

# Commentary

Luigi Zingales

## THE WEAK LINKS

Ten years ago the literature on the relation between finance and growth was set on its modern course by the publication of King and Levine's (1993) influential paper. Much of the following work in this area was done by Ross Levine and his coauthors. Thus, none better than Levine himself could summarize the progress over the past decade, in the struggle to move from a correlation between financial development and economic development (Goldsmith, 1969) to establishing a causal relation between finance and growth.

Levine emphasizes advances along two dimensions. First, in the measures of financial development. Goldsmith (1969) relied on the ratio of the value of financial intermediary assets to gross domestic product (GDP) as his only measure of financial development. Levine and coauthors have used many different variables, e.g., the liquid liability to GDP ratio, the credit in the private sector to GDP ratio, and the level of stock market turnover. Rajan and Zingales (1998) have even used the quality of accounting standards as a measure of a firm's ability to raise funds. Nevertheless, as I will discuss momentarily, this first area is probably where less progress has been made.

The second and more important dimension emphasized by Levine's survey is in the attempt to establish causality. This is the area where most innovations have taken place. Their first step was to use the time dimension to identify the cause-effect relation (King and Levine, 1993), relying on the old "post hoc ergo propter hoc" argument. Levine and coauthors have subsequently enriched this approach using dynamic panel estimation, and further progress has been made in the use of instrumental variables (Rajan and Zingales, 1998, and Levine, 1998 and

1999). In both cases they use the La Porta et al. (1998) measures of legal origin as instrumental variables. I will discuss later whether and when these can be considered good instruments.

A third step in trying to establish causality, which is not adequately surveyed by Levine, is the "natural experiment" approach. In a very clever paper, Jayaratne and Strahan (1996) use the banking deregulation across U.S. states as an exogenous change in financial development. This omission, justified on the basis of a decision not to focus on within-country studies, is the only shortcoming in Levine's survey. Personally, I trust much more the natural experiment approach than the more sophisticated, but less robust, dynamic panel estimation techniques.

The final step in the quest for a causal link, amply summarized by Levine, is to look in more detail at the mechanism through which finance spurs growth (see, e.g., Rajan and Zingales, 1998, and Demirgüç-Kunt and Maksimovic, 1998).

In spite of this minor quibble, Levine's survey does an excellent job of summarizing the progress made in the past decade. In 1993 many people doubted that there was a relation between finance and growth; now very few do. Since Levine has documented so well what has been done, my role as a discussant is to describe what remains to be done. I will focus, thus, on the weak links in the quest for a reliable relation between finance and growth that policymakers can use in their decisions. I focus on six such weak links.

## Good Institutions vs. Finance

As La Porta et al. (1999 and 2002) document, there is a set of countries that seem to be doing "the right thing" in many dimensions: Their legal enforcement is better, their level of generalized trust higher, their judicial system more efficient and independent; they have less corruption, less regulation, more respect for property rights, and better-developed financial markets. Each institution taken individually has a positive effect on economic growth. Yet there are too many (highly correlated)

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variables and too few countries to be able to reliably identify the effect that one institution has compared with another.

To make the problem worse, all these variables are measured with errors. Thus, a multiple regression may fail to identify which of these variables really matter.

Finally, these characteristics seem to be very persistent. In fact, all are highly correlated with the country from which their legal system originated. Thus, neither dynamic panel estimation techniques nor instrumental variables (when the instrument is correlated with the omitted factor) can help us separate the effect of financial development from the effect of other good institutions.

One could argue that the natural experiment approach followed by Jayaratne and Strahan (1996) or the more micro approach followed by Rajan and Zingales (1998) and Demirgüç-Kunt and Maksimovic (1998) can address this issue. In part, this is true. If I had to convince a policymaker of the importance of this relation, I would start from this evidence.

Nevertheless, not even this evidence is bullet proof. In the natural experiment approach, there is always a possibility that unobserved factors caused both the deregulation and the higher growth of some states. For example, Kroszner and Strahan (1999) show that one of the factors driving deregulation was the diffusion of automated teller machines (ATMs). This diffusion was not homogenous. ATMs arrived sooner in California than in Arkansas. This is not uncorrelated with California being better than Arkansas at capturing the growth opportunities provided by new technologies.

