Risk management and its consequences at the Paris Bourse in the XIX century

Angelo Riva
European Business School-Paris &
Paris School of Economics

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Counterparty risk and its consequences

- Policy debate: organization of exchanges

  – In US, ATS Reg., RNMs Reg., Frank Dodd Act, etc…

  – In Europe, MIFID directive, EMIR directive, etc…

Main issues

- From a microstructure point of view:
  - Counterparty risk
  - Transparency
- From a “macrostructure” point of view (Pirrong , 2000)
  - Consolidation vs. Fragmentation of orders’ flow

Historical Perspective

- Paris Bourse: 2nd largest world Stock Exchange in the 19th Century (after the London Stock Exchange):
  - 1913 market cap = 3.6 * GDP
  - 1913 domestic stocks cap = 0.6 * GDP
  - 1906 traded volumes = 3.5 * GDP
- Paris Bourse: primarily a derivatives market (forward and options contracts) from its (re)foundation (1802) onwards
  - Legal monopoly
  - Number of (pure) brokers established by law (capacity constraints; organization helps to some extents)
  - Unlimited liability

Counterparty risk

- Problem of Counterparty Risk was chronic
- Solution: Common Fund to provide mutual guarantee (1822)
  - Financial crisis in 1818: brokers fail, counterparty risk

Counterparty risk

- Moral hazard problem
- Solution: tough regulations and monitoring
- 19th century brokers on the Bourse resist to the Stock Exchange Committee:
  - Tough rules lower returns of the brokers on the exchange
    - Price of the seat (‘controlled “ but high);
    - Regulatory burdens
  - Tough rules create scope for OTC market: challenged monopoly
    - From 1830s: Enormous increase in the demand for exchange services leads to birth of (illegal) OTC market
    - Canals, railroads, utilities, French and foreign public bonds, and some manufacturing firms

Two well differentiated exchanges throughout the all 19th century

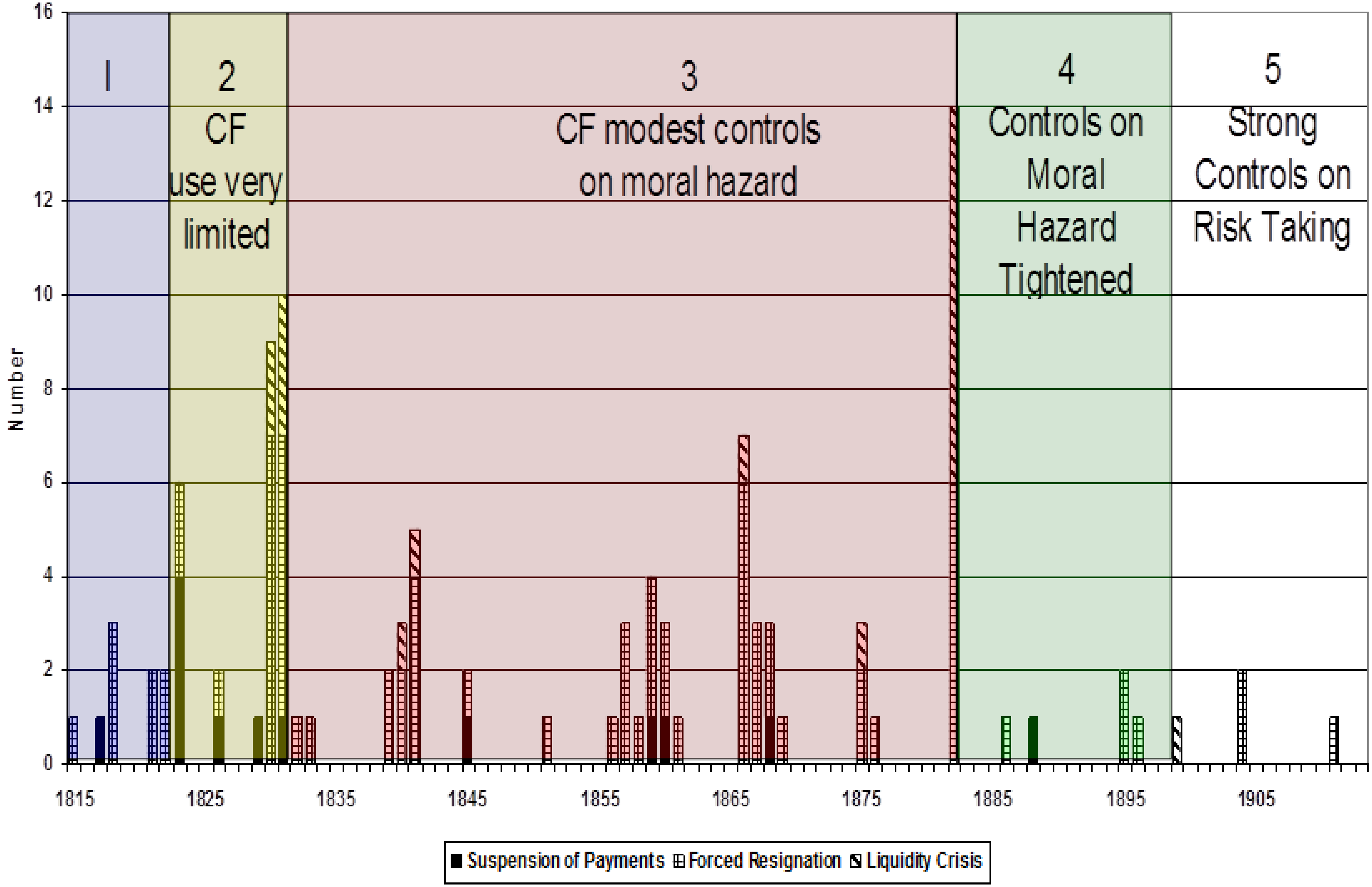
- Heterogeneity of both microstructures and operators implies specialization
  - Paris Bourse dominant in the French private securities
  - Paris Bourse dominant in the spot market
- Competition at the margin:
  - Derivatives trading of highly liquid foreign and French public bonds…the more profitable segment
    - International arbitrage

