

Chapter 2

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THE ROLE OF FINANCIAL INTERMEDIATION IN ECONOMIC GROWTH: SCHUMPETER REVISITED

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ABSTRACT

Nineteenth Century Classical Economists ignored financial intermediation as an important element in explaining economic growth until Bagehot. Bagehot, for the first time, gives explicit examples of how money market developments in England could make capital flow across the country in search of the highest rate of return. However, analysis of Bagehot was incomplete. It was Schumpeter, who put the role of financial intermediation at the center stage of economic development.

Curiously, renewed interest in economic growth in the post Second World War saw a development in the literature that completely ignored the role of financial intermediation. For example, Solow-Swan model of development and growth has no role of financial intermediation. For all practical purposes, the economies were seen to be well approximated by a one good (corn producing corn) model. It took the international financial crisis of Latin America in the early 1980s to force economists to take the role of financial intermediaries seriously.

I examine why financial intermediation is important in the tradition of Schumpeter. There are important contributions by banks and other financial intermediaries on the economy. This process can be seen when we examine how the economy is affected when there are banking crises. Latin America provides an extremely fertile test-bed.

There are important ways financial intermediaries can contribute to growth by examining the models of new growth theory in the tradition of Arrow-Romer. Elements of these models can be found in the writings of Schumpeter. Current debate about the role of financial intermediation in determining the growth rate misses the central point of Schumpeter.

Introduction

Classical economists of the Nineteenth Century have paid some attention to the role of financial intermediation in running the wheels of economic growth smoothly. For instance, Bagehot (1873) gives explicit examples of how money market developments in England could make capital flow across the country in search of the highest rate of return. " Political economists say that capital sets towards the most profitable trades, and that it rapidly leaves the less profitable and non-paying trades. But in ordinary countries this is a slow process, and some persons who want to have ocular demonstration of abstract truths have been inclined to doubt it because they could not see it. In England, however, the process would be visible enough if you could only see the books of the bill brokers and the bankers. Their bill cases as a rule are full of the bills drawn in the most profitable trades, and ceteris paribus and in comparison empty of those drawn in the less profitable. If the iron trade ceases to be as profitable as usual, less iron is sold; the fewer the sales the fewer the

bills; and in consequence the number of iron bills in Lombard Street is diminished. On the other hand, if in consequence of a bad harvest the corn trade becomes on a sudden profitable, immediately 'corn bills' are created in great numbers, and if good are discounted in Lombard Street. Thus English capital runs as surely and instantly where it is most wanted, and where there is most to be made of it, as water runs to find its level." (Bagehot, 1873, Chapter I, p. 11-12)

Further in his exposition, Bagehot becomes even more explicit about the connection between financial development (and trade) and economic growth. "The 'loanable capital,' the lending of which caused the rise of prices, was lent to enable it to augment. The loanable capital lay idle in the banks till some trade started into prosperity, and then was lent in order to develop that trade; that trade caused other secondary developments; those secondary developments enabled more loanable capital to be lent; and that lending caused a tertiary development of trade; and so on through society." (Bagehot, 1873, Chapter VI, p. 52)

These references to the connection between finance and economic growth, however explicit, did not have central stage in the thinking of classical economists. It was Schumpeter (1911) who put the role of financial intermediation at the center of economic development. It is curious to note that even though Schumpeter wrote *Theorie der Wirtschaftlichen Entwicklung* in 1911. The English translation *The Theory of Economic Development* did not appear until 1934. The German edition appeared just before the First World War. English speaking economists (such as Schumpeter's contemporary John Maynard Keynes) ignored it because it was written in German and because of the War. By the time the English translation appeared, the two main English speaking intellectual centers of the Western World, England and the United States were in the depth of the worst depression of this century. Thus, politicians and economists alike were in no mood to celebrate contributions of businessmen in economic growth. Keynes contributed to this apathy in Schumpeter indirectly by publishing his influential *General Theory* in 1936.

