/27/11 Brookings, http://www.brookings.edu/opinions/2011/0727_debt_debate_galston.aspx

common in the aftermath of financial crises. This is in contrast to research advocating crisis as potential mechanism for unlocking efficient macroeconomic reform (Drazen and Grilli, 1993; Drazen and Easterly, 2001). Indeed, our evidence on post-crisis political stalemate appears a reasonable candidate in explaining the more protracted and deeper nature of downturns after financial crises, an empirical regularity discussed in Reinhart and Rogoff (2009) and Reinhart and Reinhart (2010).

The large distributional shifts as a consequence of a debt-induced financial crisis raise the stakes for everyone in the political process. We should not be surprised with increased polarization and conflict between the "haves" and "have-nots". Such polarization may manifest itself within countries, e.g., the recent wave of Occupy Wall Street protests in the United States. Polarization, and even conflict, can also manifest itself across countries, e.g., the polarization of positions on fiscal stance between Germany and Southern Europe in the fall of 2011 or the ideological polarization ensuing crises in 1920s' Europe and the Great Depression that ultimately led to World War II.

Finally, this is a consequential finding also in explaining persistent instability after financial crises, for instance in terms of triggering sovereign debt 'secondary' crises. International financial markets are often sensitive to the lack of sound ex-post political response at the country level, which may factor into risk premia. This lack of response, however, follows naturally from the political polarization we document.

II. Debtors and Creditors after a Financial Crisis

In this section, we explain why the conflict of interest between debtors and creditors is central to our understanding of why financial crises lead to severe economic downturns. We

show how shocks to economic conditions and asset prices are amplified by debt, and we explore the mechanisms in place meant to deal with the asymmetric losses imposed on debtors when asset prices and economic conditions collapse. We argue that the existing mechanisms are often ill-suited for resolving the financial crisis, and conclude that there is a meaningful role for political intervention to impose a more even distribution of the losses among creditors and debtors.

A. The Economic Cost of Financial Crises

There is a very large literature devoted to the question of how financial crises lead to economic disruptions. The common theme in this literature is that the distribution of shocks between debtors and creditors matters. Since a negative shock is primarily absorbed by debtors, the net worth of debtors is most severely impacted in the face of a negative aggregate shock. As a result, the distribution of net worth becomes more skewed against debtors. As we explain below, such distributional shifts can lead to a negative impact on *total* output and employment by disrupting investment or aggregate demand.

The Investment Channel of Financial Crises

The influential work of Bernanke and Gertler (1989) explains how a shock to the net worth of borrowers reduces their ability to borrow. Agency problems such as the borrowers' ability to renege on debt payments mean that lenders require borrowers to have equity in a project. Given this equity requirement, a decline in the net worth of borrowers driven by a decline in the value of assets they hold will reduce their overall capacity to borrow. This borrowing constraint channel means that overall investment will fall even if there remain as many positive NPV projects as before the shock (see also Kiyotaki and Moore, 1997).

A reduction in the borrowing capacity of the entrepreneurial class with access to investment projects leads to a slowdown in investment when otherwise profitable investment projects exist. There is a large literature that discusses such borrowing constraints in the context of financial crises. A common prescription in such discussions is to transfer resources back to the debtors to boost investment. We return to the political feasibility of implementing such reforms in the next section.

The Consumption Channel of Financial Crises

A related transmission channel of financial crises is the effect of reduced net worth on the consumption of debtors. The idea goes back to the debt-deflation hypothesis of Fisher (1933) and was discussed by King (1994); this idea has gained traction in the context of the Great Recession (e.g., Eggertsson and Krugman, 2011; Guerrieri and Lorenzoni, 2011).

The consumption channel focuses on the accumulation of debt by households followed by an event that wipes out the net worth of debtors, leading to tightened borrowing constraints and reduced liquidity. The severe shock forces debtors to cut back on consumption. Should one worry about a sharp decline in debtors' consumption from an aggregate perspective? The answer to this question depends on general equilibrium feedbacks and whether the creditors are able or willing to increase their consumption in the face of reduced consumption by debtors.

Recent theoretical work such as Eggertsson and Krugman (2011) points out scenarios where nominal price rigidity and a zero lower bound constraint on nominal interest rates make it difficult for aggregate demand to remain stable. Consider for example the recent episode in the United States. A strong decline in the housing market forced indebted households to cut back on consumption. The decline in debtors' consumption means that savers or creditors must increase their consumption in order to keep aggregate demand constant.

But why would creditors increase their consumption relative to earlier levels? Such an increase is possible only if creditors can be enticed to consume more either through lower prices or lower interest rates. However, both of these channels have limited success in practice. Nominal prices may be rigid downwards. Moreover, even if significant deflation were possible, it may exacerbate the problem by increasing the real burden of household debt, which will further depress consumption by debtors. The alternative channel--lower nominal interest rates--may also have limitations. In particular, what if even at zero nominal interest rate creditors are unwilling to increase consumption significantly?

Philippon and Midrigan (2011) focus on a specific case related to the liquidity role of housing. In their framework, debtors are households that used their house as collateral in a cash-in-advance constraint model. The sharp reduction in house prices leads to a sharp pull-back in consumption for these households. With nominal rigidities and structural adjustment frictions in labor markets, they also show that this pull-back in consumption can lead to a severe recession.

In both of these environments, there may be a need for collective action to increase consumption. As in the case of investment channel, policy prescriptions in the consumption channel require a net transfer in favor of debtors to resolve the debt overhang problem. This may be done through explicit policies of debt relief or via taxation and spending on behalf of creditors.

Two recent papers provide empirical evidence to show that the consumption channel is indeed very powerful and responsible for a large fraction of the decline in US output and unemployment. Mian, Rao and Sufi (2011) show that during the recent US recession consumption decline was significantly stronger in counties with more indebted households. Moreover, there was no equivalent increase in consumption by non-indebted households despite

interest rates reaching historical lows. As a result, aggregate demand fell sharply in 2009 and 2010.

Mian and Sufi (2011b) look at the employment consequences of the fall in aggregate demand. They show that the larger decline in demand in counties hit hardest by the financial crisis is also associated with a larger decline in non-tradable employment in these counties. Since non-tradable employment has to depend on local demand for output, it suffers the consequences of the local demand collapse. Employment in tradable sectors falls everywhere uniformly, since it only depends on the country-wide fall in aggregate demand. Their empirical results show that over 65% of the drop in employment during the Great Recession can be attributed to the fall in aggregate demand driven by indebted households.

The discussion above has focused on private debt accumulated by firms or households. However, the problem is similar if the debt instead belongs to a sovereign entity. The same investment and consumption mechanisms highlighted earlier become operative at the public sector level when the debt in question is sovereign. In particular, the debtor country (e.g., Greece) demand will fall as the country is forced to cut pensions and other public spending in the face of a sovereign debt crisis. And in the absence of an equivalent positive change in demand for debtor country goods from creditor nations, the debtor's economy will plunge into a recession.

B. Default Mechanisms for Dealing with Financial Crises

The preceding section argues that a sharp reduction in the net worth of debtors in response to a financial crisis can lead to a sharp decline in investment and consumption. The combination of high leverage and a negative asset price shock leads to a large imbalance in the net worth positions of creditors and debtors, which we have argued is at the heart of the

economic malaise that follows. As a result, our argument is that there is a need for explicit policy intervention to address the imbalance in net wealth created between debtors and creditors.

However, before going into the political process in more detail, it is important to understand the legal and regulatory mechanisms put in place to deal with the potential imbalance between debtors and creditors. Doing so is also important for understanding the default bargaining position that debtors and creditors have in a post-financial crisis political process. For example, if the legal system gives creditors complete recourse to go after debtors' existing assets and future cash flows, then creditors will have a stronger incentive to resist changes to the status quo. On the other hand, debtors will also be more inclined to fight the political battle if they have more to lose in the status quo. Overall, stronger creditor rights in the face of a financial crisis might lead to more polarization between debtors and creditors.

The most common arrangement for dealing with the inability of debtors to pay creditors is bankruptcy law. However, there are two main limitations of bankruptcy regimes in alleviating the debt overhang problem. First, bankruptcy becomes operative only when the debtor declares default and stops making payments on his debt. This is not necessarily the relevant margin. For example, in the Eggertsen and Krugman (2011) model, there is no default on debt and yet aggregate demand goes down as debtors desperately try to *pay down* their existing debts in the face of a negative shock to collateral and debt capacity. This is especially relevant for the US, where 25% of mortgages are underwater yet most homeowners do not default on their mortgages.

The second reason bankruptcy regimes do not work very well is that in a financial crisis the economy cannot absorb a large-scale fire sale of assets disposed of in bankruptcy. For example, consider firm assets that can only be bought and run by other entrepreneurs that have

the know-how of the relevant industry. As discussed above, the core problem that the entrepreneurial class does not have sufficient net worth and borrowing capacity. In such an environment, a large scale attempt to sell firm assets will lead to a sharp decline in the value of such assets, putting further pressure on entrepreneurs struggling to raise capital (e.g., Shleifer and Vishny, 1992).

In the context of the housing collapse and US financial crisis, Mian, Sufi and Trebbi (2011) study the impact of foreclosures on the real economy. Using exogenous variation in the likelihood of foreclosures due to state laws, they show that forced sales of houses had a large effect in terms of further reducing house prices, residential investment, and consumption. On both theoretical and empirical grounds, bankruptcy regimes are unlikely to help in alleviating the macroeconomic costs associated with financial crises.

C. The impact of bankruptcy regimes on debtor-creditor conflict

We have argued that the typical bankruptcy regime is not adequate in addressing the gross imbalance between debtors and creditors created during a financial crisis. Nonetheless, on the margin, bankruptcy design does influence the extent to which financial losses are shared between debtors and creditors.

There are important differences in the design of bankruptcy regimes across countries. For example, it is typically harder and more expensive to declare bankruptcy in Europe relative to the United States. Moreover, in the event of a bankruptcy, most European countries allow full recourse to an individual's assets and future wages. European creditors can – and often do – go after a borrower's other assets and wages in case there is a deficiency in the value of collateral and outstanding principal. Recourse is significantly more limited in the United States and qualifying borrowers can discharge most debts by declaring bankruptcy.

