Financial Intermediation, Markets, and Alternative Financial Sectors*

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Abstract

We provide a comprehensive review of firms' financing channels (internal and external, domestic and international) around the globe, with the focus on alternative finance—financing from all the non-market, non-bank *external* sources. We argue that while traditional financing channels, including financial markets and banks, provide significant sources of funds for firms in developed countries, alternative financing channels provide an equally important source of funds in both developed and developing countries. Alternative finance is often the dominant source of funds for firms in fast-growing economies. We compare market- and bank-finance with alternative finance, along with the supporting mechanisms such as legal and institutional structures. Much more research is needed to better understand alternative finance and its role in corporate financing. We suggest ways to obtain firm-level data on various forms of alternative finance and thus overcome the main obstacle in the field.

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1. Introduction

Since corporate investment is a key driver for economic growth, a central question in financial economics is how firms raise capital to finance their investment. During the past few decades, economists have significantly advanced knowledge in this field by studying the link between economic growth and financial system development. A financial system includes a financial intermediation sector and financial markets, where firms issue securities such as stocks and bonds. This literature argues that a more advanced financial system can better allocate resources so that firms (both domestic and foreign) can finance their investment and growth at lower costs.[1]

In studying the finance-growth nexus, most of the existing research focuses only on the development of markets and banks—the so-called 'traditional' financial system. The starting point of our chapter is that this approach is inadequate for the study of corporate financing, especially for (unlisted) small and medium firms, important engines for growth in emerging and developed economies, and the majority of firms in most economies. The recent global crisis has revealed failures in financial markets and problems associated with large financial institutions in developed countries. Market- and bank finance is also highly cyclical and (external) funds from these sources can dry up quickly during crises. In addition, the costs for developing the traditional financial system, and especially a large and efficient market with multiple types of financial products, can be enormous for emerging economies and the process may take several decades. The question is then: are there alternative channels through which firms can raise capital to fund investment *before* a well-functioning, traditional financial system is built?

The goal of this chapter is to provide a synopsis on the importance of alternative financing

[1] In particular, this literature suggests that the development of stock markets and banks contributes to a country's economic growth (e.g., McKinnon (1973); King and Levine (1993); Levine and Zervos (1998)). This view has been strengthened thanks to evidence at the industry and firm levels on the causal impact of access to traditional finance on firm growth (e.g., Jayaratne and Strahan (1996); Rajan and Zingales (1998)).

channels in corporate finance and growth. Alternative financing channels are defined as all the non-market, non-bank sources, including internal finance (e.g., retained earnings) and alternative, *external* finance. We address three questions. First, what is the role of 'alternative financial sectors' in corporate financing around the globe? In answering this question, we provide a comprehensive review of all the financing channels (internal and external, domestic and international) around the globe, with the focus on different forms of alternative finance. Examples include funds from family and friends (in the form of equity and/or debt), private credit agencies, and trade credits.[2] Second, how does alternative finance compare to market- and bank-finance, in terms of their relative significance for different firms and countries, and how do different forms of alternative finance work in practice? Third, how can we expand our knowledge on alternative finance? In particular, we suggest ways to obtain and utilize firm-level data on various forms of alternative finance and thus overcome the main obstacle in the field.

We employ a comprehensive set of databases to conduct our analyses at different levels. First, we use the World Bank's Enterprise surveys data that cover mostly small and medium firms' financing channels and related governance mechanisms around the globe. This database represents the most significant (and ongoing) effort made to measure Small and Medium Enterprises (SME) sectors' financing channels from more than 100 countries, most of which are emerging economies.[3] It has enabled researchers to conduct cross-country studies that have yielded new insights on financing and governance.[4] Moreover, we compile country-level data from several sources to compare the development of financial systems across income groups over the last two decades. In particular, we

[2] It is important to point out that our definition of alternative finance does *not* include financing from venture capitalists or private equity funds. Allen and Gale (2000) argue that these sectors should belong to the stock markets as the ultimate goal of Venture Capital (VC) and Private Equity (PE) financing is to list the firm in the stock market. See Chapter 8 for a review of VC and PE.

[3] Although the World Bank's Enterprise surveys have been conducted in an important number of countries, they do not cover some developed countries such as US and Canada. The list of countries covered by these surveys is available at the World Bank's Enterprise surveys webpage (http://www.enterprisesurveys.org).

[4] The survey questionnaire includes information on the firm, qualitative questions on the relative importance of various financing channels, and evaluations of formal institutions such as courts and local governments.

report the evolution of the banking and intermediation sector, stock and bond markets, and international markets. These results help frame our arguments on the relative significance of market- and bank-finance versus alternative finance during different stages of economic growth.

We show that alternative financing channels play an important role in both developed and developing countries. In fast-growing emerging economies, the alternative financial system can be the most important source of external finance for firms. Thus, consistent with the 'Coasian view' (1937), we find and argue that alternative finance and institutions arise in an environment with weak formal institutions and become a vital engine to fund economic growth. We also find substantial variations across firms in the same country and across countries in the use of different forms of alternative finance. Among these, the use of trade credit has been studied extensively in both developing and developed countries, in part given its prominence as a financing source.

Recent work reveals a number of new findings. While trade credit has been shown to provide a viable financing channel for *small* firms facing severe asymmetric information beyond what relationship-based banking can resolve, Murfin and Njoroge (2012) find that the largest firms in the US are also net receivers of trade credits. Research based on trade credit contracts also shows that, even in developed countries such as the US, while the initial fixed costs of trade credit are high, once a network of firms (e.g., along the product chain) is forged, the average costs over an extended period can be lower than the costs of market and bank finance, and the access to trade credit can enhance firms' likelihood of receiving bank loans, (e.g., Giannetti, Burkart, and Elligensen (2011); Giannetti and Yu (2007); Kim and Shin (2007)). These results challenge the conventional wisdom that trade credit is an inferior (and more costly) source of financing as compared to bank- or market-finance. Very little research has been done on other forms of alternative financing channels outside trade credit, and we provide some suggestions on future research.

An important question is whether alternative finance, often backed by governance mechanisms

outside the legal system, is as conducive in supporting firm- and economy-wide growth as bank or market finance, which is based on formal contracts enforced by the legal system. The prevailing view, as discussed above, is that despite the limited supply in developing countries, bank and market finance is still the preferred form over alternative finance, and well-established firms with access to banks and markets grow faster (e.g., Demirgüç-Kunt and Maksimovic (1998); Beck et al. (2005); Ayyagari et al. (2010)).

Some recent research provides a different view on the comparison between these two sets of financing channels. First, Allen, Qian, and Qian (AQQ (2005)) demonstrate that China—currently the second largest economy in the world—provides a significant counterexample to most of the existing research in law, institutions, finance, and growth. During China's transformation (1980-2010), neither its legal institutions nor its traditional financial systems were well developed, and the government was regarded as autocratic and corrupt. Yet, its economy grew at the fastest pace in the world. Moreover, the most dynamic corporate sector, with various forms of private ownerships (including joint ownership with local governments), relies mostly on alternative finance and provides the engine for growth in the economy. Second, Allen, Chakrabarti, De, Qian, and Qian (ACDQQ (2012)) find that, despite the English common-law origin and a British-style judicial system, formal legal and financial institutions are of limited use in India, now the fourth largest economy in the world (in purchasing power parity, or PPP terms). They also find that alternative finance is the most important form of external finance and that those firms with access to bank or market finance are not associated with higher growth rates over firms relying on alternative finance.

In general, while markets and banks may well be the preferred form of finance over alternative finance in developed countries with advanced formal institutions, it is unclear whether the same can be said for developing countries. Research on political economy factors (e.g., Rajan and Zingales (2003a,b); Acemoglu and Johnson (2005)) argues that rent-seeking behaviour by interest groups can turn the legal

system, a monopolist institution, into barriers to changes. We expect these problems to be much more severe in developing countries. In this regard, Allen and Qian (2010) and Allen, Qian and Zhang (2011) argue that by not using the legal system, alternative finance can minimize the costs associated with legal institutions in fast growing economies like China and India. They also point out that in a dynamic environment, alternative institutions can adapt and change much more quickly than institutions that use the legal system as this process does not require legislative or electoral-related revisions. The main implication is that in fast-growing economies and during early stages of economic growth, alternative finance provides the main source of funds for (private) corporate sectors and growth, and it can be superior to market and bank finance, if backed by efficient alternative institutions. In static environments with low and predictable growth, legal and other formal institutions can play a more important role in supporting finance and commerce, and the role of markets and banks in corporate financing also becomes more significant.

Much more research is needed to better understand how alternative finance works in different corporate sectors around the globe and its advantages and disadvantages relative to traditional financial systems. The main difficulty is the availability of data on various forms of alternative finance along with supportive governance mechanisms, and the way they are utilized by firms, households, investors and other economic agents and entities. Data issues are particularly pronounced for small and medium firms that are not publicly listed but rely on alternative finance much more than large and listed companies. Therefore, research methods such as household and firm surveys become much more important and in some cases these are perhaps the only way to get around the problem of lack of publicly available data. In this regard, the World Bank's Enterprise surveys provide the most comprehensive cross-country data sets on firms' financing sources and have been widely used in cross-country studies in recent years. We compare the World Bank firm surveys with country-specific, firm-level data sets and discuss problems with this set of surveys. We also discuss the need for more firm-

level surveys covering longer time periods, and how to utilize all the available data sets and design research methods.

The paper proceeds as follows. Section 2 describes the recent evolution of traditional financial markets and reviews evidence on all the financing channels including alternative finance. Section 3 goes into more detail and examines firms' financing channels, with the focus on alternative finance. Specifically, we look at its role across firms and countries, related governance mechanisms and data issues. Section 4 begins with a discussion of the recent literature on the relationship between traditional and alternative sources of financing and firm growth. It then provides discussions on future research. Finally, Section 5 concludes.

2. State of the Financial System and Firms' Financing Channels

Almost every financial system includes a banking and intermediation sector, financial markets (stock and bond markets), an international sector (markets, intermediation and others), and an alternative sector including non-market, non-bank financial channels and associated institutions. A well-developed financial system is essential to permit economies to exploit fully the gains from trade and commerce. In this sense, the development of the financial system is particularly important in emerging market economies, where the many potentially profitable investment opportunities do not always materialize due to lack of funding. These opportunities need to be matched with appropriate funding from either standard or non-standard sources of capital as well as from either domestic or international capital markets. In this section we examine the state of all these forms of finance including internal and external financing from domestic and international sources.

As a starting point, Allen and Gale (2000) argue that different reactions to the instability associated with financial markets led to two types of financial systems—one market based and the other

bank based. Figure 1 presents an overview of the relative importance of banks and markets (i.e., equity and debt markets) across economies with different income levels over the last two decades.

—Insert Figure 1 about here.—

Four stylized facts emerge from the figure. First, the banking sector and financial markets are much less developed, as a percentage of GDP, in lower income economies relative to high income ones. The degree of financial development of middle income economies at the end of the 2000s is similar to that of high income economies two decades ago. This is not surprising given that the development of the banking sector and of the financial markets requires a country's institutions (including the legal system and accounting standards) to reach minimum levels of efficiency.

Second, bank credit tends to become larger as countries develop. As the figure shows, high income economies have a larger banking sector than middle income economies, although the growth of the banking sector (as a percentage of GDP) in less developed economies over the last two decades remains limited. This suggests that promoting economic growth through the development of the banking sector may not be an easy task.

Third, national financial systems tend to become more market oriented than bank oriented as they become richer. This trend has been mostly driven by a significant increase in stock market capitalization. However, a larger stock market does not necessarily imply that either a larger number of firms or more SMEs benefit from this development. For instance, De la Torre and Schmukler (2006) show that while stock market capitalization has increased in Latin America and the Caribbean over the last two decades, the number of listed firms has decreased. They explain this reduction in the number of listed companies with two facts. The first is an increasing migration of Latin American firms to international markets, typically through depositary receipts. The second is a sequence of mergers and acquisitions where the acquirer companies often choose to list and trade their stocks in a major financial center, leading to further increases in the size of large firms. This view is further supported by

the results in Table 1, based on data from stock exchanges around the globe that show that stock markets remain highly concentrated in many countries.

