Fifty Years of Finance and Development:

Does Causation Matter?

by

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Abstract This paper addresses the question of the necessity to find a causal relationship between financial development and growth and whether this relationship means anything at the macro level. Over the last 50 years the debate about this relationship has swung from an initial consensus that financial development follows, or is at least inter-related with growth, to an almost equally consensual belief that sustained economic growth follows from financial development. This paper argues that the relationship between financial development and economic growth is too complex to allow for such generalized assertions and that the evidence brought out in contemporary and historical research to support the new Washington-led consensus is seriously flawed. New research directions need to establish which financial policies work, especially at micro-level, and when, and to re-focus on the issue of production and the role finance can play in supporting productive investment.

Keywords causation**,** development economics, financial development, growth

J.E.L Class O11, O16, O19

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I. Introduction

This paper looks at the history of the framing of the role of finance in development by addressing the question of the necessity to demonstrate a causal relationship between financial development and growth and whether demonstrating it means anything in terms of macro-level policymaking. There is now a substantial literature on the relationship between financial development and economic growth but it is still unclear how specific policies promoting the financial sector interact with the decisions of economic agents at the micro-level. The World Bank tells us that financial development 'contributes significantly to growth', 'is central to poverty reduction, 'directly benefits the poorer segments of society ' and 'is associated with improvements in income distribution' (World Bank, 2001: 75). In other words, financial development is at the heart of economic development.

How different this is from the immediate post-war period, when development economics was a fledgling branch of economics. Fifty years ago, works on economic development had little or nothing to say about finance. My undergraduate textbook published in 1959 by Benjamin Higgins, both professor of economics at the University of Texas and visiting professor at MIT, contained little about the development of financial markets and even argued against the need for new financial institutions to channel savings to lending institutions, since credit could be extended to the same degree as cash was being hoarded by existing institutions, and advocating strict credit controls by central banks (Higgins, 1959:483-4). However, there were some pioneering studies of the time, for example Newlyn and Rowan (1954) on the colonial African money and banking system, which saw the financial and monetary system as servicing productive activity as it developed. Only with the work of Patrick (1967) and

later the famous contributions of McKinnon (1973) and Shaw (1973) did the idea grow that the development of the financial sector would accelerate economic growth. The debate about whether financial development follows or induces growth has been replaced by an almost consensual belief that sustained economic growth follows from financial development (Wachtel, 2001). Modern development economics textbooks have at least one chapter on financing development with substantial sections on the role of financial markets in development (see for example, Perkins et al, 2001).

It is argued here that the relationship between financial development and economic growth is too complex to allow for generalized assertions such as those quoted above. There is now a great deal of data with which to look at this relationship at the macroeconomic level. The large number of analyses which have been published over the last two support both directions of causation but there is also evidence of bi-directionality. At the micro-level, there is also a substantial amount of information on the demand for and use of credit. Little is known, however, about the precise ways in which policies to liberalize financial markets and expand financial services impact on the consumption and investment decisions of economic agents. This paper will, first, review the theoretical and empirical work looking at the financial development-growth relationship. Secondly, it will discuss the question of the importance of establishing the direction of causation. Finally it will suggest avenues of research which might help further our understanding of how the development of financial institutions and markets impacts on the development process.

II. Financial development and Interactions with Economic Growth

There is a well-established consensus on the role played by the financial system in an economy. The financial system enables the more effective exchange of goods and services, mobilises individual and corporate savings, enables the more efficient allocation of resources and monitoring of corporate managements through capital markets, and allows for the pooling of risk (cf Levine, 1997).

The existence of intermediaries, whether capital market institutions, merchant banks and finance houses or commercial and savings banks, reduces information costs for those parting with liquid assets, or those wishing to sell their financial assets. Without these intermediaries, investments might not take place, technological progress is likely to be held back and growth to be slower. There is clearly some interaction between the development of a financial sector and economic growth.

The theoretical and empirical literature on the relationship between financial development and economic growth has emphasised the importance of well-developed financial markets and institutions for economic growth (Gurley and Shaw, 1960; Goldsmith, 1969; Fry, 1995) and has sought to show the negative effects of policies which 'repress' the development of such markets and institutions (McKinnon, 1973; Shaw, 1973). It is not surprising that emphasis has been placed on the importance of the development of financial markets and institutions to economic growth. Growth fundamentally depends on investment. Investment is financed by borrowing, which in turn is made possible by deposits of various forms with banks and non-bank financial institutions. Modern growth theory has emphasised the importance of other factors such as education, but the existence of a well-functioning financial system is regarded as critical.

The development of various forms of financial intermediation and of a range of instruments to maximize the uptake of domestic savings is undoubtedly an integral part of the development process. Financial institutions influence and mobilize savings, channel savings into investment, promote the mobility of resources, generate the expansion of the market economy and contribute to the diffusion of improved production techniques (Newlyn and Rowan 1954: 207-8). The question is whether the importance of the financial sector is likely to arise organically out of the process of development, or is a requirement for that development process to begin and to accelerate. In other words, economic development is a consequence of political, social and economic decisions to transform 'traditional modes of production and the social relations associated with them' (Newlyn, 1977:1).

The financial sector requires significant pre-existing economic activity. Even then, imposing 'institutions conditioned by the requirements of developed countries on financially unsophisticated economies leaves a very large gap in the financial system' Newlyn (1977: 36). Moreover, the existence of institutions that channel credit to productive use does not necessarily mean that all productive credit needs will be fulfilled. This is because it is unlikely that such institutions will lend to agents without collateral. In other words, some accumulation will have to have taken place before financial markets can play a role in resource allocation.

We should therefore expect that as accumulation proceeds, financial institutions and instruments develop and in doing so assist the further accumulation of investment goods. The forms of government involvement in regulating and otherwise influencing

the financial system will determine the degree to which the latter will make a positive contribution to growth.

