Chapter 1

Introduction and Overview

1.1 History vs. Theory

Financial crises are nothing out of the ordinary. The history of financial crises, being at least as old as economic science, if not older, points out that financial crises, both in industrial and in developing countries, are a recurrent, or cyclical phenomenon. Economic history has been characterized by a permanent change between tranquil periods with balanced economic development and smoothly functioning financial markets, and periods of severe disruptions in financial markets, having been accompanied by collapses of a large number of asset prices, sharp rises in interest rates, widespread bankruptcies among business firms and financial institutions, large drops in output, persistent low or even negative growth, high inflation, (debt-)deflation, financial disintermediation, high unemployment, rising income inequality, and political instability. It has to be emphasized however, that not all financial crises in the past were systemic, i.e. not all crises were associated with real economic downturns, widespread bankruptcies, and excess volatility in the general price level. Rather, there arose also so-called spurious financial crises which were characterized by collapses of asset prices in particular financial markets and isolated bankruptcies, but which did not cause real macroeconomic contractions. Though the following analysis contains an explicit distinction between spurious and systemic financial crises, the thematic focus lies primarily on the causes and consequences of systemic financial crises as they are associated with much larger reductions in economic welfare, having been only exceeded in the past by wars and natural disasters, than spurious financial crises.

Notwithstanding the fact that there have been permanent changes between tranquil and financial distress periods in the past, the frequency of systemic financial crises has been very irregular. For example, financial crises in the 20th century were clustered in four main periods. The first period from the late 1920s until the early 1930s was characterized by a worldwide international financial crisis both in industrialized countries (as e.g. in Austria, Finland, Germany, Japan, Norway, United Kingdom, United States) and in developing countries (as e.g. in Argentina, Brazil, Chile) which culminated in the Great Depression. The second wave of financial crises erupted in the early 1980s in the developing world after the breakdown of the Bretton Woods system, having been followed by the international debt crisis which led, especially in Latin America (as e.g. in Argentina, Chile, Mexico, Uruguay), to a state of depression in the Third World for almost one decade. The third

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1 For a detailed overview of the history of financial crises from 1618-1998, see e.g. Kindleberger (2000).
wave of financial crises in the mid-1980s and early 1990s emerged in the industrialized world (as e.g. in Finland 1990, Japan 1992, Norway 1987, Sweden 1992, U.S. 1984), having been accompanied by severe real economic downturns. The financial crisis in Japan in 1992, having been triggered by the stock market crash in 1990, is extraordinary as it has been followed by a still-lasting deep depression, deflationary spirals, and a liquidity trap situation, resembling very closely the macroeconomic situation of lots of countries during the Great Depression period in the 1930s. The fourth wave of financial crises in the mid-1990s and in the late-1990s erupted primarily in emerging market countries (Mexico 1994, Asia 1997/1998, Russia 1998, Brazil 1998) and was followed by long-lasting and deep recessions.

Howbeit the incidence of financial crises has been very irregular in the past, both historical case studies and long-term econometric studies with large country samples point out that systemic financial crises display similar characteristics regarding the behaviour of lots of economic variables before, during, and after the outbreak of a financial crisis. These stylized facts can be summarized in the following six propositions.

Firstly, financial crises are inseparably linked to business cycle fluctuations, where the outbreak of a financial crisis generally coincides with the peak of a business cycle. Business cycles which are associated with the occurrence of financial crises are generally subject to a much higher amplitude of all economic variables than tranquil time business cycles which are not associated with financial crises. As a result, financial crises are generally associated with excessive boom-bust cycles in goods and financial markets.

Secondly, the boom phase of a business cycle giving rise to a financial crisis generally begins with an improvement in national and international lending conditions (increasing credit supply, low nominal and real interest rates) being caused by a sudden rise in profit expectations. The stylized facts clearly point out that both the increased access to financial markets and the rise in profit expectations are positively correlated with the introduction of macroeconomic stabilization programmes, trade and financial liberalization policies, and with the emergence of new technology regimes. Furthermore, there is strong empirical evidence, especially in the post Bretton Woods era (1973 until today), that domestic and international financial liberalization policies are positively correlated with the occurrence of financial crises.

