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Finance, Growth and Fragility:

The Role of Government

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Abstract: This paper offers a critical survey of the literature on the role of financial deepening in economic development, focusing on the role of government. Specifically, I distinguish between the policy view that relates financial sector development to an array of necessary policies and institutions, the historic view that relates financial sector development to historic and cultural factors, and the politics view that explains financial sector development as the result of political conflicts and decisions. These three views of financial sector deepening imply a different role for government. I discuss examples from the developed and developing world and repercussions for current reform discussions.

Keywords: Financial development, economic growth, financial crisis, government policies

JEL Codes: G1, G2, O16

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1. Introduction

The financial sector can be both a growth engine and a source of economy-wide fragility and crisis. It can help economies in their economic transformation and development process, as historic examples and statistical analyses have shown, but it has also been the cause for socio-economic distress and “eight centuries of financial folly” (Reinhart and Rogoff, 2009).

Critical for this two-sided relationship between finance and the real sector are the information asymmetries and agency problems central to financial transactions as well as coordination problems in financial markets, but also the role of government. What is the optimal level and structure of the financial system? What institutions and policies are needed to get to this optimal level? What should be the role of government in the financial sector? This paper is a critical survey of the literature over the past 20 years on finance and growth in developing and developed countries and the role of government in this process. I will link several strands of literature with policy experiences in developing and developed countries and some forward looking thoughts on research in this area.

The relationship between finance and the real economy is an ambiguous one. On the one hand, an exhaustive empirical literature has established a long-term positive relationship between financial development and economic growth, a relationship that goes beyond correlation. On the other hand, the financial systems and especially the banking sector, has been at the core of major economic crises over the past 150 years, including the Great Depression of the 1930s and the Great Recession of 2008/9. The role of government is critical in the relationship between finance, growth and crises. On the one hand, the government sets the necessary policy and institutional pre-conditions for financial deepening. At the same time, government provides a financial safety net to deal with financial crises. On the other hand, government policies can cause financial shallowness and fragility, through

excessive government interference or by encouraging excessive risk taking with the same financial safety net that is supposed to mitigate the impact of financial fragility.

In this paper, I will discuss lessons from the finance and growth literature, including recent findings on the insignificance if not negative relationship between both in high-income countries. I will discuss three different explanations of why financial sector deepening varies across countries. Specifically, I will distinguish between the policy view that relates financial sector development to an array of necessary policies and institutions, the historic view that relates financial sector development to historic and cultural factors, and the politics view that explains financial sector development as the result of political conflicts and decisions. These three views of financial sector deepening also see a different role for government, ranging from a benevolent and competent authority to overcome market failure over being interested party and player in the financial markets to being captive to special interests and the governing elite. Efficiency considerations in financial sector reform can therefore not be separated from distributional repercussions of these reforms.

This paper relates to several literatures. First, and most importantly, it relates to the finance and growth literature, as surveyed by Levine (2005) and Beck (2009). Rather than offering yet another survey, however, I will focus on non-linearities in the finance and growth relationship and some recent research gauging the causes for these non-linearities. This new strand of research has pointed to decreasing returns to financial deepening, to the role of household as opposed to enterprise credit, and to the financial sector pulling talent out of the real sector. I will use the findings of this literature to speak to the discussion on the role of the financial sector in post-crisis economies in the U.S. and Europe, while at the same time stressing the different role that financial systems have in emerging and especially in low-income countries.

Second, this paper relates to the literature on the determinants of financial deepening. Over the past 15 years, economists have identified monetary stability, contractual and informational framework and sound regulation and supervision as important pre-requisites of financial deepening. Parallel to this literature, other authors have pointed to the structure of legal institutions and the financial system as being the outcome of political decision processes that might not necessarily maximize aggregate welfare.² Other authors have focused on historic factors such as legal tradition and colonial history explaining the level and structure of financial systems today.³ I will discuss these three different strands in light of the different role of government they imply and draw conclusions for the political economy of financial sector reform.

In the following, I will refer to financial sector depth and deepening, where the latter results in the former, in general, without differentiating between the different dimensions. When measuring the development of financial systems, however, analysts increasingly focus on specific dimensions. On the one hand, financial depth refers to the size of the financial system relative to the real economy, as captured by either total deposits or credit or market capitalization. On the other hand, financial breadth, outreach or penetration refers to the share of the enterprise or household population with access to financial services. Related to both is the concept of efficiency, as measured by interest spreads or margins of banks or bid-ask spreads on stock exchanges. I will leave this distinction and a discussion of different segments of the financial system for another occasion.

The remainder of this paper is structured as follows. The next section provides a critical overview of some recent work on the relationship between finance and growth. Section 3 offers three different views of the process of financial sector deepening. Section 4 discusses

² See Haber and Perotti (2008) for a survey.

³ See Beck and Levine (2005) for a survey.

the role of government in financial sector deepening. Section 5 offers some specific examples from developed and developing countries and section 6 concludes.

2. The bright and dark sides of finance

Over the past thirty years, a flourishing theoretical literature has explained the endogenous emergence of financial institutions and markets and has explored their impact on real sector outcomes, including economic growth and income inequality. Over the past twenty years, a still growing empirical literature has explored the effect of development and structure of financial systems on economic growth and other real sector outcome variables.

The theoretical literature does not predict an unambiguously positive relationship between financial and economic development. On the one hand, efficient financial systems might enhance economic development by (i) providing payment services, reducing transaction costs and thus enabling the efficient exchange of goods and services, (ii) pooling savings from many individual savers, and thus helping overcome investment indivisibilities and allowing to exploit scale economies⁴, (iii) economizing on screening and monitoring costs and thus increasing overall investment and improving resource allocation, (iv) helping monitor enterprises and reduce agency problems within firms between management and majority and minority shareholders, again improving resource allocation, and (v) helping reduce liquidity risk and thus enable long-term investment, as shown by Diamond and Dybvig (1983). On the other hand, better resource allocation may depress saving rates enough such that overall growth rates actually drop with enhanced financial development.⁵ This can happen if the income effect of higher interest rates is larger than the substitution effect. Recent research has pointed to other growth-reducing effects of financial sector deepening, as the financial

⁴ See, for example, McKinnon (1973) and Acemoglu and Zilibotti (1997).

⁵ See, for example, Bencivenga and Smith (1991) and King and Levine (1993b).

sector might also attract too many resources relative to the real sector, with negative repercussions for growth.⁶

2.1. Finance is pro-growth

The empirical literature has established a pro-growth effect of financial deepening. What started with simple cross-country regressions, as used by King and Levine (1993a), has developed into a large literature using an array of different techniques to look beyond correlation and controlling for biases arising from endogeneity and omitted variables. Specifically, using instrumental variable approaches, difference-in-difference approaches that consider the differential impact of finance on specific sectors and thus point to a smoking gun, explorations of specific regulatory changes that led to financial deepening in individual countries, and micro- level approaches using firm-level data have provided the same result: financial deepening is a critical part of the overall development process of a country (see Levine, 2005, for an overview and Beck, 2009, for a detailed discussions of the different techniques).

This literature has also provided insights into the channels through which finance fosters economic growth. Overall, the evidence has shown that finance has a more important impact on growth through fostering productivity growth and resource allocation than through pure capital accumulation (Beck, Levine and Loayza, 2000). Specifically, the availability of external finance is positively associated with entrepreneurship and higher firm entry as well as with firm dynamism and innovation (Klapper, Laeven and Rajan, 2006; Ayyagari,

⁶ Philippon (2010) models the trade-off between the financial sector helping overcome agency problems, while at the same time competing for human resources with the real sector. In a situation where the social value of entrepreneurship is larger than the private value, the financial sector can be too large compared to the entrepreneurial sector. Similarly, Bolton, Santos and Scheinkman (2011) model how individuals can choose to work in the real sector or as dealers in the financial sector. While dealers can provide entrepreneurs incentives to originate good assets, they might extract excessively high informational rents and thus attract too much young talent towards the financial industry, thus leading to lower GDP per capita growth.