A European Mortgage Federation study in 2007 found that recourse was allowed in Belgium, Germany, Greece, the Netherlands, Spain, France, Ireland, Portugal, and the United Kingdom. Borrowers in these countries cannot simply default on their mortgage and be cleared of all their mortgage debts. The higher level of recourse and tougher rules for declaring bankruptcy are likely to prevent borrowers from declaring default. As a result, debtors in European countries are more likely to absorb financial shocks internally than declare default.

Does tougher bankruptcy regulation force borrowers to absorb more of the losses and make them less likely to declare default? We investigate this question by comparing the change in default rates across Europe and the United States during the 2007 to 2009 global housing crisis. Since the bankruptcy regime is relatively more lax in the United States, one would expect a larger increase in default rates. However, such a comparison can only be made if the macro environment is otherwise similar between the United States and the European countries in question.

There are two key variables that one needs to control for when comparing changes in default rates on mortgages across countries. First, the comparison countries should experience a similar decline in house prices. If the decline in house prices is smaller, then the change in default rates is also likely to be smaller, even if the bankruptcy regime has no impact on default rates. Second, for any given level of house price drops, the increase in the default rate depends on the level of indebtedness of the borrowing households. For example, if a country has 60 percent loan to value ratio in general, then it is less likely to declare default relative to a country that experiences the same decline in house prices but has 80 percent of loan to value ratio on average.

For a meaningful comparison of default rates across countries, we need to combine data on default rates with data on house price changes as well as data on the amount of leverage in a country. We were able to collect all this information for five countries (US, U.K., Spain, France and Ireland) from 2007 to 2009 using data from the European Mortgage Federation. Figure 1 shows the three main variables of interest for the five countries: the 2007 mortgage debt to GDP ratio, the change in default rates from 2007 to 2009, and the change in log house prices from 2007 to 2009. In order to display the three variables together in a single graph we renormalize change in default rate by multiplying it by ten.

The change in default rate (red bar) for USA between 2007 and 2009 is 5.9 percentage points. While the default rate level in 2007 is not shown in Figure 1, it is quite low and similar across the five countries (0.4%, 1.2%, 0.7%, 1.9%, and 2.1% for France, Ireland, Spain, the United Kingdom and the United States, respectively). However, the *change* in default rate stands out for the United States and is at least twice as large as the change in default rate for any of the other four European countries.

All European countries in Figure 1 have high recourse and tough bankruptcy laws relative to the United States. The very large increase in default rates for the US is consistent with the notion that lower level of recourse and easier bankruptcy legislation helps indebted borrowers declare default. As a related interpretation, it is also possible that differences in laws reflect different cultural attitudes toward default in the United States and Europe.

While the United States has the highest increase in default rates along with having the most debtor-friendly bankruptcy regime, we want to caution against a strong causal interpretation. The data are limited and we do not control for other factors (such as underlying quality of marginal borrowers in each country).

Nonetheless, Figure 1 shows two of the key variables that are relevant for understanding the magnitude of the negative housing shock in each country. The green bar depicts the change in house prices between 2007 and 2009. The stronger the decline in house prices, the higher the likely increase in default rates. The change in house prices for the United States is 23.3 percent, but it is not the strongest decline. House prices dropped even further in Ireland, with a 30.0 percent decline.

The blue bar depicts mortgage debt to GDP ratio for each country in 2007. The mortgage to GDP ratio is highest for United Kingdom at 85.4% followed by United States and Ireland at 76.9% and 73.7% respectively. The mortgage to GDP ratio is a good indicator of the extent of leverage in the housing sector. For the three countries for which we also have the average loan to value ratio, this ratio lines up closely with the mortgage to GDP ratio.[6] For a given change in house prices, one would expect the change in default rates to be higher in countries with more mortgage debt to GDP.

A collective look at the three housing market variables in Figure 1 shows that the United States experienced the highest increase in default rates by far, despite some of the European countries experiencing very similar (if not stronger) decline in house price (e.g. Ireland) and having similar housing leverage (Ireland and the United Kingdom). Furthermore, the decline in housing prices could very well have been stronger in countries such as the United Kingdom if they also had more lax bankruptcy laws as more houses would have been put on the market as foreclosure sales.[7]

III. The Political Response to Financial Crises and Debt Overhang

[6] Mortgage to GDP ratio is 85.4%, 76.9% and 61.4% for the United Kingdom, the United States, and Spain, respectively, while loan to value ratio for these countries is 80.0%, 77.1% and 62.8% respectively.
[7] See Mian, Sufi and Trebbi (2011) for evidence on the strong impact of foreclosure sales on house price decline.

A key problem in the aftermath of financial crises is debt overhang which disproportionately affects debtor investment and consumption, necessitating debtor relief. Existing regulations, such as bankruptcy laws, determine to some extent the ease with which debtors can discharge their debt obligations in case of default. However, such mechanisms are typically inadequate given the nature and magnitude of the aggregate debt overhang problem.

Given the inadequacy of mechanisms already in place, the extent to which policies are implemented to address debt overhang after a financial crisis becomes a matter of political and legislative debate. For example, Bolton and Rosenthal (2002) present a political economy model where it is possible to "certify" debt overhang states of the world through the political voting mechanism and renegotiate financial contracts. However, in practice, creditors are likely to push back as it is not in their individual self-interest to provide debtor relief at their expense. As a result, political battle lines are likely to be drawn between debtors and creditors. In this section, we ask, how does the political process resolve this conflict between debtors and creditors?

A. The US Experience

The 2007-2009 US financial crisis provides an interesting case study to examine the political tug of war between debtors and creditors. Table 1 provides information on the net worth distribution for US homeowners at the beginning of the recession.[8] As has been well documented, column 1 shows a very striking increase in net wealth as one moves up the distribution. The lowest quintile had a median net worth of $32 thousand whereas the highest quintile had a median net worth of $1.2 million.

[8] According to the Survey of Consumer Finances, homeowners in the United States made up 69% of the population. We isolate the sample to homeowners because levered homeowners are the most relevant group of debtors in our analysis. An analysis of renters during the Great Recession is also of interest but we exclude them from our analysis here.

Columns 2 and 3 show another very important result: as a fraction of total assets, homes represented the lion's share for low net worth homeowners, whereas high net worth owners had a large amount of financial assets. The cell means in columns 2 and 3 are not adjusted for leverage. Columns 4 and 5 show that low net worth households were much more levered, especially with regard to their housing positions. We think of the lower net worth quintiles in Table 1 as debtors, given their low net worth and levered position in housing. We think of the upper net worth quintiles in Table 1 as creditors, given their high net worth and large holdings of financial assets.

The information in Table 1 allows us to clearly see how the sharp ex-post decline in house prices from 2007 to 2009 affected the net wealth distribution. Housing assets were the main asset for low net worth individuals, and their housing positions were quite levered. As a result, the collapse in house prices disproportionately affected low net worth individuals. Mian, Rao, and Sufi (2011) show that at the 10th percentile of the county-level house price distribution, house prices dropped by 40 to 60% depending on the house price index used. This decline would completely wipe out the entire net worth of the median household in lowest quintile of the net worth distribution. CoreLogic reports that 25% of mortgages are underwater; for the low net worth individuals in the US, this effectively means that their total net worth is negative.

It is in this context that Mian, Sufi and Trebbi (2010a), henceforth MST, document the political economy of two major bailout bills that were passed in the US Congress in 2008. The first of these bills, the American Housing Rescue and Foreclosure Prevention Act (AHRFPA), provided up to $300 billion in Federal Housing Administration insurance for renegotiated mortgages, which translated into using public funds to provide debtor relief. MST show that legislators with more constituents in financial distress were more likely to vote in favor of the

bill. Similarly, legislators in competitive districts were more likely to respond to constituent pressure.

At the same time, creditors--i.e., the shareholders and debt-holders of large financial institutions--pushed a second bill which was closely tied to protecting their own interests. The $700 billion Emergency Economic Stabilization Act (EESA) enabled the Treasury Department to bailout AIG which had provided insurance against losses to creditors. The bill also allowed the Treasury to put public money as preferred shares in banks, therefore protecting creditors from realizing losses. MST show that legislators that had received larger campaign contributions from the financial industry were more likely to vote in favor of the EESA bill.

It is worth clarifying why we classify EESA, which eventually led to the Troubled Asset Relief Program, as a bailout bill that primarily benefited creditors. While the banks were highly levered, the primary beneficiaries of the legislation were the creditors to and shareholders of highly levered financial institutions. As seen in Table 1, high net worth individuals hold the lion's share of financial assets in the US economy, which includes these claims on financial institutions.

While both debtors and creditors were effective in passing legislation in their favor, there were two important differences in the magnitude of their effectiveness. First, the debtor friendly bill provided fewer resources ($300 billion versus $700 billion) than the creditor friendly legislation. The difference in resources devoted to the two bills becomes even more stark when one takes into account the fact that debtors faced substantially larger losses - in both absolute and proportional terms - than creditors in the face of the US housing crisis.

Second, while the creditor friendly EESA bill was fully implemented and executed, the housing legislation was a miserable failure. As of December 2008, there were only 312

applications for relief under the program and the secretary of Housing and Urban Development was highly critical of the program.[9] When the Obama Administration arrived and implemented the Home Affordability Modification Program under AHRFPA, their initial goal was to help 3 to 4 million homeowners with loan modifications. In July, 2011 President Obama admitted that HAMP program has "probably been the area that's been most stubborn to us trying to solve the problem."

It is worth noting that one of the main reasons for the ineffectiveness of the HAMP program has been the lack of cooperation from creditors. The initial legislation made creditor cooperation completely voluntary, thereby enabling many creditors to opt out of the program despite qualifying borrowers. In fact, as Representative Barney Frank noted, banks actually helped formulate the program in the summer of 2008.[10]

What was the net result of these programs? Figure 2 plots total household asset value at a quarterly frequency and also breaks it down into household financial assets (green line) and real estate assets (red line). Financial assets include various debt instruments as well as stocks. Both financial and real estate assets declined in the initial phase of the financial crisis. However, by 2011, while financial assets have largely recovered, real estate assets remain at depressed values. In terms of numbers, between 2007Q2 to 20011Q2, total (nominal) wealth dropped by $7.25 trillion dollars and out of this housing wealth loss is $5.92 trillion.