—Insert Table 1 about here.—

Fourth, corporate bond markets seem to develop more slowly than stock markets. As emphasized by IADB (2007) and Borensztein et al. (2008), the development of efficient domestic bond markets is costly and takes time. It requires extensive infrastructure, rigorous disclosure standards and effective governance of corporations issuing publicly traded bonds and firms with solid operations and credit worthiness that are large enough to cover the fixed costs of placing a bond issue.

The first three observations are not new. They are consistent with Goldsmith (1969)'s findings. However, re-examining these issues after four decades allows us to analyze the speed of financial development and highlight that building good institutions and developing equity and debt markets in emerging markets firms is slow and costly.

We now describe the various parts of the financial system in more detail.

a. The banking and intermediation sector

Figure 1 shows that bank credit, as a percentage of GDP, has remained relatively stable in lower and upper middle income economies over the last two decades, while it has exhibited a significant increase in high income economies. Therefore the banking sector gap has become larger across economies with different levels of income. This may be an important problem for less developed economies as bank credit brings many advantages in terms of creation of long-term relationships with firms, facilitation of corporate control mechanisms and possibly easier funding of start-up firms. However, despite these advantages, bank credit also has the disadvantages of requiring better information on firms' potential liquidity and solvency problems and imposing more stringent conditions, which result in higher monitoring costs. In addition, firms that only access capital through

banks are more vulnerable to banking crises. For example, Chava and Purnanandam (2011) find that firms relying heavily on bank financing tend to suffer larger valuation losses during banking crises and subsequently experience a higher decline in their capital expenditure and profitability as compared to firms with alternative sources of capital such as public bond markets. Consistent with a contraction to the supply of credit, banks affected by a crisis increase loan interests and decrease the lending quantity in the post-crisis period significantly more than the unaffected banks.

On the theoretical side, Bolton and Freixas (2006) develop a model to examine the determinants of the composition of sovereign bonds, corporate bonds, and bank financing in an emerging market economy with poor debt enforcement institutions and scarce capital. In the model, the presence of a government bond market reduces the cost of bond financing because of economies of scale, but it increases the probability of a banking crisis in the case of sovereign default. In turn, a banking crisis leads to bank failures and bankruptcies in firms with bank debt. The first main result of the model is that in comparison to bond financing, bank financing is more flexible (for borrowing firms) because it requires better information regarding potential firms' liquidity and solvency problems, but it also entails higher monitoring costs and more stringent conditions. As a consequence, firms that are unlikely to default prefer financing through the bond market. A second main finding of the model is that well-developed corporate bond markets may partially insulate firms against sovereign default risk and the associated bank credit crunch risk. Overall, the model's predictions are in line with the empirical evidence presented by Chava and Purnanandam (2011) and highlight the importance of a well-developed corporate debt market.

b. Financial markets: stock markets and bond markets

As shown in Figure 1, financial markets have grown considerably over the last two decades. This is true for less developed economies as well as more developed economies. Well-functioning

equity markets are important not only because they offer a new form of investment in financial markets, but also because they seem to have a positive impact on economic growth. According to Greenwood and Smith (1997), stock markets reduce the cost of mobilizing savings, facilitating investments into the most productive technologies. Levine and Zervos (1998) argue that stock market liquidity positively predicts growth, capital accumulation, and productivity improvements and find evidence for these effects.

As mentioned above, financial markets worldwide were severely affected by the 2007-09 financial crisis, and have been slow in their recovery. Figure 2 shows that financial markets in both developed and developing countries lost, on average, around half of their total market capitalization from the peak in 2007 to the trough in 2008. Even though most markets have recovered a significant fraction of their losses in 2009 and 2010, with the ongoing Eurozone debt crisis and slowdown in global economic recovery, there is a lot of uncertainty in the marketplace and many firms view financial markets as too volatile to raise large amounts of capital in the near future.

—Insert Figure 2 about here.—

Domestic bond markets are an important component of financial markets. They offer long-term finance to the public and private sectors, provide cheap capital to well-established firms, and act as an alternative source of funding when excessive dependence on bank intermediation leaves economies vulnerable to episodes of banking crises. Therefore, the existence of deep and liquid domestic bond markets is a fundamental component of financial development and growth. But, as shown in Figure 1, corporate bond markets have been relatively late to develop not only in emerging market economies but also in advanced economies. The bond markets in middle income economies at the end of the 2000s are still smaller than these markets in high income economies in the early 90s. Even more striking, corporate bond markets are nearly nonexistent in the lower income economies all through this period. Up to the 1980s, corporate bond markets in most advanced economies were essentially

nonexistent, with the US being a notable outlier (IMF (2005)). As already mentioned, a reason for the underdevelopment of corporate debt markets in comparison to stock markets is the lack of sound accounting/auditing systems and high-quality bond-rating agencies. Given low creditor protection and court inefficiency in low income economies, the recovery rates for bondholders after default are low, which in turn leads to underinvestment in the market by domestic and foreign investors.[5]

Figure 3 shows the development of debt markets around the world over the last two decades. The figure distinguishes between government debt, corporate debt and debt issued by financial institutions. Again, it emerges that the development of debt markets is much more pronounced in higher income countries than in lower income countries. Among the different debt categories, corporate debt remains the least developed, even in the high income countries, while government debt and financial institution debt grow significantly with countries' wealth. In the high income economies, debt issued by financial institutions is the largest in terms of percentage of GDP while government debt is the largest in lower and upper middle income countries. These results stress again the difficulty of developing thick corporate bond markets.

—Insert Figure 3 about here.—

One reason for the underdevelopment of the corporate bond market in comparison to the government debt market in emerging market economies like China is the lack of a well-constructed yield curve (see, e.g., Herring and Chatusripitak (2000)). Given the small size of the publicly traded Treasury bond market and lack of historical prices, only 'snapshots' of a partial yield curve (e.g., maturities range from one month to one year) based on pricing data of Treasury bonds in the national interbank market can be plotted. This is far from the standard yield curve covering interest rates on bond maturities ranging from one month to ten years. In addition, the deficiencies in the term structure

[5] See IADB (2007) and Borensztein et al (2008) for a detailed analysis of the factors behind the underdevelopment of corporate debt markets in Latin America.

of interest rates hamper the development of derivatives markets that enable firms and investors to manage risk, as well as the effectiveness of the government's macroeconomic policies.

c. International Sectors

Over the past four decades, global financial markets have become increasingly integrated, in terms of outcome measures, such as the level of cross-border asset holdings, and in terms of the legal restrictions on capital account transactions.[6] In this context of financial globalization, international equity and debt issues have taken off in conjunction with the recent development of domestic markets for equity and debt. In fact, international capital raisings grew more than four-fold in the period from 1991 to 2008 (see Gozzi et al. (2012)). As a consequence, international financial markets have become another important financing source for firms in emerging market economies. There are several motivations for issuing bond and equities in international markets. Potential motivations for issuing equities in international markets are to avoid illiquid domestic markets, taxes, regulations and the lack of sound accounting/auditing systems (see Gozzi et al. (2012) for references). Potential motivations for issuing bonds offshore are risk management, price arbitrage, market completeness, barriers to nonresident investment onshore, and funding diversification (Black and Munro (2010)).

The problem is that international financial markets are accessible only to well-established large firms. Small and medium firms do not have the prerequisites in terms of transparency and minimum scale required by international investors. Moreover, given that international debt issues tend to be denominated in foreign currency, firms in the tradable sectors are likely to have access to international market under better credit conditions. Firms are more likely to issue foreign-currency debt if bondholders expect the issuing firms to eventually repay the debt, which requires the expectation of

[6] The sum of cross-border assets and liabilities increased, on average, from about 50 percent of GDP in 1970 to over 400 percent in 2007. This trend has been accompanied by a process of capital account liberalization since mid-1980s (see, for example, figure 1 in Quinn et al. (2011)).

reasonably reliable future access to foreign currency.[7] As shown in Table 2, Gozzi, Levine and Schmukler (2010) find that only 36% of firms in developed economies and 27% of firms in developing economies issue debt in international markets.[8] The firms raising capital abroad are larger, slower growing, more leveraged, more profitable, and export more than the firms that only raise capital domestically.

—Insert Table 2 about here.—

Figure 4 shows the outstanding amounts of domestic and international debt securities issued by financial corporations (top panel) and non-financial corporations (bottom panel) as a percentage of GDP. It shows a prevalence of domestic debt securities both for financial and non-financial corporations in lower middle and upper middle income economies, and an increasing use of international debt securities in high income countries, especially for financial firms in recent years. This underlines once again the greater level of development in terms of financial corporations and financial systems in higher income countries relative to the lower income countries.

—Insert Figure 4 about here.—

Domestic and international debt markets seem to be complements in the sense that they provide firms with different financial services. Gozzi et al. (2012) show that international issues tend to be larger, of shorter maturity, denominated in foreign currency, and include a higher fraction of fixed rate contracts. Although debt issues in international markets tend to be denominated in foreign currency, there is evidence that in some countries, swap-covered foreign currency borrowing can be an

[7] Consistent with this hypothesis, Prati et al. (2011) shows that liberalizing the capital account benefits significantly more those firms with more limited foreign currency access, namely, those producing nontradables. In the same line, Borensztein, et al (2007) argues that firms whose output is oriented to the domestic market are more sensitive to country risk, as not having direct foreign currency earnings, they are more vulnerable to the imposition of capital controls.

[8] The final sample used by the authors includes 168,514 equity and debt security issuances by 45,969 firms from 116 economies over the 1991-2005 period. The data come from Security Data Corporation's (SDC) New Issues Database. It provides transaction-level information on new issues of common and preferred equity and bonds with an original maturity of more than one year. Although SDC constitutes the most comprehensive database on security issuances around the world, its coverage may be less comprehensive for those regions for which it relies mostly on informal sources, instead of collecting data from filings with regulatory agencies and stock exchanges.

important source of domestic currency funding.[9] For example, in Australia around 85% of external debt liabilities denominated in foreign currencies are hedged with financial derivatives into Australian dollars (Becker et al (2005)). In New Zealand, about 81% of foreign currency liabilities are hedged into New Zealand dollars (Statistics New Zealand (2008)).

There are two commonly cited motivations for the use of currency swaps: risk management and comparative advantage. While risk management is a recurrent motivation for the general use of currency swaps, it is not a good motivation for swap-covered foreign currency borrowing (Munro and Wooldridge (2009)). The reason is that issuers raising debt capital in foreign currency with the express intention of swapping it for domestic currency are just replicating cash flows that could also be achieved by borrowing directly in the domestic currency. A more convincing motivation for swap-covered foreign currency borrowing is comparative advantage, which exists when the same risk is priced differently in different markets. If borrowing costs differ across markets, then issuers can reduce their overall capital costs by raising funds in the market in which each has a comparative cost advantage and swapping the proceeds.

Thus, the development of currency swap markets seems to be associated with the participation of foreign currency bond issuers in these markets. As shown by Figure 5, Munro and Wooldridge (2009) show that the monthly turnover of currency swaps denominated in a specific currency (as a percentage of GDP) tends to be high in countries in which the monthly gross issuance by non-residents of debt denominated in that specified currency (as a percentage of GDP) is high. This is consistent with the evidence that in some countries swap-covered foreign currency borrowing can be an important source of domestic currency funding.

—Insert Figure 5 about here.—

[9] As explained by Munro and Wooldridge (2009), "swap-covered foreign currency borrowing presumes the existence of a currency swap market. Currency swaps are over-the-counter derivatives. They can be characterized as an exchange of a loan in one currency for a loan in another currency. The principal amount is usually exchanged at both the initiation and termination of the swap, and interest payments are exchanged during its life."

d. Alternative sectors

In addition to financial markets and the intermediation sector, there are two more financing channels: internal finance, or financing generated by the firm (e.g., retained earnings), and alternative (external) financing channels, defined as all the non-market, non-bank external sources. We do not have aggregate-level data for the relative importance of these major financing channels.[10] However, from prior research, we know that in most countries it is the small and medium firms, especially those that are unlisted, that rely more on alternative finance. Hence, for cross-country comparisons of alternative finance, we rely on the World Bank's Enterprise surveys, conducted in more than 100 countries (multiple times for some firms in certain countries and still expanding). These surveys focus on SME sectors and include many unlisted firms: small firms have between 5 and 19 employees, medium firms have between 20 and 99 employees and large firms have more than 100 employees.

