

The Amsterdam Market as derivatives pioneer, 1602-1689

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What are derivatives ?

- **Forward contracts**
 - **Buying and selling for future delivery**
- **Futures**
 - **Standardized forward contracts**
- **Options**
 - **Rights to buy or sell at a set price during a set period**

Origins of derivatives markets

- **Modern roots in CBOT contracts, 1865**
- **First comprehensive descriptions 1687-1688 :**
 - **Brochure Muys van Holy advocating taxation**
 - **Joseph Penso de la Vega, *Confusion***
- **Both show fully developed market by 1680s**
- **When and where did derivatives develop ?**

Prerequisites of derivatives markets

- 1. Price fluctuations**
- 2. A commercial object of recognizable standard qualities**
- 3. Standardized forward contracts**
- 4. Organized clearing, preferably also taking care of counter-party risks**
- 5. A substantial public willing to hold paper claims**
- 6. A suitable regulatory climate**

Forward trading

- **Common in early-Modern commodity markets :**
 - **Production and trade tied to seasonal cycles**
 - **Harvests very uneven**
 - **Supplies unpredictable :**
 - **Shipping hazards**
 - **Endemic wars create erratic demand patterns**
- **Product quality varies greatly**
 - **Trade limited to hedging by direct participants**
 - **No basis for futures and options**

Conditions for futures trading

- **Limited liability companies**
 - **Origins in part shipping, which establishes :**
 - **Limited liability**
 - **Transferability of shares**
 - **A growing public of investors**
- **VOC charter, 1602 :**
 - **Creates 6.8 million guilders' worth of shares**
 - **Confirms company law principles**
 - **Finds eager public to take up shares**

Conditions of futures trading

- **Forward trading built into the VOC charter**
 - **Subscriptions paid in four annual installments**
 - **Administrative chore of transfer puts premium on paper deals tied to clearing**
- **Huge profits boost speculative buying**
- **Shares find a ready market :**
 - **Speculative trading begins immediately in 1602**
 - **Market keen to use shares as loan collaterals**

