

Lionel Robbins Memorial Lectures

Market Efficiency and Rationality: Why Financial Markets are Different

Lord Turner

Chairman of the Financial Services Authority, the Climate Change Committee and the Overseas Development Institute

Christopher Johnson

Chair, LSE

LSE events



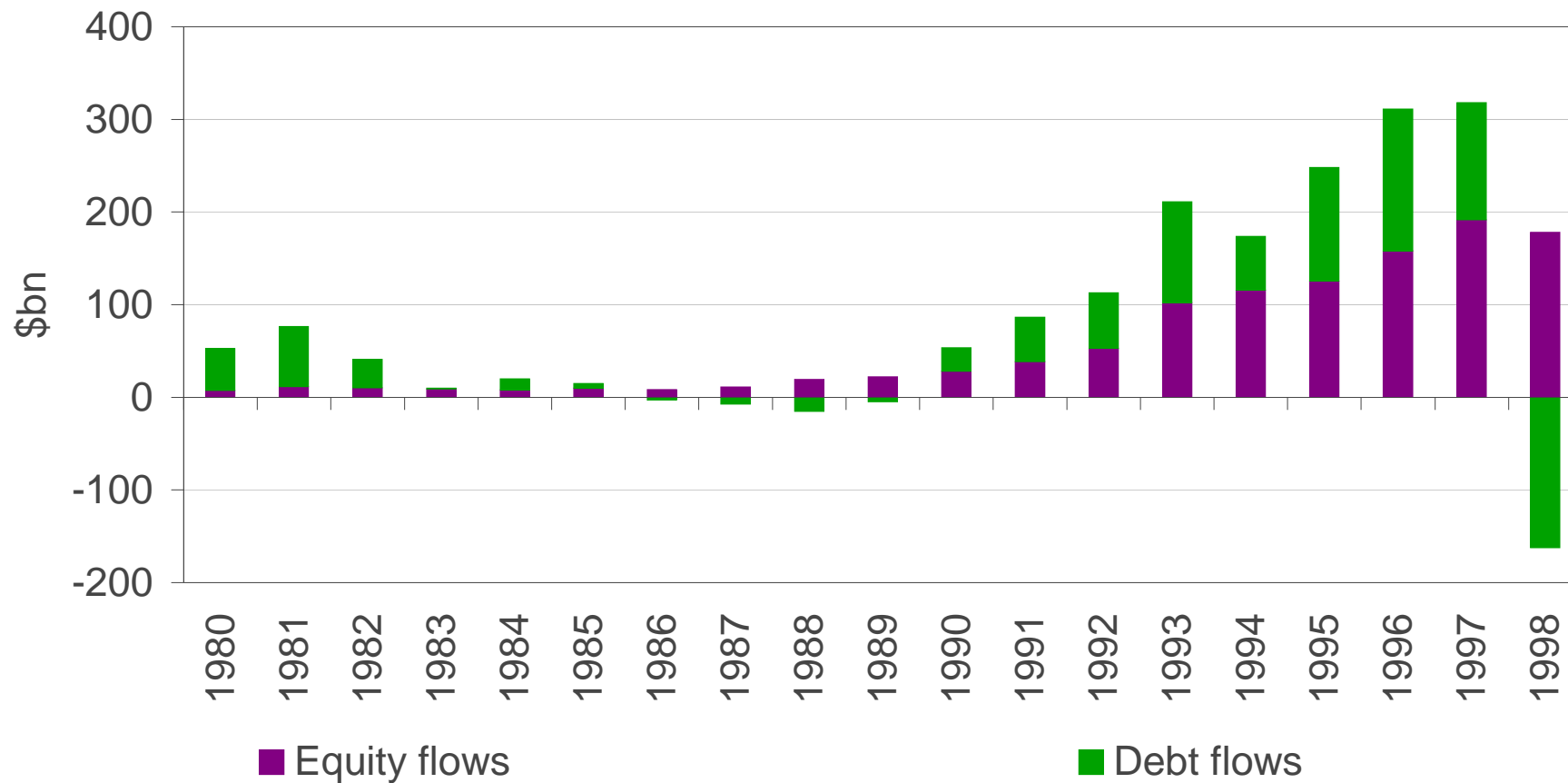
Lionel Robbins Memorial Lectures
Economics after the crisis: Objectives and means

Lecture II
**Financial Markets: Efficiency, Stability and Income
Distribution**

Adair Turner

London School of Economics
12 October 2010

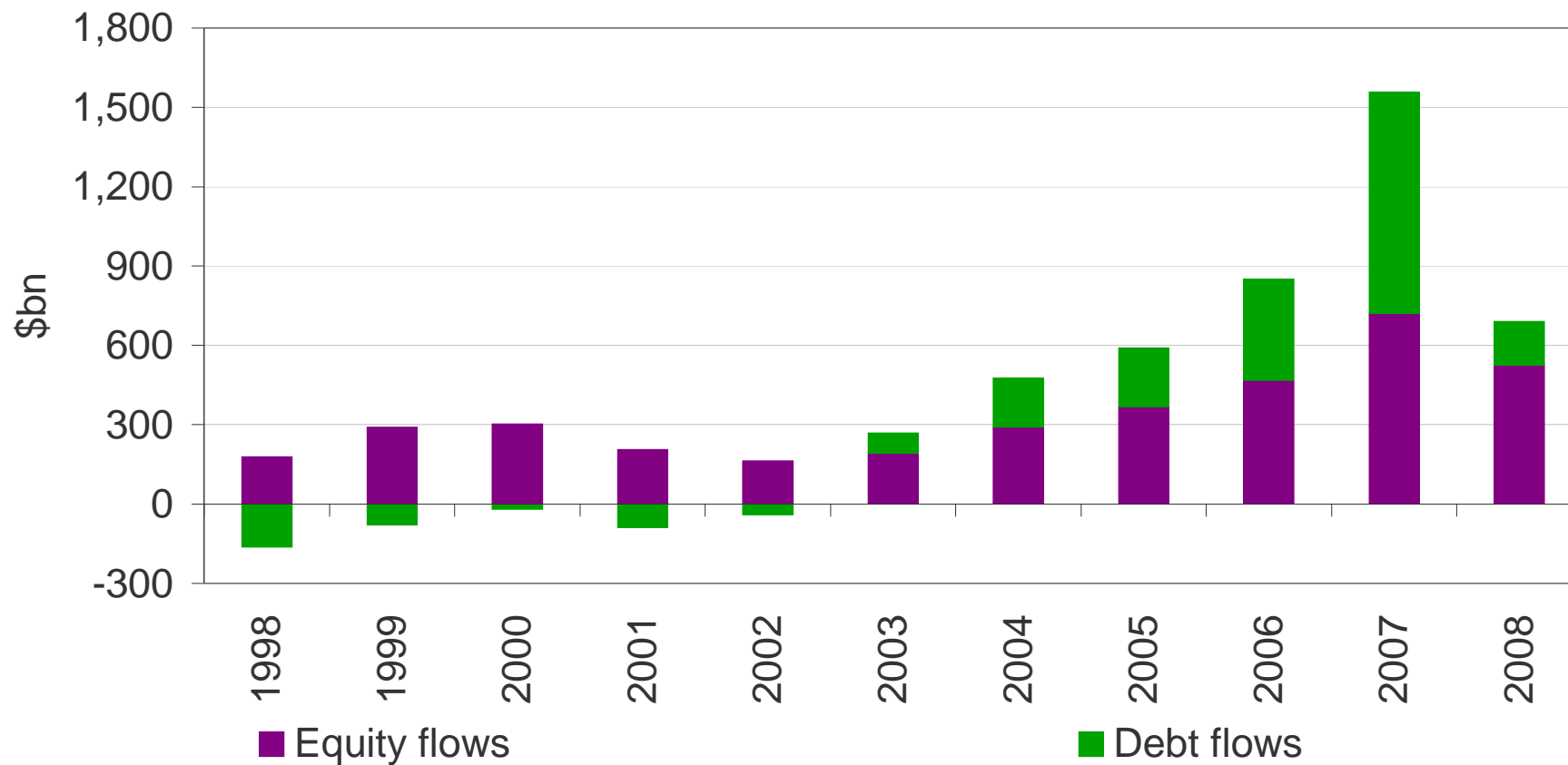
Capital inflows to emerging markets 1980 – 98



Equity includes direct investment and portfolio equity investment. Debt includes portfolio debt investment and other investment.

Emerging markets includes: Argentina, Brazil, Chile, China, Colombia, the Czech Republic, Hungary, Hong Kong, India, Indonesia, Korea, Malaysia, Mexico, Peru, the Philippines, Poland, Russia, Singapore, South Africa, Thailand, Turkey and Venezuela.