Financial wealth dropped by only $1.33 trillion while housing wealth dropped by $5.92 trillion. Although not reported separately in the flow of funds data, it is likely that once the decline in financial wealth due to stocks is taken out, the decline in value of debt held by creditors will be even smaller. In other words, while debtors lost a major chunk of their overall

[9] See http://www.washingtonpost.com/wp-dyn/content/article/2008/12/16/AR2008121603177.html .
[10]See http://www.washingtonpost.com/wp-dyn/content/article/2008/07/23/AR2008072300317.html .

wealth represented by home equity, their liabilities largely remained fixed in nominal terms. Even some of the losses passed onto creditors due to defaulting mortgages were insured either via GSEs or the EESA bailout package.

Why were creditors better able to protect their interests in the recent US financial crisis? It is difficult to conclusively know the answer, but one possibility is that creditors were relatively smaller in number (due to the concentration of wealth) and better organized through financial institutions. Indeed, Johnson and Kwak (2010) notably identify thirteen banks (and their bankers). Textbook collective action theory á la Olson (1965) would predict that politically organized and cohesive special interests, such as banks, would be ideally suited to influence government policy. Concentrated benefits (to banks) often trump diffused costs borne by taxpayers. The effective bailout of General Motors, Chrysler, and Ford, which followed TARP, seem to conform to this explanation as well. Debtors, on the other hand, were numerous and diffused, therefore suffering from typical collective action problems. In light of the 2008 presidential elections few months ahead, millions of struggling mortgage holders represented a large enough electoral constituency to obtain policy recognition through the AHRFPA, but apparently were not a sufficiently cohesive force to effectively profit from the bailout down the road.

B. Cross-country evidence on financial crises and change in creditor rights

The seminal work of La Porta et al (1998), followed by Djankov et al. (2007), introduced cross-country index of "creditor rights" from 1978 to 2002. The index captures the rights of secured lenders under a country's legal system. A country has stronger creditor rights if: (i) there are restrictions for a debtor to file for reorganization; (ii) creditors are able to seize collateral in

bankruptcy automatically without any "asset freeze"; (iii) secured creditors are paid first; and (iv) control shifts away from management as soon as bankruptcy is declared.

Stronger creditor rights favor creditors in bargaining situation vis-à-vis debtors. Djankov et al. (2007) show that creditor rights, which are partly determined by a country's history such as legal origins, lead to stronger growth in credit. This result is to be expected, since stronger creditor rights will make creditors more likely to extend credit and offer it at cheaper prices. However, as the discussion in section II.A. highlighted, such rights may not be helpful ex-post in the event of a financial crisis. There is likely to be a tension between creditor rights and the push to introduce reforms in the aftermath of a financial crisis.

There is evidence in the Djankov et al. (2007) data on creditor rights that suggests this tension is real. While the creditor rights index is remarkably stable, it does occasionally change for a given country. Table 2 shows that there are twelve instances between 1978 and 2002 when creditor rights deteriorate in a country, and eight instances when creditor rights are strengthened. Six of the eight instances when creditor rights are strengthened involve transition economies such as Romania, Lithuania and Bulgaria. These countries had very low creditor rights to begin with and were in the process of broadly changing their legal code in conjunction with western norms.

What is more interesting is that most of the instances of a relaxation in creditor rights involve established democracies. Moreover, the timing of these changes in creditor rights often comes after a severe financial crisis. For example, Indonesia and Thailand actively reduced creditor rights in the aftermath of the East Asian financial crisis of 1997-98. Similarly, the Nordic banking crisis of the early 1990s led to a relaxation in creditor rights in both Sweden and Finland.

A more formal analysis of the likelihood of reduction in creditor rights in the face of financial crises confirms the anecdotal evidence above. Employing Reinhart and Rogoff (2009, 2011), henceforth RR, information on banking, debt (external or otherwise), currency, and inflation crises, it is possible to focus on within-country variation in creditor rights. Table 3 performs simple country fixed effect regressions of creditor rights in the sample of countries which undergo a crisis, restricting to observations at most five years before and five years after the crisis for comparison. The inclusion of country and year fixed effects allows to formally test whether the reduction of creditor rights is systematic around financial crises.

Notwithstanding the limited numbers of changers in the sample and the different coverage of RR relative to Djankov et al. (2007), the evidence appears to go in this direction. Across all four types of crises, the evidence points toward a relaxation of creditor rights after a financial crisis (negative sign on the post-crisis indicator variable). In the case of banking and currency crises the reduction is also highly statistically significant. Notice, however, that magnitudes are not large, around 7 percent of a one-point decrease in creditor rights index (which is the modal size of a change in the creditor right score), suggesting that creditor rights get relaxed around crises, but that this type of policy change is not the norm after a financial crisis.[11] The following section will investigate the fundamental reasons for the sparseness of this type of reform.

Overall, while creditor rights promote the origination of more credit, a financial crisis that results from excessive debt tends to reduce creditor rights. These results highlight a fundamental tension between the benefits of stronger creditor rights ex-ante and the debt

[11] To be more explicit, given that the coefficient on post-crisis averages creditor rights decreases across all post-crisis instances, one would expect a coefficient around -1 (the modal change) on the post-crisis dummy in the case all crises were systematically followed by changes in creditor rights. The estimated coefficient in Table 3 is much lower, -0.07, instead, indicating that less than 1 in 10 crises are followed by creditor rights decreases.

overhang costs associated with giving creditor too much power in the financial crisis state of the world.

C. Cross-country evidence on financial crises and political polarization

Ex-post relaxation of creditor rights is not the norm after a financial crisis. This section highlights an underappreciated reason for this phenomenon: political polarization in the aftermath of a financial crisis.

More specifically, we show that financial crises are systematically followed by political polarization and that this may result in gridlock and anemic reform. The logic is simple. Financial crises polarize debtors and creditors in society. On the one hand, debtors are weakened by a fall in the value of assets they hold. On the other hand, creditors become more sensitive to write-offs during bad times (losing an extra dollar on a loan when a lender is close to be insolvent is worse than when the lender is on solid grounds) and possibly more reluctant to converge onto a renegotiated platform because of their increased reliance on the satisfaction of the original terms of agreement.

Although the debtor-creditor tug of war is hardly the only explanation of the current shift of US voters' ideological positions to extremes (e.g., the Tea Party versus Occupy Wall Street, but also evidence from Gallup polls in Figure 3), it fits the profile. Furthermore, although the US does not appear to suffer from systematic chipping-away from the moderate middle after banking, currency, and market crashes according to self-reported Liberal-Conservative scores in the American National Election Study Cumulative Data File 1948-2008 (see Figures 4a-4c), this seems to be more the result of the lack of depth of the 'typical' US crisis. [12] The congressional stalemate observed in the fall of 2011 debate on the national debt ceiling raise, with its exceptional political salience and persistence, appears telling in this respect.

[12] The definition of crises is again derived from RR.

More systematically, Figure 5 considers de-trended (HP-filtered) congressional party polarization levels as standard in the political science literature (see McCarthy et al., 2006) built from ideological position scores and based on the spatial voting models of Poole and Rosenthal (1985, 1997). Political polarization in the United States appears higher after banking crises and market crashes, while lower after currency crises.[13]

The US is no exception though. Increases in polarization of voters are a common feature across all 70 countries sampled by RR. For example, South Korea's Gini coefficient increased by 6 percent in the four years after 1996 and the Asian financial crisis. Thailand experienced drastic increases in economic disparity in the post-financial crisis period as well, particularly in the North and Northeast areas. Both events led to political attrition within these countries. Indeed, one would expect systematic shifts in political polarization on a systematic scale, which we show below.

The frequency of crises of the various types reported by RR and their distribution by year are reported in Tables 5a and 5b. In Figure 6 we employ the official aggregate World Value Survey from 1981-2008, which includes a question on self-positioning on the political scale (1 is most liberal, 10 most conservative). The sample covers about 250,000 individual interviews from 60 countries, which we matched to the pre-crisis and post-crisis RR crisis indicators and then collapsed based on their selected ideological bin. After a crisis, the share of centrists/moderates in a country goes down in 3 out of 4 types of crisis and the share of extremists (left or right radicals) goes up in 7 out of 8 possible cases. Interestingly, while banking and currency crises are neutral (i.e. they increase extremists on both the left and the right of the political spectrum),

[13] There are almost no debt crises in the US that we can use for the analysis. A caveat in the interpretation of Figure 5 is that crises in the US are sparse and the number of congresses used to generate the graphs is very limited, typically around 10-15. Once again we only include congresses within five years before and after the crisis.

inflation crises appear to produce more conservative extremists and debt crises produce many more left-wing radicals.

Further, financial crises move political systems toward systematically more polarized legislatures and fragmented political scenarios. After a crisis, governments have to rely on weaker coalitions, oppositions grow larger and more fragmented, and overall political disintegration becomes the norm. Figures 7, 8, and 9 report the shift in the vote share of the governing coalition, the vote share of the opposition (excluding unaligned parties, which are political forces that may align alternatively with the government or the opposition), and the overall degree of fragmentation within the legislative assembly, respectively, as reported by the World Bank's Database of Political Institutions. We observe in Figure 7 that ruling governments become weaker after almost any type of financial crisis. We also observe that their opposition grows in size (Figure 8) and that the overall fragmentation of the political environment unambiguously increases (Figure 9).