However, such intervention varies with very different effects. At a minimum, governments, even in the most liberalised financial markets, regulate them to assure the security of lenders. At a maximum, they can set interest rates and their ceilings, fix bank reserve ratios and in other ways control credit creation, and even nationalize banks and other financial institutions. Governments have intervened in the monetary and financial system, for good or ill, for the following reasons. First, in many ex-colonial countries, foreign companies owned banks and their primary interest was private profit and not investment for long-term development. Secondly, the banks' position as formal institutions lending only to proven credit-worthy customers at market interest rates excluded many potential borrowers, thus limiting investment and slowing growth. Thirdly, as much of the initial development investment to build the infrastructure and to stimulate growth by setting up state enterprises would have to come from the state, then governments would have to direct the financial sector towards this development objective. Finally, a key function of the financial system was to mobilize savings. The high transactions costs of organizing deposit facilities for large numbers of poor people who saved little because they were poor, meant that governments had either to take control of commercial banks in order to promote bank branch expansion, or had to establish institutions to organize the savings of low income groups, especially in rural areas (Newlyn and Rowan, 1954)).

In poorly developed economies the state is usually the dominant economic actor and, if so, engages in a process of long-term development management. Effective,

coherent and realistic development management means directing investment funds to projects which may yield low returns in the short-run, but high returns in the long run as external economies are generated. Thus, the reasons for state intervention were--and are--quite coherent. Nonetheless, if the quality of development management and its execution is poor, then low or zero returns may be both the short and long run outcome. Theories of financial repression, associated especially with McKinnon and Shaw, suggest the latter is the more common result. The principal form of 'repression' was the policy of setting a ceiling on interest rates (Shaw, 1973: 81ff). Interest rate ceilings lead to an excess supply of securities, as borrowers' rates become low or even negative in real terms, after taking inflation into account. Low or negative real rates reduce or remove the incentive to save. Credit rationing is the typical result. However, such rationing does not guarantee that credit goes to its most productive use. Such an outcome depends on the judgement of the decision-makers. Worse, it produces incentives to corruption as bank officials can arbitrage between market rates and low interest ceiling rates as their price for granting loans. Low interest rates favour low-risk, low return projects. Moreover, loans on some projects are never repaid as maturities on them are continually extended as a result of favouritism by banks towards certain lenders, or because of the political clout of certain lenders (Shaw, 1973: 82-87).

Other elements of financial repression are high reserve ratios and an oligopolistic banking system that offers high spreads between deposit and lending rates (Shaw, 1973: 87-88). Theories of financial repression fit well into the liberal model and its critique of state intervention and government price controls in capital, commodity and foreign exchange markets. Opposed to policies of financial repression are those of

financial deepening. Here, market-clearing interest rates correctly price the reward for foregoing current consumption. Competition in the banking sector reduces the interest rate spread, signifying higher levels of banking efficiency. There is a greater diversity of financial assets with different lengths to maturity, and the development of capital markets where these assets can be traded. Liberalization of other markets where prices are controlled is regarded as a key corollary to money market liberalization. The result should be a higher savings ratio[1], stronger control over domestic credit expansion, higher investment productivity and consequently greater inflows of foreign short and long term capital (McKinnon, 1973; Shaw, 1973).

However, the banking system may act perversely after liberalisation. The Shaw-McKinnon argument rests on the view that markets allocate resources best and that state development management agencies are not better at plotting development paths. However, Stiglitz and Weiss (1981) proposed that lenders were more likely to favour low interest rates thus effectively rationing credit to low return-low risk projects. Financial liberalisation would simply exchange one form of credit rationing with another. This was firstly because lenders did not have enough information on borrowers; and

[1] Pagano (1993) points out that where financial liberalisation involves a greater availability of credit, then the savings ratio is likely to fall, and this is borne out by more recent evidence (see Loayza et al, 2000).

secondly, because in lending to high risk borrowers they were likely to be subject to more loan defaults. The implications for developing countries are that far from higher interest rates leading to moves away from credit rationing, they would lead to greater credit rationing by risk averse and inadequately informed lenders.

It is not difficult to see how theories of finance and growth lead to the conclusion that finance leads growth. However, it is also not difficult to argue that without the pre-existence of some level of production and technology, financial markets and instruments can only respond to the demands of producers and consumers. In other words, finance follows, or at least interacts with growth. It is instructive that while Levine (1997) regards the link between finance and growth to be advanced enough to draw relatively firm conclusions, he also cites evidence that economic growth generates financial intermediation which in turn promotes growth, thus proposing that 'financial and economic development are jointly determined' (Levine, 1997: 703). So which way does the causality go?

3. Causation, but which way?

Empirical econometric work tends to follow a standard theoretical pattern in which a reduced form equation of the following kind is tested:

$$gGDPc = a + bi + cF$$

where *gGDPc* is the growth rate of real GDP per capita, *i* is the real deposit interest rate and F is some vector of variables constituting financial development such as ratios of M2 to GDP, private sector credit to GDP, total financial assets to GDP or an index of these. Many of these earlier studies pool data from different countries while a

feature of later studies, especially those dealing with causality, analyse countries separately on the grounds that much country specific information is lost in pooling the data. The studies testing for causality fall into two categories. The first, recognising the problem of simultaneity embodied in equations such as the one above, look for instruments such as the level of GDP at the beginning of the time period analysed, or some other exogenous likely determinant of financial development such as legal systems. The second rely on Granger causality tests. As is well known, these tests can tell us whether financial development precedes economic growth or vice versa, or both, but we cannot deduce causality in the normally accepted sense (Mukherjee et al, 1998). So the econometric analyses that are discussed below do not necessarily prove causality either way. What they do demonstrate is that the issue is not as clear cut as the Washington consensus would have us believe.

