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Global Capital Markets: Overview and Origins

At the turn of the twenty-first century, the merits of international financial integration are under more forceful attack than at any time since the 1940s. Even mainstream academic proponents of free multilateral commodity trade, such as Jagdish Bhagwati, argue that the risks of global financial integration outweigh the benefits. Critics from the left such as Lord Eatwell, more wary even of the case for free trade on current account, claim that since the 1960s “free international capital flows” have been “associated with a deterioration in economic efficiency (as measured by growth and unemployment).”¹

Such a resurgence of concerns about international financial integration is understandable in light of the multiple crises seen since the early 1990s in Western Europe, Latin America, East Asia, Russia, and elsewhere. Supporters of free trade in tangible goods have long recognized that its net benefits to countries typically are distributed unevenly, creating domestic winners and losers. Recent international financial crises, however, have submerged entire economies and threatened their trading partners, inflicting losses all around. International financial transactions rely inherently on the expectation that counterparties will fulfill future contractual commitments; they therefore place confidence and possibly volatile expectations at center stage.² These same factors are present in

¹ See Bhagwati (1998) and Eatwell (1997, 2). For alternative skeptical perspectives on the prospects for different facets of international economic integration, see Rodrik (2000) and Stiglitz (2002). More recently, the economically liberal *Economist* newspaper has endorsed the use of capital controls in some circumstances (see “A place for capital controls,” May 3, 2003). The position of the International Monetary Fund (IMF) has also moved in this direction (see *IMF Survey*, “Opening up to capital flows? Be prepared before plunging in,” May 19, 2003). Prior to the financial turbulence of the late 1990s, which we discuss further below, the IMF had considered amending its Articles of Agreement so as to promote the further easing of capital-account restrictions among its members. See Fischer (1998).

² The vast majority of commodity trades also involve an element of intertemporal exchange, via deferred or advance payment for goods, but the unwinding of the resulting cross-border obligations tends to be more predictable than for assets, and transaction volumes are smaller.

purely intranational financial trades, of course, but the relatively higher costs of trading goods and assets internationally make the adjustments to market shocks more costly. Furthermore, problems of oversight, adjudication, and enforcement all are orders of magnitude more difficult among sovereign nations with distinct national currencies than within a single national jurisdiction. And because there exists no natural world lender of last resort, international crises are intrinsically harder to head off and contain than are purely domestic ones. Factors other than the threat of crises, such as the power of capital markets to constrain domestically oriented economic policies, also have sparked concerns over greater financial openness.

Yet we must be careful not to allow the potential risks to obscure the potential benefits. In this introductory chapter we will outline the efficiency gains that international financial integration offers in theory; to a great extent these correspond to those attainable through financial markets even within a closed economy, although the scope is global. We will then turn to the practical problems that arise in trying to realize the gains from asset trading at the level of the global economy. To place theory in a historical context, we conclude the chapter with a brief survey of the evolution of modern international capital markets starting in the late middle ages.

Our goal in this chapter is to set out the core themes of the book. The ebb and flow of international capital since the nineteenth century illustrates recurring difficulties, as well as the alternative perspectives from which policymakers have tried to confront them. Subsequent chapters are devoted to documenting these vicissitudes quantitatively and explaining them. We believe that economic theory and economic history together can provide useful insights into events of the past and deliver relevant lessons for today.

1.1 Theoretical benefits

Economic theory leaves no doubt about the potential advantages of global financial trading. International financial markets allow residents of different countries to pool various risks, achieving more effective insurance than purely domestic arrangements would allow. Furthermore, a country suffering a temporary recession or natural disaster can borrow abroad. Developing countries with little capital can borrow to finance investment, thereby promoting economic growth without sharp increases in saving rates. At the global level, the international capital market channels world savings to their most productive uses, irrespective of location. The other main potential role of international capital markets is to discipline policymakers who might be tempted to exploit

a captive domestic capital market. Unsound policies – for example, excessive government borrowing or inadequate bank regulation – would spark speculative capital outflows and higher domestic interest rates under conditions of financial openness. In theory, at least, a government's fear of these effects should make rash behavior less attractive.

1.1.1 International risk sharing

A basic function of a world capital market is to allow countries with imperfectly correlated income risks to trade them, thereby reducing the global cross-sectional variability in per capita consumption levels. In a world of two economies, for example, a pure terms-of-trade change redistributes world income away from the country whose exports cheapen and, in equal measure, toward its trading partner. If the countries exchange equity shares in each other's industries, however, the redistributive effect of terms-of-trade fluctuations is dampened. Both countries benefit from the exchange because both can enjoy consumption streams that are less variable after trade. This pooling of risks can be accomplished through a diversity of financial instruments: stock shares, foreign direct investments, insurance contracts, or even nominally non-contingent securities whose real values are subject to exchange-rate risk. In addition, many derivative securities based on some of these underlying assets are also traded internationally.

As a simple example that conveys the intuition behind the risk-pooling function of a global capital market, imagine a one-period world endowment economy made up of N countries, each populated by a representative individual. Every country or individual i has a random output Y_i of a single perishable world consumption good; for all i , Y_i has mean μ and variance σ^2 , and national outputs are uncorrelated. If there is no trade in assets, the representative individual from country i has a consumption level of $C_i = Y_i$, and thus a consumption variance of σ^2 . In contrast, suppose that there is an international asset market in which people from different countries can trade claims to national outputs at the start of the period, prior to the realization of the random national outputs. Then the resident of country i , say, will sell off a fraction $(N - 1)/N$ of his claim on the domestic output process to residents of other countries, while using the proceeds to purchase a fractional claim $1/N$ of Y_j , for all $j \neq i$. This leaves everyone in the world holding the same global mutual fund with payoff $\sum_{i=1}^N Y_i/N$. This payoff, in turn, equals C_i for all countries i , but now the variance of this consumption level for each individual or country is only σ^2/N , far below the variance σ^2 of autarky consumption.

For analytical purposes, economists often think of uncertainty as representable by a set of possible “states of the world” on every date, one of which will be randomly chosen by Nature. In that setting, the most basic type of contingent contract is an Arrow-Debreu security that pays off 1 unit of consumption in a specified state of the world, but 0 in all other states. Asset markets are said to be “complete” when a full set of such Arrow-Debreu contracts, one for each possible state on every date, is traded. Under a hypothetical complete-markets regime with free international asset trade, agents the world over can pool risks to the utmost (technologically feasible) extent. The relative prices of Arrow-Debreu securities are common to all countries, and everyone trades so as to equate his or her marginal rate of substitution between consumption in different states to a common relative-price ratio. This process fully exhausts all potential gains that existed prior to trade. Figure 1.1 displays an efficient, post-trade allocation in an economy with two agents (think of them as countries) and two goods, the “goods” being consumption in the two states of nature. In Figure 1.1, the length of the Edgeworth box’s horizontal edge measures the total world output available in state 1, that of the vertical edge total state 2 output. We have drawn the box to have horizontal and vertical edges of equal length, meaning that there is no *systematic* uncertainty about world output, only *idiosyncratic* uncertainty about national output shares. Thus, the “contract curve” of Pareto optimal allocations is the linear diagonal connecting the domestic and foreign origins O^H and O^F . Given the absence of systematic risk, the equilibrium price of the two Arrow-Debreu assets is unity and agents trade at that price from an initial endowment point such as E to the equilibrium consumption allocation at C.³

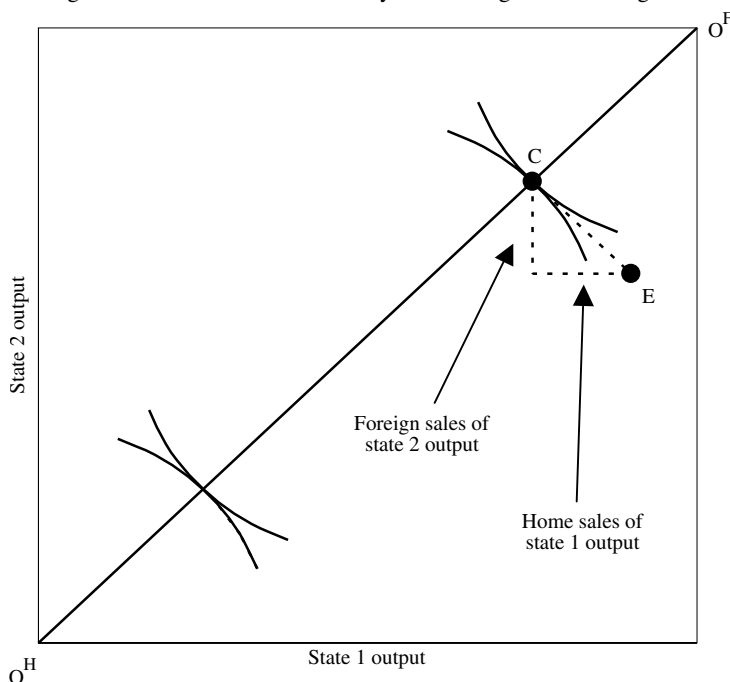
The effect of global asset markets on *production* decisions may offer even greater gains than their function in allocating exogenous consumption risks more efficiently. As Arrow observes, “the mere trading of risks, taken as given, is only part of the story and in many respects the less interesting part. The possibility of shifting risks, of insurance in the broadest sense, permits individuals to engage in risky activities that they would not otherwise undertake.”⁴ In one economic model, the ability to lay off risks in a global market induces investors to shift their capital toward riskier but, on average, more profitable activities. The result is a rise in the average growth rate of world output and, possibly, high welfare gains.⁵

³ See Obstfeld and Rogoff (1996, chap. 5).

⁴ See Arrow (1971, 137).

⁵ Obstfeld (1994a).

Fig. 1.1. Asset trade in an economy with two agents and two goods



Notes: As shown in this Edgeworth box, identical agents home (H) and foreign (F) have different endowments of the state-contingent output in a two-state world. They can trade Arrow-Debreu state-contingent output claims on the two goods shown in the diagram, consumption in state 1 and consumption in state 2. Agents' allocations are measured from their respective origins (home up and right from the lower left, foreign down and left from the upper right). Trade allows them to shift allocations from endowment point E to consumption point C via the trade triangle (broken line); it thus raises the utility of both agents (iso-utility lines are solid curves). We have illustrated the case of no systematic (or aggregate) uncertainty: the box's edges are of equal length.

