Global Financial Systems
Chapter 4
Liquidity

Jon Danielsson London School of Economics

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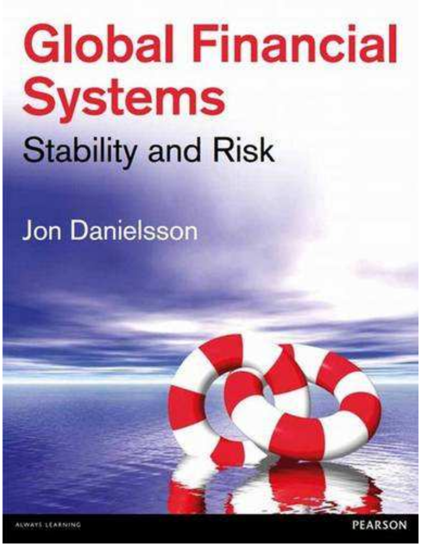
Book and slides



- Updated versions of the slides can be downloaded from the book web page `www.globalfinancialsystems.org`

Introduction to Liquidity

Liquidity

- Liquidity is what makes the financial markets and economy work
- It is the ability to pay, save, and exchange, the most fundamental building block of the financial system
- Everybody knows it is important, but nobody knows quite what it is
- Nevertheless, we have lots of ways of measuring liquidity, or at least different aspects of it
- The concept of liquidity ties into just about every other concept in the course, and we will focus on different features of liquidity in different contexts

Liquidity and asset–pricing

- When liquidity is scarce, asset prices are more affected by it
- When there is no liquidity in the market, no one can trade, and there is no price
- When there is uncertainty about the true value of a security, liquidity does sometimes evaporate
- Liquidity *is priced*

The virtues of liquid markets

- More liquid markets have lower transaction costs
  - securities are more attractive to investors
  - firms and banks can more easily withstand mismatches between their assets and liabilities
  - Central bankers can conduct open-market operations and thereby efficiently implement monetary policy
- Liquidity begets liquidity

Liquidity is idiosyncratic ...

... but only in good times

- Certain securities are usually more liquid than others
- The most liquid are securities with the broadest appeal, characterized by
  - familiarity
  - well-understood risks
  - formal trading mechanisms
- Innovative, sophisticated, bespoke, and highly risky securities are inherently illiquid
- Liquidity is systemic

Liquidity crises

just some examples

- 2008
- 1998
- 1997
- 1987
- 1914
- 1864
- 1763
- Almost all financial crises have liquidity as a central element
- But not 2020

Illiquidity and insolvency

- A firm that is insolvent is bankrupt
- Illiquidity is where assets minus liabilities are positive, but the bank does not have enough liquid assets on hand to pay off creditors
- Illiquidity means that banks cannot raise cash by selling assets because they cannot get acceptable prices in the short run
- In practice, it can be difficult to distinguish between illiquidity and insolvency

Definition

many contradictory definitions. This one from the BCBS is common

- *Funding liquidity* refers to the ability of firms to obtain the cash they need to continue to operate smoothly
- *Market liquidity* refers to the ease of buying and selling securities at a fair price
- More generally, liquidity has to do with switching between cash and assets and between cash now and cash later

- *Central bank liquidity* money provided by the central banks (see next chapter)

Interventions

- In times of heightened market stress, market participants demand liquidity, which can create at least two problems
  1. It amplifies market distress
  2. It removes funds used for financing economic activity
- This is why the central banks supply liquidity in times of stress — 2008, 2020 —
- But this is not why they supply liquidity outside of those times, such as the QE we have seen over the past 15 years (discussed later)

When things go wrong

Effect of margins and haircuts

- Margins and haircuts protect those owed money
- In highly leveraged positions, losses happen quickly
- Margins have to be met every day — the trading horizon reduces to one day
- Explains Keynes's comment in the last chapter
- Margins/haircuts depend on the risk of assets
- During market turmoil, they increase

Procyclicality of margins and haircuts

- They are lower in booms than in busts
- Easing credit when things go well
- And contracting credit when things go badly
- They therefore amplify the cycle — *procyclicality*

Mark to market accounting

- Mark-to-market accounting exacerbates the problems during crises
- It makes firms more sensitive to falling prices than they otherwise would be
- Consequently, inducing them to react when not reacting might be a better course of action

