Global Financial Systems
Chapter 20
The infrastructure of financial markets

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To accompany

Global Financial Systems: Stability and Risk

http://www.globalfinancialsystems.org/

Published by Pearson 2013

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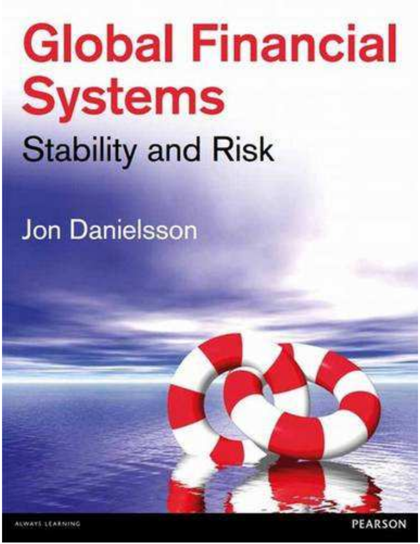
Book and slides



- The tables and graphs are the same as in the book
- See the book for references to original data sources
- Updated versions of the slides can be downloaded from the book web page

  `www.globalfinancialsystems.org`

"Plumbing"

- Refers to the infrastructure that makes the financial system work, and tools used by market participants
- We discuss a small subset, those most relevant to theme of book
- Payment systems
- CCPs
- Margins
- Trading strategies including carry trades
- Securitization

Content

- These slides combine content from
- Chapter 9: CCPs, trading strategies,
- And have some new content

Payment system

Payment system

- Used to settle payments by transferring money between economic agents
- Can refer to a narrow system, perhaps enabling one owner of a mobile phone to transfer money to another
- Or a national system, either directly operated by the government (typically central bank) or directly under its control
- Also refers to an international system like SWIFT
- The payment system is fundamentally to an efficient economy
- If it fails, economic activity grinds to a halt
- Nobody can make any electronic payments, including debit/credit cards

Examples

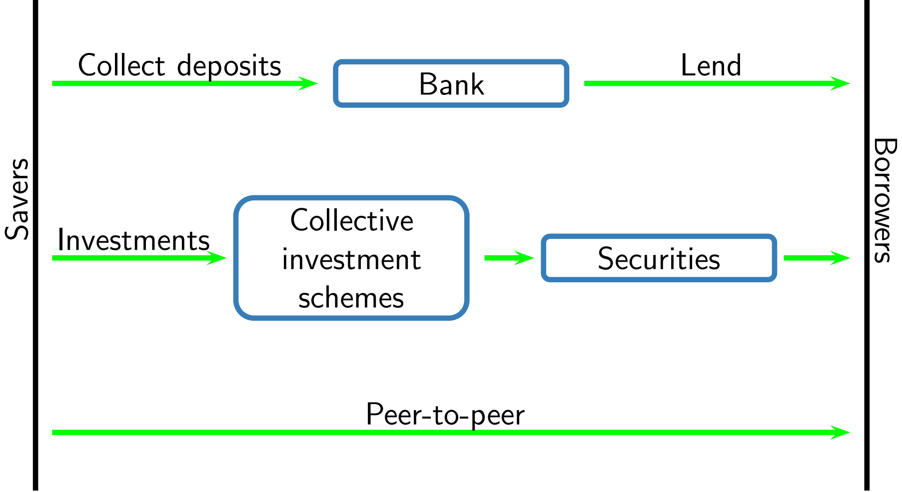
- Real-time gross settlement systems (RTGS). Immediate, no netting. Final and irrevocable
  - Eurosystem has TARGET2
  - Federal Reserve Banks, Fedwire (RTGS, for banks with accounts at the Fed)
- Private payment systems
- Visa, Mastercard, Apple Pay, Alipay, Paypal, Etherum, etc.
- Integrity of the payment systems is of primary national interest, including guarding against criminals, terrorists and hostile nation states

Shadow Banking

Shadow banking

- Credit intermediation that involves entities and activities (fully or partly) outside the regular banking system
- Said differently, an operation that does banking without being called a bank
- Term created in 2007
- Before known as market-based finance or non-banks
- Now sometimes called *parallel banking* because shadow banking is seen as a negative term
- Historically mostly US
- But now widespread in most countries