An omitted variable is even more of a problem in Demirgüç-Kunt and Maksimovic's (1998) approach. After computing a firm-based measure of financial constraints, they collapse it into a country-level indicator. In so doing, they fall back into a traditional country-level regression, which prevents them from controlling for country-specific factors, as Jayaratne and Strahan (1996) and Rajan and Zingales (1998) do.

By exploiting the channel through which finance should have an effect, Rajan and Zingales (1998) make it more difficult for spurious correlation to drive their results. For such correlation to exist, both their measure of external financial dependence and their instrumented measure of financial development would need to be spuriously correlated in the "right" direction. Potentially, the most serious source of trouble could be that external financial dependence acts as proxy for growth opportunities in

the more technologically advanced sectors, which have better opportunities for growth in economically developed countries (which tend to be also more financially developed). Rajan and Zingales (1998), however, consider this possibility and add to their specification an interaction between their measure of external dependence and the per capita GDP, as a proxy for the state's economic development. While this addition reduces the size of the coefficient of financial development, the coefficient remains both economically and statistically significant. Nevertheless, the possibility remains that financial development (instrumented by the legal origin variables) is a better proxy for technological sophistication than per capita GDP.

In sum, while enormous progress has been made in the last decade toward establishing a causal link between finance and growth, we still do not have the smoking gun.

### **Measures of Financial Development**

For the relation between finance and growth to be used as a policy tool, we need to improve our measure of financial development. Thus far, the literature has mostly relied on the measures that were easily available, with few links to what theory suggests the measure should be.

More problematically, some of these measures can be misleading from a policy point of view. Consider, for instance, the proxy of financial market development employed by Levine and Zervos (1998): volume of stock traded relative to their market capitalization. There is no question that—as the authors say—improvement in liquidity should be beneficial to the economy and that liquidity is positively correlated with trading volume. Nevertheless, more stock trading is not necessarily beneficial. More volume can increase stock volatility, as shown in a clever paper by French and Roll (1986). And nobody would dare argue that the diffusion of day trading has been beneficial to the economy. Nevertheless, an unsophisticated policymaker, who took the Levine and Zervos (1998) evidence seriously, would conclude that donating a computer and an E\*Trade® account to every household in Africa would benefit the economic growth of that continent!

Thus, one dimension in which this literature must progress is in its measure of financial development. From this point of view, it would be useful to go back to fundamentals. From a theoretical point of view, the right measure would capture the ease with which any entrepreneur or company with a

sound project could obtain finance and the price at which this finance could be obtained. A developed financial system should provide broader access to finance at a lower cost.

All measures currently used are only vaguely related to this notion. For example, most papers use the credit to GDP ratio, but Jayaratne and Strahan (1996) show that after banking deregulation, when the efficiency of the financial system most likely went up, the level of bank debt to GDP did not go up. It was only the percentage of bad loans that went down.

Rajan and Zingales (1998) attempt to devise a measure of financial development that is more linked to theory. They use the quality of the accounting standards, which is more likely to be correlated with the ease of raising external funds than with any of the previous measures.

More recently, Guiso, Sapienza, and Zingales (2002) (GSZ) tried to develop a more theory-based measure of financial development. Since the right theoretical measure should capture the ease with which entrepreneurs with sound projects can obtain finance, they compute the local variation in households' access to credit. By using a rich data set of Italian households, which includes their answer to the question "Have you been denied credit or been discouraged from applying for credit in the past year?" they can identify where, *ceteris paribus*, households have easier access to credit. To distinguish between overlending and efficient provision of funds, they control for the percentage of bad loans in the area. Not only is this a measure related to the theoretical notion of financial development, it is also a variable that policymakers can target in hopes of obtaining the desired final effect.

One potential problem with this approach is that the measure of financial development may capture local variation that is correlated with access to credit. To guard against this potential problem, GSZ instrument their measure of financial development by using some historical constraints present in the Italian banking system. This specificity, however, limits the applicability of this method to other environments. Hence, more work is needed on this dimension.