Thirdly, rising profit expectations and increasing access to financial markets induce a “cumulative upward process” in goods and financial markets, being characterized by an investment boom, accelerating GDP growth, and rising stock market valuations. The investment boom is associated with a lending boom causing a general rise in indebtedness with business firms and financial institutions both in domestic and in foreign currency. On the supply side, the lending boom is driven by a general monetary expansion resulting from an increase in domestic bank lending which is facilitated by easy monetary conditions. Regarding developing and emerging market countries, domestic monetary expansions are mainly driven by large capital inflows which are intermediated by domestic banking systems, where domestic banks generally borrow in foreign currency, and lend

\[^2\]Cumulative processes causing an economic upswing, i.e. an expansion in real economic activity, as well as relaxing financial market conditions, are labelled as cumulative “upward” processes in the following, whereas cumulative processes engendering an economic downturn, i.e. a contraction in real economic activity, as well as tightening financial market conditions, are labelled as cumulative “downward” processes.
to domestic agents in domestic currency. These capital inflow-induced lending booms are generally amplified by the existence of fixed exchange rate regimes, implying however an increase in financial instability as implicit or explicit exchange rate guarantees make most borrowers and lenders not to hedge against exchange rate risk. On the demand side, the lending boom is stimulated by profit expectations growing much faster than actual profits, implying that the growth in investment has to be increasingly financed by external debt due to a widening gap between earnings and expenditures. The overall rise in domestic and foreign indebtedness during the expansion phase is generally considered to be sustainable as profit expectations are self-fulfilling, i.e. a rise in expected profits induces a rise in investment, output and finally in actual profits, validating the initial increase in expectations, and inducing a further rise in profit expectations.

Fourthly, profit expectations generally tend to become increasingly unrealistic in the late boom phase due to self-reinforcing herding behaviour of investors, driving the economy into a state of "irrational exuberance", and giving rise to an asset bubble as expected asset returns increasingly deviate from actual returns. The growing divergence between expected and actual profits is mainly due to a switch from a rational, fundamental data-based expectation formation scheme, to a general market sentiment-based expectation formation scheme. Growing indebtedness based on unrealistic profit expectations leads to an overall rise in financial fragility as interest payments, as well as repayment of debt, grow faster than actual profits, implying a steady decline in liquidity and solvency positions of business firms and financial institutions. Moreover, profits, liquidity and solvency positions are reduced by rising interest rates due to an overproportional rise in demand for debt finance, and by rising domestic inflation leading to a deteriorating export performance via a real overvaluation of the domestic currency.

Fifthly, financial instability is revealed at the peak of the business cycle by beginning failures of highly-indebted business firms and financial institutions, giving rise to a burst of the stock market bubble, sharply rising interest rates due to increasing risk premia, a real macroeconomic contraction, and widespread bankruptcies among firms and banks due to large-scale domestic and foreign debt withdrawals, ending up in a severe domestic banking crisis. If the stock of foreign exchange reserves under fixed exchange rate regimes does not suffice to meet all capital outflows (foreign debt withdrawals and capital flight by domestic residents), both the domestic banking crisis and the real economic downturn are amplified, in case of the existence of a large foreign debt stock, by the occurrence of a currency crisis, ending up in a systemic "twin crisis" (being defined as the simultaneous occurrence of a banking and a currency crisis) due to a nominal and real appreciation of the foreign debt stock, and owing to high exchange rate stabilization-induced domestic interest rates.

Sixthly, the outbreak of a financial crisis induces a "cumulative downward process"3 in goods and financial markets, being driven by collapsing profit expectations which very often undershoot due to self-reinforcing pessimistic herding behaviour. Sharply declining profit expectations induce a self-fulfilling and long-lasting real macroeconomic contraction as the expectations-led collapse of investment demand causes a fall in output, and finally in actual profits, validating the initial decline in expected profits, and inducing a further reduction in expected profits. In extreme cases, the cumulative downward process causes deflationary spirals, leading to a further macroeconomic contraction by a rise in real

3For this terminology, see footnote 2.
interest rates. Economies having been hit by a systemic financial crisis start to recover only when indebtedness, actual profits, expected profits, and liquidity and solvency positions have returned to "sustainable" levels, implying that in severe cases, the recovery phase can take several years.

It is very puzzling that economic science has not yet managed to eliminate the problem of systemic financial crises, though the analysis of the history of financial crises clearly points out that systemic financial distress is a cyclical and recurrent phenomenon with well-defined and hardly changing characteristics. Current standard theory of financial crises, which can be classified into two broad categories being outlined below, argues that the persistence of systemic financial crises throughout history is mainly due to the fact that systemic crises are caused by events which cannot be avoided or predicted, and whose adverse effects on real macroeconomic performance can be only alleviated imperfectly, or cannot be prevented at all by crisis management policies.

