

The impact of technology on currency and banking markets: an historical perspective

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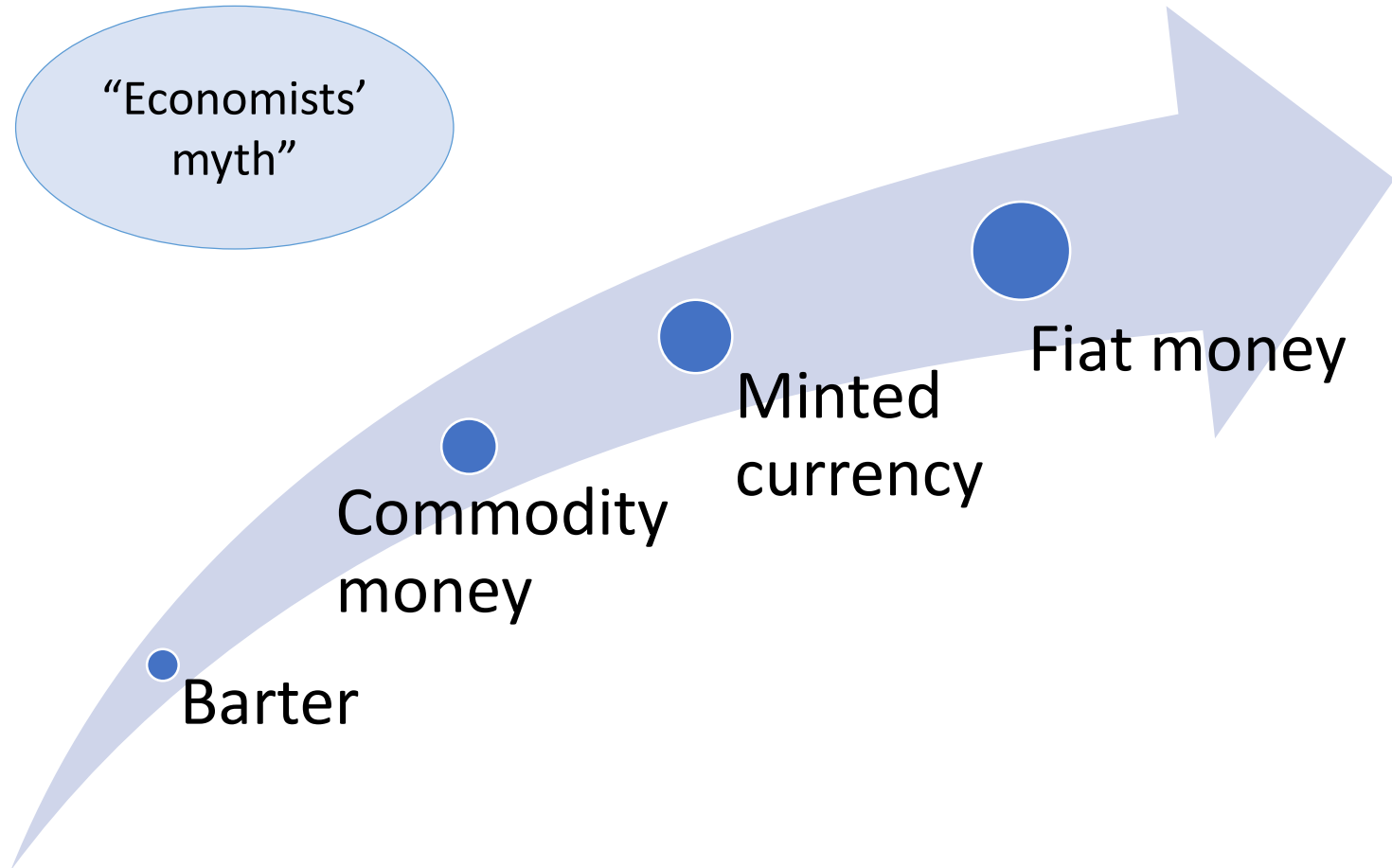
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Michael Lewis's *Big Short*

