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FINANCE, INSTITUTIONS AND DEVELOPMENT: LITERATURE SURVEY AND RESEARCH AGENDA



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Abstract

This paper takes stock of and provides a critical review of several literatures, notably the theoretical and empirical work on finance and growth and studies on the determinants of financial development. These two literatures are linked as the sustainable expansion of the financial sector is constrained by the institutional framework it operates in. Important interactions between financial sector and institutional development are discussed as well as policy implications and a research agenda going forward.

Note: Comments by participants at a workshop in Namur are gratefully acknowledged.

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1. Introduction

For better or worse, the financial sector has a critical role in modern market economies. While it can be a force for development, by providing basic payment and transaction services, intermediating society's savings to its best uses, offering households, enterprises and governments risk management tools, it can also be a source of fragility, as we have been reminded during the recent Global Financial Crisis and the ongoing Eurozone crisis, but also by numerous banking crises in emerging and developing markets. At the same time, the financial sector is critically connected to the overall institutional framework in a country. Given that the intertemporal of financial transactions makes it one of the most "institution-sensitive" sector, a financial system can only thrive in an environment with effective institutions that reduce agency conflicts between contract parties. There might also be reverse influences from a thriving financial sector to institutional strengthening of a country.

This paper summarizes the current state of knowledge across different literatures relevant for economic development. Specifically, it discusses the evidence on the relationship between financial sector deepening and economic development, the different channels and mechanisms through which finance and development interact, but also the open questions and challenges. In its main part, the paper will also discuss the role of institutions in the relationship of finance with economic development, including possible bi-directional causality, but also important complementarity in their respective impact on development. This paper discusses the interaction between financial sector development and institutional development, how they influence each other, and how their respective impact on economic development is conditioned on the quality of the other.

An extensive empirical literature has shown a positive relationship between financial development and economic growth for developing and emerging markets, though with important non-linearities. A more recent literature has explored the relationship between access to financial services and individual welfare and firm growth. A separate, equally extensive literature has shown a positive relationship between rapid credit growth and systemic banking distress and economic crises. Several recent papers have shown an important trade-off between the growth benefits of financial deepening and fragility risks. This trade-off is not surprising, but can be directly explained by theoretical models of financial intermediation.

Financial deepening does not happen in an institutional vacuum. Theory and empirical research has shown the importance of the institutional framework for financial deepening, but also financial stability, including the contractual framework, the informational environment and private property right protection. These same elements of the institutional framework, however, are also important factors for overall economic development, so that the question arises to which extent financial sector development is simply a by-product of institutional development or a driver. Financial sector development in turn can also contribute to institutional deepening, by breaking up entrenched relationships and fostering competition.

There is also an important question on the role of public vs. private institutions as well as formal vs. informal institutions in their relationship with financial sector deepening. This question has recently arisen in the context of the rapid development of the Chinese financial system, mostly in the absence of formal Western institutions. This debate has also critical policy repercussions for financial sector policymakers in low-income countries tasked with financial sector development.

The question on how to foster efficient and stable financial system is critical and will be extensively discussed. One can broadly distinguish between three different strands of the literature, where the first focuses on specific policies and institutions. The second strand focuses on the interest of different stakeholders and links (the lack of) institutional reforms conducive to financial sector deepening back to the political structure of the society. A third strand sees these political constraints in a historical context, where only outside shocks can change the equilibrium and thus lead to reforms. In terms of policy messages, it is important to see these three strands as complementary.

A final word of caution. This survey is related to and builds on a large number of already existing surveys in the different areas that are being covered. Rather than being comprehensive, it tries to be selective but consistent in linking the different literatures to each other.

The remainder of the paper is structured as follows. The next section provides a critical overview of the finance and growth literature, with an emphasis on low-income countries. Section 3, the main part of the paper, discusses extensively the relationship between the institutional framework of a country and financial sector deepening. Section 4 concludes with policy implications and a forward looking research agenda.

2. Finance and growth

There is large variation in the development and efficiency of financial systems across the world. On average, low-income countries have the shallowest financial markets, with few providers, few and costly products, and short maturities. Consequently, volumes and the number of transactions are low and only a small share of the population has access to the formal financial system. As I will discuss in the following, an extensive theoretical and empirical literature has discussed the importance of underdeveloped financial markets for economic development, especially economic growth and poverty alleviation.

2.1. Finance and Growth – towards a consensus view?

Before discussing the empirical literature, it is important to note that 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 economies[1], (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.[2] 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 sector might also attract too many resources relative to the real sector, with negative repercussions for growth.[3] A priori, it is thus not clear whether financial sector development contributes to economic development or not. And even it we find a positive impact, the importance of financial sector development relative to other policy areas is not either.

[1] See, for example, McKinnon (1973) and Acemoglu and Zilibotti (1997).
[2] See, for example, Bencivenga and Smith (1991) and King and Levine (1993b).
[3] See, for example, Philippon (2010) and Bolton, Santos and Scheinkman (2011).

An extensive empirical literature has tested these theoretical predictions and has, to a large extent, shown a positive relationship between financial sector development and economic growth. What started with simple cross-country regressions, as used by King and Levine (1993a, b), 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 of the literature). While each methodology is subject to specific criticisms, the overwhelming evidence across different methodologies and aggregation levels provides robust reassurance that financial sector development should be on policymakers' priority list for economic development.