Demirgüç-Kunt and Maksimovic, 2011). Finance also allows existing firms to exploit growth and investment opportunities and to achieve larger equilibrium size (Rajan and Zingales, 1998; Beck et al., 2005, 2006). In addition, firms can safely acquire a more efficient productive asset portfolio where the infrastructures of finance are in place, and they are also able to choose more efficient organizational forms such as incorporation (Claessens and Laeven, 2003); Demirguc-Kunt et al., 2006). Finally, this line of research has shown that the impact of financial sector deepening on firm performance and growth is stronger for small and medium-sized than for large enterprises (Beck et al., 2005, 2008).

Financial sector development is important not only for fostering the economic growth process, but also for dampening the volatility of the growth process. Financial systems can alleviate the liquidity constraints on firms and facilitate long-term investment, which ultimately reduces the volatility of investment and growth (Aghion et al., 2010). Similarly, well-developed financial markets and institutions can help dampen the negative impact that exchange rate volatility has on firm liquidity and thus investment capacity (Aghion et al. 2009). This is especially important in economies that depend heavily on natural resources and are thus subject to high terms of trade and real exchange rate volatility. It is important to note, however, the important difference between real and financial/monetary shocks, whereby the latter can be exacerbated by deeper financial systems (Beck, Lundberg and Majnoni, 2006). Finally, financial development increases the effectiveness of monetary policy, widens the fiscal policy space and allows a greater choice of exchange rate regimes (IMF, 2012).

More recent research, however, has pointed to important non-linearities in the relationship between finance and growth. There is evidence that the effect of financial development is strongest among middle-income countries, whereas other work finds a declining effect of finance and growth as countries grow richer (Rioja and Valev, 2004a, 2004b; Aghion,

Howitt, and Mayer-Foulkes, 2005).⁷ More recently, Arcand, Berkes, and Panizza (2012) find that the finance and growth relationship turns negative for high-income countries, identifying a value of 110 percent private credit to GDP as approximate turning point, with the negative relationship between finance and growth turning significant at around 150 percent private credit to GDP, levels reached by some high-income countries in the 2000s.

There are several, not exclusive, explanations for such non-linearities, as put forward by the recent literature and partly informed by the recent crisis. First, the measures of financial depth and intermediation the literature has been using might be simply too crude to capture quality improvements at high levels of financial development.⁸ In addition, the financial sector has gradually extended its scope beyond the traditional activity of intermediation towards so-called “non-intermediation” financial activities (Demirgüç-Kunt and Huizinga, 2010). As a result, the usual measures of intermediation services have become less and less congruent with the reality of modern financial systems. Second, some argue that the reason for the non-linearity of the finance-growth relationship might be that financial development helps catch up to the productivity frontier, but has limited or no growth effect for countries that are close to or at the frontier (Aghion et al., 2005). Third, the financial system might actually grow too large relative to the real economy if it extracts excessively high informational rents and in this way attracts too much young talent towards the financial industry (Bolton et al., 2011; Philippon, 2010). Fourth, and related, the financial system can grow too large due to the safety net subsidy we will discuss below, which results in too aggressive risk-taking and overextension of the financial system. Finally, a critical question is who the beneficiary of financial deepening is, a question I will turn to next.

⁷ There is also evidence that the finance-growth relationship might have weakened in recent times, as documented by Rousseau and Wachtel (2011).

⁸ More recently, several papers have proposed measures of banking sector quality, focusing on the profit or cost efficiency of financial institutions. See, e.g., Hasan, Koetter and Wedow (2009). See also Wachtel (2011) for a discussion on the difficulties of capturing financial development in empirical indicators.

2.2. Who gets the credit? And does it matter?

While the theoretical and most of the empirical finance and growth literature has focused mostly on enterprise credit, financial systems in high-income countries provide a large share of their services, including credit, to households rather than enterprises. As shown in Figure 1, as countries grow richer and financial systems develop, a larger share of bank credit is given to households rather than enterprises. In several countries, household credit constitutes more than 80% of overall bank credit, including in Canada, Denmark, and the Netherlands, mostly mortgage credit. Even within high-income countries, this trend has been increasing over time, as shown in Figure 2, which shows the average across six high-income countries (Iceland, Japan, Korea, Portugal, UK and US) of total bank credit to GDP and the share of household credit in total bank credit.

Although the theoretical and empirical literature has clearly shown the positive impact of enterprise credit for firm and aggregate growth, theory has made ambiguous predictions on the role of household credit. On the one hand, Jappelli and Pagano (1994) argue that alleviating credit constraints on households reduces the savings rate, with negative repercussions for economic growth. On the other hand, Galor and Zeira (1993) and De Gregorio (1996) argue that household credit can foster economic development if it increases human capital accumulation.

Tentative cross-country evidence has shown that the positive effect of financial deepening comes mostly through enterprise credit, and there is no significant relationship between the importance of household credit and economic growth (Beck et al., 2012). These results hold controlling for an array of other country characteristics and controlling for endogeneity. The relationship between enterprise credit and GDP per capita growth is more accurately estimated and significant for a larger number of countries than the relationship between

overall bank lending and GDP per capita growth. This finding, together with the observation of an increasing share of household credit in total bank lending in many developed economies over the past decades, mostly for mortgages, can go some way toward explaining the diminishing growth benefits from financial deepening in high-income countries.

2.3. Finance, inequality and poverty

Recent evidence has shown that financial deepening is not only pro-growth, but also pro-poor. While theory makes ambiguous predictions about the relationship between financial deepening and income inequality, most of the recent empirical literature has shown a negative long-term relationship. Beck, Demirgüç-Kunt, and Levine (2007) show that countries with higher levels of financial development experience faster reductions in income inequality and poverty levels. Clarke, Xu, and Zou (2006) show a negative relationship between financial sector development and the level of poverty. On the country-level, Beck, Levine and Levkov (2010) show that branch deregulation across U.S. states in the 1970s and 80s has helped reduce income inequality; Gine and Townsend (2004) show that financial liberalization can explain the reduction in poverty in Thailand and Ayyagari, Beck and Hoseini (2013) show that financial deepening following the 1991 liberalization episode can explain reductions in rural poverty across India. Given that changes in poverty can be decomposed into changes due to growth and changes due the movements in income inequality, this suggests that financial sector development is not only pro-growth but also pro-poor. Unlike other policy areas, which might have opposing effects on growth and equity, financial sector development does not present such concerns.

Theory also gives insights into the possible channels, through which financial development can help reduce income inequality and poverty. On the one hand, providing access to credit to the poor might help them overcome financing constraints and allow them to invest in

microenterprises and human capital accumulation (Galor and Zeira, 1993; Galor and Moav, 2004). On the other hand, there might be indirect effects through enterprise credit. By expanding credit to existing and new enterprises and allocating society's savings more efficiently, financial systems can expand the formal economy and pull larger segments of the population into the formal labor market. First explorations of the channels through which finance affects income inequality and poverty levels point to an important role of such indirect effects. Specifically, evidence from the United States, India and Thailand, cited above, suggests that an important effect of financial sector deepening on income inequality and poverty is indirect. By changing the structure of the economy and allowing more entry into the labor market of previously un- or underemployed segments of the population, finance helps reduce income inequality and poverty, but not by giving access to credit to everyone. This is also consistent with cross-country evidence that financial deepening is positively associated with employment growth in developing countries (Pagano and Pica, 2012).

These findings are in contrast to more ambiguous results on the effect of expanding access to credit to households and micro-enterprises. As surveyed by Karlan and Morduch (2009), some studies find a positive effect, while others find insignificant effects, with some studies showing different results depending on the econometric method being used. More recent evidence has point to important differential effects across borrowers of different characteristics (Banerjee et al., 2010), with households that are inclined to become entrepreneurs more likely to do so with improved access to credit or savings services, while others spend more on consumption.

