

State-aided Price Coordination in Dutch Mortgage Banking

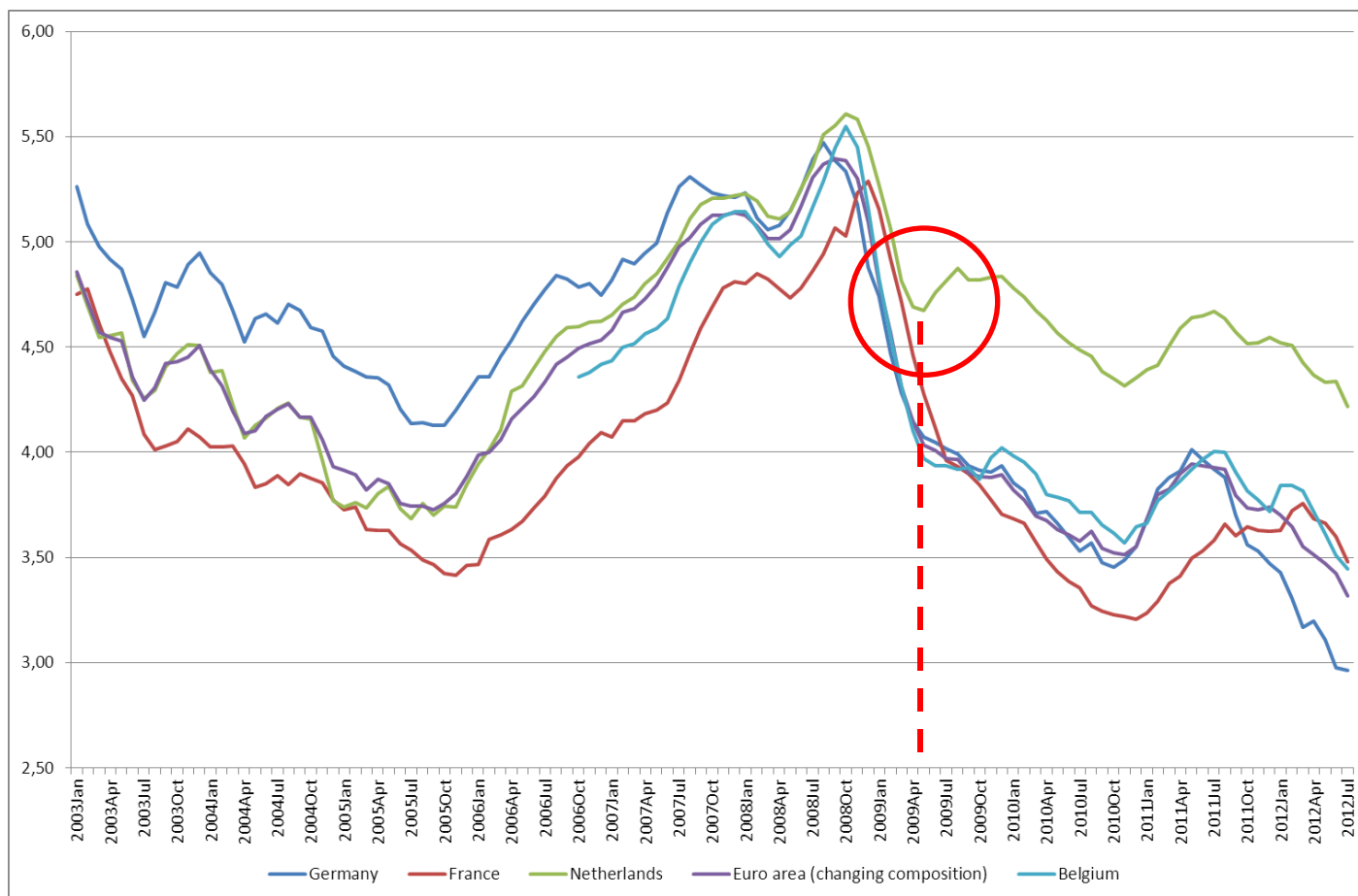
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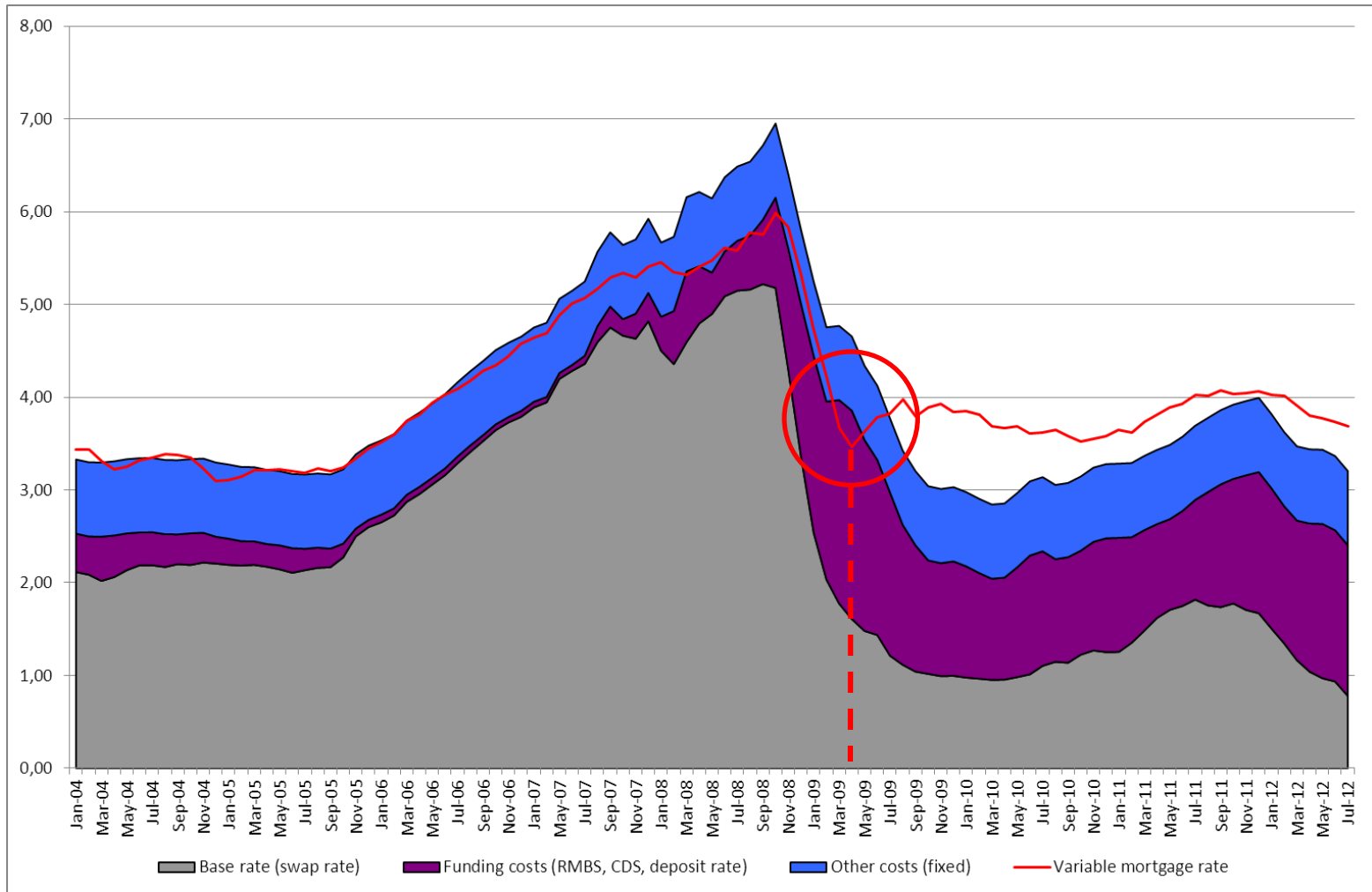
ERES Industry Seminar
The mortgage market's stranglehold on the housing market
Amsterdam, March 22nd 2013