1.1.2 Intertemporal trade

The risk-sharing function of capital markets is to improve the allocation of resources across different random states of the world. That function, conceived in the abstract, need have no dynamic dimension; but capital markets also reallocate resources over time in ways that can raise efficiency. In principle, this second function of intertemporal reallocation can be understood without reference to uncertainty. So we temporarily abstract from it and imagine a world of perfect foresight. In such a world, an international capital market allows countries to smooth out over time the dynamic consumption effects of

predictable income fluctuations. A country whose output is temporarily low, for example, can borrow to support consumption, repaying the loans later after the anticipated output increase. The borrowing opportunity allows a less variable consumption path than would be available in autarky.

As in the case of risk sharing, purely intertemporal trading opportunities will also affect the production activities that agents undertake, contributing further to efficiency in the absence of distortions. A country that has rich investment opportunities, but that generates little saving of its own, can tap the international capital market to exploit its investment potential without massive short-run consumption cutbacks. Conversely, countries with abundant savings but more limited investment prospects at home can earn higher returns to wealth than they would domestically. Both borrowers and lenders gain as capital flows to its most productive uses worldwide. In particular, developing countries can invest more than they could if closed, while simultaneously enjoying higher consumption and wages. The process of economic convergence is hastened by capital flows from rich to poor countries.

Under conditions of uncertainty, even trades of noncontingent assets (that is, consumption-indexed loans) can help countries mitigate the effects of the risks that they face. Countries that suffer random but temporary income shortfalls, such as crop failures, can blunt their impacts by borrowing abroad until better fortune returns. The capacity of loans to substitute partially for an absence of risk-sharing markets simply reflects the fact that the economy faces ongoing uncertainty. However, the degree of risk shifting that loan markets permit is generally far inferior to what truly complete asset markets would allow. In the complete-markets case, countries would lay off all idiosyncratic output risk in world insurance markets, and an idiosyncratic shock to national *output* therefore would not affect national *income* at all (and would induce no international borrowing or lending response). Of course, international trades involving assets with random payoffs, such as foreign direct investments, can also serve to exploit the gains from intertemporal trade. In reality, the scope of world asset trade is intermediate between the cases of noncontingent loans and complete markets, though still probably closer to the former, as we shall see.

1.1.3 Discipline

An open capital market can impose discipline upon governments that might otherwise pursue overexpansionary fiscal or monetary policies or tolerate lax financial practices by domestic financial intermediaries. The prospect of rising interest rates and capital flight may discourage large public-sector deficits; the

sharp reaction of exchange rates to investor expectations and interest rates may restrain inflationary monetary moves. Tirole (2002) puts discipline effects at the heart of his framework for analyzing proposed international financial reforms.

There is considerable evidence that during the period up to 1914, countries that adhered to the international gold standard were rewarded by lower costs of borrowing from abroad. Countries with lower public debts were similarly rewarded during the years of the restored interwar gold standard, 1925–31. In more recent data, developing countries' external borrowing spreads reflect, at least partially, certain macro fundamentals.⁶ Markets seem to try, as well, to divine the economic implications of national foreign policy moves. In 1998, for example, Moody's and Standard and Poor's downgraded India as an investment destination in reaction to the country's controversial announcement of nuclear tests. As Thomas L. Friedman wrote in the *New York Times*, "This is far more important than any U.S. sanctions, because it will raise the cost of borrowing for every Indian company and state government seeking funds from abroad."⁷

Unfortunately, market discipline often seems insufficient to deter misbehavior. Capital markets may tolerate inconsistent policies too long and then abruptly reverse course, inflicting punishments far harsher than the underlying policy "crimes" would seem to warrant. And in some cases, capital-market openness has constrained the official pursuit of arguably desirable economic goals. These problems and others are critical to understanding both perception and reality in the historical evolution of the modern global capital market.

1.2 Problems of supranational capital markets in practice

In a world of multiple sovereign states, an integrated world capital market necessarily straddles several distinct political jurisdictions that may differ in economic infrastructure, legal institutions, and commercial culture, as well as in the trade-generating factors (endowments, technologies, preferences) stressed in textbooks. The existence of political entities smaller than the market itself can limit the market's effectiveness and even render market linkages counterproductive. Any overall assessment of the net gains conferred by the global capital market must therefore account for the market's extent over a number of sovereign states.⁸

⁶ We discuss the evidence on the pre-1914 and interwar gold standards in Chapter 6 of this book. On more recent developing-country borrowing, see, for example, Edwards (1986). See Haque et al. (1996) for an analysis of credit ratings.

⁷ See Friedman, "What goes around....," *New York Times*, June 23, 1998, A21.

⁸ Considerations of space allow only brief mention of a topic as important as it is vast. For an authoritative recent survey, see Bryant (2003).

1.2.1 Enforcement of contracts and informational problems

An obvious first problem is the enforcement of financial contracts. The gains from financial trade are, from an analytical point of view, formally indistinguishable from those that result from static commodity trade when contracts can be costlessly verified and enforced. All that is involved in demonstrating this equivalence is to redefine goods available on different dates, or contingent upon different states of nature, as distinct commodities. Static trade gains, however (at least in a hypothetical world without shipping time or trade credit), do not require payment today in return for expected payment tomorrow. Thus, the question of *confidence*, which is central to financial transactions in reality, need not arise. In dynamic real-world financial markets, though, the problem is a dominating one. The contracting party who is the first to receive payment may have little motivation to fulfill his or her part of the deal later on.

The problem of enforcement is that of ensuring sufficient incentives to fulfill contractual obligations. While enforceability is pivotal even in a closed economy, it becomes even more problematic in contracts between residents of different countries. If one party to the contract is a sovereign, legal remedies in cases of breach of contract may be limited. Even when all contracting parties are private agents, it can be comparatively difficult to pursue legal actions in foreign courts or to impose domestic legal judgments on foreigners. Sometimes, governments will assume the troubled debts of their domestic private sectors, turning private-sector debt problems into sovereign debt problems. In general, as Tirole (2002) emphasizes, actions of the sovereign can affect private residents' willingness or ability to fulfill contracts with foreigners.

The efficiency of contracts is limited further by informational asymmetries, which again are more severe in an international setting than within a single nation's borders. Cross-border monitoring can be more difficult than in a domestic context because of differences in accounting standards, legal systems, government efficiency, governance mechanisms, and other factors. Both enforcement limitations and informational asymmetries reduce the gains that can feasibly be reaped from international trade, without necessarily eliminating them.⁹

1.2.2 Loss of policy autonomy

Politicians, states, rulers, and – in democratic polities – voters prize the ability to make sovereign, independent policy choices. That is, they wish to decide the particular goals of domestic policy, as well as the policies that will shape

⁹ See Obstfeld and Rogoff (1996, chap. 6) for a survey.

the future of the nation, state, or regional entity. Such desires often come into conflict with supranational markets that extend beyond the polity's borders. Financial openness, in particular, may compromise the ability of fiscal and monetary policy to attain various national goals.

Why might the constraints of financial openness pose a dilemma for fiscal policy? If capital is free to emigrate in the face of taxes, then either the burden of providing social services must be shifted toward labor, or those services must be scaled back (or, alternatively, some capital emigrates, wages fall in equilibrium, and the burden is shifted by another means). Tax competition could lead to a global downward leveling of capital taxes below the politically desirable levels. In short, footloose capital confronts governments with a harsher tradeoff between the size of the public sector and an equitable functional distribution of income. Because capital mobility can substitute for trade, as stressed by Mundell, and thus can have effects on the income distribution similar to those of trade, a reduction in the government's ability to attain distributional goals could be all the more damaging to social cohesion when capital is mobile.¹⁰

Financial openness also constricts governments' choices over monetary policies. As we shall discuss at greater length in Section 1.4, governments cannot simultaneously maintain an open capital account, a fixed exchange rate, and a domestically oriented monetary policy for any substantial length of time. They can combine at most two elements from this list of three. This *macroeconomic policy trilemma* is central to understanding how the global capital market has evolved over time. The trilemma is also central to the aspect of the global capital market that arguably has generated the most concern over the years: its susceptibility to crisis and even collapse.

1.2.3 International aspects of capital-market crises

In the 1990s, foreign-exchange crises disrupted exchange markets across the globe. These recent events sharpened debate over two opposing views on the causes of crises. One claim is that otherwise successful economies have been victims of greedy market operators, usually foreign ones. This view is especially popular with government ministers in the afflicted countries. The opposing view is that such crises are largely home-grown, and that the global

¹⁰ See Mundell (1957). The downward pressure on taxes and spending induced by the threat of capital flight is often termed a "race to the bottom." Yet again, exactly the same concerns can arise *within* certain political units, as in federal states. For research on the implications of U.S. federalism on fiscal outcomes and social programs at the state level see, for example, Ferejohn and Weingast (1997). For an early comparison of issues raised by intranational and international mobility, see Cooper (1974).

capital market is simply performing a valuable and needed role in disciplining imprudent government policies.

Recent thinking on crises would argue that neither view is universally correct. Currency crises do not occur any time market whims dictate; but they may not represent, either, an inevitable punishment for unsustainable government policies. Instead, there may be extensive “gray areas” in which unwise policies or adverse economic shocks make countries vulnerable to crises, but in which a crisis is not inevitable and might in fact not occur without the impetus of a sudden capital-flow reversal. For example, a government with a large domestic-currency public debt of short maturity may be induced to devalue by very high short-term interest rates, which themselves reflect a rational expectation of devaluation. The government’s motivation in devaluing is to debase its debt in real terms so as to limit future tax burdens. On the other hand, there can be a second equilibrium in which markets do not expect devaluation, interest rates are low, and the government’s pain therefore is not so great as to induce a devaluation. A jump from the second equilibrium to the first – due to an essentially exogenous shock to expectations – generates a sudden crisis.¹¹

As a result, currency crises, like bank runs, may contain a self-fulfilling element that can generate multiple market equilibria and render the timing of crises somewhat indeterminate. What we see in these cases is a sharp break from an essentially tranquil equilibrium to a crisis state, rather than a gradual deterioration in domestic interest rates and other market-based indicators. This scenario helps to explain why capital markets can appear to impose too little discipline before the crisis arrives and too harsh a discipline afterwards.

