Manias, Panics, and Crashes

1 Financial Crisis: A Hardy Perennial

There is hardly a more conventional subject in economic literature than financial crises. If few books on the subject appeared during the several decades after World War II, following the spate of the 1930s, it was because the industry of producing them is anticyclical in character, and recessions from 1945 to 1973 were few, far between, and exceptionally mild. More recently, with the worldwide recession of 1974–75 and the nervous financial tension of the 1980s and 1990s, the industry has picked up.[1] When it first appeared in 1978, this work thus reflected a revived interest in an old theme, a theme that became increasingly salient in the decades that followed.

Financial crises are associated with the peaks of business cycles. We are not interested in the business cycle as such, the rhythm of economic expansion and contraction, but only in the financial crisis that is the culmination of a period of expansion and leads to downturn. If there be business cycles without financial crises, they lie outside our interest. Isolated financial crises that prove so manageable as to have no effects on the economic system will also be neglected to an extent. The financial crises we shall consider here are major both in size and in effect and, as a rule, international in scope.

The issues to be probed are several. Are markets so rational that manias—irrational by definition—cannot occur? If, on the other hand, such manias do occur, should they be allowed to run their course without governmental or other authoritative interference—at the risk of financial crisis and even panic that may spread through propagation by one means or another to other financial markets at home and possibly abroad? Or is there a salutary role to be played by a "lender of last resort," who comes to the rescue and provides the public good of stability that the private market is unable to produce for itself? And if the services of a lender of last resort are provided nationally, by government or by such official institutions as a central band, what agency or agencies can furnish stability to the international system, for which no government exists?

The reader is owed an immediate confession. In an earlier work, *The World in Depression, 1929–1939,* I reached the conclusion that the 1929 depression was so wide, so deep, and so prolonged because there was

no international lender of last resort.[2] Exhausted by the war and groggy from the aborted recovery of the 1920s, Great Britain was unable to act in that capacity and the United States was unwilling to do so. This interpretation of the Great Depression has not gone unchallenged.[3] The present work is nonetheless an attempt to extend the analysis more widely in time and space.

Speculative excess, referred to concisely as a mania, and revulsion from such excess in the form of a crisis, crash, or panic can be shown to be if not inevitable, at least historically common. And the role of the lender of last resort is fraught with ambiguity and dilemma. Commenting on the behavior of the Bank of England in the crisis of 1825, Thomas Joplin said, "There are times when rules and precedents cannot be broken; others, when they cannot be adhered to with safety."[4] Of course. But breaking the rule establishes a precedent and a new rule, which should be adhered to or broken as occasion demands. In these circumstances, intervention is an art, not a science. General rules that the state should always intervene or that it should never intervene are both wrong. This fact is abundantly demonstrated by recent questions of whether, or how, to rescue Lockheed, Chrysler, New York City, the Continental Illinois Bank, the Orange Country treasury in California, and Baring Brothers. It is evident as well in the questions of how to cope with continuing or new problems presented by Third World syndicated bank loans or the trauma of ailing thrift institutions in the Southwest of the United States that suffer from disintermediation, this on top of a bout of ill-advised lending for oil exploration, office buildings, luxury condominiums, and shopping malls. The list of questions emphasizes that the problem of financial crisis is still very much with us despite what the world has learned about economic stability from Keynes, so amply put into effect in the years up to about 1965.

By no means does every upswing in business excess lead inevitably to mania and panic. But the pattern occurs sufficiently frequently and with sufficient uniformity to merit renewed study. What happens, basically, is that some event changes the economic outlook. New opportunities for profits are seized, and overdone, in ways so closely resembling irrationality as to constitute a mania. Once the excessive character of the upswing is realized, the financial system experiences a sort of "distress," in the course of which the rush to reverse the expansion process may become so precipitous as to resemble panic. In the manic phase, people of wealth or credit switch out of money or borrow to buy real or illiquid financial assets. In panic, the reverse movement takes place, from real or

financial assets to money, or repayment of debt, with a crash in the prices of commodities, houses, buildings, land, stocks, bonds—in short, in whatever has been the subject of the mania.

The monetary aspects of manias and panics are important, and later we shall examine them at some length. A monetarist view of the matter—that mania and panic would both be avoided if only the supply of money were stabilized at some fixed quantity, or at a regularly growing level—is rejected. In one monetarist view, a distinction should be made between "real" financial crises, which involve a shrinkage of the money base, or high-powered money, and "pseudo" crises, which do not. "Pseudo" strikes me as overkill. *The New Shorter Oxford English Dictionary* defines "pseudo," inter alia, as "false, pretended, spurious, intellectually pretentious, meaningless." It is legitimate to distinguish financial crises in which monetary change early or late in the process occurs from those in which the money supply is not greatly affected, but for monetarists to call the latter pseudo is rather like a cardiologist finding a cancer patient only pseudosick. Monetarists who insist on the distinction do so because of a strong prior belief in monetarism more than on empirical differences, and the speculators and investors who were wiped out in 1873, 1929, or 1987 would take little comfort from the thought that their experience was unreal.[5] While better monetary policies would moderate mania and panic in all cases, and doubtless eliminate some, I contend that even optimal policies would leave a residual problem of considerable dimensions. Even if there were exactly the right amount of liquidity in the system over the long run, there would still be crises, and need in crisis for additional liquidity to be provided by a lender of last resort. This view can be generalized to commodity markets. Markets generally work, but occasionally they break down. When they do so, they require government intervention to provide the public good of stability.

