
In the introduction to the book, Goodhart and Tsomocos (hereafter G&T) describe the minimum structural characteristics that should be present in any model attempting to study and capture the fundamental aspects of financial fragility, monetary policy and their interaction. The model should be multi-period with general uncertainty and agent heterogeneity. Default and missing financial markets should be part of the model. Monetary and liquidity constraints should be explicit. A banking sector should be integrated, and the regulatory framework should be clearly defined.

In chapter 1, Principles for macroprudential regulation, the authors write that financial stability reflects the ability of the financial system to consistently supply the credit intermediation and payment services that are needed in the real economy if it is to continue on its growth path. The financial system should help people and businesses to share risks. It
should create liquid claims that facilitate transactions. Any satisfactory framework for analyzing financial stability and macroprudential regulation should be rich enough to account for these contributions of the financial system. Any satisfactory framework should also incorporate forward looking behavior and have prices that adjust endogenously to reflect potential risks. This principle implies that the analysis should be conducted in a general equilibrium environment. The principle opens up a role for both ex ante regulation that operates on incentives to avoid problems and ex post policies that seek to mitigate the damage after bad realisations have occurred.

Chapter 2, *The macroprudential toolkit*, starts with a review of recent theoretical work on fire sales that form the building blocks for a next generation of models of the financial system. The authors adopt Shleifer & Vishny’s (2011) definition of a fire sale as essentially a forced sale of an asset at a dislocated price (p.13). Indirect evidence for fire sales was the breakdown of covered interest parity in the last months of 2008. There is not a workhorse model that rationalizes the standard regulatory tools of capital and liquidity requirements, let alone one that includes also the possibility of fire sales (p.18). Fire sales were a major feature of the 2007-2009 crisis. Capital requirements alone, or even in conjunction with a single liquidity requirement were not adequate to head off fire sales. Thus, preventing fire sales requires finding and using new tools. Banking and shadow banking systems are highly interconnected. So, simply clamping down on banks will drive activity into the shadow banking system. Authorities will need three regulatory tools to control defaults, credit crunches and fire sales.

Chapter 3, *Financial regulation in general equilibrium*, explores how different types of financial regulation could combat many of the phenomena that were observed in the financial crisis of 2007 to 2009. Within the given framework, five different policy options are compared: limits on loan to value ratios, capital requirements for banks, liquidity coverage ratios for banks, dynamic loan loss provisioning for banks, and margin requirements on repurchase agreements used by shadow banks. Although the general equilibrium model is stylized, it is still rich enough to compare the efficacy of the regulatory tools. One of the conclusions is that given the many complex interactions between the various agents, no single regulatory tool is going to be sufficient to offset the many distortions arising from default. Multiple sources of inefficiency require multiple tools.

In chapter 4, *An integrated framework for analyzing multiple financial regulations*, G&T and co-authors also explore the interactions of various types of financial regulation. The authors find that regulations that control fire-sale risk are critical for delivering financial stability and improving the welfare of savers and borrowers. They analyze the effects of the same regulatory tools as those discussed in chapter 3.

Chapter 5, *The Lender of Last Resort in a General Equilibrium Framework*, starts with a historical review of the concept of the lender of last resort (LoLR), (Henry Thornton (1802) and Walter Bagehot (1873)). The aim of the chapter is to address the hitherto unattempted task of modelling the lender of last resort function in a general equilibrium framework. The interplay between a commercial bank and the LoLR is
treated as a strategic game. An interesting feature is that the authors consider a mixed-strategy Nash equilibrium to be a rationalization of the policy of constructive ambiguity (p.116).

In chapter 6, *A reconsideration of Minsky’s Financial Instability Hypothesis*, G&T and their co-authors explore the relative advantages of alternative regulations in reducing financial fragility and suggest a novel criterion for improvement of aggregate welfare. Minsky’s financial instability hypothesis (1992) states that over periods of prolonged prosperity and optimism about future economic prospects, financial institutions invest more in riskier assets, which can make the economic system more vulnerable in the case that default materializes. The authors develop a model in which the expectations formation mechanism is exogenous and is implemented through Bayesian updating. Regulation cannot affect optimism, but it can control its consequences by affecting the incentives and ability of investors to take on risk. The purpose of regulation is not to eliminate risk taking altogether, but to discourage investors from taking excessive risk due to optimistic expectations. The RWA-measures as defined by Basel Accord II do not increase as much as they should during upturns, when banks shift their portfolios toward projects previously regarded as too risky. The implied procyclicality in measured risk is mitigated once we focus on the difference between projects with lower and higher risk weights, assuming that their relative rankings are preserved (p.188). The authors therefore propose an index based on this difference.