2.4. Financial fragility – the dark side

But finance can also create havoc. The same mechanism through which finance helps growth also makes finance susceptible to shocks and, ultimately, fragility. Specifically, the maturity

and liquidity transformation from short-term savings and deposit facilities into long-term investments is at the core of the positive impact of a financial system on the real economy, but also renders the system susceptible to shocks, with the possibilities of bank and liquidity runs. The information asymmetries and ensuing agency problems between savers and entrepreneurs that banks help to alleviate can also turn into a source of fragility given agency conflicts between depositors/creditors and banks. The opacity of banks' financial statement and the large number of creditors (compared to a real sector company) undermine market discipline and encourage banks to take too much risk, ultimately resulting in fragility.⁹

The role that finance has as a lubricant for the real economy thus likewise exacerbates the effect of financial fragility on the real economy. The failure of financial institutions can result in significant negative externalities beyond the private costs of failure; it imposes external costs on other financial institutions through different contagion effects and the economy at large. The costs of systemic banking distress can be substantial, as reported by Laeven and Valencia (2008), reaching over 50 percent of GDP in some cases in fiscal costs and over 100 percent in output loss. Cross-country comparisons have shown that during banking crises, industries that depend more on external finance are hurt disproportionately more, an effect that is stronger in countries with better developed financial systems.¹⁰

The external costs of bank failures have made banking one of the most regulated sectors and have led to the introduction of explicit or implicit safety nets across most countries of the modern world that – at a minimum - protect depositors, in many cases, especially during the recent crisis, also non-deposit creditors or even equity holders. It is this safety net subsidy, in turn, that induces aggressive risk-taking by banks as shown by multiple country-level and cross-country studies and that might also explain the overextension of the financial system

⁹ See Carletti (2008) for an overview

¹⁰ Dell'Ariccia, Detragiache, and Rajan (2008) and Kroszner, Laeven, and Klingebiel (2007).

(see, e.g. Demirguc-Kunt and Kane, 2002). It is important to note that this safety net subsidy does not have to be explicit, but can be very much an implicit one, as seen in the recent crisis. Until recently, most senior creditors and uninsured depositors were made whole in Europe, a tendency only broken with the Cyprus crisis resolution. It can also extend beyond banking, as seen during the recent crisis; several segments of the financial system outside the regulatory perimeter, including investment banks and money market funds, became subject of government guarantees in the U.S.

2.5. Which view of the financial sector?

While academics have focused mostly on the *facilitating role* of the financial sector, which consists of mobilizing funds for investment and contributing to an efficient allocation of capital in general, policy makers – especially before the crisis and more in some European countries than others - have often focused on financial services as a *growth sector in itself*. This view towards the financial sector sees it more or less as an export sector, i.e. one that seeks to build an – often – nationally centered financial center stronghold by building on relative comparative advantages, such as skill base, favorable regulatory policies, subsidies, etc. The differences between these two approaches towards the financial sector can also be illustrated with different measures that are being used to capture the importance of the financial system. Academic economists typically focus on Private Credit to GDP, which is defined as the outstanding claims of financial institutions on the domestic non-financial private sector relative to economic activity as crude and imperfect measure of the development and efficiency of the financial system as it captures the intermediation function of financial institutions. The financial center view, on the other hand, focuses on the financial sector's contribution to GDP or the share of the labor force employed in the financial sector.

While there is strong evidence for the facilitating role of finance, there is less evidence for growth benefits from building a financial center. Recent cross-country comparisons have shown that, controlling for the effects of financial intermediation, a larger financial sector might bring short-term growth benefits in high-income countries, but certainly brings higher growth volatility with it (Beck, Degryse and Kneer, 2013). Based on a sample of 77 countries for the period 1980-2007, they find that intermediation activities increase growth and reduce volatility in the long run, while an expansion of the financial sectors along other dimensions has no long-run effect on real sector outcomes. Over shorter time horizons a large financial sector stimulates growth at the cost of higher volatility in high-income countries.

Intermediation activities stabilize the economy in the medium run especially in low-income countries. While these results were obtained for the period before 2007, recent experiences have confirmed this. The 2008 collapse of the Icelandic banking system and the on-going turmoil around the Cypriot banking system has shed significant doubt on the premise that more is better when it comes to finance. The recent crisis has certainly taught us the risks of such a financial center approach, which brings with it high contingent taxpayer liabilities that in a crisis turn into real taxpayer costs and that turn a banking crisis more easily into a deep recession and potentially into a sovereign debt crisis. Refocusing our attention on the facilitating and intermediation role of finance might be therefore useful.

3. What explains financial deepening

If finance can be good for growth, but has to be harnessed for society's benefit, what explains the large variation across countries and over time in development and fragility of financial systems? One can broadly distinguish between three different responses to this question, which are also linked to three different literatures. The first approach is to identify policies and institutions related to deeper and safer financial systems. This literature has identified

macroeconomic stability, effective contractual and information frameworks and incentive-compatible financial safety nets as pre-conditions for sound and sustainable financial deepening. These policies are also often at the core of financial sector reform programs developed by the IMF and World Bank for developing countries.

A second approach argues that the level and structure of financial development is a function of political decision processes. The decisions do not necessarily maximize aggregate social welfare, but reflect the interests of the incumbent elites or coalitions of interest groups. Financial sector reform programs that do not take into account the distribution of political power and interests are set to fail, according to this view.

A third approach focuses on historic determinants. A recent literature has shown significant differences in financial sector depth between countries with Common Law tradition and countries with Civil Code tradition, especially the Napoleonic type Civil Code tradition. Colonial history and religious differences have also been cited as decisive factor for different development paths of financial systems across the world.

In the following, I will discuss each of these views in turn. As will become clear, these three views are not exclusive, but they imply very different views on the nature and role of government within the financial system.

3.1. The policy view

In order to understand the policies and institutions needed for a sound and effective financial system, I will introduce the concept of the financial possibility frontier. This concept will allow us not only to better understand the performance of financial systems, relative to other countries and over time, but also to identify the necessary policies to achieve the optimal level of financial deepening.

To develop the frontier, I will start from basic concepts. Financial systems are constrained by two major market frictions, transaction costs and risks, which can constrain the deepening and broadening of financial systems in developing countries.¹¹ As I will discuss in the following, financial intermediaries and markets arise exactly because these market frictions prevent direct intermediation between savers and borrowers. However, their efficient operation is limited by these same market frictions.

Fixed transaction costs in financial service provision result in decreasing unit costs as the number or size of transactions increases.¹² The resulting economies of scale at all levels explain why financial intermediation costs are typically higher in smaller financial systems and why smaller economies can typically only sustain small financial systems (even in relation to economic activity). They also explain the limited capacity of small financial systems to broaden their financial systems towards clients with need for smaller transactions.¹³ In summary, fixed transaction costs can explain the high level of formal financial exclusion in many developing countries. Fixed costs can also explain the lack of capital markets in many small developing economies.

In addition to costs, the depth and outreach of financial systems, especially in credit and insurance services, is constrained by risks, particularly default risk. These risks can be either contract specific or systemic in nature. While idiosyncratic risks are specific to individual

¹¹ For the following, see a similar discussion in Beck and de la Torre (2007) and Barajas et al. (2013).

¹² These fixed costs exist at the level of the transaction, client, institution, and even the financial system as a whole. Processing an individual payment or savings transaction entails costs that, at least in part, are independent of the value of the transaction. Similarly, maintaining an account for an individual client also implies costs that are largely independent of the number and size of the transactions the client makes. At the level of a financial institution, fixed costs span a wide range—from the brick-and-mortar branch network to computer systems, legal and accounting services, and security arrangements—and are independent of the number of clients served. Fixed costs also arise at the level of the financial system (e.g., regulatory costs and the costs of payment, clearing, and settlement infrastructure) which are, up to a point, independent of the number of institutions regulated or participating in the payment system.

¹³ The effect of fixed costs on financial service provision can be reinforced by network externalities, where the marginal benefit to an additional customer is determined by the number of customers already using the service (Claessens et al., 2003). This is especially relevant for the case of payments systems and capital market development where benefits, and thus participation and liquidity increase as the pool of users expands.

borrowers, projects or policy holders, their management is influenced by the systemic risk environment. High macroeconomic uncertainty and deficient contract enforcement institutions exacerbate agency problems, while the lack of diversification possibilities can hinder the ability of financial institutions to diversify non-agency risks. As systemic risk increases, it enlarges the set of borrowers and projects that are effectively priced out of credit and capital markets. Similarly, it makes insurance policies unaffordable for larger segments of the population. At the same time, the easing of agency frictions in the absence of adequate oversight can create incentives for excessive risk-taking by market participants (by failing to internalize externalities), fueling financial instability.

