Financial fragility in the automotive sector: is the French automotive sector "Ponzi" in the sense of Minsky?

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Introduction: context

- From the financial crisis to the economic crisis
  - All industrial sectors have been affected
  - A particularly affected sector: the automotive industry

- The automotive industry crisis has been particularly discussed
  - Difficulties anterior to the financial crisis
  - Economically and politically sensitive: "too big to fail"
    - concentration / very large companies
    - large amounts involved in public help
    - huge economic stake *(OECD: 2.5% of GDP, 1% of employment, 11% of the world exports, 14% of private research in France)*
Shares of automobile in World trade (2007)

- Automotive: 11%
- Telecom: 14%
- Chemicals: 14%
- Steel: 5%
- Agriculture: 11%
- Fuels and mining: 45%

Shares of OECD GDP and employment (2007 or latest available)

Source: OECD STAN Database.
Some key observations

- Stock prices krach
- Drop in Sales
- Decreasing / negative operating results
Crisis impact: Stock price

--- FTSE EUROTOP AUTO
--- PSA
Crisis impact: Stock price

Source: wwwboursorama.com
Crisis impact: Drop in sales

In Million euros

- PSA
- Renault
- Others

Years:
- 2005
- 2006
- 2007
- 2008
- 2009

Values:
- 140,000
- 120,000
- 100,000
- 80,000
- 60,000
- 40,000
- 20,000
- 0
Crisis impact: Loss of profitability

Profit margin growth rate

-5% -3% -1% 1% 3% 5% 7%

2,007 2,008 2,009

PSA Renault Others
Introduction (2)

Some key observations

- Stock prices krach
- Drop in Sales
- Decreasing / negative operating results
- Large scale public help: vehicle scrapping schemes, investment in green technology, low interest loans (only in France)
Research question

=> A paradoxal French case?

😊 ?

- Crisis effect significant and important on automotive sector's sales for all countries except France
- Lower drop in Sales' growth in France than in the rest of the OECD

😢 !

- Stock price more severely affected
- Deeper drop in operating profit
- Specific public help schemes (LLR)
The automotive industry in the crisis: a French case?

Literature review

Causes:

- Structural causes => in difficulty for several years
  - OECD overcapacity / saturated markets
  - Huge fixed capital and labour costs, High debt burden, High pension and health commitments (US)

- Global crisis effects
  - Sector specific: Rise in oil prices up to mid-2008
  - Economic crisis: unemployment, consumption drop
  - Financial crisis: tightening credit conditions
The automotive industry in the crisis: a French case?

**Literature review**

<table>
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<th>Crisis effect</th>
<th>Explanatory power</th>
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<td><strong>OPEC countries</strong> (except France)</td>
<td><strong>France</strong></td>
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</table>
| Oil Price  
*In sales growth* | Statistically significant; impact lower than expected | OCDE (2009a) |
| Revenue effect  
*In sales growth* | Statically significant; impact lower than expected | OCDE (2009a) |
| *car sales / private consumption correlation coeff.* | raising or stable | Decreasing |
| Credit tightening effectiveness  
*In sales growth* | significant | Guichard, Haugh, Turner (2009) |
| | Significant; important (80%) | Non significant |
| | | OECD (2009a) |
Proposal

- Hypothesis: an effect of the rising financial activity within the automobile industry
  - From a car manufacturer to a Bank - specificity of the French case

- An analysis following Minsky's Financial Instability Hypothesis

- "Big 6" car manufacturers (OECD) + Renault
  (GM – data available till 2008, Ford, Toyota, Daimler, VAG, PSA)
Analysis

*Theoretical framework: Minsky's instability hypothesis*

- **Hedge / Speculative / Ponzi finance**
  - Cyclical increase in the portion of speculative finance
  - Endogenous rise in interest rate & liquidity crisis
  - Speculative entities become Ponzi / default
  - Self – fulfilling crisis, towards cumulative debt deflation

- **Required solutions**
  - Big Bank: prudential supervision & LLR
  - Big Government: public investment
  - Institutional reforms
Analysis

Speculative/ponzi criteria assessment

Criteria: the functioning of the entity relies upon its capacity to roll over debt

Assesment:

