THE GLOBALIZATION OF THE INTERNATIONAL FINANCIAL SYSTEM

C. M. Adam
Australian Graduate School of Management, University of Sydney and University of New South Wales, Australia

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Contents

Summary

This entry examines the role of banks in the international financial markets. Conventional analysis of the development of international banking focuses on supply and demand factors. Supply factors include infrastructure, convertibility of currencies, the creation of the single European market, and the emergence of improved communications on a global scale. Demand factors spring from the growth of real economies, the permitted imbalance of balances of payments, particularly during the Bretton Woods era, and international diversification costs to individual shareholders. Section 1 of this entry reviews these factors.

There is, however, a deeper question to be explored. The emergence of international banks, as opposed to other possible forms of financial market structure, was not a given in the world economy. Why did economic agents not prefer a financial system in which arm's-length market transactions met the needs of deficit units to obtain funding from surplus units, instead of a system in which separate organizations perform this brokering role? In real goods and services markets there are many examples of direct connections between ultimate suppliers and consumers, without the need for intermediaries. There is, however, a theoretical rationale for an intermediated system that appears to underpin

the actual development of the international banking system after 1945. We explore this issue in Section 2.
A further question remains, concerning the impact of the international macroeconomy on banks, and the ways in which banks can themselves affect the international macroeconomy. It is important to understand the these connections in order to understand how international banking may develop in the future. We address these interdependencies in Section 3.

Finally, we note that there are theoretical limits to the expansion of a financially intermediated system, due to the existence of asymmetric information and enforcement risks. These two problems appear more acute in the international context than they are domestically. It is perhaps rather surprising that the international banking system has developed as much as it has over the last 50 years. The forces that have driven this expansion include large differences between nations in capital abundance, the desire for systemic risk diversification, and inefficient domestic financial structures.

1. Introduction

The international financial system is a structure of markets within which organizations and individuals trade to support economic commitments made across national borders. There is no single market for all international financial transactions. Many different financial instruments are traded in many different markets. The markets are often linked by economic agents who operate in several markets, either at once, or in sequence. Prices established in one market may affect the outcomes of trade in others, often in other countries. The origins of international financial transactions lie in the need to support international trade in real goods and services. However, the financial markets have grown enormously, and today most market activity is comprised of trade in financial assets for reasons that have little to do with the financing of real trade.

We focus on the role of banks in the international financial markets. There is a large literature attempting to understand theoretically if banks are unique in their activities compared with other organizations such as insurance companies, stockbrokers, or even just individuals. We do not explore this issue directly. We take the bald empirical observation that most national jurisdictions recognize a legal entity called a “bank” as an organization that accepts deposits and makes loans on its own account. In many countries—Germany and France are examples—banks are permitted to undertake many other functions, including trade in corporate shares and the selling of insurance, on their own account. Our emphasis is then on what forces have given rise to the dominance of banks using their borrowing and lending capacities in the international financial markets in the late twentieth century.

Our understanding of the development of international banking has progressed more fitfully than the creation of ideas about international, and especially multinational, business. Inspection of significant histories of multinational businesses reveals almost no discussion of international banking itself. Even the role of finance itself as a part of multinational business development is addressed only briefly. Recent work has begun to look more carefully at the development of finance in helping business grow internationally, but there is still little specific discussion of banking itself. As a result we

have come to depend heavily on a few writings that stand in splendid isolation to give depth of analysis in reviewing how financial intermediaries have expanded internationally. (See *Multinational Banking and Global Capital Markets f*or the most recent empirical survey of growth.)

The conventional view of the growth of international banking since 1945 tends to list a number of supply and demand elements that collectively are considered to have contributed to that growth. Following the literature, we identify three categories of forces: conducive international banking environment; real economic growth in both value (Gross National Product) and international trade terms; and imbalances in international payments.