Differently, form the survey evidence discussed above, DPI's cross-country and time coverage is excellent and the DPI sample's overlap with RR is almost perfect, which allows for a more systematic analysis of the data. In Table 4 we report summary statistics useful for the interpretation of Tables 5 and 6, where the issue of 'politics after the crisis' is explored in a regression framework. Once again, the evidence points in a direction of increased political polarization after a financial crisis. Table 5 performs pooled and country fixed effect regressions of government vote shares, opposition vote shares, and polarization indexes in the sample of countries which undergo a banking, currency, debt, or inflation crisis, again restricting to observations to (at most) five years before and five years after the crisis for comparison (similarly to what presented in Table 2).

We first examine unconditional mean differences pre and post crisis across countries. We then include country and year fixed effects in order to capture country-specific unobserved heterogeneity and time effects. Notice that the inclusion of time effects is particularly demanding, as financial crises tend display cross-border contagion. Yet, all our results point clearly in the direction of countries becoming more polarized post-crisis.

The magnitudes of the estimated post-crisis differences are quantitatively meaningful. For instance after a banking crisis the within-country analysis indicates a drop in government electoral support of more than 6 percent, a sizeable drop relative to a sample mean of 56%. At the same time, the opposition's gain is 7%, a sizeable increment relative to a sample mean vote share of 37%. Qualitatively similar effects are observed also when considering the share of seats in the legislative body held by government or opposition, as opposed to vote shares. We do not report them for brevity.

In Table 7, we explore measures of fractionalization, which consider the probability that two representatives drawn at random within the government coalition, the opposition coalition, or the assembly at large belong to different parties (hence, 1 indicates maximal fractionalization and 0 no fractionalization). Fractionalization increases across the board for both the government and the opposition after a financial crisis. However, it is sufficient to look at the sample means in Table 4 to see that the increase is similar in relative terms for the governing coalition than for the opposition. The probability of two legislators drawn at random from the government coalition belonging to different parties increases by 2.5 percentage points, relative to a mean of 20%. For opposition the post-crisis effect is 4.3 percentage points against an average fractionalization of 48%. Governments that may be initially monolithic before a financial crisis, tend to fragment in its aftermath. Oppositions, in turn, both grow and fragment, with somewhat ambiguous effects

on their relative strength vis-à-vis the ruling coalition (it may be harder to negotiate with multiple opponents, but also fragmented opponents may be easier to divide).

While we do not have direct evidence on reform implementation, it is easy to see how these three facts would lead to political stalemate.[14] Weak and disperse ruling coalitions are known to breed stalemate and present leadership lacking room for maneuver (see Alesina et al. 2004 for an analysis of institutional features which produce endogenous insulation of leaders).

IV. Concluding Remarks and Discussion

This paper begins by highlighting how financial crises put pressure on debtors and how the ensuing debt-overhang problem deepens economic downturn. A potential solution discussed in the macroeconomic and finance literature involves relaxing creditor rights and bailing out (partially or totally) debtors.

However, such policy interventions are rare. Why? Based on within US and cross-country evidence we conjecture that bailouts and pro-debtor reforms may be stifled by ideological polarization and political gridlock that systematically follow financial crises. Politics after the crisis is substantially skewed in favor of stalemate, with systematically more polarized voters, weaker governments, and more fragmented oppositions. Our results offer a political economy explanation for why financial crises often lead to prolonged economic slumps and why it becomes hard to reach a policy consensus in the aftermath of a financial crisis. Crises bring gridlock through polarization. Gridlock delays reform and it possibly makes recovery slower, explaining long post-crisis slumps (see Reinhart and Rogoff, 2009; Reinhart and Reinhart, 2010).

[14] For strong evidence on the role of polarization on stalemate and policy gridlock in the US see Binder (2003), Coleman (1999), and McCarthy, Poole, and Rosenthal (2006).

The inability to reach a political consensus can lead to further losses. Gridlock brings political uncertainty and markets for sovereign debt often respond heavily to such conditions. Debt crises may be a natural consequence of gridlock. Recent U.S. and European events highlight the cost that political indecisiveness imposes on the economy.

Gridlock also brings selective policy intervention. If a reform overcomes political gridlock, it is likely because of strong political organization by its constituency. Concentrated special interests (banks) did get a sizeable bailout. Diffused special interests (mortgage debtors) did not. Importantly, this mechanism feeds back into higher inequality in society and polarization.

Overall our aim in this paper is to highlight the shifting political landscape in the aftermath of a financial crisis. It is a question that has not been extensively addressed in the literature[15] but has important economic consequences. Any model of post-crisis macro intervention leaving this political feature aside forgoes what we believe is an important dimension. Indeed, any type of post-crisis reform becomes harder, including bailouts. Crises are occasionally thought of as critical junctures where macroeconomic reform unlocks by shattering entrenched conditions. The opposite seems true.

Since post-crisis politics makes it difficult to politically resolve the debt-overhang problem ex-post, what other alternatives are there? One possibility is to explicitly put in place a contingency in traditional non-contingent debt contracts. The contingency only needs to be written on the aggregate state of the economy. For example, in mortgage contracts the contingency could be the level of aggregate (or regional) price index. If the state of the economy,

[15] With some exceptions, such as Alesina et al. (2011) who study electoral consequences of large fiscal adjustments. Brender and Drazen (2008) look at electoral consequences of fiscal and inflation performance, but with no emphasis given to post-crisis recovery.

or the housing index in this example, performs too poorly then the contingency could automatically kick in and restructure the debt.

The typical benefit of non-contingent debt is that it protects the lender from moral hazard issues related to the borrower deliberately mis-utilizing the loan. However, if the contingency for debt reduction is written on the aggregate state of the economy, such moral hazards continue to be avoided. More generally, we believe that the mechanism design problem of contracting around the debt-overhang problem for the overall economy is an important and practical issue to investigate.

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Figure 1: Cross-Country Change in Mortgage Default Rates and House Prices (2007 to 2009)

The figure plots mortgage to GDP ratio, change in default rate from 2007 to 2009 and change in house prices from 2007 to 2009 for four European countries and the U.S. We multiply the change in default rate by 10 in order to keep the scale comparable across the three variables.

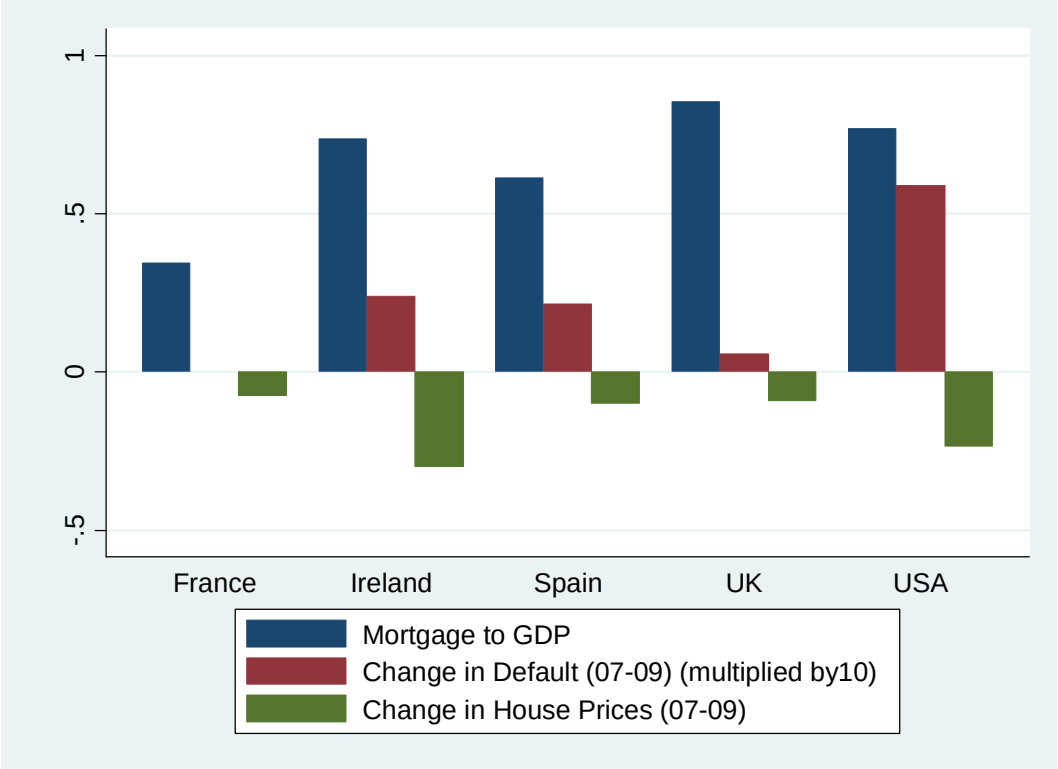

Figure 2: US Flow of funds real estate and finance assets.

The figure plots quarterly flow of funds data for total assets and assets broken down by real estate (non-financial) and financial assets (include deposits, bonds and stocks).

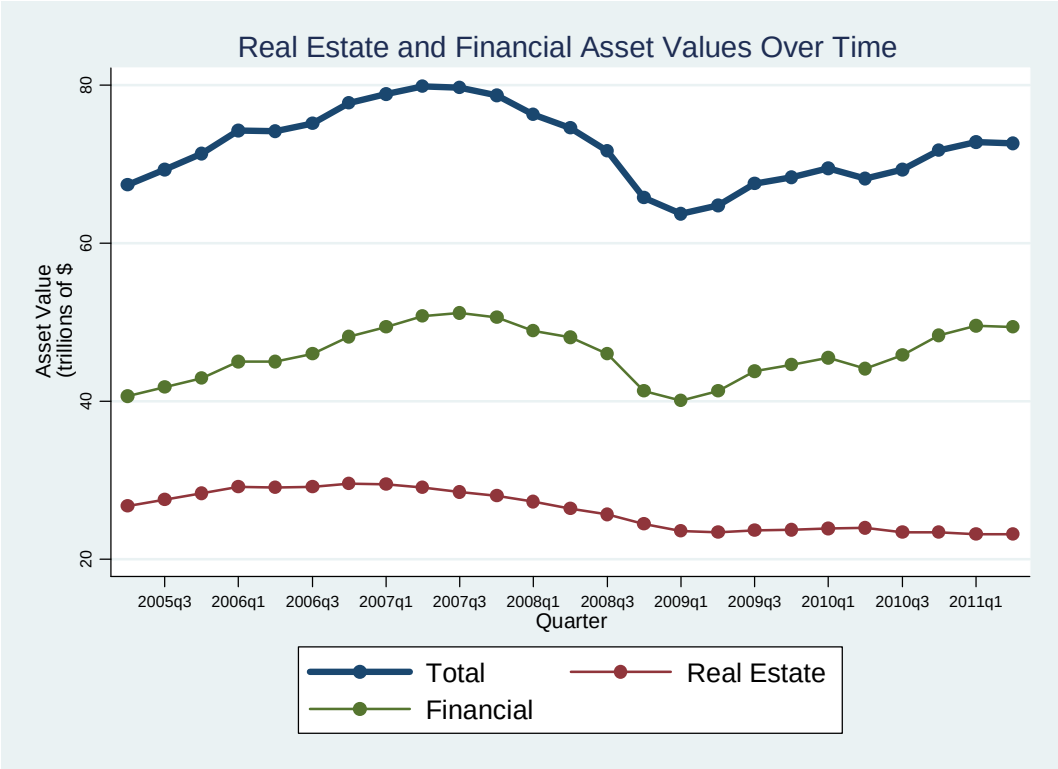

Figure 3: United States Ideological Groups Time Series.