Ryan Gosling explains credit tranches and CDS



Stadial history of money



Technology of minted currencies

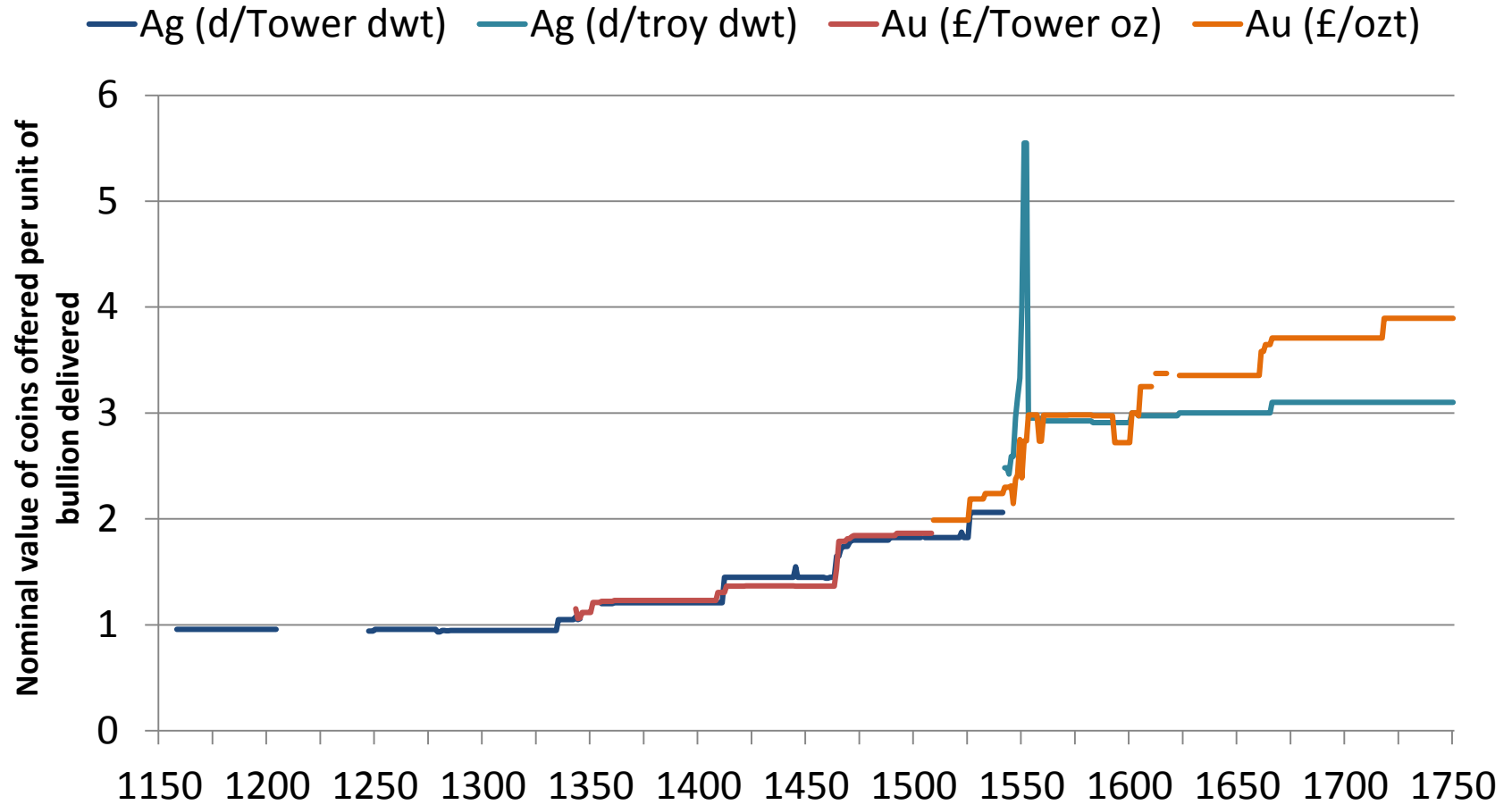


Numismatic
scholarship

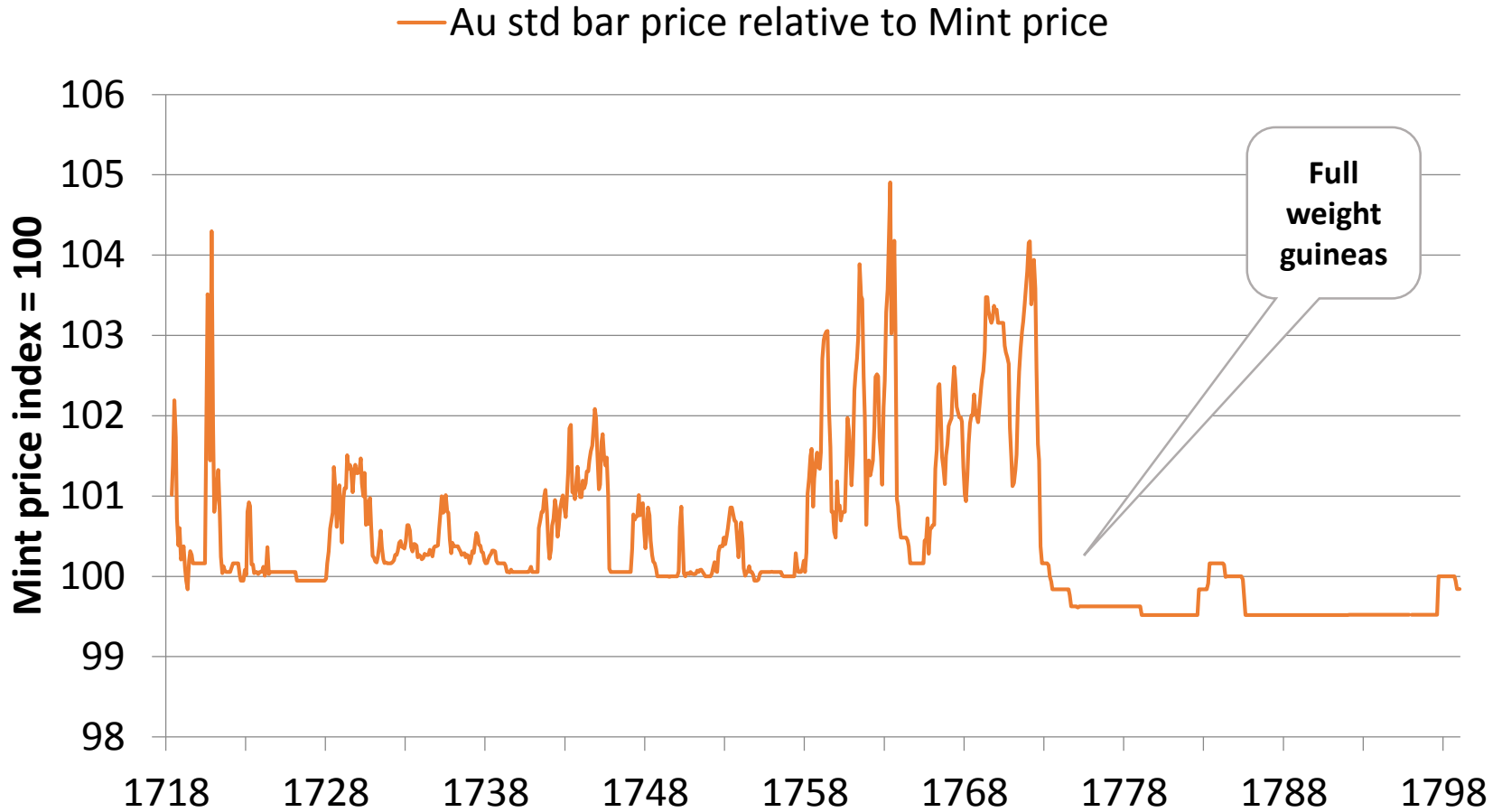
Currency with portable collateral:

- Discovery of bullion reserves and their transport, e.g. Potosi
- Refining and metallurgy (furnaces)
- Assaying of bullion (fineness)
- Hammered coins between dies
- Mill press from 17th C, milled edges (counter clipping)
- Matthew Boulton's Soho Manufactory (steam mills) from 18th C
- Steam press and steel collars (token coins without counterfeits)

Mint price - key macroeconomic policy variable



Posted mint price - cap and collar on bullion prices



Transactions and their settlement

Epistolary
banking

- Medieval marketplace
 - Unit of account (£ s d)
 - Bills, promissory notes and coin (mostly by tale within the realm)
 - Declarations of conveyances (collective memory)
- Shop ledgers, goldsmith bankers
 - Journal entries and signatures
- Book-entry banking (clearing banks)
 - Current accounts, cheques, clearing and net settlement
- Distributed ledger technology (DLT)
 - Blockchain (2008)

Evolution, not
revolution?