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.[4] Finance also allows existing firms to exploit growth and investment opportunities, and to achieve larger equilibrium size.[5] 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.[6] 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.[7] In addition to capital accumulation and resource allocation, a possible third channel through which financial sector development affects growth is by changing the cost-benefit trade-off between working in the formal or informal sector, with theoretical and

[4] Klapper, Laeven and Rajan (2006); Aghion, Fally and Scarpetta (2007); Ayyagari, Demirgüç-Kunt and Maksimovic (2011).
[5] Rajan and Zingales (1998); Beck, Demirguc-Kunt and Maksimovic (2005, 2006).
[6] Claessens and Laeven (2003); Demirguc-Kunt, Love and Maksimovic (2006).
[7] Beck et al. (2005, 2008).

empirical evidence clearly pointing to financial sector development contributing to a higher share of firms working in the formal rather than informal sector.[8]

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, as is the case for many low-income countries. 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 evidence has also established favorable effects of financial deepening on income distribution. Similarly, as in the case of the effect of finance on growth, theory does not make unambiguous predictions for the relationship between financial sector development and poverty alleviation. On the one hand, theory predicts that due to entry barriers only richer population segments will benefit from financial sector development, thus widening income inequality.[9] On the other hand, theory predicts that barriers of indivisibilities and information asymmetries are more binding for the poor, so that they stand to benefit most from financial sector development.[10]

Cross-country evidence has shown that countries with higher levels of financial development see faster drops in income inequality and poverty rates, results that are confirmed with in-depth studies for individual countries, including the U.S., Thailand and India.[11] Tentative evidence also suggests that this poverty-reducing effect of financial deepening comes again more through resource allocation and indirect effects through labor and product markets,

[8] Straub (2005); Beck, Lin and Ma (2014)
[9] Greenwood and Jovanovic (1990)
[10] Galor and Zeira (1993); Aghion and Bolton (1997); Galor and Moav (2004)
[11] See Beck, Demirguc-Kunt and Levine (2007), Beck, Levine and Levkov (2010) and Ayyagari, Beck and Hoseini (2013).

rather than through expanding access to credit to a larger share of population. I will get back to this topic below in section 2.5.

2.2.Finance and growth – post-2008 divergence

While most of the finance and growth literature has focused on the average effect of financial development on economic growth, non-linearities were taken into account early on, such as by including financial sector indicators in logs rather than levels and by dropping specific country groups (such as commodity exporters) for which many of the standard predictions of growth theory are not assumed to hold. More recent research, however, has focused more closely on these non-linearities in the relationship between finance and growth. Specifically, 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, b) show that the effect of finance on growth is strongest for middle-income countries. These findings are consistent with Rousseau and D'Onofrio (2013) who show that it is monetization rather than financial intermediation that seems to matter for growth across Sub-Saharan Africa. Aghion, Howitt, and Mayer-Foulkes (2005) argue that the impact of finance on growth is strongest among low- and middle-income countries that are catching up to high-income countries in their productivity levels and fades away as countries approach the global productivity frontier.[12]

There are several, not exclusive, explanations for such non-linearities, as put forward by the recent literature and partly informed by the recent crisis, though most of these relate more to middle- and high-income than low-income countries. 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. In addition, the financial sector has gradually extended its scope beyond the traditional activity of intermediation towards so-called "non-intermediation" financial activities (Demirgüc-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. In low-income countries, on the other hand, financial development indicators might capture mostly short-term transactions that have little

[12] More recently, Arcand, Berkes, and Panizza (2015) 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.

impact on long-term growth. A second reason for non-linearities might be the beneficiary of the credit as argued by Beck et al. (2012) who explore the differential growth effects of enterprise and household credit. Consistent with theory they find that the growth effect of financial deepening comes through enterprise rather than household credit. Most of the financial deepening in high-income countries, has come through additional household lending, which thus might explain the insignificant finance-growth relationship across high-income countries.[13] 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). Finally, and related, the financial system can grow too large due to the safety net subsidy we will discuss below that results in too aggressive risk-taking and overextending of the financial system.

One important and rather under-researched group of countries concerns the natural resource rich countries and the question whether financial development is as important for this group of countries as for other developing and emerging markets. Beck (2011) shows that the importance of financial sector development for economic growth is as important in commodity-based economies, but that there is evidence for a Dutch disease phenomenon in financial sectors in these countries, crowded by the natural resource related activities. On the other hand, the natural resource curse might expand to the financial sector; Beck and Poelhekke (2016) show that natural resource windfall gains are not intermediated through the financial sector, but rather other, less effective channels. This ultimately has negative repercussions for long-term growth.

2.3.Stability vs. growth

As much as financial sector development can contribute to economic development, credit boom and bust cycles can exacerbate economic volatility. 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

[13] These findings are confirmed by recent studies by Mian, Sufi and Verner (2016) who show in a cross-country study that rise in the household debt to GDP ratio predicts lower output growth and a higher unemployment rate over the medium-run and Chakraborty, Goldstein and MacKinley (2014) who show for the U.S. that banks which are active in strong housing markets increase mortgage lending and decrease commercial lending, with consequently lower investment by firms that borrow from these banks.

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.[14]

Systemic financial fragility is often associated with asset price cycles, as documented, for example, by Rajan and Ramcharan (2015) for land prices in the U.S. in the 1920s. They show that the commodity price boom between 1917 and 1920 resulted in rapid credit expansion across the U.S. linked to land price inflation, while the subsequent bust affected especially areas with higher credit availability, where the land price fall was more pronounced and more banks subsequently failed.

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.[15]

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

[14] See Carletti (2008) for an overview
[15] 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.

It is important to note, however, that most banking crises in low-income countries are not associated with credit boom-and-bust cycles, but rather governance problems, including corruption and theft, but also outright incompetence. Maturity mis-matches are rarely at the core of banking distress, while deficiencies in bank regulation and supervision and government and political interference loom large (Honohan and Beck, 2007).

Ultimately, both theory and empirical work document an important stability-growth trade-off in financial sector deepening, with a positive impact on competition, resource allocation and growth and a negative impact through a higher crisis probability. Ranciere, Tornell and Westermann (2008) show that the first moment of credit growth is positively associated with GDP growth in a large cross-country panel, while the third moment (skewness) is negatively associated, suggesting a positive relationship between systemic fragility and growth. Ranciere, Tornell and Westermann (2006) show that the positive growth effect of financial liberalization outweighs the negative growth effect through a higher crisis probability for emerging and developing markets. This does not necessarily suggest that systemic banking crises are growth-enhancing – to the contrary; it rather makes the important point that systemic risk-taking and consequently fragility associated with financial deepening has overall positive growth repercussions.