This figure reports shares of respondents in Gallup polls self-identifying in each ideological category. Coverage: United States, years 1992-2011.

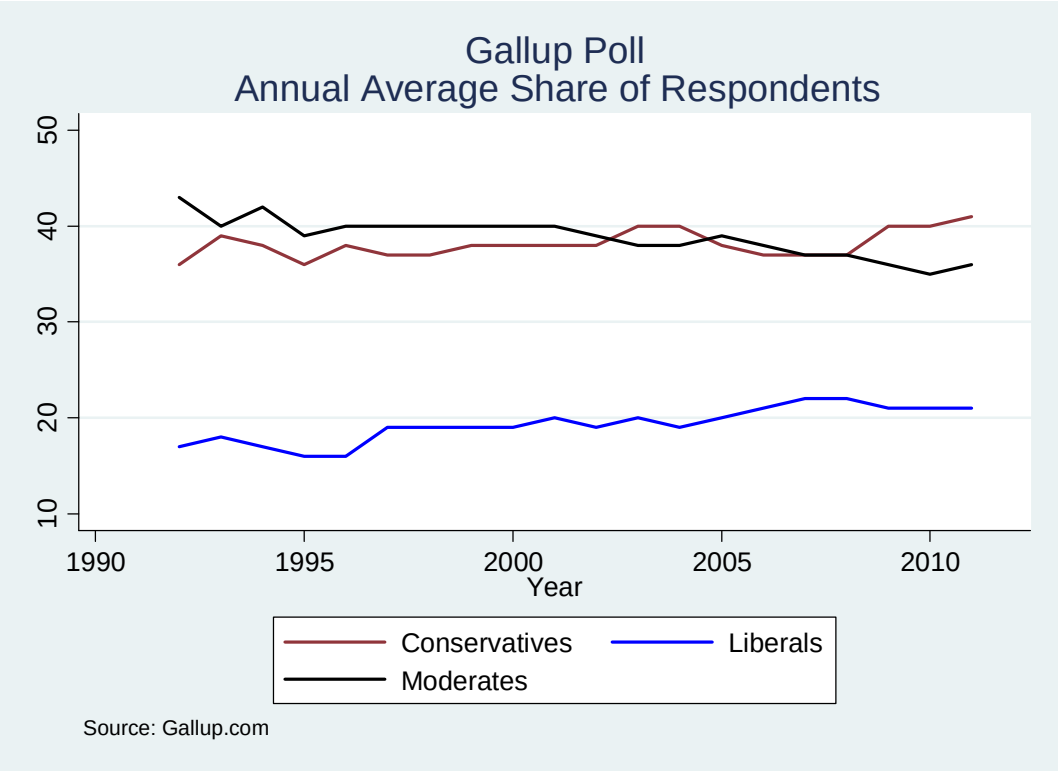

Figure 4a: Post-Crisis Decreases Mass at Ideological Center.

This figure reports the average shares of the population in each ideological bin of the Thermometer Index: Liberal-Conservative, American National Election Study Cumulative Data File 1948-2008 (VCF0801, 2011). We include all United States banking crises 1948-2010 as identified by Reinhart and Rogoff (2011).. Pre-Crisis Sample: 5 years before first year of crisis. Post-Crisis Sample: 5 years after last year of crisis.

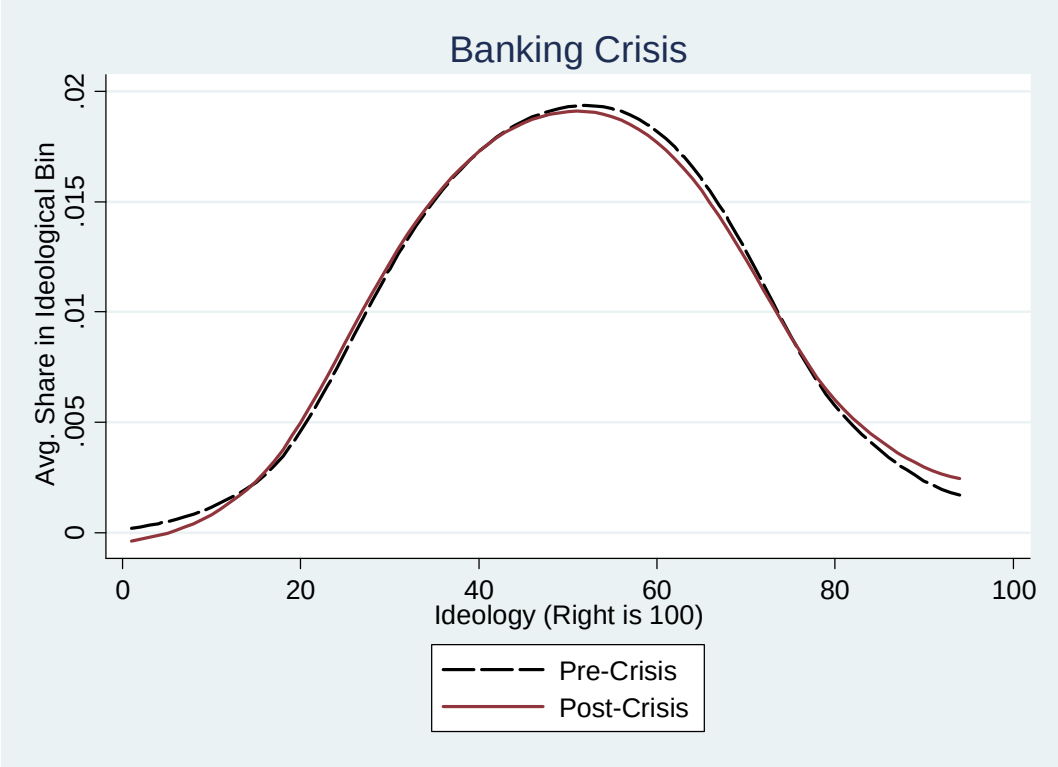

Figure 4b: Post-Crisis Decreases Mass at Ideological Center.

This figure reports the average shares of the population in each ideological bin of the Thermometer Index: Liberal-Conservative, American National Election Study Cumulative Data File 1948-2008 (VCF0801, 2011). We include all United States currency crises 1948-2010 as identified by Reinhart and Rogoff (2011). Pre-Crisis Sample: 5 years before first year of crisis. Post-Crisis Sample: 5 years after last year of crisis.

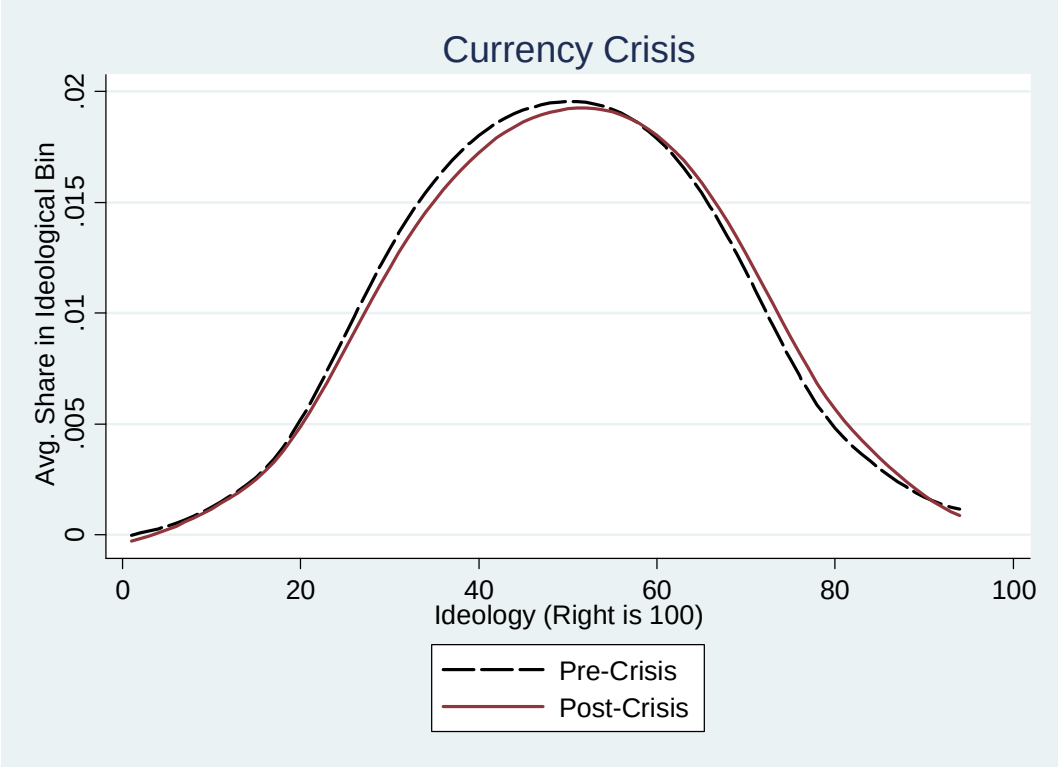

Figure 4c: Post-Crisis Decreases Mass at Ideological Center.