1882 crisis

- A boom in France:
  - Investors’ learning about securities after Emprunts de Libération (1871 and 1873): 20% 1873 GDP
  - economic growth; Freycinet plan
  - Creation and growth of new banks (new aggressive commercial practises + press) and “caisses de report” (banks working on repo market)
    - The Union Général (1878)
  - The heyday of the regional markets (Lyon, headquarter of the UG)
- 1882: most severe financial crisis of the XIX century (Le Bris, 2010)
  - Paris official market + Paris OTC market + Lyon Stock Exchange: collapse
  - Central bank bails out the Paris Official market… (aware of moral hazard issue)
  - OTC… a couple of years later, reemerges as a « financial Phoenix »
  - Lyon: struggle for the survival

After 1882

- After 1882, Paris Bourse new “significant” regulations to limit moral hazard



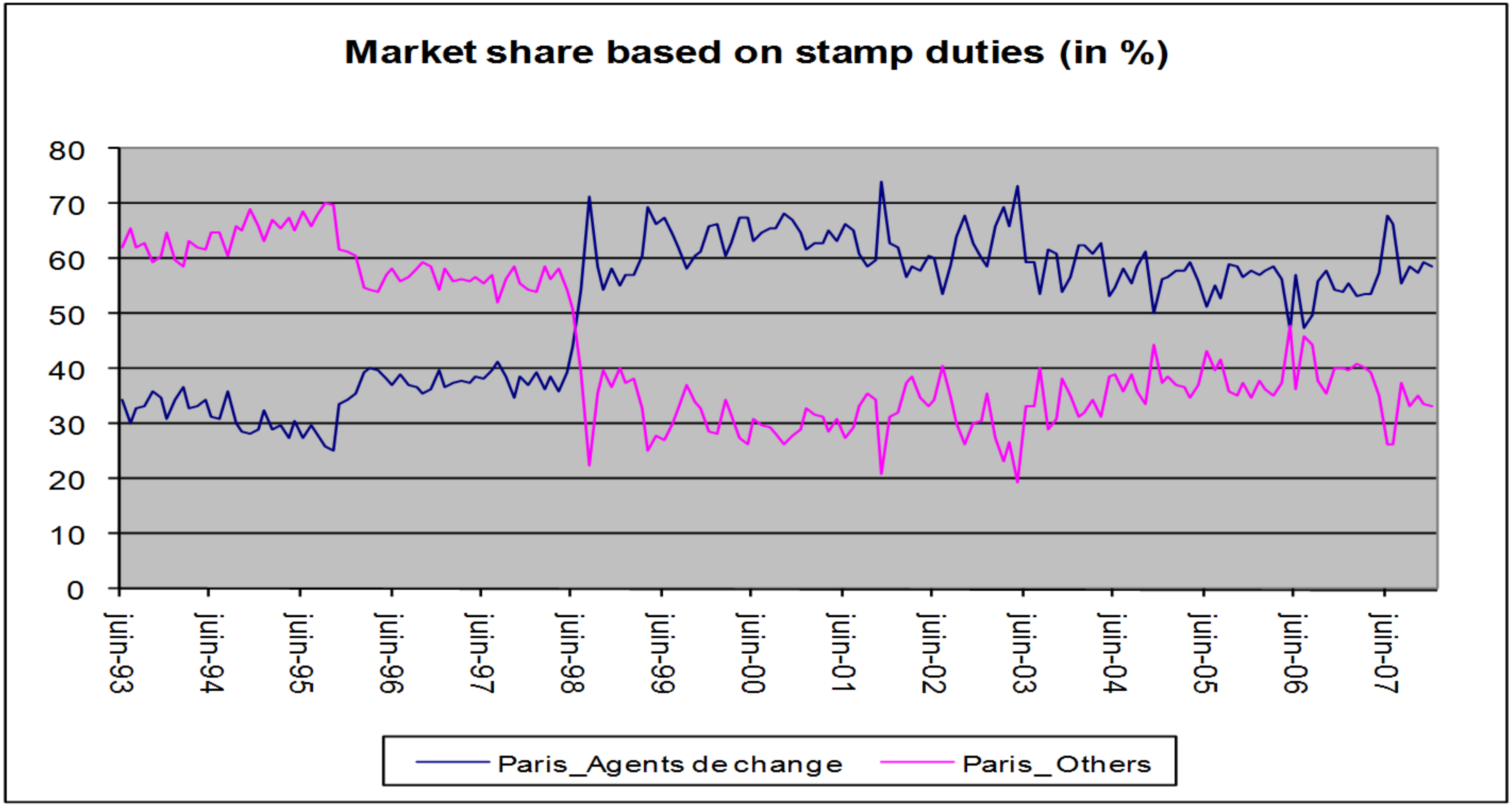
After 1882

- BUT: the Official market loses business to the OTC market
  - OTC: 2/3 of the Paris traded volumes at the beginning of the 1890s.
- Debate on organization of stock markets in France
  - Banks and bankers: why should we pay monopolistic rents…? The Bourse first collapsed (no safe heaven) and then too heavily regulated … May be free market is better…
  - The French government enters their views