The efficiency with which financial institutions and markets can overcome market frictions is critically influenced by a number of state variables—factors that are invariant in the short-term (often lying outside the purview of policy makers)—that affect provision of financial services on the supply-side and can constrain participation on the demand-side. State variables, thus, impose an upper limit on sustainable financial deepening in an economy at a given point in time. These variables are either directly related to the financial sector (for e.g., macroeconomic fundamentals, the available technology, contractual and information frameworks underpinning the financial system, prudential oversight) or related to the broader socio-political and structural environment in which the financial system operates. Among the state variables is also the size of the market, and problems in many developing countries are related to the oft-found triple problem of smallness—small transactions, small financial institutions, and small market size – which reduces the possibilities to diversify and hedge risks, while at the same time increasing concentration risks. However, there are also important demand factors, such as the demographic composition of the population that determines aggregate savings rates or cultural and religious preferences or aversion vis-a-vis formal financial services and the concept of interest rate.

Using the concept of state variables allows us to define the financial possibility frontier as a rationed equilibrium of supply and demand. In other words, this is the maximum sustainable depth (e.g., credit or deposit volumes), outreach (e.g., share of population reached) or breadth of a financial system (e.g., diversity of domestic sources of long-term finance) that can be realistically achieved at a given point in time. The financial possibility frontier can move over time, as income levels change, the international environment adjusts, new technologies arise and – most importantly – the overall socio-political environment in which financial institutions work changes. Critically, policy levers including the macroeconomic environment and contractual and information frameworks can be used to push out the frontier, although such benefits are rarely to be reaped in the short-term.

The financial possibility frontier also allows us to distinguish between several challenges to deepen and broaden financial systems in developing countries and the corresponding policies. Depending on where a financial system stands relative to the frontier and where the frontier stands in comparison to other countries with similar characteristics, different policy priorities apply and thus different functions for government. In the following, I will discuss situations, where (i) a financial system is below the frontier, (ii) is above the frontier, and (iii) the frontier is too low.

First, the financial possibility frontier may be low relative to countries at similar levels of economic development due to deficiencies in state variables. Here we can distinguish between the role played by structural and policy variables. Among structural variables, low population density and small market size increase the costs and risks for financial institutions, excluding large segments of the population from formal financial services. In addition, economic informality of large parts of the population lowers demand for as well as supply of financial services. Among policy variables, absence of an adequate legal, contractual and

institutional environment or persistent macroeconomic instability can explain a low frontier. For instance, limited capacity to enforce contracts and, more generally, poor protection of property rights can discourage long-term investments and arms-length financial contracting. Similarly, persistent macroeconomic instability can prevent deepening of markets for long-term financing.

Second, there is the possibility that a financial system lies below the frontier, i.e. below the constrained maximum defined by state variables, due to demand and/or supply-side constraints. Demand-side constraints can arise if, for instance, the number of loan applicants is too low due to self-exclusion (e.g., due to lack of financial literacy) or on account of a lack of viable investment projects in the economy (e.g., as a result of short-term macroeconomic uncertainty). Supply-constraints influencing idiosyncratic risks or those artificially pushing up costs of financial service provision might also serve to hold the financial system below the frontier. For instance, lack of competition or regulatory restrictions might prevent financial institutions and market players from reaching out to new clientele or introducing new products and services. Similarly, regulatory barriers could prevent deepening of certain market segments as can weak systems of credit information sharing or opacity of financial information about firms.

Finally, the financial system can move beyond the frontier, indicating an unsustainable expansion of the financial system beyond its fundamentals. For instance, “boom-bust” cycles in economies can occur in the wake of excessive investment and risk taking (often facilitated by loose monetary policy) by market participants. Experience from past banking crises suggests that credit booms and subsequent busts typically occur in environments characterized by poorly defined regulatory and supervisory frameworks. As underscored by the global financial crisis, financial innovation and regulatory ease can foster rapid

deepening, but also pose challenges for financial stability.¹⁴ Finally, fragility in many developing countries is often linked to governance problems, so that an overshooting of the financial possibility frontier may also be related to limited supervisory and market discipline.

In summary, the policy view sees the problem of financial deepening as one of choosing the right policies. It emphasizes that this mix might very much differ across countries at different levels of economic and financial development and with different needs. It explicitly recognizes the trade-off in some of these policies, including competition. As has become clear, the policy view starts from the existence of market failures and assumes competent and well-meaning political and regulatory authorities. We will come back to this important point in the next section.

3.2. Finance and politics

The policy view of financial deepening argues that government acts in best interest of society, ultimately maximizing the social planner's problem, though possibly with less information available. This public interest view also argues that the market failures inherent in financial markets require a strong government involvement in the financial system beyond regulation and supervision. The private interest view, on the other hand, argues that policy makers, including regulators, act in their own interest, maximizing private rather than public welfare. Politicians thus do not intervene into the financial system to further public welfare but to divert the flow of credit to politically connected firms (Becker and Stigler, 1974). The private interest view is at the core of the political economy view of financial deepening. It stipulates that financial sector policies and regulations are the outcome of political processes.

¹⁴ See Beck et al. (2012) for evidence on the bright and dark sides of financial innovation.

Let me mention several examples that illustrate the political economy view of financial deepening. Take the financial safety net, i.e. the regulation and supervision of banks, lender of last resort, deposit insurance and bank resolution framework. As discussed above, the fragility of banking makes it one of if not the most regulated sector in modern economies. The objective of this regulation is to reduce the external costs of bank failure, i.e. costs not directly borne by a bank's stakeholders, namely contagion costs for other financial institutions, cost of bank runs and loss of savings for depositors and other creditors, and borrowers' costs of losing access to external finance. These costs have been extensively documented in the literature and the fact that they are external to financial institutions' decision takers can explain a higher degree of risk taking by banks than is socially optimal.. Minimizing these external costs has often also led to reducing market discipline on banks' creditors and even equity holders, through bail-out and/or explicit or implicit government subsidies. By encouraging a higher degree of risk taking than socially optimal, a generous financial safety net ultimately undermines its objective of reducing the impact of fragility on external stakeholders.

The trade-off between minimizing external costs of bank failure and enforcing market discipline on banks' stakeholders is reflected in the structure of the financial safety net, including the generosity of the deposit insurance scheme, the likelihood of being bailed out etc. This structure, however, reflects the interests of the different stakeholders of the financial safety net (Kane, 2000). Bank managers and owners have strong incentives to take aggressive and imprudent risk and have obviously strong preferences towards liquidity support and against market discipline. Depositors, and creditors more generally, are mainly concerned about the safety of their deposits and debt claims on banks. They would thus aim at either a very generous deposit insurance scheme and/or resolution framework that foresees the bail-out of all but equity holders. The owners of the financial safety net, ultimately the

taxpayers, want to minimize the external costs of bank failure, while at the same time foster market discipline to reduce the risk of taxpayer financed bail-outs. It is the managers of the safety net, mostly regulatory authorities, however, who take the decision. Whose interests they represent depends on the institutional structure of bank regulation and supervision and the political environment. Figure 3 illustrates the trade-off between minimizing external costs and fostering market discipline. Specifically, the chosen resolution technique will reflect both legally and institutionally available options on the possibility frontier (e.g. merger and acquisition with regulatory encouragement, purchase and assumption, or bridge bank) and the preferences of the safety net managers reflecting more the interests of equity holders and creditors or those of taxpayers, as incorporated in the indifference curve.

This political view of finance is confirmed by empirical work by Demirguc-Kunt, Kane and Laeven (2008) who provide empirical support for the political influence on the design of financial safety nets. Specifically, they show that countries with more undercapitalized banks and thus higher incentives to take aggressive risks adopt more generous deposit insurance schemes, as do countries with more political space for special interest groups.