2.4. Finance and growth – caveat medida

One important caveat across the finance and growth literature – though often ignored – is that we have only very crude indicators of the development of financial institutions and market and the efficiency with which financial services are provided to households, enterprises and governments. Specifically, there is not a clear mapping between the functions of finance as spelled out by theory and the empirical gauges of financial sector development, which

capture mostly the size, activity or efficiency of different financial institutions or markets.[16] Consequently, one has to be careful in interpreting the empirical relationship between standard indicators of financial sector development, such as Private Credit to GDP, and economic growth. Specifically, this variable indicates the quantity not the quality and focuses only on regulated financial institutions. It does not capture the maturity structure. It does not capture how widespread the use of credit services is among enterprises and households and the ease with which enterprises and households can access credit. Importantly, it is not clear that there is a linear mapping from higher levels of Private Credit to GDP into more efficient and developed financial markets. Credit provision in an economy fluctuates substantially with the business cycle (Bernanke and Gertler, 1989), so that short-term variations in Private Credit to GDP for a given country are thus unlikely to reflect changes in the efficiency and development of financial markets and institutions. More importantly and as already discussed, credit cycles are often related to asset price cycles, so that rapid increases in Private Credit to GDP might reflect credit bubbles rather than rapid improvements in the efficiency and development of financial systems. In this context, it is important to point out that the theoretical models mentioned in 2.1 relate to the long-term relationship between financial development and growth and not short-term fluctuations, reflected also in the empirical literature that has typically focused on longer time period (at least five years, preferably ten or even more).

While the measurement error has been long recognized as one of the biases in cross-country regressions, there has been less focus on it than on reverse causation or omitted variable biases. While there are on-going attempts are more accurate gauges, capturing specific dimensions of financial sector development, it seems unlikely that we will ever get to the perfect measure.

2.5.Finance and growth – individual vs. aggregate effects

There is a critical difference between effects of financial development on the household-/firm-level and the aggregate effects. This is important especially in the debate on the role of finance in poverty alleviation. On the one hand, an extensive empirical literature, using both observational data and randomized control trials, has explored the impact of improved access to specific financial services, including credit, savings and insurance, on firm growth or

[16] See Beck, Demirguc-Kunt and Levine (2000) for an extensive discussion of different indicators.

household welfare. On the other hand, the aggregate finance and development literature has focused on the role of financial sector development in allocating resources to their most productive uses, fostering innovation and competition and improving governance across the economy. This contrast is not only academically important, but the relative importance of effects on the individual vs. aggregate levels has important policy repercussions. To give one example, in order to maximize the impact of financial sector development on poverty reduction, should the focus be on financial inclusion policies (and if yes, which type of services) or on making the financial system more efficient (Ayyagari, Beck and Hoseini, 2013)?

An extensive literature has gauged the effect of access to credit on households' welfare and growth of micro-enterprises, based.[17] As summarized by Banerjee, Karlan and Zinman (2015) in their introductory paper on a special issue of the AEJ: Applied Economics with six microcredit assessments, there is "a consistent pattern of modestly positive, but not transformative, effects." There are several reasons of why the impact of microcredit is so limited and why impact is heterogeneous.[18] First, micro-entrepreneurs might not be credit constrained and/or other constraints within the business environment might be more binding, which might also explain the limited take-up of microcredit in many circumstances. Second, there might be rapidly diminishing returns, in the form of an S-shaped production. Initial returns might be high, but rapidly decreasing (Banerjee and Duflo, 2007). Micro-enterprises' capacity to grow might thus be limited. Third, a large part of borrowers use credit for consumption rather than investment purposes, as for example documented by Johnston and Morduch (2008) in Indonesia, Attanasio et al. (2015) in rural Mongolia and Karlan and Zinman (2010) in the Philippines. In addition, there is a fragility risk to donor- or political efforts to expand microcredit rapidly; most prominently, following a rapid expansion of the microcredit industry India's Andhra Pradesh saw a major crisis in the sector in 2010. Some of the characteristics resemble those of a classical banking boom and bust cycle that we described above.

On the other hand, as already discussed above, there is some tentative evidence that financial deepening can reduce income inequality and poverty alleviation through indirect channels. On the aggregate cross-country level, Beck et al. (2012) find that that the negative

[17] Ghatak (2016) presents a theoretical framework that documents the important role that lack of access to credit can have for poverty traps on the individual level, but stresses also income and behavior related constraints.
[18] See Banerjee (2013) for an in-depth discussion.

relationship between financial depth and changes in income inequality goes through enterprise and not household credit. Assuming that access to formal credit by microenterprises is more likely to be captured by household credit, this suggests that the pro-poor nature of financial deepening is primarily linked through indirect effects. However, this study is subject to the important caveats on cross-country comparisons. In addition, recent evidence also suggests that financial deepening can contribute to employment growth, especially in developing countries (Pagano and Pica, 2011), consistent with the studies for Thailand and the U.S. Gine and Townsend (2004) compare the evolution of growth and inequality in a dynamic general equilibrium model with the actual development in the Thai economy and show that financial liberalization and the consequent increase in access to credit services can explain the fast GDP per capita growth, rapid poverty reduction and initially increasing but then decreasing income inequality. Underlying these developments are occupational shifts from the subsistence sector into the intermediated sector and accompanying changes in wages. Net welfare benefits of increased access are found to be substantial, and, though they are concentrated disproportionately on a small group of talented, low wealth individuals who without credit could not become entrepreneurs, there are also benefits to a wider class of workers because eventually wage rates increase as a result of the enhanced access to credit by potential entrepreneurs. Ayyagari, Beck and Hoseini (2013) find a strong negative relationship between financial deepening, rather than financial inclusion, and rural poverty, following financial liberalization in 1991 in India. They also find that financial deepening reduced poverty rates among the self-employed, and also supported an inter-state migration from rural areas into the tertiary sector in urban areas.

These findings are also consistent with evidence that a large share of micro-entrepreneurs are lifestyle entrepreneurs in the absence of better opportunities as salaried wage earners in formal businesses (e.g., Bruhn, 2013, for Mexico). This in turn can explain the limited growth opportunities (or ambitions) mentioned above. In addition, such entrepreneurs are less likely to benefit the broader economy by creating jobs.