A national solvency crisis need not be related to a currency collapse, and could occur even in a country that uses a foreign currency such as the U.S. dollar as its money. Thus, the exchange-rate channel is not central in theory, though it often has been in practice. If lenders refuse to roll over a country’s maturing dollar debts, and if it lacks the liquid resources – foreign reserves and credit lines – with which to meet its obligations, a crisis ensues. Here we have a close analogy with the case of a banking panic. Willing rollover would preclude panic, whereas a market fear that others will flee makes it optimal for each individual lender to flee as well. In many recent cases, indeed, banking

¹¹ See Obstfeld, (1994b, 1996) for details. More recent crisis models, such as that of Morris and Shin (1998), focus on possible restoration of a unique equilibrium when market actors have asymmetric information. But these models do not deliver good news for fixed exchange rates, as the unique equilibrium is the one in which speculators attack a currency whenever there is a sufficiently good chance that the attack will succeed. Subsequent research has tended to restore multiplicities; see, for example, Angeletos et al. (2003) and Chamley (2003).

and currency crises have coincided, worsening the pain inflicted by both. At times, national solvency has come into question as a result.

The European countries that devalued in the 1992 crises of the Exchange Rate Mechanism did not subsequently fall into solvency crises, which is why their forced devaluations did not impair growth (indeed, they probably helped it). But in some crisis countries (notably some of the Nordic countries), bank-sector weakness enhanced economic vulnerability. In general, exchange-rate, financial-sector, and national-solvency crises can interact in explosive ways. The attempt to ensure pegged exchange rates (or a preannounced ceiling on exchange depreciation) can lead to the very vulnerabilities that raise the possibility of a national solvency crisis. When domestic banks and corporate borrowers are (over)confident in a peg, they may borrow dollars or yen without adequately hedging against the risk that the domestic currency will be devalued, sharply raising the ratio of their domestic-currency liabilities to their assets. They may believe that even if a crisis occurs, the government's promise to peg the exchange rate represents an implicit promise that they will be bailed out in one way or another. Such beliefs introduce an element of moral hazard. Borrowers may face little risk of personal loss even if a bailout does not materialize because they have little capital of their own at stake. When confidence in the peg evaporates, however, the government is placed in an impossible bind: an aggressive interest-rate defense will damage domestic actors with maturity mismatches, while currency depreciation will damage those with currency mismatches.

Such problems have been especially acute in developing countries, where (typically) prudential regulation is looser, financial institutions are weaker, borrowing from foreigners generally is denominated in foreign currency, and the government's credit may be shaky. As market sentiment turns against an exchange-rate peg, the government is effectively forced to assume the short foreign-currency positions in some way – or else to allow a cascade of domestic bankruptcies. Because the government at the same time has used its foreign-exchange reserves (in a vain attempt to defend the peg), may have sold dollars extensively in forward markets, and cannot borrow more in world credit markets, national default becomes imminent. As a result, the “crisis triplets” of currency, banking, and public credit collapse have been witnessed in numerous historical crises.¹²

The international nature of capital movements makes it harder to exercise prudential regulation and to institute other safeguards – deposit insurance, lender of last resort facilities, and the like – that have proven useful in imparting greater

¹² Krugman and Obstfeld (2000, chap. 22); James (2001).

stability to the domestic credit markets of the industrial countries. There are certainly distortions on the supply as well as on the demand side of the market.¹³ In addition, there is a major source of systemic risk not present in the closed-economy context: the exchange rate itself. Even among industrial countries, concerns over gaps in prudential oversight have motivated the Basel Committee for more than a quarter century to seek enhanced international regulatory cooperation. In the late 1990s, the same concerns for oversight became a major focus of the International Monetary Fund (IMF) in its responses to crises. For a time, the Fund espoused a Sovereign Debt Restructuring Mechanism (SDRM) meant to provide a set of bankruptcy procedures for sovereign debtors. But the proposal proved unpopular with borrowers and lenders alike, who now seem likely to settle instead on alternative market-based solutions that will encourage orderly workouts, such as collective-action clauses.¹⁴

1.3 The emergence of world capital markets

The Asian financial turmoil of 1997–8 started as a seemingly localized tremor in far-off Thailand but then swelled into a crisis with massive repercussions in financial markets on every continent. Both the international lending institutions, led by the International Monetary Fund, and national governments joined in the policy response.

At the time, the broad repercussions of the Asian crisis seemed extraordinary. Such turns of events would have been inconceivable, say, during the 1950s and 1960s. During those years, most countries' domestic financial systems labored under extensive government restraint and were cut off from international influences by official firewalls. Yet, despite those restrictions, which were a legacy of the Great Depression and World War Two, international financial crises occurred from time to time. Between 1945 and 1970, however, their effects tended to be localized, with little discernible impact on Wall Street, let alone Main Street.

Given the supposed benefits of a global capital market, why was the market still so fragmented and limited in scope a full generation after the end of World War Two? Following the setback of World War One and a brief comeback between 1925 and 1931, international finance withered in the Great Depression. Governments everywhere limited the scope of domestic financial markets

¹³ These are stressed by Dobson and Hufbauer (2001).

¹⁴ See Basel Committee (1997) and IMF (1998). Krueger (2002) discusses the SDRM as well as other reforms espoused by the Fund. On the retreat from the SDRM approach, see *Economist*, "Dealing with default," May 10, 2003.

as well, imposing tighter regulation and prohibiting myriad activities outright. World War Two cemented the demise of the global capital market. In the early 1950s, the world's major economies remained linked only by the most rudimentary, and typically bilateral, trade and financial arrangements. Only in the 1960s did private capital movements start to return on any scale, but in the 1970s they grew rapidly. In the 1980s, that growth accelerated (though global capital largely bypassed the developing countries mired in the decade's debt crisis). Periodic crises in emerging financial markets have continued occasionally to hamper developing countries' access to capital flows from abroad. On the whole, however, a worldwide trend of financial opening after the 1980s has begun to restore a degree of international capital mobility that has not been seen for almost a century.

Prior to World War One, a vibrant, free-wheeling capital market linked financial centers in Europe, the Western Hemisphere, Oceania, Africa, and the Far East. A nineteenth-century reader of the *Economist* newspaper could track investments in American railroads, South African gold mines, Egyptian government debt, Peruvian guano, and much more. The big communications advance of the era was perhaps more significant than anything that has been achieved since. The laying of the trans-Atlantic cable in 1866 reduced the settlement time for intercontinental transactions from roughly ten days (the duration of a steamship voyage between Liverpool and New York) to only hours. A flourishing world capital market had already evolved in the years between the mid-nineteenth century and 1914. But despite a revival following the hiatus of World War One, the market collapsed as a result of the worldwide Great Depression. The middle third of the twentieth century, was marked by a sharp reaction against global markets, especially the financial market.

The core of this book will document the quantitative and institutional history of that market over the last century or more: how the market functioned in its golden age, its subsequent destruction, and the recent attempts to rebuild another, even more comprehensive, global market. We will use that historical analysis to ask what lessons the evolutionary story of the world capital market offers for today. Before we begin, it remains to consider how the first global market emerged. It was built over centuries, starting in Europe during the late middle ages. It rose in importance and efficiency in the Renaissance. In the seventeenth and eighteenth centuries, in Amsterdam and London, it began to assume a form that we recognize today. The world capital market embraced other European centers, Latin America, and the United States by the early nineteenth century. By the mid-nineteenth century, it stood poised to bring the entire global economy into its reach.

1.3.1 *Early modern financial development*

As we have indicated, the growth of modern world financial markets has distant origins. Identification of any single starting point is necessarily arbitrary, yet we certainly discern beginnings in the commerce centered on medieval fairs. International credit was in widespread use by the latter thirteenth century. One impetus for this use of credit was long-distance trade, where the purchase of goods by importers and traders might be separated from their sale for profit by long journeys and considerable time.

On the increasingly busy overland trade routes of Europe a key commercial nexus developed at the Champagne fairs: the four fair towns were an important place of intermodal exchange and arbitrage, but they are best remembered for seminal financial developments in the twelfth century. Using specie as a limited liquidity buffer, medieval merchants could always try to buy and sell goods in a more or less balanced way, but this was not always possible or desirable. The “letters of fair” were a response to this problem: an early form of commercial credit, these were paper assets that could permit trade imbalances to exist over time. Net sellers could leave the fair with a credit on their account and net buyers with a debit, balances which the authorities would carry over until the next fair convened. It was in Champagne, then, that we find the first recorded intertemporal deficits and surpluses in interregional trade, certainly a landmark in the evolution of the global economy.¹⁵

By the first half of the fourteenth century, Italian houses with agents or correspondents throughout the Atlantic seaboard of Europe and the Mediterranean were the center of a credit network based on nonnegotiable bills of exchange. These bills usually took the form of instructions to pay the bearer a specified currency in a specified locale on the bill’s due date.¹⁶ These bills greatly economized on the need to ship specie between financial centers, a costly and sometimes perilous enterprise. Interestingly, the dominance of foreign currency bills derived from the need to circumvent the Church’s usury doctrine. Because bills payable in foreign currency involved an element of exchange risk, church doctrine did not forbid their discounting. The evolution of the credit market in the middle ages thus furnishes an early example of financial regulation driving transactions offshore.¹⁷

¹⁵ Cameron (1993; 65, 67).

¹⁶ Italian lenders’ operations included sovereign lending, such as the underwriting of English king Edward III’s invasion of France (a very unwise investment, as it turned out).

¹⁷ See De Roover (1948, chap. 4). Even though fiat currencies were not in use, exchange rates between centers could vary because of “(1) changes in the monetary standard at home or abroad, (2) disturbances in the balance of payments between any two places, and (3) speculation based on the expectations of the exchange-dealers or on the criminal attempts of manipulators who

By the late sixteenth century, Antwerp emerged as a major international trading and financial center and the *negotiable* foreign bill of exchange was in widespread use in this “multilingual, multinational marketplace of the emerging world economy.”¹⁸ Although some domestic financial instruments had been developed with similar transferability characteristics in the Low Countries, this was the first instrument used in any significant way to permit international transactions. The bills were provided with a space on the back for a series of endorsements, making them negotiable and allowing a trade in these bills to develop. The bills served as a form of foreign exchange in complement to local currency in port cities.