Another example is the establishment of credit registries. While cross-country comparisons have shown the importance of credit information sharing for financial deepening, especially in developing countries, there are both winners and losers of effective systems of credit information sharing.¹⁵ Specifically, a wider sharing of information about borrowers, which allows these borrowers in turn to build up reputation capital, undermines information rents of incumbent banks. Bruhn, Farazi and Kanz (2013) show that countries with lower entry barriers into the banking market and thus a greater degree of contestability in the banking system are less likely to adopt a privately-run credit bureau as are countries characterized by

¹⁵ See Pagano and Jappelli (1999), Djankov, McLiesh and Shleifer (2007) and Brown, Jappelli and Pagano (2011) for empirical evidence on the effect of credit registries on financial deepening.

a high degree of bank concentration. In these countries, incumbent banks stand to lose more monopoly rents from sharing their extensive information with smaller and new players.

Interestingly, these relationships do not hold for public credit registries (mostly at Central Banks), which underlines the limitations of purely private institutions and the positive role of governments.

On a more general level, recent theoretical and empirical work has modeled and estimated the relative power and coalitions between labor and firm insiders, including management and majority shareholders, against minority shareholders to explain cross-country differences in contractual institutions underpinning financial institutions and markets (Pagano and Volpin, 2005, and Perrotti and von Thadden, 2006). An alternative explanation is the experience of the middle class losing their financial assets due to inflation in the period between the wars and subsequent political resistance against vibrant financial markets. This went hand in hand with a decision in these countries toward state-funded and -managed pension funds, with lower need and demand for private pension funds and thus lower demand for protection of individual investor rights (Perotti and Schwienbacher, 2009).

3.3. The historical determinants of financial development

A third view, directly related to the finance and politics view sees today's level and structure of financial systems as result of historical processes and thus reflections of historic political conflicts. The historical view of financial deepening sees strong persistence in financial systems. In the following, I will mention a few theories that focus on historical determinants of financial deepening.

One set of theories sees historical events in Europe more than 200 years ago as shaping the legal and regulatory frameworks across the globe today through their influence on political

structures in these countries. Specifically, the legal origin theory sees political conflicts in England and France in the medieval age and during the Glorious and French Revolutions shaping the role and independence of judiciaries in these countries. Different points on the trade-off between centralized power to avoid civil unrest and freedom to allow economic activity in England and France during medieval times influenced the government's approach to the judiciary, with France taking a much more centralized approach than England (Glaeser and Shleifer, 2002). Alternatively, one can consider the role of the judiciary during the Glorious Revolution, where the judges sided with the winning Parliament, and the French Revolution, where the judges were on the losing side. This resulted in a strengthening of the judiciary's independence but also their role in lawmaking in England, while it reduced the judiciary to an executing role in France, with law- and rule-making concentrated in legislature and executive. However, this also resulted in a different degree of flexibility and adaptability of the legal systems in England and France. England's legal system was more adaptable due to a stronger role for jurisprudence and reliance on past decisions and the ability of judges to base decisions on principles of fairness and justice, whereas France's legal system was more rigid, based on bright-line rules and little if any role for jurisprudence and previous decisions.¹⁶

Through the Napoleonic Wars in the early nineteenth century, the Napoleonic legal tradition was spread throughout continental Europe. Subsequently, legal traditions were spread throughout the rest of the world, mostly in the form of colonization, with the British common law tradition adopted in all British colonies and the Napoleonic civil code tradition transplanted to Belgian, Dutch, Portuguese, Spanish and French colonies. The legal structures originating in these different traditions have proven to be very persistent, especially in

¹⁶ Other important groups constitute the German and the Scandinavian legal systems, which are based on similar political structures as the French civil code tradition but have a more flexible and adaptable structure.

developing countries. Take the example of the Napoleonic legal tradition. First, while the European nations overcame the rigidities of the Napoleonic code, they exported its antagonism toward jurisprudence and its reliance on judicial formalism to minimize the role of judges. This comes with the tradition of avoiding open disputes about legal interpretation and the aversion against jurisprudence. Second, as the Napoleonic doctrine sees judges as purely executing civil servants, judges frequently “are at the bottom of the scale of prestige among the legal professions in France and in many nations that adopted the French Revolutionary reforms, and the best people in those nations accordingly seek other legal careers” (Merryman, 1996, p. 116). Third, and as a consequence of the previous point, there is a stronger reliance on bright-line laws to limit the role of the courts. Once a country adopts the bright-line approach to lawmaking, this can lead into a trap, as courts will not be challenged to develop legal procedures and methods to deal with new circumstances, thus retarding the development of efficiently adaptive legal systems (Pistor et al., 2002, 2003). By the same token, Common Law systems can be persistent, given the high social reputation of judges attracting talent to this profession and the role of jurisprudence allowing for a vibrant legal debate fostering legal innovation.

Empirical evidence has indeed shown that countries with a Napoleonic legal tradition have less independent judiciaries and less adaptable legal systems.¹⁷ Countries with a Napoleonic legal tradition have also—on average—weaker property rights protection and contractual institutions that are less conducive to external finance, including weaker protection for minority shareholders and secured and unsecured creditors. Enforcement of contracts is more costly and slower in civil code countries as is the registration of property and collateral. This has the overall effect of smaller and less effective financial markets in civil code countries (Beck, Demirgüç-Kunt, and Levine, 2003a).

¹⁷ La Porta et al. (2004) and Beck, Demirgüç-Kunt, and Levine (2003b).

An alternative explanation refers not to the identity of the colonizing power but the mode of colonization. Distinguishing between settler and extractive colonies, Acemoglu, Johnson, and Robinson (2001, 2002) show that the former developed stronger property rights protection than the latter, given the political and societal structures that natural resource extraction in the latter implied. The initial colonization mode, in turn, was determined by the disease environment that European colonizers encountered as well as the incidence of native population in the colonized areas. Areas with more hostile disease environments and/or large native population concentrations were more likely to be settled in an extractive mode. The political structures developed during the colonization period endured after independence, therefore also making the weak property rights and contract enforcement institutions persistently weak beyond independence.

Empirical evidence shows the importance of the colonization mode for the development of financial markets today (Beck, Demirgüç-Kunt, and Levine, 2003a). Countries that were initially colonized in an extractive mode have less developed financial markets today. This effect is in addition to the effect of the legal tradition discussed above. Alternative historical explanations for cross-country variation in financial sector development and structure focus on religion (Stulz and Williamson, 2003) and ethnic and consequently political fragmentation. There are also recent studies that focus on specific cultural traits, such as risk avoidance as determinants of the development and structure of financial systems (Kwok and Tadesse, 2006).

Beyond using the colonization experience to document the importance of initial political structures and resource distribution, the legal tradition and endowment views show the importance of political structures and persistence in financial system development. These hypotheses suggest that changes in the legal institutions that underpin thriving financial

markets are only possible under outside pressure or exogenous shocks, such as new technologies, dramatic socio-political change, or globalization. Similarly, changes in financial sector policies are more likely under exogenous pressure. Let me give a few examples.

In the 1990s, the transition economies of Central Europe faced the challenge to build market-based financial systems from scratch, while the continuing relationships between banks and incumbent but insolvent enterprises and the resulting fragility had severe negative macroeconomic repercussions. The need for recapitalization of banks due to non-performing loans resulted in rising fiscal deficits, monetary overhang, and thus inflation. The solution to this continuous cycle of repayment problems, accumulation of nonperforming assets, recapitalization, and inflation was the adoption of a disciplining tool to impose a hard budget constraint on enterprises and banks alike. Credibly committing to monetary stability in turn forced the necessary reforms in the financial sector to avoid future recapitalization. In many countries, banks were therefore not only privatized but sold to foreign banks, which helped sever the links between state-owned enterprises and banks.¹⁸ What essentially was needed was a straightjacket that tied policy makers' hands and prevented them from bailing out financial and nonfinancial institutions. Foreign bank entry as well as the perspective of EU accession thus provided the necessary outside discipline to transform financial systems.

Similarly, in Brazil the introduction of the Real Plan in 1994 that terminated the long-running inflationary tradition prevented the government from bailing out banks owned by individual states, as it had done several times before, and thus forced a complete restructuring of these institutions (Beck, Crivelli, and Summerhill, 2005). In Argentina, the establishment of a currency board in 1991 started the restructuring process of provincial banks (Clarke and Cull,

¹⁸ See Giannetti and Ongena (2009).