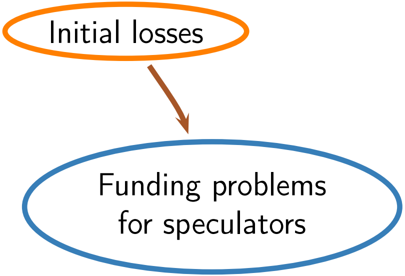
Market liquidity and funding liquidity

- Deteriorating credit conditions, particularly as manifested in increasing margin requirements, can worsen market liquidity crises
- Small exogenous shocks can be aggravated by endogenous responses of traders, their financiers, and their risk managers, sometimes resulting in dangerous and destructive ‘spirals’ of self-reinforcing action and reaction
- These spirals reinforce each other—*margin spirals* and *liquidity spirals* reinforce broader *loss spirals*

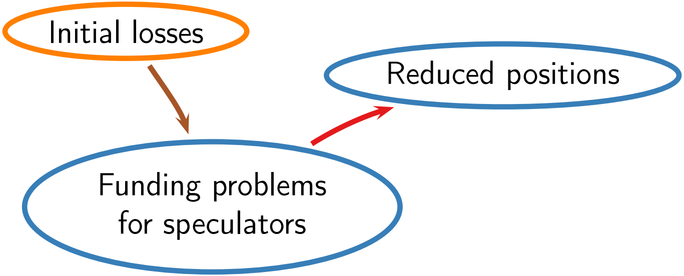
Vicious liquidity feedback loops

Initial losses

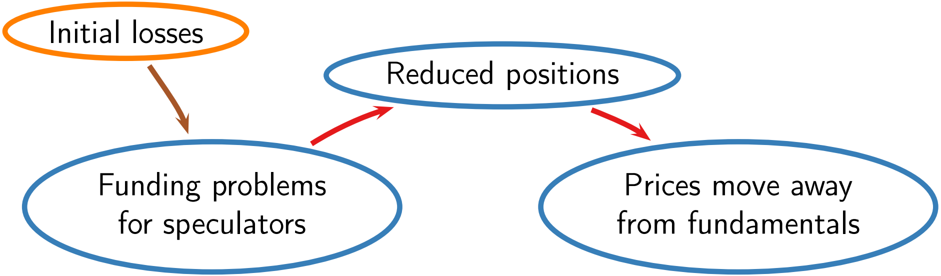
Vicious liquidity feedback loops



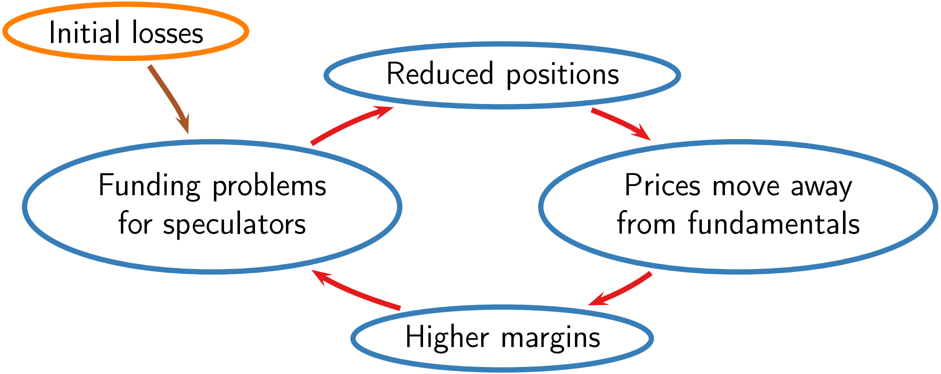
Vicious liquidity feedback loops



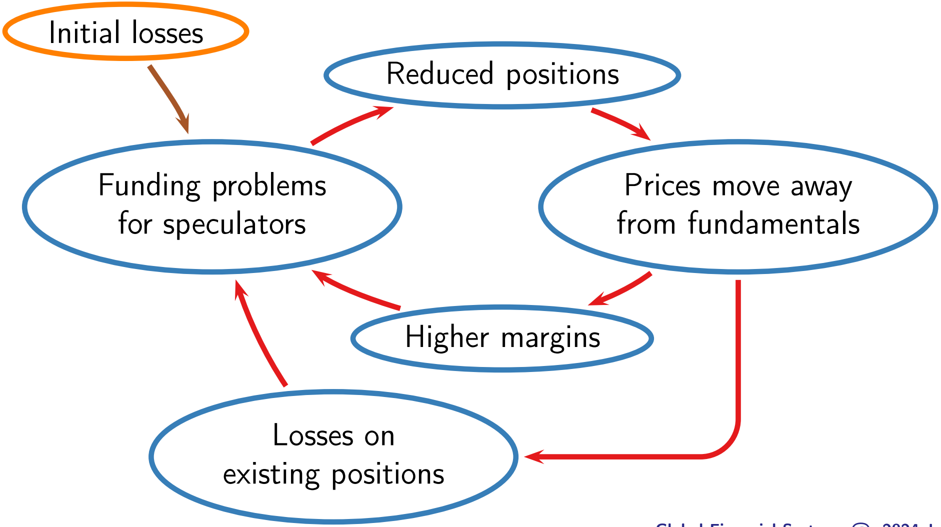
Vicious liquidity feedback loops



Vicious liquidity feedback loops



Vicious liquidity feedback loops