Taken together, the empirical evidence so far suggests an important difference between two concepts – *Finance and Poverty Alleviation* and *Finance for the Poor*. By changing the structure of the economy and allowing more entry into the labor market by previously unemployed or underemployed segments of the population, financial deepening (more efficient financial institutions and markets) helps reduce income inequality and poverty, as discussed above. By doing so, financial deepening can help achieve more inclusive growth

and also help overcome spatial inequality in growth benefits. It is thus important to understand that the effects of financial deepening on employment and poverty alleviation do not necessarily come through the "democratization of credit" but rather a more effective credit allocation. This also implies that microcredit is not necessarily the most important policy area to reap the benefits of financial deepening for poverty alleviation.

For the poor to benefit directly from financial sector deepening and broadening (*Finance for the Poor concept*) it is important to look beyond credit to other financial services that are needed by the poor, such as simple transaction or savings services. There is increasing evidence from randomized control trials (RCTs) on the positive effects of access to formal savings services, tailored to the poor, on firm growth and household welfare. To give just a few examples: Dupas and Robinson (2013a) show that the expansion of savings accounts in rural Kenya leads to higher investment among female mico-entrepreneurs, though not male entrepreneurs. Dupas and Robinson (2013b) show that the use of different commitment devices, including lockboxes with and without keys, individual health savings accounts and joint health pots, leads to higher preventive healthcare spending. And providing access to formal savings does not seem to undermine the role of informal safety nets, as documented by Dupas, Keats, and Robinson (2015) who show that households with such access rely less on their extended family but are more likely to be supportive of friends and family. Similarly, Brune et al. (2015) find in their study for Malawian cash crop farmers that using a commitment savings product increases investment and crop output by 21%, with an increase of 11% in consumption. Ashraf, Karlan and Yin (2010) show that the introduction of a commitment savings product in the Philippines led to a shift towards female-oriented durable good consumption. Finally, Prina (2013) finds in her experimental study for Nepal that access to savings accounts appears to help households to manage their resources better, prioritizing on expenditure categories, such as education and food consumption, and to feel more in control of their financial situation.

While even more recent, there is a small literature that documents the positive effect that access to more efficient payment systems – most notably digital finance or mobile money – can have for the welcome of the poor. The quick take-up of M-Pesa in Kenya to send remittances across the country – crowding out informal channels – as documented in household surveys, shows the rapid take-up of this payment method. Jack and Suri (2014) examine the impact of reduced transaction costs after the introduction of M-Pesa in Kenya on risk sharing and find that M-Pesa users are more likely to absorb negative income shocks,

especially among lower income households. Blumenstock, Eagle and Fafchamps (2016) use mobile phone transfers over four years in Rwanda and show that these transfers are used to help people affected by natural disasters, such as an earthquake near Lake Kivu. Beck et al. (2016) show an important interaction between access to more efficient payment services and access to trade credit by small entrepreneurs in Kenya.

In summary, the tentative policy conclusions that arise from this literature is that while it should be a goal to achieve access to basic transaction and savings services for as large a share of the population as possible to thus enable them to participate in the modern market economy, the agenda in boosting access to credit should focus on improving the efficiency of this process, replacing access through political connection and wealth as it still happens in many developing countries with access through competition. By channeling society's resources to the most

3. What drives financial development?

It is important to note that financial development is not a policy variable in itself, but rather the result of market forces and an array of policies and institutions. In this second part of the paper, I will discuss different policy areas and institutional arrangements that the literature has shown to foster financial sector development. In this context it is important to distinguish between the deep-seated institutional framework and very specific policies. Finally, I will link financial sector and institutional development in the concept of the financial possibility frontier, a concept that takes us back to the trade-off between the growth and fragility effects of financial sector deepening.

The interaction of finance with institutions is present on at least three levels. First, given its intertemporal nature finance is one of the most "institutions-intensive" sectors, and its development has been shown to depend critically on a conducive institutional framework, including effective contractual framework and transparency. Second, the outreach of the financial system and, ultimately, its impact on economic development, increases in governance and trust, as this will allow to expand the financial system to lower-income population segments and small and medium-sized enterprises. Third, an effective and competitive financial system can also improve institutions; by increasing competition in the real sector, it can allow new entry and fosters entrepreneurship, which can increase demand

for effective and accessible institutions, with ultimate positive repercussions for economic development.

3.1.What drives financial sector development?

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 and the underlying institutional infrastructure 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.

3.1.1. The policy view

The literature has identified very specific policies and institutions that are conducive to financial sector development. Macroeconomic stability has often been stressed as *conditio sine qua non* for financial sector development, given the intertemporal character of many

financial transactions. 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).

A second important area is the institutional framework, which encompasses the rights of secured and unsecured creditors, the efficiency of credit registries and bureaus, the quality of court systems and the efficiency of contract enforcement, the existence and quality of collateral registries and accounting standards. This also includes effective corporate governance rules for the relationship between management and shareholders and minority and majority shareholders. I will discuss each in turn.

First, La Porta et al. (1997), Levine, Loayza and Beck (2000) and Djankov, McLiesh and Shleifer (2007) show the importance of contractual institutions, such as creditor rights, for financial sector development. Using firm-level data, paper, Qian and Strahan (2007) show that, on average, firms in countries with stronger secured creditor rights have longer-maturity loans and more secured debt. Also using firm-level data, Love, Martinez Peria and Singh (2016) find that introducing collateral registries for movable assets increases firms' access to bank finance, with the effect larger among smaller firms, while using loan-level data Calomiris et al. (2016) show loan-to-values of loans collateralized with movable assets are lower in countries with weak collateral laws, relative to immovable assets, and that lending is biased towards the use of immovable assets. These cross-country studies have been complemented by country-specific studies, including Jappelli, Pagano and Bianco (2005) on Italy and Laeven and Woodruff (2007) on Mexico.