2002). Technological innovation was critical in driving branch deregulation in the United States in the 1970s and 1980s. As shown by Kroszner and Strahan (1999), the invention of automatic teller machines (ATMs), in conjunction with court rulings that ATMs are not bank branches, weakened the geographical bond between customers and banks, and improvements in communications technology lowered the costs of using distant banks. These innovations reduced the monopoly power of local banks, weakening their ability and desire to fight against deregulation, ultimately leading to branch deregulation. The timing of this deregulation across states, in turn, was very much a function of initial conditions, ranging from party politics to the importance and independence of insurance companies.

The three approaches to explain cross-country variation in financial sector development are not exclusive. It is more, they are closely linked. Political structures that either hold back or foster financial deepening are often related to historic determinants. These same political structures also influence the policy areas. Focusing exclusively on the policies necessary for financial sector deepening, while ignoring political constraints, often driven by history, has therefore often led to limited results.

One interesting example to illustrate this point is Nigeria, which undertook a broad program of financial liberalization in the mid-1980s, including liberalization of interest rates and entry into the banking system. While ending direct rationing of foreign exchange for the real sector, however, the government maintained a multiple exchange rate regime, thus opening a new area of arbitrage and rent seeking for financial institutions that had privileged access to foreign exchange auctions.¹⁹ The consequence was the quick entry of many new players into the banking system, especially merchant banks that specialized in foreign exchange operations. In the following years, the number of banks tripled from 40 to nearly 120,

¹⁹ The arbitrage potential arose from the spread between the official exchange rate and the interbank rate. After the trade liberalization, which was part of the SAP, there was an increasing demand for trade-related financing. Lewis and Stein (2002) describe the different arbitrage possibilities in more detail.

employment in the financial sector doubled and the contribution of the financial system to GDP almost tripled (Lewis and Stein, 2002; Beck, Cull and Jerome, 2005). The financial sector boom, however, was accompanied by financial dis-intermediation, with deposits in financial institutions and credit to the private sector, both relative to GDP, decreasing dramatically. The increasing number of banks and human capital in the financial sector was thus channeled into arbitrage and rent-seeking activity rather than financial intermediation. By 1990, the bubble started to burst.²⁰

4. The role of government

Across all three approaches to financial sector deepening, the government has a central role, although behind the three different views lie two very different views of the behavior of governments. Under the public interest view, it is the government that is responsible for the policies to foster a sound and efficient financial system. This view works under the assumption of competent and benevolent political and regulatory authorities. Under the private interest view, government policies are determined by the interests of the ruling elite.

To categorize and more easily discuss the different policy levers, I would like to relate back to the concept of the financial possibility frontier discussed above (Beck and de la Torre, 2007; Barajas et al., 2013). First, *market developing policies* help push out the frontier. Cross-country comparisons suggest that macroeconomic stability is critical for financial deepening (Boyd, Levine and Smith, 2001), while country experiences suggest that macroeconomic stability is a necessary condition for unlocking the financial deepening process. For instance, deposit mobilization and credit expansion in transition economies only took off when disinflation became entrenched (IMF, 2012). Smaller countries are less likely

²⁰ On a side note, we can also link this example to the above mentioned distinction between the facilitating view of finance and the financial center view, as the Nigerian experience is consistent with short-term growth benefits as well as higher volatility of a large financial system.

to be hosts to thriving financial systems as they lack the necessary scale for a diversified, competitive landscape of institutions and markets (Bossone, Honohan and Long, 2002). Accessing the vast risk-pooling and diversification opportunities offered by international capital markets, while adopting appropriate macro-prudential policies to dampen the impact of potentially disruptive volatile international capital flows, can be important for such economies. Constraints imposed by market size can be partly overcome through regional integration and foreign bank entry, although risks have to be carefully managed, as evidenced by the global financial crisis. An extensive literature has shown that strengthening informational and contractual frameworks (e.g., building or upgrading of credit registries, collateral, risk insurance) and providing supporting market infrastructure can help to push out the frontier (La Porta et al., 1997, 1998; Djankov, McLiesh and Shleifer, 2007; Levine, Loayza and Beck, 2000).

Market-enabling policies help push a financial system closer to the frontier, and include more short- to medium-term policy and regulatory reforms. For instance, policies aimed at fostering greater competition can result in efficiency gains, as illustrated, by the recent vigorous expansion of profitable micro- and consumer lending across many developing countries. Such policies can also include removing regulatory impediments and reforming tax policies. Enabling policies are not just limited to allowing new entry and facilitating greater contestability, but also include “activist” competition policies, such as opening up infrastructures (e.g., payment systems and credit registries) to a broader set of institutions, or forcing institutions to share platforms and infrastructure. Beyond targeting competition, market-enabling policies can address hindrances such as coordination failures, first mover disincentives, and obstacles to risk distribution and sharing in financial markets by, e.g., providing partial credit guarantee schemes and or establishing joint platforms.

Political economy restrictions, however, might prevent countries from adopting such policies. I already discussed the example of the establishment of credit registries, which undermine information rents of incumbent banks. Perotti and Volpin (2010, 2012), for example, show that in countries with lower political accountability and diffusion of information and thus more dominant elites corporate governance is less effective and there is lower entry of new firms into industries more reliant on external finance.

A final set of policies aim at preventing the financial system from moving beyond the frontier (i.e. the sustainable long-term equilibrium.) This set of *market-harnessing or market-stabilizing* policies encompass risk oversight and management, and include the regulatory framework, macro-economic and macro-prudential management. These include upgrading regulatory frameworks to mitigate risks stemming from increased competition from new non-bank providers of financial services, carefully calibrating the pace of financial liberalization to the prudential oversight capacity, and establishing cross-border regulatory frameworks to mitigate risks stemming from increased international financial integration. Such policies are also important on the user side (e.g., minimizing the risk of household overindebtedness, through financial literacy programs and consumer protection frameworks).

As discussed above, the adoption of appropriate regulatory frameworks might be prevented by undue influences over supervisors. A large literature has pointed to the risk of both regulatory capture – regulators representing the interests of the regulated, i.e. banks – and political capture – regulators representing short-term political interests. Regulatory capture biases regulators towards liquidity support; similarly, political capture makes regulators care more about today’s economic consequences of failure resolution than the dynamic effect of the moral hazard risk created by these actions. Given the short-term horizon of politicians, captured regulators would thus heavily discount the future moral hazard repercussions of

today's resolution actions. Empirical evidence supports the bias in resolution decisions if supervisors are subject to political capture (Brown and Dinc, 2005, Bongini, Claessens and Ferri, 2001; Imai, 2009).

It is important to note that the same financial sector policy can be interpreted under the public interest and the private interest view. Take the expansion of housing finance in the U.S. in the 1990s and 2000s. The public interest view would interpret the expansion of access to mortgage finance as pushing out the frontier by financial innovation, including credit scoring and securitization techniques. In hindsight, it very much seems that access to housing might have overshoot the frontier of sustainable access, which therefore led to a bubble and subsequent bust. However, both the ex-ante and the ex-post interpretation of the housing boom and bust cycle are so far consistent with the public-interest view. Mistakes made during the crisis can be explained with mis-conceptions of where the frontier really was and honest policy mistakes.²¹ The private interest view would rather focus on political interests pushing for housing credit and higher home ownership, with policies such as the Community Reinvestment Act and guarantees provided by government-sponsored financial institutions, such as Fannie Mae and Freddie Mac. As laid out convincingly by Rajan (2010), in the absence of easy solutions to reduce income inequality, there was a political focus on reducing consumption inequality, which included boosting access to credit.

5. Implications for current policy debates

The discussions so far are relevant for developing and developed countries alike and we can apply the literature and the framework developed so far to several current policy debates.

²¹ See, however, Levine (2010) detailing out the intentional “looking the other way” by U.S. regulators as new sources of risk arose.