Shadow banking



Money market funds (MMF)

- The type of a shadow bank that raises most concerns is *money market mutual fund* — it can have many other names
- Intermediary that manages money
- Low-risk securities (commercial paper, certificates of deposits and treasuries)
- Ability to withdraw money at short notice
- Maintain the value of the principal of its assets
- Higher yield than bank accounts
- Big worry in US and especially China

Benefits of shadow banks

- If the banking system is inefficient
- Shadow banks can provide the cheaper alternative way of connecting savers with investors
- Has been a big benefit to the United States
- And establishing such a system is the objective of the European capital markets union — even if they wouldn't use those words

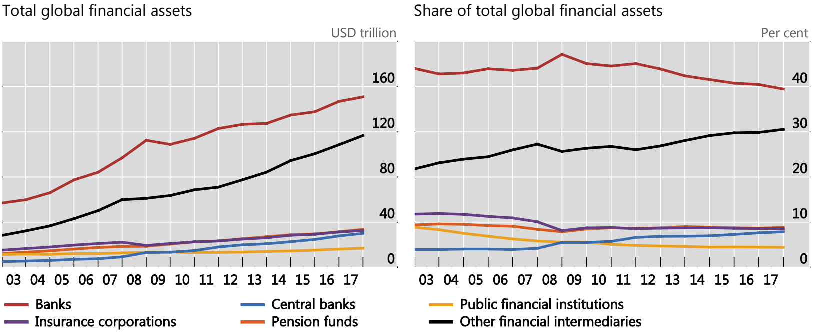
Growth in non-bank assets

www.fsb.org/wp-content/uploads/P040219.pdf

Assets of financial intermediaries[1]

21+EA-Group

Exhibit 2-2



[1] Some exchange rate effects have been netted out by using a constant exchange rate (from 2017).

Sources: Jurisdictions' 2018 submissions (national sectoral balance sheet and other data); FSB calculations.

move to other intermediaries strongest in China and Eurozone

Why worry?

- Systemic risk
- Regulatory arbitrage
  - Asian crisis — Thailand
- Monetary policy transmission
- Channel for capital flows
- Unknown unknowns

Benefits — ~~Shadow~~ Parallel banking

- More competition
- More diverse financial system
- Financial inclusion

Trading and Risk

Market participants

- General term referring to those who engage in trading
- Proprietary trading (*prop trading*) buying and selling for a financial institution's own account, in order to make speculative profits
  - this is the target of the US Volcker rule, UK Independent Commission on Banking (Vickers report), EU Liikannen report
- Institutionalization, outsource investment decisions, perhaps using a benchmark to evaluate performance
  - plenty of scope for abuse (e.g. underperformance and fraud)
  - hence highly regulated (micro–prudential regulations)

Hedge funds (HFs)

Lightly but not unregulated

- Lightly regulated funds. Sometimes restricted to only sell to sophisticated and wealthy investors (*accredited*)
- Who consequentially should be able to take care of themselves (no need for micro–prudential protection)
- Still subject to securities laws and deal with regulated parts of the financial system
- Prime brokers
- Difficult to classify (except by absence of regulations)
- Before 2007 thought to be the main source of financial instability (echoes of 1998 and LTCM)

Trading and Risk

Trading Activities

Trading strategies

- Rules used by traders when deciding what to buy and sell
- Can be highly formalized and automated (like HFTs)
- Or a vague preference for low–risk or safe investments
- Often are unconscious
- We have seen several examples, especially in the endogenous risk chapter
- Discuss momentum, value, technical trading, carry, short, HFT below

Value investing

- Find companies trading below their *inherent worth*
- Stocks with strong fundamentals like earnings, dividends, book value, cash flow
- The strategy of Warren Buffett
- One example of a mean reversion trade

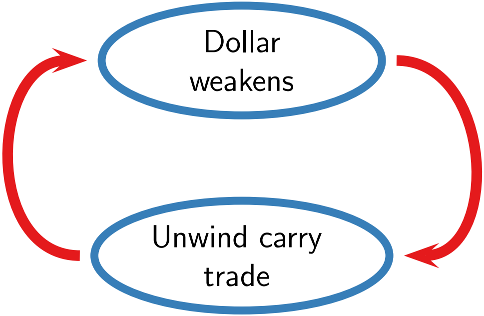
> Seeking yield is maximizing risk
>
> Warren Buffett