The pre-1600 development of the bill market is seen by most observers as the beginning of the “financial revolution” at the international level. The institution behind it was the merchant bank. With correspondent banks in Antwerp, London, and Amsterdam in constant communication, the merchant banks managed the flow of credit and payments associated with the bills, as physical goods and payments circulated contrariwise around this embryonic international market system. The system was further perfected, and its center moved to Amsterdam, with the founding of the celebrated Amsterdam Wisselbank in 1609, a clearing-house organization for various merchant bankers who held accounts there denominated in bank money (*banco*).¹⁹

The cosmopolitan nature of this trading world derived in large part from the ever-extending network of European trade. In the major financial centers, just as goods flowed in from around the Mediterranean, then from the East, and then from the Americas, so too did people, ideas, and customs. Many such immigrants, some refugees from persecution and expulsion, brought information about the economies they had left, human capital and skills for engaging in trade or commerce, or financial capital with which to start their own enterprises. In this context, the emergence of a new financial services sector was a true novelty and thus a challenge to the established order. But the bill of exchange and the emerging merchant credit operations were just the start of things to come. The development of joint-stock companies, and the consequent growth of securities markets in the seventeenth century, represented yet another huge leap in financial development.²⁰

sometimes tried to corner the money market. To this list one should perhaps add the disturbing effects of regulations enacted by the public authorities” (De Roover 1948, 63).

¹⁸ See Neal (1990, 5). Neal supplies a clear explanation of the workings of the negotiable bill of exchange as a financial instrument. On Antwerp see van der Wee (1963).

¹⁹ See Neal (1990, 7).

²⁰ See Neal (1990, 2000).

1.3.2 Technological and institutional changes

Looking at the frenetic pace and charged atmosphere of today's world stock markets, the reader might imagine that modern finance would be unable to function without coffee. This could be true in more ways than one.

Four hundred years ago coffee was, on the one hand, a typical "exotic" product, one of the many new consumption goods introduced to Europe as colonial expansion took European powers into new trading regions in the Americas and the Orient. And, on the other hand, the original java was, of course, brought from the East by the fleet of that earliest of joint-stock companies, the Dutch East India company. It was in 1609 that Dutch East India company stock began to trade broadly in Amsterdam and the other five cities that controlled the company. The stocks took the form of easily transferable securities that could be owned by domestic and foreign investors alike. Soon an active secondary market in these and other securities developed on the Amsterdam Beurs (Bourse), the first modern stock exchange.²¹

Subsequently, in London, similar transactions in various domestic securities began to be regularized at customary times and places. Eventually the market settled down in the cozy confines of the latest, trendy places-to-be-seen: the coffeehouses. In London, the prime coffeehouse trading locations included Garraway's, Jonathan's, Sam's, Powell's, and the Rainbow. The first two in particular, on Exchange Alley, near the Royal Exchange itself, soon became the center of the trade, and, in a classic demonstration of network externalities, eventually only one became the place-to-be for trading (if not the brew), and that was Jonathan's. Despite being destroyed and rebuilt after fire in 1748, Jonathan's still flourished, so much so that a move to newer and larger premises on Threadneedle Street was necessary in 1773, at Sweeting's Alley, and again in 1801 at Capel Court. These new establishments were called the "Stock Exchange." Vestiges of the original Jonathan's survive to this day in the Old Stock Exchange complex.²²

Though far from modern, these early stock markets were in no sense primitive, and their features would be instantly recognizable to today's observer. In 1688 Josef Penso de la Vega, a Portuguese Jew living in Amsterdam, published his remarkable work *Confusion de Confusiones*.²³ Like the countless financial self-help guides to be found at airport bookstands nowadays, Penso de la Vega's tract aimed at educating the stock-market neophytes of his day. He described not only trading in derivative securities, such as put and call options, but also

²¹ See Neal (1990).

²² See Dickson (1967, 490 et seq.).

²³ Penso de la Vega (1688).

all manner of incidents and events, such as attempts to manipulate the market, panics, crashes, and bull and bear markets.

Almost identical developments were witnessed in London as chronicled by John Houghton in his 1681 pamphlet *A Collection for the Improvement of Husbandry and Trade*. The correspondence in timing between the English and Dutch markets should come as no surprise: the two markets had long been intertwined by the evolving markets for bills of exchange and other instruments, so information flowed between them very rapidly, and institutional developments were easily imitated. The diffusion of ideas between the two centers was all the more fluid after the Glorious Revolution of 1688 brought William of Orange to the English throne and a host of his courtiers, advisers, and financiers into London.²⁴

Such developments arose in an already maturing British market for domestic credit, itself founded on an expanding and liquid market for government debt. This had been, and was still to be, a trump card in the British military ascendancy of the seventeenth and eighteenth centuries, notwithstanding formidable foes such as the French with superior manpower, natural resources, and technology. From the beginning, the idea was to imitate the Dutch model and so create a liquid market where money would be “cheap” – that is, where government bonds could be floated at lower interest rates (say 3 to 4 percent, versus 8 percent or more). Interest costs could greatly multiply the burden of wartime deficits, so the state financiers well understood the benefits of creating such a market and lowering their debt servicing costs. Coupled with emerging British dominance in international financial markets, and a rapidly growing market for sterling bills of exchange increasingly centered on London, this also helped the British finance and wage wars more effectively – and, eventually, to do so on a global scale. In this manner, the British state – as much as the private-sector companies such as the Bank of England, the (British) East India Company, or the Royal African Company – came to find itself increasingly a beneficiary of the new financial markets.²⁵

These were heady days for finance. The sector expanded in novel and unpredictable ways. It offered new opportunities, but it unsettled traditional arrangements. It crossed national boundaries and had its own lingua franca. New financial products and services emerged that confused and bewildered many. A new class of entrepreneurs, many of them immigrants and foreigners, held great sway in this new form of enterprise. Both the private sector and governments increasingly fell under its influence. From this mix, new and difficult tensions

²⁴ See Neal (1990, 16–17) and Neal (2000, 123–4).

²⁵ See Dickson (1967); Brewer (1989); Ferguson (2001, 2003b).

began to surface in the late seventeenth and early eighteenth centuries, and a possible backlash loomed, even as the benefits of an expanding capital market seemed apparent.

Thus, although today's debates about financial integration may generate plenty of heat, the fires being stoked have been smoldering for a very long time. Indeed, even in the most favorable circumstances, capital markets have caused some consternation: Amsterdam and London might be celebrated today as the progenitors – and exemplars – in the Anglo-Saxon world of prudently managed, modern financial markets, but their precocious activities still could not escape scrutiny. Just as it does today, the complex and volatile securities market alarmed many observers and inclined policymakers to intervene either to regulate or to close the market. The esoteric world of financial derivatives was a common target.

As early as 1609 in Amsterdam, the futures market was threatened when the board of the Dutch East India Company, perhaps motivated by concerns about dealings in the company's shares, lobbied the Estates of Holland to ban all futures trading. The local stockbrokers promptly petitioned the government, pointing out that such an action would be as ineffective as it was inequitable. Their rejoinder took the form of a memorandum in which they highlighted various flaws in the proposed ban.

Three main arguments were advanced by the brokers. First, contrary to the board's position, the brokers claimed that futures trading did not tend to depress share prices. On the contrary, they noted, the evidence showed that Amsterdam shares traded higher than those in the outlying bourses where there was no futures trade. Second, they argued for an equitable application of the principles of free trade – including futures trading, which had always been allowed in the Dutch commodities markets, most notably in those for uncaught herring and unharvested grain. Finally, the brokers warned that the proposed regulation was futile in any event. Should the freedom of securities trade be restricted, the business would simply move elsewhere, as there were already active markets opening in such potential rival financial centers as Middelburg, Hamburg, Frankfurt, Cologne, and Rouen.²⁶

Arguments against financial activity were very common in early modern times – as they have been ever since. Sometimes objections were based on claims about welfare, efficiency, equity, and so on – but all too often they could degenerate into baser forms of misunderstanding, suspicion, rumor, or envy, with an undercurrent of racism. London was not spared these concerns

²⁶ See Dillen (1930, 50–57). We thank Joost Jonker for bringing these events to our attention.

either, though eventually the arguments in favor of free and transparent financial markets prevailed:

The main criticisms of these developments followed obvious lines: objections to Jews, foreigners, and men of low origins; to novel ways of getting rich quickly; to new and outlandish techniques and vocabulary; to bearish manipulation of prices. Against this it could be argued that the evolution of the market was an essential counterpart to government borrowing, and that its operations helped provide a flow of new capital for war loans. It could also be argued that the daily valuation of the government's credit on the floor of Jonathan's was, like the popular press, one of the features of England's "open" form of government in the eighteenth century; and that this form, despite the risks it involved, was to prove more secure in the long run, because more firmly based on public discussion and evaluation, than the closed and supposedly more efficient bureaucratic governments of France and other European powers.²⁷

Then, as now, the critics could be influential. From time to time, attempts were made to rein in the London market. Exchange Alley came in for tough regulation at times. On occasion, outright bans were imposed on the trading of derivative securities such as calls ("refuses") and puts. The government sometimes attempted to coerce the market to maintain good prices on public debt instruments so as to preserve the appearance of a good reputation. Brokers were required to be licensed for operations. Most of these measures were temporary or ineffective. An exception was the Bubble Act of 1720, a response to the mania and panic of the infamous South Sea Bubble, when shares of that company soared tenfold only to crash after a few months. This act did make the formation of joint stock companies more difficult and limited the growth of the market to some degree for a century or more.

Yet by the late 1700s, the climate had changed: for the most part, the stock exchange and the financial services sector as a whole were by then left to regulate themselves. Faith in government intervention in the market had been replaced to a great extent by a *laissez-faire* belief that "the wealth of nations could only increase if controls on enterprise were reduced."²⁸ These developments set the stage for an even more impressive two-stage growth in the London financial market in the nineteenth century, during the century of comparative European peace that lasted from the Congress of Vienna (1815) until the outbreak of World War One (1914). The first stage went hand in hand with the Industrial Revolution and raised the profile of international finance. The second stage, after 1850, put international finance center stage and laid the foundation for the first truly global market in the era from 1870 to 1914.

²⁷ Dickson (1967, 516).

²⁸ Dickson (1967, 516–20); Neal (1990); Muller (2002).

1.3.3 *The rise of global finance*

Prior to the nineteenth century, the reach of international finance remained relatively limited. London and Amsterdam were the key centers, and their currencies and financial instruments were the principal focus of market players. As the Industrial Revolution gathered steam in Britain, and as the Napoleonic Wars raged on, the importance of international financial markets became apparent in both public and private spheres. Research now suggests that continental savings helped augment British budget constraints in an era when war finance and industrialization threatened to exhaust the domestic supply of savings, and when military crises could require extensive short-term financing.²⁹ Yet, viewed with hindsight, or from a global perspective, these and other fledgling markets were still quite isolated and the capital flows between them were very small relative to economic activity in general.