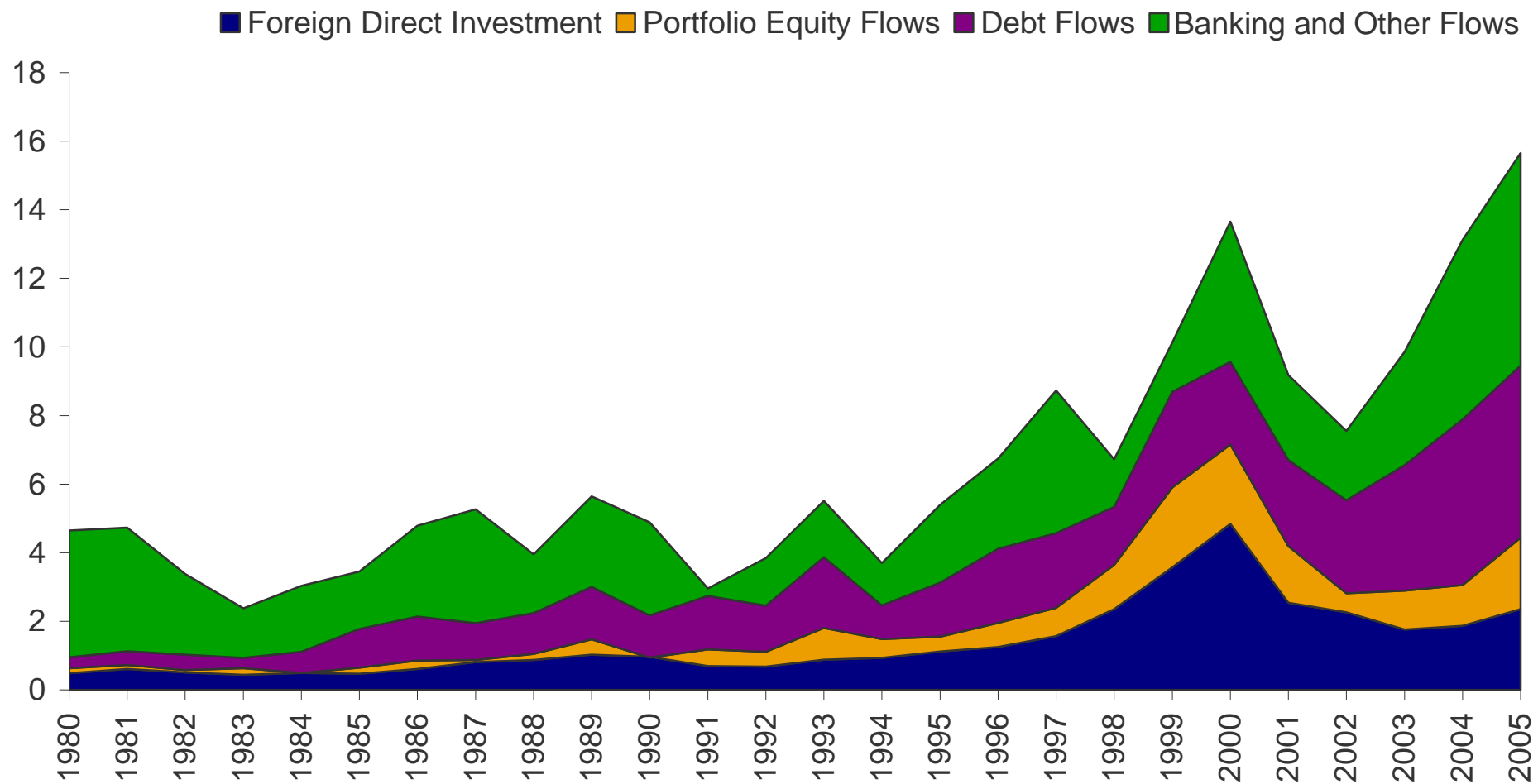
Capital flows to emerging markets 1998 – 2008



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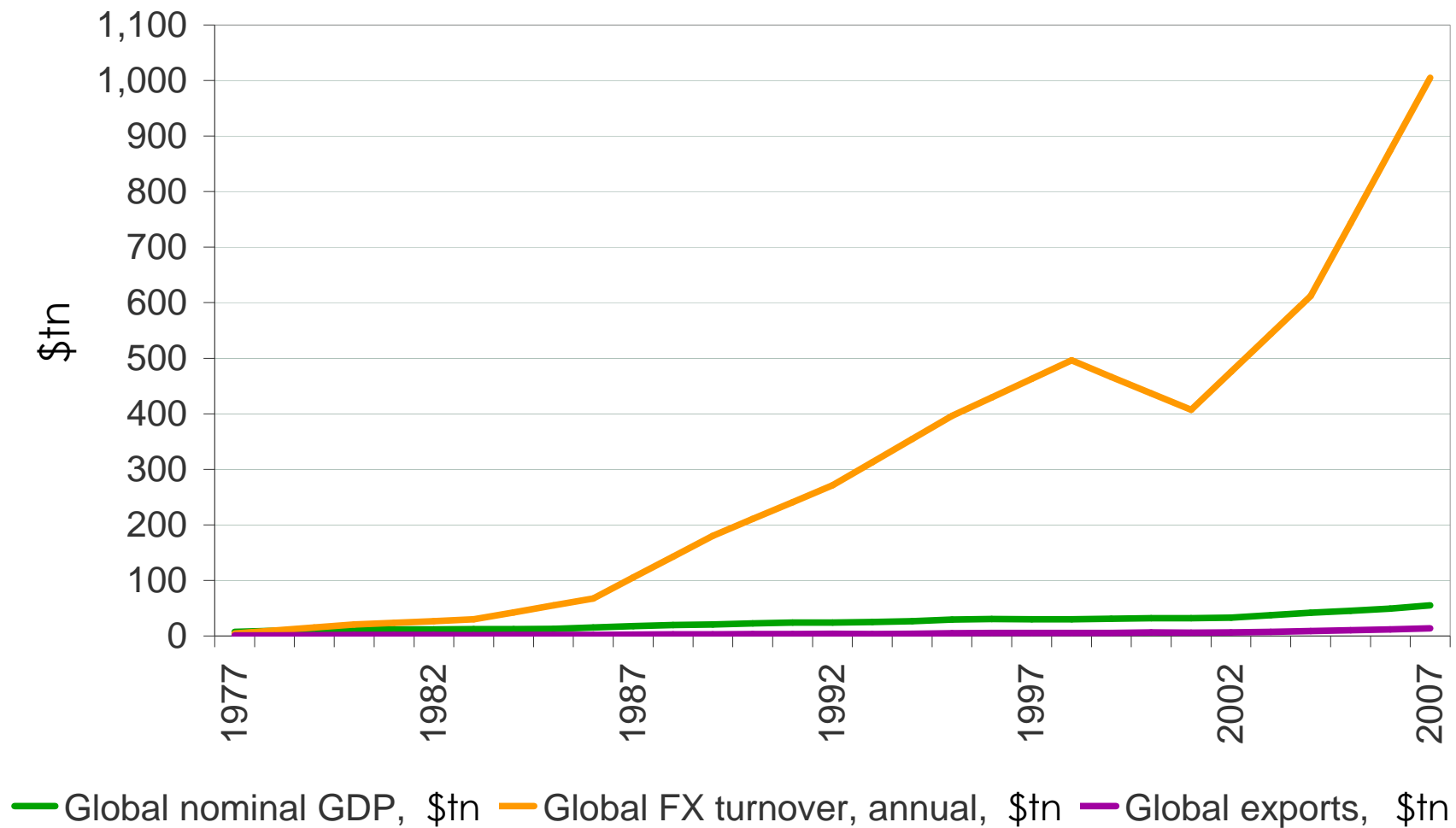
Emerging markets includes: Argentina, Brazil, Chile, China, Colombia, the Czech Republic, Hungary, Hong Kong, India, Indonesia, Korea, Malaysia, Mexico, Peru, the Philippines, Poland, Russia, Singapore, South Africa, Thailand, Turkey and Venezuela.

Total global cross-border inflows as % of global GDP



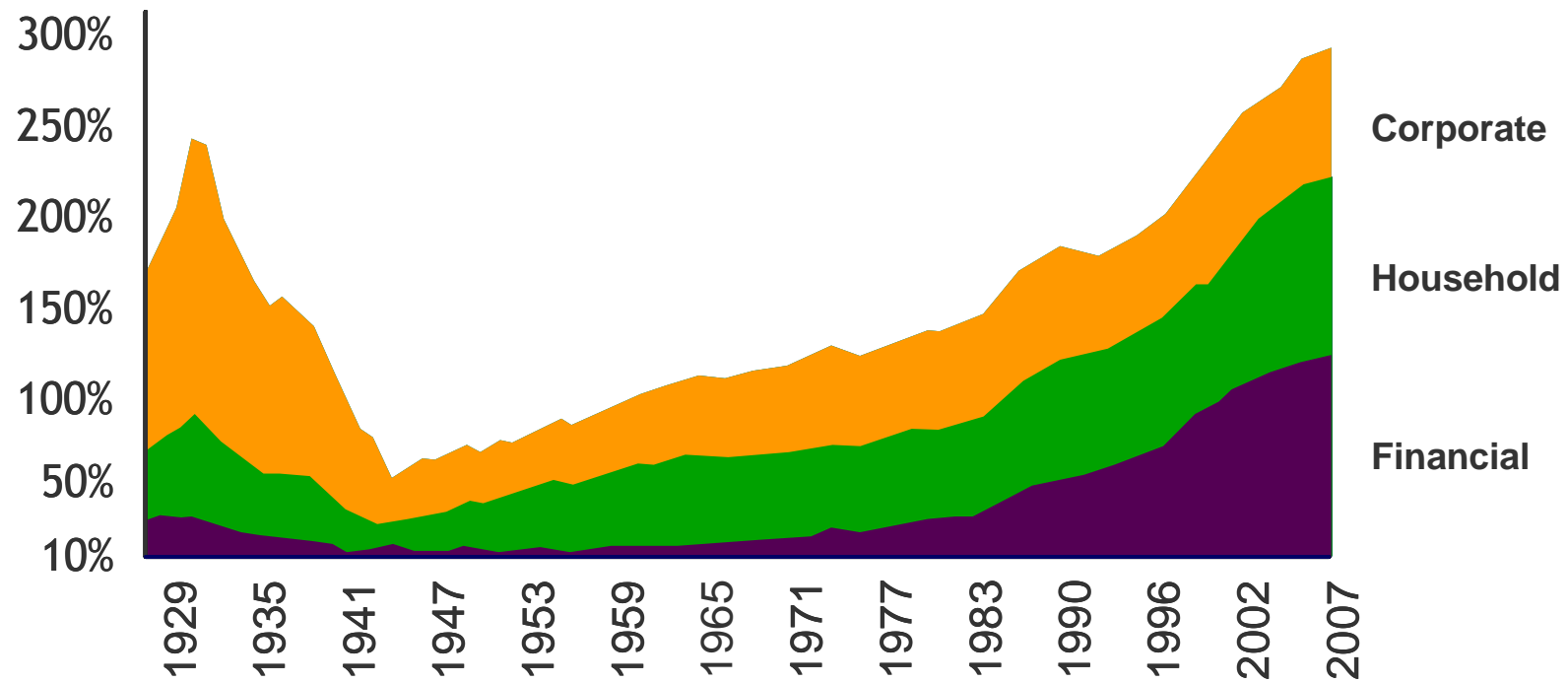
Source: IMF Global Financial Stability Report, 2007