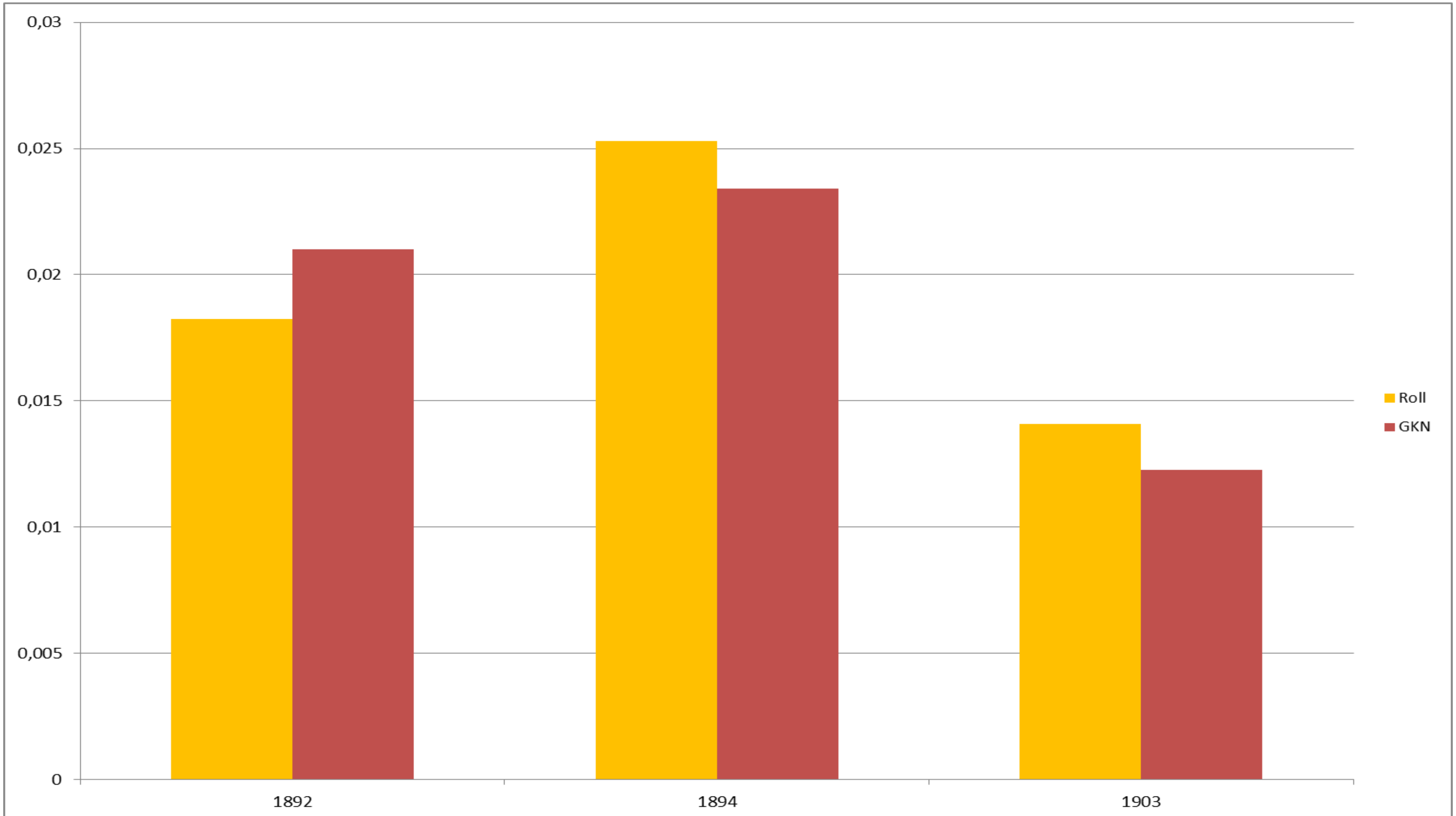
Experiments in market organization

- The 1893 liberalization through taxation…
  - Any market operator allowed to pay FTT on listed securities
- 1895-6: gold mines boom and bust in the OTC market… Official market not involved
- The government changes its mind: monopoly enforced through taxation in 1898
  - Only official stockbrokers allowed to pay FTT on listed securities

Empirical question : what is the impact on market quality of regulations affecting the degree of competition among exchanges?