Using the World Bank's Enterprise surveys, Table 3 reports and compares financing channels across countries with different income levels. Although many economists view financial markets as the ideal and most important source of funds for firms, the table shows that this view of the world is not entirely supported in the data. First, as has been stressed in numerous papers and in standard corporate finance textbooks (see, e.g., Brealey, Myers and Allen (2010)), internally generated funds appear as the most important source of capital in all countries, and far more important than external finance raised through markets, banks, and alternative channels. Internal financing is more important for firms in low income economies than in high income economies. Second, financial markets (i.e., equity and debt markets) provide the *least* important source of external capital, while alternative finance is, on average, as important as bank finance.

—Insert Table 3 about here.—

[10] The availability and quality of aggregate fund flows data is uneven across countries, and we are not aware of any database that provides the global breakdowns of the major corporate financing channels (internal, markets, banks, and alternative).

While Table 3 reports that the levels of firm financing through banks and alternative channels are similar across income groups of countries, Table 4 shows important heterogeneities within countries with similar income levels. For example, the ratio of bank finance to all sources of finance goes from about 4% for firms in Syria and Argentina to about 33% in Colombia and Malaysia and to 38% in Peru. The ratio of alternative finance to all sources of finance goes from 3% in Egypt to 52% in China. Moreover, Table 4 indicates that alternative finance is more important than bank finance in 18 out of the 40 largest economies reported in the World Bank surveys. Consistent with AQQ (2005), alternative finance is more important for SMEs in China than in any other country, and it accounts for more than 25% of all firm financing in Argentina, Brazil, Czech Republic, and Indonesia.

—Insert Table 4 about here.—

3. Firms' Financing Channels: The Role of Alternative Finance

The previous section presented evidence that alternative finance is an important source of financing for firms in both developed and developing countries. In this section, we analyze this form of finance in more depth and detail. In particular, we study its role across firms and countries, related governance mechanisms and issues related to various data sets on alternative finance.

a. Overview of alternative financing channels

To understand the role of alternative finance, we begin with the differences between bank finance and market finance, which has been extensively researched. While banks tend to invest and form long-term relationships with their borrower firms, finance through equity and debt markets is more 'arms-length.' Well developed markets can reach large and small investors scattered around the globe and allow firms to issue different financial instruments to raise capital. This implies that bank-based and market-based financing channels are better at providing funds for different firms and/or

firms at different stages of growth. Banks are prepared to fund small and medium firms, while equity and bond markets are more suitable for well-established firms to raise long-term capital at lower costs.

However, in many emerging countries the banking sector is limited and vulnerable to banking crises, and equity and bond markets are only accessible to large firms in a small number of industries (e.g., mining). This suggests that firms must sometimes make use of alternative forms of finance in these countries since bank finance is not feasible. We start by examining the proportion of firms having a line of credit/loan from a financial institution and the proportion of firms identifying access to finance as a 'very severe' obstacle to the development of their business. Using the World Bank's Enterprise surveys, Table 5 covers firms in the 'formal sector' in the sense that they are all registered with the government. A high proportion of firms in both developed and emerging market economies do *not* have access to credit from any financial institution, and the difficulty in access to such credit is more pronounced in less developed economies and for small firms. Only 17% of the small firms from low-income economies have bank credit, as compared to 66% of the large firms from high income economies.

—Insert Table 5 about here.—

The table also reports that 44% of the small firms from low-income economies identify lack of access to credit as a 'major' or 'very severe obstacle' to the development of their businesses against 18% of the large firms from high-income economies. Since in most countries, and especially in developing countries, the small and medium firms contribute most to economic growth (e.g., Beck, Demirgüç-Kunt and Levine (2005)), the evidence in Table 5 indicates the need for caution in generalizing the importance of banks and other formal financial institutions on growth in many emerging economies, especially if characterized by a dynamic and large SME sector.

Which types of firms rely more on alternative finance? Table 6, based on Chavis et al. (2010) and once again using the World Bank surveys, shows that younger firms rely more on alternative

finance than on bank finance for both short-term (working capital) and long-term (new investment) financing needs, while older firms rely more on bank finance than alternative finance especially for long-term financing. These patterns are not surprising given that banks' outreach to younger (and smaller) firms is limited as these firms have higher risk and more uncertainty in their growth prospects.

—Insert Table 6 about here.—

AQQ (2005) and ACDQQ (2012) show that in China and India, state-owned enterprises (SOEs in China and Public Sector Undertakings, or PSUs in India) and publicly listed firms have much easier access to legal institutions, banks and financial markets than non-state, non-listed firms. They also document that the non-state, non-listed firms do not rely on financial markets or banks for most of their financing needs, and conduct business (e.g., settling disputes) outside the legal system. Rather, they rely on alternative financing channels such as trade credits and funds from family and friends to finance their growth, and use mechanisms based on reputation, relationships and trust to settle disputes and induce good behaviors. In both countries, and especially in China, it is the non-state, non-listed firms that provide most of the economic growth and employ most of the labor force.

Figure 6 presents evidence on four financing channels at the aggregate level for different corporate sectors in China. The figure is based on AQQ (2005 and 2008) and uses data from the *Statistics and Finance Yearbooks of China*. It classifies firms into three sectors: the State Sector (SOEs), the Listed Sector, in which many listed firms are converted (partially privatized) from SOEs, and the Hybrid Sector, which contains firms with various forms of private ownership including some with joint ownership with local governments. In all of these figures, each of the four connected lines represents the importance of a particular financing channel over the time period 1994–2002, measured by the percentage of firms' total financing coming from this channel. The figures at the top and centre illustrate how firms in the Listed Sector and the State Sector respectively finance their investment (for fixed assets). Around 30% of publicly traded companies' funding comes from bank loans, and this ratio

has been very stable despite the fast growth of the stock markets in China. Around 45% of the Listed Sector's total funding comes from self-fundraising, including internal financing and proceeds from equity and bond issuance. Moreover, equity and bond sales, which rely on the use of external markets, only constitute a small fraction of total funds raised, compared to internal financing and other forms of fundraising which we regard as alternative finance. Combined with the fact that self-fundraising is also the most important source of financing for the State Sector, we can conclude that alternative channels of financing are important even for the State and Listed Sectors. Finally, the category 'self-fundraising,' including internal finance and all forms of alternative finance such as capital raised from family and friends of the founders and managers, and funds raised in the form of private equity and loans, is by far the most important source of financing for firms in the Hybrid Sector, accounting for about 60% of the total funds raised.

—Insert Figure 6 about here.—

b. Different types of alternative financing channels

Having discussed the relation between the accessibility of bank finance and the use of alternative finance, we next provide evidence on different types of alternative financing channels and associated governance mechanisms. Given limitations in data availability, we use both cross-country data from World Bank's Enterprise surveys and data from prior 'within' country studies for the two largest emerging market economies, China and India.

Table 7 reports different sources of alternative finance for the forty largest countries for which information is available from the World Bank's Enterprise surveys. These include leasing, trade credit, credit cards, investment funds, loans from family and friends, informal sources, and others. On average, leasing, trade credit and loans from family and friends appear to be the most important sources of alternative finance. The use of these sources varies considerably across countries. For example, leasing

goes from 0% in Algeria and Argentina to 63% in South Africa, 69% in Portugal and 70% in Ireland. Trade credit goes from 0% in Venezuela and 1% in Korea to 59% in Peru and 62% in Mexico. Loans from family and friends go from 0% in Venezuela to 85% in Syria.

—Insert Table 7 about here.—

Trade credit: importance and literature review

As mentioned earlier, the use of trade credit has been researched extensively in both developing and developed countries given its prominence as a financing source even in countries such as the US. As of 2009, trade payables—financing for the purchase of goods extended by suppliers to their customers—represented the second largest liability on the aggregate balance sheet of non-financial businesses in the US (US Flow of Funds Account (2011)). Second only to corporate bond liabilities, the amount of trade payables outstanding is more than triple of the amount owed to banks and more than twentyfold the value of assets financed in the commercial paper market. While trade credit has been shown to provide a viable financing channel for *small* firms facing severe asymmetric information beyond what relationship-based banking can resolve, Murfin and Njoroge (2012) find that the largest firms in the US are also net receivers of trade credit.

Trade credit is a loan or line of credit that a supplier of raw materials or other inputs extends to its customers. The main goal of trade credit is to allow firms to buy the inputs necessary to conduct their business, with an agreement to bill them at a later date. It is an important source of alternative finance for financially constrained firms because suppliers may be better able than financial institutions to overcome informational asymmetries and enforcement problems.

Existing literature shows that trade credit may serve as a substitute for bank credit, a good alternative for funding for small firms, and an important source of capital during episodes of financial distress. Consistent with the literature that highlights the role of alternative finance in economies with underdeveloped financial markets, Fisman and Love (2003) find that firms in industries that heavily rely

on trade credit exhibit faster growth in countries with underdeveloped financial development. Nilsen (2002) reports that small firms are more likely to rely on trade credit during episodes of financial distress. Cuñat (2007) argues that suppliers have an interest in keeping their customers in business because trade credit is mainly based on long-term relationships and likely to involve sunk costs. McMillan and Woodruff (1999) report, using data on private firms in Vietnam, that trade credit is more likely to be extended by a supplier when the customer is part of a business network, the customer has scant sources of supply and the duration of the relationship with the customer is longer. Wilner (2000) reports that trade creditors that are more dependent on the business of their customers grant more credit to financially distressed firms than banks do. Coricelli (1996) argues that private trade credit markets played a key role in Poland's economic transition. Petersen and Rajan (1997) find that credit-constrained firms extend less trade credit to their customers and take more trade credit from their suppliers. Cull et al. (2009) argues that trade credit is likely to provide a substitute for loans for those companies' customers that are shut out of traditional financing sources. Demirguc-Kunt and Maksimovic (2001) show that trade credit is more widespread in countries with underdeveloped legal systems.

Recent work shows that, while the initial fixed costs of trade credits are high, once a network of firms (e.g., along the product chain) is forged, the average costs over an extended period can be lower than the costs of market and bank finance, even in developed countries such as the US (e.g., Giannetti, Burkart, and Elligensen (2011); Giannetti and Yu (2007); Kim and Shin (2007)). However, very little research has been done on forms of alternative financing channels other than trade credit.

Private credit agencies (that are not formal *institutions)*

Based on surveys of a small set of privately owned Chinese firms, AQQ (2005) report that during their growth period, these firms obtain financing from private credit agencies and trade credit rather than from banks. These patterns are shown in Figure 7. As documented by Tsai (2002), these

agencies are of various forms ranging from shareholding cooperative enterprises run by professional money brokers, lenders and middlemen, to credit associations operated by a group of entrepreneurs (raising money from group members and from outsiders to fund firms), from pawnshops to underground private money houses. Recently, these private credit agencies have become a prominent and controversial issue in China. The size of the 'shadow banking' system is large, estimated by some as accounting for half of the total financing in China.[11] Moreover, given the recent economic slowdown there are more defaults related to the loans made by these agencies.

—Insert Figure 7 about here.—

Family and friends and other forms of seed capital

From the same set of surveys and also shown in Figure 7, AQQ (2005) show that funds from family and friends represent one of the most importance sources of firms' 'seed capital,' arguably the most important type of funds for Chinese start-ups. There is also evidence that financing through illegal channels, such as smuggling, bribery, insider trading and speculations during early stages of the development of financial markets and real estate markets, and other underground or unofficial businesses, plays an important role in the accumulation of seed capital. Based on similar episodes in the history of other developing countries, our view is that, depending on the precise nature of the activity and as long as the purpose of money making is to invest in a legitimate company, it may be more productive for the government to provide incentives for investment rather than to expend costs discovering and punishing these activities.