The first edition of this book failed to include a definition of financial crisis, as Raymond Goldsmith pointed out, though it may be that the genus is like pretty women (in our culture): hard to define but recognizable when encountered. Goldsmith's pithy definition is "a sharp, brief, ultracyclical deterioration of all or most of a group of financial indicators—short-term interest rates, asset (stock, real estate, land) prices, commercial insolvencies and failures of financial institutions." He specifically excludes foreign-exchange difficulties as a necessary feature.[6] Michael Bordo, a monetarist, defines financial crisis in terms of ten key elements or links (of which reduction in the money supply is number 6): a change in expectations, fear of insolvency of some financial institution,

attempts to convert real or illiquid assets into money, and so on.[7] The first edition made its way without trying to define and limit the concept of financial crisis, but I recognize that there are people who are more comfortable when provided with a definition.

The position that markets generally work but occasionally break down is widely at variance with the views at either of two extremes: that financial and commodity markets work perfectly in all times and places, or that they always work badly and should be replaced by planning or governmental assignments. On the contrary, I contend that markets work well on the whole, and can normally be relied upon to decide the allocation of resources and, within limits, the distribution of income, but that occasionally markets will be overwhelmed and need help. The dilemma, of course, is that if markets know in advance that help is forthcoming under generous dispensations, they break down more frequently and function less effectively.

In the earlier versions of this book, I started with the South Sea and Mississippi bubbles of 1719–20, largely out of ignorance. With wider reading, I am now ready to begin with the sixteenth century and to include especially the *Kipper- und Wipperzeit,* a monetary crisis from 1619 to 1622 at the outbreak of the Thirty Years War, and the much-discussed "Tulipmania" of 1636–37. The reader perhaps deserves another warning, that there is a strong and insistent voice preaching that there are no manias or bubbles, and that the tulip episode in the Dutch Republic was a natural consequence of the fundamental fact that rare specimens of tulip are difficult to breed, but once bred are easy to propagate.[8]

The early historical treatment is largely on Europe, and comes down to the London crisis of the fringe banks in 1973. Appendix B lists the major crises dealt with insofar as they can be fitted into a standard format. I know European financial history better than American, and both far better than those of Latin America and Asia, which occupy stage center today. To the extent that an abundance of work in secondary sources accurately reflects its importance in the international financial system, as it largely does, major attention to Britain is appropriate for the nineteenth century, if less so for the early eighteenth, when Amsterdam matched or outstripped London in financial power. Inability to read Dutch has cut me off from most of at least once frequently cited monograph on the crisis of 1763, but there is a considerable literature on Amsterdam in this period in more accessible languages, notably English.

This book is an essay in what is derogatorily called today "literary economics," as opposed to mathematical economics, econometrics, or

(embracing them both) the "new economic history." A man does what he can, and in the more elegant—one is tempted to say "fancier"—techniques I am, as one who received his formation in the 1930s, untutored. A colleague has offered to provide a mathematical model to decorate the work. It might be useful to some readers, but not to me. Catastrophe mathematics, dealing with such events as falling off a height, is a new branch of the discipline, I am told, which has yet to demonstrate its rigor or usefulness. I had better wait. Econometricians among my friends tell me that rare events such as panics cannot be dealt with by the normal techniques of regression, but have to be introduced exogenously as "dummy variables." The real choice open to me was whether to follow relatively simple statistical procedures, with an abundance of charts and tables, or not. In the event, I decided against it. For those who yearn for numbers, standard series on bank reserves, foreign trade, commodity prices, money supply, security prices, rate of interest, and the like are fairly readily available in the historical statistics. My thesis does not rest on small differences in quantities, however—or so I believe. It seemed to me to bog the argument down, as well as to involve an inordinate amount of work with greater costs than benefits. The result is an essentially qualitative, not quantitative, approach.

Chapter 2 provides the background to the analysis. It consists of a model of speculation, credit expansion, financial distress at the peak, and then crisis, ending in panic and crash. It is patterned after early classical ideas of overtrading, followed by revulsion and discredit, as expressed by Adam Smith, John Stuart Mill, Knut Wicksell, Irving Fisher, and others, but most recently by the late Hyman Minsky, a monetary theorist who held that the financial system is unstable, fragile, and prone to crisis. It is not necessary to agree with him about the current monetary system of the United States to recognize that his model may have great explanatory power for past crises in this country and especially in Western Europe.

