

**Volume 2B**

**Section 3. Financial-Real Connections 1343**

**16. Wholesale Banking and Bank Runs in Macroeconomic Modeling of Financial Crises 1345**

M. Gertler, N. Kiyotaki, A. Prestipino

- 1. Introduction 1346
- 2. The Growth and Fragility of Wholesale Banking 1349
- 3. Basic Model 1358
- 4. Numerical Experiments 1373
- 5. Anticipated Runs 1379
- 6. Two Productive Assets and Spillover Effects 1385
- 7. Government Policy 1388
- 8. Summary and Directions for Future Research 1397
- Appendices 1398
- References 1423

**17. Housing and Credit Markets: Booms and Busts 1427**

V. Guerrieri, H. Uhlig

- 1. Introduction 1428
- 2. A Stark Model 1432
- 3. Related Literature: Households' Leverage 1446
- 4. A Simple Model of Catastrophes 1453
- 5. Related Literature: Sentiments and Bubbles 1466
- 6. A Simple Model of Sentiments 1472
- 7. Evidence 1481
- 8. Conclusions 1491
- Acknowledgments 1492
- References 1493

**18. Macro, Money, and Finance: A Continuous-Time Approach 1497**

M.K. Brunnermeier, Y. Sannikov

- 1. Introduction 1498
- 2. A Simple Real Economy Model 1504
- 3. A Model with Price Effects and Instabilities 1510
- 4. A Simple Monetary Model 1532
- 5. Critical Assessment and Outlook 1539
- Acknowledgments 1542
- References 1543

<b>19. Housing and Macroeconomics</b>	<b>1547</b>
M. Piazzesi, M. Schneider	
1. Introduction	1549
2. Facts	1553
3. Theory	1568
4. Theory vs Data	1602
Acknowledgments	1634
References	1635
<b>20. Term Structure of Uncertainty in the Macroeconomy</b>	<b>1641</b>
J. Borovička, L.P. Hansen	
1. Introduction	1642
2. Mathematical Framework	1644
3. Asset Pricing over Alternative Investment Horizons	1646
4. Relation to Impulse Response Functions	1654
5. Discrete-Time Formulas and Approximation	1661
6. Continuous-Time Approximation	1668
7. Models with Financial Constraints in Continuous Time	1673
8. Directions for Further Research	1685
Appendices	1687
Acknowledgments	1694
References	1694
<b>21. Quantitative Models of Sovereign Debt Crises</b>	<b>1697</b>
M. Aguiar, S. Chatterjee, H. Cole, Z. Stangebye	
1. Introduction	1698
2. Motivating Facts	1700
3. Environment	1707
4. Benchmark Models	1720
5. Benchmark Results with Nonlinear Default Costs	1723
6. Rollover Crises	1742
7. Extensions and Literature Review	1746
8. Conclusion: Where We've Been and Where We Need to Go?	1752
Acknowledgments	1753
References	1753

<b>Section 4. Models of Economic Growth and Fluctuations</b>	<b>1757</b>
<b>22. RBC Methodology and the Development of Aggregate Economic Theory</b>	<b>1759</b>
E.C. Prescott	
1. Introduction	1760
2. A Brief History of Business Cycles	1761
3. The Nature of the Discipline	1770
4. Major Developments and Their Applications Post-1995	1775
5. Intangible Capital Expands the Applicability of the Theory	1779
6. Concluding Comments	1784
References	1785
<b>23. Families in Macroeconomics</b>	<b>1789</b>
M. Doepke, M. Tertilt	
1. Introduction	1790
2. The Family and the Macroeconomy in the Short and Medium Run	1794
3. The Family and Economic Growth	1837
4. The Family and the Political Economy of Institutional Change	1861
5. Conclusion	1877
Appendices	1879
Acknowledgments	1882
References	1882
<b>24. Environmental Macroeconomics</b>	<b>1893</b>
J. Hassler, P. Krusell, A.A. Smith, Jr.	
1. Introduction	1895
2. Limited Natural Resources and Sustainability Concerns	1899
3. Climate Change: The Natural-Science Background	1912
4. A Static Global Economy-Climate Model	1938
5. Dynamic IAMs	1986
References	2004
<b>25. The Staying Power of Staggered Wage and Price Setting Models in Macroeconomics</b>	<b>2009</b>
J.B. Taylor	
1. Introduction	2010
2. An Updated Empirical Guide to Wage and Price Setting in Market Economies	2011
3. Origins of the Staggered Wage and Price Setting Model	2019
4. A Canonical Staggered Price and Wage Setting Model	2020