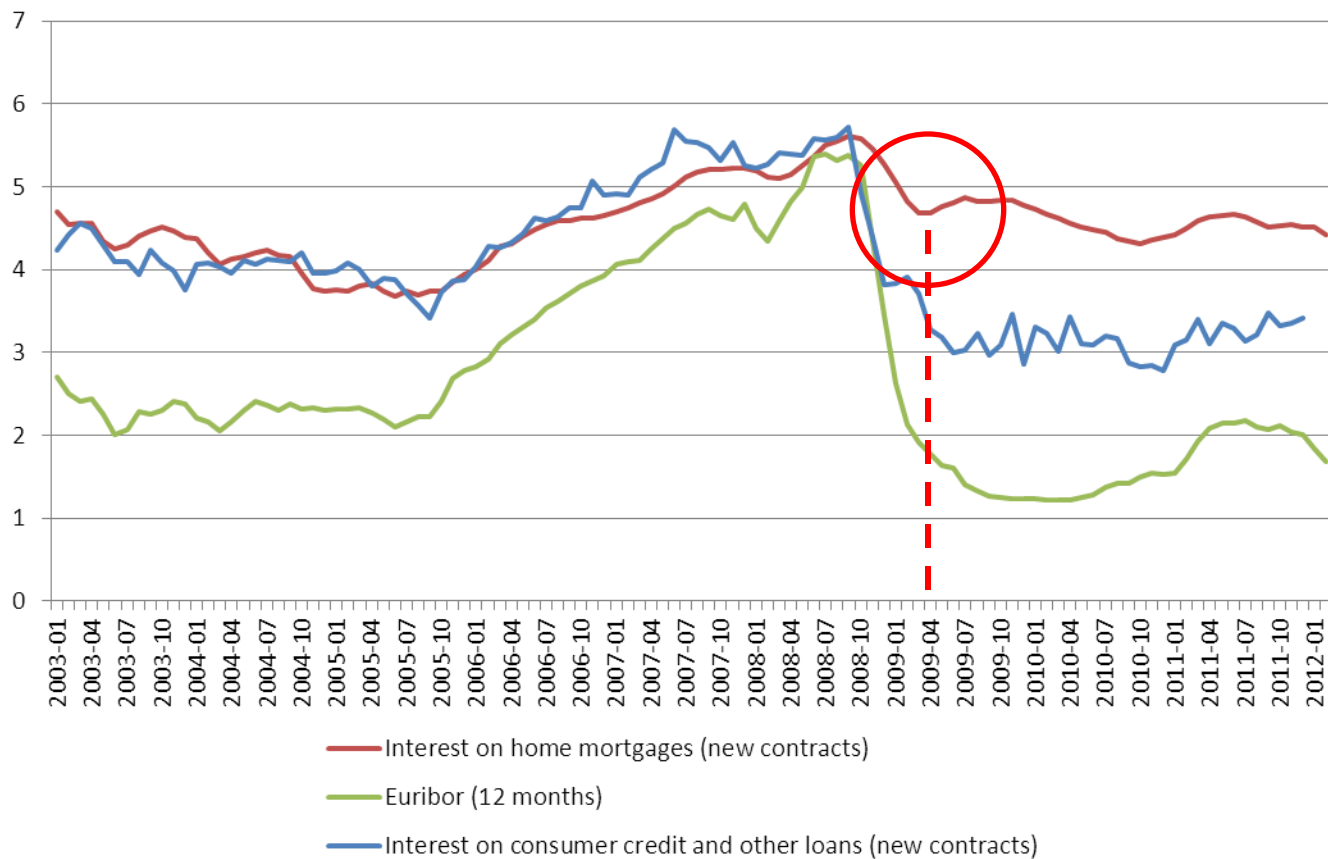
Lending for home purchase: The Netherlands in Europe