The analysis itself, with copious historical illustration, begins with Chapter 3, which focuses on speculation, the mania phase of the subject. The central issue here is whether speculation can be destabilizing as well as stabilizing—whether, in other words, markets are always rational. The nature of the outside, exogenous shock that sets off the mania is examined in different historical settings: war, the end of war, a series of good harvests, a series of bad harvests, the opening of new markets, innovations, and the like. A particular recent form of displacement that shocks the system has been financial deregulation, or liberalization. This has

been an especial stimulus to monetary expansion, foreign borrowing, and speculative investment in East Asia, encouraged by attacks on government direction of bank activity or repression by Ronald McKinnon and Edward Shaw as early as 1973.[9]

Objects of speculation are listed: commodity exports, commodity imports, agricultural land at home or abroad, urban building sites, new banks, discount houses, stocks, bonds (both foreign and domestic), glamour stocks, conglomerates, condominiums, shopping centers, office buildings. Moderate excesses burn themselves out without damage. A difficult question to answer is whether the euphoria of the upswing endangers financial stability only if it embraces two or more objects of speculation, a bad harvest, say, along with a railroad mania or an orgy of land speculation.

Chapter 4 deals with the monetary dimensions of both manias and panics. We shall note occasions when boom or panic has been set off by monetary events—a recoinage, a discovery of precious metals, a change in the ratio of the prices of gold and silver under bimetallism, an unexpected success of some flotation of a stock or bond, a sharp reduction in interest rates as a result of a massive debt conversion, or a mistake in monetary policy. A sharp increase in interest rates may also cause trouble through disintermediation, as depositors flee banks and thrift institutions and leave them with long-term assets that fall in price. Innovations in finance, as in productive processes, can shock the system and lead to overtrading. A 1986 report of the Bank for International Settlements stated that financial innovations are often underpriced and hence overused.[10]

More fundamentally we shall stress the difficulty of getting the monetary mechanism right at any one time and the impossibility of keeping it right. Money is a public good; as such, it lends itself to private exploitation. Banking, moreover, is notoriously difficult to regulate. Modern monetarists insist that much, perhaps most, of the cyclical difficulties of the past are the consequences of mistakes of understanding. That such mistakes were frequent and serious cannot be denied. The argument advanced in this chapter, however, is that even when the supply of money was neatly adjusted to the demands of an economy, and mistakes were avoided, the monetary mechanism did not stay right very long. When government produces one quantity of the public good, money, the public will proceed to make more, just as lawyers find new loopholes in tax laws as fast as legislation closes up old ones. The evolution of money from coins to include bank notes, bills of exchange, bank deposits,

finance paper, and on and on illustrates the point. The Currency School might be right about the necessity for a fixed supply of money, but it is wrong about the possibility of achieving it.

In Chapter 5 we consider swindles and defalcations. It happens that crashes and panics often are precipitated by the revelation of some misfeasance, malfeasance, or malversation (the corruption of officials) engendered during the mania. It seems clear from the historical record that swindles are a response to the greedy appetite for wealth stimulated by the boom. And as the monetary system gets stretched, institutions lose liquidity, and unsuccessful swindles are about to be revealed, the temptation to take the money and run becomes virtually irresistible. It is difficult to write on this subject without permitting the typewriter to drip with irony. An attempt will be made.

Chapter 6 describes the crisis stage, with the emphasis on domestic aspects. One question is whether manias can be halted by official warnings—moral suasion or jawboning. By and large, the evidence suggests that they cannot, or at least that many crises followed warnings that were intended to head them off. One remark, widely noted in financial circles, was that of Alan Greenspan, chairman of the Federal Reserve Board, who stated on December 6, 1996, that he thought the New York stock market was "irrationally exuberant." This was at a time when the Dow-Jones industrial average was 6,400. It subsequently rose over 11,000. A similar warning had been issued in February 1929 by Paul M. Warburg without slowing for long the stock market's upward climb. The nature of the event that ultimately produces a turning point is discussed: some bankruptcy, defalcation, or troubled area revealed or rumored, a sharp rise in the central-bank discount rate to halt the hemorrhage of cash into domestic circulation or abroad. And then there is the interaction of falling prices—the crash—and its impact on the liquidity of the system.

Chapter 7 deals with domestic propagation. It was mentioned just now that a financial crisis may be more serious if two or more, rather than just one, good or asset is the subject of speculation. History seems to show that a boom in one market spills over into others. When and if a crash comes, moreover, it may seize up the banking system and, quite apart from any change in the quantity of money, lead banks to ration credit all around. The connections between the stock and commodities markets were especially strong in New York in 1921 and 1929, and those linking shares and real estate again in 1929, and in 1987, and notably in Japan and Scandinavia in 1988 to 1990.

In Chapter 8 we turn to international contagion of manias and crises.