In due course, the range of this trade extended to other centers that developed the markets and institutions capable of supporting international financial transactions, and whose governments were not hostile to such developments. On the United States's eastern seaboard, a range of centers including Boston, Philadelphia, and Baltimore gave way to what became the dominant American center of national and international finance, New York. France and Germany had developed sophisticated and expanding capital markets that became well integrated into the widening networks of global finance.

After 1870, these developments progressed even further. Elsewhere in Europe and the New World similar markets evolved from an embryonic stage, and eventually financial trading spread to places as far afield as Melbourne and Buenos Aires.³⁰ With the world starting to converge on the gold standard as a monetary system, and with technological developments in shipping (for example, steamships replacing sail, the Panama Canal) and communications (the telegraph, transoceanic cables) coming online, the construction of the first global marketplace in capital, as well as in goods and labor, took hold in an era of undisputed liberalism and virtual *laissez faire*.

Finance also advanced through the development of a broader array of private debt and equity instruments, through the expansion of insurance activities, and through international trade in government bonds. By 1900, the key currencies

²⁹ See Neal (1990, chap. 10); Oppers (1993); Brezis (1995).

³⁰ On the United States, see Davis (1965) and Sylla (1975; 1998). On Europe, see Kindleberger (1984). For a comprehensive discussion of the historical and institutional developments in some key countries where international financial markets made an impact at this time – the United Kingdom, the United States, Australia, Argentina, and Canada – see Davis and Gallman's (2001) volume in this series. For a long-run perspective on comparative financial deepening and sophistication, see Goldsmith (1985).

and instruments were known everywhere and formed the basis for an expanding world commercial network, whose rise was equally meteoric. Bills of exchange, bond finance, equity issues, foreign direct investments, and many other types of transaction were by then quite common among the core countries, and among a growing number of nations at the periphery.

More and more day-to-day activities came into the orbit of finance via the growth and development of banking systems in many countries. This in turn raised the question of whether banking supervision would be done by the banks themselves or the government authorities, with solutions including free banking and “wildcat” banks (as in the United States), and changing over time to include governmental supervisory functions, often as part of a broader central monetary authority, the central bank. From what was once an esoteric sector of the economy, the financial sector grew locally and globally to touch increasingly more areas of activity.

Thus, the scope for capital markets to do good – or harm – loomed larger as time went by. Who stood to gain or be hurt? What policies would emerge as government objectives evolved? Would global capital markets be allowed to proceed unfettered or not?

From the turn of the twentieth century, the unfolding of this history of the international capital market has been of enormous import. It has undoubtedly shaped the course of national and international economic development and swayed political interests in all manner of directions at various times. In terms of distribution and equality, it has produced winners and losers, though so often is it misunderstood that the winners and losers – at the national and the global level – are often unclear.

The aim of this book is to tell the history of what became a truly *global* capital market at the dawn of the twentieth century and to explore how it has shaped and been shaped by events ever since.

1.3.4 Stylized facts for the nineteenth and twentieth centuries

Notwithstanding the undisputed record of technological advancement and economic growth over the long run, we must reject the temptations of a simple linear history as we examine international capital markets and their evolution. It has not been a record of ever-more-perfectly-functioning markets with ever-lower transaction costs and ever-expanding scope. As we have noted, the global capital market collapsed during the middle third of the twentieth century. The market became fragmented as governments strove to resist the effects of the Great Depression, and as both public opinion and policy reacted against finan-

cial markets' perceived role in the onset of global crisis. Echoes of this same antimarket reaction can be heard once again in public debate at the start of the twenty-first century.

What do we already know about the evolution of global capital mobility in the last century or more? Very few previous studies exist for the entire period and covering a sufficiently comprehensive cross section of countries; but many authors have focused on individual countries and particular epochs, and from their work we can piece together a working set of hypotheses that might be termed the conventional wisdom concerning the evolution of international capital mobility in the post-1870 era. The story comes in four parts, corresponding – not coincidentally – to the division of the twentieth century into distinct international monetary regimes.³¹

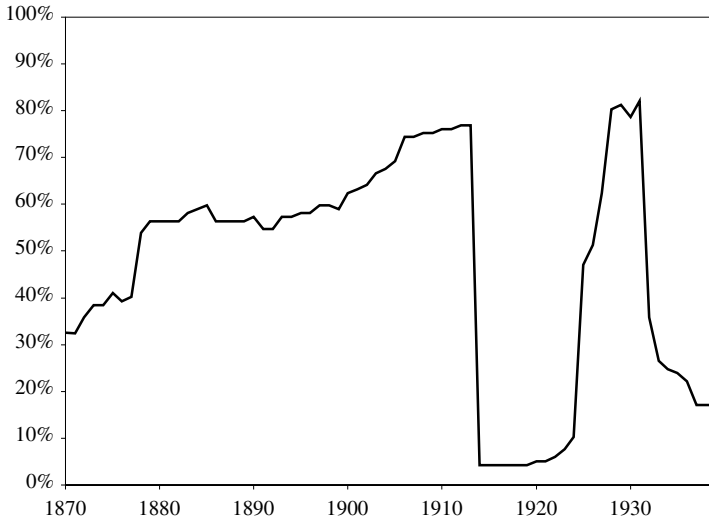
The first period in our classification ends in 1914. Between 1870 and World War One, the first age of globalization sprang forth. An increasing share of the world economy came into the orbit of the classical gold standard, and a global capital market with London as its nerve center. The trends are clearly seen in Figure 1.2. By 1880, many countries were on gold; by 1900, a large majority. This fixed-exchange-rate system was for most countries a stable and credible regime that functioned as a disciplining or commitment device. Accordingly, interest rates across countries tended to converge, and capital flows surged. Many peripheral countries, not to mention the New World offshoots of Western Europe, increasingly took part in a globalized trade not only in capital, but also in goods and labor.³²

In the second period, from 1914 to 1945, this global economy was destroyed. Two world wars and the intervening Great Depression accompanied a rise in nationalism and increasingly noncooperative economic policymaking. With gold-standard credibility broken by World War One, monetary policy became subject to different political goals, in the first instance as a way to help finance wartime deficits. Later, monetary policy was used as a tool to stabilize domestic economic activity under more flexible exchange rates. As a guard against currency crises and to protect gold, capital controls became widespread. The

³¹ On this division of history, see, in particular, Eichengreen (1996). Earlier surveys of the progress of financial-market globalization since the nineteenth century include Obstfeld and Taylor (1998), Bordo, Eichengreen, and Kim (1999), and Flandreau and Rivi re (1999). For an even longer quantitative perspective see Lothian (2002).

³² On the gold-standard regime and late-nineteenth-century capital markets, see, *inter alia*, Edelstein (1982), Eichengreen (1996), Eichengreen and Flandreau (1996), Bordo and Kydland (1995), and Bordo and Rockoff (1996). On this first era of globalization in goods and factor markets, see Green and Urquhart (1976), Sachs and Warner (1995), Williamson (1996), Taylor and Williamson (1997), O'Rourke and Williamson (1999), and the volume edited by Bordo, Taylor, and Williamson (2003).

Fig. 1.2. Adherence to the gold standard, 1870–1939
Percentage of countries



Source: Estevadeordal, Frantz, and Taylor (2003).

world economy went from globalized to almost autarkic in the space of a few decades. Private capital flows dried up, international investment was regarded with suspicion, and international prices and interest rates fell completely out of synchronization. Global capital (along with finance in general) was demonized and seen as a principal cause of the world depression of the 1930s.³³

In the third period, the Bretton Woods era (1945–71), an attempt to rebuild the global economy took shape. Trade flows accomplished a remarkable expansion and world economic growth began its most rapid spurt in history. Yet the fears of global capital that had been formed in the interwar period were not easily dispelled. The IMF, designed at Bretton Woods, New Hampshire, in 1944, initially sanctioned capital controls as a means to prevent speculative attacks on currency pegs. Controls lent some domestic policy autonomy to governments, both by providing more room for activist monetary policy and by facilitating relatively orderly occasional adjustments in the official exchange rates against the U.S. dollar. For 25 years, this prevailing philosophy held firm; and although

³³ See Eichengreen (1992; 1996) and Temin (1989). In labor markets migrations collapsed, and in goods markets trade barriers multiplied (Kindleberger 1986; Williamson 1995; James 2001).

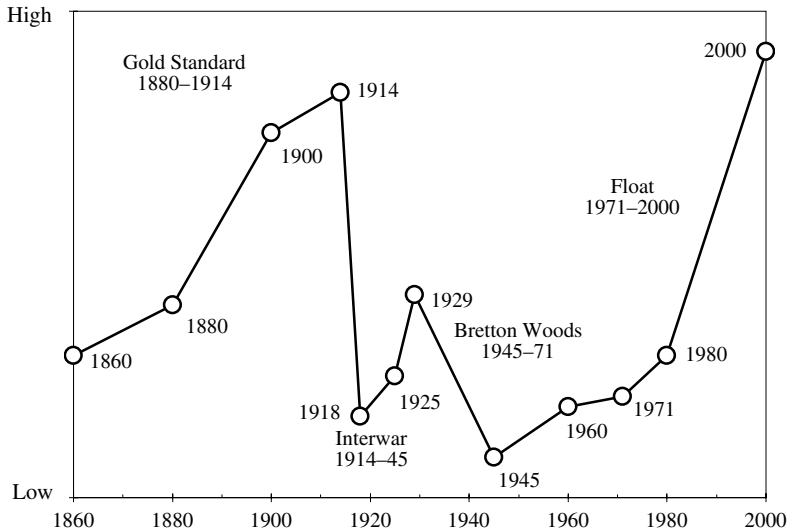
capital markets recovered, they did so only slowly. But by the late 1960s, with international trade expanding rapidly, global capital could no longer be held in check so easily. Its workings were eventually to break the network of fixed-but-adjustable exchange rates at the core of the Bretton Woods system.³⁴

In the fourth and final period, the post-Bretton Woods era of mostly floating industrial-country exchange rates, a different trend has been evident. Fixed dollar exchange-rates were given up by the developed countries, and over the twentieth century's final three decades, capital account restrictions were widely eliminated or reduced. Broadly speaking, industrial-country governments no longer needed capital controls as a tool to help preserve a mandatory fixed exchange-rate peg, since the peg was gone. Because a floating rate could accommodate market developments, controls could be lifted. European countries, on the other hand, gave up monetary autonomy but jettisoned capital controls in embracing monetary unification. In both cases the dismantlement of controls encouraged the flow of capital. In many developing countries, economic reforms reduced the transaction costs and risks of foreign investment, and capital flows grew there too – at least until the emerging-market crises of the 1990s reminded investors of the unreliably fixed exchange rates and fragile financial infrastructures that had tended to persist on the periphery. Increasingly, the smaller developing countries that desired fixed exchange rates looked to give up domestic monetary policy autonomy credibly through some form of “hard peg” (such as a currency board or even dollarization), whereas larger developing countries such as Mexico, Chile, and Brazil opted for exchange-rate flexibility coupled with inflation targeting.

