Chapter 1

Introduction

1.1 A brief history of crises

What happened in Asia in 1997? Countries such as South Korea, Thailand, Indonesia, Singapore and Hong Kong, whose economies had previously been the envy of the world, experienced crises. Banks and other financial intermediaries were put under great strain and in many cases collapsed. Stock markets and currencies plunged. The real economy was severely affected and GDP fell significantly. What were the causes of these dramatic events?

To many people these crises were a new phenomenon. There had been crises in other countries such as Mexico and Argentina but these were usually attributed to inconsistent government macroeconomic policies. In those cases taxes were too small relative to government expenditures to maintain a fixed exchange rate. This was not the case for the Asian crises. Other causes were looked for and found. The institutions in these countries were quite different from those in the US. Many had bank-based financial systems. There was little transparency either for banks or corporations. Corporate governance operated in a quite different way. In many cases it did not seem that managers interests were aligned with those of shareholders. In some countries such as Indonesia corruption was rife. These institutional factors were seen by many as the cause of the crises. However, they had all been present during the time that these countries were so successful.

Others blamed guarantees to banks and firms by governments or implicit promises of "bail-outs" by organizations such as the International Monetary Fund (IMF). Rather than inconsistent macroeconomic policies being the problem microeconomic policies were to blame.

In this book we will argue that it is important not to take too narrow a view of crises. They are nothing new. They have not been restricted to emerging economies. The Scandinavian crises of the early 1990's are an example of this. Despite having sophisticated economies, Norway, Sweden and Finland all had severe crises. These were similar in many ways to what happened in the Asian crises of 1997. Banks collapsed, asset prices plunged, currencies came under attack and their value fell. Output was severely affected.

Taking an historical view the period from 1945-1971 was exceptional. Apart from one in Brazil in 1962, there were no banking crises anywhere in the world. There were currency crises when exchange rates were pegged at the wrong levels but that was all. Going back to the first half of the twentieth century and before there were many examples of financial crises. The stock market crash of 1929, the banking crises of the early 1930's and the Great Depression was one of the most dramatic episodes. There were many others, particularly in the US in the last half of the nineteenth century when it had no central bank. In Europe crises were much less frequent. The Bank of England had learned how to prevent crises and the last one there was the Overend & Gurney crisis of 1866. Other central banks also learned to prevent crises and their incidence was significantly reduced. Prior to that crises were endemic in Europe as well. Kindleberger (1994) suggests they had occurred on average about every ten years for several centuries.

The historical experience of crises up until the start of the Second World War was quite different from that after the war. Particularly after the experience of the Great Depression, crises were perceived as a market failure. They must be avoided at all costs. The reform of the Federal Reserve System in the early 1930s and the extensive regulation of the financial system that was put in place in the US were part of this mindset. In other countries financial regulation went even farther. Governments controlled the allocation of funds to different industries through state-owned banks or heavily regulated banks. This extensive regulation was the cause of the virtual disappearance of banking crises from 1945-1971.

However, the elimination of crises came at a cost. Because of the extensive regulation and government intervention the financial system ceased to perform its basic function of allocating investment. There were many inefficiencies as a result. This lead to calls for deregulation and the return of market forces to the allocation of investment. As a result crises have returned. Bordo and Eichengreen (2000) find that the frequency of crises in this recent period is not that different from what it was before 1914.

Chapter 2 of the book provides a brief history of financial crises. It contrasts the pre-1914 period with the interwar years, the Bretton Woods period from 1945-1971 and the post 1971 period.

1.2 Theories of Crises

The contrast between the majority view underlying the cause of crises in the 1930's and the view of many today is striking. In the 1930's the market was the problem and government intervention through regulation or direct ownership of banks was the solution. Today many argue that inconsistent government macroeconomic policies or moral hazard in the financial system caused by government guarantees is at the root of recent crises. Here the view is that government is the cause of crises and not the solution. Market forces are the solution.

These differing perspectives on crises are reflected in the literature on crises. One part of the literature has focussed on banking crises. This part by and large starts with the 1930s perspective that crises are bad and should be eliminated by government intervention. Another part of the literature focusses on currency crises. This literature initially focussed on trying to understand the crises that occurred with fixed exchange rates under the Bretton Woods system and more recently with pegged exchange rates. Their cause was usually inconsistent government macroeconomic policies. It is often suggested that floating exchange rates where market forces are allowed free reign is the solution.