Connections run through many linkages, including trade, capital markets, flows of hot money, changes in central bank reserves of gold or foreign exchange, fluctuations in prices of commodities, securities, or national currencies, changes in interest rates, and direct contagion of speculators in euphoria or gloom. Some crises are local, others international. What constitutes the difference? Did, for example, the 1907 panic in New York precipitate the collapse of the Società Bancaria Italiana via pressure on Paris communicated to Turin by withdrawals? There is fundamental ambiguity here, too. Tight money in a given financial center can serve either to attract funds or to repel them, depending on the expectations that a rise in interest rates generates. With inelastic expectations—no fear of crisis or of currency depreciation—an increase in the discount rate attracts funds from abroad and helps provide the cash needed to ensure liquidity; with elastic expectations of change—of falling prices, bankruptcies, or exchange depreciation—raising the discount rate may suggest to foreigners the need to take more funds out rather than bring new funds in. The trouble is familiar in economic life generally. A rise in the price of a commodity may lead consumers to postpone purchases in anticipation of the decline, or to speed them up against future increases. And even where expectations are inelastic, and the increased discount rate at the central bank sets in motion the right reactions, lags in responses may be so long that the crisis supervenes before the Marines arrive.

One complex but not unusual method of initiating financial crisis is a sudden halt to foreign lending because of a boom at home. This occurred in Germany and Austria in 1873 and contributed to the difficulties of Jay Cooke in the United States; in the Baring crisis in 1890, when troubles in Argentina led the British to halt lending to South Africa, Australia, the United States, and the remainder of Latin America; and in the spring of 1928, when the start of the stock market boom in New York cut off lending on bonds to Germany and Latin America, causing them to slide into depression. A halt to foreign trading is likely to precipitate depression abroad, which may in turn feed back to the country that launched the process.[11] Chapter 8 is especially enlarged from earlier editions to make room for the manias and crises of Latin America, East Asia, and Russia, a form of contagion that started locally and in due course spread widely over oceans.

Crisis management at the domestic level is treated in Chapters 9 and 10. The first of these is devoted to no management on one hand and to a host of miscellaneous devices on the other. No management is the remedy of those who think that the market is rational and can take care of itself; according to one formulation, it is healthy for the economy to go through the purgative fires of deflation and bankruptcy because these get rid of the mistakes of the boom. Among the miscellaneous devices are holidays, bank holidays, the issuance of scrip, guarantees of liabilities, issuance of government debt, deposit insurance, and the formation of special institutions like the Reconstruction Finance Corporation in the United States (in 1932) or the Istituto Riconstruzione Italiana (IRI) in Italy (in 1933). The Italian literature calls the process the "salvage" of banks and companies; the British in 1974–75 referred to saving the fringe banks as a "lifeboat" operation.

Chapter 10 addresses questions related to a lender of last resort—whether there should be one, who it should be, how it should operate—and the dilemmas posed for the system by the discharge of such a role. If the market is sure it will be saved by a lender of last resort, its self-reliance is weakened. On the other hand, one may choose to halt a panic for the sake of the system today, rather than worry about effects on incentives tomorrow. If there is a lender of last resort, however, whom should it save: insiders? outsiders and insiders? only the solvent, if illiquid? But solvency depends on the extent and duration of the panic. These are political questions, and they are raised in particular when it becomes necessary to legislate to enlarge such devices as the Federal Deposit Insurance Corporation (FDIC) or the Federal Savings and Loan Insurance Corporation (FSLIC) when one or the other runs out of funds to lend to banks in trouble in time of acute stress. The issue was particularly acute in the 1990s in Japan, where the collapse of the Nikkei stock bubble in 1990 uncovered all sorts of bad real estate loans by banks, credit unions, and other financial houses, confronting the government with the neuralgic question of how much of a burden to put on the taxpayer. Particularly troubling was the catatonic state of government in Japan in the 1990s, slow to decide how to meet the crisis and slower to act.

The penultimate chapter moves from the domestic scene, in which there is responsible government, to the international arena where no agency or government has *de jure* responsibility for providing the public good of monetary stability. U.S. government support for Mexico, first in 1982 and again in 1994 on two occasions, was justified on the grounds, one, that countries of the North American Free Trade Area (NAFTA) should stick together, and second, that in preventing a breakdown of Mexican finance, the NAFTA countries prevented a collapse of

lending to a list of "emerging markets." This expectation or hope failed to be realized. Following the rescue of Mexico in 1995 under the leadership of the IMF, the crisis spread to Thailand and then ricocheted through East Asia to Indonesia, Malaysia, and South Korea, escaping, however, China, Singapore, and Hong Kong.

A final chapter sums up the argument. In a word, our conclusion is that money supply should be fixed over the long run but be elastic during the short-run crisis. A lender of last resort should exist, but its presence should be doubted. For example, uncertainty about whether New York City would be helped, and by whom, may have proved just right in the long run, so long as help was finally provided, and so long as there was doubt right to the end as to whether it would be. This is a neat trick: Always come to the rescue, in order to prevent needless deflation, but always leave it uncertain whether rescue will arrive in time or at all, so as to instill caution in other speculators, banks, cities, or countries. In Voltaire's *Candide,* the head of a general was cut off "to encourage the others." What I am urging is that some sleight of hand, some trick of mirrors be found to "encourage" the others (without, of course, cutting off actual heads) because monetarist fundamentalism has such unhappy consequences for the economic system.