Margin on variable mortgage rate



Mortgage rate departs from consumer credit rate



Source: DNB



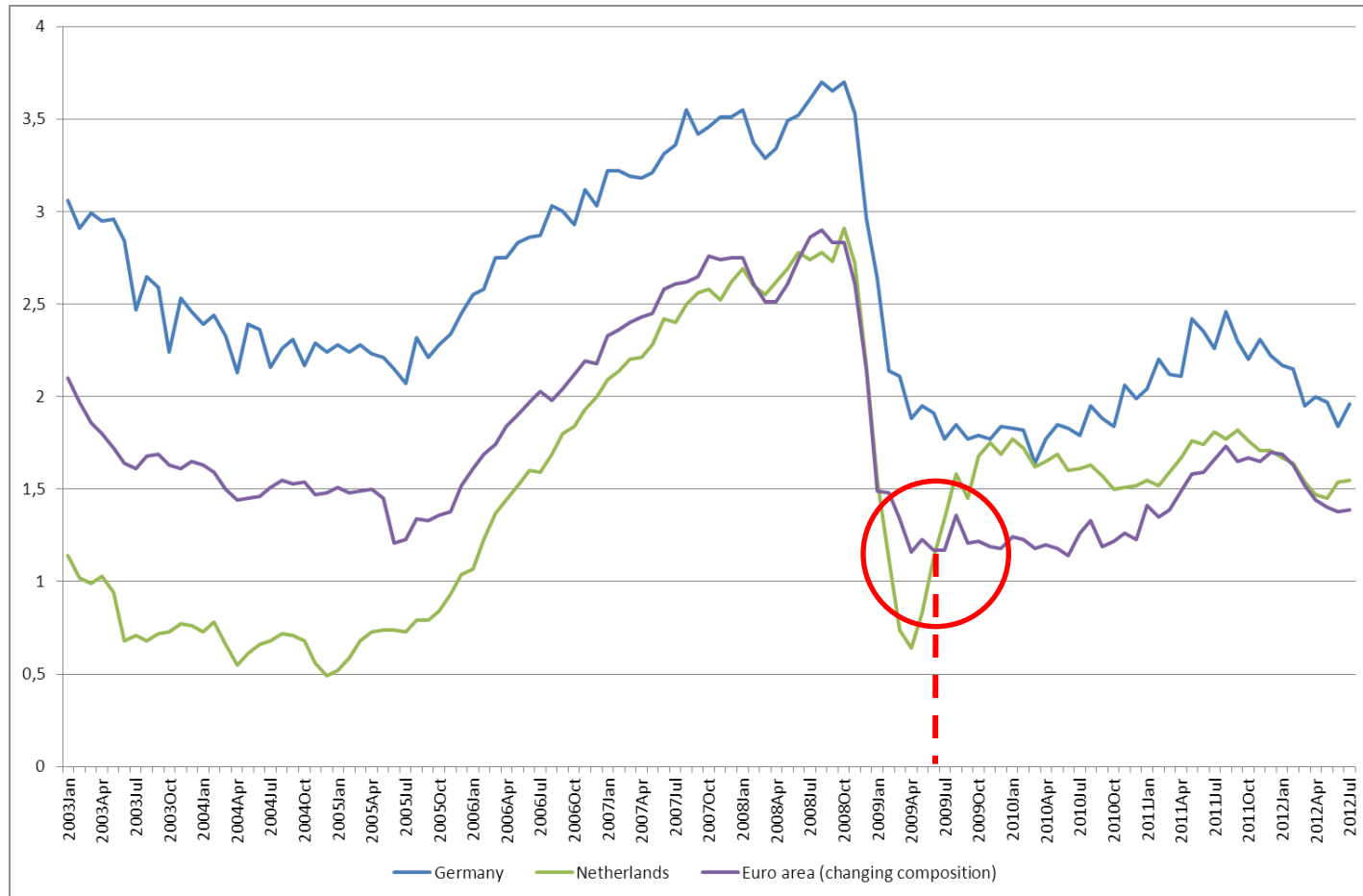
What happened in the Spring of 2009?

1/5. Funding costs have risen

- Dutch savings deposits rates are relatively high
 - They have been historically
 - Mortgage rate minus savings deposits rate breaks in Spring of 2009
- Dutch banks pay a premium, due to large loan-to-deposit gap (DNB, 2012/2013)
 - Yet, gap grows steadily and ratio is stable
 - No significant difference between CDS spreads for systemic banks NL-D
- Banks face a tighter regulatory regime: cost of raised capital requirements
 - Basel III more recent. Modigliani-Miller (albeit qualified by State guarantees)
- Maturity mismatch leads to losses on the legacy portfolio
 - Sunk costs. Competition for marginal customers should erode margin