These are not the only theories of crises that exist in the literature. At least six categories of theory can be identified.

1. Financial panic (multiple equilibria)
2. Business cycle (essential crises)
3. Inconsistent government macroeconomic policies
4. Bubble creation and collapse
5. Amplification (contagion and fragility)
6. Flawed government microeconomic policies.

The first two theories come from the literature on banking crises. They are discussed at length in Chapter 3. Both theories have a long history. One view of crises, well expounded in Kindleberger (1978), is that they occur spontaneously as a panic. The modern version was developed by Bryant (1980) and Diamond and Dybvig (1983). The analysis is based on the existence of multiple equilibria. In at least one equilibrium there is a panic while in another there is not.

The business cycle theory also has a long history (see, e.g., Mitchell (1941)). The basic idea is that when the economy goes into a recession or depression the returns on bank assets will be low. Given their fixed liabilities in the form of deposits or bonds they may unable to remain solvent. This may precipitate a run on banks. This kind of crisis has been formally analyzed by Chari and Jagannathan (1988), Jacklin and Bhattacharya (1988), Hellwig (1994), Alonso (1996) and Allen and Gale (1998).

Chapter 4 is concerned with currency crises. There is a large literature on crises that arise as a result of government policies that are inconsistent with a fixed or pegged exchange rate. The literature started with so-called first generation models based on Krugman (1979) and Flood and Garber (1984). These were deterministic in nature. Although the models were consistent with large volumes of trade at the crisis date they could not explain the large changes in prices that typically occurred when a fixed exchange rate was abandoned. This led to the development of second generation models such as Obstfeld (1996). These were based on multiple equilibria. A crisis was similar to a panic in the banking crisis literature and was the result of a change in equilibrium.

As in the banking literature the selection of equilibrium was not formally modelled. One way of doing this was to appeal to a "sunspot" approach whereby one equilibrium was associated with a sunspot while the second was not. This approach does not explain why a particular equilibrium was tied to the occurrence of a sunspot and the other to its non-occurrence. In that sense it is purely arbitrary. Morris and Shin (1998) showed how the global games approach of Carlsson and van Damme (1993) could be used to ensure equilibrium is unique. Whether the equilibrium involves a crisis or not depends on the fundamentals of the economy.

Although currency crises occurred in isolation in the period from 1945-1971, Kaminsky and Reinhart found that subsequently there have been frequent "twin crises" where currency crises and banking crises occurred together. Although banking crises and currency crises literature developed in isolation from each other the frequent occurrence of twin crises lead to the development of models to explain them. As in the banking literature there are two approaches corresponding to the financial panic and business cycle theories. Chang and Velasco (2000, 2001) develop a model with multiple equilibria. Allen and Gale (2000) develop one based on fundamental factors.

In many instances financial crises occur after a bubble in asset prices collapses. How these bubbles form and collapse and their effect on the financial system is the subject of Chapter 5. The most important recent example of this phenomenon is Japan. In the mid 1980's the Nikkei stock index was around 10,000. By the end of the decade it had risen to around 40,000. A new governor of the bank of Japan who was concerned that a loose monetary policy had kindled prospects of inflation decided to increase interest rates substantially. This pricked the bubble and caused stock prices to fall. Within a few months they had fallen by half. Real estate prices continued to rise for over a year however they then also started to fall. Twelve years later both asset prices and real estate are significantly lower with stocks and real estate at around a quarter of their peek value. The fall in asset prices has led to a fall in growth and a banking crisis. Japan is by no means the only example of this phenomenon. It can be argued the Asian crises fall into this category. In the US the Roaring 1920's and the Great Depression of the 1930's are one example. The high tech 1990's and the 00's may turn out to be another.

The Asian crises illustrated another important phenomenon, contagion. The episode started in Thailand and spread to many other countries in the region including South Korea, Malaysia, Indonesia, Hong Kong, the Philippines and Singapore. Interestingly it did not affect Taiwan nearly as much. Other regions, particularly South America, were also affected. Understanding the contagious nature of many crises has become an important topic in the literature. There are a number of theories of contagion. One is based on trade and real links, another is based on interbank markets, another on financial markets and one on payments systems. These are the subject matter of the first part of Chapter 6.