Economists in studying theories of economic growth in the 1950s showed renewed interest. Robert Solow (1956) and T. Swan (1956) developed a model of economic growth. Solow-Swan model of development and growth has no role of financial intermediation. For all practical purposes, the economies were seen to be well approximated by a one good (corn producing corn) model. The growth model that dominated had only two elements in production: capital and labor. However, when researchers talked about capital, it was understood to be physical capital. Financial capital or human capital played no role. Economists understood right after the development of the Solow-Swan model that the model could not explain large parts of economic growth (the existence of so-called "Solow Residuals"). For example, Arrow (1962) wrote, "It is by now incontrovertible that increases in per capita income cannot be explained simply by increases in the capital-labor ratio." Arrow's motivation was to incorporate knowledge into the model. It would be a quarter of a century before Arrow's idea of "learning by doing" would be incorporated into a serious macroeconomic model (Romer, 1986) in the so-called "new growth theory". It would also be another quarter of a century before economists took Solow Residuals seriously and entertained models that contained financial activities.

In 1982, the financial markets around the world were rocked by the deep financial problem in Mexico that led to default of international loans. The default sparked crises in financial markets in other Latin American countries. Eventually the financial crisis stalled the economic growth of these Latin American countries in the whole decade that followed. Between 1960 and 1980, the average growth rate for Latin American countries exceeded 6% per annum. The average growth rate fell to 1.3% per annum during 1981-1990. This has prompted economists to dub the 1980s as the lost decade for Latin America. After the Great Depression, this was the first clear evidence that financial crisis leads to general economic depression. Policy in many countries shifted to reforming (and deregulating) financial institutions. It took the international financial crisis of Latin America in the early 1980s to force economists to take the role of financial intermediaries seriously.

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Schumpeter's Views

Schumpeter made the first articulated statement about how financial transactions take central stage in economic growth. He did not use the modern parlance of financial transactions but he used the banker as an example. Instead of using the term economic growth, he used the term development. Thus, he wrote, "The banker stands between those who wish to form new combinations and the possessors of productive means. He is essentially a phenomenon of development, though only when no central authority directs the social process. He makes possible the carrying out of new combinations, authorises people, in the name of the society as it were, to form them. He is the ephor of the exchange economy." (Schumpeter, 1934, p. 78)

Only in the last decade, Schumpeter's view about the nexus between banking (and finance) and economic development (and growth) is being taken seriously. Below I review some of the literature to date. I point out where they succeed and where they do not in articulating Schumpeter's vision.

Schumpeter sharpened his view in later writing. While discussing business cycles, he wrote, "the relation between credit creation by banks and innovation is fundamental to the understanding of the capitalist engine." (Schumpeter, 1939, p. 111)

Financial Intermediation Reduction Friction

If there is perfect competition, all traders are price takers, there is no private information, and hence there is no role of financial intermediation. The Solow-Swan growth model usually assumes away the existence of financial markets. If we introduce market frictions, then we need to introduce the central role of financial intermediaries. There are two important frictions that financial intermediation mitigates.

Technological friction

Financial institutions take in the saving of investors and convert them into stocks and bonds. They money generated from stocks and bonds are finally used by firms to invest in bricks and mortar. Why can't the investors themselves do that? There is informational asymmetry between the investors and the firms. The financial intermediaries reduce the search, collection and processing cost of investors. This process is sometimes called the *screening function* of the financial intermediaries.

Financial intermediaries allow individual small savers to access large investment projects through the mechanism of *fund pooling*. Individual investors are usually too small to access the benefits of indivisible large projects. Pooling done by financial intermediaries allow the small investors to access this avenue. Once again, if there are informational asymmetry between the small investor and the firm, this mechanism becomes essential.

Financial intermediaries help diversify risk for small investors. Large projects carry large risks. It is difficult for small investors to invest in large risky investment projects by themselves. Financial intermediaries allow them to *pool risks*. They can form portfolios of large risky

investments. The portfolios themselves would be insulated against high risk if they diversify. It allows the small investors to access this avenue without high risk.

Long term projects require long term investment. Most small investors cannot afford to invest in the long term. They want to invest in the short term. This temporal gap is bridged by *financial intermediation*. This process is called liquidity management. Once again, long-term projects have higher return that ordinary investors cannot access, as they only have short-term investment options. Financial intermediaries make this possible.

Thus, in summary, financial intermediaries help efficient allocation of resources by allowing small-scale investors to get the benefits of large-scale investment projects. They do it through screening, fund pooling, risk-pooling, and financial intermediation.