Print technologies, literacy and financial markets

15th C

Printing press (Caxton, 1476)

Literacy

- Latin versus vernacular languages

Late 17th/ 18th C

Gazettes and pamphlets

- Public financial markets/price dissemination

Britain's first financial revolution (1690s)

- Stocks, shares, bullion, commodities

**Fiscal-
military
state**

Authenticated paper money

- Intaglio printing
- Refracted ink colours
- Silver strips and foil threads or patches
- See-through windows
- Ultra-violet/fluorescent strips
- Watermarks
- Holograms
- Polymer notes

Energy conversion technologies

19th C

Coal/steam power

**Late-19th C
globalisation**

20th C

Petroleum/ICE etc.
Grid electrification

Bill on London/
cross-border
correspondent
banking

21st C

Mobile electrification (batteries)
Nuclear/renewables (?)

Electronic communication technologies

19th C Telegraph (cable/fx market)

20th C Telephone
 Television

21st C Internet/digitalisation
 Mobile telephony
 Big data ?

2nd financial revolution?

- Alt-coins
- Fintech
- Challenger banks
- Non-bank lenders

Vertically integrated banking of 20th C

Inland bills peak in
mid-19th C

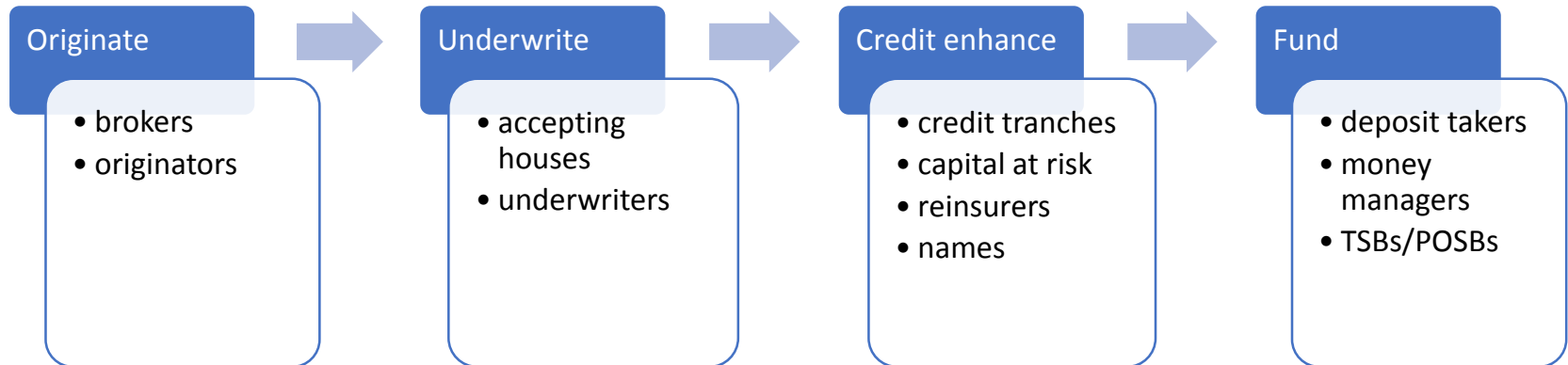
Inland correspondent
banking between
country banks and
London banks

Amalgamation
movement
of late 19th C

VIBs – ‘Big 4’ clearing
banks in England

- Branch banking
- Cheque clearing
- Overdrafts/working
capital finance

Lowell Bryan's *Breaking Up the Bank* (1988)



**Failure of ABS
markets in
2007-8**


Bryan's model plus a resilient money market

Properly drawn bill

- 'Clausing'/real bills
- Assignment trail
- Liability of acceptors and endorsers
- Monitoring by Discount Office, Bank of England

Qualifying ABS


- Disclosure regime
- Real-time reporting
- Limits on re-financing risk



Big data disclosure
(including transaction
trail)

Fintech success

- Challengers must disrupt vertically integrated banking
- Success depends on the break up of the banks
- Bryan provided a model ...
- But it needs a resilient money market
- Forget one without the other



Mini-VIBs
won't work

Shameless plug ...

Respectable Banking

The Search for Stability in London's
Money and Credit Markets since 1695

Anthony Hotson