Let me close this introduction with a word of caution. This book has few new themes. Insofar as it fits into an intellectual pattern, it is against revisionism. A considerable portion of the economic writing of the last fifty years has been devoted to attacking old-fashioned modes of analysis that I happen to believe are valid. The monetarist school of Milton Friedman, for example, holds that there is virtually no destabilizing speculation, that markets are rational, that governments make mistake after mistake. I hope to suggest that such views, although not necessarily wrong, are too emphatic and leave too little room for exceptions. Both Keynesians and monetarists tend to disregard the macroeconomic impact of price changes, on the ground that gains from price changes for producers or consumers are matched by losses to consumers or producers, with no net effect on the system except where there is money illusion, that is, when consumers or producers fail to see that their income has changed when prices change while nominal monetary aggregates remain unchanged. This disregard is often mistaken, in my judgment, as when the decline of prices leads to industrial, mercantile, and investor bankruptcy, financial disintermediation, bank failure, and spreading deflation before the benefits, if any, from lower prices have a chance to make themselves felt. The net effects of rising prices in today's world

may be limited by offsetting gains and losses, without letting loose dynamic reactions. I would argue, however, that the pre-Keynesians were right in paying attention to price movements, now so cavalierly discarded. A study of manias, bubbles, crashes, panics, and the lender of last resort helps us to move from classical thesis through revisionist antithesis to a more balanced synthesis. Or so I claim.

2 Anatomy of a Typical Crisis

HISTORY VS. ECONOMICS

For historians each event is unique. Economics, however, maintains that forces in society and nature behave in repetitive ways. History is particular; economics is general. In the chapters that follow, we shall set out various phases of speculative manias leading to crisis and collapse, with a wealth of historical explanation. In this chapter we are interested in the underlying economic model of a general financial crisis.

Note that we are not presenting here a model of the business cycle. The business cycle involves a full revolution of the economic wheel, while boom and bust deal only with that portion of the cycle covering the final upswing and the initial downturn. Nor are we concerned with the periodicity of both cycles and crises. Such a discussion would broaden the subject to different kinds of cycles: the Kitchin cycle of thirty-nine months, based on the rhythm of fluctuations in business inventories; the Juglar cycle of seven or eight years, related to business investment in plant and equipment; the Kuznets cycle of twenty years, from population changes from generation to generation and the resultant rise and fall in the construction of housing; and possibly the more dubious and elusive Kondratieff cycle, set off by major inventions such as the railroad and the automobile.[1] Along with other observers, we note the spacing of crises ten years apart in the first half of the nineteenth century (1816, 1826, 1837, 1847, 1857, 1866), before the timing became more ragged. We make no attempt to explain this rhythm, beyond suggesting that some time must elapse after one speculative mania that ends in crisis before investors have recovered sufficiently from their losses and disillusionment to be willing to take a flyer again.

THE MODEL

We start with the model of the late Hyman Minsky, a man with a reputation among monetary theorists for being particularly pessimistic, even lugubrious, in his emphasis on the fragility of the monetary system and its propensity to disaster.[2] Although Minsky was a monetary

theorist rather than an economic historian, his model lends itself effectively to the interpretation of economic and financial history. Indeed, in its emphasis on the instability of the credit system, it is a lineal descendant of a model, set out with personal variations, by a host of classical economists including John Stuart Mill, Alfred Marshall, Knut Wicksell, and Irving Fisher. Like Fisher, Minsky attached great importance to the role of debt structures in causing financial difficulties, and especially debt contracted to leverage the acquisition of speculative assets for subsequent resale.

According to Minsky, events leading up to a crisis start with a "displacement," some exogenous, outside shock to the macroeconomic system. The nature of this displacement varies from one speculative boom to another. It may be the outbreak or end of a war, a bumper harvest or crop failure, the widespread adoption of an invention with pervasive effects—canals, railroads, the automobile—some political event or surprising financial success, or a debt conversion that precipitously lowers interest rates. An unanticipated change of monetary policy might constitute such a displacement, and some economists who think markets have it right and governments wrong blame "policy-switching" for some financial instability.[3] But whatever the source of the displacement, if it is sufficiently large and pervasive, it will alter the economic outlook by changing profit opportunities in at least one important sector of the economy. Displacement brings opportunities for profit in some new or existing lines and closes out others. As a result, business firms and individuals with savings or credit seek to take advantage of the former and retreat from the latter. If the new opportunities dominate those that lose, investment and production pick up. A boom is under way.

In Minsky's model, the boom is fed by an expansion of bank credit that enlarges the total money supply. Banks typically can expand money, whether by the issue of bank notes under earlier institutional arrangements or by lending in the form of additions to bank deposits. Bank credit is, or at least has been, notoriously unstable, and the Minsky model rests squarely on that fact. This feature of the Minsky model is incorporated in what follows, but we go further. Before banks had evolved, and afterward, additional means of payment to fuel a speculative mania were available in the virtually infinitely expansible nature of personal credit. For a given banking system at a given time, monetary means of payment may be expanded not only within the existing system of banks but also by the formation of new banks, the development of new credit instruments, and the expansion of personal credit outside of

banks. Crucial questions of policy turn on how to control all these avenues of monetary expansion. But even if the instability of old and potential new banks were corrected, instability of personal credit would remain to provide means of payment to finance the boom, given a sufficiently thoroughgoing stimulus.