The conducive international environment is captured by changes to monetary, regulatory, and technological infrastructures. What is infrastructure? A common view is that it is a societal or institutional arrangement that has the effect of reducing the private cost of doing business or encouraging business activities. Intangible elements of this infrastructure include the US postwar policy to liberate capital flows internationally, to restore convertibility of European currencies in 1957, and the steady promotion of the International Monetary Fund. Flowing from these supply-side elements has been a continuing process of financial market liberalization in many countries from the early 1970's. These actions have included the floating of exchange rates for major currencies and the explicit removal of controls on domestic capital markets from the early 1980s in many European countries, North America, and Japan. The creation of the single European Union from 1992 is often argued to have provided significant reductions in the prices of banking services.

Tangible supply factors in international finance focus on the establishment of faster and more reliable communications networks and data processing facilities. This has made easier the physical activity of trading monies across nations. It has also reduced the psychological barriers to financial and nonfinancial firms engaging in the international markets. It has become commonplace for US or Australian corporate treasurers to consider borrowing their own currency in another country if it is cheaper to do so than at home. This is participation in the "external money markets," or eurocurrency markets.

Supply-side issues, however, are not alone sufficient to explain the growth of international banking (see *Multinational Banking and Global Capital Markets).* International merchandise trade grew at an annual rate of 7.2 percent during the period 1962-80, and about 4.3 percent per year 1980-89. The international capital markets of the world grew during this latter period at average rate of about 25 percent, with specific markets such as the international bond market averaging 45 percent during the 1980s. The capital market flows clearly took on a life of their own, with growth and development unconnected with the volume of international trade in real goods and services. There appears to have been a substantial increase in the demand for international financing.

The pattern of international trade flows has not been balanced. This tends to produce more immediate demands for financing capital flows than even the overall scale growth.

The significant restructuring of US dollar flows that resulted from the OPEC oil price rises at the end of 1973 and 1979 provided a major surplus for the OPEC countries and severe deficits for oil-importing countries. International banks found their traditional customers, ultimate net borrowers and net lenders, requiring substantial financing needs. This led to the "petro-dollar" recycling, to ensure that the surplus lenders could find investment opportunities among the substantial deficit borrowers. Banks played a central role in this process. In order to do so, they grew in size and reach.

This conventional story about the growth of international banking from the 1950s, however, leaves unanswered a number of questions. History tells why we might have seen the growth of existing institutions, but why the international banks themselves develop in the first place? Why did they seem better placed than other sorts of financial institutions, such as arm's-length financial markets, to manage the funds flows of the growing world economy? Indeed, could non-financial firms not have managed their own financing arrangements? Do we not observe this activity in the emerging trend for high quality non-financial corporations to use their internal funds in the capital markets of developed economies in the early twenty-first century? We need to provide a more analytical approach to help us see what might be unique to financial intermediaries that enabled them to benefit so strongly and grow in the international context during recent decades.

2. Market Systems and Intermediated Systems: Theory

We adopt a simple model proposed recently to show how we can analyze the different impacts of having a financial market allocate funding for projects compared with a banking (intermediated) system. The critical starting point is to recognize that the existence of incomplete markets is the driving force for there being any outcome in which intermediated finance could possibly produce better welfare outcomes than financial markets. "Incompleteness" of markets here can be treated as a metaphor for any significant frictions found in most financial markets. For example, it may be that there are only spot markets in the economy—no futures or forward markets may exist.

2.1 A Market System

In our example we assume that there is an infinite sequence of time periods (t = 0, 1, 2, ...) and that the population of the economy is an "overlapping generations" type. That is, there is an initial older generation that lives for one period, and at every date t from then, there is a new generation that lives for two periods. Each agent is identical except for the date on which she was born. For mathematical simplicity, the number of agents is normalized to unity. If the agents make investments through financial markets, they are called "investors"; if through a banking system, they are called "depositors." Each investor/depositor is endowed at birth with $e > 0$ units of the single consumption good, which she does not consume when young but invests to provide for consumption in her old age. From this consumption c she obtains utility $u(c)$ with the first derivative of utility $u'(c) > 0$ and second derivative $u''(c) < 0$.