Variable mortgage rate minus deposits redeemable at notice



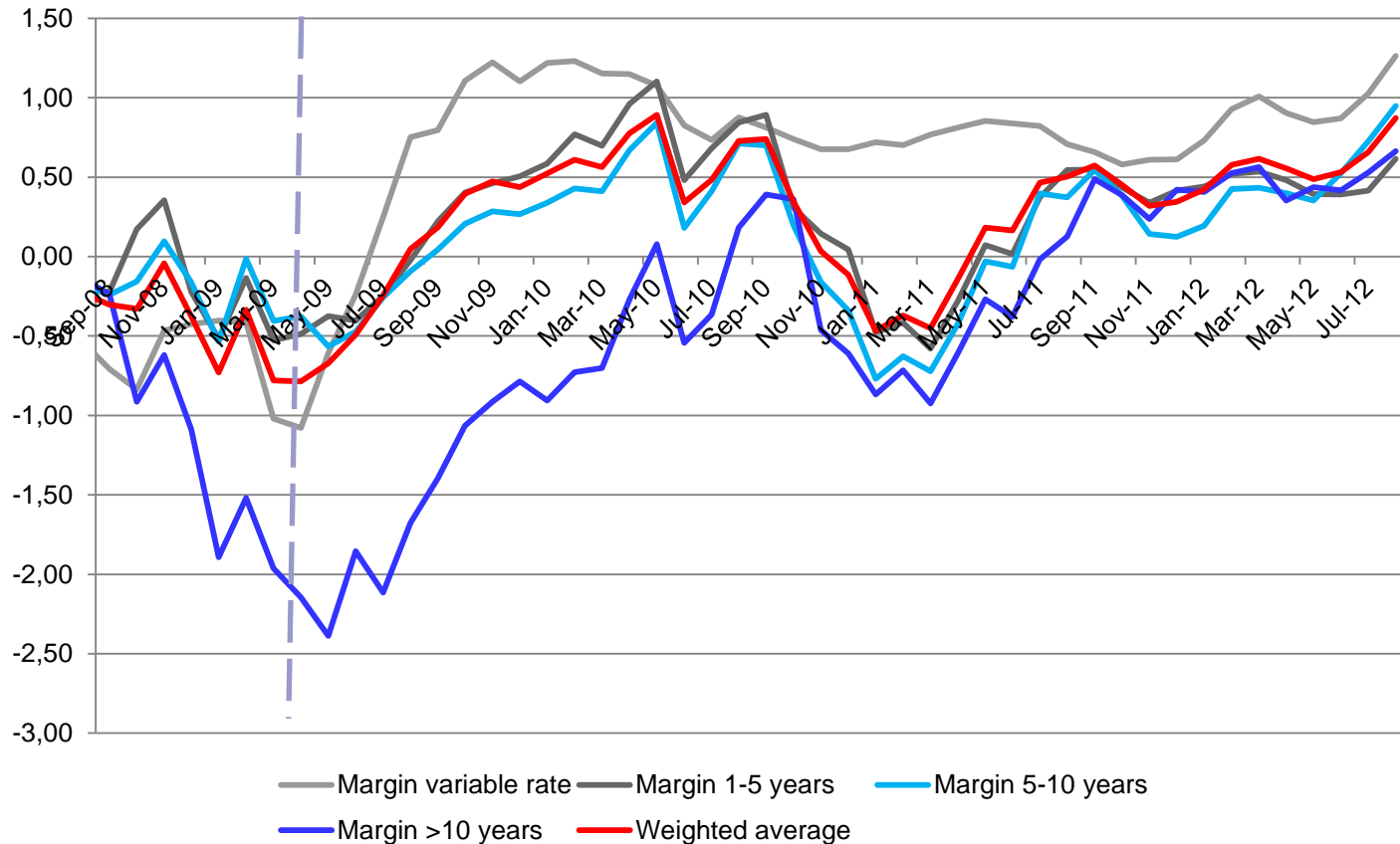
Cost for attracting funding included in margin calculations

$$\text{margin} = r_{mort} - (r_{base} + x_1 p_{rmbs} + x_2 p_{cds} + x_3 \max\{r_{deposit} - r_{euribor}, 0\} + other)$$

- Reconstruction from NMa, *Sectorstudie hypotheekmarkt*, May 2011
- Swap rates (6-months Euribor, 4, 7 and 12 year maturities)
- RMBS and CDS spreads, and savings deposit rate
- Extra margin, on top of pre-crisis normal return: 01/2004-08/2008 vs. <05/2009
- Dijkstra and Schinkel (2012)



Extra margin by maturity



Source: Dijkstra and Schinkel (2012)



What happened in the Spring of 2009?

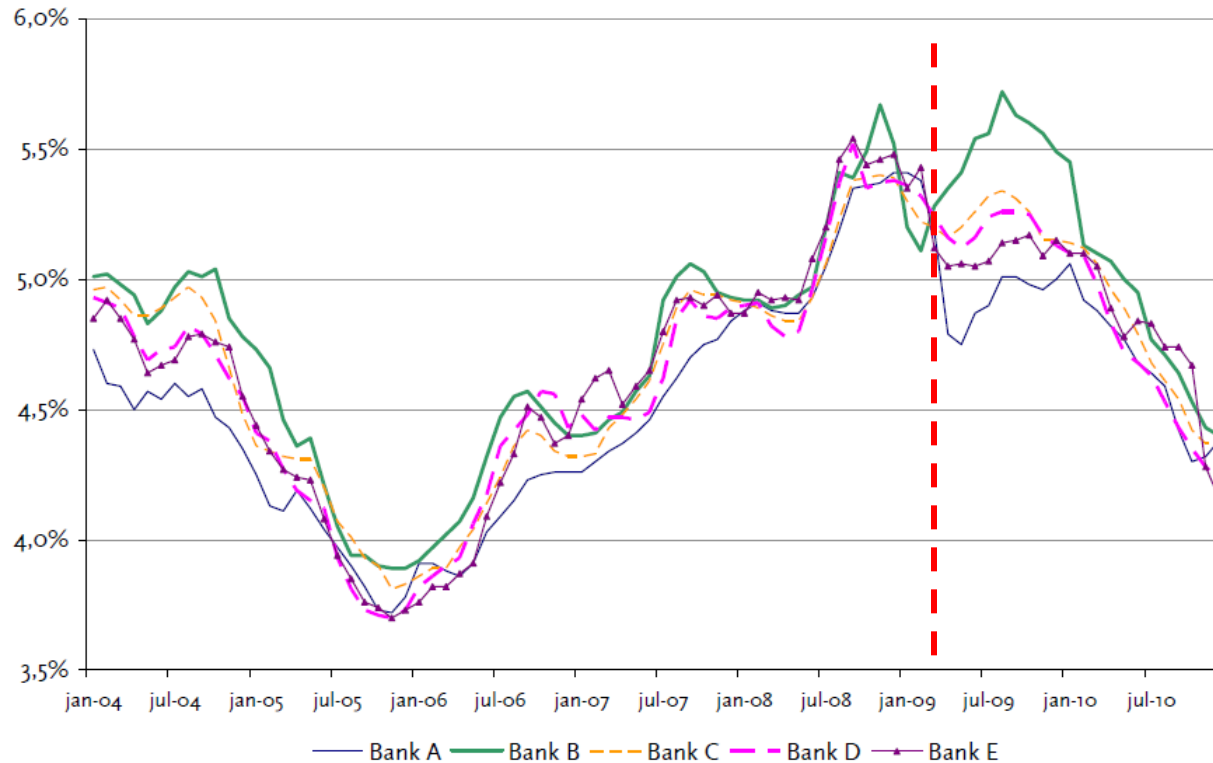
2/5. Asymmetries between banks

- Rabobank had lower cost of attracting funds, due to lower risk profile
- Some competitors reluctant to sell/renew mortgages, to recompose portfolio
- Rabo margin translates into average margin, due to large market share
- Yet, three main players are systemic banks – of which ABN is State-owned
- Also, significant part of mortgages under State-guarantee (NHG)