### **Mechanisms Through Which Finance Works**

Much of the literature has focused on proving that the observed correlation between finance and

growth is causal. Less attention has been focused on understanding the channels through which finance works. Establishing the main channel is important not only for instilling confidence in the theory of a causal link, but also from a policy point of view. Only by understanding the channel through which this relation works can we help policymakers design effective policies to promote growth.

Identifying the most important channels will also help us settle the question of which aspects of the financial system are more important. Most studies agree that having a more developed banking sector is better than having an underdeveloped one. But there is still a lot of uncertainty about whether a developed equity market provides an additional benefit, even more so if the development of the equity market occurs at the expense of the development of the banking system.

One approach in establishing the main channels is to derive some cross-sectional implications about which firms or industries would benefit the most from financial development. This is the approach followed by Rajan and Zingales (1998).

Another approach is to trace the effects of financial development from the micro evidence to the macro. For example, Rajan and Zingales (1998) show that financial development provides greater benefit to the growth in the number of establishments than to the growth in the average size of the establishment. This would suggest that one of the channels through which finance affects growth is by promoting entrepreneurship. Not only do GSZ find such evidence in their Italian micro data set, but they also show how this effect translates into a higher growth of firms in more financially developed areas and ultimately in higher GDP growth. More evidence of this kind is needed.

### **Does Domestic Financial Development Matter?**

All the evidence on the impact of finance on growth has measured the development of finance at the country level and ignored the possibility that financial institutions and markets from a neighboring country could substitute for deficiencies in the domestic financial system. In the past, this was not such a strong assumption. International capital movements were extremely limited. In recent years, however, private capital flows have grown dramatically. International listings also grew dramatically over the 1990s. Now, more Israeli companies are

listed in Nasdaq than in Tel Aviv. It is legitimate to ask, then, whether Israel needs a local capital market. This question is extremely important from a policy point of view. Do emerging markets need to develop their domestic financial institutions and markets or, in the current scenario with high capital mobility, can they piggyback on the financial systems of developed countries?

Unfortunately, this is a difficult question to answer empirically. The integration of national financial markets is so recent that we lack a sufficiently long time series to estimate its impact in the data. At the same time, the pace of integration is so fast that, if we were to establish that national financial development mattered for national growth during the past decade, we could not confidently extrapolate this result to the current decade.

To try to assess the relevance for growth of national financial institutions and markets in an increasingly integrated capital market, GSZ follow a different approach. Rather than study the effect of financial development across countries, they study the effect of local financial development within a single country—one that has been unified for the past 140 years—Italy. The level of integration achieved in Italy probably represents an upper bound for the level of integration that international financial markets can reach. The authors find that local financial development matters for growth within Italy. Hence, one can safely conclude that national financial development will continue to matter for national growth in the foreseeable future.

It still remains to be established, however, to what extent foreign institutions can substitute domestic ones. Consistent with Petersen and Rajan (2002), GSZ's evidence suggests that small firms encounter barriers to distance lending. They do not find these barriers for large firms. Thus, domestic financial development might be an issue for small firms only.

### **Other Effects of Financial Development**

Thus far, the literature has focused on the effects of finance on GDP growth, with occasional reference to investment and total factor productivity growth. Not only is this single-minded focus unwarranted—because there are several aspects we care about besides economic growth—but it is also harmful. These are conditions of the economic system that might impact the long-run ability to grow, such as competition, firm size, and industry concentration, but also aspects we care about directly, such as

social mobility and income distribution. There are sound theoretical reasons why financial development might impact these variables. Greater access to funds, for instance, facilitates new entry of firms, which breeds competition. At the same time, it makes it easier for poor individuals to exploit their talents, promoting social mobility but also, possibly, worsening the income distribution. Thus, there is no justification for ignoring these aspects.

To be fair, there is already evidence on some of these effects. Haber (1991) presents an interesting case study of the effects of financial development in promoting competition. Similarly, GSZ show that, in more financially developed areas, firms' mark-ups are lower, indicating more intense competition. Finally, Cetorelli (2001) shows that a more concentrated financial sector is associated with larger firms.