Empirical econometric work has given substantial support to financial repression theory and its implications. Of 19 econometric studies reported by Kitchen (1986: 90-91), 13 give positive support to the hypothesis, four are either negative or inconclusive, while two give limited support. Of 22 econometric studies analyzing the relationship between financial development and growth cited by Fry (1995), all find positive relationships. 13 use real deposit interest rates as the independent variable indicating financial deepening, eight adopt one or more financial ratios, such as M2 as a ratio of gross domestic product (GDP), or private sector credit to GDP, and two combine financial ratios and the real deposit rate. A further three studies are concerned with causation, two of which run Granger causality tests. Of these three, two found causation running from financial development to growth, while the other found causation to be bi-directional. One of the studies using real interest rates

discovered an inverted U relationship, in which high very real interest rates had a negative impact on growth where these rates had been raised to regain credibility or compensate for perceived country risk. Levine (1997) reported further econometric studies, all of which support the hypothesis that financial development is associated with economic growth inducing, though with some questions raised about causation (see below). Indeed, the evidence of association seems overwhelming. The evidence on causation however is mixed and it is remarkable how little attention is paid to studies which have found that causation does not run from financial development to growth.

For example, the study referred to by Fry (1995), that suggests a bi-directional relationship, is that of Demetriades and Hussain (1993), which covered 12 countries. In a later version involving 16 developing countries over 27 years and four different econometric causality tests, these authors found that finance does not lead growth. In seven countries, they found a bi-directional relationship, in six countries that growth leads finance, and in three countries that one of their financial indicators causes growth. However, in one of those cases, one of the tests finds bi-directionality, in another reverse causation and in the third causation running from finance to growth where the data was not co-integrated. They also conclude that there is a country-specificity which may make 'lumping together in cross-section equations countries with very different experiences in relation to financial development' dangerous' (Demetriades and Hussein, 1996: 407). Levine's survey does refer in a footnote to time series investigations which give conflicting results, but then goes on to claim that 'many time-series investigations find that financial sector development Granger-causes economic performance'. However, only one reference is offered to such an

investigation (Wachtel and Rousseau, 1995), which appears to be the only one that produces such a result.

Nevertheless it is the work of Levine and his colleagues that has dominated the recent literature. For example, King and Levine (1993), using cross-country analysis, find that financial development, measured in various ways, is strongly correlated with economic growth. They then turn this into a causal relationship running from finance to growth by relating the values of financial development at the beginning of the period they analyze to growth over the subsequent period. They argue that the 'pre-determined' component of financial development is strongly associated with later growth and its sources. They control for growth and investment in the decade prior to the initial year but that does not change their conclusions, though they do not report the results. The key issue therefore remains: what has determined this 'pre-determined' component?

Table 1 reports details of more recent studies since those surveyed by Levine (1997). Of the 24 studies listed in the table, only eight unambiguously support the view that causation runs from finance to growth. Of the eight studies supporting this direction of causation, only three employ time series techniques. Most of the others suggest either bi-directionality or non-linearity. How is it possible to reconcile these different findings, especially where, in the case of ones which us time-series techniques of analysis involving co-integration and causality tests, they come up with different results? First of

Table 1: Recent Empirical Studies on the Finance-Growth Relationship

Author(s) (date)	Period Covered	No of countries	Direction of Causation	Financial Development (FD) measure(s)	Estimated Equation: Dependent; Independent Variables	Data
Gregorio & Guidotti, 1995	1960-85	(1) 100 (2) 12 LA	Strong assoc Negative assoc	Bank credit (BC)	GDPc; FD, Inv, PS, SS, GDPc1960, GovtE, Rev, Ass	Pooled cross-section (1) Panel (2)
Bethelemy & Varoudakis, 1995	1960-85	91	Bi-directional	M2	GDPc; FD, init GDP, init FD, Educ, Trade, Govt, Revol, Oil D	Panel
Bethelemy & Varoudakis, 1996	1960-85	95	Bi-directional	M2	GDPc; FD, Educ,Trade, Govt, Revol, Oil D	Panel
Demetriades& Luintel 1996a	1961-91	India	Bi-directional (joint determination)	Bank deposit liabilities (BDL)	GDPc; R, Inv. FD	Time-series
Demetriades & Luintel, 1996b	1964-92	Nepal	Bi-directional (joint determination)	BDL	GDPc; R, Inv. FD	Time-series
Odedokun, 1996	1961-90	81	FD→ Efficiency (→G)	Liquid Liabilities (LL)	ICOR; X, govtE, devbank, FD, INF, R, Ex	Pooled cross section
Hanson & Joning	1834-1991	Sweden	Unstable with bi-directionality	Private Credit (PC)	GDPc, inv, schooling, patent applications, K/L, H/L	Time series
Arestis & Demetriades, 1997	1979-91	Germany USA	FD → G G → FD	SM Cap SM Volatility, M2, Domestic BC	GDPc; SMC, SMV, M2 SMC, SMV, DBC	Time series
Rousseau & Wachtel, 1998	1870-1929	5 developed	FD → G	FI Assets Money Stock/Base	VAR: GDP, MB ,FD; FD	Time Series
Ghali, 1999	1963-93	Tunisia	FD → G	BDL, PC	GDPc; FD	Time series