Spring 2009 increase in price dispersion

Figuur 4.1 Gemiddelde rentepercentages grote banken (op basis van daadwerkelijk afgesloten tarieven van NHG-hypotheek met een rentevaste periode van tien jaar, januari 2004 - december 2010)²⁸



Bron: WEW, bewerking NMa.

Source: NMa Sectorstudie hypotheekmarkt, May 2011



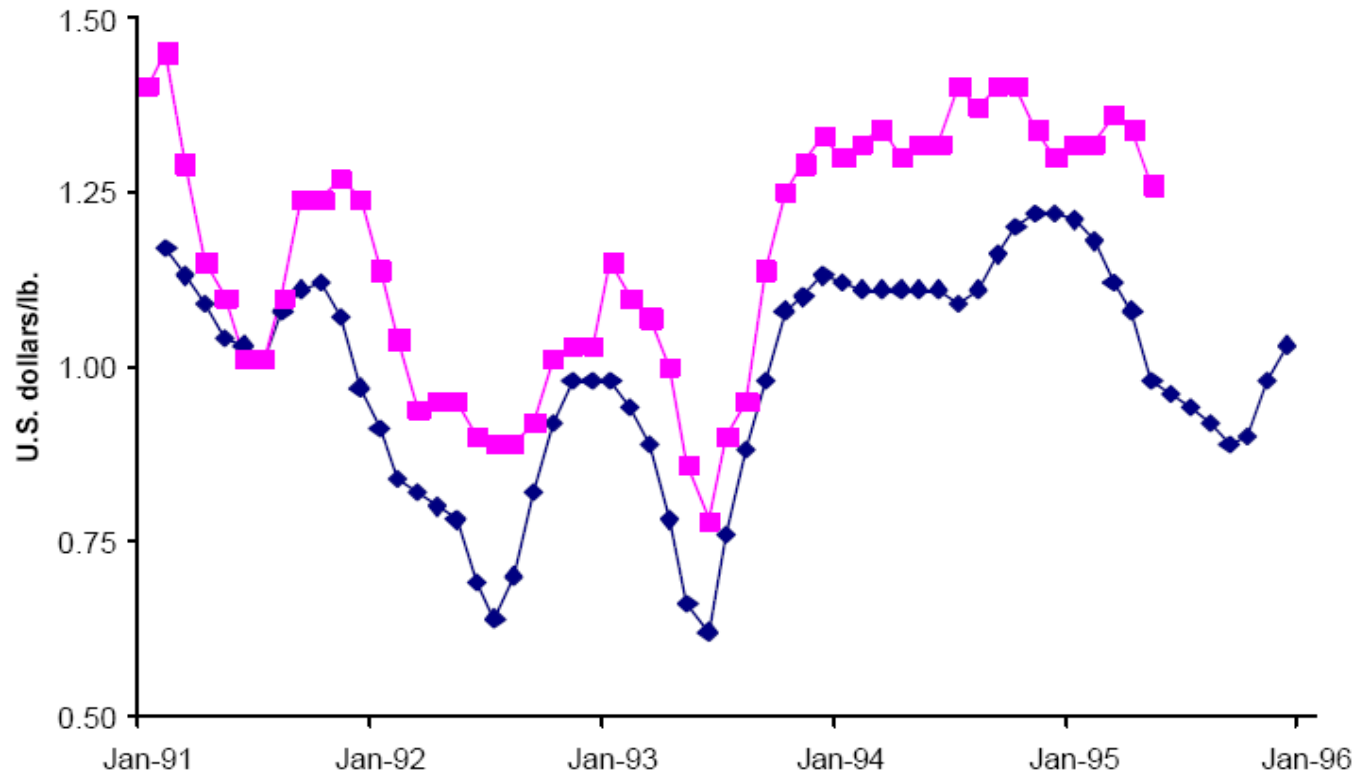
What happened in the Spring of 2009?

3/5. Smoke-filled rooms

- NMa investigated collusion in response to complaints in Summer of 2010
- NMa (May 2011) finds no hard evidence “on the basis of analyses of market behavior”
- Solely based on mean-variance test (Abrantez-Metz, et al., 2006)
- NMa dismisses “collusive conduct”
- Since, the European Commission has started investigating suspicion of collusion in:
 - spreads on CDS – April 2011
 - Euribor rates – October 2011



Figure 1. Lysine Transaction Prices, U.S. and EU Markets, 1991-1996.



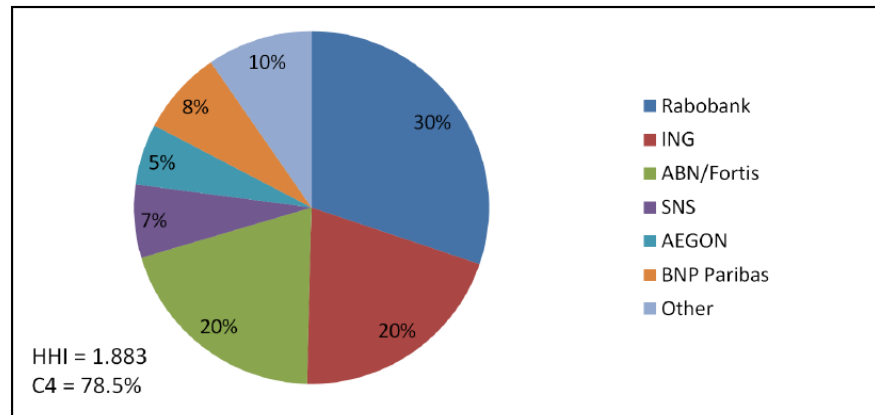
Source: Connor (2007)



What happened in the Spring of 2009?