Let us assume, then, that the urge to speculate is present and is transmuted into effective demand for goods or financial assets. After a time, increased demand presses against the capacity to produce goods or the supply of existing financial assets. Prices increase, giving rise to new profit opportunities and attracting still further firms and investors. Positive feedback develops, as new investment leads to increases in income that stimulate further investment and further income increases. At this stage we may well get what Minsky called "euphoria." Speculation for price increases is added to investment for production and sale. If this process builds up, the result is often, though not inevitably, what Adam Smith and his contemporaries called "overtrading."

Now, overtrading is by no means a clear concept. It may involve pure speculation for a price rise, an overestimate of prospective returns, or excessive "gearing."[4] Pure speculation, of course, involves buying for resale rather than use in the case of commodities or for resale rather than income in the case of financial assets. Overestimation of profits comes from euphoria, affects firms engaged in the productive and distributive processes, and requires no explanation. Excessive gearing arises from cash requirements that are low relative both to the prevailing price of a good or asset and to possible changes in its price. It means buying on margin, or by installments, under circumstances in which one can sell the asset and transfer with it the obligation to make future payments. As firms or households see others making profits from speculative purchases and resales, they tend to follow: "Monkey see, monkey do." In my talks about financial crisis over the last decades, I have polished one line that always gets a nervous laugh: "There is nothing so disturbing to one's well-being and judgment as to see a friend get rich."[5] When the number of firms and households indulging in these practices grows large, bringing in segments of the population that are normally aloof from such ventures, speculation for profit leads away from normal, rational behavior to what has been described as "manias" or "bubbles." The word *mania* emphasizes the irrationality; *bubble* foreshadows the bursting. In the technical language of some economists, a bubble is any deviation from "fundamentals," whether up or down, leading to the possibility and even the reality of negative bubbles,

which rather gets away from the thrust of the metaphor. More often small price variations about fundamental values (as prices) are called "noise." In this book, a bubble is an upward price movement over an extended range that then implodes.[6] An extended negative bubble is a crash.

As we shall see in the next chapter, the object of speculation may vary widely from one mania or bubble to the next. It may involve primary products, especially those imported from afar (where the exact conditions of supply and demand are not known in detail), or goods manufactured for export to distant markets, domestic and foreign securities of various kinds, contracts to buy or sell goods or securities, land in the country or city, houses, office buildings, shopping centers, condominiums, foreign exchange. At a late stage, speculation tends to detach itself from really valuable objects and turn to delusive ones. A larger and larger group of people seeks to become rich without a real understanding of the processes involved. Not surprisingly, swindlers and catchpenny schemes flourish.

Although Minsky's model is limited to a single country, overtrading has historically tended to spread from one country to another. The conduits are many. Internationally traded commodities and assets that go up in price in one market will rise in others through arbitrage. The foreign-trade multiplier communicates income changes in a given country to others through increased or decreased imports. Capital flows constitute a third link. Money flows of gold, silver (under the gold standard or bimetallism), or foreign exchange are a fourth. And there are purely psychological connections, as when investor euphoria or pessimism in one country infects investors in others. The declines in prices on October 24 and 29, 1929, and October 19, 1987, were practically instantaneous in all financial markets (except Japan), far faster than can be accounted for by arbitrage, income changes, capital flows, or money movements.

Observe with respect to the money movements that in an ideal world, a gain of specie for one country would be matched by a corresponding loss for another, and the resulting expansion in the first case would be offset by the contraction in the second. In the real world, however, while the boom in the first country may gain speed from the increase in the supply of reserves, or "high-powered money," it may also rise in the second despite the loss in monetary reserves, as investors respond to rising prices and profits abroad by joining in the speculative chase. In other words, the potential contraction from the shrinkage on the monetary

side may be overwhelmed by the increase in speculative interest and the rise in demand. For the two countries together, in any event, the credit system is stretched tighter.

As the speculative boom continues, interest rates, velocity of circulation, and prices all continue to mount. At some stage, a few insiders decide to take their profits and sell out. At the top of the market there is hesitation, as new recruits to speculation are balanced by insiders who withdraw. Prices begin to level off. There may then ensue an uneasy period of "financial distress." The term comes from corporate finance, where a firm is said to be in financial distress when it must contemplate the possibility, perhaps only a remote one, that it will not be able to meet its liabilities.[7] For an economy as a whole, the equivalent is the awareness on the part of a considerable segment of the speculating community that a rush for liquidity—to get out of other assets and into money—may develop, with disastrous consequences for the prices of goods and securities, and leaving some speculative borrowers unable to pay off their loans. As distress persists, speculators realize, gradually or suddenly, that the market cannot go higher. It is time to withdraw. The race out of real or long-term financial assets and into money may turn into a stampede.