In addition, several papers have explored the implementation of specific reforms. For example, Visaria (2009) exploits the staggered introduction of debt recovery tribunals for claims above a certain threshold across states in India in the 1990s, which made contract enforcement much speedier and more efficient. She finds that this reform reduced loan delinquency and the cost of credit. However, there were also distributional repercussions from this reform, as documented by Von Lilienfeld-Toal, Mookherjee and Visaria (2012); total credit increased for larger borrowers, while it decreased for smaller borrowers, consistent with an inelastic aggregate supply of credit and additional demand by larger borrowers more easily satisfied. They also document a reallocation of lending away from rural areas toward urban and metropolitan areas. Chemin (2009, 2012) focuses on the role of

the court system and uses the geographic variation in the procedural handling of court cases in India following a reform in 2002 and shows that a more efficient court procedure resulted in a reduction in case backlog in courts, lower contract breach, and higher investment by firms in fixed assets; the positive effect of court reform fell mostly on farmers whose access to credit was eased and contract-intensive sectors, such as formal manufacturing companies. Ponticelli and Alencar (2016) gauge the interaction of legal reform and the efficiency of court systems, exploiting municipality-level variation in Brazil and show that the introduction of a bankruptcy reform in 2005 resulted in a higher increase in secured lending to manufacturing firms and a higher increase in firm investment in municipalities with less congested courts. Assuncao, Bemmelech and Silva (2013) show that the 2004 reform in Brazil that facilitated the repossession of cars used as collateral for car loans, increased access to credit by riskier and self-employed borrowers and resulted in larger loans with lower interest rates and longer maturities. However, by expanding the borrower population towards riskier clientele, the reform also led to higher default rates. Finally, Campello and Larrain (2016) show that a legal reform in Romania enlarging the menu of assets that could be used as possible collateral resulted in firms operating in sectors intensive in movable assets increasing their ability to borrow.

However, the positive supply-side effects might be countered by negative demand-side effects of legal reform, as documented by Vig (2013). Specifically, he finds that following the strengthening of secured creditor rights in 2002 in India, there was actually a 5.2% decrease in the use of secured debt by firms, which might be due to the threat of premature liquidation faced by borrowers under stronger creditor rights.

One important debate in this context is the distinction between coercion-constraining institutions, which govern the relationship between governments and private citizen, and contract enforcement institutions, which govern the relationship between private citizens. Most of the reforms discussed above refer to the latter rather than the former. And while the contract-enforcing institutions seem of more immediate concern for financial transactions, coercion-constraining institutions are as important as trust in private property right protection is critical for investors afraid of expropriation risk. The broader question - beyond the scope of this paper arises on whether effective contract enforcement institutions are feasible in a weak coercion-constraining institutional framework. Finally, some studies have explored differential effects between these two types of institutions, with stronger effects from coercion-constraining effects than contract enforcement institutions (Acemoglu and Johnson,

2005), though questions on the measurement of these two concepts arise (Woodruff, 2006). Cull and Xu (2005) find for China that both types of institutions, influencing access to credit and expropriation risk matter for the reinvestment decisions of Chinese entrepreneurs.

A second important area concerns the establishment of credit registries that allows the sharing among lenders and thus helps overcome information asymmetries. Theory suggests positive effects of credit information sharing on screening accuracy and thus profitability of banks, but also – in case that positive information is being shared – for the possibility of borrowers to build up reputation capital and competition among lenders (Pagano and Jappelli, 1993; Padilla and Pagano, 1997). Cross-country studies have confirmed the positive relationship between effective credit information sharing and financial sector development and firms' access to credit (Pagano and Jappelli, 1999; Djankov, McLiesh and Shleifer, 2007); Brown, Jappelli and Pagano, 2011). The cross-country literature has been complemented by specific country studies, such as by De Janvry, McIntosh and Sadoulet (2006) who use the entry of a credit registry for micro-finance institutions to gauge the effect on both adverse selection and moral hazard by gauging the effect of the announcement on behaviour of existing borrower groups in this joint-liability institution and subsequent changes in groups. The authors find lower default rates due to both effects. There might also be off-setting effects on expanding the borrower population and fragility; Gonzalez-Uribe and Osorio (2014) document that the decision in 2008 to erase past default information from the Colombian credit bureau resulted in new borrowing opportunities for black-listed borrowers with banks they had no prior relationship, but also higher default among these loans.

As alternative to formal contractual and informational institutions, peer monitoring and social capital have been stressed, especially for smaller, less formal borrowers. The success of the cooperative movement in Continental Europe in the 19th and 20th centuries has relied on personal guarantors and group-based peer monitoring (Banerjee, Belsey and Guinnane, 1994). Related to this concept is the embedment of such financial institutions in a local community with repeated interactions. This also points to the importance of context-specific design elements for such institutions, as the comparison of the successful German cooperatives with the failed experiment of cooperatives in Ireland shows.

The idea of peer monitoring based on group-liability and local social capital has also been at the core of the micro-credit movement. Ghatak and Guinanne (1999) provide a theoretical basis for how joint-liability lending enhances the screening and monitoring process of

borrowers and improves on the enforcement of contract in the absence of formal judiciary processes (either because of their complete lack, their inefficiency or their high costs). An expansive empirical literature – beyond the brief of this survey – has assessed the effectiveness of these mechanisms.

A third area concerns competition and market structure. Competition has an ambiguous relationship with financial sector deepening and financial stability. On the one hand, competitive markets can increase efficiency and ultimately outreach and depth of financial markets. On the other hand, private information acquisition by financial institutions relies on the availability of rents, counter to the idea of perfectly competitive markets. Similarly, in the area of stability, different theories make different predictions on the relationship between competition and bank fragility, with empirical evidence not clear cut either. In terms of market structure, there is overwhelming evidence across the developing (and developed) world of a negative impact of government ownership and management of commercial banks on the efficiency and stability of financial systems. Somewhat more ambiguous is the impact of foreign bank ownership, where theory and empirical work has not come to a final conclusion.

The competition of the banking market has also important repercussions for the effect of institutional reforms. Credit supply will be more elastic in a more competitive financial system, so that the negative distributional repercussions discussed above for India might not be as prevalent. Besley, Buchardi and Ghatak (2012) show theoretically and empirically that improving property rights has a stronger effect in more competitive banking systems. The same argument, however, also applies to the fragility risks of competition, where higher competition might exacerbate a lending boom and therefore the negative implications of the subsequent bust (Rajan and Ramcharan (2015).

Competition can also have important effects on the structure of micro-finance markets, as documented by De Quidt, Fetzer and Ghatak (2016a, b). Specifically, in the absence of credit information sharing higher competition among microfinance providers results in lower repayment incentives; similarly, higher competition and the increasing entry of for-profit micro-finance providers will result in a shift from the joint-liability to the individual lending model.