Figure 8 depicts the relative importance of institutional (bank) and alternative finance in the start-up phase and the ease of obtaining funding in the growth stage for a set of Indian firms surveyed

[11] See "Chinese Finance: A Shadowy Presence," H. Sender, Financial Times, 04/01/11. This is consistent with the figure of 52% for alternative finance for China in Table 4.

by ACDQQ (2012).[12] It is evident from the figure that funding from alternative sources is far more important in the start-up stage and is considerably more accessible in the growth stage. While 85% of the respondent firms consider friends and family finance extremely important in the start-up phase and 86% in the growth phase, the corresponding numbers are 15% and 17% for bank finance. Of the 199 respondents who answered the query, 22% had no bank/financial institution credit, 48% had loans from only one institution (indicating that bank credit could be relationship-driven), 14% had accounts with two banks or intermediaries, and only 2% had loans from three institutions. These results are consistent with their findings from the *Prowess* sample that (unlisted) SMEs get as much as 55% of their funding from alternative sources.

—Insert Figure 8 about here.—

c. Data issues

One of the main difficulties in doing research about alternative finance is the availability of data on alternative financing channels and institutions. Data issues are particularly pronounced for small and medium size firms that are not publicly listed (and in some cases not even registered), but that rely extensively on alternative finance. For this, research methods such as firm surveys are much more important. However, firm surveys carry important limitations. Sample sizes are often small and the design and the implementation of the surveys can affect results, producing (unintended) measurement errors.[13] As discussed earlier, the most significant effort made in recent years to measure firm financing channels for SME sectors from a large set of countries has been the World Bank's Enterprise surveys. These surveys, carried out in different years with both standard questions and specific questions tailored to a region or country, collect information concerning mostly nonlisted SME firms in more

[12] For ease of access, the survey respondents were asked to rate each source on a 1-4 scale (1= little importance (extremely difficult and costly to access); 4 = extremely important (very easy and low cost)).
[13] Although bias in surveys is undesirable, it is often unavoidable. Some examples of biases in surveys are: response bias, non-response bias, coverage bias, and selection bias.

than 100 countries. The survey questionnaire includes background information on the firm and its founder/entrepreneur, qualitative questions on the relative importance of various financing channels, and evaluations (by the survey respondents, most of whom are founders and/or executives of the firms) of formal institutions (e.g., courts and other legal institutions, local government, access to markets and banks).

This extensive and still expanding data set has created a new and growing strand of literature on cross-country comparisons of institutions, finance and growth; and it can also be used as a benchmark for studies of SMEs in individual countries. In this regard, we compare financing channels based on the World Bank survey results for India with those presented in ACDQQ (2012), which are based on firms' annual reports collected for the *Prowess* database by the Centre for Monitoring the Indian Economy (CMIE). CMIE is a Mumbai-based economic and business information and research organization. Its *Prowess* database provides financial statements, fund flows and product profiles for both large (listed) and small (unlisted) Indian companies for a much longer time period than the World Bank surveys.

Table 8 (from ACDQQ (2012)) reports firm financing channels used by Indian firms using the *Prowess* database. The raw sample includes more than 14,000 non-financial firms. Panel A of Table 8 provides a snapshot of some descriptive statistics of the 8,304 firms with data available in 2005. They classify all the firms into four categories: [14]

i. Large Enterprises in the manufacturing sector (LE-M);
ii. Large Enterprises in the services sector (LE-S);
iii. Small and Medium Enterprises in the manufacturing sector (SME-M);
iv. Small and Medium Enterprises (SMEs) in the services sector (SME-S).

Panel B of Table 8 provides evidence on the sources of funds for these firms: a summary of

[14] They adopt the definitions of LE versus SME sectors because they are used widely in the Indian context. To qualify for inclusion in either of the two SME categories, a firm had to satisfy the definition of SME in *each* year of the sample period. Similarly, the firms in the two LE categories had fixed assets larger than the SME ceiling in each year.

financing patterns of all firms, and the LE and SME sectors, using the definitions of the same four financing channels.[15] Finally, the reported numbers in Panels A-C represent the percentage of total (annual) funding coming from each financing source.

—Insert Table 8 about here.—

The World Bank conducted surveys for Indian firms twice (2002 and 2005), with most of the surveyed firms being unlisted. Some of the surveyed firms only have basic accounting information (e.g., size, leverage, etc.) in one of the two years, while others only have information on financing sources in one of the two years. Like Table 8, Panel A of Table 9 presents summary statistics of the Indian firms covered in the World Bank surveys, while Panel B presents the percentage of total (annual) funding coming from each financing source for both long term ('new investment') and short term investments ('working capital').

—Insert Table 9 about here.—

Comparing these two tables, we can clearly see that the importance of alternative finance for SMEs is lower in the World Bank survey sample. While alternative finance represented less than 15% according to the World Bank's Enterprise surveys in Table 9, it represents around 30% for all firms (large and small) and almost 50% for the SMEs in the *Prowess* dataset as shown in Table 8. In particular, trade credits (bank loans) are less (more) important for Indian firms based on the World Bank surveys. These differences are clearly economically significant, and discrepancies between these different data sources stress the difficulty in measuring alternative finance consistently in developing countries. One clear disadvantage for the World Bank surveys is lack of time series data, which is needed to study the finance-growth nexus in ACDQQ (2012).

[15] ACDQQ include all the firms as long as they have at least two years' data during the five-year period (2001-2005) on the amount raised from all the financing channels. For each firm group, they first take the average of the amount of funds raised from each financing source over the five-year period (2001-2005) for each firm; then sum this average across firms (within the group) to obtain the total funding (per year) from each source.

There is no doubt that future efforts, in terms of data collection, are needed for a better understanding of alternative finance and its effects. More comprehensive data on alternative finance would allow researchers to implement better identification strategies and thus to separate the effects of alternative institutions from those of legal and formal institutions on financial and economic development, as they can be correlated in certain industries, countries and regions.

4. Comparing Traditional and Alternative Financial Sectors

In this section we first discuss theories and then discuss the conditions that are conducive for the development of alternative financial sectors. We close this section by offering some thoughts on future research.

a. Comparing different forms of financing

There are different views regarding whether alternative finance is as conducive as bank and market finance in supporting growth. The 'predominant' view, as illustrated in cross-country (e.g., Beck et al. (2005, 2008)) and within country studies (e.g., Ayyagari et al. (2010)), states that firms with access to bank and market finance are of superior quality and they will grow faster than the rest of the firms that rely only on internal and alternative finance. This view on the superiority of market- and bank-finance is more likely to be supported in developed economies with advanced markets, banks, and formal institutions.

In ACDQQ (2012), the null hypothesis, based on the predominant view, is that the access to bank and market finance is associated with higher firm growth rates in India. To conduct firm-level analysis on finance and growth, ACDQQ use the *Prowess* database, which covers a large panel of Indian firms (along with detailed financial and accounting information) over several years. ACDQQ's main finding is that the positive relation between bank finance and firm growth does *not* hold for Indian firms, after controlling for firm characteristics including location and regional development and

correcting for possible survivorship biases due to higher death rates among smaller firms. In order to deal with a potential endogeneity problem that the use of any particular form of financing is chosen by the firms, ACDQQ employ a two-stage least square procedure with instrumental variables. In the first stage, the dependent variable is whether a firm had bank finance in a previous year, and the instruments are the number of bank branches per firm and available bank credit per firm in a given year (with different lags) in a given state. Their main results are robust to this procedure. In sum, they reject the null hypothesis and conclude that bank and market finance is not necessarily superior to alternative finance in fast-growing economies such as India.

These results motivate new theories on the role of alternative finance. Allen and Qian (2010) and Allen, Qian and Zhang (2011) state that in a fast-growing economy, alternative finance, backed by nonlegal mechanisms, can actually be superior to bank and market finance, backed by the legal system. Research on political economy factors (e.g., Rajan and Zingales (2003a,b); Acemoglu and Johnson (2005)) argues that rent-seeking behaviour by interest groups can turn the legal system, a monopolist institution, into barriers to changes. These problems are expected to be much more severe in developing countries. The 'alternative' view thus argues that by not using the legal system, alternative finance can minimize the costs associated with legal institutions. These papers also point out that in a dynamic environment, characterized by frequent, fundamental changes in the economy, alternative institutions can adapt and change much more quickly than institutions. In particular, competition among different networks and institutions can ensure the most efficient mechanism prevails, and it is not necessary to persuade the legislature and the electorate that the law needs to be revised when circumstances change.

The main implication is that in fast-growing economies and during early stages of economic growth, the disadvantages of using the legal system can overshadow its advantages. Thus, conducting business without using the law and legal system and relying on alternative finance as the main source of

external funds for corporate sectors, as witnessed in China and other Asian economies, can be a superior model. On the other hand, in static environments with low and predictable growth, legal and other formal institutions can play a more important role in supporting finance and commerce, and the role of markets and banks in corporate financing also becomes more significant.

b. Conditions conducive to developing legal and alternative institutions

One reason for advocating alternative institutions is that the costs for developing formal institutions can be prohibitively high in emerging economies and the process can take years.[16] By contrast, the costs for developing alternative institutions are much lower as many such institutions have been in existence (often in certain regions and/or corporate sectors) for generations, as a result of historical ties and social norms. But this implies that there can be a set of conditions required for a viable system of alternative mechanisms to exist and work. A good example is Africa. Clearly, past efforts in building formal institutions by different governments and organizations have not worked well in promoting financial development and economic growth. It appears that alternative institutions have not worked well either, at least not as successfully as those in Asian countries such as China and India.

What is missing in Africa? Prior literature on development economics suggests that constant internal and external conflicts, including those related to and caused by ethnic fractionalization, have plagued many African countries over the past several centuries (e.g., Easterly and Levine (1997)). The experience in China during the first half of the 20th century (prior to 1949), which was a very turbulent time there, suggests that political stability is not necessary to foster effective alternative institutions. However, what is common to China and India are long-lasting traditions and strong social and business ties and trust among families and in local communities, and these have contributed to the workings of alternative institutions—for example, dispute resolution mechanisms based on local notables and

[16] Consistent with this view, Djankov, McLiesh and Shleifer (2007) find that, despite apparent significant economic benefits from reform, there is very little time variation of creditor rights over the past 25 years around the globe.

traditions. Hence, the lack of similar long-standing traditions and trust in conflict-stricken areas can be one reason why alternative institutions have not taken off in Africa.

A second factor, documented in Allen, Carletti, Cull, Qian, Senbet, and Valenzuela (ACCQSV, 2011), is related to population density. ACCQSV compare determinants that are associated with banking sector development in Africa versus those in other developing countries. They find that while factors such as the natural resource 'curse' and macroeconomic policies matter as much in Africa as in other emerging countries, population density matters a lot more for Africa's financial development. In most sub-Saharan African countries, population density is much lower than it is in China and India, and road coverage (including railroads) is poor. It is reasonable to argue that frequent interactions among firms, households, and investors are a necessary condition for business transactions and a viable system of alternative institutions. Their results thus imply that this is lacking in Africa and the costs for building roads are high. Given the associated high costs of developing viable banking sectors outside metropolitan areas, not surprisingly bank branch penetration in Africa is much lower than it is in China. However, technology advances, such as mobile phone banking, could be a promising way to facilitate both formal and alternative institutions in Africa.

c. Future research on alternative finance

Much of the finance and growth literature focuses on the development of financial markets and formal institutions, such as banks, as the conduit for growth, and regards alternative finance as "picking up the slack" of formal finance and is therefore more costly for firms. By contrast, one of the central messages of our chapter is that nonmarket, nonbank finance, backed by alternative mechanisms, can be superior to bank and market finance, backed by legal institutions, in fast-growing economies. Much more research is needed to confirm these predictions in emerging economies around the globe. We need to better understand how different types of alternative finance, especially those outside trade credit, work to promote firm growth.