Chapter 7, *Liquidity and default in an exchange economy*, analyzes various channels of shock transmission in an economy subject to financial frictions, by incorporating liquidity and default effects on asset prices. The DSGE model allows the authors to explain essential mechanisms and interactions of financial and real economic variables in a comprehensive, yet intuitive fashion. Their results suggest that liquidity and default in equilibrium should be studied contemporaneously due to their interconnectedness and welfare effects. Credit spreads are endogenously determined and indicative of financial distress as they incorporate the default and liquidity premia as well.

In chapter 8, *Monetary transaction costs and the term premium*, the authors show that, in a monetary equilibrium, trade and asset prices depend on both the supply of liquidity by the central bank and the liquidity of assets and commodities. They also show that assets that promise higher payoffs in liquidity constrained states in the future are relatively more expensive. This generates a term premium in the yield curve. Stability of monetary policy is required to maintain flat yields curves (p.242).

In chapter 9, *Debt deflation effects of monetary policy*, the authors assess the role that monetary policy plays in the decision to default using a General Equilibrium model with collateralized loans, trade in fiat money and production. The value of collateral depends on traditional monetary policy and agents can optimally choose to default depending on the relative value of the collateral to the face value of the loan. The authors’ objective is to analyze the interaction between Fisher debt-deflation dynamics, monetary policy and real economic activity. In their model, interest rates have a
redistribution effect on investment. When the interest rate is higher, then the capital good will be redistributed from more productive agents to less productive ones (p.254). It is precisely the interplay of liquidity and default that activates the default channel that distorts optimal capital investments.

In chapter 10, *International monetary equilibrium with default*, the authors present an integrated framework for the study of an international financial economy with trade, fiat money, monetary and fiscal policy, endogenous default and regulation. Market incompleteness and positive default in equilibrium allow for the study of the transmission of default through the international financial markets and imply a positive role for policy. Discussion of purchasing power parity and interest rate parity are included in the equilibrium analysis.

Chapter 11, *Global imbalances and taxing capital flows*, is a study of a monetary economy with two large open economies displaying net real and financial flows. If default on cross-border loans is possible, taxing financial flows can reduce its negative consequences. It can improve welfare unilaterally, in some cases in a Pareto sense, via altering the terms of trade and reducing the costs of default. The authors have China and Germany in mind as surplus countries, and United States and Southern Europe as deficit countries. They discuss taxes on capital inflows as well as taxes on capital outflows. The terms-of-trade effects of taxes depend on the assumptions concerning default and interest rates. They admit that the problem of global imbalances may be rather should be studied within a framework, which explicitly considers the strategic interaction between governments or a “trade war” (p.289).

In chapter 12, *International monetary regimes*, G&T propose a method to impose symmetric constraints on the net capital flows both of deficit and surplus countries. The Bretton Woods system was a system for smoothing and facilitating the adjustment mechanism of deficit countries. It did not place any symmetric pressure on surplus countries to reduce their surpluses. The need for some symmetry between surplus and deficit countries has been on the agenda for international monetary reform since the Committee of Twenty in 1974. G&T propose that surplus countries (current account surplus over 4 % of GDP) must tax, or place additional capital requirements, on all bank lending to non-residents, including all purchase of foreign bonds, unless the IMF gives permission not to do so. Deficit countries (current account deficit over 4% of GDP) must tax or place additional capital requirements on all bank lending denominated in foreign currency, unless the IMF gives permission not to do so. For simplification, intermediate rules concerning surpluses and deficits between 2% and 4% of GDP are omitted here (p.310).

In chapter 13, *Debt, recovery rates and the Greek dilemma*, the authors show that when additional funds released to the debtor (Greece), via debt restructuring, are used efficiently in pursuit of a practical business plan, then both debtor and creditor (Germany) can benefit. In the default steady state, debt forgiveness lowers the volatility of both German and Greek consumption whereas demanding higher recovery rates has the opposite effect. The authors expect that their analysis can be, and most probably will be, dismissed as no more than wishful thinking. But
they conclude that so far, the main lacuna in all negotiations has been a realistic and practical plan for the future growth of the Greek economy (p.326).

G&T are both outstanding researchers in financial regulation and stability.

Charles Goodhart (born 1936) is emeritus professor of banking and finance with the Financial Markets Group at the LSE. Previously he worked at the Bank of England as a monetary advisor. In a period, he was outside independent member of the Bank of England’s Monetary Policy Committee. He is author of numerous books and articles on monetary policy and financial regulation. He is Emeritus Fellow of the British Academy.

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G&T have worked together for many years. While they both worked in Bank of England, they developed a model of financial fragility (2003), which in different versions has been adopted and calibrated by several other central banks.

Most of the articles included in the present volume seem to reflect their extensive experience with this multi-period general equilibrium model. SUERF readers will probably be most interested in the sections of the book, where G&T apply their analysis on understanding financial crises and other recent events. The reviewer expects that only a limited number of academic readers will study the mathematical appendices with precise model details.