What is the contribution of the financial sector: miracle or mirage?

Andrew Haldane
Director of Financial Stability, Bank of England

THE FUTURE OF FINANCE
The Contribution of the Financial Sector
Miracle or Mirage?

Simon Brennan
Andy Haldane
Vasileios Madouros

Bank of England
July 2010
Here’s a funny thing…

• 2008 Q4
  – Collapse of Lehman Brothers, AIG, ….  
  – Global banks equity prices fall 50%  
  – World GDP falls 6% (annualised)  
  – World trade falls 25% (annualised)  
  – ….second Great Depression?
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  - Collapse of Lehman Brothers, AIG, …. 
  - Global banks equity prices fall 50%
  - World GDP falls 6% (annualised)
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  - ….second Great Depression?
  - Largest rise in GVA of financial sector on record
  - Largest rise in gross operating surplus of financial sector on record
  - Contribution of financial sector to GDP at a record high

- How do we square this circle?
Plan

• Measuring financial sector output

• Decomposing financial sector output – “productivity miracle”

• Explaining returns to finance – “risk mirage”

• Disaggregating returns to banking
Three Eras of Finance

Chart 1 UK financial intermediation and aggregate real GVA

Table 1 Average annual growth rate of UK financial intermediation

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<tr>
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Chart 2 Gross operating surplus of UK private financial corporations (% of total)

Chart 3 Share of the financial industry in US GDP

Sources: ONS and Bank calculations.

Measuring Financial Sector Output

- Fees (overdraft, underwriting etc) – easy to measure
- Intermediation services – difficult to measure
  ─→ FISIM (Financial Intermediation Services Indirectly Measured)
- FISIM on loans/deposits
  \[(\text{Loan rate} – \text{Reference rate}) \times \text{Loan Amount}\]
  \[(\text{Reference rate} – \text{Deposit rate}) \times \text{Deposit Amount}\]
- FISIM = roughly 50% of gross output of financial sector
Chart 7 Value of gross output of the UK banking sector

Problems with FISIM

- No adjustment for risk
- Eg, rise in expected losses
  - rise in bank spreads/margins
  - rise in FISIM
  - but underlying financial services greater?
- Helps explain 2008 Q4 paradox
- Risk-adjusting reference rates using market rates: FISIM 60% lower between 2003-07
- Even then, assumes risk correctly priced by market…
- …which it wasn’t in run-up to crisis
Decomposing Financial Sector Output

• Growth accounting framework

\[ g^F = \alpha_K g^K + \alpha_L g^L + s \]

where \( \alpha_k, \alpha_l \) = capital/labour share
\( s = \) Solow residual (TFP)

• Rising share of finance - factor inputs (\( g^K, g^L \))? - or productivity (\( s \))?
Factor Shares in Finance

Chart 8  Share of financial intermediation employment in UK and US whole-economy employment

Chart 9  UK financial sector physical capital (share of total industry capital)
Solow Residual – “Productivity Miracle”

Chart 10
Annual TFP growth across the five largest UK industries, average 2000-7

- Real estate, renting, etc (22%)
- Manufacturing (12%)
- Wholesale / retail trade (11%)
- Financial intermediation (8%)
- Health and social work (7%)

Chart 11 Differential in TFP growth between financial intermediation and the whole economy

Per cent

Per Cent

Spain
Ireland
Belgium
Italy
UK
Australia
Netherlands
Japan
US
France
Sweden
Germany
Austria

2003-2007
1995-2007


Returns to Capital and Labour

**Chart 12** Returns to labour and capital in UK financial intermediation

- Gross operating surplus
- Compensation of employees
- Gross value added

£ billions, current prices
Returns to Labour

**Chart 15** Historical 'excess' wage in the US financial sector\(^{(a)}\)

![Chart 15](image)

Source: Philippon and Reshef (2009).

(a) Difference between the actual relative wage in finance and an estimated benchmark series for the relative wage.