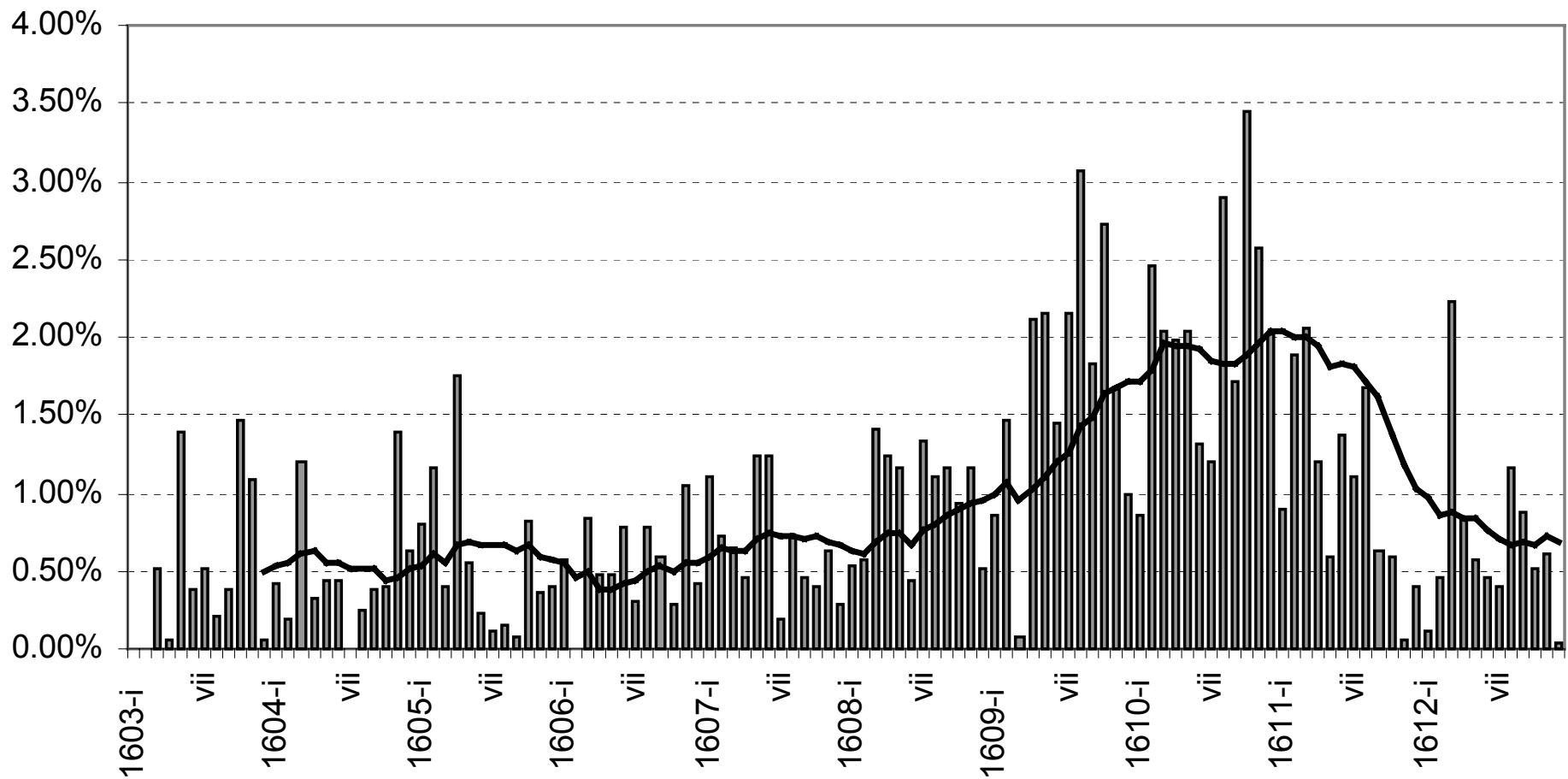


Figure 3. Monthly transfers of shares of the Amsterdam Chamber of the VOC, calculated as a percentage of the total stock of capital, 1603-1612 (with 12 months' moving average)

Source: ARA 1.02.04 VOC No. 7066

The dawn of futures trading

- **Securities trade geared to provide liquidity**
- **Market quickly develops allied techniques :**
 - **Lombarding shares**
 - **Repo trading**
 - **Margin trading**

The dawn of futures trading

- **Forward trading rapidly established :**
 - **Separate prices for cash and forward trade**
 - **A fully documented bear syndicate, 1609**
- **Regulatory climate permissive :**
 - **Estates ban forward trading of VOC/EIC shares**
 - **Securities traders counter, upholding benefits**
 - **Bans not upheld by prosecution, so to no avail**
- **Liquidity paramount, so early switch to futures likely**
- **No documentation available as yet**