Author(s) (date)	Period Covered	No of countries	Direction of Causation	Financial Development (FD) variable(s)	Estimated Equation: Dept; IndepVariables	Data
Luintel & Khan, 1999	1951-1995*	10	Bi-directional	BDL	gGDPc; VAR (FD, GDP/Pop, Kc, R)	Time series
Ram, 1999	1960-1989	95	Weak association	LL	gGDP; gPop, gExports, I/GDP, FD	Individual/ country group time series
Levine et al, 2000	1960-1995	74	Legal/Regulatory→ FD → G	PC, Commercial Bank credit to Commercial + Central bank credit, LL	gGDPc; FD, initGDPc, Govt, Trade, Inf, Educ, XR, period Ds, legal	Cross-section Dynamic panel
Rousseau & Wachtel, 2000	1980-1995	47	Stock markets → G	LL, SM Cap, SM value traded	VAR: GDPc; FD, init GDPc, Educ, XR , Revol	Panel
Beck et al, 2001	1960-1995	63 CC 77 panel	FD → G	PC,	gGDPc; init GDPc, FD, Ed, Trade, Inf, Govt, XR	Cross section and panel
Shan et al, 2000	1974-1998	9 OECD + China	G → FD (3) Bi-directional (5) No causality (2)	BC	GDPc; FD, TFP, Trade, Inv,CPI, SM	Individual time series
Al-Yousif, 2002	1970-1999	30	Bi-directional	Currency ratio; M2	gGDPc; FD	Individual time series and panel
Sinha & Macri, 2002	1950-1997	8	Both way and bi-directional	M1,M2, DC	gGDP; gPop, gM1, gM2, gDC	Individual time series
Deidda and Fattouh, 2002	1960-1989	119	Non-linear	LL	gGDPc; init GDPc, init educ, FD	Cross section
Graff, 2002	1970-1990	93	FD → G, but unstable	No. of banks, employee share of FS, FS/ GDP	GDPc; FD	Pooled cross-section
Shan & Morris, 2002	1985-1988	19 OECD + China	G → FD (5) FD → G (1) Bi-directional (4) No causality (10)	Total credit Interest rate spread	GDPc; FDs, productivity, inv, trade, CPI, R,SMI,	Individual country time series
Fase and Abma, 2003	1974-1999	8	FD → G	Bank balance sheet totals	gGDP; gGDP-1;gGDP-2, g FD-1	Time series indiv. countries
Andersen & Tarp, 2003	1960-1995	74	Weak association	PC, Comm/CB, LL	GDPc; Educ, Legal, FD, init GDPc, region	Cross-section
Graff, 2003	1970-1990	93	FD → G	No. of banks, employee share of FS, FS/ GDP	GDPc; GDPc -1, Educ, FD, K/L, H/L	panel

all, no two countries are the same and even in the studies which broadly support the growth-to-finance chain of causation, there is evidence that this is not the case for all countries, as is shown in the table. Secondly, the possibility that this direction of causation may also exist in the cross-section or panel studies favoured by Levine and his colleagues, is hidden by the techniques which group together a large number of countries and look for a general pattern. This reinforces the point made by Arestis and Demetriades (1997: 784) who, referring to the cross-country regressions employed by King and Levine and others, suggest that the issue of causality is best addressed by time-series techniques on a country by country basis.

Yet the cross-country and panel regressions continue to be used despite all the associated problems especially that of endogeneity. Attempts to find an instrument for financial development have led to the ingenious idea that the development of the financial sector is determined by the 'legal origin'. The advantage of using legal origin is that for most developing countries the legal system they developed depended on which country had colonized them. Thus, legal origin is taken as both exogenous and explains cross-country variations in creditor rights, systems for debt contract enforcement and corporate information disclosure standards (Beck et al, 2000: 264). They show that legal origin 'exerts a large impact' on economic growth (Beck et al, 2000: 262). However, the choice of instrument here may not be such a decisive one. Particular financial practices and developments could have influenced the nature of financial regulation and legalities the colonising country.

The picture that emerges from all the recent work on finance and growth fits an unsurprising view that the causal relationship is likely to be different in different countries at different times in their history. This notion of non-linearity is borne out by some of the studies listed in Table 1. Bi-directionality occurs in many cases and again is not a surprising result. Historical and cross country differences in experience and in the precise relationship between finance and growth are likely to revolve around specific policies and the effectiveness of institutions, which can vary significantly between countries (Arestis and Demetriades, 1997).

The recent experience of developing countries after financial liberalisation suggests that institutional issues are critical both in the implementation of reforms and in their effect on growth. To begin with there is the critical issue of information asymmetry first identified theoretically by Stiglitz and Weiss (1981). Indeed even if informational asymmetries do not result in credit rationing, as predicted by the SW model, financial development may not necessarily lead to a positive relationship with growth. For example increasing bank competition may result in a move away from 'relationship banking', where banks possess substantial information about clients, to a situation where clients switch banks, thus deterring banks entering into long term lending relationships.[2] A further consequence of increased bank competition is that banks adopt a gambling strategy as returns to prudent investments are reduced under competition. One result of that is an increased probability of bank failure. It is not clear that banking regulation is a ready made solution to these problems given the absence of well developed and interlocked institutions as exist in developed economies.

III. Historical Evidence

An approach which considers the historical relationship between finance and growth in the now developed countries might throw more instructive light on process of financial development and its impact on growth and vice-versa. Only the Swedish study listed in Table 1 looks at the long sweep of history using the latest time-series econometric techniques (Hanson and Joning, 1997). The econometric results suggest that finance responds to investment demand and investment generates growth. It also suggests a periodicity with finance positively impacting on growth between 1890 and 1939. A bi-directional relationship is found between patent applications and financial lending. The lack of a financial development impact on economic growth post WW2 could be explained by the system of capital controls imposed after the war.

What is interesting about this analysis is that there is a dispute among historians as to the degree of financial sophistication in Sweden during the nineteenth century. If as some historians assert, Sweden was financially sophisticated, then it could be argued that this preceding sophistication enabled a process of growth to take place in the period before the Second World War. However, there are others who dispute this story and see Sweden's financial system as responding to demand for investment. This 'leading-following' debate is relevant to the view of history related by Levine (1997). Levine relies heavily on Hicks (1969) and Cameron et al (1967) to support his thesis that finance leads growth. However the weight of Levine's account is affected by some selective quotation from both sources[3]. Hicks's essential argument was that scientific

[2] See Andersen and Tarp, 2003, for an excellent survey of the theoretical literature on this and other aspects of the finance–growth relationship..)
[3] See Lawrence (2003) for a detailed account of this selectivity.

progress (most importantly the steam engine) drove the industrial revolution and that the parallel availability of funds for the finance of fixed capital investment was crucial. This view of the interaction of finance and technological change is close to the account of the Swedish case referred to above. The sources of finance were either investor's own financial resources, or were borrowed from others who had liquidity or 'may be a bank' (Hicks, 1969: 144). What eventually cheapened capital was not the lower interest rates deriving from greater financial liquidity, but the development of machine tools.