4/5. Concentration increase

Figure 2.2. – Overview of market shares of Dutch mortgage providers in 2010 (based on newly registered mortgages)

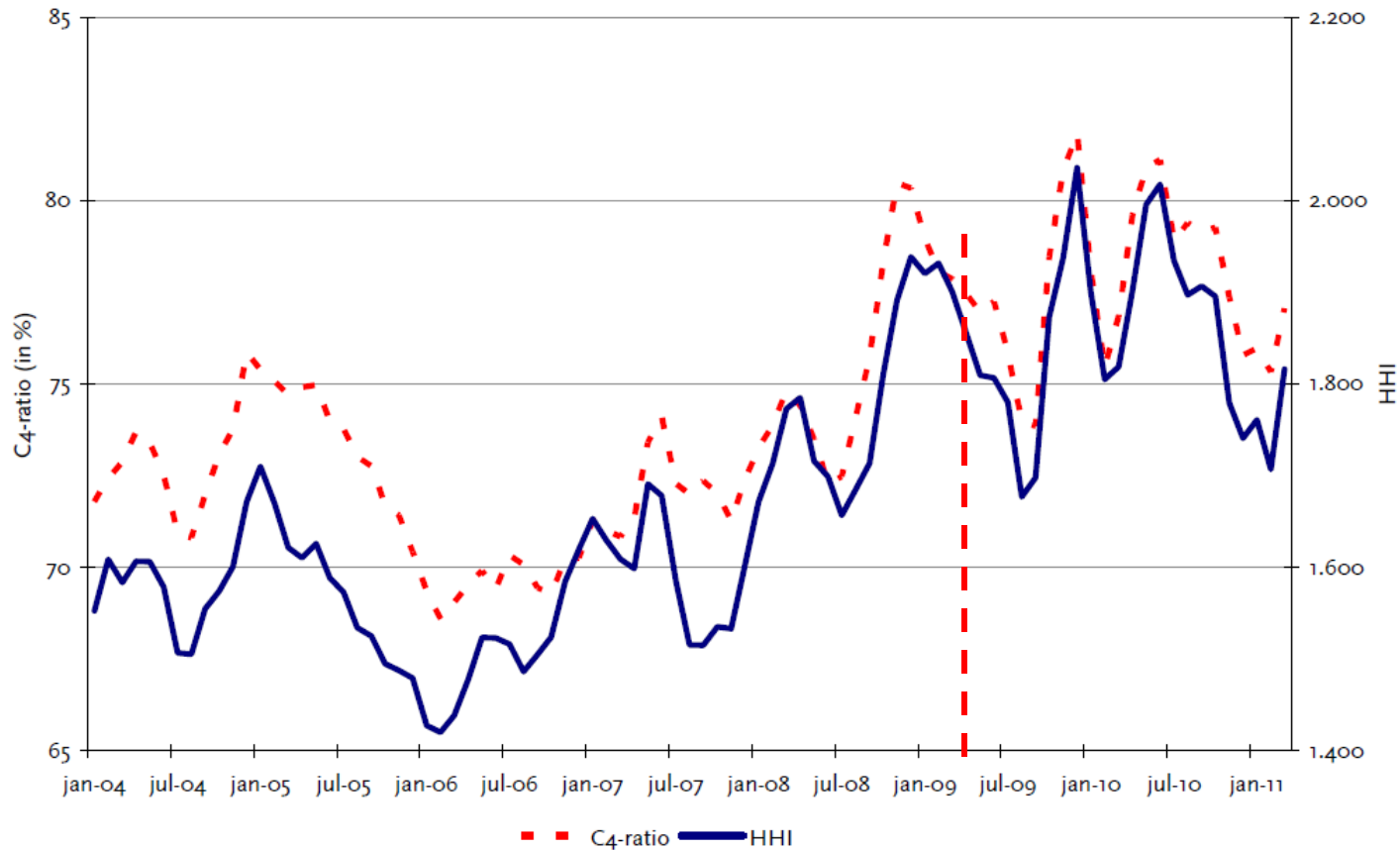


Source: NMa, Sectorstudie Hypotheekmarkt, May 2011

- Some banks left the Dutch market – GMAC, Sparck, ELQ, DSB
- Some banks became less active – Argenta, BNP Paribas (later exited)



Figuur 3.2 Concentratiegraad Nederlandse hypotheekmarkt (op basis van aantallen nieuw ingeschreven hypotheeklen 2004 tot en met maart 2011)