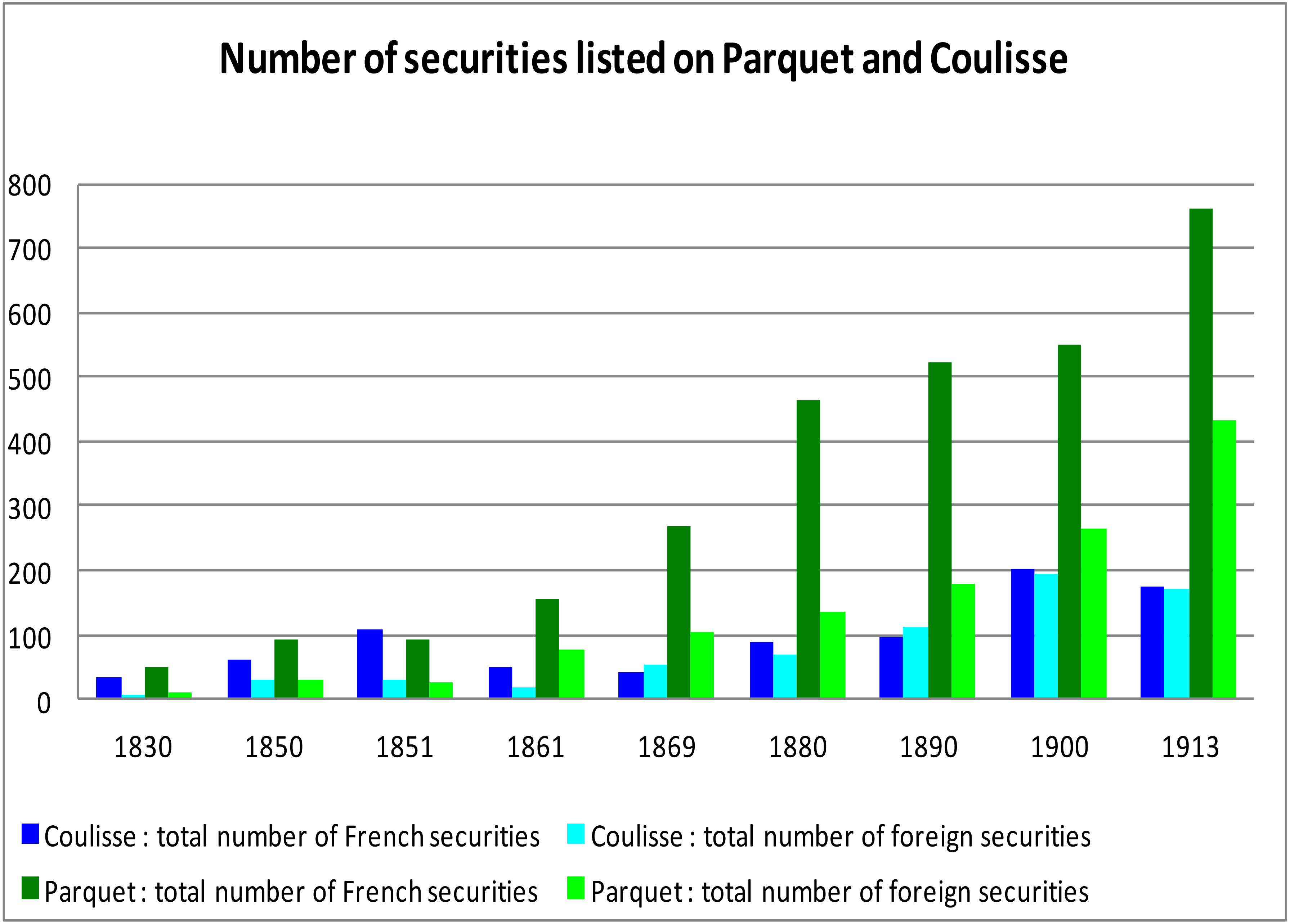


Market touch in Paris



Market quality

- Spreads regressions: significant institutional dummies
  - Market
  - Years: Year_92; Year_03
- Informational efficiency
  - Engel-Granger (ADF)
    - Co-integration more frequent in 1894 compared to 1892 (positive impact of 1893 deregulation); but not very lower in 1903 compared to 1894 (little negative impact of 1898).
  - Granger causality test
    - Causality runs from Coulisse to Parquet (mostly for cross listed securities and forward market, as expected);
    - Exception : Parquet dominates the spot market for stocks (as expected);


Number of securities listed on Parquet and Coulisse
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700
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500
400
300
200
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1890
1900
1913
Coulisse : total number of French securities
Coulisse : total number of foreign securities
Parquet : total number of French securities
Parquet : total number of foreign securities

Traded volumes

- 1892
  - GDP: 22.9 bl
  - France: 5*GDP
  - Paris: 4.8*GDP
  - Paris Bourse: 1.5*GDP
  - Paris OTC: 3.3*GDP
- 1906
  - GDP: 28.5 bl
  - France: 6.1*GDP
  - Paris: 5.8*GDP
  - Paris Bourse : 3.5*GDP
  - Paris OTC : 2.3 GDP

« London » counting

Carsten's broker sells to Angelo's broker 100.000 FF of Air Liquide shares
Angelo's broker buys from Carsten's broker 100.000 FF of Air Liquide shares

Here, traded volumes = 200.000 FF

as in London where tipically Carsten's broker sells to a jobber and Angelo's broker buys from a jobber

Conclusions

- Overall, co-existence of two markets differentiated markets is positive for the Paris financial center: specialization and competition at the margin
- (Mis)Management of counterparty risk in the Official market imposes tough regulations, creates scope for removing monopoly
- Effects of the reforms
  - 1893
    - Reinforces the dominance of the Coulisse
    - Makes the Paris financial centre more efficient in terms of cointegration
    - Increases transactions costs (spreads)
    - Stability?
      - Short term: it likely facilitates the gold mines' bubble
      - Long term: we do not know (end after 5 years)… but, after the 1896 crash, transactions stagnate up to 1898
  - 1898
    - Substantial decrease in transactions costs
    - Growth of the market as a whole… listing, volumes…
    - Stability? 1907 crisis is not a big problem in Paris… dramatic in London and NY…

Thank you!