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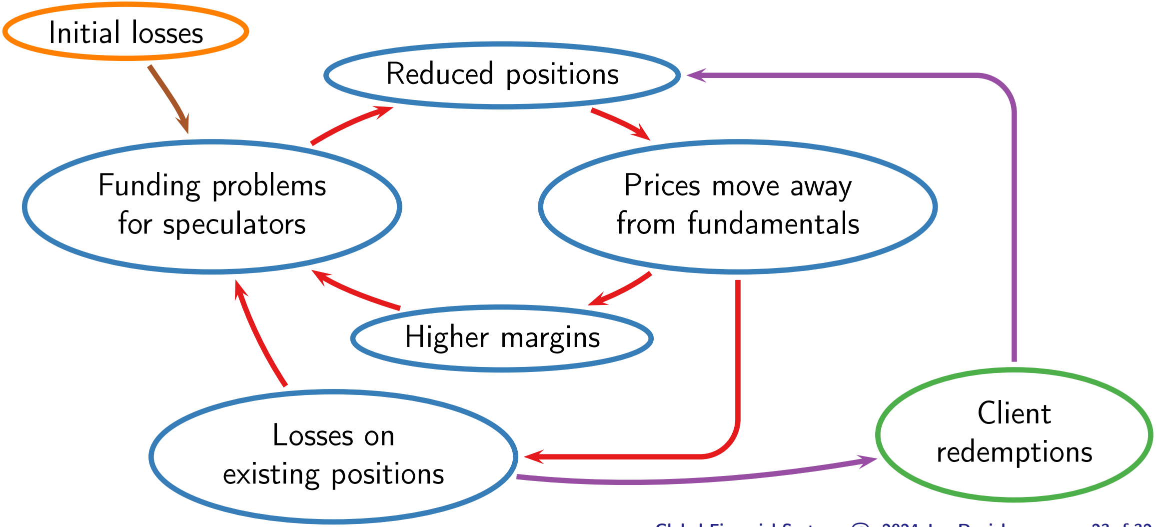


Liquidity and Asset–Pricing

Diamond and thief in desert

- Suppose you steal the world's most valuable diamond, worth $100 million
- And flee into the desert
- After 3 days, you are lost, and your water is finished
- Someone offers you 1 litre of water and directions out of the desert in exchange for your diamond
- Will you accept?
- What determines the value of assets?

Cash–in–the–market pricing

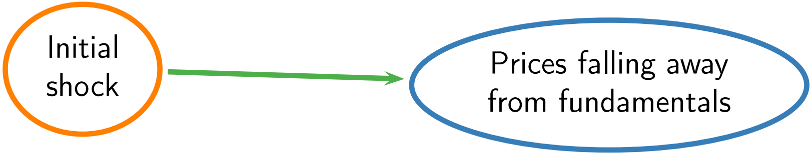
Allen and Gale

- Markets are incomplete
- Financial institutions may be forced to sell assets to obtain liquidity
- Supply of and demand for liquidity is likely to be inelastic in the short run
- Small aggregate uncertainties may result in large fluctuations in asset prices
- Can become so severe that financial institutions are unable to meet their obligations, ending in a crisis.