Take first the recent Global Financial Crisis. What effect does this crisis have on our thinking about the financial sector and its role in the economy? The finance and growth literature and the experience of the recent crises in the developed world have shown that financial sector deepening is not a goal in itself, but rather a tool for economic growth. While financial liberalization in the 1980s and 90s across the world might have helped in structural transformation and economic development, the focus on the financial sector as a growth and export sector in itself in several European countries, with a consequent regulatory bias and an implicit safety net subsidy, has not only contributed significantly to the current crisis but might also have exacerbated its extent. Political pressure in the U.S. to expand housing credit to address consumption inequality, with the consequent regulatory bias in favor of credit expansion, was a root cause of the sub-prime mortgage crisis. It is time to focus again on the facilitating rather than self-serving role of finance and focus on sustainable intermediation.

Post-crisis regulatory reform should therefore have two complementary goals: making finance safe for taxpayers and society and maximizing the growth benefits of finance. By constructing a bank resolution framework that forces risk decision takers to internalize external failure costs to a larger extent, these reforms can also reduce the safety net subsidy that can partly explain why the financial system has grown so large in spite of decreasing if not negative marginal social returns to further financial deepening as discussed above.

Focusing regulatory and other financial sector policy on the different services that the financial system provides for the real economy – payment, savings, credit and risk management – can help increase the growth benefits of the financial sector.

As important, however, is it not to lose sight of the important services provided by the financial sector for a functioning modern economy, as financier for new enterprises and innovation and offering important risk management tools for households, enterprises and

governments. Even more important, while further financial deepening might not be as important a growth factor in developed economies, all the available evidence continues to point to the critical role of finance in developing countries to help them grow faster and reduce incidence and extent of poverty at a swifter rate.

Second, our discussions have repercussions for the on-going regulatory reform discussions on the global, European and national level. It is critical to reduce the linkages between banks, regulatory and politicians. Even if one does not subscribe to Simon Johnson's view that US politics is completely dominated by Wall Street (Johnson and Kwak, 2010), there is an undue influence of the financial sector on governments around the world. Introducing "progressive taxation" on large banks to reduce the too-big-to-fail phenomenon is critical and initial attempts as under Basel 3 might not be enough. In order to further reduce this undue influence, the strengthening of independent and accountable regulatory authorities, with strong incentives to blow whistle rather than try to not have fragility "on their watch". In addition to claw backs for bankers, it might be time to also consider such structures for regulators (Kane, 1989). Preventing group think among supervisors is also critical and therefore more competition among regulators rather than consolidation might be called for. Disciplining the regulator through a sentinel construction, an entity to act on behalf of taxpayer and public to monitor and improve regulatory structures and policies (Levine, 2012; Barth, Caprio and Levine, 2012) or through an incentive audit, which focuses less on laws and rules, but the underlying incentive structures for bankers and regulators (Cihak, Demirguc-Kunt and Johnston, 2013) might be useful solutions. The most critical part of the overall regulatory reform debate, as already discussed above, should be a resolution framework that forces banks to internalize the external costs of bank failure. Bail-in rules and living wills for systemically important financial institutions (for which these externalities are especially strong) might be helpful in this context.

Third, we can take the discussions so far and apply them to the current discussion on the banking union for the Eurozone. One can take the pure policy or public interest view and discuss what reforms are necessary to (i) help the Eurozone emerge out of the crisis and (ii) make the currency union sustainable in the long-term. Most economists agree that moving to a supranational financial safety net is critical in this context (see Beck, 2012, and the different pieces therein). The experience over the past years, however, has shown that political economy constraints might be too strong. First, even if the banking union is beneficial for the Eurozone as such, it might not be for individual countries, given differences in the external costs of bank failures (Beck and Wagner, 2013). Second, a banking union would imply certain external benefits that are not being internalized by individual national governments, which are at the core of the decision process. Third, the mixing of the debate on the resolution of the current crisis with a forward-looking banking union delays resolution (thus exacerbating the crisis), while making creditor countries more reluctant to agree to a mutualization mechanism that would imply covering past losses.

6. Conclusions – what have we learned?

This paper takes a fresh view on the finance and growth literature, emphasizing important non-linearities, using the concept of the financial possibility frontier to discuss the constrained optimum of financial depth and different policies to achieve long-term sustainable level of financial development. I differentiated between different explanations for cross-country variation in financial development, which are based on different views of the role of government in finance.

Where does this discussion leave us in terms of the role of government? On the one hand, effective authorities are needed to create the policy space and institutional framework for financial institutions and markets to flourish, but internalize all consequences of their risk

decisions. On the other hand, we have learned that governments cannot necessarily be trusted, which leaves us with a conundrum of the financial sector reform, as it is often the countries with the most captured regulatory and government authorities that need a strong role for government to overcome market failures. In line with Acemoglu's (2003) argument that a Coase Theorem is impossible on the country level, the efficiency and distributional repercussions of financial sector reform cannot be separated.

Experience across countries has given some insights into possible solutions, although there is no silver bullet. Independent but accountable regulators can certainly help, though additional safeguards against the "not-on-my-watch" phenomenon of forbearance are needed. Moving regulatory and supervisory processes to the supra-national level, thus more removed from local political influences might be helpful, although it does raise concerns of accountability. Most important, however, is that political economy constraints have to be taken into account when designing financial sector reform programs. The optimal role of government intervention in the financial sector is a function of the overall political structure, including checks and balances and accountability in a country. There is thus a need to move from best-practice to best-fit approaches. Ultimately, all financial sector policy is local!

The same "local circumstances rule" argument applies to historic circumstances. Legal reform has to have a different face according to the legal tradition of a country. In spite of their shortcomings and deficiencies, court systems across many former British colonies still have a reasonable reputation. They can rely on a large body of case law and precedents, from London and other parts of the former British Empire. What courts in many common-law countries across the developing world are lacking are capacity and financial sector-specific skills. The introduction of commercial courts might be helpful in this context. The situation in many Civil Code developing countries is different, as courts in these countries have

deficiencies along many dimensions and suffer from very low reputations. In these countries, establishing alternative dispute resolution systems might be more helpful.

Globalization can be a strong force for governance reform and accountability, as the case of the transition economies in Central and Eastern Europe has shown. Cross-border banks can bring in competition and necessary innovations, but they can also bring in additional sources of fragility, as the same example of the Central and Eastern Europe countries has shown during the recent crisis. Adopting regulatory frameworks accordingly is therefore important. Critical, the positive impact of foreign bank entry on financial deepening and real sector growth depends on the institutional infrastructure in a country (Claessens and van Horen, 2014).

On a broader level, the experiences I have discussed so far show the importance of competitive and contestable financial markets to reap the benefits of financial innovation and reduce long-term monopolistic rents. Yes, informational rents are at the core of many relationships and innovation often needs to be incentivized with rents, but there is a strong case for “sunset clauses” for such rents, to the benefit of long-term financial deepening. In the same vein, a focus on financial services rather than on specific institutions or markets is called for.

What does the literature so far imply for future research in finance and growth? First, there have been attempts to reconcile the long-term positive effects of finance with the negative short-term effects of rapid credit growth (Loayza and Rancière, 2006). More research along these lines is certainly needed. Furthermore, recent evidence that financial sector deepening might actually have a negative effect on growth beyond a certain threshold has raised additional questions on the optimal size and resource allocation to the financial sector. Operationalizing the frontier concept with aggregate and micro-data to thus identify the

location of a country's financial system vis-a-vis the frontier and the most effective policies to close the gap to the frontier, push out the frontier or prevent the system from moving beyond the sustainable maximum will be important (Beck and Feijen, 2013).

As important as these advances at the aggregate level, however, will be advances at the micro-level, and specifically on two fronts. First, randomized experiments involving both households and micro- and small enterprises will shed light on the effect of access to finance on household welfare and firm growth. One of the challenges to overcome will be to include spill-over effects and thus move beyond partial equilibrium results to aggregate results. Second, further studies evaluating the effect of specific policy interventions can give insights into which policy reforms are most effective in enhancing sustainable financial deepening and positive real sector outcomes.