In the 1990s, the term “globalization” became a catch-all to describe the phenomenon of an increasingly integrated and interdependent world economy, one that exhibits supposedly free flows of goods, services, and capital, albeit not of labor. Yet for all the hype, economic history suggests that we be cautious in assessing how novel this development really is. We will show that a period of impressive global integration was witnessed before, at least for capital markets, at the turn of the twentieth century, over a hundred years ago. Of course, that earlier epoch of globalization did not endure. As the preceding discussion suggests, if we were roughly to sketch out the implied movements in capital mobility, we would chart an upswing from 1880 to 1914. This would be followed by a collapse through 1945, interrupted by a limited recovery during the brief reconstruction of the gold standard in the 1920s, a transient interlude between the autarky of World War One and the Depression. We would then envision a

³⁴ On Bretton Woods, see, for example, Bordo and Eichengreen (1993) and Eichengreen (1996).

Fig. 1.3. A stylized view of capital mobility in modern history



Source: Introspection.

gradual rise in mobility after 1945, one that accelerates after the demise of the Bretton Woods system in the early 1970s.

For illustrative purposes, let us make the fanciful assumption that international capital mobility or global capital market integration *could* be measured in a single parameter. Suppose we could plot that parameter over time for the last century or so. We would then expect to see a time path something like the one shown in Figure 1.3, where the vertical axis carries the mobility or integration measure. Given the histories of various subperiods and certain countries, as contained in numerous fragments of the historical literature, it seems reasonable to speak of capital mobility increasing or decreasing at the times we have noted. Based on this largely narrative evidence, the pattern of a nineteenth-century rise followed by a twentieth-century U-shape that we have depicted in the figure is probably correct.

Without further quantification, however, the usefulness of this stylized view remains unclear. For one thing, we would like to know if it accords with various empirical measures of capital mobility. Moreover, even if we know the direction of changes in the mobility of capital at various times, we cannot measure the extent of those changes. Without such evidence, we cannot assess whether the

U-shaped trend path is complete: that is, have we now reached a degree of capital mobility that is above, or still below, that seen in the years before 1914? To address these questions requires more formal empirical testing, and that is one of the motivations for the quantitative analysis that follows.

1.4 Trilemma: Capital mobility, the exchange rate, and monetary policy

This book not only offers evidence in support of the stylized description of global capital market evolution, it also provides an organizing framework for understanding that evolution and the forces that shaped the international economy of the late nineteenth and twentieth centuries. What explains the long stretch of high capital mobility that prevailed before 1914, the subsequent breakdown in the interwar period, and the very slow postwar reconstruction of the world financial system? The answer is tied up with one of the central and most visible areas in which openness to the world capital market constrains government power: the choice of an exchange-rate regime.³⁵

It is a trite but true assertion of international monetary economics that the exchange rate is an open economy's most important price. Exchange rate movements therefore have widespread repercussions even in the very large U.S. economy, and have increasingly become a cause for public and official concern. Because of its pivotal importance, the exchange rate is, in most of the world's economies, a key instrument or target for monetary policy. At the very least, it is a prime policy indicator.

An open capital market, however, deprives a country's government of the ability simultaneously to target its exchange rate and to use monetary policy in pursuit of other economic objectives. To take a simple example, look at a country such as Denmark, which pegs the exchange rate between its currency, the krone, and the euro. Since market participants understand that the exchange rate will not change by much, nominal interest rates in Denmark must closely match those in the euro zone. (The rates are kept in line by arbitrageurs who would massively borrow at the low rate and lend at the high rate, confident that their gains cannot be erased by an exchange-rate movement.) But this equality of interest rates also means that Denmark cannot conduct a monetary

³⁵ This section's discussion of the open-economy macroeconomic policy "trilemma" draws on Obstfeld and Taylor (1998), who first invoked the term, and on Obstfeld (1998). Intimately related is the idea of the "inconsistent quartet," the fourth element being free trade, as famously set out in the context of European monetary unification by Padoa-Schioppa (1988). Trade restrictions furnish an awkward stabilization tool for a number of reasons, and meaningful capital mobility presupposes some openness to trade. We therefore take the level of trade openness as given and focus on the trio consisting of the other three quartet members.

policy independent of the European Central Bank's; both the exchange rate and the interest rate, the two conduits for monetary-policy effects, are exogenously determined. Since Denmark (and not the European Central Bank) is pegging the exchange rate, the Danish central bank has only one monetary role, to vary its liabilities so as to offset any incipient change in the krone's exchange value against the euro.

In theory (if not in practice, given European Union treaties), Denmark could regain an independent monetary policy in two ways. If it could prohibit any cross-border financial transactions, Denmark would decouple its interest rate from the euro zone's but could still maintain the fixed exchange rate. In that case, Denmark might unilaterally lower its interest rates, for example, but investors no longer would have the right to move funds from Copenhagen to Frankfurt in response to the resulting return differential. Pressures in the foreign exchange market would be limited to euro demands from Danish importers and from exporters to Denmark wishing to convert their krone earnings into euros. Any exchange-rate effects of these trade-driven demands for euros (which are far smaller than the potential demands associated with international financial flows) could normally be offset by sales of Danish official euro reserves. Alternatively, Denmark could maintain freedom of private capital movement but allow the krone-euro rate to float. In that case, Denmark would be free to lower its interest rates, but the krone would depreciate against the euro as a result. Both developments would tend to spur aggregate demand for Danish output.

Secular movements in the scope for international lending and borrowing may be understood, we shall argue, in terms of a fundamental *macroeconomic policy trilemma* that all national policymakers face. In brief, the chosen macroeconomic policy regime can include at most two elements of the "inconsistent trinity" of three policy goals:

- (i) full freedom of cross-border capital movements;
- (ii) a fixed exchange rate; and
- (iii) an independent monetary policy oriented toward domestic objectives.

The implications of the trilemma are straightforward yet stark. If capital movements are prohibited, in the case where element (i) is ruled out, then a country with a fixed exchange rate can break ranks with foreign interest rates and thereby run an independent monetary policy. Similarly a floating exchange rate, in the case where element (ii) is ruled out, reconciles freedom of international capital movements with monetary-policy effectiveness (at least when some nominal domestic prices are sticky). But monetary policy is powerless to achieve domestic goals when the exchange rate is fixed and capital movements are free.

In that case, element (iii) is ruled out because interventions in support of the exchange parity then entail capital flows that exactly offset any monetary-policy actions threatening to alter domestic interest rates.³⁶

This conflict among rival policy choices, the trilemma, structures our discussion of the historical evolution of world capital markets in the pages that follow, and helps make sense of the ebb and flow of capital mobility in the long run and in the broader political-economy context. Our central proposition is that secular movements in the scope for international lending and borrowing over the course of history may be understood in terms of the trilemma. Capital mobility has prevailed and expanded under circumstances of widespread political support either for an exchange-rate-subordinated monetary regime (for example, the gold standard), or for a monetary regime geared mainly toward domestic objectives at the expense of exchange-rate stability (for example, the recent float). The middle ground in which countries attempt simultaneously to hit exchange-rate targets and domestic policy goals has, almost as a logical consequence, entailed exchange controls or other harsh constraints on international transactions.³⁷

³⁶ The choice between fixed and floating exchange rates should not be viewed as dichotomous; nor should it be assumed that the choice of a floating-rate regime necessarily leads to a useful degree of monetary-policy flexibility. In reality, the degree of exchange-rate flexibility lies on a continuum, with exchange-rate target zones, crawling pegs, crawling zones, and managed floats of various other kinds residing between the extremes of irrevocably fixed and freely floating. The greater the attention given to the exchange rate, the more constrained monetary policy is in pursuing other objectives. Indeed, the notion of a “free” float is an abstraction with little empirical content, as few governments are willing to set monetary policy without some considerations of its exchange-rate effects. If exchange rates are subject to pure speculative shocks unrelated to economic fundamentals, and if policymakers are concerned to counter these movements, then monetary control will be compromised. This scenario motivated James Tobin’s proposal for a tax on capital flows – the “Tobin tax” – although, as Tobin recognized, a tax with teeth would have to apply to all foreign exchange transactions. Debate on Tobin’s proposal continues, but the major industrial countries that maintain floating rates seem to view it as an extremely costly route to highly uncertain gains.

³⁷ Our interpretation is consistent with the view in the political science literature that purposeful government control is the key factor determining the degree of international financial integration. See, for example, Helleiner (1994) and Kapstein (1994), and the references they list. Also relevant to our analysis is the paper by Epstein and Schor (1992), who link the existence of controls to the balance of power between labor-oriented interests favoring Keynesian macroeconomic policies and financially-oriented interests favoring inflation containment. We stop short of a formal econometric analysis of the determinants of capital controls. Alesina, Grilli, and Milesi-Ferretti (1994) and Grilli and Milesi-Ferretti (1995) carry out panel studies of the incidence of capital controls (for 20 industrial countries over the years 1950 to 1989, and for 61 industrial and developing countries over the years 1966 to 1989). Consistent with our interpretation, they find that more flexible exchange rate regimes and greater central-bank independence lower the probability of capital controls. For OECD countries, Posen (1995) argues empirically that stronger financial-sector influence leads to both greater central-bank independence and lower inflation. Campillo and Miron (1997) question the role of financial-sector influence in explaining more recent inflation performance.

Of course, the trilemma is only a proximate explanation, in the sense that deeper institutional and socio-political forces explain the relative dominance of some policy targets over others. Cohen (1996, 274–5) usefully distinguishes four potential categories of explanation concerning the evolution of international financial integration. We paraphrase his categories by distinguishing four different explanations based upon:

- (i) the impacts of technological innovation, including in addition any associated increases in market competition;
- (ii) the results of policy competition among governments that seek to advance “state interest,” somehow defined;
- (iii) the forces of domestic institutions and politics, including partisan rivalry and interest-group lobbying; and
- (iv) the influences of ideology and advances in economic knowledge.