Incentive problems

The functions described above assume that there is no conflict of interest between the savers and the firms. Additional problems arise when firms have incentives not to reveal all information. All firms do not have the same risk. Savers typically do not have the means to distinguish between high risk and low risk firms. Financial intermediaries can help them do so. It is also costly to monitor the activities of the firm. Individual investors are too small to carry that out. Financial intermediaries can do it on behalf of small investors. These problems are commonly referred to as problems of adverse selection and moral hazard.

Empirical Aspects of Scumpeterian View

Becsi and Wang (1997) put very eloquently the relationship between finance and economic growth in the context of modern growth theory. "Financial intermediation increases the efficiency of investment by identifying and channeling resources toward high-return projects and by disciplining corporations. While innovation and knowledge creation are the ultimate forces behind broad capital accumulation and growth, financial intermediation will enhance growth to the extent that the intermediaries perform their functions efficiently. Thus, countries' growth performance should vary with their level of financial efficiency. Financial efficiency in turn depends importantly on the extent to which financial economies of scale have been realized and on how developed and innovative the financial sector is. Financial development can be measured by the size of the financial sector to the extent that activities transform the quality of investments.

Also, as the growth model with financial intermediation illustrated, financial development and efficiency are reflected in lower loan-deposit rate spreads. The growth model also predicts that growth rates are positively correlated with real interest rates and negatively correlated with loan spreads. In addition, it has been shown that government intervention can severely affect the efficiency of financial intermediaries and economic growth and alter these correlations." (p. 56-57)

Modern applications try to capture one or many aspects of these connections between finance and economic growth. In economics quite often *connections* exist between economic variables. It is one thing to establish the connection by statistical means, it is quite another to uncover *causation*. As we shall see, this is exactly the nature of the debate about financial factors *affecting* economic development.

Early Empirical Work

Cameron (1961) and Gershcckron (1962) noted that economic development in France was associated with the *Credit Mobilier*. It was not until the publication of the book by Goldsmith (1969) that the link was explored for many countries simultaneously. He analyzed data from 35

countries over a period from 1860 to 1963. He found the economic growths and financial developments are positively correlated over periods of decades. As a proxy for financial development, he took the ratio of financial intermediation (measured by the total assets of all financial intermediaries divided by the GDP of the corresponding year). There are three obvious drawbacks of Goldsmith's study. (1) Firms alone do not do financial intermediation. Households and governments are also active in this process. Therefore, the effect that Goldsmith uncovered may have been coming from the two other sectors. (2) More serious is the problem of causation we mentioned earlier. Does financial development cause economic development or does it work the other way around? From the analysis of Goldsmith it was not clear. In fact, Goldsmith doubted whether this question could ever be settled. (3) Economic theory tells us that the propensity to save, enhancement of human capital, rate of population growth, fiscal and monetary policy, rule of law are all (potential) contributors to growth of GDP. Thus, Goldsmith's contribution is important but incomplete.

There were further investigations in the tradition of Goldsmith (see, for example, Shaw, 1973 and McKinnon, 1973). There were some refinements in the methods used. However, none of them used any advanced econometric techniques even though methods of testing causality was already available and being applied elsewhere (see Sims, 1972).

Investigations along this line came to a trickle between 1973 and 1993. For example, a search with keywords "financial" and "economic development" dug up only five articles between 1969 and 1980 (from ECONLIT). Between 1981 and 1990, 144 articles published were listed in ECONLIT. Theoretical work in the tradition of Goldsmith was published earlier (Greenwood and Jovanovic, 1990).

Recent Wave of Evidence

Probably the biggest impetus came with the advent of large macroeconomic datasets. This led to the pioneering empirical study by King and Levine (1993a, 1993b). They used four measures of operations of the financial system: (1) Liquid liability of the financial system as a percentage of GDP. (2) Quantity of credit provided to private enterprises. (3) Share of credit provided by the banks. (4) Share of total credit allocated to private non-financial firms. The first two were measuring the quantity of financial activities in the economy. The last two measured the quality of financial activities. They also used three measures of economic growth. (1) Per capita growth rate in GDP. (2) Per capita growth rate in capital stock. (3) Total factor productivity growth rate. They aggregate these figures across countries and across time to arrive at some averages. They calculate simple correlations. They also take into account leads and lags as there may not be contemporaneous relationships between economic growth and financial development. They conclude, "The data are consistent with the view that financial services stimulate economic growth by increasing the rate of capital accumulation and by improving the efficiency with which economies use that capital." (1993b, p. 735)