The first category of current standard theory, representing the "majority" in the financial crisis literature, argues that capitalist market economies are inherently stable, that agents' expectations are formed rationally, and that financial crises are caused by exogenous events, or "historical accidents". The view that crises are unpredictable and unavoidable is reflected in the fact that mainstream theory has developed four different classes, or "generations" of financial crisis models over the last 30 years which tried to explain each new wave of financial crises ex post, and which emphasize very different determinants of exogenously-caused financial distress.

The first class of models argues that financial crises are caused by inconsistent macroeconomic policies. Overly expansionary and overly contractionary monetary and fiscal policies finally lead to a collapse of asset prices, and to real macroeconomic contractions owing to a rise in actual and expected real interest rates, and due to an actual and expected depreciation of the home currency.

The second class of models, emphasizing the role of self-fulfilling expectations and the existence of multiple equilibria, argues that financial crises are the result of a random and exogenous shift in (rational) expectations regarding financial sector or exchange rate stability, from a "good" no-crisis-equilibrium to a "bad" crisis-equilibrium. The change in expectations is self-fulfilling, as the ex ante shift from optimistic towards pessimistic expectations induces bank runs and capital flight which lead to an actual breakdown of the financial and of the exchange rate system, and thereby to an ex post validation of pessimistic ex ante expectations. As the shift in expectations is generally assumed to be a random and exogenous event, self-fulfilling financial crises both cannot be predicted, and are not preceded by a deterioration of economic fundamentals.

The third class of models argues that financial crises are caused by a combination of moral hazard, exogenous shocks, and self-fulfilling expectations. Explicit or implicit government guarantees in the form of deposit insurance systems or fixed exchange rates make investors engage in much riskier and unhedged investment projects due to a rise in investments' expected values, since in case of default, losses are transferred to the tax payer. The increase in risk is assumed to be sustainable as long as losses are smaller than the exogenously given upper limit of government guarantees. However, if losses exceed the upper limit, the government is forced to suspend its guarantees, causing an actual default of the investor, and thereby a financial crisis. Regarding the trigger of financial crises, moral hazard models generally argue that crises are caused by exogenous shocks.
or self-fulfilling expectations, but deny an endogenous financial collapse. Respecting exogenous shock-driven models, financial crises are caused by large adverse random shocks to economic fundamentals, e.g. by an exogenous rise in domestic or foreign interest rates, or by adverse terms of trade or technology shocks which lead to a suspension of government guarantees, to an actual default of the investor, and to a systemic financial crisis as losses exceed the upper limit of government guarantees. Concerning self-fulfilling expectations-driven models, financial crises are caused by a random shift from optimistic towards pessimistic expectations as to governments’ ability to fulfill guarantees, triggering an actual default of the investor as losses exceed the guarantee’s upper limit, and ending up as well in a full-fledged systemic financial crisis which validates pessimistic ex ante expectations ex post.

The fourth class of models argues that business firms and financial institutions are financially constrained by their balance sheet or net worth positions due to the existence of asymmetric information in financial markets. An increase in net worth implies an increase in lending and in expenditures, whereas a fall in net worth implies a reduction in lending and in expenditures. According to fourth-generation models, financial crises are caused either by adverse exogenous shocks to economic fundamentals, or by random and self-fulfilling shifts from optimistic towards pessimistic expectations as to firms or banks net worth position, leading to a collapse of asset prices and exchange rates, which induce large reductions in net worth, widespread bankruptcies, credit crunches and real macroeconomic contractions.

Unlike the first category of financial crisis models, representing the “mainstream approach” to financial crises, the second category of current standard theory, representing the “minority” in the financial crisis literature, argues that capitalist market economies are inherently unstable, and that financial crises are an endogenous, or “natural” outcome. Models of endogenous financial crises contend that there is a general endogenous build-up of financial fragility during the expansion phase of a business cycle by unrealistic expectations, overinvestment and overborrowing, leading finally to a financial collapse at the upper turning point when investors realize that expectations cannot be fulfilled. Collapsing asset prices and expectations lead to widespread bankruptcies, and to a deep and long-lasting depression. Unlike mainstream models, endogenous financial crisis models generally do not provide an exact quantitative explanation of their basic hypotheses, firstly, as lots of endogenous financial crisis models are based on a qualitative-descriptive approach, and secondly, as most quantitative approaches concentrate on the mechanisms generating endogenous financial fragility and endogenous business cycles, but do not explain when endogenous financial fragility actually evolves into systemic financial crises.