One important question is the sequencing of policy reforms. Many developing, especially low-income countries face implementation constraints beyond political constraints. This

raises the question, which reforms have the highest benefit-cost ratio as well as which reforms have the quickest impact (which then in turn might crowd in demand for further reforms). There is a small literature that has explored these issues. Most prominently, Djankov, McLiesh and Shleifer (2007) document in cross-country comparison the relative importance of information frameworks vis-a-vis contractual frameworks for developing countries, with the reverse holding for developed countries. In the area of contractual institutions, Haselmann, Pistor, and Vig (2010) have distinguished between those that chiefly enable the individual lender to recover on a debt (by, e.g., recovering collateral)) and those that are mainly concerned with resolving conflicts between different claimants (such as, e.g., bankruptcy codes). Using data from the transition economies of Central and Eastern Europe—which adopted relevant legal reforms at different times after the collapse of the planned economy system—they show that bank lending is more sensitive to the institutions that govern individual claims than to those that resolve conflicts between multiple claimants. Given their heavier reliance on secured lending, it is not surprising that foreign bank lending increases by even more.

While this evidence so far provides some evidence that reforms directed at simple contractual relationships and reforms directed at the information rather than enforcement environment might be more promising in economically and institutionally less developed economies, more research in this area is needed. Ultimately, what one needs is a binding constraints cum reform feasibility analysis on the country level. 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.

3.1.2. Finance and Politics

If the empirical literature has identified the necessary conditions for financial sector deepening, why are these policies not put into place? This is where the second view, the finance and politics view comes in. 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, which is at the core of the politics and finance approach to financial sector deepening, 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.

Let me mention a few examples that illustrate the political economy view of financial deepening, in line with the policies mentioned in the previous section. 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. 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 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 broader level, Perotti and Volpin (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. Biais and Mariotti (2008) show that the distribution of political power can influence whether a society adopts debtor- or creditor friendly bankruptcy regimes, where the latter is more likely to lead to financial deepening. As incumbent and wealthy entrepreneurs do not rely on external funding they are more interested in soft bankruptcy laws to prevent the entry of new, less wealthy entrepreneurs that can contest their market position.

Similarly, Aney, Ghatak and Morelli (2016) show that if the median voter is a worker, she will not necessarily support the surplus-maximizing legal reforms but rather reforms that that are beneficial for wage-earners, which might prevent a general property right protection reform. On the other hand, Caselli and Gennaioli (2008) show that financial sector reforms in the presence of a market for control (i.e., where ownership stakes in enterprises can easily be acquired and sold) will face less political resistance from the incumbents than deregulation that results in open entry, as the incumbents are able to "cash in" on their rents with outsiders acquiring their firms, using external finance.

A third example relates to the regulatory framework. 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 and political 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). Political economy constraints can also play an important role in crisis resolution, as documented by Ardagna and Caselli (2014) for the case of the two bail-outs of the Greek government in 2010 and 2011. Specifically, they argue that communication frictions between governments and their voters and the time limitation on negotiation rounds between different parties led to decisions in 2010 and 2011 that were individually, but not collectively rational, i.e. not the optimal outcome available.

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 expanding the bankable population by financial innovation, including credit scoring and securitization techniques. In hindsight, it very much seems that access to housing might have overshot 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.[19] 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.

3.1.3. **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 and institutional 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,

[19] See, however, Levine (2010) detailing out the intentional "looking the other way" by U.S. regulators as new sources of risk arose.

whereas France's legal system was more rigid, based on bright-line rules and little if any role for jurisprudence and previous decisions.[20]

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 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.[21] 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

[20] 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.
[21] La Porta et al. (2004) and Beck, Demirgüç-Kunt, and Levine (2003b).

costlier 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 (La Porta et al., 1998; Beck, Demirgüç-Kunt, and Levine, 2003a). In sum, deep-seated historically determined legal institutions have shaped political structures (relative power of different player and importance of private property rights vis-à-vis governments) and specific contractual institutions, such as court systems and collateral registries.[22]

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.

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

[22] This is also confirmed by within-country studies, as for example by Berkowitz and Clay (2005, 2006) who show the persistent effects of Common Law and Civil Law experience in the former British colonies compared to former French and Spanish colonies across the U.S. for judicial structures and independence today.

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.[23] 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, 2002). Technological innovation was critical in driving branch deregulation in the United States in the 1970s and 1980s.

Technology can also play an important role. 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

[23] See Giannetti and Ongena (2009).

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.

Beyond influencing political and thus institutional structures, history can also have an impact on today's financial systems by creating social capital and trust. Guiso, Sapienza and Zingales (2004) exploit the large variation within Italy to show the importance of social capital – historically pre-determined – for financial sector development. Using data on immigrants in the U.S., Osili and Paulson and (2008a, b) show the persistence of institutional constraints, as immigrants from countries with worse institutions are less likely to use formal financial services in the U.S. and if they do so, they do so less extensively.

The influence of religious beliefs and institutions might also have an important impact on financial sector development (Stulz and Williamson, 2003). In particular, the Catholic Church has historically taken a negative stance toward the charging of interest and creditor rights, and the Quran prohibits the charging of interest. In contrast, the Protestant Reformation advanced a different religious attitude toward finance, whereby the payment of interest was considered a normal part of commerce, so that the rights of creditors were more naturally emphasized in countries dominated by Protestant religions. As shown by Stulz and Williamson (2003), countries with a predominantly Catholic religious heritage tend to have less developed credit markets and more poorly developed financial institutions. Grosjean (2010) uses micro-data for six South Eastern countries, part of which used to be part of the Ottoman empire, and shows that former Islamic rule is associated with lower financial development today, even within countries. Moreover, localities with Armenian, Jewish or Greek minorities, who were allowed to practice interest lending under Ottoman rule, have higher levels of bank penetration. By contrast, Islamic religion and trust in the financial system play no role in explaining such long-term persistence.