FX trading values and world GDP: 1977 – 2007



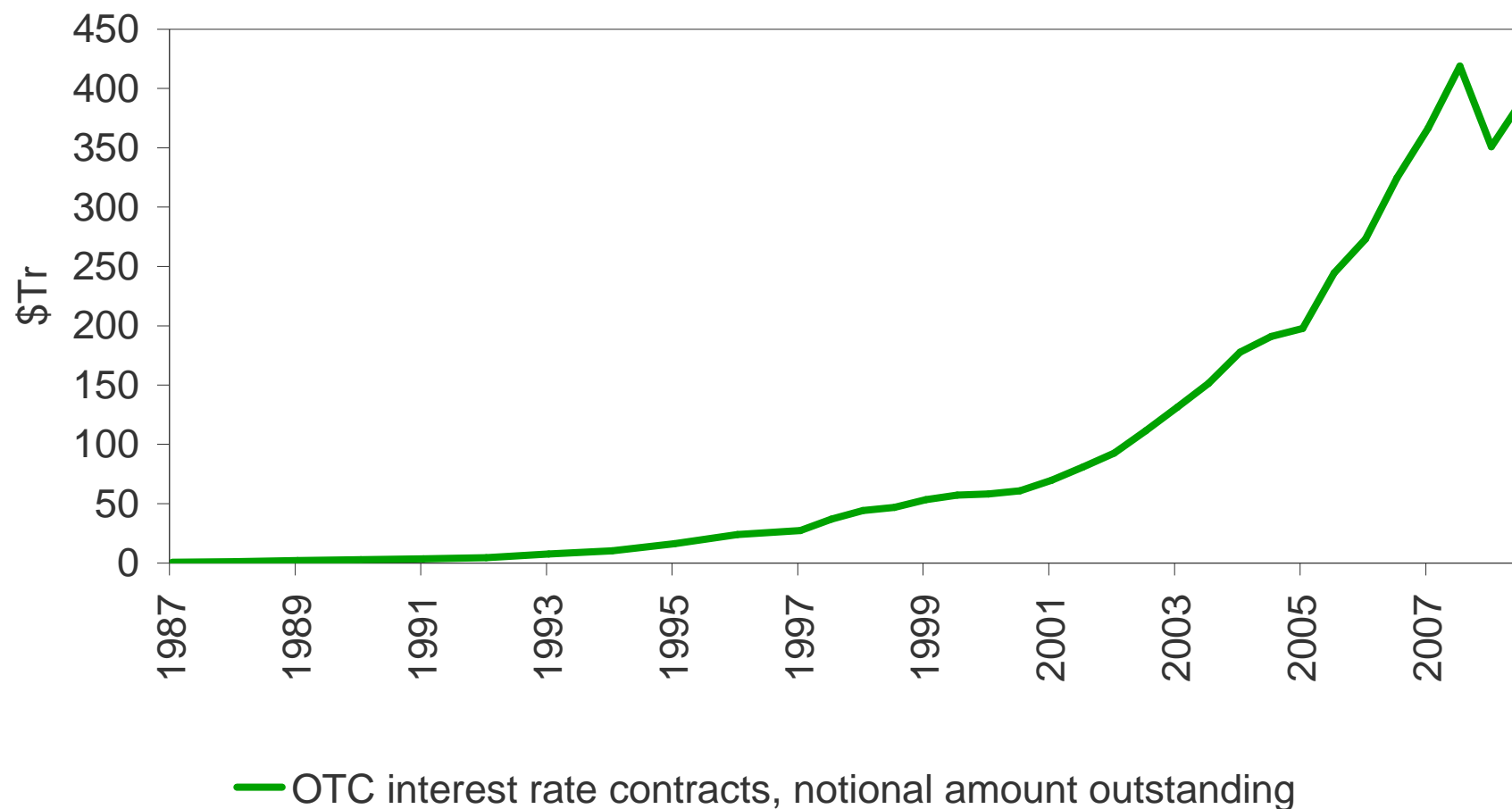
Source: BIS Triennial Central Bank Survey, IMF International Financial Statistics

USA debt as a % of GDP by borrower type



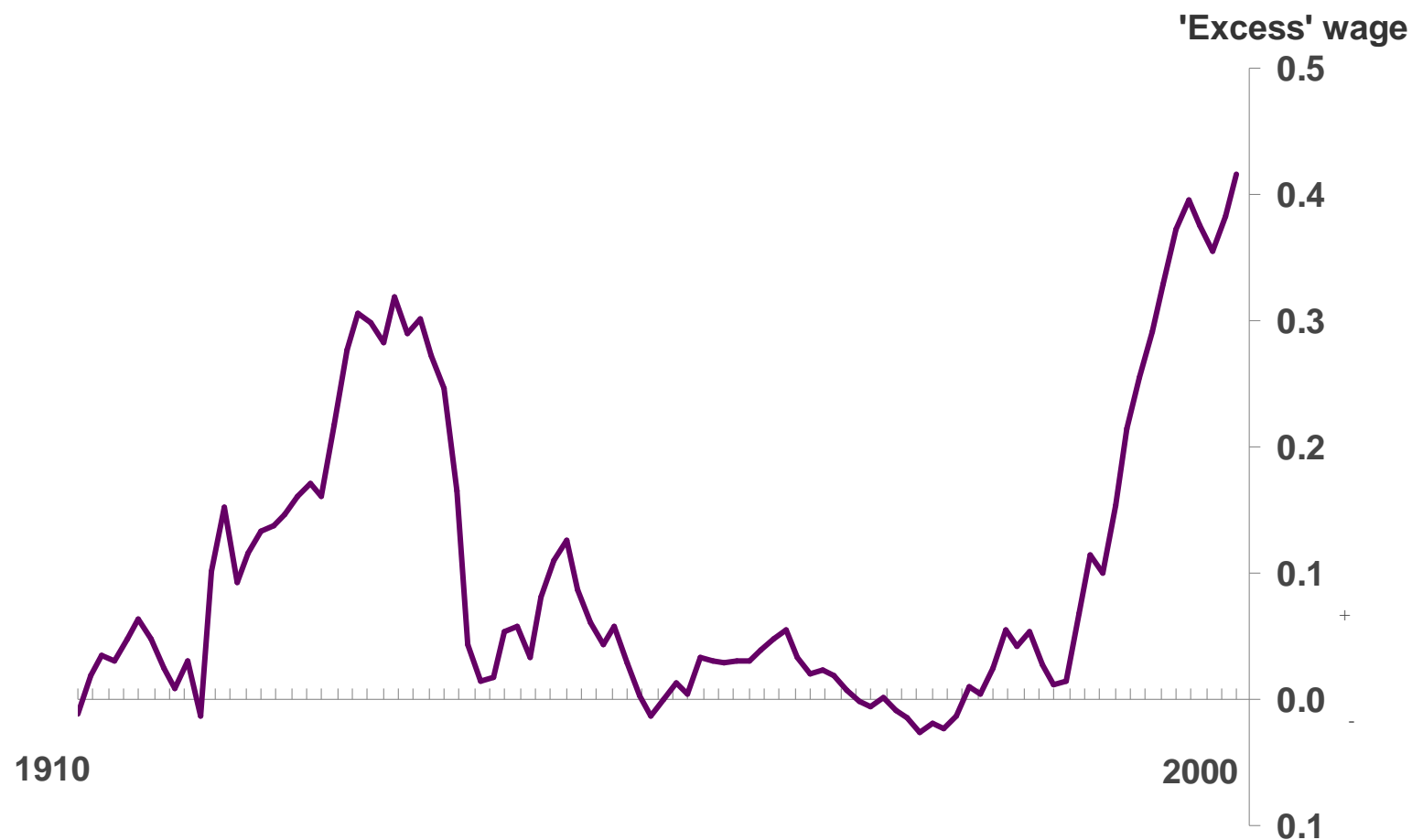
Source: Oliver Wyman

Growth of interest rate derivatives values 1987 – 2009



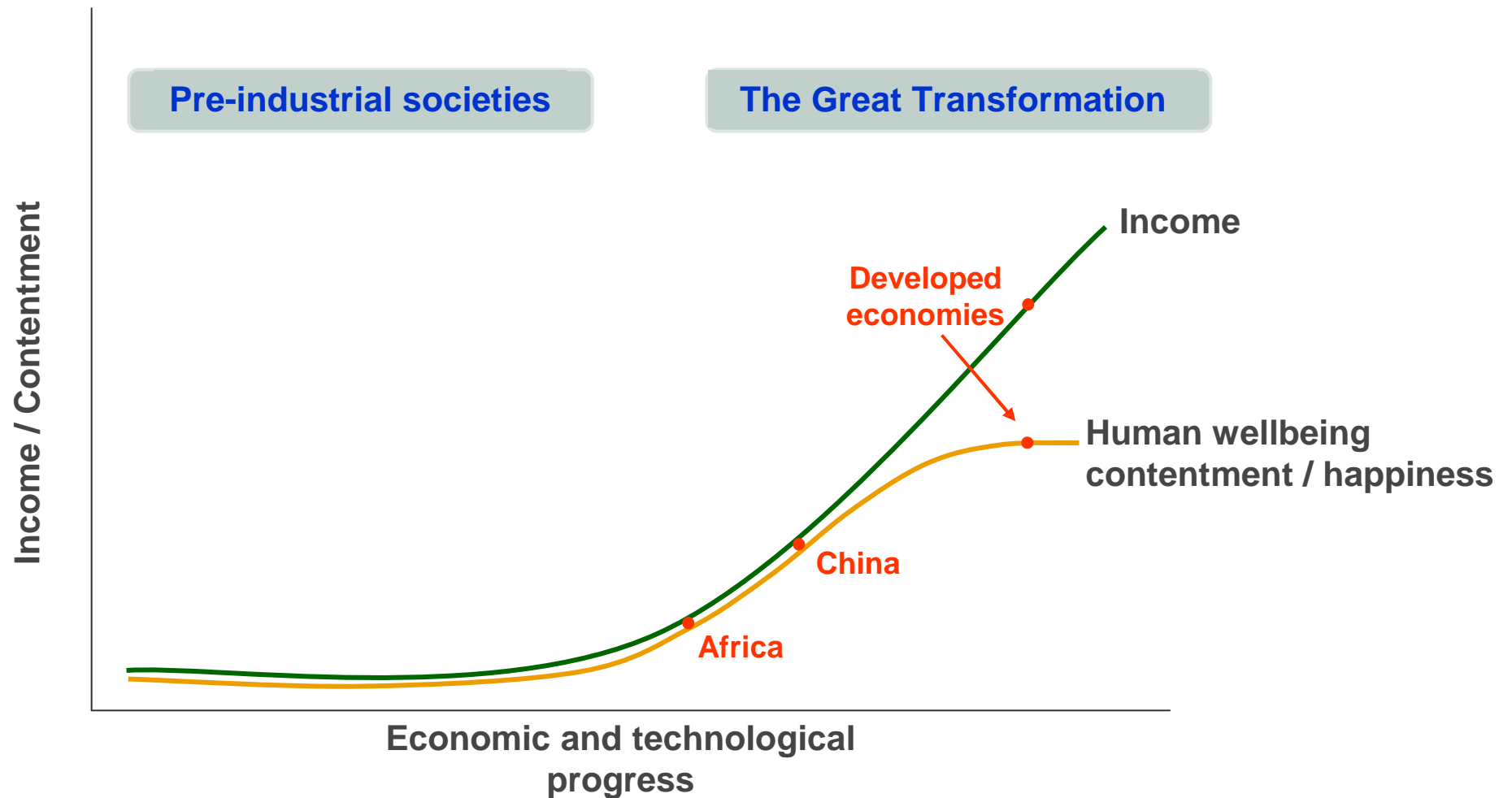
Source: ISDA Market Survey (1987-1997), BIS Quarterly Review (1998-2009). Includes interest rate swaps and interest rate options.