“Testing” the validity of both categories of standard theory by confronting the model results with the stylized facts provides a mixed picture. That is, both categories are consistent with a series of empirical regularities, but also fail to explain important stylized facts. Regarding the common grounds of the mainstream approach to financial crises with the stylized facts, the models correctly demonstrate that financial distress is associated with high real domestic and foreign interest rates, real overvaluation of the domestic currency, pessimistic expectations, suspensions of government guarantees as e.g. the breakdown of fixed exchange rate regimes, credit and liquidity crunches, and real macroeconomic contractions. However, mainstream models do not consider the link between business cycle fluctuations and financial crises, as well as the irregular change between tranquil
business cycle fluctuations and financial crisis cycles. Moreover, mainstream models deny an endogenous build-up of financial fragility due to overinvestment and overborrowing driven by unrealistic expectations which collapse at the upper turning point, and tend to undershoot during the bust phase.

Regarding the common grounds of the endogenous financial crisis approach with the history of financial crises, the models correctly reflect the empirical facts that financial crises are linked to business cycle fluctuations, that there is a general build-up of financial fragility during the boom phase by unrealistic expectations leading to overborrowing, and that the collapse of expectations leads to a severe and long-lasting downturn. However, the endogenous financial crisis approach fails to explain why there are also tranquil business cycle fluctuations indicating dynamic stability of capitalist systems, and why the occurrence of financial crisis cycles is irregular. Moreover, endogenous financial crisis models fail to provide a quantitative theory of the formation of expectations which is able to explain the growing divergence of fundamentals and expectations during the up- and the downswing, as well as the change of expectations at the business cycle turning points. Finally, endogenous financial crisis models fail to provide a general analytical explanation of the long-run dynamics of modern capitalist systems which are characterized by an irregular change between dynamic stability and instability.

Summing up, the comparison of both categories of standard theory with the stylized facts points out that there is no theoretical approach which provides a correct representation of systemic financial distress, firstly, because standard models concentrate too much on specific stylized features of financial crises, and secondly, because both the mainstream approach and the endogenous financial crisis approach are too polarized and deadlocked in their basic assumptions, preventing an objective representation of the “truth”. Consequently, the persistence of financial crises throughout history could be, at least partly, attributed to the failure of economic theory of not having developed a “general” theoretical analysis of systemic financial crises which could be used to prevent crises, or to develop much better crisis management policies.

The present approach to be developed in this book, tries to overcome this “failure” of economic theory by providing an alternative and more general approach to financial crises which combines endogenous business cycle theory with current financial crisis theory. The main results of this “cyclical” approach to financial crises can be summarized in the following three propositions.

Firstly, if there are no exogenous shocks, capitalist systems tend to be cyclically stable in the long-run, as they converge to endogenous tranquil business cycles which are associated with financial tensions at the upper turning point, but which do not generate systemic financial distress. These tranquil long-run equilibrium cycles are mainly driven by an endogenous interaction between profit expectations, indebtedness of business firms, and lending behaviour of financial institutions.

Secondly, financial crisis cycles are caused by an exogenous positive shock to profit expectations, e.g. due to the emergence of a new technology regime, or owing to the implementation of liberalization and stabilization policies, giving rise to an enormous build-up of financial fragility by overly optimistic profit expectations, leading to overinvestment and overindebtedness. At the upper turning point of the financial crisis cycle, profit expectations collapse endogenously and induce a cumulative downward process, being associated with a stock market crash, a collapse of the domestic currency, widespread
bankruptcies among firms and financial institutions, a general credit and liquidity crunch, and a long-lasting depression.

Thirdly, notwithstanding the fact that financial crisis cycles generate real sector and financial sector instability, economies tend to recover endogenously after the occurrence of a systemic financial crisis by converging back to tranquil equilibrium business cycle fluctuations.