Finally, specific historic events might turn into a traumatic experience for nations, with long-ranging implications for institutions. Murphy (2005) sees the 1720s Mississippi bubble, with its subsequent banking crisis and hyperinflation, as critical for the negative French attitude toward the financial sector. Similarly, the hyperinflationary experience in Germany has resulted in a hawkish approach toward monetary policy deeply entrenched for the following 80 years. Malmendier and Nagel (2010) show that "depression babies," that is, individuals growing up during the Depression era in the United States, are less likely to invest in equity and have overall more risk-averse investment strategies.

3.2.Financial development and institutional constraints

The previous section has shown that financial sector development depends critically on the institutional framework of a country, where the latter is often driven by historic experiences. This interrelationship between financial and institutional development can be conceptualized using the financial possibility frontier, as, for example, developed in Barajas et al. (2012).

Specifically, this concept starts from the premise that 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. Financial intermediaries and markets arise exactly because these market frictions prevent direct intermediation between savers and borrowers. However, 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 the institutional framework, including contractual framework and transparency, as discussed above.

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. Focusing on the role of institutions in this context, a low financial possibility frontier thus illustrates the importance of institutional building for sustainable financial deepening.

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. Importantly, this situation points to options for policy makers for sustainable financial sector deepening within the existing institutional framework.

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. 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.

The concept of the financial possibility frontier has been partially operationalized in empirical exercises by Barajas et al. (2012) in the form of a benchmarking exercise. This exercise relates the actual level of financial development indicators to values predicted from a cross-country panel regression analysis including different socio-economic characteristics. This benchmarking exercise can be interpreted both in the cross-section, i.e. comparing the gap between actual and predicted values across countries as over time within a given country. It is especially the latter that can also serve as a gauge for the build up of fragilities.

3.3.Institutions and financial structure

The institutional framework is not only important for the development but also the structure of financial systems. In broad terms, economists have distinguished between bank- and market-based financial systems. While both financial institutions and markets can help overcome information asymmetries and agency problems, they do so in different ways. Financial institutions create private information, which helps them reduce information asymmetries. Financial markets, on the other hand, create public information, aggregated into prices. Similarly, there are differences in the mechanisms through which financial institutions and markets exercise corporate governance. Banks can help improve corporate governance directly through loan covenants and direct influence on firm policy and indirectly through reducing the amount of free cash flows senior management has available. Financial markets can help improve corporate governance by linking payment of senior management to performance, through voting structures and the threat of takeover if the stock price falls below a value that is seen below fair value. Finally, there are different ways financial

institutions and markets help diversify risks. Banks offer better intertemporal risk diversification tools, whereas markets are better in diversifying risk cross-sectionally. Markets are better in offering standardized products, and banks are better in offering customized solutions. However, banks and markets can also be complementary through instruments such as securitization, allowing exit strategies for venture capitalists, and by providing competition to each other.[24]

The importance of financial institutions or markets can in a broader sense be interpreted as the predominance of relationship-based financial transactions or arms-length- based financial transactions. In the absence of easily available information and easily enforceable contracts, reliance on close relationships and thus repeated interactions between borrowers and lenders, which allows the collection of proprietary and soft (i.e. not quantifiable) information and direct governance tools, might be the only option. However, this is broader repercussions for the economy, as this limits the share of entrepreneurs with access to credit and might result in entrenched lending relationships undermining competition.

The predominance of relationship vs. arms-length financial transactions in an economy can be related to back to the institutional framework. While the weak institutional development thus limits financial institutions to rely on private information and thus relationship-based financial transactions (and ultimately explains the bank-based nature of financial systems in many developing countries), it also prevents the development of public capital markets.

However, the dominance of institutions supporting arms-length financial transactions has been questioned, also related to the discussion on private vs. public institutions. Allen et al. (2005; 2012) argue that the recent financial sector development in both India and China is built on private if not informal institutional frameworks rather than the European-style contractual institutions, discussed above. This is a relevant debate also in the context of fostering financial sector development in many low-income countries lacking effective public institutions.

An alternative to using the local institutional framework is to use foreign institutional and macroeconomic frameworks. One characteristics of many developing and emerging markets is the tendency to focus on foreign-currency rather than local currency loans and even on financial contracts subject to foreign rather than local jurisdictions, which is the result of lack of trust in domestic macroeconomic management and contractual institution. As discussed

[24] See Stulz (2001) for an overview.

by de la Torre and Schmukler (2004) based on observations across Latin America, it is important to understand that these are short-cuts that result in risk reallocation rather than risk reduction, most notably from price risk (against volatile real interest and real exchange rate changes) to price-induced default risk. It is has contributed to the high degree of dollarization in many financial systems of the developing world and has thus made even more difficult macroeconomic management in these countries (as foreign exchange policy has a direct impact on financial stability). Outsourcing contract enforcement outside domestic borders can also undermine local institution building.

3.4. From financial deepening to institution building

As much as thriving financial markets depend on institutions, there might be a feedback loop from financial deepening to institution building, although this reverse link has been not quite rigorously documented yet in the literature. On the one hand, thriving financial markets can foster competition in the real economy. Evidence from the U.S. has shown that financial liberalization has contributed to higher entry and exit of enterprises (Kerr and Nanda, 2009). Gianetti and Ongena (2009) show for Central and Eastern Europe that foreign bank entry helped reduce the importance of entrenched lending relationships and thus foster entrepreneurship and competition. Financial liberalization can also contribute to lower discrimination, as shown by Black and Strahan (2002) and Levine, Levkov and Rubinstein (2014) using the US branch deregulation in the 1970s and 80s as identification strategy.

One important question in this context is whether financial deepening can happen in societies with lacking institutional support. Low-income countries often suffer from a lack of accountability and transparency in political institutions and policy making processes, which brings them into a catch-22 situation – on the one hand, they do not have the necessary institutional framework to support efficient and sustainable financial system; on the other hand, the development of financial markets can contribute to institution building.[25] In this context, questions such as the substitutability of private and public institutions come up, as well as whether contract enforcement institutions can be improved even in the absence of coercion constraining institutions (Greif, 2005).

[25] This is parallel to a similar situation in international financial liberalization as discussed by Kose et al. (2009).

4. Conclusions

The primary purpose of this paper is to take stock of the existing theoretical and empirical literature on the interaction of financial systems and institutional quality in their importance for economic development, especially where relevant for low-income countries. In this concluding part, the paper will discuss policy implications of the literature as it currently stands as well as avenues for future research.