Given the heterogeneity in the use of alternative finance documented in this chapter, understanding why alternative institutions appear to work so well in some countries such as China and India compared to countries in Africa is another important topic for future research. For example, reputation is one of the most important components of alternative mechanisms. In general, for reputations to work well, low discount rates and long horizons are necessary. There must also be flexibility in terms of the effects of random shocks. Analyzing quite how these mechanisms work in the different countries discussed is a high priority. Alternatives to reputation, such as bonding, also need to be much better understood.

In addition, the new theories on alternative finance also suggest that excessive regulation of alternative financial institutions, such as informal credit agencies, may be counter-productive in emerging markets. For example, the difference in how legal and alternative institutions adapt to changes implies that the pace of innovations is faster in economies, especially fast-growing economies, with effective alternative institutions than that in economies with a dominant but rigid legal system. Innovations may be stymied if the legal system is captured by special interest groups.

5. Concluding Remarks

In this chapter, we have considered how firms raise capital to finance their investment. In addition to the traditional ways of raising finance through banks and equity and bond markets, we focus on alternative financing sources. These include internal finance through retained earnings and external financing channels that include funds from family and friends of the firm owners in the form of equity and/or debt, private credit agencies, trade credits, and many other forms. The very high rates of economic growth achieved by China and India, two of the largest and fastest growing economies in the world, are difficult to explain in terms of finance provided by banks and organized equity and bond markets. It seems that, in both countries, alternative finance played a major role in funding fast

growing small and medium sized enterprises. The institutional structure that supports much of this alternative financing is not based on standard legal mechanisms but rather a whole range of mechanisms such as reputation, relationship and trust.

We argue and provide evidence that while traditional financing channels, including financial markets and banks, provide significant sources of funds for firms in developed countries, alternative financing channels provide an equally important source of funds in both developed and developing countries. Alternative finance is often the dominant source of funds for firms in fast-growing economies. In these economies and during early stages of economic growth, conducting business without using the law and legal system and relying on alternative finance as the main source of external funds for corporate sectors, as witnessed in China and other Asian economies, can be a superior model. On the other hand, in more developed economies with low and predictable growth, legal and other formal institutions can play a more important role in supporting finance and commerce, and the role of markets and banks in corporate financing also becomes more significant.

Our knowledge of the role of alternative finance in financial markets and its impact on firm growth remains limited, and much more research is needed. A first area of research involves investigating the proper balance between banks, organized equity and bond markets and alternative finance. A second area is to explore the conditions conducive to developing alternative institutions (e.g., reputation). A third area is to study how different sources of firm financing, and alternative finance in particular, may change over the business cycle, in reaction to the implementation of structural reforms, and during episodes of financial instability. A fourth area is to determine the effects of the availability and cost of alternative finance on the creation/expansion of firms and thus on employment, real output and economic growth. Finally, in view of the 2007-09 financial crisis, a fifth area of research is to examine how different financing channels may make firm and aggregate growth more vulnerable/resilient to episodes of financial distress.

In pursuing the above-mentioned areas of future research, much better data would be a great advantage. For example, firm-level panel data sets containing financial and accounting information based on annual reports for an important number of developed and emerging market economies would be helpful in better understanding financing channels around the globe. In addition, more comprehensive data on financing channels and alternative finance would allow researchers to implement better identification strategies that would allow them to separate the effects of alternative institutions from those of legal and formal institutions on financial and economic development, as they can be correlated in certain industries, countries and regions.

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Table 1: Stock Market Concentration

This table reports the total number of firms listed in domestic stock markets, the number of the 5% most capitalized companies, and the market concentration, in terms of total domestic market capitalization and trading value, of the 5% largest companies. The source is World Federation of Exchanges (http:/www.world-exchanges.org)

	2010				2009			
Exchange	**Domestic companies** (number)	**5% most cap. comp. (number)**	**Market value (%)**	**Trading value (%)**	**Domestic companies** (number)	**5% most cap. comp. (number)**	**Market value (%)**	**Trading value (%)**
Americas								
BM&FBOVESPA	373	19	64	61	377	19	65	67
Buenos Aires SE	101	5	53	52	101	5	57	49
Colombia SE	84	4	58	59	87	4	51	48
Lima SE	199	10	64	69	195	10	66	57
Mexican Exchange	130	7	58	49	125	6	50	61
NASDAQ OMX	2,480	124	72	69	2,569	128	74	52
NYSE Euronext (US)	1,787	104	57	93	1,832	92	49	81
Santiago SE	227	11	49	57	232	12	53	73
TSX Group	3,654	190	79	85	3,624	188	82	89
Asia - Pacific								
Australian Securities Exchange	1,913	96	79	NA	1,882	94	81	NA
Bombay SE	5,034	252	88	NA	4,955	248	89	NA
Bursa Malaysia	948	50	73	71	952	50	73	73
Colombo SE	241	12	47	14	231	12	50	35
Hong Kong Exchanges	1,396	70	69	67	1,308	65	71	72
Indonesia SE	420	21	60	60	398	20	68	73
Korea Exchange	1,781	90	76	62	1,778	89	75	62
National Stock Exchange India	1,551	78	70	62	1,453	65	72	77
Osaka Securities Exchange	1,272	63	73	89	1,321	66	73	91
Philippine SE	251	13	50	37	246	12	53	42
Shanghai SE	894	44	56	25	870	43	63	32
Shenzhen SE	1,169	58	31	24	830	42	35	28
Singapore Exchange	461	24	40	39	459	23	45	48
Taiwan SE Corp.	752	38	58	39	741	37	59	42
Thailand SE	541	27	68	67	535	27	69	72
Tokyo SE Group	2,281	114	60	71	2,320	115	60	70
Europe - Africa - Middle East								
Amman SE	277	14	74	53	272	14	73	47
Athens Exchange	277	14	72	95	285	15	70	94
Budapest SE	48	2	63	83	42	2	59	81
Casablanca SE	73	4	51	54	76	4	48	50
Cyprus SE	110	6	82	94	115	6	77	94
Deutsche Börse	690	36	78	82	704	36	80	84
Egyptian Exchange	227	11	46	47	312	16	46	41
Irish SE	50	3	47	52	55	3	51	53
Istanbul SE	338	14	56	41	315	13	58	50
Johannesburg SE	352	18	35	59	351	18	29	79
Ljubljana SE	72	4	57	68	76	4	52	78
London SE Group	2,362	118	82	54	2,470	123	83	54
Luxembourg SE	30	2	75	51	31	2	79	71
Mauritius SE	62	4	38	59	64	5	48	89
MICEX	245	12	64	97	234	12	71	98
NASDAQ OMX Nordic Exchange	752	37	70	86	773	39	71	92
NYSE Euronext (Europe)	983	49	69	77	990	50	70	83
Oslo Børs	195	9	62	78	190	9	69	77
Saudi Stock Market - Tadawul	146	8	57	44	135	7	51	33
SIX Swiss Exchange	246	13	66	76	275	14	74	84
Tehran SE	369	17	61	34	364	17	60	73
Tel Aviv SE	596	31	71	75	609	31	74	79
Warsaw SE	569	28	75	84	470	23	72	80
Wiener Börse	89	6	49	62	97	6	49	62

Table 2: Firm Financing Channels—Domestic and Foreign Sources

This table reports equity and debt capital raisings in domestic and international markets over the period 1991-2005. Equity issues include initial public offerings and seasoned equity offerings. Debt issues include convertible and non-convertible debt issues and preferred shares issues. Issues abroad are those carried out in a public market outside of the firm's home country. The source is Gozzi, Levine and Schmukler (2010).

	Equity issues		**Debt issues**		**Total**	
	Total	**% abroad**	**Total**	**% abroad**	**Total**	**% abroad**
	Amount raised (million U.S. dollars at 2005 prices)					
Developed economies	4,372,328	8	19,146,822	35	23,519,150	30
Developing economies	583,375	28	629,122	47	1,212,497	38
	Number of firms					
Developed economies	24,313	5	11,504	36	32,989	16
Developing economies	10,497	6	3,165	27	12,980	11

Table 3: Firm Financing Channels—World Bank Surveys

This table presents financing patterns across country income groups across the world. Financing channels include: Retained Earnings, Market Financing (funds from private and public equity), Bank Financing (funds from local commercial banks and foreign owned commercial banks), Alternative Finance (funds from leasing, trade credit, credit cards, loans from family and friends, investment funds, development banks and other state services, informal sources, and other sources). The financing proportions are in percentages. The data used in the construction of this table comes from the World Bank's Enterprise surveys (http://www.enterprisesurveys.org). The table utilizes surveys conducted during the 2002-2010 period.

		Internal Sources	External Sources		
	Number of Countries	Retained Earnings (%)	Market Finance (%)	Bank Finance (%)	Alternative Finance (%)
High income	15	60	6	16	17
Upper middle income	27	64	2	18	16
Lower middle income	31	61	4	18	17
Low income	24	72	3	14	11

Table 4: Firm Financing Channels around the World

This table presents firm financing for the 40 largest countries covered in the World Bank's Enterprise surveys. Financing channels include: Retained Earnings, Market Financing (funds from private and public equity), Bank Financing (funds from local commercial banks and foreign owned commercial banks), Alternative Finance (funds from leasing, trade credit, credit cards, loans from family and friends, investment funds, development banks and other state services, informal sources, and other sources). The financing proportions are in percentage. The countries in bold correspond to countries in which alternative financing is higher than bank financing. The data used in the construction of this table comes from the World Bank's Enterprise surveys (http://www.enterprisesurveys.org). The table utilizes surveys conducted during the 2002-2010 period.

		Internal Sources	External Sources		
Country	**Observations**	**Retained Earnings (%)**	**Market Finance (%)**	**Bank Finance (%)**	**Alternative Finance (%)**
Algeria	337	75	0	16	9
Argentina	**752**	**69**	**1**	**5**	**25**
Bangladesh	892	60	0	30	10
Belarus	**314**	**74**	**3**	**6**	**17**
Brazil	**1351**	**56**	**4**	**14**	**25**
Bulgaria	**582**	**67**	**0**	**15**	**18**
Chile	1434	52	2	30	17
China	**1342**	**15**	**12**	**20**	**52**
Colombia	563	47	0	33	19
Croatia	269	54	5	24	17
Czech Republic	**495**	**55**	**7**	**9**	**29**
Ecuador	715	49	2	27	23
Egypt, Arab Rep.	716	86	4	7	3
Germany	1179	51	9	23	17
Greece	340	71	6	13	9
Hungary	649	55	16	16	12
India	1757	58	1	28	13
Indonesia	**291**	**42**	**1**	**16**	**40**
Ireland	278	49	1	28	23
Kazakhstan	391	79	1	14	7
Korea, Rep.	173	65	8	20	7
Malaysia	442	43	2	34	22
Mexico	**422**	**73**	**0**	**7**	**19**
Morocco	769	63	1	19	16
Pakistan	**240**	**58**	**15**	**6**	**21**
Peru	465	41	6	38	14
Philippines	**179**	**58**	**4**	**13**	**24**
Poland	**1211**	**73**	**1**	**12**	**13**
Portugal	**197**	**66**	**1**	**14**	**19**
Romania	**710**	**73**	**1**	**13**	**13**
Russian Federation	**701**	**82**	**0**	**6**	**11**
Slovak Republic	**292**	**64**	**10**	**8**	**17**
South Africa	**539**	**58**	**0**	**17**	**25**
Spain	598	60	2	22	16
Syrian Arab Republic	**210**	**81**	**0**	**4**	**15**
Thailand	1382	19	13	58	9
Turkey	1325	58	12	16	14
Ukraine	**687**	**75**	**5**	**8**	**12**
Venezuela, RB	170	67	4	24	5
Vietnam	956	30	28	28	14

Table 5: Firms with Access to Bank Credit

The top panel of this table reports the proportion of firms in the formal sector with a line of credit or a loan from a financial institution across country income groups and firm sizes. The bottom panel reports the proportion of firms identifying access/cost of finance as a 'major' or 'very severe' obstacle to the development of their business. Country income groups are from the World Bank. The firm proportions are in percentages. Firm size levels are the following: small firms have between 5 and 19 employees, medium firms have between 20 and 99 employees and large firms have more than 100 employees. The data used in the construction of this table comes from the World Bank's Enterprise surveys (http://www.enterprisesurveys.org). The table utilizes surveys conducted during the 2002-2010 period.