This figure reports the average shares of the population in each ideological bin of the Thermometer Index: Liberal-Conservative, American National Election Study Cumulative Data File 1948-2008 (VCF0801, 2011). We include all United States market crashes crises 1948-2010 as identified by Reinhart and Rogoff (2011). Pre-Crisis Sample: 5 years before first year of crisis. Post-Crisis Sample: 5 years after last year of crisis.

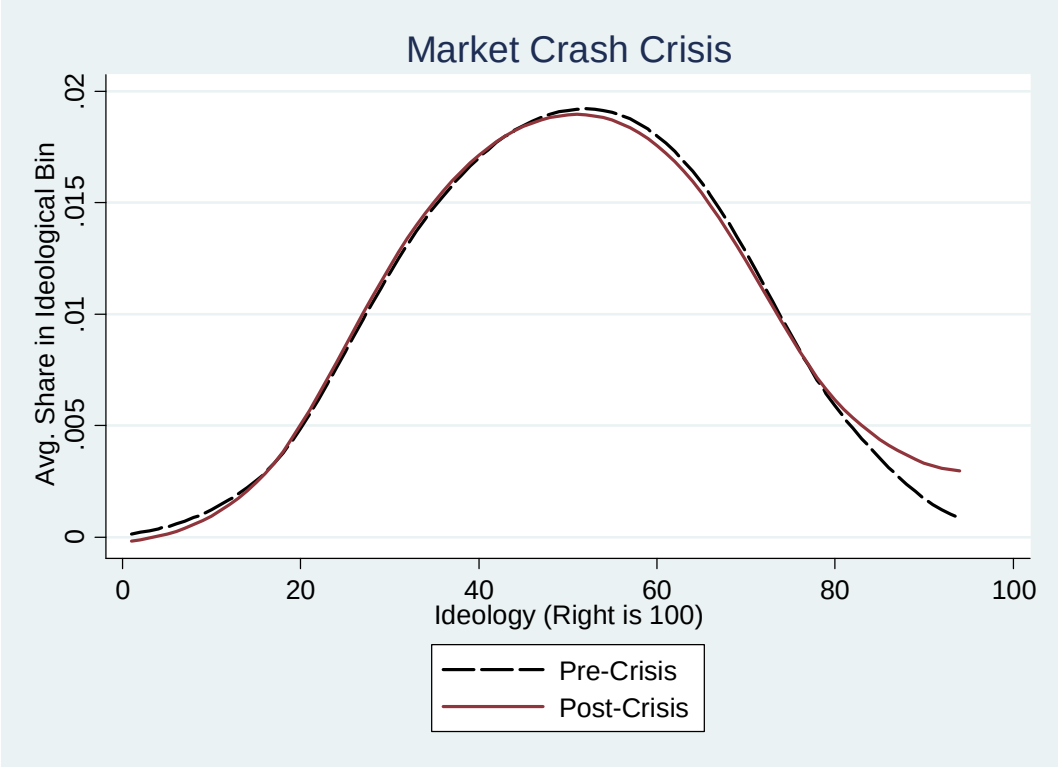

Figure 5: Post-Crisis Increases in Congressional Polarization.

This figure reports the kernel densities of HP Filtered Difference in DW Nominate Scores Party Means, Chambers Average, United States Congress, 1879-2010 as obtained from Keith Poole and Howard Rosenthal voteview.com. Pre-Crisis Sample: 5 years before first year of crisis. Post-Crisis Sample: 5 years after last year of crisis. Crises definitions follow Reinhart and Rogoff (2011).

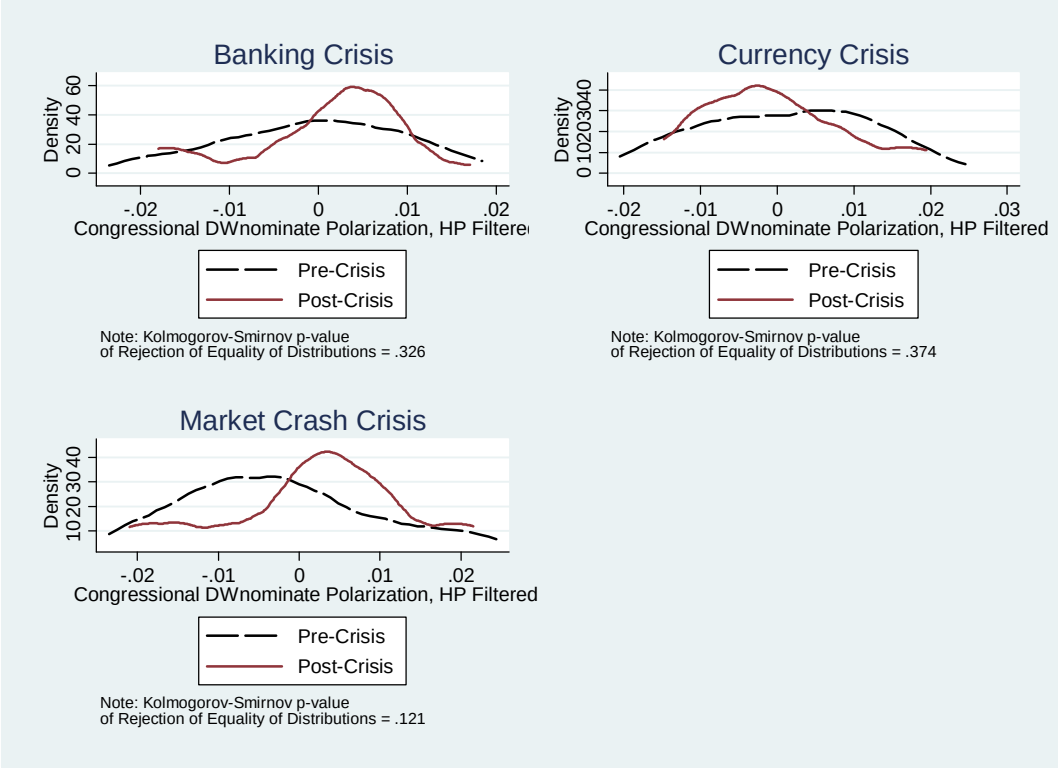

Figure 6: Post-Crisis Decreases Mass at Ideological Center.

This figure reports the average shares of the population in each ideological bin of the Self Positioning in Political Scale, World Values Survey 1981-2008 Official Aggregate (e033, 2009). Pre-Crisis Sample: 5 years before first year of crisis. Post-Crisis Sample: 5 years after last year of crisis. Crises definitions follow Reinhart and Rogoff (2011). All 70 Reinhart and Rogoff (2011) countries. All crises 1975-2010.

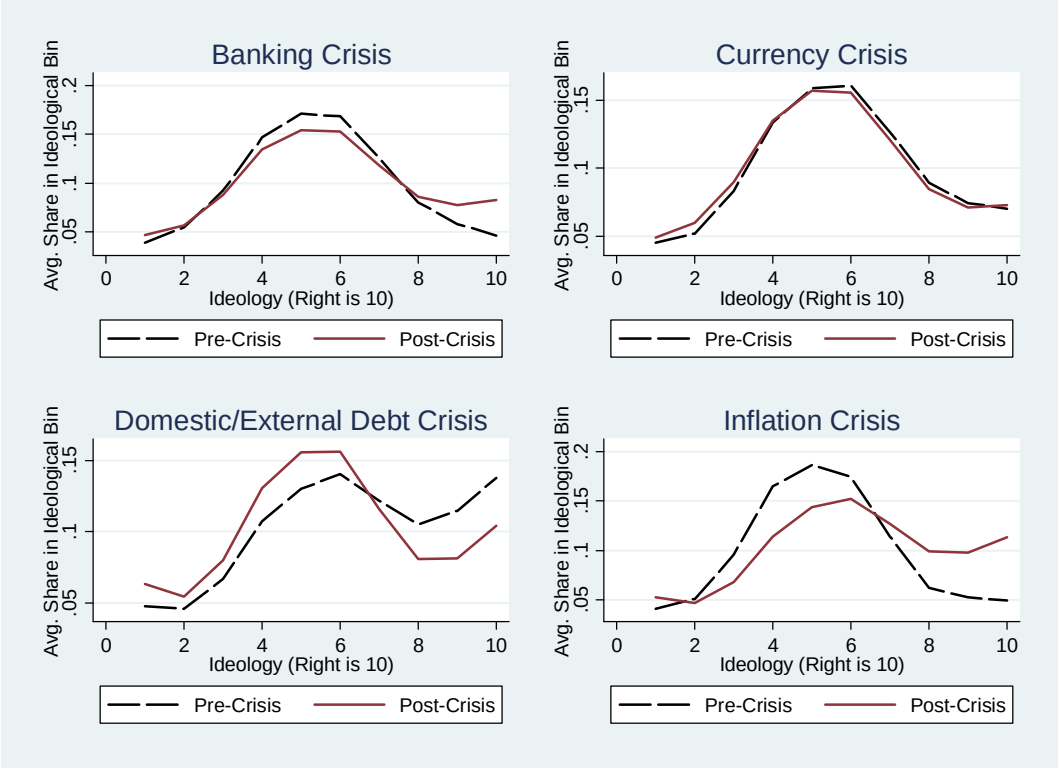

Figure 7: Post-Crisis Decrease in Majority Margins for Government.

This figure reports the kernel densities of the vote share of government parties from the Database of Political Institutions (World Bank, 2010). Pre-Crisis Sample: 5 years before first year of crisis. Post-Crisis Sample: 5 years after last year of crisis. Crises definitions follow Reinhart and Rogoff (2011). All 70 Reinhart and Rogoff (2011) countries. All crises 1975-2010. The null of equality of distributions is rejected in all panels according to a Kolmogorov-Smirnov test.