The study by Cameron et al (1967) of banking in early industrialization in some European countries and Japan shows a wide variation in banking experiences and degrees of success. In the case of Scotland, for example, it is clear from this research that there was an interaction between Scottish banking the growing Scottish economy with the direction of causation not clear-cut at all (Cameron et al, 1967: 5). Further, the demand for capital for investment in manufacturing was small relative to GDP; and secondly, capital investment was largely financed by reinvesting profits, an account not inconsistent with that of Hicks (Cameron et al, 1967: 36-39). It has been noted that the major demand for capital came from local authorities to improve infrastructure while on the supply side, savings as a proportion of GDP rose by only one or two percentage points during the period of the industrial revolution (Kindleberger, 1984:196-201). Later industrialization accelerated by the railway boom had to be financed institutionally, and here the existence of well established capital markets and joint-stock banks facilitated this development (Kindleberger, 1984:196-201). The nineteenth century development of the joint stock limited liability company suggested also some interaction between

legal regulation and financial system that queries the alleged exogeneity of the legal system as presented in some recent modelling (see above).

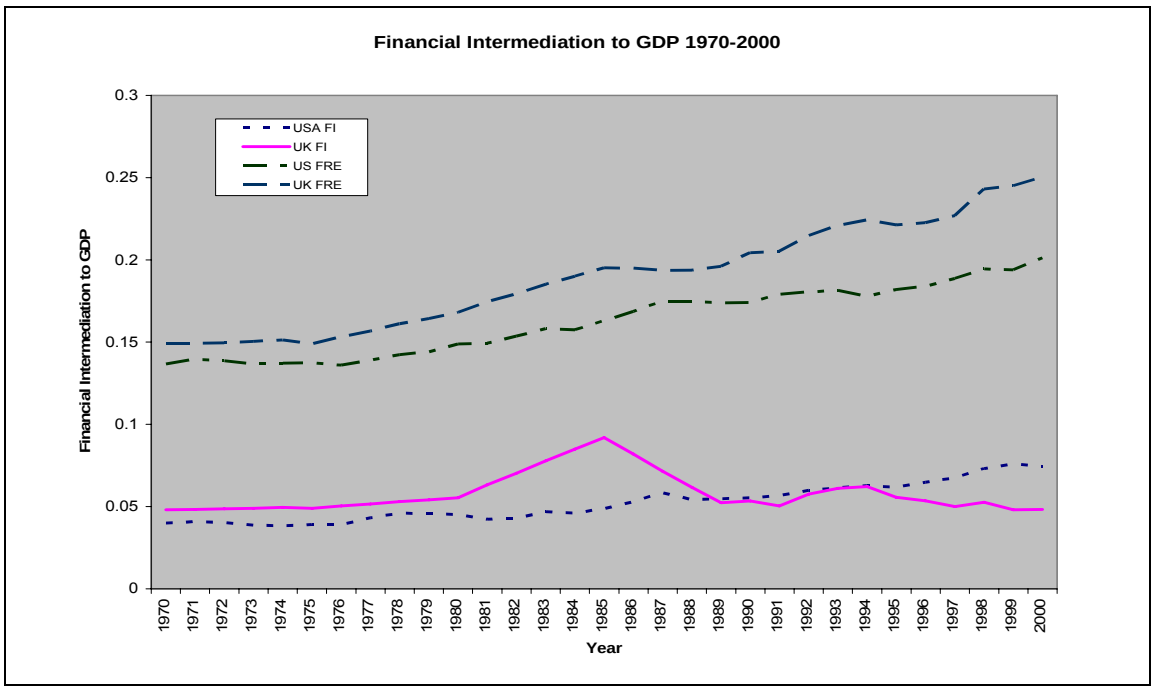
These accounts of the historical relationship between financial institutions and growth also lend support to the findings of bi-directionality or non-linearity in the studies reviewed earlier in this paper. Financial markets developed alongside industrialization, making credit available more easily, especially once the investments required a higher level of financing than could be provided by the family firm's accumulated profits or the lending capacity of informal arrangements. The financial sector did promote investment and growth at particular periods in history but in response to developments in the real economy.

IV The Importance of the Financial Sector in GDP

Part of the problem of analysing the relationship between finance and growth is that an increase in financial services activity will always contribute to economic growth, given that this is measured by the growth in GDP and that the value added of the financial sector is a component of GDP. Indeed, it is surprising that growth has not been measured as the growth of GDP minus financial sector growth to avoid this problem. Figure 1 shows the extent of the growth of the financial sector's GDP since 1970 in the USA and UK. The financial sector has grown steadily and more rapidly than GDP over this period in the USA, and in the UK in the 1980s, especially after the financial sector reforms. However the UK has seen a decline in share through the 1990s. In the national accounts presentation, the financial sector is lumped together with real estate and the combination of the two may offer a more realistic measure of the growth of the sector since it plays an important role in the financing of real estate business. Figure 1

therefore offers both measures for the two countries which have led the financial revolution of the late 20th century.

Figure 1



Source: USA: Department of Commerce, Bureau of Economic Affairs; UK: Office of National Statistics, National Statistics Online.

Given the fact that the financial sector has grown faster than total GDP, a more fruitful approach might be to disaggregate GDP into its sectoral components and analyse the relationship between financial development and the different sectors of GDP, or at least subtract financial GDP from the total. As Pagano (1993) has observed, it is also important to disaggregate financial markets, so that the effects of the development of stock markets and household credit markets can be analysed.