Income Level	Large firms	Medium firms	Small firms
	Firms with a line of credit/loan from a financial institution (%)		
High income	66	60	45
Upper middle income	65	54	38
Lower middle income	51	39	25
Low income	46	33	17
	Firms identifying access to finance as a 'major' or 'very severe' obstacle (%)		
High income	18	18	22
Upper middle income	20	25	29
Lower middle income	23	28	31
Low income	30	39	44

Table 6: Firm Financing Channels by Firm Age

This table presents financing patterns across firm age. We present two panels. The financing patterns are: Retained Earnings, Market Financing (funds from private and public equity), Bank Financing (funds from local commercial banks and foreign owned commercial banks), Alternative Finance (funds from leasing, trade credit, credit cards, loans from family and friends, investment funds, development banks and other state services, informal sources, and other sources). The financing proportions are in percentage. The source is Chavis, Klapper and Love (2010).

	1-2	3-4	5-6	7-8	9-10	11-12	13+	Total
				Working Capital (%)				
Retained Earnings	61	68	64	67	65	66	60	63
Market Finance	9	9	9	9	9	8	9	9
Bank Finance	9	8	10	11	11	11	16	13
Alternative Finance	21	14	17	13	14	14	15	15
				New Investment (%)				
Retained Earnings	66	66	65	66	62	64	60	62
Market Finance	10	10	10	10	10	8	11	10
Bank Finance	9	10	12	13	16	17	20	16
Alternative Finance	14	14	12	10	11	9	9	11

Table 7: Decomposition of Alternative Finance Channels

This table presents financing channels for the 40 largest countries covered in the World Bank's Enterprise surveys. The table reports different forms of Alternative Finance: funds from leasing, trade credit, credit cards, loans from family and friends, investment funds, development banks and other state services, informal sources, and other sources. The financing proportions are in percentages. The data used in the construction of this table comes from the World Bank's Enterprise surveys (http://www.enterprisesurveys.org). The table utilizes surveys conducted during the 2002-2010 period.

		Alternative Finance							
Country	Obs.	Leasing (%)	Trade Credit (%)	Credit Cards (%)	Investment Funds (%)	Loans from Family and Friends (%)	Informal Sources (%)	Other (%)	**Total** (%)
Algeria	337	0	55	0	0	45	0	0	100
Argentina	752	0	19	0	3	34	4	41	100
Bangladesh	892	19	26	0	3	42	3	6	100
Belarus	314	28	18	0	2	36	9	6	100
Brazil	1351	12	35	1	34	5	4	9	100
Bulgaria	582	25	24	0	8	19	4	19	100
Chile	1434	17	34	0	10	4	1	34	100
China	1342	0	2	0	1	11	4	82	100
Colombia	563	0	40	0	4	15	5	36	100
Croatia	269	39	13	1	6	9	4	28	100
Czech Republic	495	33	14	5	2	11	7	29	100
Ecuador	715	2	54	4	3	14	4	19	100
Egypt, Arab Rep.	716	21	24	2	7	29	0	18	100
Germany	1179	62	24	5	3	5	0	1	100
Greece	340	35	51	0	5	4	0	4	100
Hungary	649	50	11	1	5	12	2	18	100
India	1757	6	29	5	0	47	5	7	100
Indonesia	291	6	7	1	4	44	17	22	100
Ireland	278	70	5	0	4	8	2	11	100
Kazakhstan	391	15	22	0	11	35	8	9	100
Korea, Rep.	173	21	1	9	0	27	5	37	100
Malaysia	442	36	21	0	3	9	3	28	100
Mexico	422	0	62	0	2	12	10	14	100
Morocco	769	40	14	1	2	4	1	38	100
Pakistan	240	12	9	4	6	53	13	3	100
Peru	465	8	59	0	2	7	4	20	100
Philippines	179	4	33	2	1	42	2	16	100
Poland	1211	35	13	2	11	18	6	15	100
Portugal	197	69	5	1	4	11	0	11	100
Romania	710	27	24	1	8	30	2	8	100
Russian Federation	701	14	37	2	6	15	9	17	100
Slovak Republic	292	62	8	2	9	7	7	4	100
South Africa	539	63	3	0	3	3	1	28	100
Spain	598	53	24	2	4	5	1	10	100
Syrian Arab Republic	210	0	14	0	0	85	0	1	100
Thailand	1382	6	40	0	4	20	8	22	100
Turkey	1325	33	17	3	18	21	4	3	100
Ukraine	687	7	23	0	12	37	11	10	100
Venezuela, RB	170	0	0	0	0	0	0	100	100
Vietnam	956	4	7	0	23	35	4	27	100
Total	**26315**	**23**	**23**	**1**	**6**	**22**	**4**	**20**	**100**

Table 8: Firm Financing Channels in India (*Prowess* Database)

Panel A. Descriptive statistics of the *Prowess* sample of firms (as of 2005). This table provides the descriptive statistics of our sample of non-financial Indian firms in the year 2005, based on the *Prowess* database of CMIE. The table shows the breakdown between firms in the small and medium enterprises (SME) sector and large enterprises (LE), as well as between manufacturing and services sectors. It reports the maximum, median and minimum values of sales, assets and age of the firms. The source is ACDQQ(2012).

Firm Category		SME-Manufacturing	Large-Manufacturing	SME-Service	Large-Service	All SMEs	All Large Firms	All Firms
Number of Obs.		3,373	2,723	1,815	393	5,188	3,116	8,304
Sales (Million US$)	Max	900.26	34,837.47	1,324.82	10,025.98	1,324.82	34,837.47	34,837.47
	Med.	0.83	22.82	0.17	10.62	0.49	21.47	2.94
	Min.	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Assets ($Million)	Max	2,324.28	21,098.39	1,381.39	24,937.98	2,324.28	24,937.98	24,937.98
	Med.	1.64	21.94	0.96	23.05	1.40	22.03	4.19
	Min	0	0.62	0	0.74	0	0.62	0
Firm Age (years)	Max	137	180	108	104	137	180	180
	Med.	16	21	14	15	15	20	17
	Min	0	1	0	1	0	1	0

Panel B. All firms with four financing channels. This table reports the results on financing patterns for all firms and for firms in both the LE and SME Sectors in India. We aggregate all financing channels (from the *Prowess* database) into four categories: 1) Internal sources; 2) Market finance (external financing through markets): equity (stock) and debt (bonds) raised from capital markets; 3) Bank/FI finance (external financing through banks): debt/loans from banks and other financial institutions; and 4) Alternative (external) finance: all nonmarket, nonbank external finance, including equity and debt raised from private sources including group companies, promoters and founders, trade credits, and other liabilities. The breakdown of equity into publicly issued stocks (part of Market finance) and privately placed equity (part of Alternative finance) of firms is not available in the *Prowess* database. We classify all the equity raised by listed firms to be market finance, and all the equity raised by unlisted firms to be alternative finance. The source is ACDQQ (2012).

	All Firms			**LEs**		**SMEs**	
	All Firms	**LEs**	**SMEs**	**Listed LEs**	**Unlisted LEs**	**Listed SMEs**	**Unlisted SMEs**
Internal Sources (%)	45	47	15	58	34	40	11
Market Finance (%)	7	5	10	8	3	25	8
Bank/FI Finance (%)	18	19	25	12	26	19	26
Alternative Finance (%)	30	29	50	22	37	16	55
Median Assets Value (in Rs. Crores)	16.40	70.37	9.55	223.16	51.19	69.56	8.64
Number of Observations	12,344	4,760	9,014	1,001	3,759	400	8,614

Table 9: Firms' Financing Channels in India—using World Bank Surveys

Panel A. Summary statistics. This table reports summary statistics of the surveyed firms for the whole sample as well as subsamples. This table is based on the World Bank's Enterprise surveys on Indian firms conducted in 2002 and 2005. A small fraction of the surveyed firms sampled in 2002 were listed firms; none in the 2005 survey were listed. Survey questions include ownership and governance structure, financing channels, and business environment. Some firms surveyed in 2002 do not have information on financing sources.

	Listed Firms	Unlisted Firms	Large-Manufacturing	SME-Manufacturing	All Firms
			Total Assets (USD Million)		
# of observations	273	1,552	100	1,490	1,825
Max	8,577	31,777	31,777	42.15	31,777
Median	1.54	0.15	18.44	0.15	0.16
Min	0.00	0.00	0.19	0.00	0.00
			Total Sales (USD Million)		
# of observations	274	3,653	101	1,489	3927
Max	24,000	9,577	726.67	169.15	24,000
Median	1.79	0.15	18.18	0.15	0.16
Min	0.00	0.00	0.00	0.00	0.00
			Firm Age (Years)		
# of observations	251	3,745	94	1,417	3,996
Max	126	144	124	109	144
Median	19	14	24	13	15
Min	2	1	4	1	1

Panel B. Financing Channels for All Firms. This table reports sources of financing (both short-term financing for working capital, and long-term financing for new investments) for the Indian firms. Each surveyed firm has at most two years' observations (2002 and 2005).

Source of new funds	Working Capital (%)	New Investment (%)
Internal	47	52
Equity	1	1
Debt: Bank & FI	32	34
Trade Credits	9	4
All other sources	11	9
Family and friends	9	7
Informal	1	1
Unknown	1	1
# of observations	2,162	1,476

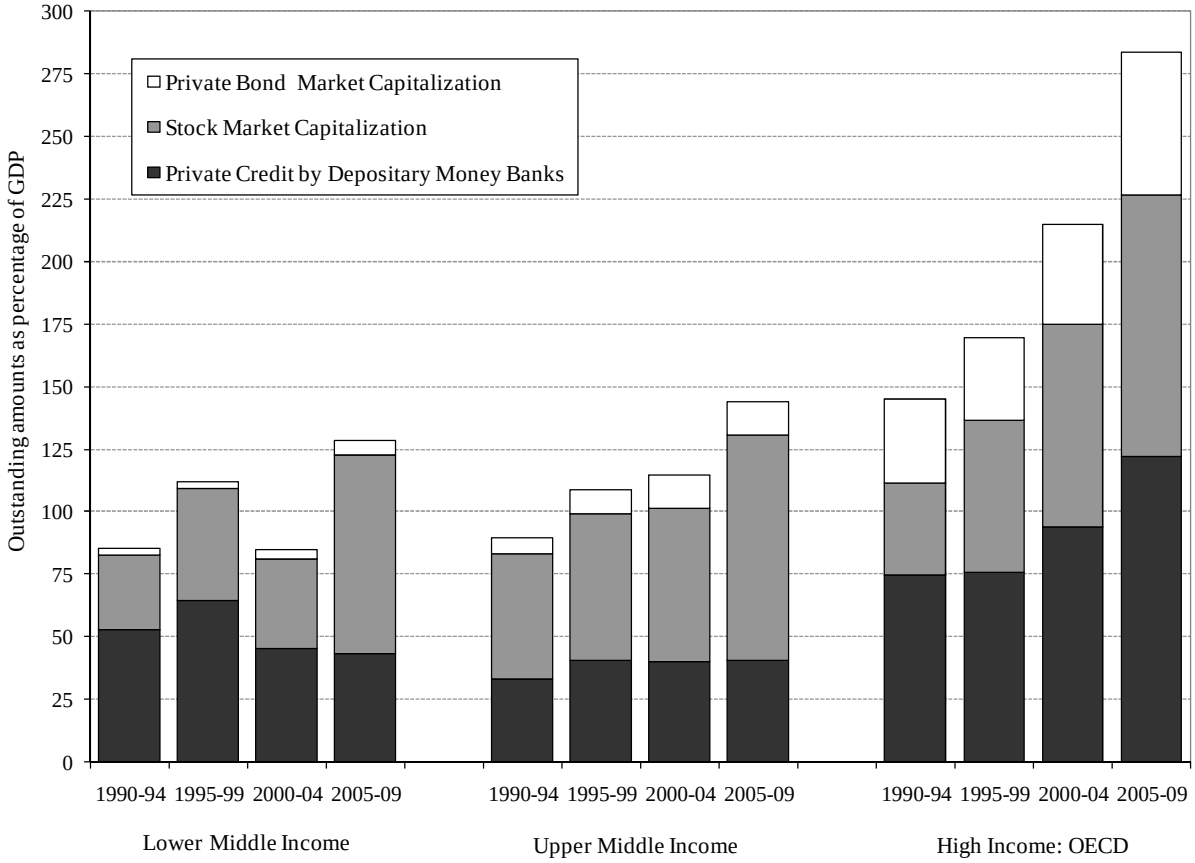

Figure 1. Financial markets and intermediaries around the world over the last two decades. This figure shows private bond market capitalization, stock market capitalization, and private credit by depositary money banks as a percentage of GDP. The income classification is from the World Bank. The data source is the Financial Structure Dataset (Beck and Demirgüç-Kunt (2009)).