5.	Generalizations and Extensions	2026
6.	Derivation of Staggered Price Setting When Firms Have Market Power	2028
7.	Price and Wage Setting Together	2031
8.	Persistence of Inflation and Indexing	2032
9.	Taylor Contracts and Calvo Contracts	2033
10.	State-Dependent Models and Time-Dependent Models	2035
11.	Wage-Employment Bargaining and Staggered Contracts	2036
12.	Staggered Contracts vs Inattention Models	2036
13.	Critical Assessment and Outlook	2037
	Acknowledgment	2038
	References	2039
<b>26.</b>	<b>Neoclassical Models in Macroeconomics</b>	<b>2043</b>
	G.D. Hansen, L.E. Ohanian	
1.	Introduction	2044
2.	The Importance of Low Frequency Components in Macroeconomic Data	2047
3.	Cass-Koopmans: The Foundation of Simple Models	2060
4.	Neoclassical Models of the US Post-Korean War Economy	2061
5.	Neoclassical Models of Depressions	2087
6.	Neoclassical Modeling of Large Fiscal Shocks: The US World War II Economy	2106
7.	Neoclassical Models of Productivity Shocks	2114
8.	Neoclassical Models of Inequality	2118
9.	Neoclassical Macroeconomics: Critical Assessments and Future Directions	2121
10.	Conclusions	2124
	Acknowledgments	2124
	References	2124
<b>27.</b>	<b>Macroeconomics of Persistent Slumps</b>	<b>2131</b>
	R.E. Hall	
1.	The Slump Following the 2008 Financial Crisis	2133
2.	Driving Forces	2138
3.	Propagation Mechanisms	2147
4.	Fiscal Driving Force and Multiplier	2153
5.	Other Issues	2153
6.	A Model	2154
7.	Application to the U.S. Economy	2160
8.	Crisis and Slump	2169
9.	Persistence	2172
10.	Concluding Remarks	2173
	Acknowledgments	2175
	References	2176

<b>Section 5. Macroeconomic Policy</b>	<b>2183</b>
<b>28. Challenges for Central Banks' Macro Models</b>	<b>2185</b>
J. Lindé, F. Smets, R. Wouters	
1. Introduction	2186
2. Common Features of Central Bank Models	2189
3. A Benchmark Model	2191
4. Empirical Performance of Benchmark Models During the Great Recession	2203
5. Augmenting the Benchmark Model	2218
6. State of Macroeconomic Modeling: Critical Assessment and Outlook	2246
Appendices	2249
Acknowledgments	2257
References	2257
<b>29. Liquidity Requirements, Liquidity Choice, and Financial Stability</b>	<b>2263</b>
D.W. Diamond, A.K. Kashyap	
1. Introduction	2264
2. Literature Review	2268
3. Baseline Model	2275
4. Basel-Style Regulatory Options	2285
5. Extensions	2294
6. Conclusion	2298
Acknowledgments	2301
References	2301
<b>30. Understanding Inflation as a Joint Monetary–Fiscal Phenomenon</b>	<b>2305</b>
E.M. Leeper, C. Leith	
1. Introduction	2307
2. Endowment Economies with Ad Hoc Policy Rules	2314
3. Production Economies with Ad Hoc Policy Rules	2333
4. Endowment Economies with Optimal Monetary and Fiscal Policies	2346
5. Production Economies with Optimal Monetary and Fiscal Policies	2372
6. Empirical Considerations	2382
7. Practical Implications	2394
8. Critical Assessment and Outlook	2401
Acknowledgments	2409
References	2409
<b>31. Fiscal Multipliers: Liquidity Traps and Currency Unions</b>	<b>2417</b>
E. Farhi, I. Werning	
1. Introduction	2418
2. Multipliers and Summary Multipliers	2423

3.	A Closed Economy	2427
4.	National Multipliers in a Liquidity Trap	2429
5.	An Open Economy Model of a Currency Union	2438
6.	National and Local Fiscal Multipliers in Currency Unions	2442
7.	Liquidity Constraints and Non-Ricardian Effects	2450
8.	Outside-Financed Fiscal Multipliers	2456
9.	Taking Stock: Some Summary Multiplier Numbers	2461
10.	Country Size, Aggregation, and Foreign Government Spending	2465
11.	Conclusion	2468
	Appendices	2469
	References	2491
<b>32.</b>	<b>What is a Sustainable Public Debt?</b>	<b>2493</b>
	P. D'Erasmus, E.G. Mendoza, J. Zhang	
1.	Introduction	2494
2.	Empirical Approach	2498
3.	Structural Approach	2521
4.	Domestic Default Approach	2557
5.	Critical Assessment and Outlook	2588
6.	Conclusions	2590
	Appendix: Details on Measurement of Effective Tax Rates	2592
	Acknowledgments	2593
	References	2593
<b>33.</b>	<b>The Political Economy of Government Debt</b>	<b>2599</b>
	A. Alesina, A. Passalacqua	
1.	Introduction	2600
2.	Optimal Debt Policies: A Brief Review	2602
3.	Deficits and Elections	2610
4.	Social Conflict: War of Attrition and Riots	2613
5.	Debt as a Strategic Variable	2617
6.	The Common Pool Problem	2618
7.	Intergenerational Redistribution	2625
8.	Rent Seeking	2628
9.	Budget Rules	2631
10.	Budget Institutions	2636
11.	Questions for Future Research	2640
	Acknowledgments	2646
	References	2646
	Index	2653