We view explanations based on technology as secondary for the period of interest to us (starting in the latter nineteenth century), as it follows the deployment of transoceanic cable technology.³⁸ The precise definition of “state interest” may well reflect the domestic political power structure, so explanations of classes (ii) and (iii) need not be disjoint. Yet there may be situations in which there is a broad domestic consensus regarding certain policies as furthering the national interest. Similarly, ideology and the state of knowledge can determine the policies that states pursue in seeking a given perceived national interest. As will become clear in what follows, we regard explanations along the lines of (ii) and especially (iii) as the “deep factors” behind movements in international financial integration, with a supporting role for (iv) as well.³⁹ The pivotal force of the trilemma is to constrain the choice set within which the deep factors can play their roles.

We likewise view these deeper factors as ultimate determinants – perhaps *the* ultimate determinants – of economic performance, in that they underlie government behavior across the entire spectrum of policies (Tommasi 2002).

³⁸ We recognize, however, that technologically driven changes in the extent of goods-market integration might affect aspects of financial integration, as in the analysis of Obstfeld and Rogoff (2000). The decline in real freight rates for shipping from 1870 to 1914 remains unparalleled. This trend slowed or even, by some measures, reversed, in the interwar period: see Isserlis (1938) and Shah Mohammed and Williamson (2003). Government imposed trade barriers spiked upward during the interwar period, of course. On the impact of these transaction cost trends on world trade, see Estevadeordal, Frantz, and Taylor (2003).

³⁹ Rajan and Zingales (2003) place interest-group politics at center stage in their theory of domestic financial-market liberalization. They find a U-shaped evolution in domestic financial markets reminiscent of the pattern for international integration that we document in this book. We return to domestic liberalization briefly at the end of Chapter 4.

If a country's weak institutional underpinnings lead to chronic incursions on private property rights, for example, then no resolution of the trilemma will produce favorable outcomes.⁴⁰ Given a government's propensity toward ill-advised policy interventions, however, it remains true that combining open capital markets with fixed rather than flexible exchange rates assures an even steeper descent into financial chaos.

1.4.1 *A brief narrative*

This introductory chapter began by drawing on economic theory to review the potential benefits and costs of international capital mobility for the national participants. Clearly, the ability to lend or borrow represents, trivially, a loosening of constraints relative to those faced by a perfectly closed economy. In this dimension, at least, open trade in financial markets offers unambiguous gains relative to a closed economy. Such trades permit insurance and the smoothing of shocks, and allow capital to seek out its highest rewards, implying the usual gains-from-trade results.

In other ways, however, international financial mobility raises concerns, particularly for policymakers pursuing objectives that may be inconsistent with the free flow of capital across international boundaries. In addition, the risks of financial and balance of payments crises – some of them self-fulfilling crises fueled by pure expectations effects interacting with weak “fundamentals” – may represent further obstacles to the adoption of free capital markets.

Although these are very much contemporary questions of policy debate, the issues they raise can be traced back the early history of international financial markets. Then, too, advanced forms of financial asset trade developed very quickly, yet, as we have seen, they were subject to suspicion from various quarters, both public and private. The markets saw bubbles, panics, and crises. In consequence, calls for the regulation and restriction of such financial market activity have been with us from the start.

We have already noted that, despite these fears, a succession of technological breakthroughs and a gradual institutional evolution had contributed to the emergence of a wide-reaching international capital market by the late nineteenth century. This network of nations embraced modern financial practices and instruments and operated virtually free of controls on the part of governments. Under the generalized gold-standard monetary regime, a flourishing global market for capital developed and reached its peak in the decades just before World War One.

⁴⁰ Obstfeld (2002); Calvo and Mishkin (2003).

Subsequent history, as we have also noted, showed that this seemingly linear path toward ever more technological progress and institutional sophistication in a liberal world order could indeed be upset. Two global wars and a long, deep depression pushed the world near to autarky. Conflicting policy goals and political imperatives often put the interests of global capital at a low premium relative to other objectives. Activist governments used capital controls to sidestep the discipline of external markets, and thereby freed monetary policy for use (or abuse) as a tool of macroeconomic control. Only over the half century following World War Two did the world capital market eventually re-emerge with a vibrancy rivaling its pre-1914 incarnation.

These broad trends and cycles in the world capital market reflect changing responses to the fundamental trilemma. Before 1914, each of the world's major economies pegged its currency's price in terms of gold, and thus, implicitly, maintained a fixed rate of exchange against every other major country's currency. Financial interests prevailed in the world of the classical gold standard and financial orthodoxy saw no alternative mode of sound finance.⁴¹ Thus, the gold-standard system met the trilemma by opting for fixed exchange rates and capital mobility, sometimes at the expense of domestic macroeconomic objectives that would be paramount today. Between 1891 and 1897, for example, the United States endured a harsh deflation in the face of persistent speculation on the dollar's departure from gold. These policies were hotly debated; the Populist movement agitated forcefully against gold, but lost.⁴²

The balance of political power began to shift only with the First World War, which brought a sea change in the social contract underlying the industrial democracies.⁴³ For a sample of industrial countries, Figure 1.4 shows the Polity IV coding for "institutional democracy" as it evolved over the period bracketing World War One (the coding ranges from 0 to 11; see Marshall and Jaggers 2002 for details). Apart from the United States (which has a constant score of 10 throughout the sample period, and is omitted from the figure), there is clear evidence of a discrete increase in political openness in the decade or so after 1918.⁴⁴ Organized labor emerged as a political power, a counterweight to

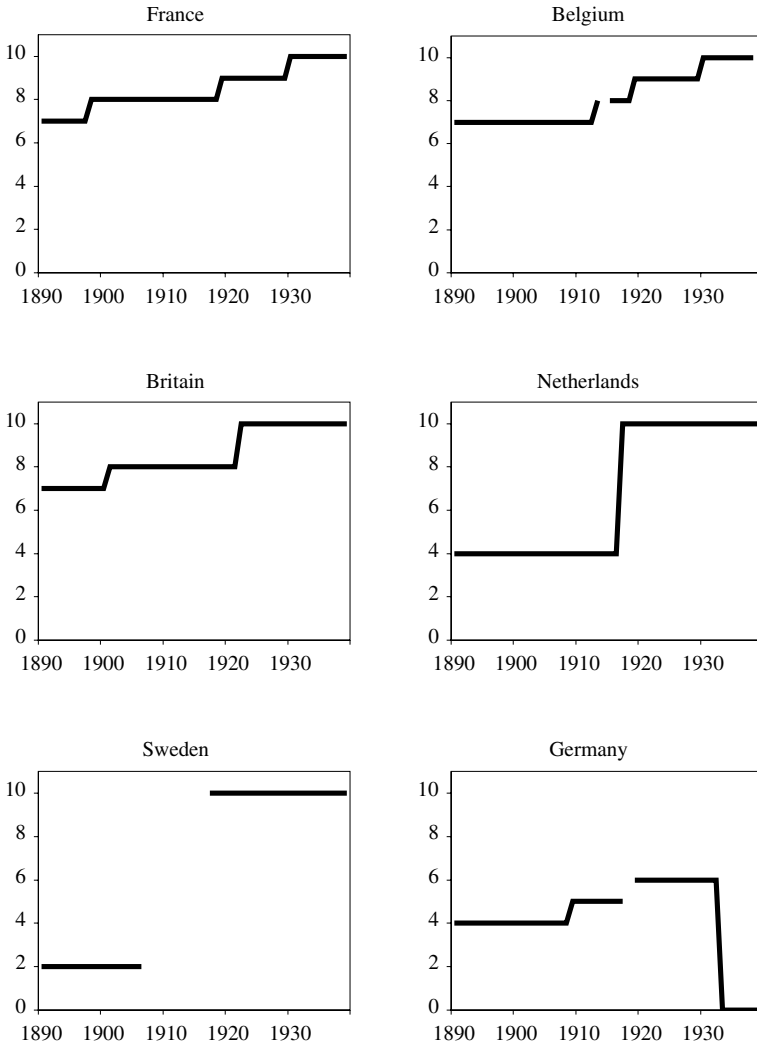
⁴¹ See Bordo and Schwartz (1984) and Eichengreen (1996).

⁴² Frieden's (1997) econometric evidence shows how financial interests promoted U.S. adherence to gold, whereas those who would have gained from currency depreciation favored silver. A similar debate over the monetary regime arose in Germany, where the Prussian agricultural nobility lobbied in vain for relaxing the restraints of the gold standard (though they were successful in getting tariff protection instead). See Gerschenkron (1943, 57, n. 62).

⁴³ See Polanyi (1944); Temin (1989); Eichengreen (1992, 1996); Obstfeld and Taylor (1998). For a recent elaboration, see Tortella (2003).

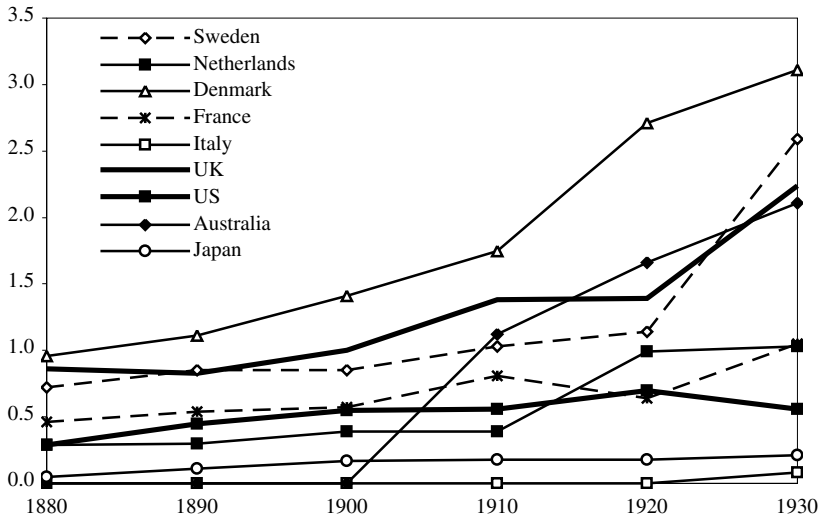
⁴⁴ The institutional democracy variable is composed of separate codings for the "competitiveness of political participation," the "openness and competitiveness of executive recruitment," and

Fig. 1.4. Institutional democracy, Polity IV scores
Index on a scale of 0 to 11



Source: Marshall and Jagers (2002).