Not only are these effects interesting, per se, they might also shed light on the political support (or lack thereof) for financial development. If finance breeds competition, then incumbent firms might not be so thrilled to see finance develop. I will return to this issue momentarily.

In this search for the additional effects of financial development, it is important to acknowledge the possible negative effects. While the overwhelming evidence at this point suggests a positive overall effect of finance, it is well possible that financial development also has negative consequences. For example, are financially developed systems more prone to financial crisis or bubbles? The possibility exists. Kaminsky and Reinhart (1999), for instance, show that in 18 of 26 banking crises in the past two decades, the financial sector was liberalized in the preceding 5 years. More research is needed on this issue as well.

### **What Causes Financial Development?**

Thus far, all the literature points to financial development as being beneficial. So then, if finance is indeed so good, why don't we see more of it? What does cause financial development (or lack thereof)? This question is important from the perspective of both theory and policy. From a theoretical point of view, as stated earlier, only by understanding the real causes of financial development can we devise the appropriate instruments to identify the causal relation between finance and growth.

From a policy perspective, this is probably the most important question. It is of little use to know that a relation between finance and growth exists

if policymakers do not know how to promote financial development. What do we know on this count?

La Porta et al. (1997) show a strong correlation between financial development (and, in particular, financial markets development) and the presence of a legal and regulatory infrastructure. Their conjecture is that, for external finance to develop, investors need to be protected by laws and regulations. This conjecture is supported by further work. Dyck and Zingales (2002), for instance, show that private benefits of control are lower in countries with better laws and regulations, suggesting that outside investors are indeed better protected there. They also show that markets with a lower level of private benefits are more developed.

This evidence, however, compels the question of why these better laws and regulations are not introduced in all countries. La Porta et al. (1998) claim that there is something specific to common-law tradition that makes a common-law country more protective of property rights and in particular more attentive to investors' property rights. In La Porta et al. (1998) they identify a number of statutes that protect investors, and they show that these statutes are more often present in common-law countries than in civil-law countries.

The source of the difference, however, cannot be so simplistic. If there is political will, civil-law countries can easily copy common-law statutes. Hence, either those statutes are not the source of the difference or the problem resides in the lack of political will. In several papers, Andrei Shleifer and coauthors have explored alternative reasons why common-law countries protect investors more. They have focused on the three aspects that differentiate them: the general stance of government, i.e., their degree of interventionism; the structure of the legal system, in particular the politicization of judges; and the strength of common-law principles, such as "smell tests." Of these three, only the last is intrinsically linked to the essence of the common-law tradition, making it hard to export in civil-law countries. The other two compel the same question: If there is political will, why don't civil-law countries imitate the more successful institutions of common-law countries?

As suggested, a possible answer is that these countries lack political will. In fact, Rajan and Zingales (2001, 2003) point out that reforms to promote financial development can be opposed by the dominant elite, who benefit from oligopolistic and nontransparent markets. Since these elites are

wealthy and well connected, they could easily shape political action even in well-established democracies. But their power is reduced when a country is open to foreign goods and capital. Consistent with this interpretation, they find evidence that financial markets develop the most in countries and in periods of free capital and goods mobility.

An additional explanation is that better laws and regulations simply reflect a more fundamental trait of some countries or communities, where people vote, obey the law, and cooperate with each other and whose leaders are honest and committed to the public good (Putnam, 1993 and 1995). As Guiso, Sapienza, and Zingales (2000) show, these characteristics, often labeled "social capital," are highly correlated with the use and the availability of financial instruments at the local level and with financial development across countries. Unfortunately, we still know very little about what causes social capital to use these findings as an effective policy tool.

In sum, the debate on the causes of financial development is still in its infancy and a lot more remains to be learned.

## CONCLUSION

In his survey, Levine emphasizes how much we have learned in the past decade about the relation between finance and growth. Here, I have stressed how much we still need to know before this relation can be confidently used for policy purposes. In this area, the next decade promises to be as exciting as the past one.

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