**Chart 13** Average weekly earnings across UK industries, 2007

![Chart 13](image)
Returns to Capital

**Chart 16** Net operating surplus over net capital stock in UK financial intermediation and the whole economy

**Chart 17** Return on equity in finance

Sources: ONS and Bank calculations.
(a) Gross operating surplus less capital consumption, divided by net capital stock.
Explaining “Excess” Returns

• Three pre-crisis balance sheet strategies
  – Leverage
  – Trading books
  – Deep out-of-the-money options

• All three boosted reported returns on equity …

• …but not risk-adjusted returns on equity
Price: Book ratios for UK, US and European institutions (a)(b)

Sources: Bloomberg, Thomson Datastream and Bank calculations
(a) Chart shows the ratio of share price to book value per share. Simple averages of the ratio in each peer group are used. The chart plots the three month rolling average.
(b) Excludes Nationwide and Britannia from Major UK Banks peer group

Chart 6 Cumulative excess returns from hedged bet placed in 1900

Sources: Global Financial Data and Bank calculations.
Balance sheets balloon....

**Chart 19** Size of the UK banking system\(^{(a)}\)

Banking sector assets (per cent of GDP)

1880 98 1916 34 52 70 88 2006

Sources: Sheppard (1971) and Bank of England.

(a) The definition of UK banking sector assets used in the series is broader after 1966, but using a narrower definition throughout gives the same growth profile.

**Chart 20** Size of the US banking system relative to GDP, 1870-2008

Per cent

1870 90 1910 30 50 70 90 2008

Source: Schularick and Taylor (2009).
….driven by leverage…. 

Chart 23 Long-run capital ratios for UK and US banks

Chart 24 Leverage at the LCFIs(a)

Sources: Bloomberg, published accounts and Bank calculations.
(a) Leverage equals assets over total shareholders equity net of minority interests.
….flattering returns

Chart 26 Major UK banks' pre-tax return on equity

Sources: Published accounts and Bank calculations.
(a) Based on twelve-month trailing pre-tax revenues and average shareholders equity.
Rising trading books

Chart 29 LCFIs' trading assets and loans to customers as a proportion of total assets\(^{(a)}\)

Chart 30 LCFIs' ratios of total assets to Tier 1 capital and trading assets to total assets\(^{(a)(b)}\)

Sources: Published accounts and Bank calculations.

\(^{(a)}\) Includes US commercial bank LCFIs, European LCFIs and UK LCFIs.
….in structured products….

**Chart 32 Global issuance of asset-backed securities**

Mar.2000 = 1

- Other ABS
- CMBS
- RMBS
- Moore’s Law (LHS)

US$ billions

Source: Dealogic.

(a) ‘Other ABS’ includes auto, credit card and student loan ABS.
(b) Bars show publicly-placed issuance.

**Chart 34 Growth of outstanding notional amount of CDS vs. Moore's Law**

Dec 2004 = 1

US$ trillions

Sources: Bank for International Settlements and Bank calculations
....where losses greatest

Chart 33 Global structured finance ratings changes\(^{(a)}\)

Source: Fitch Ratings.
\(^{(a)}\) Data compares beginning-of-the-year rating with end-of-the-year rating. Does not count multiple rating actions throughout the year.

Chart 31 Major UK banks' and LCFIs' write-downs\(^{(a)}\)

Sources: Published accounts and Bank calculations.
\(^{(a)}\) Includes write-downs due to mark-to-market adjustments on trading book positions where details are disclosed by firms.
\(^{(b)}\) Other includes SIVs and other ABS write downs.
\(^{(c)}\) On exposures to monolines and others.
Disaggregating Returns

Chart 36  JP Morgan Chase business segment return on equity, quarterly Q4 2005 – Q1 2010

Source: Published accounts.
Questions

• Why are retail financial services so profitable?

• And transaction/custodial services?

• Marginal cost pricing for retail financial services?

• Is 3-4% the marginal cost of M + A and advisory?

• Why is market-making so profitable?
Conclusion

• Second “Golden Era” of finance…productivity miracle?

• High returns to labour/finance…risk mirage?

• Lessons for public policy/investors:
  – Better capturing risk in the National Accounts
  – Better measuring risk-adjusted performance
  – Risk-sensitive regulation and structural reform