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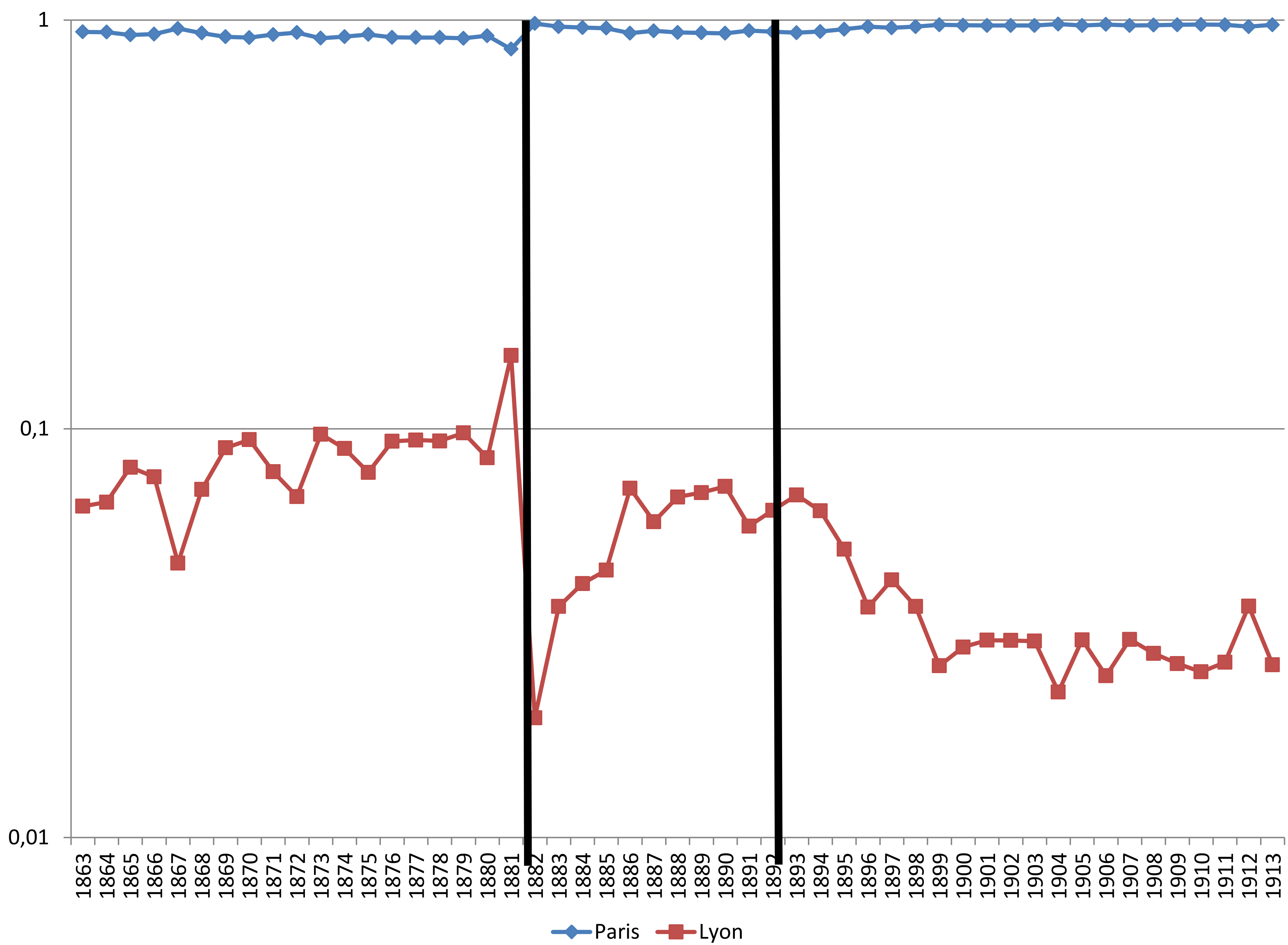
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