Carry trades

- Exploiting differences in yields
- We focus on foreign exchange carry trades
- Borrow money in a country with low interest rates, exchange it for a currency with high interest rates
- Profit from interest differential and the resulting foreign–exchange appreciation
- Very controversial because leads to excessive inflows of *hot money* and inability to manage exchange rates (we discuss this in detail later)

Endogenous risk feedback in unwinding

up by the escalator and down by the elevator (lift)



Carry trades as a source of contagion

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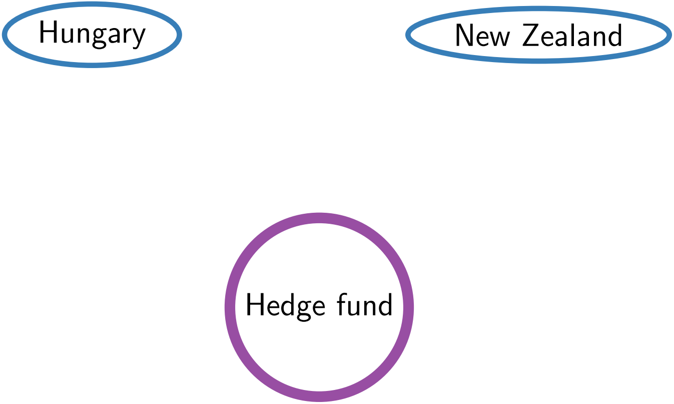
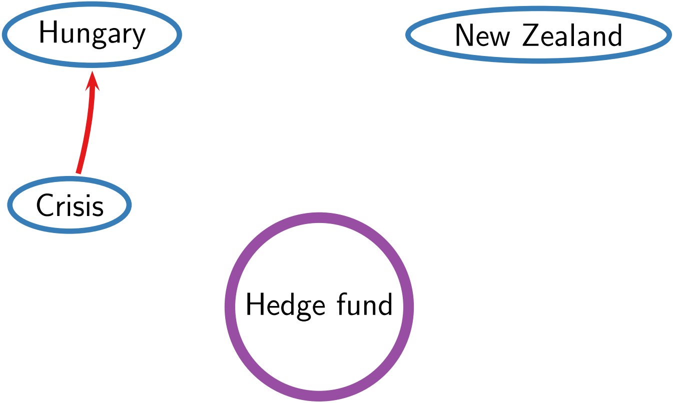
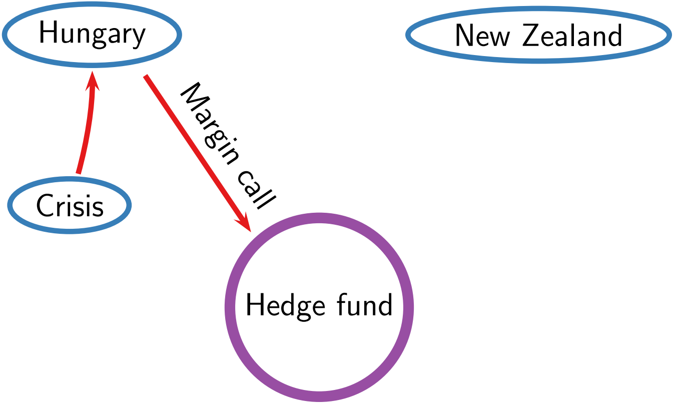