Historical 'excess' wage in the US financial sector



Source: Philippon, T and Reshef A (2009). *Wages and Human Capital in the US Financial Industry: 1909-2006*, NBER Working Paper No 14644.A. Resh (As referenced by Andrew Haldane in *The Future of Finance*, LSE Report, 2010)

Income and Human Contentment: Possible stylised pattern over time



Markets and economic growth

- ❖ Failure of pure planned economies
- ❖ Trade access key to rapid catch-up
- ❖ Entrepreneurship delivers
 - Better restaurants
 - Better innovation, e.g. information technology

But

- ❖ US Pre-First World War
- ❖ Japan 1950s - 1970s and Korea 1960s - 1990s
- ❖ China

- ❖ **Efficient and rational financial markets: reasons for disbelief**
- ❖ **The crash of 1997**
- ❖ **The crash of 2008**
- ❖ **Financialisation and income distribution**
- ❖ **Conclusions for policy and the discipline of economics**

General equilibrium, complete markets and allocative efficiency

Arrow-Debreu:

A competitive equilibrium is efficient ...

... IF all markets are complete



- ❖ Liquid stock markets
- ❖ Commodity futures markets
- ❖ Structured credit markets
- ❖ Credit derivatives markets
- ❖ Etc.



Innovation and liquidity bring us closer to the Arrow-Debreu nirvana where all possible markets exist and are complete


Market imperfections within the neoclassical paradigm

Market imperfections arising from:

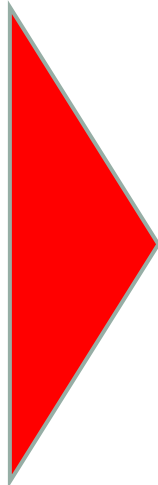
- ❖ Lack of transparency
- ❖ Manipulation
- ❖ Lack of liquidity
- ❖ Subsidies, taxes and other interventions

And

Lancaster and Lipsky:
- If a specific market is imperfect, liberalisation of other markets can be sub-optimal

- 
- ❖ Increase transparency
 - ❖ Punish manipulation
 - ❖ Remove government interventions
 - ❖ Make all markets efficient
 - ❖ Increase liquidity

But not

- 
- ❖ Ban products
 - ❖ Dampen market volatility
 - ❖ “Throw sand in the wheels of speculation” (Tobin Taxes)


Rational valuation or self-referential cycle

“Professional investment may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole [...] It is not a case of choosing those which, to the best of one’s judgement, are really the prettiest, nor even those which average opinion genuinely thinks the prettiest. We have reached the third degree where we devote our intelligences to anticipating what average opinion expects the average opinion to be. And there are some, I believe, who practise the fourth, fifth and higher degrees.”

The General Theory of Employment, Interest and Money, chapter 12
John Maynard Keynes, 1936

Manias, Panics and Crashes: The Madness of Crowds

- ❖ 1635 – 1637: Dutch tulips
- ❖ 1711 – 1720: South Sea bubble
- ❖ 1719 – 1720: Mississippi scheme
- ❖ 1929: US equities, bonds and real estate
- ❖ 1987: Global equity markets
- ❖ 1997: Asian emerging markets: FX, equities and debt
- ❖ 2000: Internet equities
- ❖ 2007 – 2008: Credit, structured credit and credit derivatives



**“This
time it’s
different “**

Why are markets irrational?

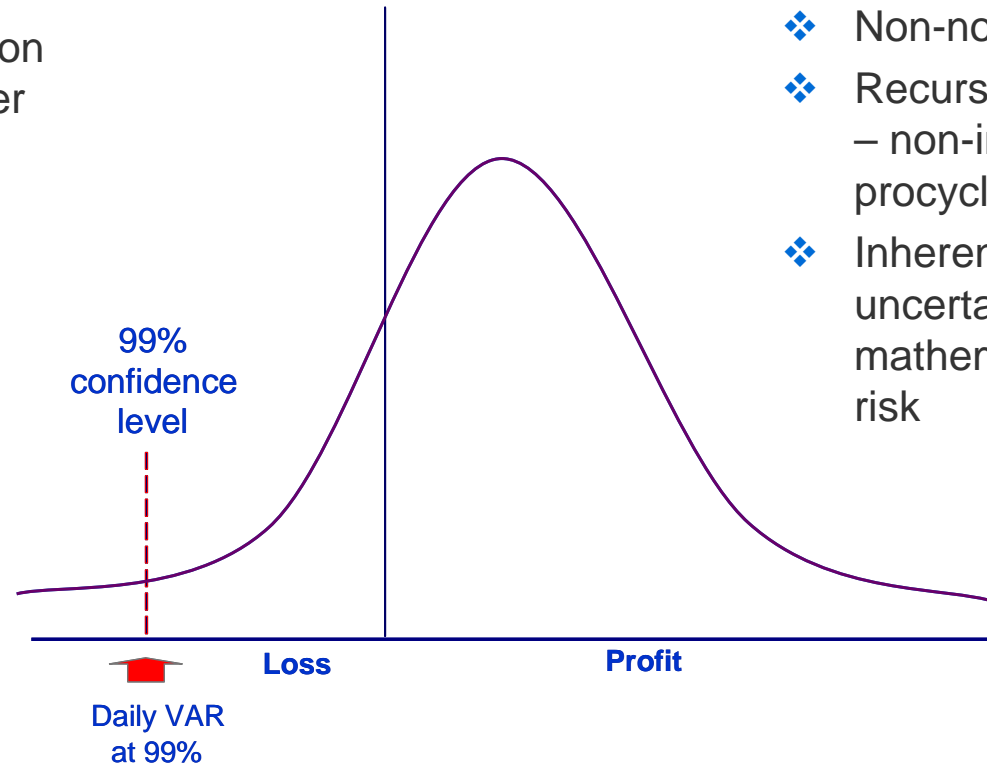
- ❖ Human beings are part rational, part instinctive
- ❖ Inherent information and principal/agent imperfections: collective irrationality even if individual humans were fully rational
- ❖ Inherent irreducible uncertainty

Value-at-risk assessment: Operational and inherent deficiencies

Basic concept

- ❖ Observe over a past period (e.g. last year) the distribution of profits / loss resulting over a defined time period (e.g. day, 10 days) from a given gross position
- ❖ Hold capital sufficient to cover some multiple of this 'Value at Risk'

Frequency distribution of observed daily trading profit/loss



Deficiencies

- ❖ Non-normal distributions
- ❖ Recursive systemic effects – non-independence: procyclicality
- ❖ Inherent irreducible uncertainty not mathematically modelable risk

Mervyn King (et al), *Uncertainty in macro-economic policy making: art or science*

“There are probably few genuinely ‘deep’ (and therefore stable) parameters or relationships in economics as distinct from in the physical sciences, where the laws of gravity are as good an approximation to reality one day as the next”

Royal Society, March 2010

- ❖ **Efficient and rational financial markets: reasons for disbelief**

The crash of 1997

- ❖ **The crash of 2008**
- ❖ **Financialisation and income distribution**
- ❖ **Conclusions for policy and the discipline of economics**

Does capital account liberalisation deliver economic benefits?

“Despite the numerous cross-country attempts to analyse the effects of capital account liberalisation, there appears to be only limited evidence that supports the notion that liberalisation enhances growth”

**Capital flows and emerging market economies, CGFS Papers No. 33
January 2009**

Bonanzas and sudden stops in international capital flows

Bonanzas

- ❖ Self-reinforcing optimism
- ❖ New paradigm stories
- ❖ “This time it’s different”