Fig. 1.5. The rise of social spending
Percent of GDP



Notes and Source: Lindert (2004, chap. 1). Includes transfers for welfare and unemployment, pensions, health, and housing. Excludes public education.

the interests of capital, as seen in the British labor unrest of the 1920s, which culminated in the General Strike.

Consistent with the new social contract was a distinct rise in the shares of national income devoted to social transfers. Figure 1.5, which is drawn from Lindert (2004), illustrates the extent of the rise in transfer payments starting in the early twentieth century in nine countries. As Lindert has noted:

Democracy was a more important influence on the timing of the rise of the welfare state [than was economic development]. The rise of voting rights helps explain the greater redistributions after World War One, while the incompleteness of voter participation in the interwar elections helps explain why the rich were not soaked further before World War Two. Social insurance through government was favored more strongly in the kinds of democracies that gave women the vote.⁴⁵

Britain's return to gold in 1925 may have led the way to a restored international gold standard and a limited resurgence of international finance, but weaknesses in the rebuilt system helped propagate a global depression after

"constraints on the chief executive." We do not plot the variable during periods of political interruption or transition.

⁴⁵ Lindert (1994, 34).

the 1929 U.S. downturn. Following (and in some cases anticipating) Britain's example, many countries abandoned the gold standard in the late 1920s and the early 1930s and depreciated their currencies; many also resorted to trade and capital controls in order to manage independently their exchange rates and domestic policies. Those countries in the "gold bloc," which stubbornly clung to gold through the mid-1930s, showed the steepest output and price-level declines. James's (2001, 189–97) account of French policymakers' vacillation between controls and devaluation well illustrates the interaction between political pressures and the constraints of the trilemma. Eventually in the 1930s, all countries jettisoned rigid exchange-rate targets and/or open capital markets in favor of domestic macroeconomic goals, leading to the demise of the gold standard seen earlier in Figure 1.2.⁴⁶

These decisions reflected the shift in political power solidified after the First World War. They also signaled the beginnings of a new consensus on the role of economic policy that would endure through the inflationary 1970s. As an immediate consequence, however, the Great Depression discredited gold-standard orthodoxy and brought Keynesian ideas about macroeconomic management to the fore. It also made financial markets and financial practitioners unpopular. Their supposed excesses and attachment to gold became identified in the public mind as causes of the economic calamity. In the United States, the New Deal brought a Jacksonian hostility toward Eastern (read: New York) high finance back to Washington. Financial markets were more closely regulated, and the Federal Reserve was brought under heavier Treasury influence. Similar reactions occurred in other countries.

Changed attitudes toward financial activities and economic management underlay the new postwar economic order negotiated at Bretton Woods in July 1944. Forty-four allied countries set up a system based on fixed but adjustable exchange parities. They did so in the belief that floating exchange rates would exhibit instability and damage international trade. At the center of the system was the International Monetary Fund. The IMF's prime function was as a source of hard-currency loans to governments that might otherwise have to put their economies into recession to maintain a fixed exchange rate. Countries experiencing permanent balance-of-payments problems had the option of realigning their currencies, subject to IMF approval.

Importantly, the IMF's founders viewed its lending capability as primarily a substitute for, not a complement to, private capital inflows. Interwar experience had given the latter a reputation as unreliable at best and, at worst, a

⁴⁶ See Díaz Alejandro (1983), Eichengreen and Sachs (1985), Temin (1989), Campa (1990), Eichengreen (1992), Romer (1992), Bernanke and Carey (1996), and Obstfeld and Taylor (1998).

dangerous source of disturbances. Broad, encompassing controls over private capital movement, perfected in wartime, were expected to continue. The IMF's Articles of Agreement explicitly empowered countries to impose new capital controls. Articles VIII and XIV of the IMF agreement did demand that countries' currencies eventually be made convertible – in effect, freely saleable to the issuing central bank, at the official exchange parity, for dollars or gold. But this privilege was to be extended only if the country's currency had been earned through current-account transactions. Convertibility on capital account, as opposed to current-account convertibility, was not viewed by the IMF at this time as either mandatory or desirable.

Unfortunately, a wide extent even of current-account convertibility took many years to achieve, and even then it was often restricted to nonresidents. In the interim, countries resorted to bilateral trade deals that required balanced or nearly balanced trade between every pair of trading partners. If France had an export surplus with Britain, and Britain had a surplus with Germany, Britain could not use its excess marks to obtain dollars with which to pay France. Germany had very few dollars and guarded them jealously for critical imports from the Americas. Instead, each country would try to divert import demand toward countries with high demand for its goods, and to direct its exports toward countries whose goods were favored domestically.

Convertibility gridlock in Europe and its dependencies was ended through a regional multilateral clearing scheme, the European Payments Union (EPU). The clearing scheme was set up in 1950 and some countries reached *de facto* convertibility by mid-decade. But it was not until December 27, 1958, that Europe officially embraced convertibility and ended the EPU. Although most European countries still chose to retain extensive capital controls (Germany being the main exception), the return to convertibility, important as it was in promoting multilateral trade growth, also increased the opportunities for disguised capital movements. These might take the form, for example, of misinvoicing, or of accelerated or delayed merchandise payments. Buoyant growth encouraged some countries in further financial liberalization, although the United States, worried about its gold losses, raised progressively higher barriers to capital outflow over the 1960s. Eventually, the Bretton Woods system's very successes hastened its collapse by resurrecting the trilemma.⁴⁷

Key countries in the system, notably the United States (fearful of slower growth) and Germany (fearful of higher inflation), proved unwilling to accept the domestic policy implications of maintaining fixed rates. Even the limited

⁴⁷ See Triffin (1957), Einzig (1968), and Bordo and Eichengreen (2001).

capital mobility of the early 1970s proved sufficient to allow furious speculative attacks on the major currencies, and after vain attempts to restore fixed dollar exchange rates, the industrial countries retreated to floating rates early in 1973. Although viewed at the time as a temporary emergency measure, the floating-dollar-rate regime is still with us more than 30 years later.

Floating dollar exchange-rates have allowed the explosion in international financial markets experienced over the same three decades. Freed from one element of the trilemma – fixed exchange rates – countries have been able to open their capital markets while still retaining the flexibility to deploy monetary policy in pursuit of national objectives. No doubt the experience gained after the inflationary 1970s in anchoring monetary policy to avoid price instability has helped to promote ongoing financial integration. Formal inflation targeting has been adopted in a number of countries. Perhaps for the first time in history, countries have learned how to keep inflation in check under fiat monies and floating exchange rates.

There remain several potentially valid reasons, however, for countries still to fix their exchange rates – for example, to keep a better lid on inflation or to counter exchange-rate instability arising from financial-market shocks. Such arguments may find particular resonance, of course, in developing countries. But few countries that have tried to fix have succeeded for long. Eventually, exchange-rate stability comes into conflict with other policy objectives, the capital markets catch on to the government's predicament, and a crisis adds enough economic pain to make the authorities give in. In recent years, only a very few major countries have observed the discipline of fixed rates for as long as five years, and most of those can be considered rather special cases.⁴⁸

The European Union (EU) members that successfully maintained mutually fixed rates prior to January 1999 were aided by market confidence in their own planned solution to the trilemma, an imminent currency merger. A number of non-European Union countries have taken a different approach and adopted extreme straitjackets for monetary policy in order to peg an exchange rate. The developing countries following this route have not generally fared so well. Even Hong Kong, which operates a currency board supposedly subordinated to maintaining the Hong Kong-U.S. dollar peg, suffered repeated speculative attacks in the Asian crisis period. Another currency-board experiment, Argentina, held to its 1 : 1 dollar exchange rate from April 1991 for a remarkable stint of more than 10 years. To accomplish that feat, the country relied on help from international financial institutions and, despite episodes of growth, endured levels

⁴⁸ See Obstfeld and Rogoff (1995).

Table 1.1. *The trilemma and major phases of capital mobility*

Era	Resolution of trilemma? Countries choose to sacrifice:			Notes
	Activist policies	Capital mobility	Fixed exchange rate	
Gold standard	Most	Few	Few	Broad consensus.
Interwar (when off gold)	Few	Several	Most	Capital controls, especially in Central Europe and Latin America.
Bretton Woods	Few	Most	Few	Broad consensus.
Float	Few	Few	Many	Some consensus except for hard pegs (currency boards, dollarization, etc.).

of unemployment higher than many countries could tolerate. It suffered especially acutely after Brazil moved to a float in January 1999. Three years later Argentina's political and economic arrangements disintegrated in the face of external default (December 2001) and currency collapse (January–February 2002). Both Argentina's tenacity in maintaining convertibility for over a decade and the chaos following its collapse illustrate domestic institutional weaknesses of that country, which make a low-inflation fiat regime hard to sustain.⁴⁹

For most larger countries, the trend toward greater financial openness has been accompanied – almost inevitably, we would argue – by a declining reliance on pegged exchange rates in favor of greater exchange-rate flexibility. If monetary policy is geared toward domestic considerations, capital mobility or the exchange-rate target must go. If, instead, fixed exchange rates and integration into the global capital market are the primary desiderata, monetary policy must be subjugated to those ends.

The details of this argument form the core of this book, based on empirical evidence and the historical record, but we can already pinpoint the key turning points (see Table 1.1). The Great Depression stands as the watershed here, in that it was caused by an ill-advised subordination of monetary policy to an exchange-rate constraint (the gold standard), which led to a chaotic time of troubles in which countries experimented, typically noncooperatively, with alternative modes of addressing the fundamental trilemma. Interwar experience, in turn, discredited the gold standard and led to a new and fairly universal policy

⁴⁹ Once again, see Tommasi (2002).

consensus. The new consensus shaped the more cooperative postwar international economic order fashioned at Bretton Woods by Harry Dexter White and John Maynard Keynes, but implanted within that order the seeds of its own eventual destruction a quarter century later. The global financial nexus that has evolved since then rests on a solution to the basic open-economy trilemma quite different than that envisioned by Keynes or White – one that allows considerable freedom for capital movements, gives the major currency areas freedom to pursue internal goals, but largely leaves their mutual exchange rates as the equilibrating residual.

This brief overview demonstrates the centrality of the macroeconomic policy trilemma in any account of the ups and downs of the global capital market's evolution. In what follows, we match the stylized facts in Table 1.1 with some of the quantitative record, so as to document more carefully the course of events. It is a remarkable history without which today's economic, financial, political, and institutional landscape cannot be fully understood.