V. Why causation matters: policy implications

Why is it so important to prove that finance causes growth? One answer is that if it can be shown that there is a line of causality from finance to growth, then policies which promote financial development will increase growth (Sinha and Macri, 2001). There is another possibility which may lie in the rapid expansion of financial sector activities. This has made the sector an important part of most developed economies' GDP. It has also led to a global expansion of the finance industry as represented by the internationalization of financial markets and the rapid increase in financial flows across the globe.[4] Table 2 presents the relevant data.

The advocacy of policies that lead to financial sector expansion on the back of research which demonstrates one-way causality from finance to growth opens up more possibilities for the global expansion of the major financial institutions. The problem is where these opportunities are taken. Table 2 shows which countries or country groups are the beneficiaries of these global capital flows.

The data in Table 2 show the scale of the growth in net flows, especially to East Asia and Latin America. However, the data also attests to the enormous volatility of these net flows, especially evident after the East Asian financial crash of 1997. Even at this level of analysis, it is evident that an expanding financial sector brings with it the risk of serious disruption to emerging market economies. Recent studies of the East Asian financial crisis have emphasized the importance of institutional stability in this process

[4] It is interesting to discover after writing this an article by Stiglitz (2003), who, in a discussion of the IMF's advocacy of capital market liberalization, notes that ' facilitating the opening of capital markets may be in the interest of certain financial circles in the developing countries, because it enhances their business opportunities.'

and of building regulatory capacity (Stiglitz, 2000). However, there are also dangers in over-regulation. The new capital adequacy requirements were brought in exactly when banks needed to maintain their lending to avoid borrower bankruptcy. Failure to do this resulted in negative growth (Stiglitz, 2000). This is a prime example of how the rapid increase in financial activity can end up having growth inhibiting consequences.

However, even if it had been clearly demonstrated that financial sector development generates economic growth, this finding would not indicate which financial policies specifically aid growth[5]. In the poorest region of the world, sub-Saharan Africa, it has been found that financial liberalisation has not had the expected growth effects. Indeed it has been found that while market reforms have allowed small and medium scale industrial activities to expand, such activities have sought, or only been offered finance by informal lenders (Nissanke and Aryeetey, 1998). Further, policies that increase regulatory capacity, which is clearly important for the formal sector, may drive such informal agents 'underground' and reduce the availability of finance to small and medium scale producers. Financial liberalization may therefore do more harm than good in the absence of adequately governed and regulated institutions and markets. There is further evidence at the macro-level that bank lending behaves differently in the wake of financial liberalisation than theory predicts. When faced with the risk of lending to unknown or unproven borrowers, banks have preferred to buy government

5. This point has also been forcibly made by Wachtel (2001: 357) in a review of the literature which concludes that 'there is ample evidence to make a convincing case that financial sector development promotes economic growth'.

Table 2: Net Capital Flows to Selected Country Groups

Series	Country Group	1980	1985	1990	1991	1993	1995	1997	1999
Portfolio investment, bonds (current US$m)	East Asia & Pacific	188.3	4443.5	-801.8	3258.6	8553.4	15454	23763	1071.8
	Sub-Saharan Africa	28.1	-29.4	-31.1	-27.4	-30	850.9	1639.5	158.3
	Latin America & Caribbean	818.8	-784	101.1	4284	20510.4	11485.6	10561.7	19067.3
	South Asia	0	319.9	147	1380.1	456.2	286.4	2294.2	-1200.6
Portfolio investment, equity (current US$)	East Asia & Pacific	0	138	2290	1199	20748	18273.9	9191.6	21133.2
	Sub-Saharan Africa	0	0	2	2	19.3	4868.6	1507.2	3899
	Latin America & Caribbean	0	0	1111.1	6327.6	27239.5	7645.5	9945.8	3892.8
	South Asia	0	0	105	23	2025	2340	2477	1311.9
Private capital flows, net total (current US$)	East Asia & Pacific	7184.6	10921.9	19405.1	26828.5	72811	97458.9	110891.5	51061.9
	Sub-Saharan Africa	4213.6	1476.5	1374.3	1978.1	2630.3	10617.2	9958	10448.6
	Latin America & Caribbean	24586.7	7306.3	12626	23498.1	60139.9	62769.7	115446.4	111302.3
	South Asia	1237.5	2411.6	2173.3	1934.9	6428.2	6772.2	9741.6	2172.5
Portfolio investment, bonds (PPG + PNG current US$m)	East Asia & Pacific	188.3	4443.5	-801.8	3258.6	8553.4	15454	23763	1071.8
	Sub-Saharan Africa	28.1	-29.4	-31.1	-27.4	-30	850.9	1639.5	158.3
	Latin America & Caribbean	818.8	-784	101.1	4284	20510.4	11485.6	10561.7	19067.3
	South Asia	0	319.9	147	1380.1	456.2	286.4	2294.2	-1200.6
Portfolio investment, equity (current US$m)	East Asia & Pacific	0	138	2290	1199	20748	18273.9	9191.6	21133.2
	Sub-Saharan Africa	0	0	2	2	19.3	4868.6	1507.2	3899
	Latin America & Caribbean	0	0	1111.1	6327.6	27239.5	7645.5	9945.8	3892.8
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Private capital flows, net total (current US$m)	**East Asia & Pacific**	**7184.6**	**10921.9**	**19405.1**	**26828.5**	**72811**	**97458.9**	**110891.5**	**51061.9**
	Sub-Saharan Africa	**4213.6**	**1476.5**	**1374.3**	**1978.1**	**2630.3**	**10617.2**	**9958**	**10448.6**
	Latin America & Caribbean	**24586.7**	**7306.3**	**12626**	**23498.1**	**60139.9**	**62769.7**	**115446.4**	**111302.3**
	South Asia	**1237.5**	**2411.6**	**2173.3**	**1934.9**	**6428.2**	**6772.2**	**9741.6**	**2172.5**

Source: World Bank, World Development Indicators CD-Rom

securities. Table 3 shows the degree to which deposit bank claims on the Government have been rising as a proportion of GDP[6] over the period 1980-2000 in 12 of the 20 selected countries, in spite of the orthodox view that such borrowing should be reduced as has been the case most notably in the US and the UK. The relative size of these claims has often been small. However, for a small number of countries, such as India, the relative size is large and rising. In the Indian case this is especially surprising since this has happened during a period of financial liberalisation in which lending to the private sector would be expected to increase at the expense of lending to the government. In some case this may be the result of governments engaging in open market operations as part of a sterilisation policy to reduce inflationary pressures, but it may also be the result of bank risk avoidance strategies, as predicted by Stiglitz-Weiss-type models.