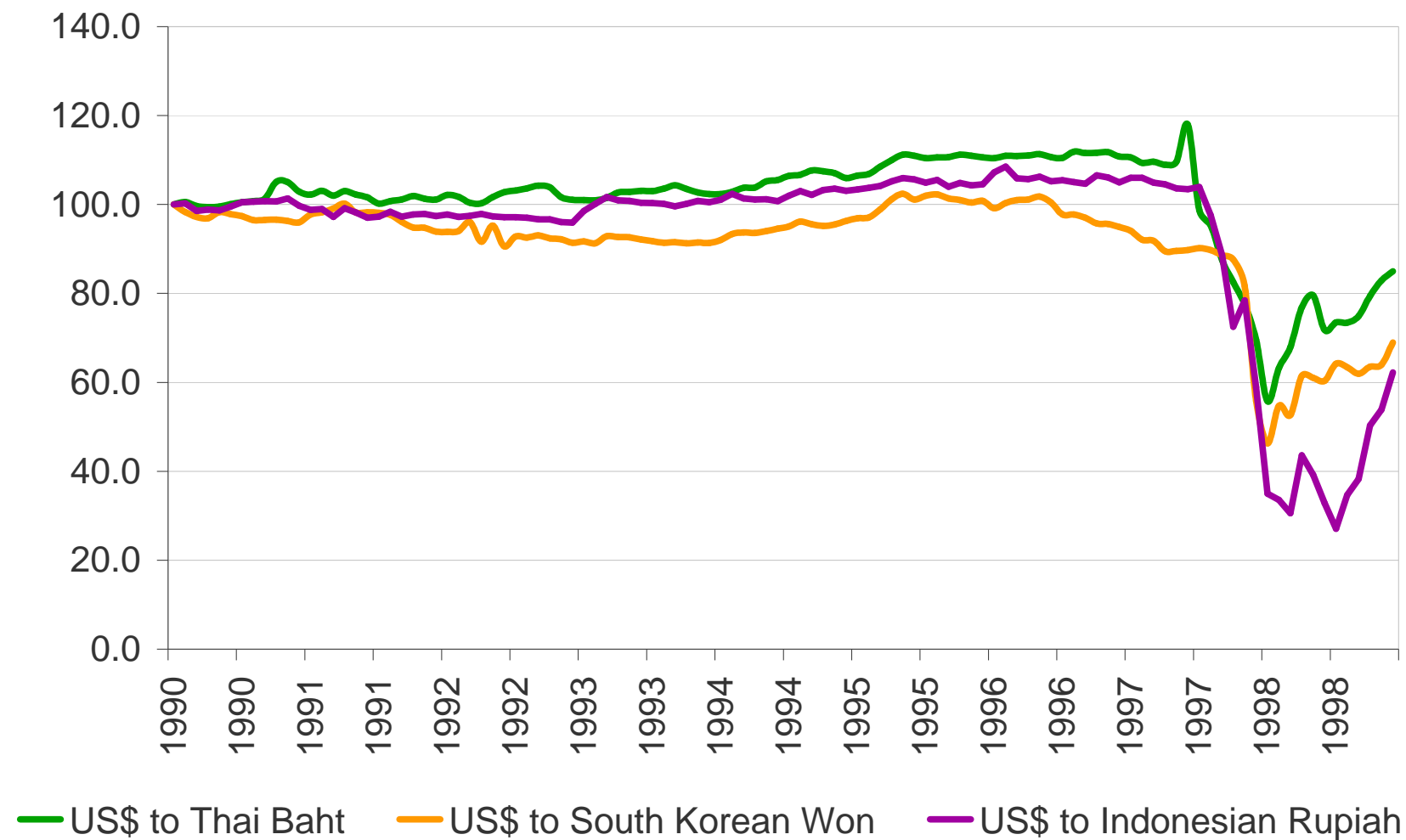
And

- ❖ Ride the wave and get out in time

Sudden stops

- ❖ Rush for the exit
- ❖ Contagion to “similar” countries

Thai Baht, Korean Won and Indonesian Rupee: Exchange rates versus US\$ 1990 – 1998



Source: GTIS and Datastream)

The Washington Consensus response: conditions and sequencing

Fx markets overshoot and are volatile because of poor fiscal and monetary policies and lack of appropriate domestic financial conditions

Conditions and sequencing are vital

Problem lies not within financial liberalisation, but in badly executed and incomplete liberalisation

Short-term capital flows and optimal policy

Are they rational?

- ❖ Theories of irrational markets and observation of bonanzas and sudden stops

VS

- ❖ Neoclassical axioms and impossibility of proving that movements were irrational

And if not, what follows?

- ❖ No perfect policies
- ❖ But take policy options out of the index of forbidden thoughts
 - Capital inflow taxes or controls
 - Financial transaction taxes

- ❖ **Efficient and rational financial markets: reasons for disbelief**
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The crash of 2008

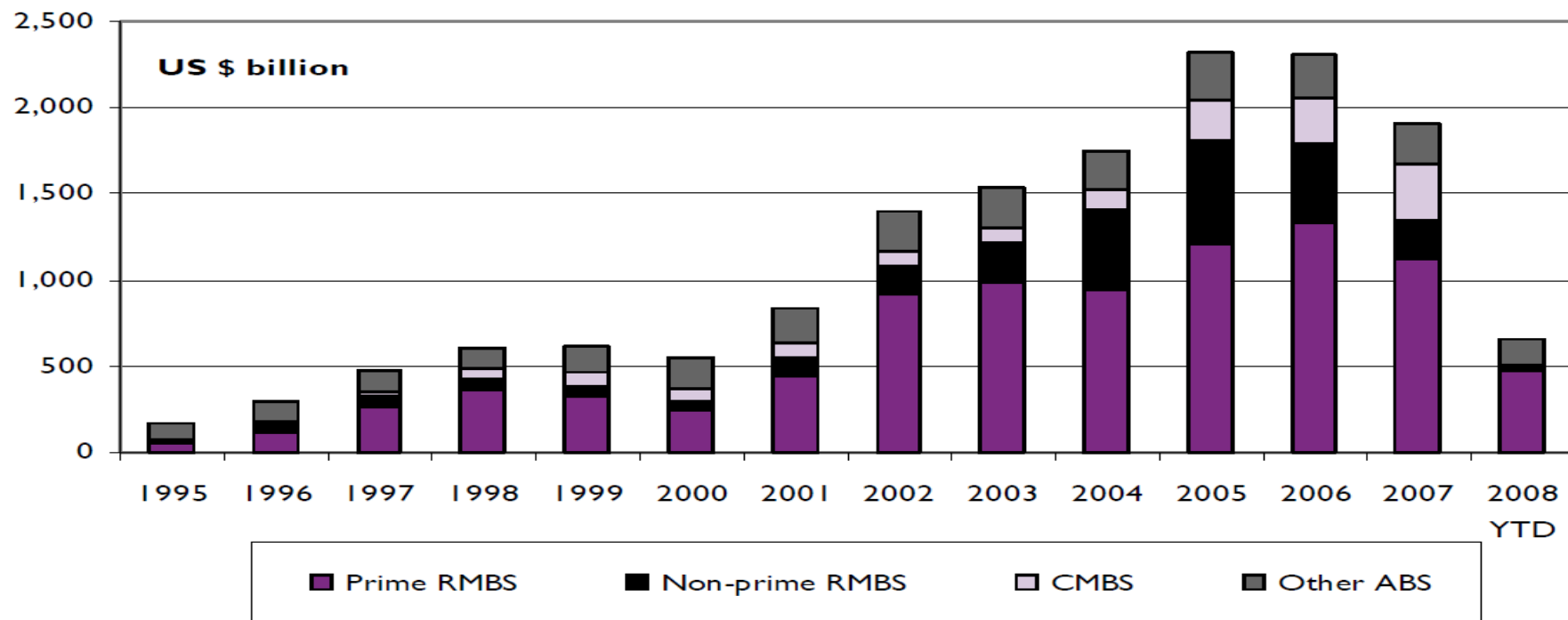
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Source: ISDA Market Survey (1987-1997), BIS Quarterly Review (1998-2009). Includes interest rate swaps and interest rate options.

Global issuance of asset-backed securities



Notes: Public issuance only. Full-year issuance except for 2008 which is up to and including September 2008. 'Other ABS' includes Auto, Credit Card and Student Loan ABS.