Source: NMa Sectorstudie hypotheekmarkt, May 2011



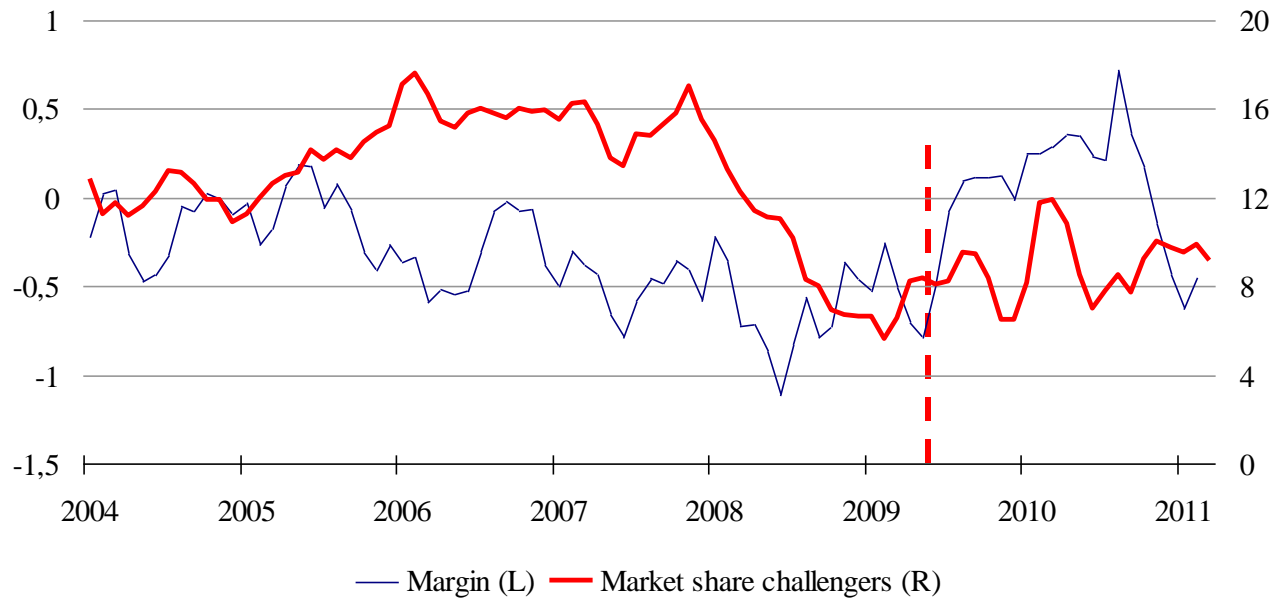
Conclusion of the NMa (May 2011):

“The developments can be explained by changes in the market structure, especially by the (partial) exit of several smaller (foreign) banks. The historically high margins are accompanied by **declining market shares of the challengers** and the subsequent normalization of margins occurred in parallel with an increase of the market shares of challengers.”

“In 2010 the margins fell back to pre-financial crisis levels.”



Margin and market share challengers



Source: Overvest and Tezel (2013)



Some problems with the concentration-explanation

- Relationship concentration-competition contested in banking
- Presupposes theory of strong fringe/potential competition effects
- Most of the HHI action was in 2008 – shortly after entry
- Volatility of C4-HHI may be due to market share measurement (new mortgages)
- Whilst there is an upswing in Spring 2009, there appears to be a trend



What happened in the Spring of 2009?

5/5. State aid negotiations

- Commission decision on the State aid implemented by the Netherlands for ING's illiquid Assets Back-Up Facility and Restructuring Plan, 18 November, 2009, p. 35:

“Without prior authorization of the Commission, **ING will not offer more favorable prices on standardized ING products than its three best priced direct competitors** with respect to EU-markets in which ING has a market share of more than 5%.”

- Similar conditions subsequently imposed also on ABN/Fortis (February 2010) and AEGON (August 2010)
- Effectively appointed Rabobank the now must-follow price leader



“Four of the five largest financial groups are ... subject to restructuring programs, at the behest of the Dutch authorities and the European Commission. [...] **With the activities of several of the largest institutions heavily constrained by EC requirements, competitive forces seem to be weaker than elsewhere**, risking worsening the access of the public to financial products and reducing pressures on the banks to adapt to the new post-crisis environment.” IMF (2010)

“Banks that are prevented from trying to be a market leader just become passive followers exerting no real competitive discipline on their rivals, as though in some **publicly-sponsored cartel**.” Beck et al., CEPR (2010)

“[I]n cases **where limitations on pricing behaviour of the beneficiary may not be appropriate, for example because they may result in a reduction of effective competition**, Member States should propose other, more suitable, remedies to ensure effective competition, such as measures that favour entry.” European Commission, Restructuring Guidelines (2010), para 44



- NMa (May 2011) dismisses effect of the price leadership bans out of hand:

“The State-aid conditions do not explain the remarkable margin increases,
because the increases took place before the conditions took effect.”

- Despite internal analysis to the contrary by its CET
- Despite NMa’s earlier (but late) own warnings to the European Commission



Can there have been an anticipation effect?

1/2. Anticipation

- Behavioral constraints on pricing in first Communication in October 2008
- Potential price restrictions implicitly mentioned in temporary approvals
- At least 6 months of dialogue between banks, government, regulators and EC
- Evidence of “healthy banks” lobbying Neelie Kroes for restrictions
- On 24 April 2009, Commission states to intend to impose PLB in ING negotiation meeting (ING Court decision)
- Commerzbank precedent (7 May 2009): “Commerzbank will not offer more favourable terms for its products and services than its three cheapest competitors...”



Can there have been an anticipation effect?

2/2. Effect

- Keeping heads down for fear of tighter State aid conditions
 - Game between banks and European Commission
 - Restructuring plans, separation of activities
 - Regulation and oversight
- Demand is intertemporal and largely for long term contract
- Created conditions favorable for tacit collusion



A stylized model of Dutch mortgage banking

- “Bank A” historically “competitive price leader” (Haan & Sterken, DNB, 2006)
- Barometric price leadership (Rotemberg & Saloner, 1986 and Cooper, 1996)
 - Leader has information followers have not
 - Leader benefits from first period monopoly
 - Followers undercut leader in second period – competitive equilibrium
- Collusive price leadership (Rotemberg & Saloner, 1986)
 - Leader sets cartel price that others follow
 - Both leader and followers better off than in BPL
 - Stable by Nash-reversion (BPL – or SM in RS)
- Suppose that prior to PLB, CPL is not stable (after all, we observe BPL)
- Anticipation of PLBs allows coordination on CPL by changing punishment (SM iso BPL)



There are 3 (types of) banks, A , B and C . In each stage game, the banks face the following individual demand for mortgages, $i = (A, B, C)$:

$$q_i = a - bp_i + d \left(\frac{p_A + p_B + p_C}{3} - p_i \right),$$

in which b is price-elasticity and d product differentiation. Intercept a is a common demand shock, uniformly distributed on the interval $[\underline{a}, \bar{a}]$, with mean \tilde{a} .

Bank A has superior market information a (for free): it is the natural leader. Banks A and B have marginal costs equal to zero. Bank C (non-systemic bank) has marginal costs $c > 0$.