In terms of policy implications for developing country, the different literatures discussed in this paper and their interactions suggest that it is critical to identify the binding constraints that holds back sustainable financial sector development, but also the political constraints that might prevent addressing these policy constraints. In the absence of external pressures, institutional reform fostering financial sector development cannot happen against the interests of the ruling elite, as the experience of the transition economies has clearly shown. In countries with more entrenched communist elite and where these elites had higher surplus stakes in the form of natural resource rents, there was a slower or no development of the necessary legal institutions for a functioning market economy (Beck and Laeven, 2006).

Finally, any policy reform has to happen within a given historically pre-determined institutional framework. Trying to impose institutions out of a different legal tradition is not helpful, as Russia found out the hard way; the short flirt with the Common Law tradition did not bear fruits. Take the example of court reform. In spite of their shortcomings and deficiencies, court systems in the 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 in Africa are lacking are capacity and specific skills. The introduction of commercial courts might be helpful in this context. The situation in most Civil Code countries in Africa is different, as courts in these countries have deficiencies along many dimensions and suffer from very low reputation. In these countries, establishing alternative dispute resolution systems might be more helpful.

The survey also poses quite some research questions going forward. First, in the area of institution building, what are the institutions and policies that are most relevant for financial sector deepening in developing countries and is there an optimal sequencing? Related to these issues is the over-arching question on the role of government in financial service provision, caricatured by Honohan and Beck (2007) in the contrast of the modernist and

activist approaches, i.e. an exclusive focus on institution building and maintaining macro-stability versus a more interventionist approach, which focuses on market frictions and government institutions and policies to overcome them. While an extensive literature has documented the limited success (if not failure in most cases) of direct government provision of financial services, especially on the lending side, an array of market-activist policies that address market frictions, while providing proper governance structures and sunset clauses have been suggested. Also, the success of several East Asian countries in providing the necessary external finance for rapid development has often been associated not with market-based financial systems, but rather strong government intervention if not outright financial repression (World Bank, 1993). Most East Asian economies relied on development finance institutions as a catalyst for funding investment projects. To which extent can the East Asian experience be transferred to other developing regions of the world, including Sub-Saharan Africa?

Second, what is the relative importance of different segments of the financial system, including banks, capital markets and contractual savings institutions? With rising incomes and structural changes in the real economy, the need for specific financial services changes over time, to the same extent that the possibilities to sustain specific institutions and markets change. What is the optimal structure of financial systems for different economic structures and income level? What financial structures are optimal for agriculturally-dominated economies and natural resource-based countries? What kind of financial system allows economies to move from low- to middle-income and middle- to high-income status? How does a financial system move from a relationship-based system to an arms-length system and is there an optimal stage of economic development and structure to do so? How strong is path dependence and is leapfrogging possible in financial structures and what policies and interventions can help?

While previous work has mostly focused on banks vs. markets, a more granular view might be necessary, including distinguishing between different types and size of financial institutions (e.g., non-bank financing companies, specialized vs. universal banks, focused local grass-root financial institutions vs. large institutions, contractual savings institutions, such as insurance companies, pension funds and mutual funds) and financial markets (e.g., bonds vs. equity, short-term money vs. long-term capital markets). While research has often focused on banks vs. public capital markets, there might also be an important role for private equity, more suitable for countries whose enterprise population cannot sustain a public stock

exchange. One recent hypothesis suggests that economies relying on industries with many small enterprises require financial systems relying on smaller financial institutions with local roots (Lin, Sun and Jiang, 2009), although this has not been empirically confirmed (Beck, Demirguc-Kunt and Singer, 2013).

Related to this issue is the question if there is a specific sequence with which different segments of the financial system (banks, capital markets, contractual savings institutions) arise and specific policies that can support their emergence? The experience in Europe and the US has shown that different development paths are possible; can we learn from these for today's developing countries? Finally, what is the relative importance of informal and formal finance for long-term growth? As discussed above, recent papers have pointed to the importance of informal financial sources for firm growth as part of the Indian and Chinese success stories (Allen et al., 2005, 2012). Can we learn from these experiences for other developing countries, including Africa, which is characterized not only by deficiencies in the formal institutional framework, but also by a lack of private institutions (Fafchamps, 2004).

Finally, what is the optimal degree of competition and rents in the financial system? An extensive literature shows that limited competition can help provide incentives to establish long-term lender-borrower relationships (see, e.g., Petersen and Rajan, 1995) and the success of M-Pesa in Kenya has often be associated with the dominant market position of Safaricom, which allowed the provider to reach scale economies rapidly. So rents are an integral part of the financial system, providing incentives for long-term relationships and innovation. On the other hand, contestability is important, as new entrants can bring new technologies and products, thus increasing efficiency with positive repercussions for depth and inclusion. The case of M-Pesa can also be interpreted as a story of competition, as Safaricom was allowed as new entrant to compete against banks in the area of payment services. However, a high degree of competition might also undermine long-term relationships between lenders and borrowers, thus having important distributional repercussions across firms. In the area of stability, there is an on-going discussion about the benefits and risks of competition (see, e.g., Beck, de Jonghe, and Schepens, 2013). More research is required in this area, including to explore whether the optimal degree of rents and competition varies across countries with different levels of economic, financial and institutional development and structure.

In closing, a few remarks on methodology. The agenda discussed above implies a multitude of different methodologies and data sources, using both observational data and experimental settings, such as RCTs. Different research questions ask for different methodologies and data. Historical and longer-period analyses might be more appropriate to gauge structural and institutional questions, while RCTs and other experimental approaches might be more adequate to assess interventions with expected results in the short-term horizon. However, the same question can be gauged with different methodologies and using data on different aggregation level. The role of theory is critical in terms of showing different hypothetical channels and mechanisms for empirically established relationships. Finally, for research to succeed in obtaining the necessary data, asking relevant questions but also maximizing its impact, a close interaction between researchers and donors, practitioners and policy makers is necessary. This relationship can often be critical for obtaining micro-level data, such as from credit registries or specific financial institutions, or for undertaking experiments or RCTs. However, these links are also critical for disseminating research findings and having an impact on practice and policy in the financial sector.

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