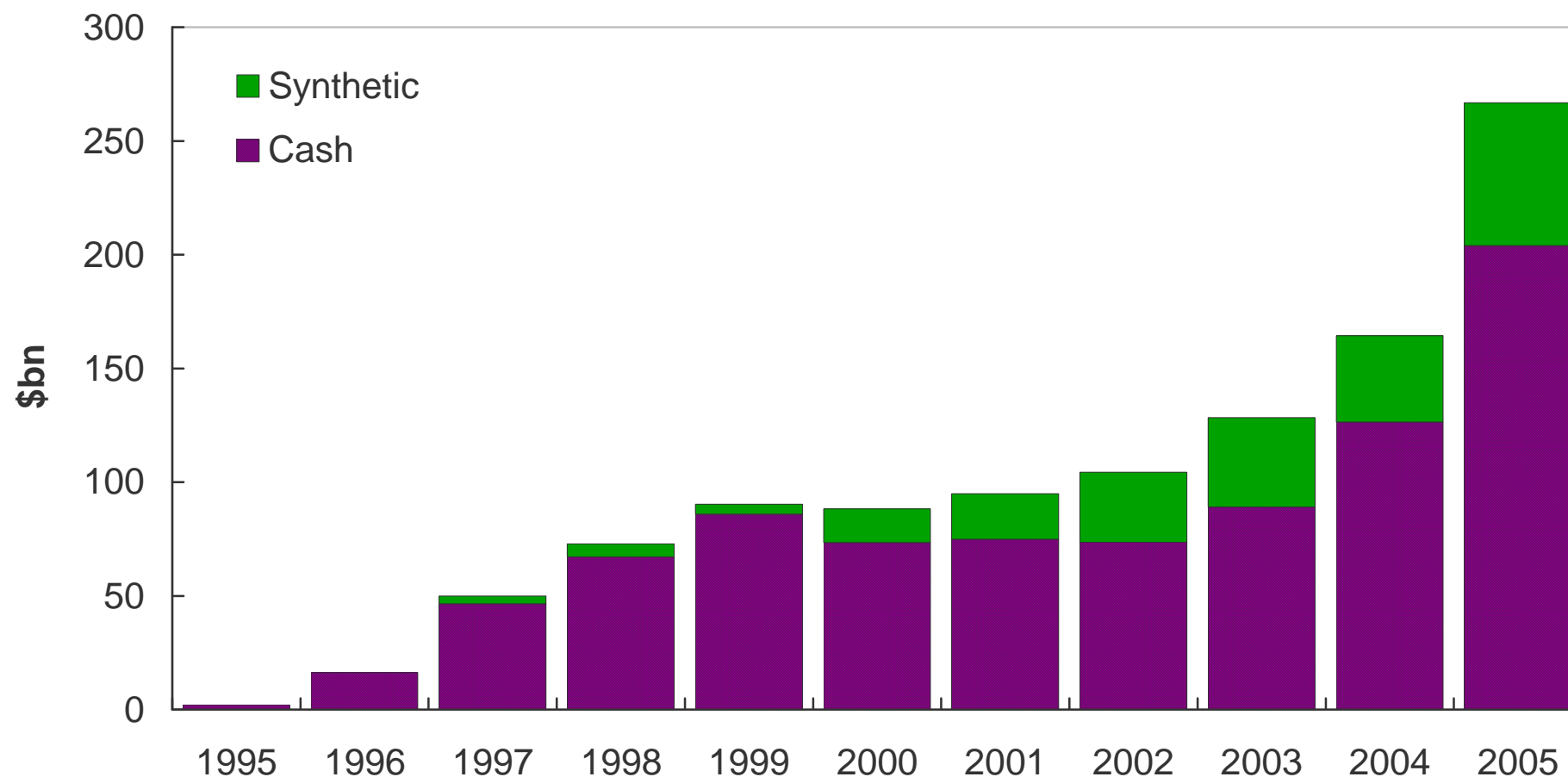
Source: Bank of England

Global credit derivatives outstanding



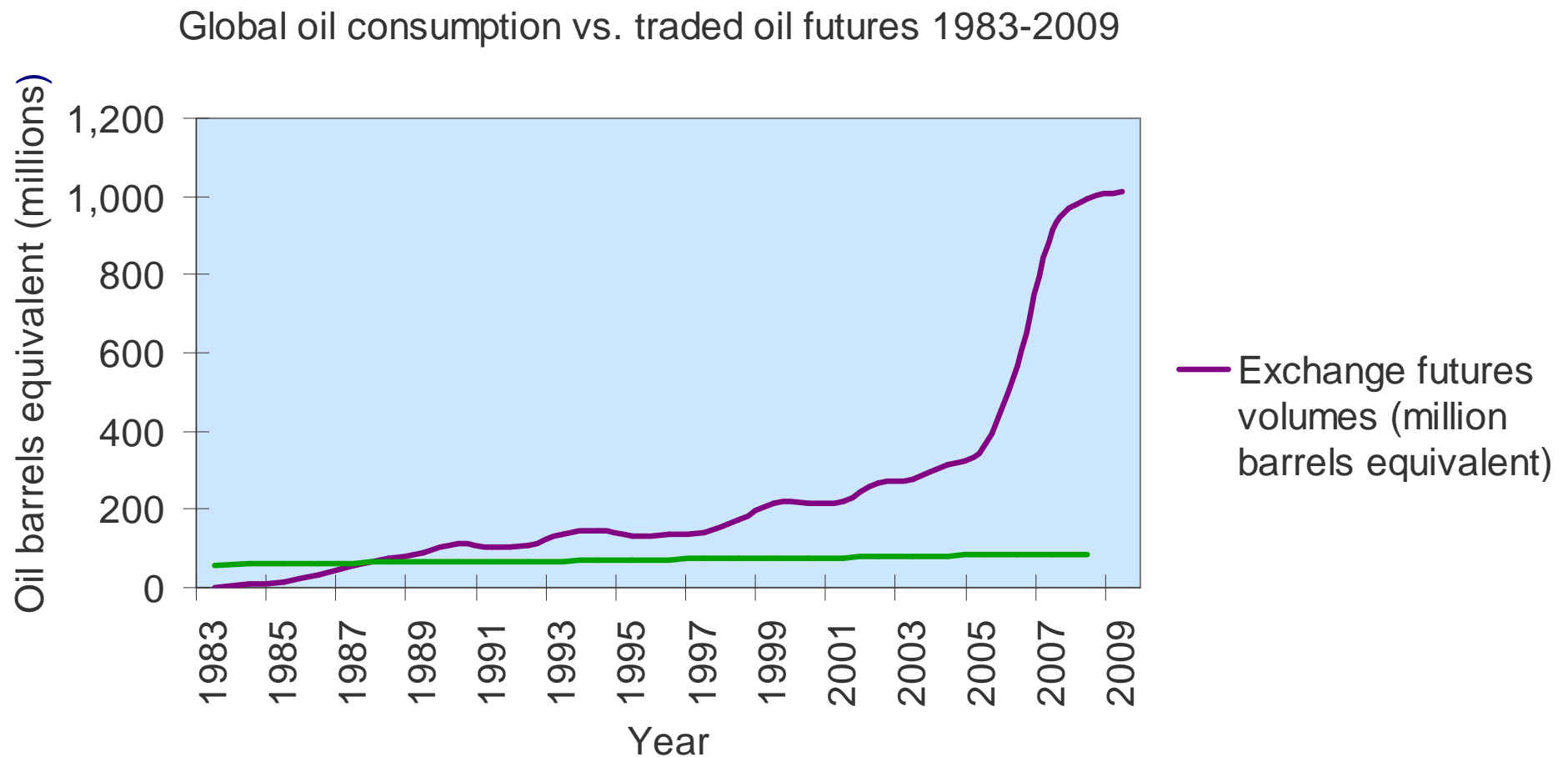
Source: ISDA Market Survey

Global issuance of Collateralised Debt Obligations: Cash and synthetic



Source: IMF Global Financial Stability Report, 2006

Global daily oil futures trading and daily oil production



Source: NYMEX

Complete markets as a route to...

... efficiency

Credit derivatives “enhance the transparency of the markets’ collective view of credit risks.. [and thus]... provide valuable information about broad credit conditions and increasingly set the marginal price of credit. Therefore, such activity improves market discipline”

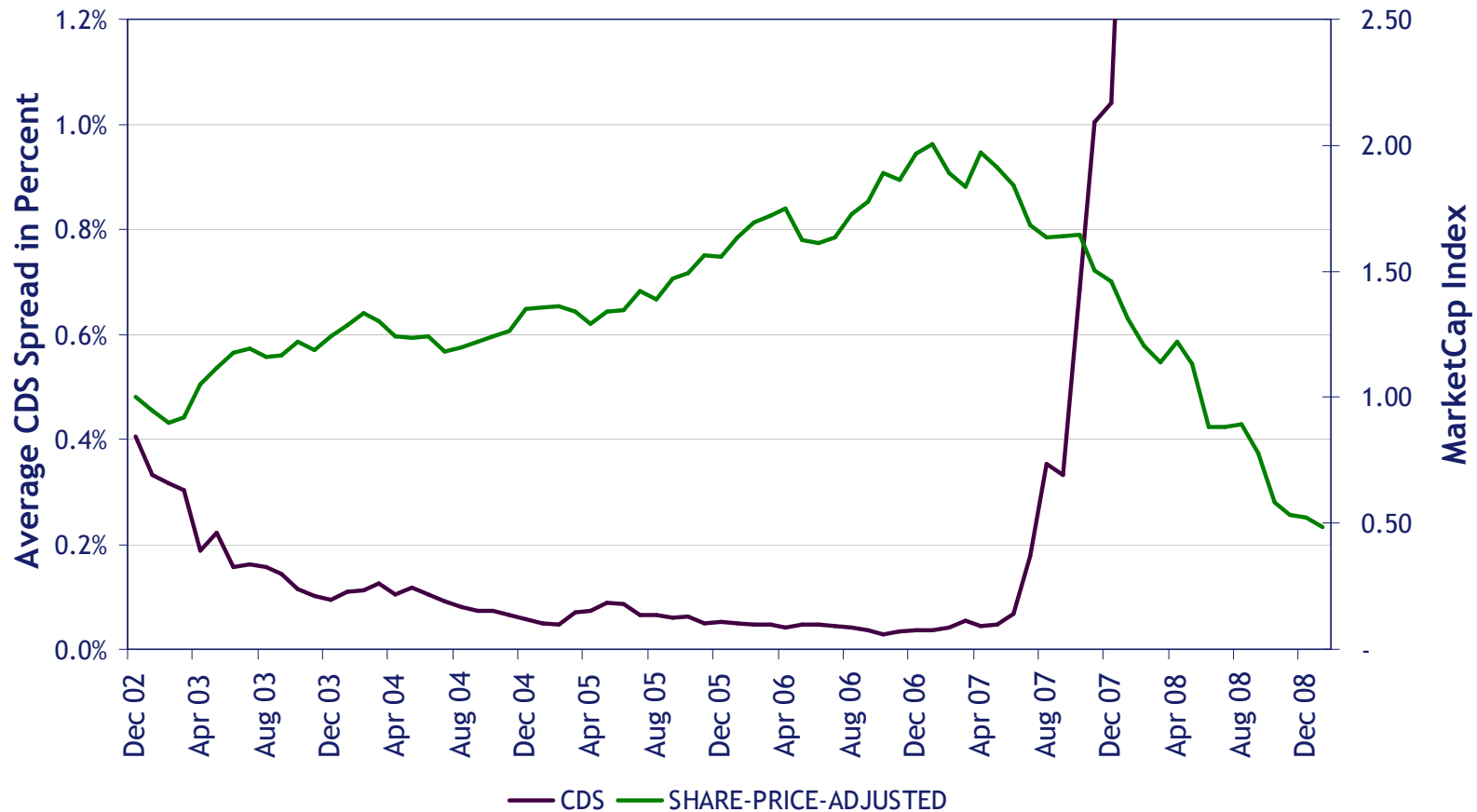
... and stability

“There is a growing recognition that the dispersion of credit risk by banks to a broader and more diverse group of investors has helped make the banking and overall financial system more resilient ...

The improved resilience may be seen in fewer bank failures and more consistent credit provision”.

IMF, Global Financial Stability Review, April 2006

Financial firms' CDS and share prices



Firms included: Ambac, Aviva, Banco Santander, Barclays, Berkshire Hathaway, Bradford & Bingley, Citigroup, Deutsche Bank, Fortis, HBOS, Lehman Brothers, Merrill Lynch, Morgan Stanley, National Australia Bank, Royal Bank of Scotland and UBS.

CDS series peaks at 6.54% in September 2008.

Source: Moody's KMV, FSA Calculations

Did financial intensification deliver...

Increased stability?