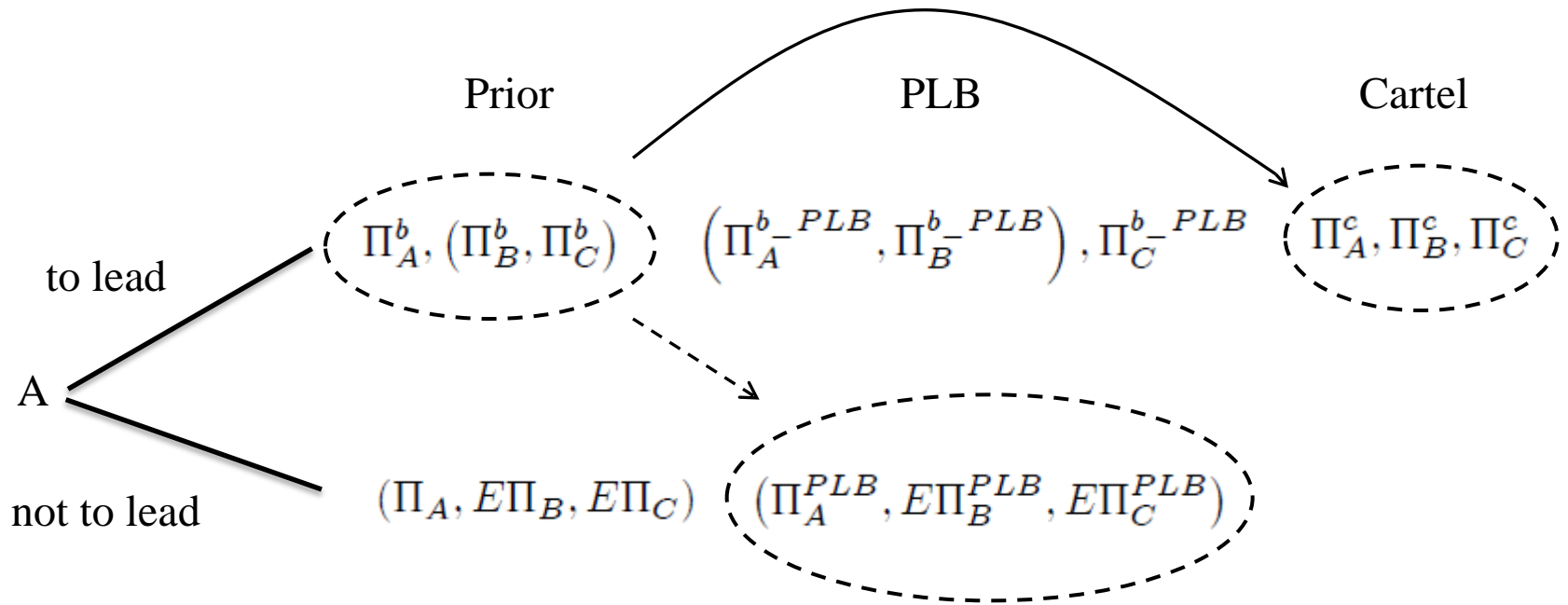


Competition is an infinitely repeated two-period stage game. The common demand shock is drawn for each stage game before price setting. Prices are set for the entire stage game, i.e. prices set in period 1 cannot be changed in period 2, but only in the next round of two periods.

Since demand is split τ and $(1 - \tau)$ over period 1 and 2, profits are

$$\Pi_i = \tau \times \pi_{i,1} + (1 - \tau) \pi_{i,2}$$





$$\Pi_A^b \geq \Pi_A \text{ and } \Pi_A^{b-PLB} \leq \Pi_A^{PLB} \text{ and } E\Pi_B^{PLB} \leq E\Pi_B^b$$

for all a or in expectation



PLB's introduce cautiously high pricing by Bank B in SM

$$\max_{p_B} E\Pi_B^{PLB} = E \left[p_B \left(a - bp_B + d \left(\frac{p_A + p_B + p_C}{3} - p_B \right) \right) - \Pr(p_B^{PLB} < p_A^{PLB}) \times F \right]$$

- Banks A and C increase prices in best-response, in particular:

increase $p_B + f$ gives smaller increase $p_A + \frac{d}{6b + 3d}f$

$$\Pr(p_B^{PLB} < p_A^{PLB}) = \alpha - \beta p_B$$

- Equilibrium prices higher, but further apart
- For high enough F , prices can surge above cartel prices



$\Pi_A^b \geq \Pi_A$ high enough τ

$$\left. \begin{array}{l} \Pi_A^{b-PLB} \leq \Pi_A^{PLB} \\ E\Pi_B^{PLB} \leq E\Pi_B^b \end{array} \right\} \text{high enough } F$$

issue: bank C stability

Proposition 1 There exists a $0 < \delta^* \leq 1$, such that for $\delta > \delta^*$ there exists a CPL-equilibrium.

Proposition 2 With PLBs announced, if F (and c, d) is (are) sufficiently large, there exists a $0 < \delta_{PLB}^* \leq 1$, with $\delta_{PLB}^* < \delta^*$, such that for $\delta > \delta_{PLB}^*$ there exists a CPL-equilibrium.



Concluding Remarks

- Concentration increase, higher costs non-systemic banks, PLBs systemic banks
- Rabobank seems positioned to put a high floor in the market

- New take on banks “earning their way out of the crisis”
- Hidden State aid angle (tax deductibility of mortgage payments)

- Overlooked by Dutch Parliamentary inquiry (Commissie de Wit, April 2012)
- Why did the Dutch government propose, and the European Commission approve of this? Why did the NMa not pursue the matter more forcefully?

- Exposes need to rethink behavioral State aid remedies – in particular PLBs
- Stresses need to integrate European residential mortgage market – March 2011
Mortgage Credit Directive proposal

- EC lifted ING’s PLB in NL in new SA decision, 19 November 2012
- SNS nationalized, 1 February 2013 – concerns about a possible PLB