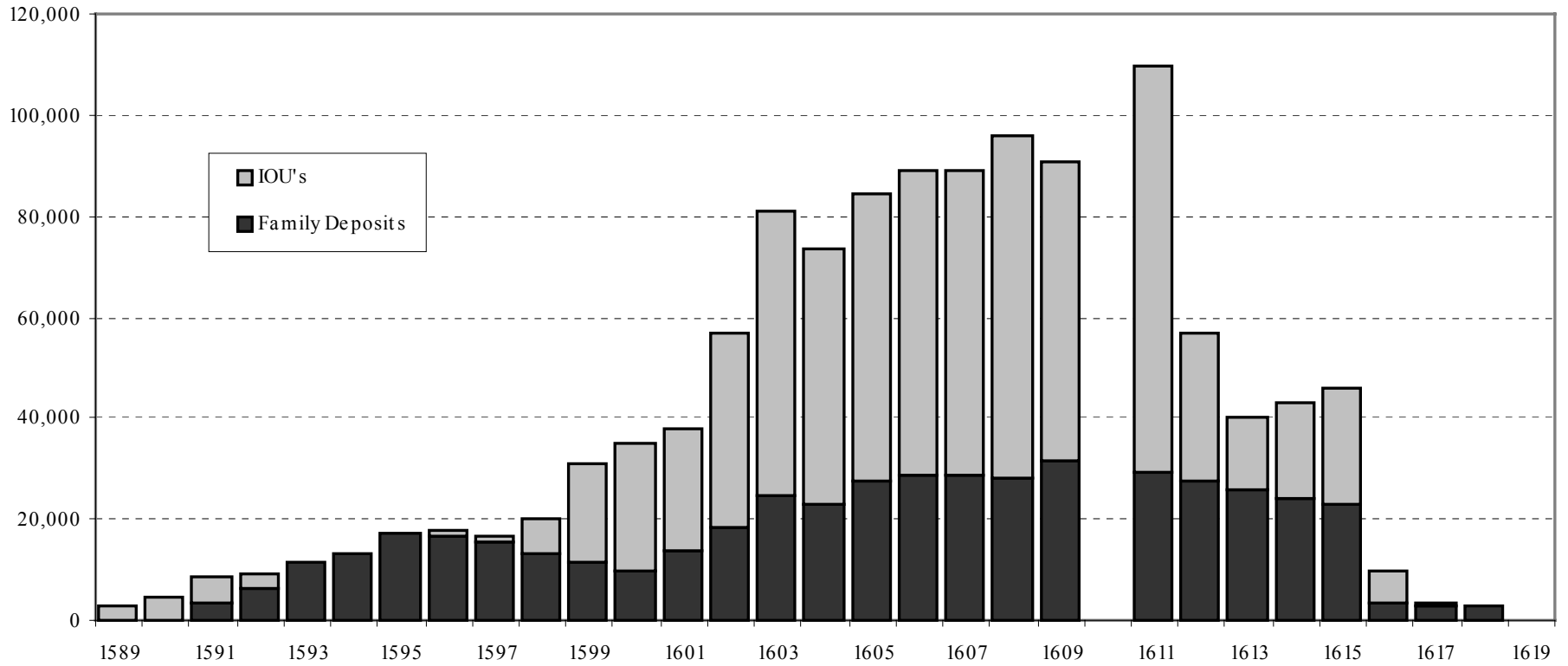


Figure 2. Funds borrowed by Hans Thijs (1589-1611) and his heirs (1612-1619) from family members, and funds raised through sales of IOUs (annual averages)

Source: BT 119 Business Ledgers Hans Thijs (1589-1609)

From forwards to futures

- **From 1609, new building offers better trade facilities :**
 - **Regular hours, some regulation**
 - **Fixed meeting points for traders**
 - **Offices for business meetings**
 - **Bookshops for stationery**
- **WIC (1621) adds another 6.6 million guilders of shares, rising to 18 million in 1629**
- **New company very volatile, thus a natural speculation target**
- **Futures appear during 1630s, possibly earlier**

From forwards to futures

- **From 1611, new building offers better trade facilities**
- **WIC (1621) adds another 6.6 million guilders of shares, rising to 18 million in 1629**
- **New company very volatile, thus a natural target for hedging and speculation**

From forwards to futures : tulips

- **The tulipomania, 1636-1637 :**
 - **Mostly described in terms of moral condemnation or folklore of madness**
 - **Trading limited to provincial production centres :**
 - **Evidence of keen investors crowding in**
 - **Probable transfer of Amsterdam trading customs**

From forwards to futures : tulips

- **Trade customs show derivatives techniques :**
 - **Trading by weight, not in specified bulbs**
 - **Trading done in clubs**
 - **Bookkeeper tracks trade in ledger**
 - **Referees adjudicate the deals**
 - **Board levies commission over deals :**
 - **For costs and drinks**
 - **Probably also for assuming credit risk**
- **Lack of market coordination reason for overheating**

When did options first appear ?

- **Until now, tentatively dated to period 1650-1680**
- **Necessary preconditions fulfilled by mid-1630s :**
 - **Suitable vehicles**
 - **Market conditions**
 - **Standardization of contracts**
 - **Necessary organization**
 - **Keen investors**

When did options first appear ?

- **During 1640s, securities trade very buoyant :**
 - **City council halves brokers' commissions**
 - **VOC shares rise from 200-300 to over 400% of par, so transactions cost 12,000 guilders or more**
 - **WIC plummets from about 100 to 16% of par**
 - **Market thus favoured new ways of trading :**
 - **Cheaper ways of to profit from high prices**
 - **Simple expedients to limit risk**
- **Ergo options are likely to have been introduced during 1640s**

Conclusions

- **Unique conditions turned Amsterdam into the cradle of modern derivatives :**
 - **Modern joint-stock principles**
 - **Keen market conditions**
 - **Suitable legal framework**
- **Step from forwards to futures by 1635, probably earlier**
- **Options during 1640s, possibly earlier**
- **Proofs lie waiting in the archives**