There are two assets. The first is fixed in supply with time-varying returns such that in even-numbered periods (t = 0, 2, 4,...) the payoff for holding this asset is r_H, and in odd-

numbered periods (t = 1, 3, 5,...) the payoff is r_L. We note that $r_H > r_L > 0$. The first older generation owns the total supply of the durable asset, normalized to equal one unit. The second asset is a storage technology, so that one unit of consumption at date t can be transformed into one unit of consumption at date $t + 1$. The investment decisions of the agents determine the amount of storage endogenously.

Uncertainty is not explicitly incorporated in the model, but there is a form of imperfect knowledge. Each agent just before she is born does not know into which generation, odd-numbered or even-numbered, she will be born. The two events are considered equally likely. This risk associated with the number of the generation is not insurable: the agent cannot trade (insure) before she is born, and once she is born the uncertainty is resolved (she knows the generation to which she belongs). This makes insurance is economically impossible. This lack of insurability is the principal incompleteness of the market in this model.

The introduction of financial markets to this economy produces some specific resource allocation effects. The younger generation uses its endowment e to buy assets in the financial markets. Suppose P_H is the endogenous price of the durable asset in terms of consumption that may be bought in even-numbered periods when the payoff is r_H, and P_L is the price in odd periods when the return is r_L. The price of storage is fixed arbitrarily to be unity.

In even-numbered periods the younger generation will invest to be able to consume in the next period when the payoff will be r_L and the price P_L. The investor buys x_L units of the durable asset and buys s_L units of storage. The investor solves the following constrained optimization problem: choose x_L and s_L to maximize $u[(r_L + P_L) + s_L]$, subject to the endowment constraint $e = P_H x_L + s_L$ and x_L, s_L both nonnegative.

In odd-numbered periods the optimization over x_H and s_H is maximize $u[(r_H + P_H) + s_H]$, subject to the endowment constraint $e = P_L x_H + s_H$ and x_H, s_H both non-negative.

The equilibrium market clearing condition for the durable asset is $x_H = x_L = 1$, that is, the total amount of the durable asset must be held by the market.

The optimum can be found by deriving the first-order conditions:

$$(r_L + P_L - P_H)u'[(r_L + P_L)\, x_L + s_L] \mu 0$$

$$(r_H + P_H - P_L)u'[(r_H + P_H)\, x_H + s_H] \mu 0$$

Since x_H and x_L are set by the market clearing conditions to be unity, any further holding of assets in storage will lower marginal utility further towards zero, the optimum requires s_H and s_L to be at their lower bound of zero.

The endowment constraint for each individual then means that the equilibrium value for prices P_H or P_L must equal e. Consumption now will differ between the generations: the even generation will consume $c_H = e + r_H$ and the odd generation will consume $c_L = e + r_L$.

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Biographical Sketch

Christopher Adam is currently Professor of Finance at the Australian Graduate School of Management, and Associate Dean-Faculty for the AGSM. The new AGSM was created in 1999 as a joint venture between The Graduate School of Business at The University of Sydney and the graduate management school of the University of New South Wales. Chris came to The Graduate School of Business at Sydney

University in 1992 as its Professor of Finance. He became the Acting Director of The GSB in 1998 on the retirement of the Foundation Director, as well as continuing in the role of Head of the Department of Management Studies for The University. From 1989 to 1992 Chris was Associate Dean for Academic Affairs and Associate Professor of Economics at Bond University. Before being invited to become a member of the Bond University foundation faculty in 1989, Chris taught and researched at the Australian Graduate School of Management in the University of New South Wales. He had come to that School in 1977 as one of its inaugural faculty members. Chris holds a Bachelor of Economics degree with First Class Honours from the University of Western Australia (1974) and earned his MA and PhD degrees in Economics from Harvard University in the USA (1977). He has been an editor of the *Australian Journal of Management*, the *Bond Management Review* and the *Journal of Applied Finance and Investment*. He was a book review editor for *The Economic Record*. Chris has also been Director of the AGSM MBA Program (1984-87, and 1999-2000); and, as foundation Director of the Bond University MBA, established this degree for the University. He has also been Director of the MBA Program at The University of Sydney.