- **Liquidity principle** (Minsky, 1986, 1992)
  - Hedge: $\text{CFO} > i + D \text{ repayment} \implies \text{no liquidity risk}$
  - Speculative: $D \text{ repayment} + i > \text{CFO} > i$
    $\implies \text{roll over debt / sensitive to liquidity shortage}$
  - Ponzi: $i > \text{CFO}$
    $\implies \text{increase in debt till default}$

- **Potentially speculative** (Arestis & Glickman, 1999)
  - Sensitive to liquidity shortage
    - Currency & maturity mismatch
Results

a/ Relevance of the hypothesis: a change in business model in French automobile sector

Characteristics of automotive financial divisions

- Development of the credit activity of automotive's financial subsidiaries: a still going on process
- Bank status: a specific French situation

Dependency upon the Banking activity:

- A growing weight of financial activity in sales and op. profit
Weight of the Banking activity in Sales

![Graph showing the weight of banking activity in sales over years 2005 to 2009 for PSA, Renault, and Others.]

- **PSA** shows a steady increase from 2005 to 2009.
- **Renault** remains relatively stable with minor fluctuations.
- **Others** exhibit a decreasing trend from 2005 to 2008, followed by an increase in 2009.
Weight of the Banking activity in Operating profit
Results

a/ Relevance of the hypothesis: a change in business model in French automobile sector

Characteristics of automotive financial divisions

- Development of the credit activity of automotive's financial subsidiaries: a still going on process
- Bank status: a specific French situation

Dependency upon the Banking activity:

- A growing weight of financial activity in sales and op. profit *
- Dependency of the firm's revenues * ?
  - On Sales => non significant
  - On Operating result => strong dependency since 2006 for French companies
Dependency of the Banking activity in PSA's Operating profit

Bank PSA finance: contribution to Operating Resul

\[ y = 0.0979x - 0.0967 \]

Auto: contribution to Operating Resul

\[ y = -0.2312x + 1.5411 \]
Dependency of the Banking activity in Renault's Operating profit

\[ y = 0.181x - 0.1591 \]

\[ y = -0.4144x + 1.8813 \]
Results

b/ French banking subsidiaries: Speculative / ponzi?

- Liquidity: No convincing a priori Speculative situation
  - CFO > i+D till 2008; Ponzi in 2008, yet temporary *
"a priori speculative"?

PSA: Cash from Operation / Interest expenses & Repayment in capital

Millions euros

![Graph showing PSA CFO and PSA Interest & Repayment for years 2005 to 2009](image.png)
"a priori speculative"?

Renault: Cash from Operation / Interest expenses & Repayment in capital

Millions euros

- Renault CFO
- Renault Interest & Repayment
Results

b/ French manking subsidiaries : Speculative / ponzi?

- Liquidity : No convincing a priori Speculative situation
  - CFO > i+D till 2008 ; Ponzi in 2008 , yet temporary *

- "Potentially" Ponzi ?
  - No maturity mismatch in the bank division
  - Limited currency mismatch + Systematic hedging
Results

b/ French manking subsidiaries : Speculative / ponzi?

- YET :
  - Functioning of the activity depends on the banking activity
    - very strong dependency of Op Profit to the banking activity (credit production)

  - Specific sensitivity to market liquidity
    - Refinancing cost depending upon rating
    - Securitization of Banking financing

=> Sensitivity to market's liquidity shortage
=> A specific form of "potentially speculative" financing
Concluding remarks

- A sector particularly hit by the crisis, but a specific French case
  - Financialisation of the whole sector
  - the French situation: a specific form of potentially speculative situation "à la" Minsky

- Political economy implications
  - Complementary justification to the French public intervention as LLR
  - Regulation of non financial companies involved in financial activity (credit creation, securitization)

- Future research development
  - Quantitative assessment of the liquidity crisis effect on CF/ Profit: reshaping OECD (2009a) model
Main references

- MINSKY H.P. [1986], Stabilizing the Unstable Economy, New Haven:Yale University Press.
- OECD [2009 a], OECD Economic Outlook, N°86, Paris.
- PRICE WATERHOUSE COOPERS [2010], "Preparing to Compete", Global Automotive Perspectives, n°1.