There are also important research questions on the politics of financial sector reform. How can one build constituencies for financial sector reform? What are the best entry points to expand the financial system? The experience with MPesa in Kenya has shown that having a telecommunication provider offer payment services has not only expanded the share of population that are linked to the formal financial system, but has also increased competition in the banking system. Other questions in this context refer to the roles of media to raise awareness and help pave the way for sustainable financial sector reform and of financial literacy to help consumers take informed decisions.

The literature on financial development has come a long way since Goldsmith (1969) first documented a positive correlation between financial and economic development, and financial systems across the developing world have come a long way since Maxwell Fry (1988) documented the financial repressive policies holding back the power of vibrant

financial markets across most of the developing world. The next generation of financial sector research promises to be as exciting as the previous one.

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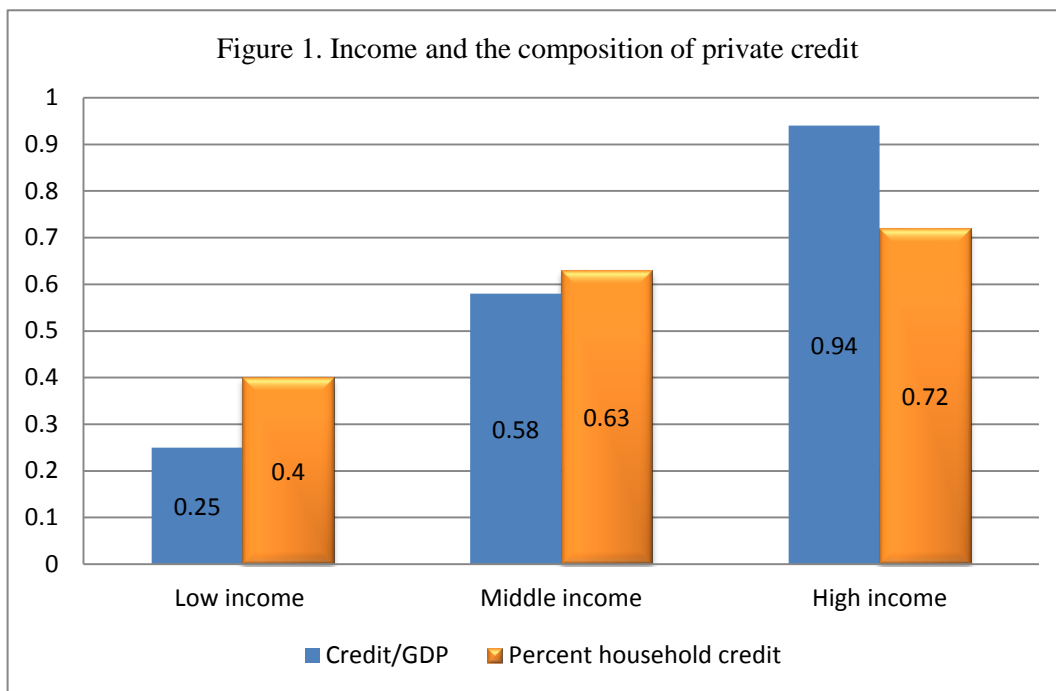
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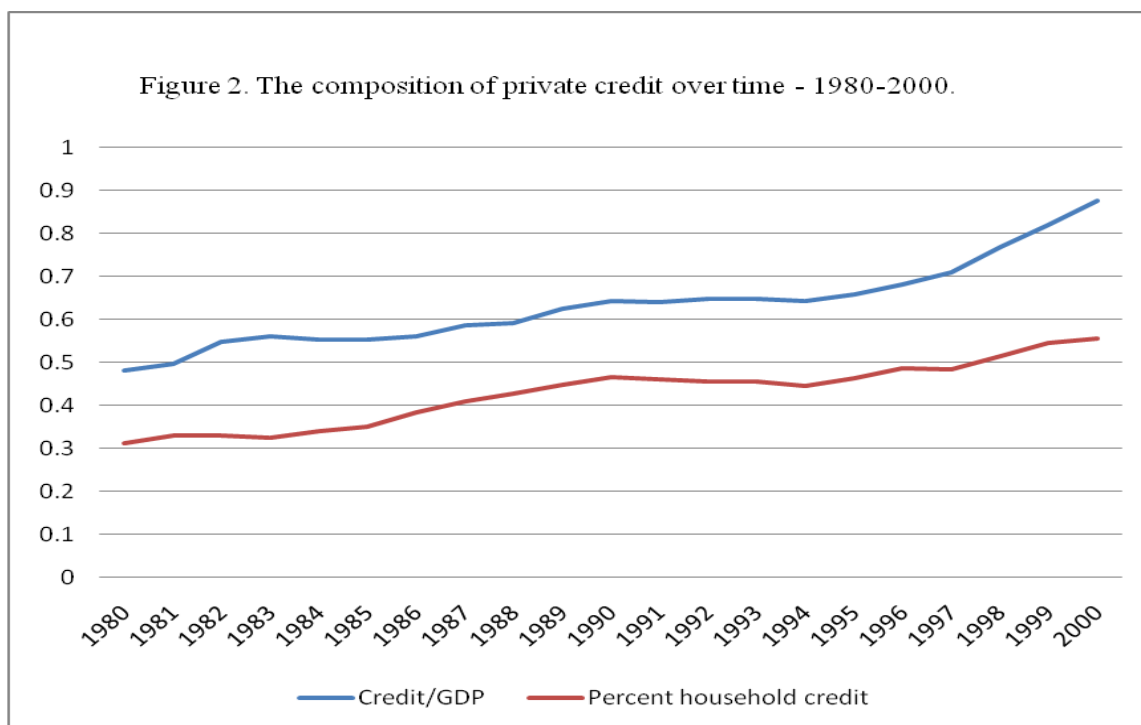
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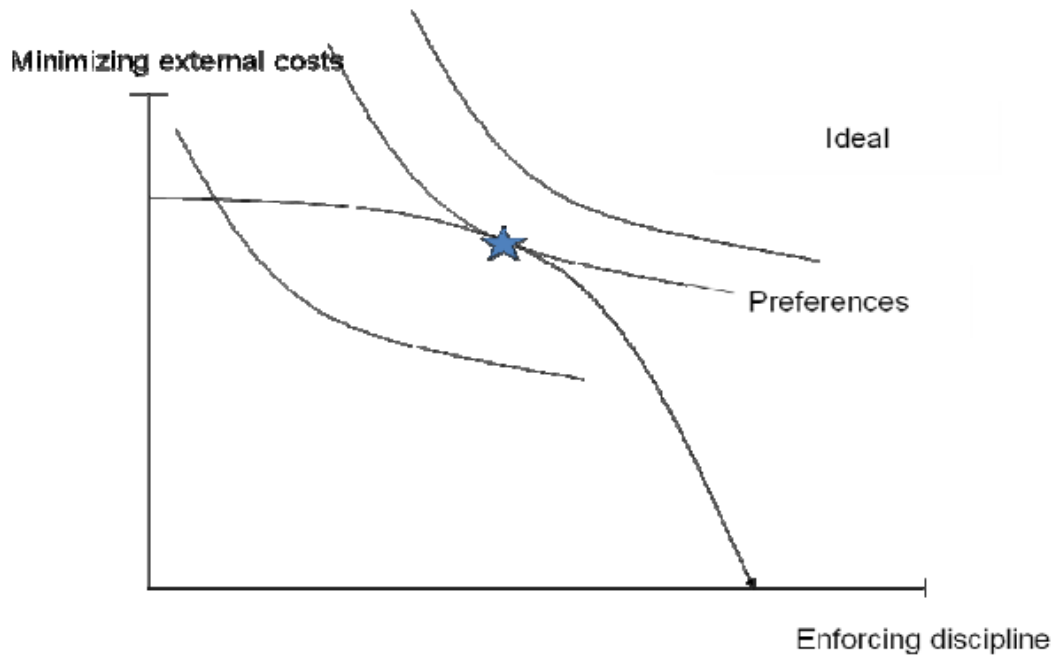


Source: Beck, Büyükkarabacak, Rioja, and Valev (2012)



Source: Beck, Büyükkarabacak, Rioja, and Valev (2012)

Figure 3: Bank resolution: preferences and options



Source: Beck (2011)