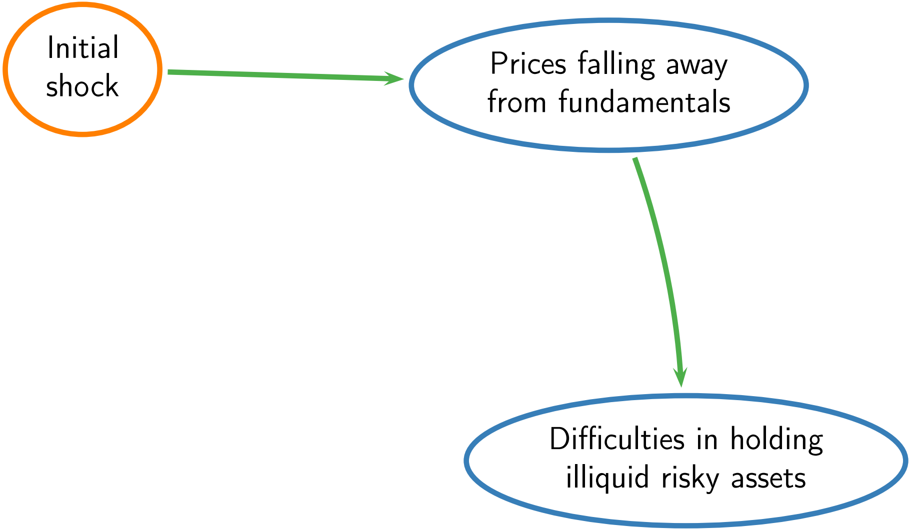
Cash–in–the–market pricing

Initial shock

Cash–in–the–market pricing



Cash–in–the–market pricing



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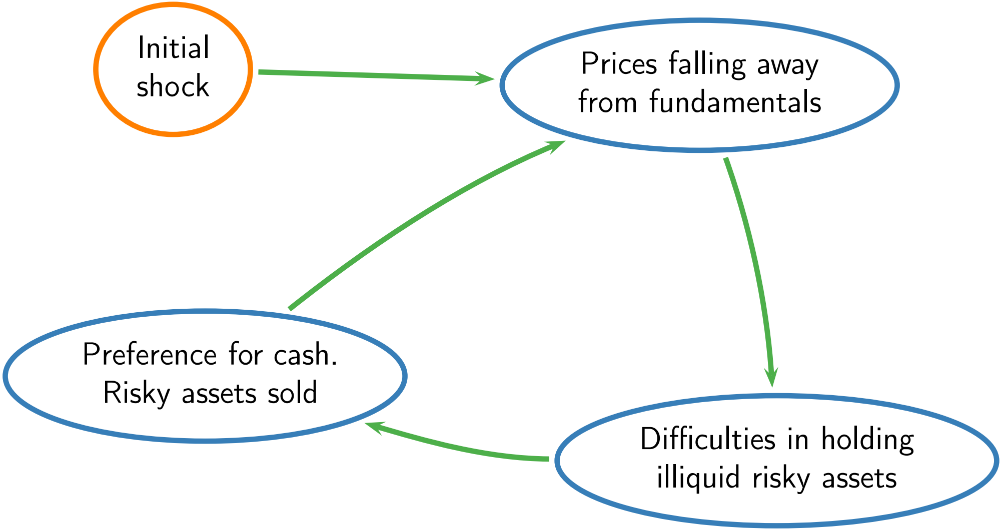

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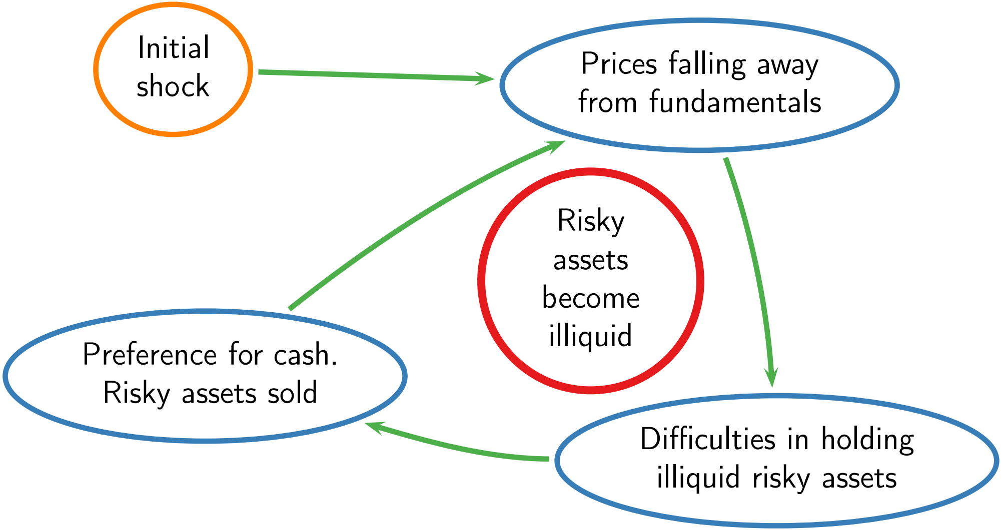

So...

- Asset prices are low in states where banks need more liquidity
- This is exactly the wrong time from an efficiency point of view for there to be a transfer from the banks needing liquidity to the providers of liquidity.