This "cyclical" approach to financial crises is based on an innovative expectation formation scheme which combines the rational expectations hypothesis with Keynes' "Beauty Contest Theory", giving rise to an endogenous dynamic interaction between chartists, fundamentalists and rational investors, where the boom and the bust phase are dominated by chartist type behaviour, and the turning points by fundamentalist type and rational behaviour. The present approach differs from other chartist-fundamentalist approaches by the explicit consideration of the rational expectation hypothesis, implying that the behaviour of agents is not only determined by market sentiments and some fundamental economic variables of the model which can be observed, but additionally by (long-run) rational behaviour according to the rational expectations hypothesis. As a result, the present approach demonstrates that "irrational" herding behaviour and rational expectations are compatible with each other, and that especially this combination generates endogenous cycles in expectations, fitting the stylized facts both of tranquil business cycles, and of financial crisis cycles. Moreover, the present approach is founded on a sophisticated balance sheet approach with many assets, liquidity and net worth constraints, financial accelerator effects, and a rich set of transmission mechanisms (interest rate channel, exchange rate channel, asset price channel, credit channel, bank lending channel, balance sheet channel) being responsible for the transmission of financial sector shocks into the real sphere of an economy. As there are fundamental differences between financial crises in industrial and in emerging market economies regarding the financial structure, indebtedness, and exchange rate regimes, the present approach distinguishes explicitly between crises in industrialized and in emerging market economies, and derives different conclusions as to crisis prevention and crisis management policies.

1.2 Outline of the Book

Following the introduction, part I, consisting of chapters 2 and 3, develops both a theoretical and an empirical basis for the new "cyclical" approach to be developed in part II of the book. Chapter 2, elaborating theoretical principles of financial crises and financial stability, begins with a general definition of financial crises, describing financial distress as a multi-dimensional set of conditions and indicators in contrast to numerous, and largely differing definitions given by standard theory describing financial distress by very few and very specific conditions. Moreover, this general definition explicitly differentiates between systemic financial crises, i.e. crises leading to severe real macroeconomic contractions, and spurious financial crises being characterized by drops in asset prices, but having no effects on real macroeconomic activity. The distinction between systemic and spurious financial crises serves as a starting point for the following sections analyzing how financial market disturbances, i.e. asset price drops and surges in interest rates, are transmitted into the real sphere of economies, and how financial shocks can evolve into systemic financial crises. Furthermore, chapter 2 develops a new theoretical framework of the interaction
of asset prices, financial constraints, financial market conditions, aggregate demand, real economic activity, and aggregate liquidity and solvency positions to illustrate the emergence of cumulative upward and downward processes during tranquil equilibrium business cycles and financial crisis cycles. After having studied the interactions between the real and the financial sphere of capitalist market economies, chapter 2 discusses various determinants of financial stability, i.e. factors determining whether a given set of financial market disturbances causes a full-fledged systemic financial crisis, or “only” a spurious financial crisis.

Chapter 3 elaborates the stylized facts of financial crises, having been already outlined briefly in the previous chapter, which serve as an empirical basis for the “cyclical” approach to be developed in part II. The analysis begins with a definition of currency, banking and twin crises from an empirical perspective, being employed to study both the frequency and the severity of financial crises during the last 120 years. The subsequent analysis discusses on the one hand the basic link between business cycles and financial crises, and on the other hand the link between financial liberalization, business cycle fluctuations, and the occurrence of systemic financial crises. Also, the financial liberalization process in the post Bretton Woods era, both in the industrialized and in the developing world, is going to be reviewed. The latter part of chapter 3 provides a detailed synopsis of numerous empirical studies analyzing the stylized behaviour of macroeconomic variables before, during, and after the occurrence of currency, banking, and twin crises in the post Bretton Woods era. Moreover, the analysis also compares the stylized behaviour of macroeconomic variables during periods of financial distress with the stylized behaviour during tranquil periods. All empirical and historical results are summarized in eight main propositions, or stylized facts which are used as a performance indicator for the empirical validity of financial crisis models. A comparison of the stylized facts with standard theory of financial crises points out, as aforementioned, that standard theory cannot explain important empirical regularities, being necessary to understand causes and consequences of systemic financial crises, as well as to develop methods to prevent, predict, and to manage crises efficiently.

The divergence between the stylized facts and standard theory is used as the starting point for a “new” cyclical theory of financial crises in part II of the book, consisting of chapters 4, 5, 6 and 7. Chapter 4 develops a theoretical open economy model of endogenous business cycle fluctuations and financial crises in industrial countries under flexible exchange rates. The static version of the model is based on a sophisticated balance sheet approach with a complex financial structure, many assets, and various transmission mechanisms. The real side of the model is characterized by the central role of business firms’ profit rate being dependent on the financial structure of the economy. Moreover, aggregate economic activity is mainly driven by investment expenditures, where the investment function is described by a modified version of Tobin’s q, implying that investment demand is dependent on stock prices, the actual price level, actual profits, expected profits, the real loan rate, the financial structure, and on the level of aggregate economic activity. The static version of the model is employed to describe various stages of a typical financial crisis cycle by a comparative-static analysis.