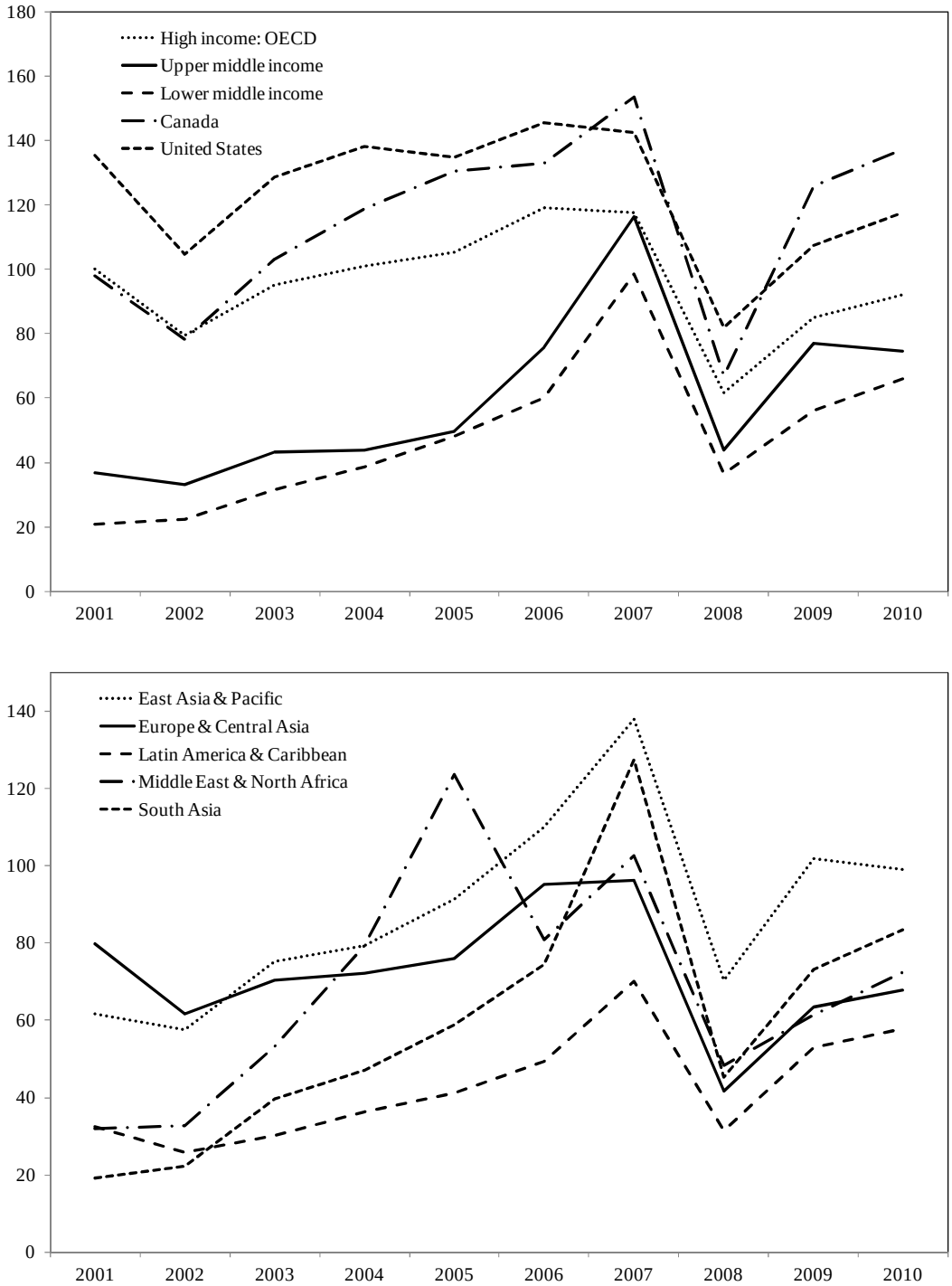

Figure 2. Market capitalization of listed firms around the 2007-2009 global crisis. This figure shows stock market capitalization of listed firms as a percentage of GDP across regions and income groups over the last decade. The income classification is from the World Bank. Bottom panel includes only emerging market economies. The data source is World Development Indicators (WDI).

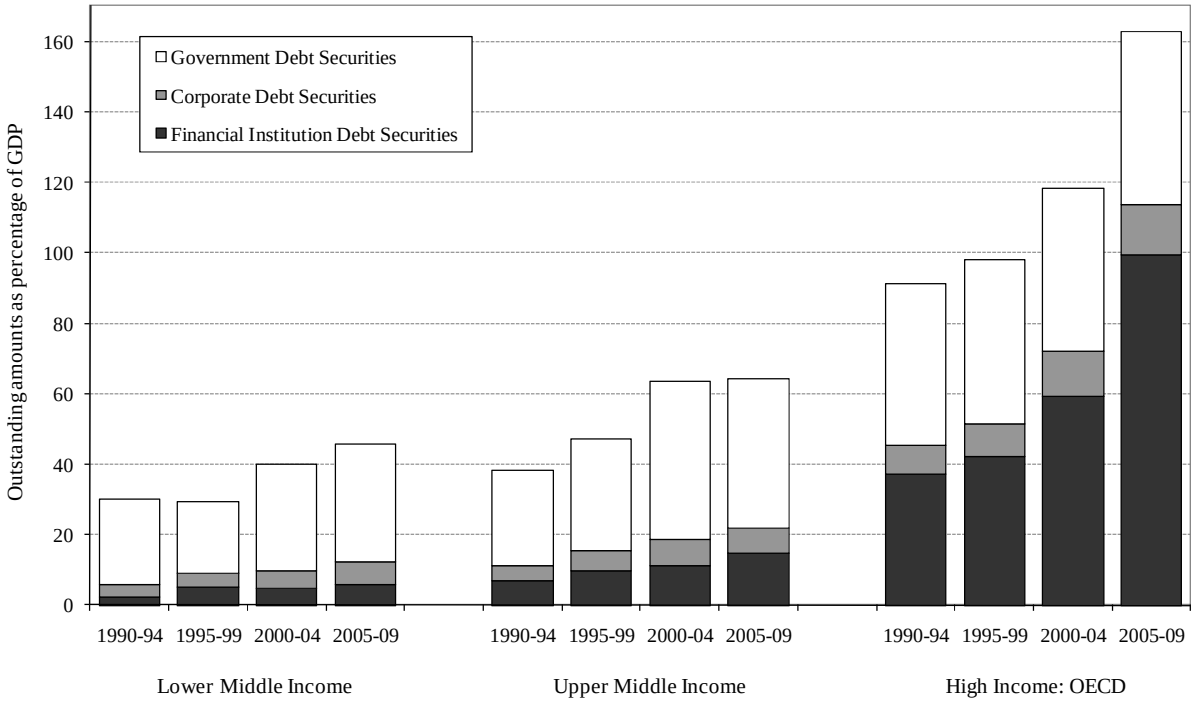

Figure 3. Development of debt markets around the world over the last two decades. This figure shows the outstanding amounts of private and public debt securities as a percentage of GDP. Private debt securities consist of securities issued by financial corporations and non-financial corporations. The income classification is from the World Bank. The data source is the Bank of International Settlements (BIS) and World Development Indicators (WDI).

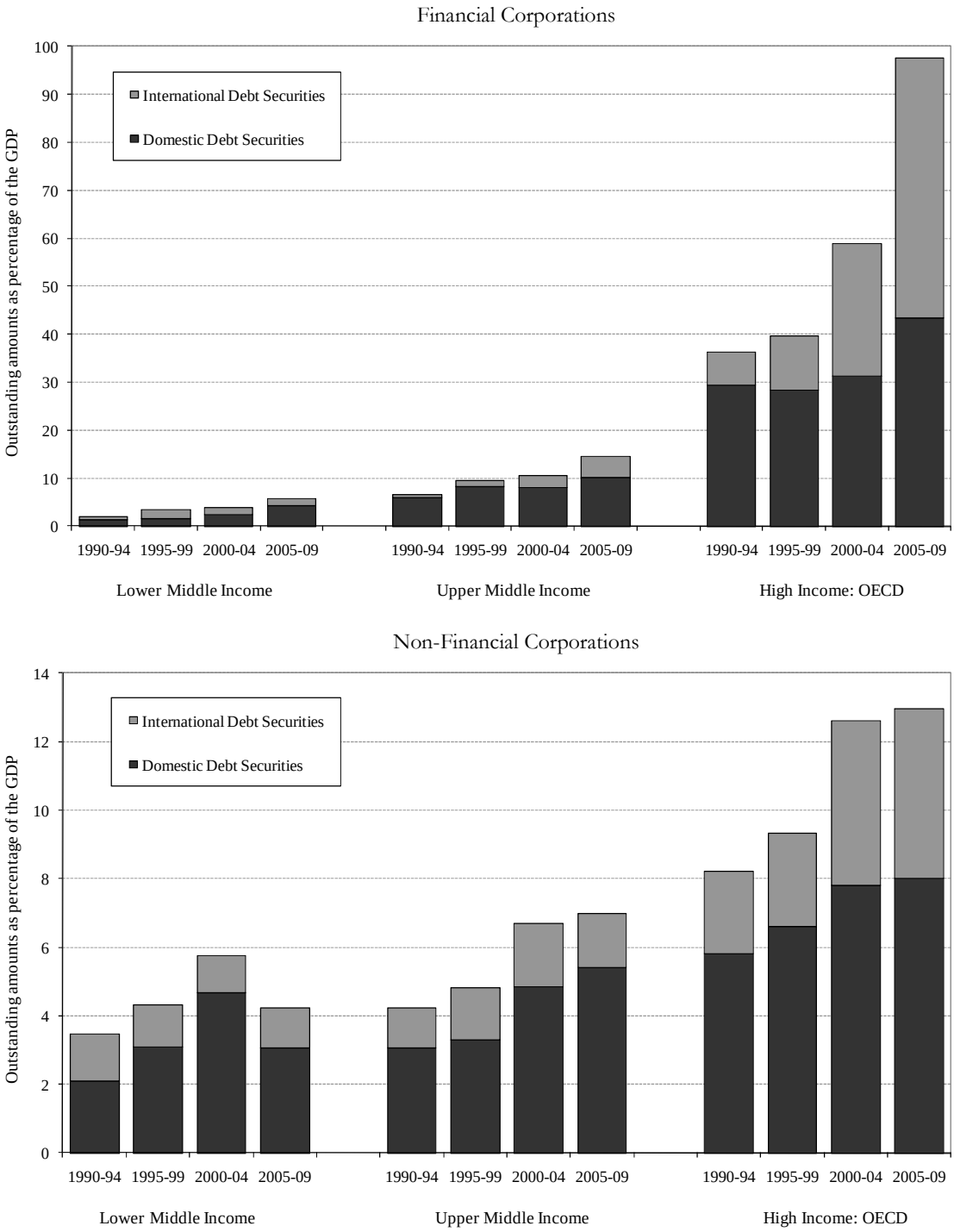

Figure 4. Domestic and international debt securities issued by corporations. This figure shows the outstanding amounts of domestic and international debt securities issued by financial corporations (top panel) and non-financial corporations (bottom panel) as a percentage of GDP. The income classification is from the World Bank. The data source is from the Bank of International Settlements (BIS) and World Development Indicators (WDI).