Table 4 shows the extent to which bank credit to the private sector has been rising in the same set of countries. Although this shows increases over the same time period for all but two of the countries, these increases are for almost half the selected countries, including the US, relatively small. So although it can be argued that there has been an increase in total bank credit as a consequence of liberalisation, it can also be argued that banks have been careful to hedge their bets by buying government securities.

[6] The raw data have been adjusted for inflation following the procedure of Beck et al (1999), which treats GDP as a flow and the financial development measures as stocks. The proportion of the financial development variable (X) to GDP is thus given by: $0.5((X_t/CPI_{e,t}) + (X_{t-1}/CPI_{e,t-1}))/(GDP_t/CPI_{a,t})$, where *e* is end of year and *a* is average.

Table 3: Commercial Bank Claims on Central Government (Selected Countries)

country/ year	1980	1985	1990	1992	1994	1995	1996	1997	1998	1999	2000
ARGENTINA	0.0170	0.0347	0.0872	0.0448	0.0346	0.0319	0.0428	0.0471	0.0537	0.0642	0.0668
CHILE	0.0052	0.0566	0.0025	0.0018	0.0025	0.0027	0.0035	0.0063	0.0068	0.0050	0.0041
FRANCE	0.1064	0.1579	0.1044	0.0936	0.1253	0.1516	0.1790	0.2010	0.1012	n.a.	n.a.
GERMANY	0.2131	0.4389	0.5106	n.a.	0.2648	0.2870	0.3131	0.3266	0.3289	0.1634	n.a.
GHANA	0.0254	0.0144	0.0026	0.0002	0.0001	0.0000	0.0030	0.0284	n.a.	n.a.	n.a.
INDIA	0.0618	0.0729	0.0813	0.0931	0.1060	0.1071	0.1036	0.1118	0.1200	0.1279	0.1468
JAMAICA	0.0830	0.0788	0.0398	0.0580	0.0770	0.0768	0.0769	0.0898	0.0868	0.0902	0.0999
KENYA	0.0431	0.0282	0.0441	0.0570	0.0779	0.0705	0.0655	0.0731	0.0875	0.0951	n.a.
KOREA	0.0220	0.0362	0.0286	0.0213	0.0159	0.0141	0.0124	0.0123	0.0226	0.0361	0.0431
MEXICO	0.0045	0.0352	0.0472	0.0386	0.0031	0.0062	0.0054	0.0572	0.0979	0.0924	0.0958
NICARAGUA	0.0692	0.0068	0.0000	0.0002	0.0000	0.0000	0.0149	0.0238	0.0167	0.0271	n.a.
NIGERIA	0.0540	0.1402	0.0248	0.0124	0.0363	0.0211	0.0145	0.0180	0.0184	0.0394	0.0622
PAKISTAN	0.0895	0.0741	0.0934	0.1270	0.1469	0.1381	0.1398	0.1518	0.1485	0.1231	0.1068
PHILIPPINES	0.0195	0.0242	0.0510	0.0541	0.0735	0.0860	0.0966	0.1119	0.1146	0.1069	0.1149
SOUTH AFRICA	0.0873	0.0387	0.0486	n.a.	0.0442	0.0426	0.0423	0.0475	0.0566	0.0601	0.0294
THAILAND	0.0416	0.0755	0.0540	0.0272	0.0128	0.0099	0.0067	0.0038	0.0184	0.0167	n.a.
UNITED KINGDOM	0.1965	0.0402	0.0447	0.0354	0.0424	0.0594	0.0588	0.0514	0.0371	0.0298	0.0194
UNITED STATES	0.0374	0.0733	0.0421	0.0325	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
URUGUAY	0.0090	0.0992	0.0449	0.0366	0.0328	0.0334	0.0276	0.0304	0.0356	0.0328	0.0132
VENEZUELA	0.0057	0.0235	0.0175	0.0079	0.0307	0.0448	0.0325	0.0174	0.0152	0.0159	0.0079

Source: IFS CD-Rom, International Financial Statistics; n.a. = not available

Table 4: Bank Lending to the Private Sector as a proportion of GDP (selected countries)