Clearly not

**Improved allocative
efficiency?**

❖ Argument by axiom

+

❖ Markets in general beat planned economies

Vs

❖ Instability itself generating misallocation

+

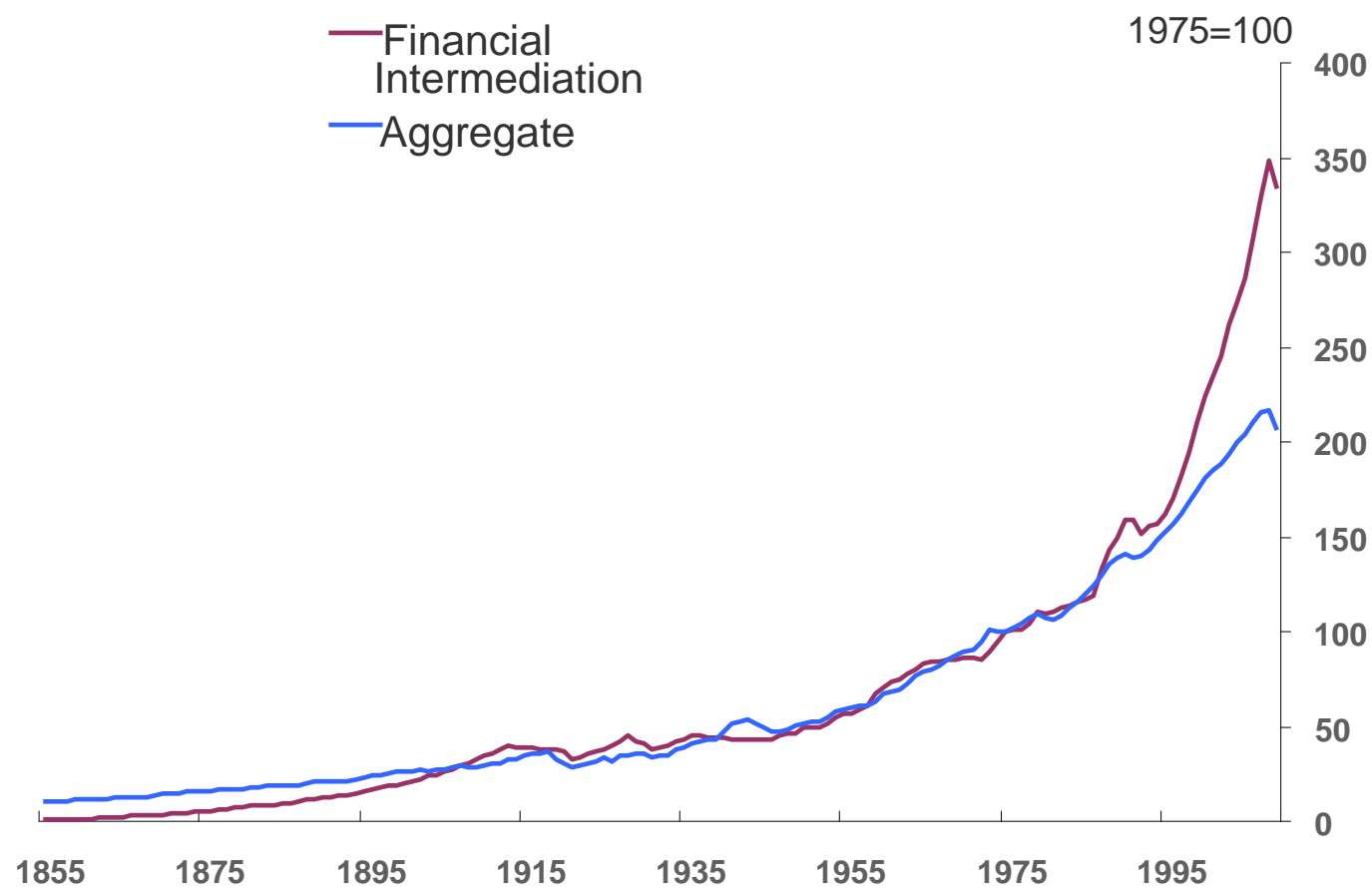
❖ Diminishing marginal benefits

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UK financial intermediation and aggregate real GVA



Source: Andrew Haldane, *The Future of Finance*, LSE Report, 2010)

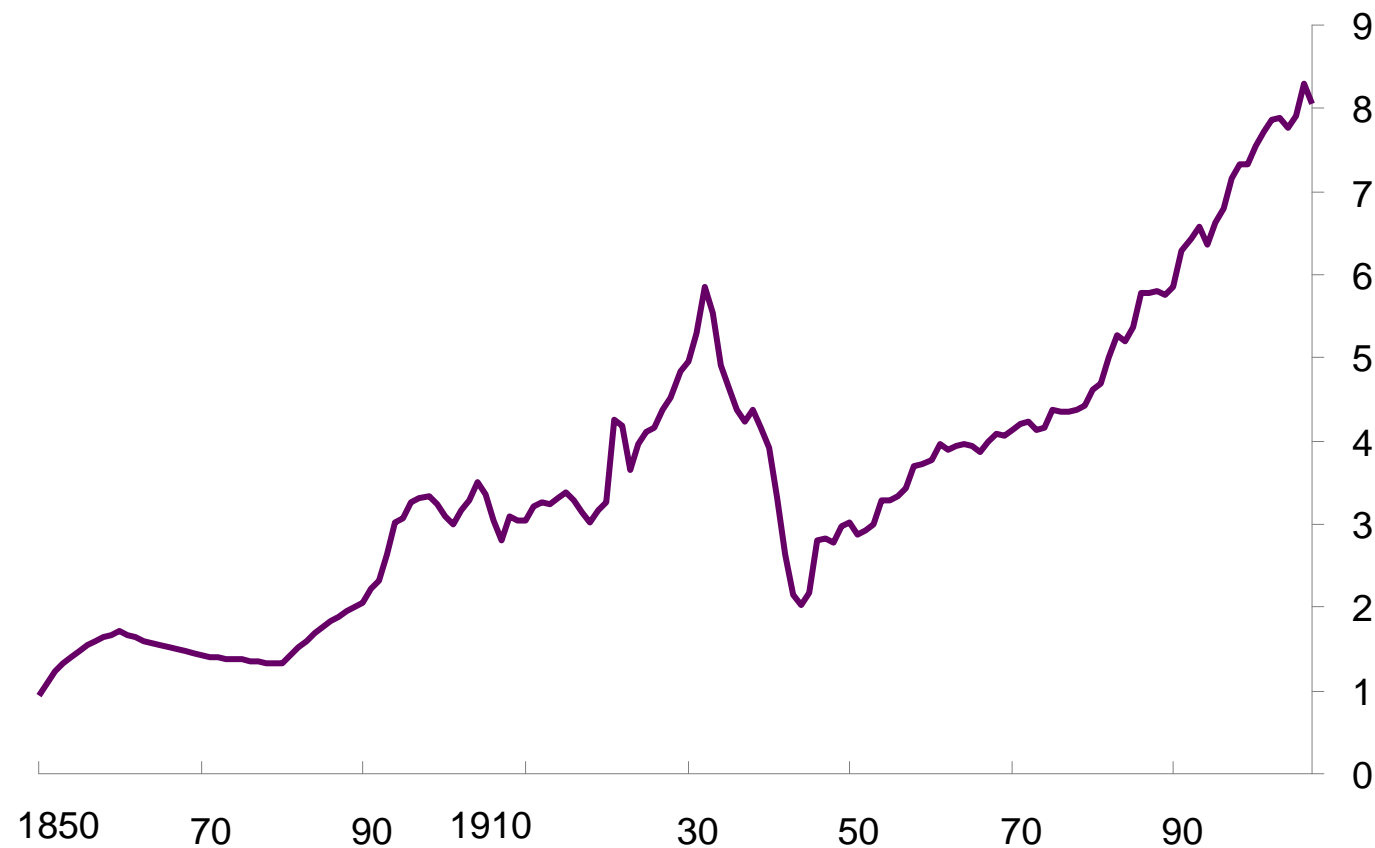
Average annual growth rate of financial intermediation

	GVA: Aggregate	GVA: Financial Intermediation	Difference (pp)
1856 – 1913	2.0	7.6	5.6
1914 – 1970	1.9	1.5	-0.4
1971 – 2008	2.4	3.8	1.4

Note: Real values

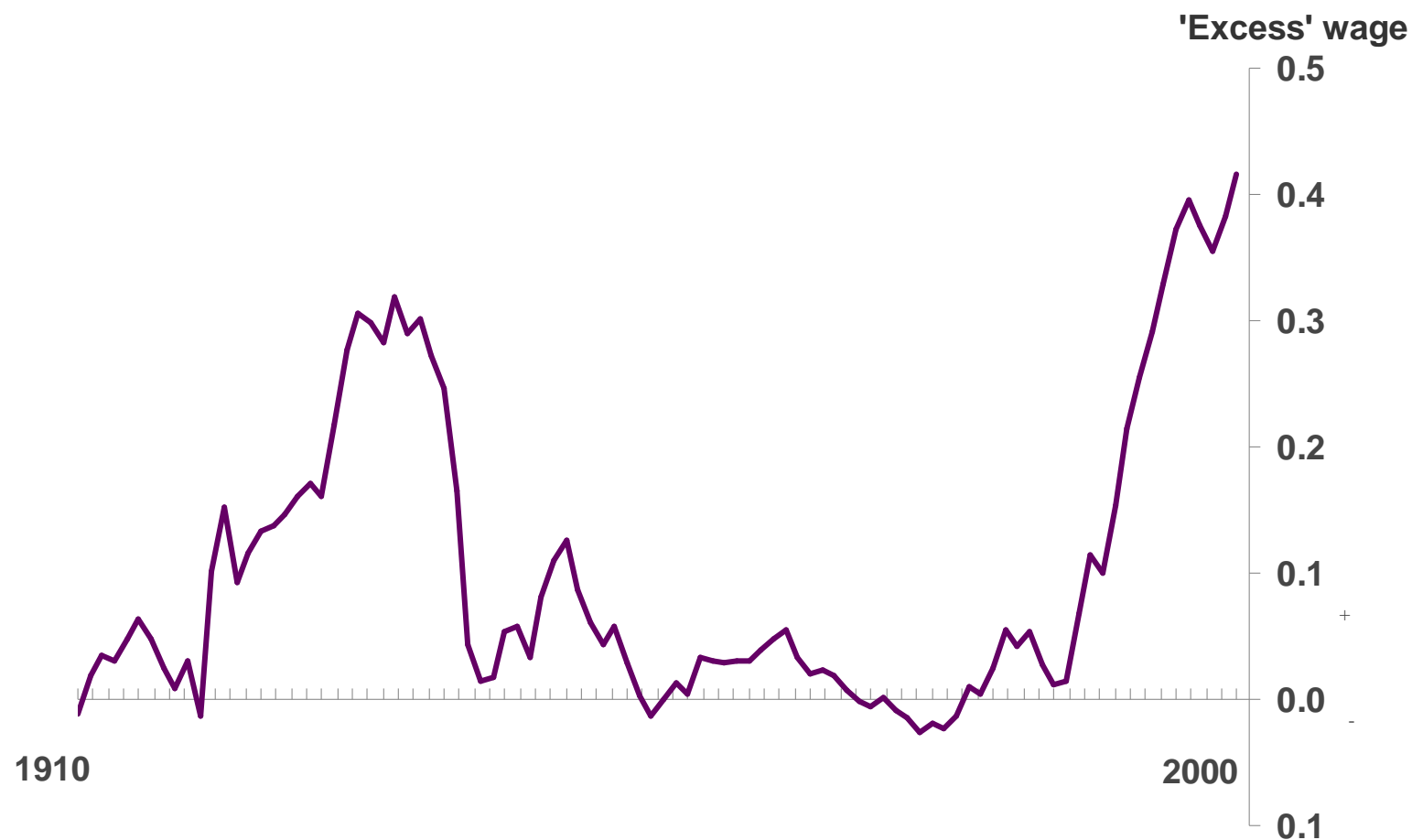
Sources: Office for National Statistics (ONS) and Bank of England calculations (as referenced by Andrew Haldane in *The Future of Finance* LSE Report, 2010)