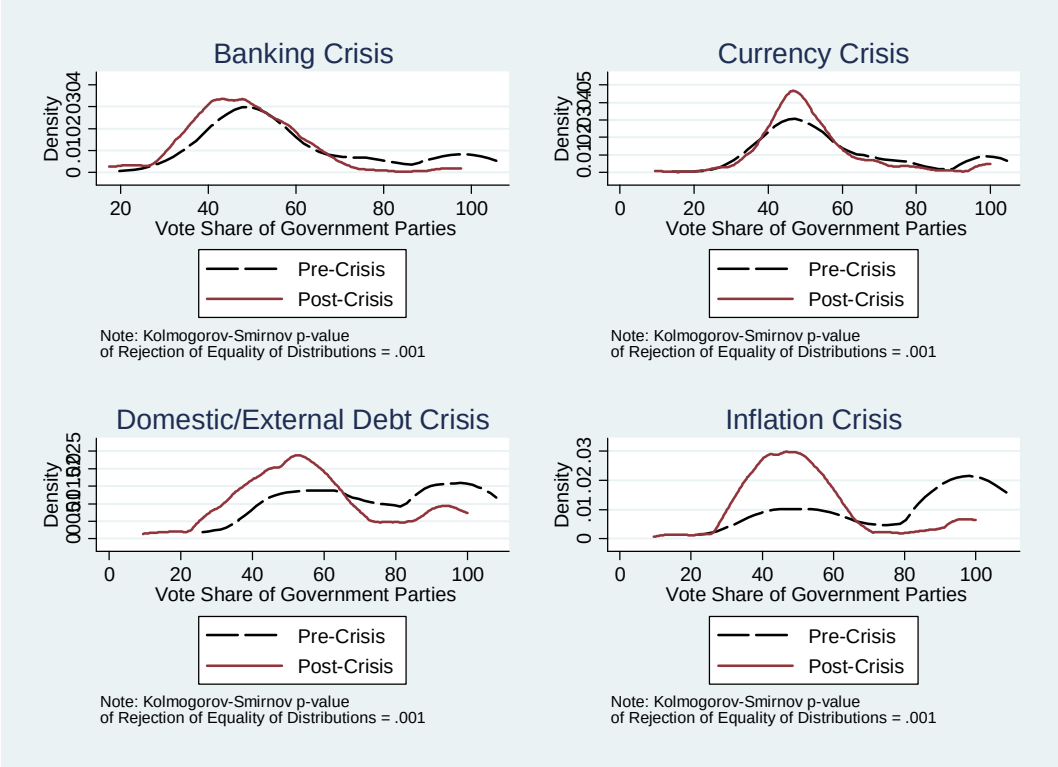

Figure 8: Post-Crisis Increase in Opposition Share.

This figure reports the kernel densities of the vote share of opposition parties, excluding unaligned parties (of relevance for minority governments only) from the Database of Political Institutions (World Bank, 2010). Pre-Crisis Sample: 5 years before first year of crisis. Post-Crisis Sample: 5 years after last year of crisis. Crises definitions follow Reinhart and Rogoff (2011). All 70 Reinhart and Rogoff (2011) countries. All crises 1975-2010. The null of equality of distributions is rejected in all panels according to a Kolmogorov-Smirnov test.

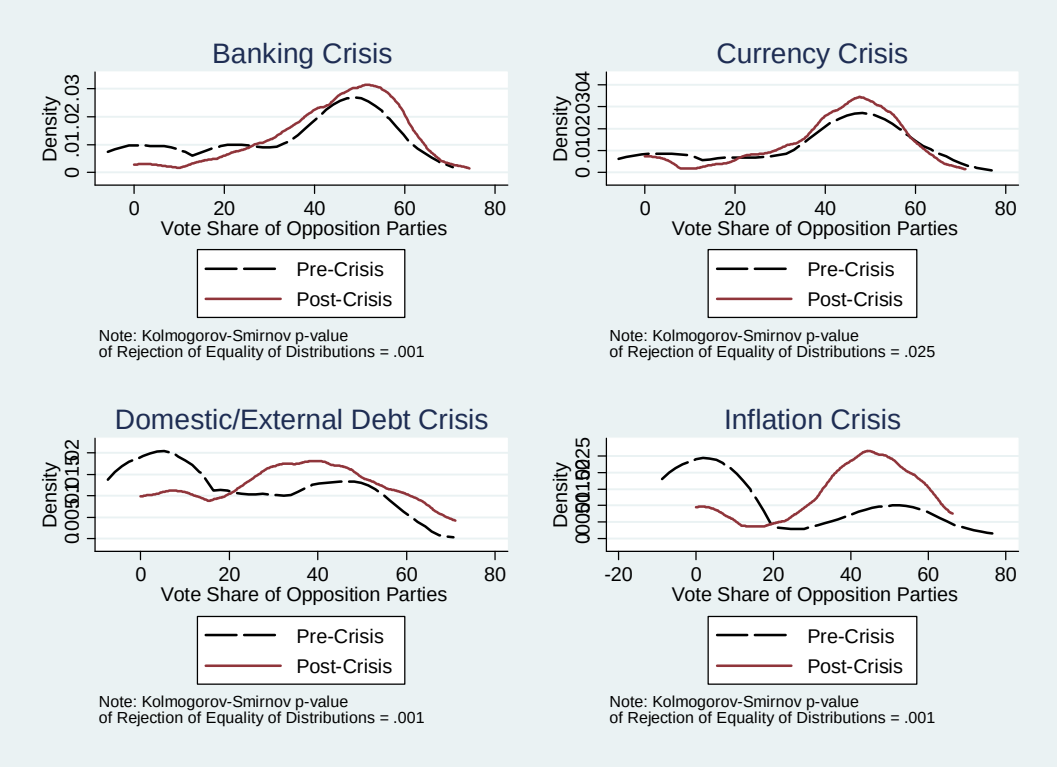

Figure 9: Post-Crisis Increase in Party Fractionalization in Legislative.

This figure reports the kernel densities of party fractionalization indexes from the Database of Political Institutions (World Bank, 2010). Pre-Crisis Sample: 5 years before first year of crisis. Post-Crisis Sample: 5 years after last year of crisis. Crises definitions follow Reinhart and Rogoff (2011). All 70 Reinhart and Rogoff (2011) countries. All crises 1975-2010. The null of equality of distributions is rejected in all panels according to a Kolmogorov-Smirnov test.

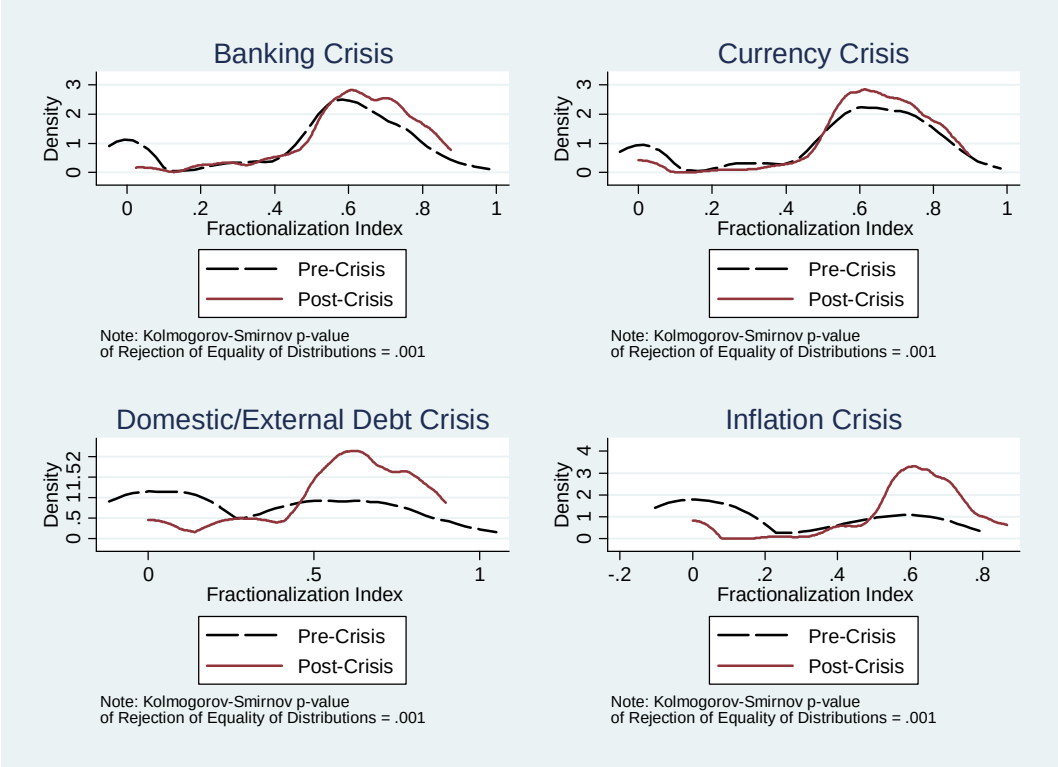

Table 1

US Net Worth Distribution for Homeowners, 2007

This table presents net worth information for US homeowners as of 2007. The information is from the 2007 Survey of Consumer Finances. We isolate the sample to homeowners and then split the sample into quintiles using population weights.

	(1)	(2)	(3)	(4)	(5)
	Net worth, $thousands	**Home value/ Total assets**	**Financial assets/ Total assets**	**Debt/Assets**	**Home debt/ Home value**
Quintile 1	32.8	0.821	0.034	0.705	0.709
Quintile 2	115.1	0.752	0.111	0.406	0.505
Quintile 3	234.1	0.659	0.207	0.225	0.306
Quintile 4	443.0	0.515	0.271	0.153	0.250
Quintile 5	1194.7	0.299	0.395	0.059	0.161

Table 2: Changes in Creditor Rights

The table reports the timing of *changes* in the credit rights index introduced by Djankov et al (2007). The last column reports the most recent major financial crisis prior to the change in creditor rights index.