The first set of criticism came on the heels of the papers by King and Levine. Fernandez and Galetovic (1994) showed that if the King and Levine sample is split between OECD and non-OECD countries, the correlations become insignificant for OECD countries. Then, they added more countries and divided the sample into three groups based on per capita income at the start of the sample period. They showed as the initial income falls, the correlations become larger and more significant. DeGregorio and Guidotti (1992) showed that the correlations become *negative* when we restrict our sample only to Latin American countries. It is well known that in Latin America the banks became active lenders in the 1970s. It turned out that they lent more but not prudently. Thus, expansion of banking sector hid the true character of it. They expanded and became more vulnerable and fragile. This type of fragility is not accounted for by the variables considered by King and Levine.

Perhaps the most damning criticism of King and Levine was the following: Suppose we accept that finance *predicts* economic growth, but can we conclude it *determines* economic growth? These two questions are not the same. King and Levine followed a *post hoc ergo propter hoc* approach (Sims, 1972). There are still several criticisms possible.

First, both financial development and growth could be driven by a common omitted variable (such as the propensity of households in the economy to save). We know that endogenous saving affects the long run growth rate in the economy. Thus, initial financial development and growth rate could be correlated simply because of this reason. This argument cannot be refuted by the simple cross-country regression run by King and Levine.

Second, there is a problem of anticipation. Financial development such as the level of credit may predict economic growth simply because financial markets anticipate future economic growth. Thus, financial development may simply be a leading indicator of economic growth rather than the cause. To interpret the positive correlation King and Levine found we need to identify the mechanism through which financial development affects economic growth and document how it does work.

Rajan and Zingales (1998) attack both of these problems head-on. They argue that "the fundamental role played by the financial sector is to facilitate the reallocation of funds from individuals with excess capital given their investment opportunities towards firms with a shortage of funds vis a vis their investment opportunities. This implies that financial development has two effects. First, by reducing the transaction costs of saving and investing, it lowers the overall cost of capital in the economy in general. Second, to the extent that financial markets and institutions help firms overcome problems of moral hazard and adverse selection, it should reduce the costs of external finance vis a vis the cost of internal funds such as cashflows." (p. 559)

Rajan and Zingales examine whether financial development facilitates economic growth by scrutinizing one rationale for such a relationship; that financial development reduces the costs of external finance to firms. Specifically, they ask whether industrial sectors that are relatively more in need of external finance develop disproportionately faster in countries with more developed financial markets. They find this to be true in a large sample of countries over the 1980s. They show this result is unlikely to be driven by omitted variables, outliers, or reverse causality.

An intriguing approach has been taken by La Porta et al. (1998). They show that all the markets in the world derive their legal systems from one of the following four sources: English common law, German, French or Scandinavian civil laws (they ignored Islamic law). More importantly, GDP per capita does not systematically vary with the legal system. Legal systems have very clear effect on financial development. Using a sample of forty-nine countries, the authors show that countries with poorer investor protections, measured by both the character of legal rules and the quality of law enforcement, have smaller and narrower capital markets. These findings apply to both equity and debt markets. In particular, French civil law countries have both the weakest investor protections and the least developed capital markets, especially as compared to common law countries. Given these results, it is now possible to argue, by sorting countries according to their origin of legal system, if financial development actually precedes economic growth. The evidence seems to indicate that is the case. The method of instrumental variable to get rid of the simultaneity in this area of research has now become commonplace (see Beck, Levine and Loayza, 1999).

DeGregorio (1999) takes a different tack. He argues that very little attention has been paid to the role of international financial integration in promoting a deep domestic financial market, and through that channel, fostering economic growth. Financial integration also permits portfolio diversification, allowing higher profitability of investment, and hence, higher rate of economic growth. His paper analyzes empirically the relationships between financial integration and financial development, and between financial development and economic growth.

Why this Wave does not capture Schumpeter

Did Schumpeter have these types of investigations in mind when he talked about the central role of the financial intermediaries? The answer is no. His vision of the financial intermediary did not entail a person who makes marginal changes. He saw them as agents of change that bring in new methods of production. Thus, the pivotal role of a financial intermediary was supposed to bring in radical changes by combination of different activities. The current wave of research does not capture this spirit because it embeds the entire debate in the context of a neoclassical growth model.

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