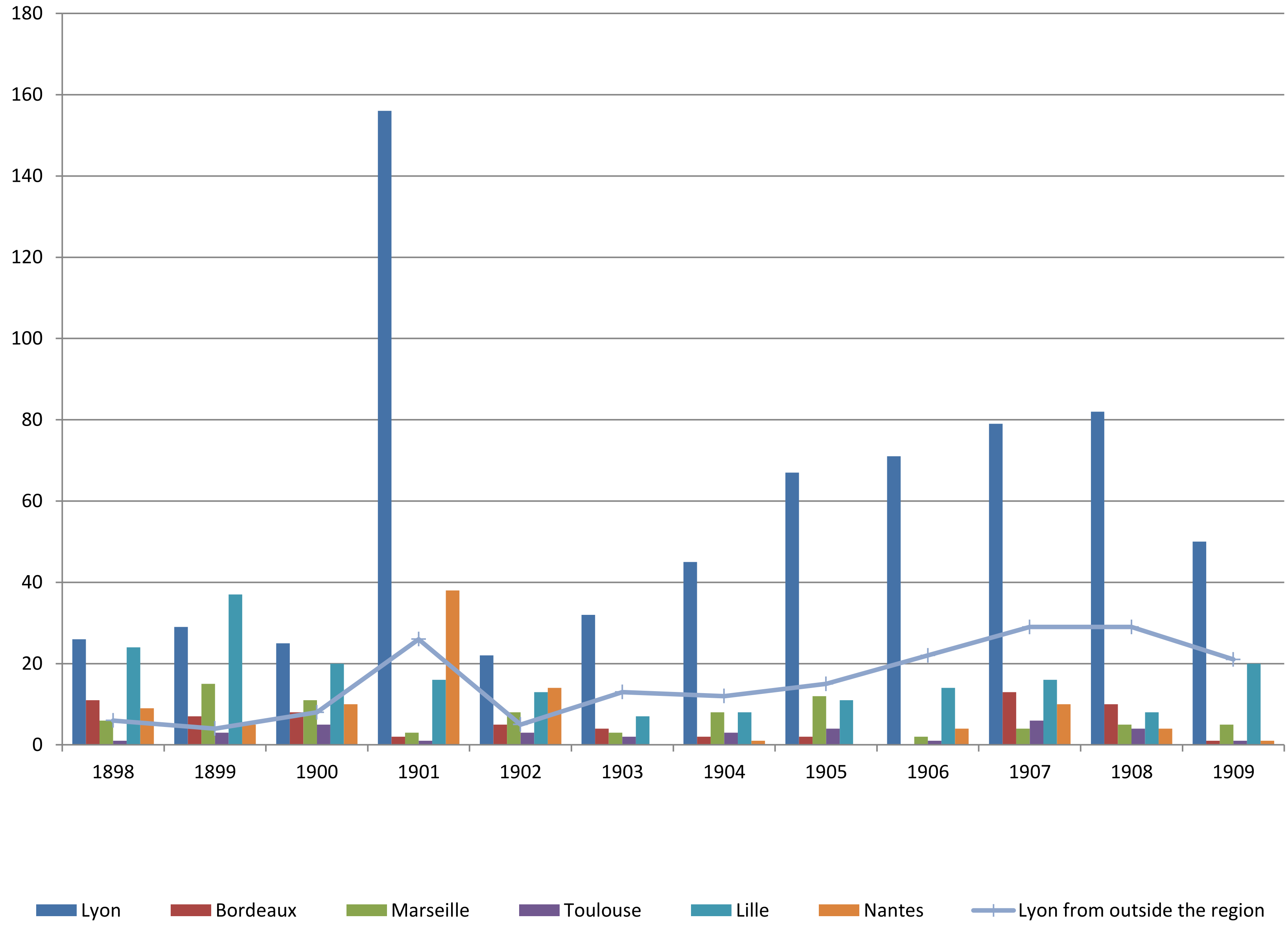
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Nantes
Lyon from outside the region