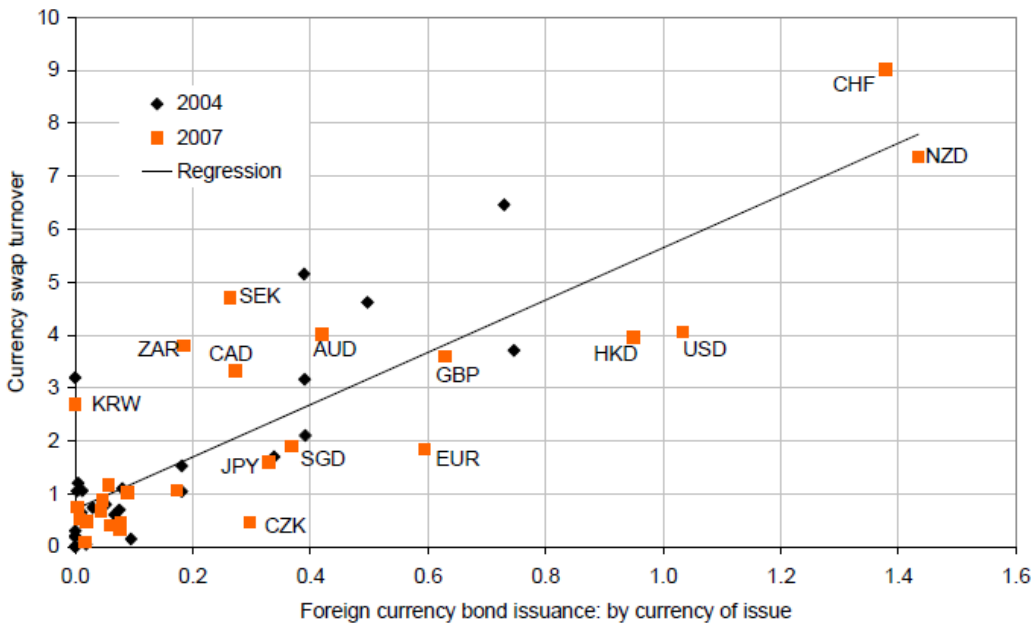

Figure 5. Correlation between currency swap turnover and foreign currency bond issuance. The figure reports the relationship between currency swap turnover and foreign currency bond issuance. The vertical axis corresponds to the monthly turnover (in April of the year specified) of currency swaps denominated in the specific currency, as a percentage of national annual GDP. The horizontal axis corresponds to the monthly gross issuance (during the April-June period of the year specified) by non-residents of bonds and notes denominated in the specified currency, as a percentage of national annual GDP. The source of the figure is Munro and Wooldridge (2009).

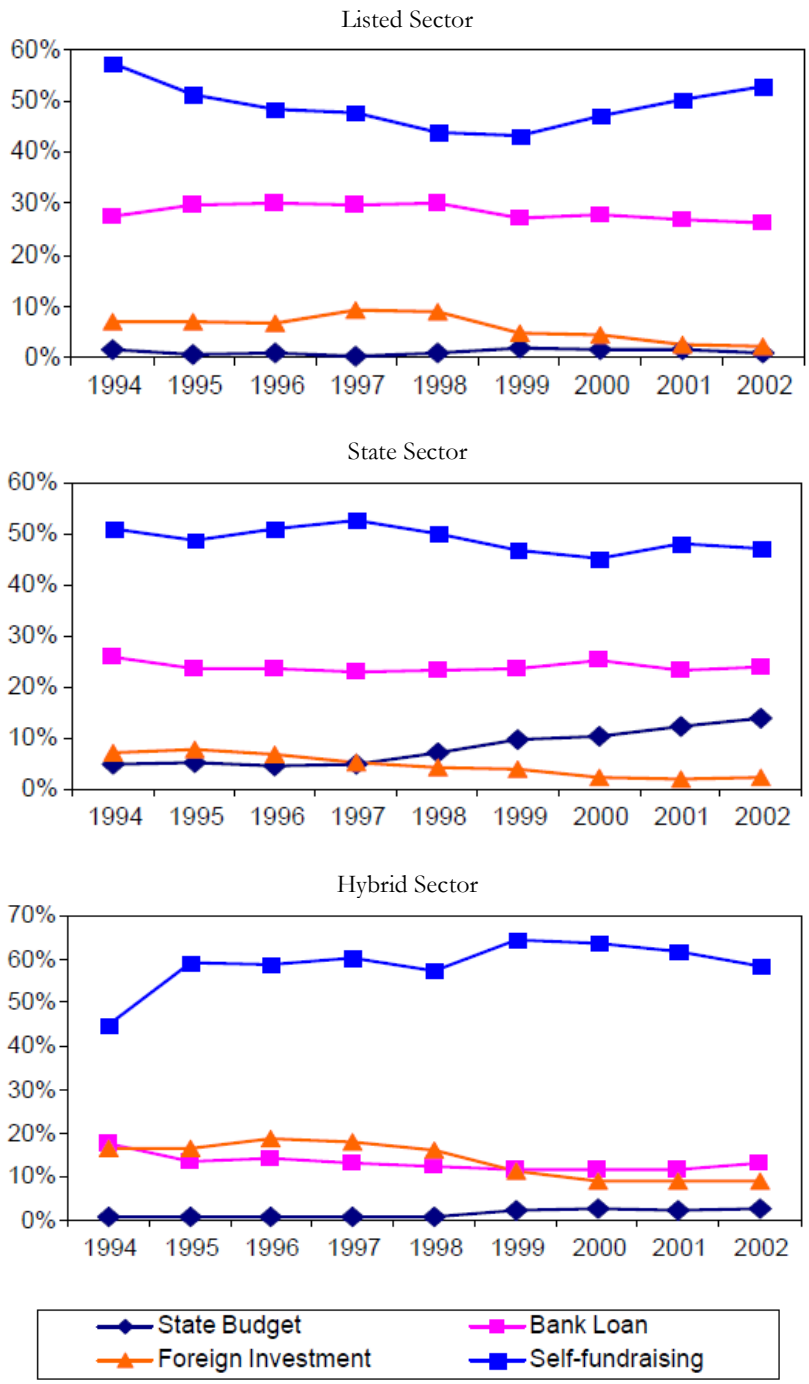

Figure 6. Firm financing channels across sectors in China. This figure shows the four most important financing sources for firms in China across sectors. The panel at the top displays the financing sources for the Listed Sector. The panel at the center displays the financing sources for the State Sector. The panel at the bottom displays the financing sources for the Hybrid Sector. The source of the figure is AQQ (2005, 2008).

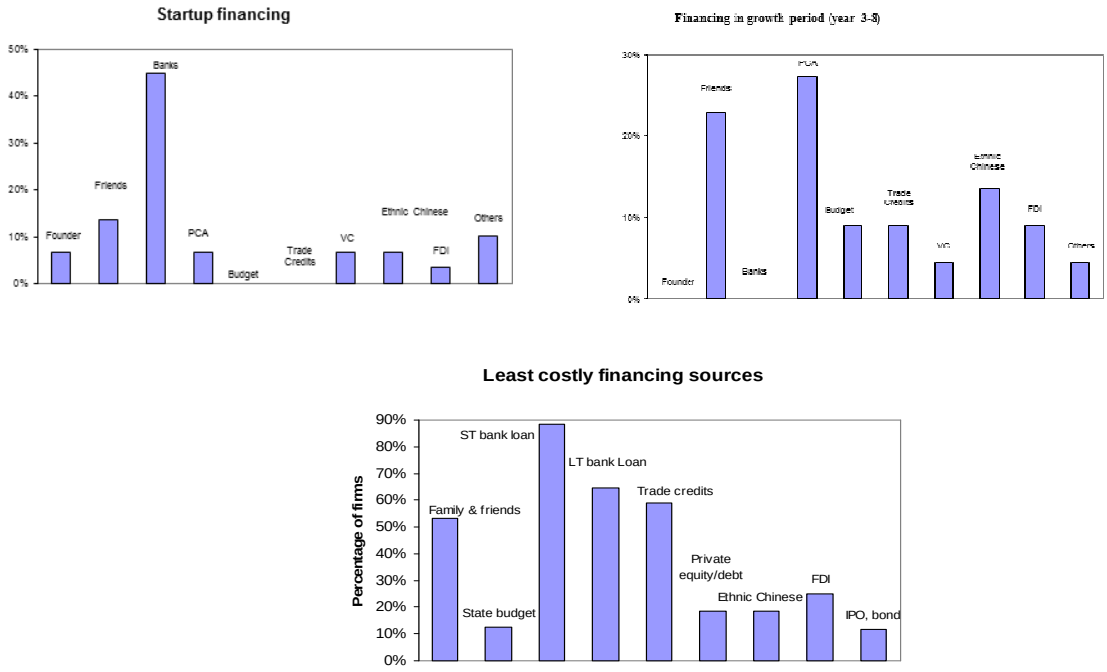

Figure 7. Financing channels in China. This figure presents survey results on firms' financing channels. Each bar represents the percentage of firms that regards a financing source as very important (25-50%) or extremely important (>50%) during their start-up and growth periods. Notes: PCA=private credit agencies, Budget=state/local budget, and VC=venture capital. The source of the figure is AQQ (2005).

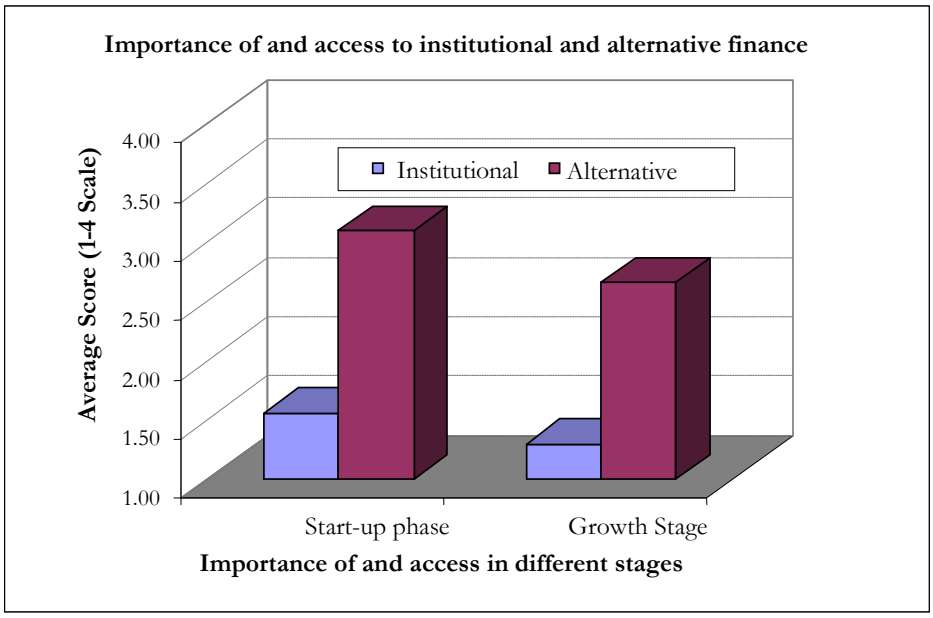

Figure 8. Financing channels in India. This figure highlights the relative importance in the start-up phase and the ease of obtaining funding in the growth stage from institutional and alternative sources. Alternative finance includes financing from friends and family and trade credit. Institutional finance includes banks, private credit agencies and individuals, government funding and venture capital for the start-up phase and short-term and long-term bank credit, loans from specialized lending institutions like SIDBI and SFC as well as private equity/debt from investors within India. Survey respondents rated each source on a 1- 4 scale (1= least important (extremely difficult and costly to access); 4 = extremely important (very easy and low cost)). The average ratings of sources within the institutional and alternative groups are reported in the figure. The source of the figure is ACDQQ (2012).