During the nineteenth century there were a number of examples of a closely related phenomenon, financial fragility. This is when a small shock has a large effect on the financial system. One of the mechanisms for this may be that the shock spreads geographically and this is the sense in which it is closely related to contagion. A recent example is the Russian default in 1998. The Russian government defaulted on some of its debt in August 1998. Although the amount of debt defaulted on was very small relative to assets in the world, the default had a large effect. Kaminsky and Schmukler (1999) report that around three quarters of the world's stock markets fell in the day that followed the announcement. There was subsequently a period of extreme turbulence in financial markets. During this period a hedge fund, Long Term Capital Management (LTCM) came under extreme pressure and was unable to meet margin calls on its positions. Even though this intermediary was unregulated and small relative to total assets in the US, the Federal Reserve Bank of New York arranged for a takeover by its main lenders. One argument that can be used to justify the New York Fed's intervention is that in its absence LTCM would have been forced to liquidate assets in thin markets, this would have caused prices to drop and led to a systemic crisis. In other words there is an appeal to the notion of financial fragility. This is the issue considered in the second part of Chapter 6.

Chapter 7 covers a number of remaining theories of crises. Most of these are concerned with flawed government microeconomic policies. As briefly mentioned above, a popular explanation of the Asian crises is that they are due to guarantees of the banking sector by the government or the prospect of bail outs by international organizations such as the IMF. The lack of adequate bankruptcy procedures is another possible problem. This is true in many countries where domestic bankruptcy laws are inadequate. It is also an important issue at the level of sovereign bankruptcy. It has been argued that Argentina's problems in 2001 would have been eased if there was an established procedure for the bankruptcy of sovereign countries. Another important topic is the issue of inadequate regulation of disclosure and governance and the extent to which these are causes of crises.

There is a tendency in much of the literature on crises to argue that the particular theory being presented is "THE" theory of crises. As even the brief discussion in this chapter indicates crises are complex phenomenon in practice. One of the main themes of this book is that there is no one theory of crises that can explain all aspects of the phenomena of interest. In general, the six theories of crises that we will focus on are not mutually exclusive. Actual crises may contain elements of some combination of these theories.

1.3 Policy issues

Financial crises pose many policy issues. Since the Great Depression it has been taken as axiomatic by many policymakers in industrial countries that crises must be avoided at all costs. Much of the banking and financial regulation that exists is designed to prevent crises. The analysis underlying many of these policy recommendations takes it as given that this is the case. For example, with capital adequacy regulation there is usually a discussion of crises as the rationale for the regulation. However, the possibility of crises and the cost of crises is not usually included in the analysis. Another theme of this book is that it is not axiomatic that crises should be avoided at any cost. It is certainly possible to avoid crises as the experience from 1945-1971 demonstrates. As the reaction to financial repression during that period suggests, the regulation and government intervention in place during that period was so stifling that it severely hindered or prevented the financial system from performing one of it's main tasks of allocating investment across different sectors.

More generally, there is the issue of the trade-off between growth and risk. One of the cornerstones of finance is the idea that projects with high risk have high returns on average. This suggests that if an economy is to have high expected returns to allow it to grow quickly it must also have a high degree of risk associated with its capital stock. High growth may therefore be correlated with frequent crises. Eliminating crises by forcing banks and hence firms to take less risks may slow the growth of the economy.

This discussion leads to the identification of the first policy issue.

- To what extent are crises desirable or undesirable?

Central banks were initially founded for a number of reasons. One important reason was to increase the efficiency of the payments system. The Sveriges Riksbank was the first central bank and was founded in 1668. In Sweden at that time copper was the payment standard. One of the things that the Riksbank did early on was to introduce paper notes to increase the efficiency of the payments system. The Bank of England was founded shortly after the Riksbank in 1694. Its purpose was to raise money to fights wars against France. However, as the brief historical discussion at the start of the chapter indicates, by the nineteenth century one of the main responsibilities of European central banks had become to intervene in crises. In contrast, from 1836 until 1914 the US did not have a central bank. There was limited intervention in the financial system. The severe crisis of 1907 sparked a debate whether there should be a central bank in the US or not. This debate lead to the foundation of the Federal Reserve System in 1914. This contrasting history of central banking in Europe and the US raises a second policy issue.

- Should there be a central bank to provide liquidity to the financial system?

These two policy issues are considered Chapter 3.