Country	Credit Rights	Creditor Rights Changed In	Most Recent Financial Crisis Prior To Change
Canada	Relaxed	1992	1985 (Banking)
Finland	Relaxed	1993	1993 (Banking and Currency)
India	Relaxed	1993	1993 (Banking and Currency)
Indonesia	Relaxed	1998	1998 (All types)
Ireland	Relaxed	1990	1977 (Currency)
Israel	Relaxed	1996	NA
Japan	Relaxed	2000	2000 (Banking)
Malawi	Relaxed	2000	NA
Niger	Relaxed	1998	NA
Sweden	Relaxed	1995	1994 (Banking)
Thailand	Relaxed	1999	1999 (Banking)
Ukraine	Relaxed	1999	NA
Azerbaijan	Toughened	1997	NA
Bulgaria	Toughened	2000	NA
Denmark	Toughened	1984	1980 (Market Crash)
Kazakhstan	Toughened	1997	NA
Lithuania	Toughened	1995	NA
Mongolia	Toughened	1997	NA
Romania	Toughened	1994	1994 (Banking, Currency and Inflation)
United Kingdom	Toughened	1985	1984 (Banking)

Table 3

	Banking Crisis	Currency Crisis	Dom./External Debt Crisis	Inflation Crisis
	(1)	(2)	(3)	(4)
	Dependent Variable: Creditor Rights			
Post-Crisis	-0.0771	-0.0630	-0.0075	-0.0163
	[0.0203]**	[0.0227]**	[0.0221]	[0.0153]
R^2	0.98	0.97	0.99	1.00
N	573	521	305	275

Notes: Independent variable is a post-crisis indicator variable. All columns include country and year fixed effects. Robust standard errors in brackets. ** Significant at .01 * significant at .05. Includes only country and year observations within 5 years before or after a crisis. All 70 Reinhart and Rogoff (2011) countries. All crises 1975-2010.

Table 4: Summary Statistics for Political Regressions

Variable	Obs.	Mean	Std. Dev.	Min	Max
Government Vote Share	1698	56.03	19.49	9.47	100
Opposition Vote Share (Excluding Unaligned Parties)	1698	37.40	19.25	0	90.20
Polarization	2308	.61	.87	0	2
Party Fractionalization	1670	.56	.24	0	.93
Government Fractionalization	1687	.20	.26	0	.92
Opposition Fractionalization	2004	.48	.26	0	1
Banking crisis	2520	.17	.38	0	1
Currency crisis	2515	.21	.40	0	1
Debt crisis	2520	.19	.39	0	1
Inflation crisis	2520	.18	.38	0	1

Table 5a: Frequency of Crises 1975-2010 by Country. Source: Reinhart and Rogoff (2011)

Country Name	Years of Banking Crisis	Years of Currency Crisis	Years of Debt Crisis	Years of Inflation Crisis
Algeria	3	6	6	5
Angola	7	17	20	21
Argentina	10	19	21	21
Australia	4	6	0	1
Austria	3	1	0	0
Belgium	3	2	0	0
Bolivia	7	7	17	10
Brazil	6	24	13	21
Canada	3	1	0	0
Central African Republic	19	1	29	1
Chile	5	12	9	10
China	8	4	0	1
Colombia	8	19	0	18
Costa Rica	4	4	9	7
Cote d'Ivoire	4	1	27	3
Denmark	9	1	0	0
Dominican Republic	2	6	28	9
Ecuador	6	17	17	19
Egypt	9	6	1	6
El Salvador	1	1	16	5
Finland	4	1	0	0
France	5	2	0	0
Germany	6	4	0	0
Ghana	9	19	3	22
Greece	8	10	0	2
Guatemala	3	3	2	3
Honduras	3	4	30	6
Hungary	8	8	0	6
Iceland	7	15	0	14
India	6	5	2	0
Indonesia	8	6	5	3
Ireland	4	5	0	2
Italy	6	3	0	1
Japan	10	1	0	0
Kenya	9	9	10	4
Korea	11	5	0	2
Malaysia	9	1	0	0
Mauritius	0	5	0	3
Mexico	9	12	9	17
Morocco	2	1	6	0
Myanmar	8	1	10	19
Netherlands	3	1	0	0
New Zealand	4	5	0	0
Nicaragua	13	8	32	15
Nigeria	5	9	14	12
Norway	7	3	0	0
Panama	2	0	14	0
Paraguay	6	10	9	11
Peru	9	18	17	20
Philippines	12	5	12	2
Poland	5	19	14	13
Portugal	3	7	0	3
Romania	10	15	4	13
Russia	4	16	22	8
Singapore	2	1	0	0
South Africa	3	9	5	0
Spain	12	4	0	1
Sri Lanka	5	4	5	3
Sweden	4	5	0	0
Switzerland	2	2	0	0
Taiwan	4	1	0	0
Thailand	14	3	0	0
Tunisia	5	2	4	0
Turkey	7	26	4	27
UK	8	7	0	1
USA	12	3	0	0
Uruguay	5	25	7	21
Venezuela	11	13	13	20
Zambia	1	17	12	20
Zimbabwe	14	20	10	19

Table 5b: Frequency of Crises 1975-2010 by Year. Source: Reinhart and Rogoff (2011)

Year	Countries in Banking Crisis	Countries in Currency Crisis	Countries in Debt Crisis	Countries in Inflation Crisis	Number of Countries
1975	1	10	4	14	70
1976	3	16	5	11	70
1977	5	14	2	14	70
1978	5	10	4	9	70
1979	4	14	7	16	70
1980	5	11	6	21	70
1981	10	17	13	17	70
1982	14	22	17	13	70
1983	16	23	24	17	70
1984	15	27	24	20	70
1985	15	22	23	17	70
1986	12	20	27	17	70
1987	15	16	26	16	70
1988	13	20	23	19	70
1989	16	27	24	19	70
1990	17	22	24	25	70
1991	20	21	21	25	70
1992	22	19	20	21	70
1993	21	21	18	20	70
1994	25	16	17	23	70
1995	27	16	15	20	70
1996	17	14	15	16	70
1997	20	21	12	10	70
1998	18	14	10	10	70
1999	18	16	9	9	70
2000	12	14	11	8	70
2001	13	9	11	9	70
2002	10	10	11	8	70
2003	4	5	11	8	70
2004	1	3	10	4	70
2005	1	13	10	2	70
2006	2	1	6	3	70
2007	5	1	7	3	70
2008	17	22	8	5	70
2009	16	2	7	1	70
2010	13	4	6	1	70

Table 6

	Banking Crisis		Currency Crisis		Dom./External Debt Crisis		Inflation Crisis	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent Variable: Government Vote Share								
Post-Crisis	-10.6029	-6.8459	-5.6889	-2.9830	-17.0451	-3.3900	-26.6331	-10.2615
	[1.4469]**	[1.4906]**	[1.4648]**	[1.0052]**	[2.8974]**	[2.3458]	[2.9077]**	[1.6419]**
R^2	0.09	0.67	0.03	0.77	0.13	0.84	0.27	0.92
N	534	534	599	599	236	236	279	279
Dependent Variable: Opposition Vote Share (Excluding Unaligned Parties)								
Post-Crisis	8.6544	7.7531	2.8580	0.5635	10.9867	2.5713	20.4801	6.3344
	[1.5059]**	[1.3673]**	[1.5110]	[1.0068]	[2.7145]**	[2.6374]	[2.8892]**	[2.1033]**
R^2	0.06	0.71	0.01	0.75	0.07	0.74	0.17	0.86
N	534	534	599	599	236	236	279	279
Dependent Variable: Polarization								
Post-Crisis	0.1761	0.1002	0.0971	0.0605	0.2732	0.1126	0.4836	0.1099
	[0.0625]**	[0.0637]	[0.0646]	[0.0489]	[0.0753]**	[0.0840]	[0.0616]**	[0.0727]
R^2	0.01	0.64	0.00	0.63	0.03	0.57	0.09	0.67
N	752	752	753	753	366	366	411	411

Note: This table estimates pre and post crisis levels of three different dependent variables. Independent variable is a post-crisis indicator variable. Columns (2), (4), (6), and (8) include country and year fixed effects. Robust standard errors in brackets. ** Significant at .01 * significant at .05. Includes only country and year observations within 5 years before or after a crisis. All 70 Reinhart and Rogoff (2011) countries. All crises 1975-2010.

Table 7

	Banking Crisis		Currency Crisis		Dom./External Debt Crisis		Inflation Crisis	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent Variable: Party Fractionalization								
Post-Crisis	0.1059	0.0656	0.0733	0.0466	0.2250	0.1859	0.3346	0.1269
	[0.0189]**	[0.0110]**	[0.0193]**	[0.0115]**	[0.0397]**	[0.0280]**	[0.0338]**	[0.0193]**
R^2	0.05	0.82	0.03	0.85	0.14	0.91	0.31	0.92
N	523	523	585	585	230	230	269	269
Dependent Variable: Government Fractionalization								
Post-Crisis	0.0195	0.0248	0.0179	0.0444	0.0680	0.1006	0.1210	0.0296
	[0.0219]	[0.0188]	[0.0221]	[0.0177]*	[0.0379]	[0.0359]**	[0.0241]**	[0.0296]
R^2	0.00	0.68	0.00	0.73	0.01	0.74	0.06	0.74
N	534	534	591	591	232	232	275	275
Dependent Variable: Opposition Fractionalization								
Post-Crisis	0.0481	0.0434	0.0125	0.0178	0.0678	0.0161	0.0999	0.0561
	[0.0207]*	[0.0192]*	[0.0198]	[0.0171]	[0.0349]	[0.0455]	[0.0345]**	[0.0312]
R^2	0.01	0.56	0.00	0.61	0.01	0.51	0.02	0.77
N	652	652	723	723	258	258	310	310

Note: This table estimates pre and post crisis levels of three different dependent variables. Independent variable is a post-crisis indicator variable. Dependent variable is a post-crisis indicator. Columns (2), (4), (6), and (8) include country and year fixed effects. Robust standard errors in brackets. ** Significant at .01 * significant at .05. Includes only country and year observations within 5 years before or after a crisis. All 70 Reinhart and Rogoff (2011) countries. All crises 1975-2010.