Share of the financial industry in US GDP



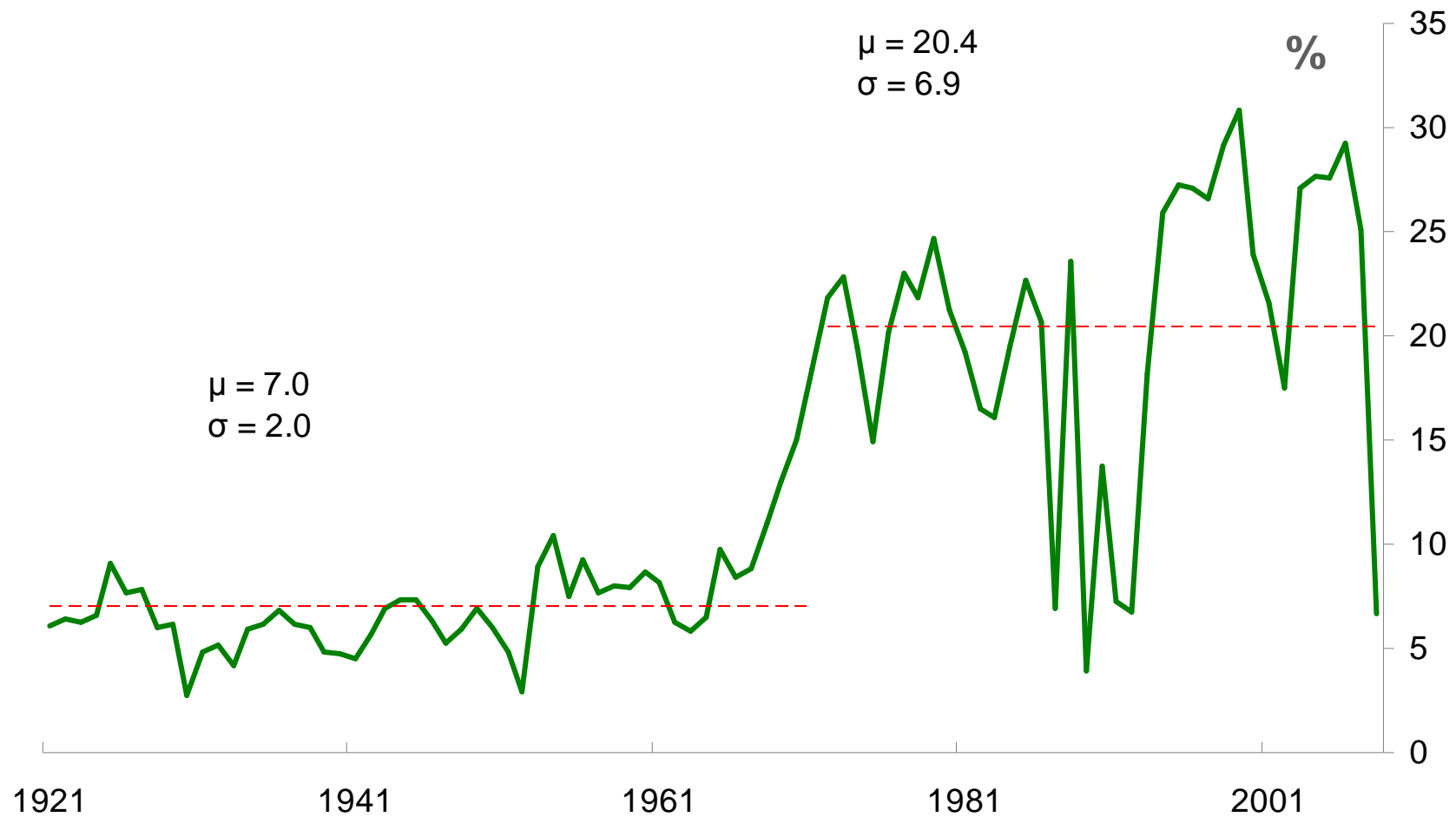
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Return on equity in finance



Sources: Capie, F. and Billings, M. (2004), BBA and Bank of England calculations (as referenced by Andrew Haldane in *The Future of Finance* LSE Report, 2010)

Increased financial sector factor incomes

Increase in the real value added functions performed within more complex and more global economies

OR

- ❖ Opacity of margin and asymmetries of knowledge and power
- ❖ Complex opaque put options
- ❖ Tax and regulatory arbitrage
- ❖ Creation of volatility – which non-financial sector needs to hedge

Why are some bankers paid so much?

Theory

- ❖ Highly skilled labour produces high marginal product
.... but will never receive wage higher than the social value delivered

Practice

- ❖ Mix of indirectly “creative” and purely “distributive” / “rent extracting” activities – private marginal product can diverge from social
- ❖ Measurability of (apparent) marginal product is key driver of pay levels

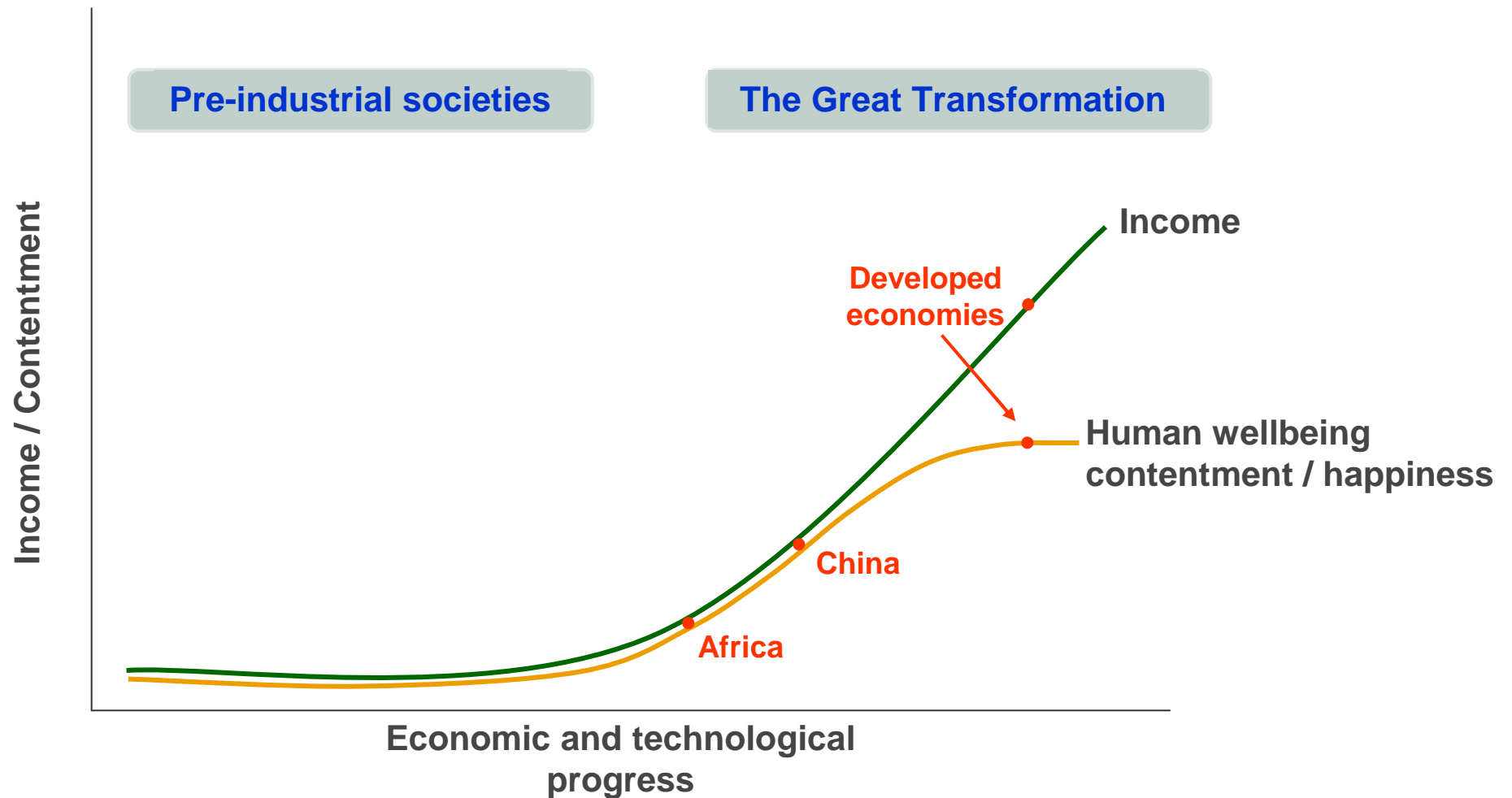
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Conclusions for policy and the discipline of economics

Conclusions

- ❖ All imperfect markets are different
- ❖ The benefits of financial market liberalisation differ by stage of development
- ❖ Stability matters a lot – minor increments of allocative efficiency, little
- ❖ Economics for the real world

Income and Human Contentment: Possible stylised pattern over time



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Economics for the real world

Implications for economics

- ❖ Human beings as they are
- ❖ Markets as they actually operate
- ❖ Economic history as key input
- ❖ Complex and multiple understandings
 - No all-encompassing model

Robert Lucas, *Professional Memoir*

“I prefer to use the term ‘theory’ ... [as] something that can be put on a computer and run... the construction of a mechanical artificial world populated by interacting robots which economics typically studies”

Professional Memoir, Page 21, 2001

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