country/ year	1980	1985	1990	1992	1994	1995	1996	1997	1998	1999	2000
ARGENTINA	0.0843	0.1227	0.1279	0.1277	0.1820	0.1990	0.1924	0.2005	0.2249	0.2450	0.2371
CHILE	0.2836	0.5197	0.4183	0.3932	0.4556	0.4619	0.4734	0.5032	0.5392	0.5785	0.5891
FRANCE	0.6929	0.7436	0.9131	0.9576	0.8908	0.8612	0.8452	0.8199	n.a.	n.a.	n.a.
GERMANY	0.8295	0.9285	0.9335	0.8990	0.9869	1.0084	1.0525	1.1005	1.1439	n.a.	n.a.
GHANA	0.0211	0.0244	0.0469	0.0408	0.0439	0.0451	0.0477	0.0673	n.a.	n.a.	n.a.
INDIA	0.2052	0.2493	0.2409	0.2336	0.2239	0.2188	0.2182	0.2245	0.2276	0.2363	0.2674
JAMAICA	0.1810	0.2245	0.2370	0.1682	0.1790	0.1858	0.2085	0.2128	0.2421	0.2686	0.2862
KENYA	0.2430	0.1851	0.1779	0.2018	0.1858	0.2118	0.2514	0.2699	0.2746	0.2632	n.a.
KOREA	0.3630	0.4541	0.4782	0.4985	0.4991	0.4998	0.5316	0.5864	0.7012	0.7271	0.8046
MEXICO	0.1340	0.0852	0.1322	0.2251	0.3008	0.2847	0.1767	0.1510	0.1600	0.1477	0.1183
NICARAGUA	0.2234	0.1428	0.0089	0.1742	0.2949	0.3303	0.3039	0.3022	0.3693	0.4304	n.a.
NIGERIA	0.1031	0.1527	0.0878	0.0842	0.0916	0.0918	0.0842	0.0972	0.1183	0.1225	0.1294
PAKISTAN	0.2116	0.2517	0.2380	0.2187	0.2316	0.2276	0.2357	0.2401	0.2437	0.2482	0.2570
PHILIPPINES	0.2889	0.2021	0.1625	0.1851	0.2633	0.3183	0.4135	0.5027	0.5030	0.4278	0.3869
SOUTH AFRICA	0.3952	0.5099	0.4913	n.a.	0.5352	0.5540	0.5701	0.6022	0.6415	0.6605	0.6751
THAILAND	0.2917	0.4359	0.5631	0.6665	0.8110	0.8869	0.9547	1.0961	1.2156	1.1104	0.9434
UNITED KINGDOM	0.2601	0.4471	1.1174	1.1110	1.0675	1.0997	1.1433	1.1643	1.1660	1.1748	1.2550
UNITED STATES	0.3459	0.3547	0.4206	0.4102	0.4049	0.4184	0.4274	0.4325	0.4494	0.4611	0.4708
URUGUAY	0.2906	0.3412	0.2494	0.2007	0.1999	0.2184	0.2338	0.2521	0.3530	0.4760	0.5008
VENEZUELA	0.2505	0.2418	0.1489	0.1604	0.1025	0.0712	0.0642	0.0850	0.1102	0.1025	0.0913

Source: IFS CD-Rom, International Financial Statistics; n.a. = not available

There is also a large variation in ratios of private sector credit to GDP among the developed countries such that it is pertinent to ask at which ratio can financial depth be said to have been truly achieved.

It can conceivably be argued that liberalizing policies have not been as effective as predicted because they have been poorly implemented rather than because the policies have not been relevant to the circumstances in which developing countries find themselves. Then again, if it is known that institutions and financial markets are not fully developed or are missing, then it is not surprising that liberalising policies do not have the predicted results. The attempts to show that finance causes growth have to been in the context of the rapid expansion of global financial activity. The pursuit of financial liberalisation has resulted in larger amounts of credit becoming available, but banks, the major source of this credit, have in many cases channeled credit less towards the private sector than towards the purchase of government securities. This reflects the degree to which modern financial systems have been superimposed on much less advanced real sectors. [7]

To some extent this development supports the idea that modern financial systems have developed as a consequence of the needs of the real sector and has had feedback reinforcing. The policy implications of what after all are the findings of a large part of the econometric literature on the topic, are quite different from those of the 'financial leading' school. Such policies may involve greater state support for productive activity using development banks, where commercial credit is not willing to

[7] India for example has liberalised financial markets and institutions during the 1990s, but this has not had as yet any significant impact on financial depth (Lawrence and Longjam, 2003).

support what it sees as high risk projects, as well as support for micro-finance activity that directly supports productive activity. To some extent this takes us back to the idea of development banks, which is where finance for development began 50 years ago.[8] If it is the case that commercial banks find it optimal partly to lend to the Government, then the Government can use these funds to lend on to Development Banks. They in turn are able to lend to those projects seen as high risk by the commercial sector, mitigating adverse selection by engaging in long term relationships with their clients or by being prepared to incur the costs of acquiring information about clients with potentially high return projects, than commercial banks are prepared to incur.

VI Conclusion

This survey of research on the relationship between financial development and economic growth has argued that the apparent consensus fostered by the World Bank on the nature of this relationship and on the direction of causality is not supported by a large part of the empirical literature. This research shows that there is plenty of evidence for causation running from growth to finance, and for bi-directionality. The fact that finance is important for growth is undeniable. Indeed the early development literature recognized the need for finance, but considered this best provided cheaply by development banks. The financial liberalisation school sought to demonstrate the growth potential of building financial markets free of government controls and gave rise to a literature which sought to show that liberalization, especially of interest rates, generated increased savings and higher productivity investment. More generally

[8] The concept of development bank is making something of a comeback. The editors of a recent collection on the World Bank argue for 'reinventing' the Bank as the development bank it once was. See Pincus and Winters, 2002.

research demonstrated a strong positive association between measures of financial depth and of economic growth. That might have been enough, but there was clearly a need to show that financial development caused economic growth.

In an era of financial globalization and of the increasing share of GDP produced by financial and related sectors, such a need is not surprising. However, it is not clear that it is necessary to demonstrate causation from finance to growth to show that growing economies need properly functioning financial institutions. The data does show that even when liberalized, commercial banks end up lending to the Government rather than the private sector. This suggests that financial development flourishes where real economy activity is strong, and that where it is weak, there is still plenty of room for governments to intervene in credit supply where financial markets are weak or missing.

More importantly as both Stiglitz (2000) and the father of the 'Washington consensus', Williamson (2000) have pointed out, prudent regulation is an important part of liberalising financial markets and this had been neglected until its importance was emphasised in the East Asian crash of 1997. The treatment by development economics of the role of finance in development has come a long way in the last 50 years, but recent crises have attested to the continuing importance of governments and real output in mitigating the effects of financial market volatility. Overstating the role of the financial sector may lead developing countries up a blind alley and leave them further behind in the development process.

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