Subsequently, both the expected profit rate and the degree of indebtedness, being represented by firms’ debt-asset ratio, are going to be endogenized to study the long-run dynamics of the system. The dynamic version of the model is based on a very uncommon
and innovative kind of expectation formation scheme having not yet taken into consideration by standard approaches to financial crises, which combines the rational expectations hypothesis and Keynes' "Beauty Contest Theory", resulting in endogenous interactions between chartists, fundamentalists and rational investors. This synthetic expectation formation scheme allows for a theoretical explanation of endogenous cycles in profit expectations with irrational exuberance during the boom phase, "irrational undershooting" during the bust phase, and with rational and endogenous returns from unrealistic optimistic and unrealistic pessimistic expectations to real economic fundamentals at the turning points of business cycles. The dynamic analysis points out firstly, that capitalist market economies are cyclically stable and converge to tranquil business cycles, secondly, that financial crises are caused by large exogenous positive shocks to expectations, giving rise to an excessive business cycle ending up in a systemic financial crises, and thirdly, that after the occurrence of a financial crisis, economic systems recover endogenously, and return to tranquil business cycle fluctuations. The dynamic version of the model studies additionally the case when expectations are solely determined by market sentiments in a purely Keynesian fashion, and concludes that in this case, each business cycle can generate a systemic financial crisis. Finally, the model is compared both with standard models of financial crises and standard models of business cycle theory.

Chapter 5 develops a modified version of the industrial country model of chapter 4 for emerging market economies. The model differs substantially from the industrial country version with respect to the financial structure, as emerging market debt generally stems from international financial markets, and is denominated in foreign currency. Furthermore, the emerging market model assumes a fixed exchange rate regime allowing for a detailed analysis of real exchange rate misalignments over the business cycle, as well as for an investigation of the impact of a contractionary devaluation due to high foreign debt stocks in the case of twin crises. All other assumptions, as e.g. the expectations formation scheme, coincide with the industrial country model. Both the comparative-static and the dynamic version of the emerging market model demonstrate that in spite of fundamental differences in the model structure, financial crises in emerging markets are very similar to those in industrialized economies, and differ only with respect to two issues. Firstly, both tranquil and financial crisis cycles in emerging markets are driven by an endogenous interaction between international capital flows and profit expectations of domestic and international investors, whereas all cycles in industrial countries are driven by fluctuations in domestic bank debt and profit expectations of domestic investors. Secondly, in case of twin crises, the real macroeconomic contraction in emerging market is amplified by the outbreak of the currency crisis due to a nominal and real appreciation of the foreign debt stock (contractionary devaluation), whereas in industrial countries the contraction is dampened by the devaluation of the home currency (expansionary devaluation).

Chapter 6 develops a calibration model of financial crises in emerging markets on the basis of chapter 5 in order to enlarge the previous dynamic analysis which has been restricted to a qualitative phase diagram analysis of a nonlinear 2 × 2 system. Unlike the general function models in chapters 4 and 5, the calibration model is able to provide specific information on the transitional crisis dynamics of a large number of macroeconomic variables beyond the "cyclical steady state" during periods of financial distress. However, in order to remain analytically tractable, the dynamic nonlinear version of the emerging market model of chapter 5 has to be transformed into a dynamic linear model,
implying that the transitional dynamics of typical financial crisis cycles have to be studied by a stepwise calibration procedure which differentiates between the boom phase, the overborrowing phase, and the bust phase. Apart from the calibration of financial crises as a cyclical phenomenon, chapter 6 additionally simulates the effects of an adverse foreign interest rate shock. Notwithstanding the fact that calibration techniques are subject to various limitations being discussed in detail, they constitute a precious complement to general function models. There is no explicit elaboration of an industrial country calibration model in chapter 6, as the emerging market model structure is richer and more complex than the industrial country case. Furthermore, the simulation results of the emerging market case can be simply applied to financial crises’ periods in industrial countries.

Chapter 7 summarizes the main results of book and develops both new perspectives for economic theory and alternative policy recommendations for crisis prevention, crisis prediction, and crisis management.