The specific signal that precipitates the crisis may be the failure of a bank or firm stretched too tight, the revelation of a swindle or defalcation by someone who sought to escape distress by dishonest means, or a fall in the price of the primary object of speculation as it, at first alone, is seen to be overpriced. In any case, the rush is on. Prices decline. Bankruptcies increase. Liquidation sometimes is orderly but may degenerate into panic as the realization spreads that there is only so much money, not enough to enable everyone to sell out at the top. The word for this state—again, not from Minsky—is *revulsion.* Revulsion against commodities or securities leads banks to cease lending on the collateral of such assets. In the early nineteenth century this condition was known as *discredit. Overtrading, revulsion, discredit*—all these terms have a musty, old-fashioned flavor. They are imprecise, but they do convey a graphic picture.

Revulsion and discredit may go so far as to lead to panic (or as the Germans put it, *Torschlusspanik,* "door-shut-panic"), with people crowding to get through the door before it slams shut. The panic feeds on itself, as did the speculation, until one or more of three things happen: (1) prices fall so low that people are again tempted to move back into less liquid assets; (2) trade is cut off by setting limits on price

declines, shutting down exchanges, or otherwise closing trading*; or (3) a lender of last resort succeeds in convincing the market that money will be made available in sufficient volume to meet the demand for cash. Confidence may be restored even if a large volume of money is not issued against other assets; the mere knowledge that one can get money is frequently sufficient to moderate or eliminate the desire.

Whether there should be a lender of last resort is a matter of some debate. Those who oppose the function argue that it encourages speculation in the first place. Supporters worry more about the current crisis than about forestalling some future one. There is also a question of the place for an international lender of last resort. In domestic crises, government or the central bank (when there is one) has responsibility. At the international level, there is neither a world government nor any world bank adequately equipped to serve as a lender of last resort, although some would contend that the International Monetary Fund since Bretton Woods in 1944 is capable of discharging the role.

Dilemmas, debates, doubts, questions abound. We shall have more to say about these questions later on.

THE VALIDITY OF THE MODEL

The general validity of the Minsky model will be established in detail in the chapters that follow. At this stage we simply want to argue against three contrary positions. The first maintains either that each crisis is unique, a product of a unique set of circumstances, or that there are such wide differences among economic crises as a class that they should be broken down into various species, each with its own particular features. We dismiss without argument the monetarist position mentioned in the last chapter that a distinction should be made between "real" (or "true") and "pseudo" financial crises. The second position is that while the Minsky model may have been true of some earlier time, today things are different. This argument cites structural changes in the institutional underpinnings of the economy, including the rise of the corporation, the emergence of big labor unions and big government, modern banking, speedier communications, and so on, and so on. These changes, it is alleged, make a model of crises based on the instability of credit uninteresting except to antiquarians. This view has of course received less support since the financial troubles of the 1980s in Third World debt, office buildings, luxury apartments, shopping malls, and the like, the 508-point drop in the Dow-Jones industrial average on October 19, 1987, and the 1990s troubles in Japan, East Asia, Russia, and Brazil.

*The device has come to be known as a "circuit breaker," from the Nicholas Brady report to the U.S. government on the stock market implosion of 1987, earlier applied to trading on commodity exchanges, which is cut off for the rest of the day when a commodity has fallen in price by a given percentage in a single session.

The third position is that there can be no bubbles because market prices reflect fundamentals, and that sharp falls in prices frequently reflect "policy switching" by government or central banks. Where there are no fundamentals to claim attention, and an alleged bubble appears to be the result of herd behavior, positive feedback or bandwagon effects—credulous suckers following smart insiders—econometricians who believe in the efficient market hypothesis tend to suggest that the model is "misspecified," that is, that something was going on not taken into account by the theory, and that more research is called for.[8] Some of the research ignored by those with this belief is offered in this book.

The issue cannot of course be resolved to the satisfaction of everyone. Truth is multidimensional, and on issues of this kind, differences of approach to truth can be justified on the basis of taste or depth of perception. The argument here is that the basic pattern of displacement, overtrading, monetary expansion, revulsion, and discredit, generalized in modern terms by the use of the Minsky model, describes the nature of capitalistic economies well enough to direct our attention to crucial problems of economic policy.

Take first the contrary view that each crisis is unique, a product of a series of historical accidents. This has been said about 1848 and about 1929,[9] and is implied by the series of historical accounts of separate crises referred to throughout this text. There is much to support the view. Individual features of any one crisis will differ from those of another: the nature of the displacement, the object or objects of speculation, the form of credit expansion, the ingenuity of the swindlers, the nature of the incident that touches off revulsion. But if one may borrow a French phrase, the more something changes, the more it remains the same. Details proliferate; structure abides.* Our interest in this chapter is structure; in future chapters, details will engage us.

*Cf. "One bubble resembles another, nor do panics differ very widely from each other, no matter whether foreign loans, gold, rubber or railway shares are the goods to be boosted up" (Paul E. Emden, *Money Powers of Europe in the Nineteenth and Twentieth Centuries* [New York: D. Appleton-Century, 1938], p. 92).