As the brief historical background above indicated, the Bretton-Woods period from 1945-1971 was quite distinct from other historical periods in terms of the occurrence of crises. Banking crises were eliminated. Currency crises persisted due to the fixed exchange rate system that the Bretton-Woods agreement put in place. Another important component of this agreement was the establishment of the IMF. This was designed to provide help to countries that had balance of payments difficulties. The collapse of the Bretton-Woods Agreement in 1971 and the move towards floating exchange rates by many countries made the role of the IMF unclear. As crises have reemerged, and there has been a debate on whether countries should peg their exchange rates or dollarize if they are unwilling to float, there has been an extensive debate on the desirability of the IMF being an international equivalent of a central bank.

- Should there be an international lender of last resort?

These two policy issues are considered in Chapter 4.

The bubble in asset prices in Japan and the effect of the collapse on the Japanese financial system and economy raised the issue of whether central banks and governments should intervene to try to prevent bubbles. The urgency of this issue has been emphasized by the run up in technology stocks and their subsequent collapse in the US and Europe and the more recent collapse in the broader stock markets. As yet these collapses have had a limited effect on the real economy. To many close observers of the "lost decade" of the 1990's in Japan it seems clear that some intervention is desirable. To those who have only experienced the so far relatively benign effects of the bubble collapses in the US and Europe, the answer is less clear. There are many practical difficulties such as identifying the bubble and deciding on the best way to prevent further rises in asset prices.

- Should central banks intervene to prevent bubbles in asset prices?

This is the policy issue focussed on in Chapter 5.

As the LTCM episode illustrates, central banks worry a great deal about the collapse of individual institutions. This notion of "too big to fail" has a strong hold on many policymakers. The origin of this is the experience with contagion and financial fragility in the nineteenth century US and elsewhere. Often the prospect of these phenomena leads to bail-outs and other forms of intervention. In Chapter 6 the following policy issue is addressed.

- Do individual institutions pose a systemic risk to the financial system and if so what can be done about it?

Government guarantees whether implicit or explicit are one of the ways that contagion and fragility are dealt with. However, these guarantees can lead to a moral hazard problem where banks knowingly take excessive risks. If they are successful they will make a lot of money. If they fail the government will bail them out. As discussed above, many authors believe that government guarantees contributed significantly to the Asian crises. The first policy issue considered in Chapter 7 is the following.

- Are government guarantees of the banking system desirable?

The second issue considered is the design of bankruptcy law to any inefficiencies that forced liquidation may, for example, lead to. If a bankrupt bank is forced to liquidate its assets quickly then asset prices may fall considerably. This may create incentives for market participants to hold too much unproductive cash and too few productive assets.

- What is the relationship between bankruptcy law and financial crises?

The final policy issue considered in Chapter 7 is the design of sovereign bankruptcy law.

- What is the optimal way to deal with sovereign default?

With most of these policy issues there is no definitive answer. However, the theories presented in the following chapters will hopefully provide some insight into the policy debates.

1.4 Concluding remarks

The word crisis is used in many different ways. This naturally raises the question of when a situation is a crisis and when it is not. It is perhaps helpful to start by considering the definition of crises. According to the dictionary (dictionary.com) a crisis is:

1(a) : the turning point for better or worse in an acute disease or fever

(b) : a paroxysmal attack of pain, distress, or disordered function

(c) : an emotionally significant event or radical change of status in a person's life

2 : the decisive moment (as in a literary plot)

3(a) : an unstable or crucial time or state of affairs in which a decisive change is impending; especially : one with the distinct possibility of a highly undesirable outcome

(b) : a situation that has reached a critical phase

This gives a range of the senses in which the word is used in general. With regard to financial crises it is also used in a wide range of situations. Banking crises usually refer to situations where many banks simultaneously come under pressure and may be forced to default. Currency crises occur when there are large volumes of trade in the foreign exchange market which can lead to a devaluation or revaluation. Similarly it is used in many other situations where big changes, usually bad, appear possible. This is the sense in which we use the word in this book.

Historically, the study of financial crises was an important field in economics. The elimination of banking crises in the post-war period significantly reduced interest in crises and it became an area for economic historians. Now that crises have reemerged much research remains to be done using modern theoretical tools to understand the many aspects of crises. This book is designed to give a brief introduction to some of the theories that have been used to try and understand these complex events.

There is a significant empirical literature on financial crises. Much of this work is concerned with documenting regularities in the data. Since the theory is at a relatively early stage there are relatively few papers trying to distinguish between different theories of crises. In the chapters below the historical and empirical work is discussed as a background to the theory. Much work remains to be done in this area.