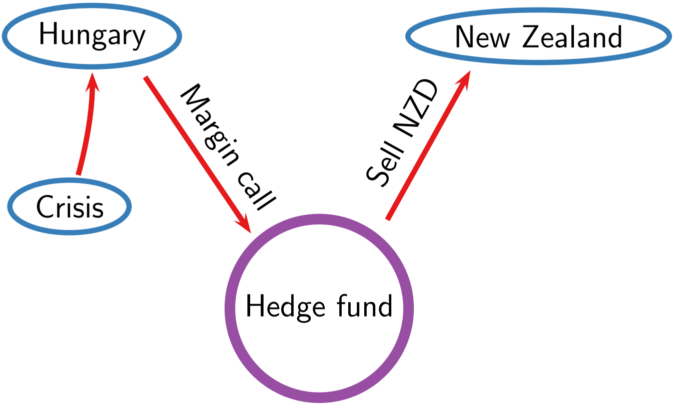
Carry trades as a source of contagion



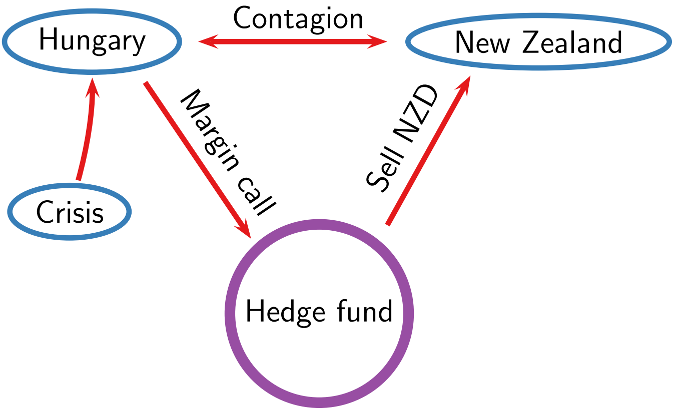
Carry trades as a source of contagion



Carry trades as a source of contagion



Carry trades as a source of contagion



Technical trading

- Forecasting prices with quantitative methods
- Often successful with statistical arbitrage and HFT
- Less likely to work at lower frequencies
- Many studies proclaiming it works
- A problem with data mining. Forecasting in–sample not a proof of success
- Most public studies have methodological problems
- However, if someone is successful they will not really talk about it in any detail

Momentum — trend following

- Buying assets that have seen recent price increases and selingl those that have fallen in price
- Can endogenously affect prices (self–validating in the short run)
- In the long run may cause bubbles and crashes
- May be conscious, but perhaps more likely done subconsciously
- For example, we only engage with successful managers

High–frequency trading (HFT)

- Using technology to beat everybody else
- Famous example Nathan Rothschild, pigeons and Napoleon's defeat in Waterloo in 1815
- Now done with high–speed computers, data networks and *algorithmic trading*
- Main fears crystallized in the flash crash of May 2010

Short selling

- Selling assets one does not own — borrow with the intention of buying back later
- In many cases a legitimate hedging activity
- But can be used to make directional speculative bets
- Difficulties in sorting out economic vs. political or moral arguments

Naked short selling

Two different activities

A. A short speculative position, rather than hedging

B. Short selling an asset without borrowing it

Shortselling issues

- Profits from falling markets
- But is it any different from just selling assets one owns?
- Hard to see an economic distinction
- Hence the political/moral dimension of profiting from a crisis, or causing prices to fall
- Frequently banned
- However little empirical evidence indicating damage from short–selling or effectiveness of banning

Relevance to financial stability

- Most trading activities discussed here are not important for the stability of the entire financial system
- However, they can be one of the hidden mechanisms that culminates in a crisis
- Like a large, hidden, sell on loss strategy
- Flash crashes a big worry

Central (clearing) counterparty (CCP)

Clearing and settlement

- There are a host of chores to do after trades are agreed ...
- *Clearing houses* mitigate counterparty risk among broker-dealers
- Depository Trust & Clearing Corp. in the U.S. cleared \$1.48 *quadrillion* of trades and held \$34 trillion of securities in trust in 2009
- Some clearing houses act as *central counterparties*, e.g. in many futures and options exchanges

CCPs

- One way to mitigate the systemic risk from CDSs, and the like is *central counterparties*
- But, will CCP create new systemic risk?
- Should eliminate asymmetric information
- Ideally one CCP or clear cross netting arrangements
- i.e. CCP is the legal counterparty to every market participant

Moving to CCPs

- Promises to solve the problem of asymmetric information
- Many exchanges
  - Cross netting?
- They can not be allowed to go bust. See next slide
- National ambitions get in the way

But the CCP can not allowed to fail

- Huge amount of default risk concentrated in the CCP, and *everyone* is exposed to it
- Should the CB backstop it?
- Will it excessively increase margins during crisis and create *endogenous risk*?
- Ensuring the CCP is well capitalized means standardizing margining across the whole market: positive feedback
- Unless there's just one CCP, clearing and netting between CCPs becomes an issue