More compelling is the suggestion that the genus "crises" should be divided into species labeled commercial, industrial, monetary, banking, fiscal, financial (in the sense of financial markets), and so on, or into groups called local, regional, national, and international. Taxonomies along such lines abound. Although there is something to be said for such classification, we reject it for two reasons. In the first place, we are concerned primarily with international financial crises involving a number of critical elements—speculation, monetary expansion, a rise in the prices of assets followed by a sharp fall, and a rush into money. Crises that fall outside these dimensions do not, on the whole, concern us, and there are enough within the category to suggest that the broad genus is worthy of study. Second, this book is sufficiently occupied with general features; to penetrate to deeper levels would overburden the analysis by burying it in detail.

A more cogent attack on the model used here comes from the late Alvin Hansen, who claimed that something closely akin to it applied satisfactorily to the world economy prior to the middle of the nineteenth century but then underwent a sea change:

> Theories based on uncertainty of the market, on speculation in commodities, on "overtrading," on the excesses of bank credit, on the psychology of traders and merchants, did indeed reasonably fit the early "mercantile" or commercial phase of modern capitalism. But as the nineteenth century wore on, captains of industry . . . became the main outlets for funds seeking a profitable return through savings and investments.[10]

In the book from which this quotation is drawn, Hansen was setting out to explain the business cycle. Before getting to the Keynesian analysis, of which he was a foremost expositor, he wanted to clear away earlier explanations. In my judgment, he was wrong—not about the rise of the modern corporation or the importance of savings and investment, but on the corollary that these required the dismissal of the earlier views on speculation in commodities and securities and on instability in credit and prices. It is understandable that Hansen's attention was drawn to savings and investment and the forces that lay behind them, but ignoring uncertainty, speculation, and instability does not mean that they had disappeared.

The heart of this book is that the Keynesian theory is incomplete, and not merely because it ignores the money supply. Monetarism is incomplete, too. A synthesis of Keynesianism and monetarism, such as the Hansen–Hicks IS–LM curves that bring together the investment-saving (IS) and liquidity-money (LM) relationships, remains incomplete, even when it brings in production and prices (as does the most up-to-date macroeconomic analysis), if it leaves out the instability of expectations, speculation, and credit and the role of leveraged speculation in various assets. The Keynesian and Friedmanite schools, along with most modern macroeconomic theories that synthesize them, are perhaps not so much wrong as incomplete. At the same time, under particular circumstances the omissions may be so critical as to make both Keynesianism and monetarism misleading.

THE MODEL'S RELEVANCE TODAY

One place where the model surely applies today is foreign-exchange markets, in which prices rise and fall in wide swings, despite sizable intervention in the market by monetary authorities, and in which exchange speculation has brought large losses to some firms and some banks while others have made substantial trading profits.[11] Financial crisis has been avoided, but in the opinion of some observers, not by much.

Again, contemplate the enormous external debt of the developing countries, built up not only since the rise of oil prices but importantly—a widely ignored fact—in the several years before that time. This occurred as multinational banks swollen with dollars created through a serious mistake in monetary policy (i.e., cheap money initiated in the United States to help with Nixon's presidential reelection campaign while the Deutsche Bundesbank was tightening money to curb inflation) tumbled over one another in trying to uncover new foreign borrowers and practically forced money on the less-developed countries (LDCs). Some of the chickens have already come home to roost, in defaults by Zaire and Peru; others such as Argentina, Brazil, and Mexico have had close calls and been forced from time to time to postpone debt service and negotiate debt rescheduling. In this area of syndicated bank lending the world was in distress as early as 1978, although it failed to identify that condition until the Mexican debt crisis of August 1982.[12] On that occasion the United States acted as a lender of last resort with advanced purchases of a billion dollars' worth of oil for the strategic stockpile and a billion-dollar bridging loan from the Federal Reserve Bank of New York until the International Monetary Fund could work out a debt rescheduling. Muddling through has continued thereafter, despite calls

from various quarters for a definitive solution of Third World debt by means of a massive write-off.

Other more recent examples can be found in the Japanese stock and real-estate markets in 1988 to 1990 and in mutual fund investments in "emerging markets" in 1993, many of which—especially the Mexican again—collapsed in 1994. Since that time there have been innovations in asset trading through hedge funds that have fewer than ninety-nine participants, each with large amounts of money, an explosive expansion of derivatives, and stock trading on the Internet, often all day and into the evening. These changes have added to the volatility of stock exchanges and raised the levels of indexes to giddying heights. The fall in personal savings, rise of personal bankruptcies, and large cumulative deficit in the U.S. balance of payments as foreign investors have bought U.S. commodities, stocks, bonds, and companies pose a risk that overtrading, followed by revulsion and perhaps discredit, is by no means a relic of the distant past.

I therefore insist that the model cannot be dismissed out of hand, as Hansen tried to do. But I look back, not ahead. This is a work in financial history, not economic forecasting. The world seems not to have learned from experience in the past. It may do so in the future.