Readings beginning with the week of 7 February:

• Money & Finance:


  3. Karl Shell website section on Taxes Denominated in Money

Books


• This Time is Different: Eight Centuries of Financial Folly, Carmen Reinhart & Kenneth Rogoff, Princeton University Press, 2009


Books (Continued)

- Understanding Financial Crises (Clarendon Lectures in Finance)
  Franklin Allen & Douglas Gale, Oxford University Press, 2009

- Manias, Panics and Crashes: A History of Financial Crises, Sixth Edition,


Books (Continued)

• Misunderstanding Financial Crises: Why We Don’t See Them Coming, Gary B. Gorton, Oxford University Press, 2010

• Slapped by the Invisible Hand, The Panic of 2007, Gary B. Gorton, Oxford University Press, 2010

• A Demon of Our Own Design, Richard Bookstaber, Wiley, 2007

• Irrational Exuberance, Robert J. Shiller, Princeton University Press, 2005

• The Housing Boom and Bust, Thomas Sowell, Basic Books, 2009
• The World Depression, 1929-1939, Charles P. Kindleberger, University of California Press, 1973

• The Great Crash 1929, John Kenneth Galbraith, Houghton Mifflin, 1988

• Lombard Street, Walter Bagehot, Smith, Elder & Co., 1915 or later edition

• The South Sea Bubble, Viscount Erleigh, Greenwood Press (& Peter Davies Limited), 1933
Books (Continued)


Books (Continued)


• Xavier Freixas and Jean-Charles Rochet, Microeconomics of Banking, Second Edition, MIT.


Review of Monetary Equilibrium

• Rewriting constraints
  • \( z^1_h = -p^{m1}m^1_h \)
  • \( p^2z^1_h = p^{m2}m^1_h \)

• \( z^1_h + p^2z^2_h = (p^{m2} - p^{m1})m^1_h \)

• Hence, \( p^{m2} = p^{m1} = p^m \geq 0 \)
• Equilibrium allocation \( x \in \mathbb{R}_{++}^{2n} \) is the same as for Future Market if \( p^m > 0 \)
Review of Monetary Equilibrium

• Economic interpretation of constant $p^m$?
• Why does $p^m$ wash away when $p^m > 0$?
• What are the economics $p^m = 0$
Uncertainty (isomorphic to intertemporal)

• See Arrow article
• 2 states of nature \( s = \alpha, \beta \)
• \( h = 1, \ldots, n \) consumers
• Contingent commodity \( x_h(s) > 0 \) delivered only in state \( s \)
• Contingent endowments \( \omega_h(s) > 0 \)
• Preferences
  \[ V_h(x_h(\alpha), x_h(\beta)) = \pi(\alpha)U_h(x_h(\alpha)) + \pi(\beta)U_h(x_h(\beta)) \]
Contingent Claims (Continued)

• Consumer Problem
  \[ \max \pi(\alpha)U_h(x_h(\alpha)) + (1 - \pi(\alpha))U_h(x_h(\beta)) \]
  Subject to
  \[ p(\alpha)x_h(\alpha) + p(\beta)x_h(\beta) = p(\alpha)x_h(\alpha) + p(\beta)\omega_h(\beta) \]
  Or \[ p(\alpha)z_h(\alpha) + p(\beta)z_h(\beta) = 0 \]
  Find \((p(\alpha), p(\beta))\) such that

• CP determines \(x_h(\alpha), x_h(\beta)\)

and materials balance

• \(\sum_h x_h(s) = \sum_h \omega_h(s)\) for \(s = \alpha, \beta\)
Arrow Securities

- $b_h(s)$ is the quantity bought of security $s$
- Security $s$ pays 1 unit of account in state $s$; otherwise, nothing
- $p_b(s)$ is the price of security $s$
- $p_b(\alpha)b_h(\alpha) + p_b(\beta)b_h(\beta) = 0$
- Purchase of security is financed by sale of other security (not necessary)
Arrow Securities (Continued)

• CP

$$\max \quad \pi(\alpha)U_h(x_h(\alpha)) + (1 - \pi(\alpha))U_h(x_h(\beta)) \quad \text{s.t.}$$

1) \quad p(\alpha)x_h(\alpha) = p(\alpha)\omega_h(\alpha) + b_h(\alpha)

2) \quad p(\beta)x_h(\beta) = p(\beta)\omega_h(\beta) + b_h(\beta)

3) \quad p_b(\alpha)b_h(\alpha) + p_b(\beta)b_h(\beta) = 0

• Multiply 1) by $p_b(\alpha)$ and 2) by $p_b(\beta)$

1) \quad p_b(\alpha)p(\alpha)z_h(\alpha) = p_b(\alpha)b_h(\alpha)

2) \quad p_b(\beta)p(\beta)z_h(\beta) = p_b(\beta)b_h(\beta)

But by 3) we have

$$\hat{p}(\alpha)z_h(\alpha) + \hat{p}(\beta)z_h(\beta) = 0$$

Where $p_b(s)p(s) = \hat{p}(s)$ for $s = \alpha, \beta$
• CE is \((\hat{p}(\alpha), \hat{p}(\beta)) \in \mathbb{R}^{2n}_+\) in which
\((x_h(\alpha), x_h(\beta)) \in \mathbb{R}^2_+\) solves
PC for \(h = 1, ..., n\)
and
\[\sum_h z_h(s) = 0 \text{ for } s = \alpha, \beta\]
Conclusion

• Every contingent claims equilibrium allocation is also an Arrow securities equilibrium allocation
• Every AS equilibrium in which $p_b(s) > 0$ for $s = \alpha, \beta$ is also CC equilibrium allocation
• Every FM equilibrium allocation is also an MM equilibrium allocation
• Every MM equilibrium allocation in which $p^m > 0$ is also an FM equilibrium allocation
• But interpretations of MM differ widely from interpretations of FM