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Monetary policy in France and Germany: a case for different channels?

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Christophe Blot, Sciences Po, OFCE, Paris, France

Jérôme Creel, Sciences Po, OFCE, Paris, France & ESCP-EAP, Paris, France

Fabien Labondance, Fucam, University of Mons, Belgium

Mathieu Plane, Sciences Po, OFCE, Paris, France

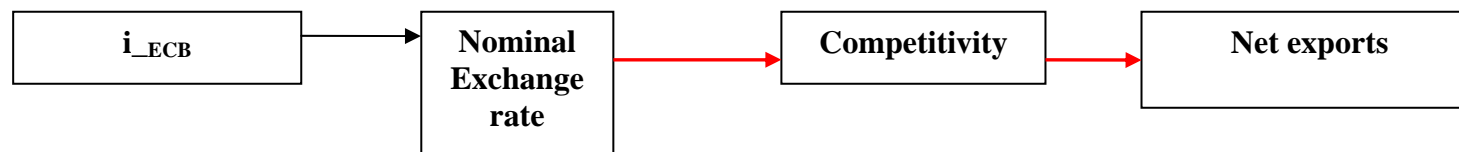
Xavier Timbeau, Sciences Po, OFCE, Paris, France

Very preliminary version, June 2008

1. Monetary policy in France and Germany : why would it be so different ?

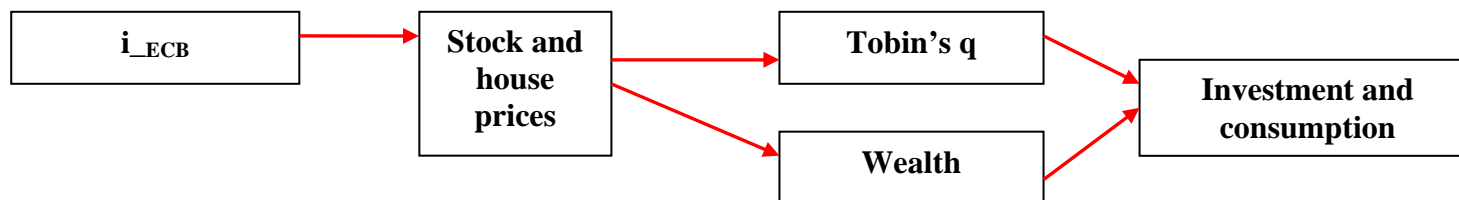
- Since 1999, France and Germany share the same money and have monetary policy interest rates determined commonly by the ECB. But this is far from being the end of the story...
- A strong presumption that monetary policy does not transmit identically across countries. A simple look at the different monetary transmission channels helps understanding why it might be different. Mishkin (1995) identifies 4 broad monetary policy transmission channels :

i. Exchange rate channel :



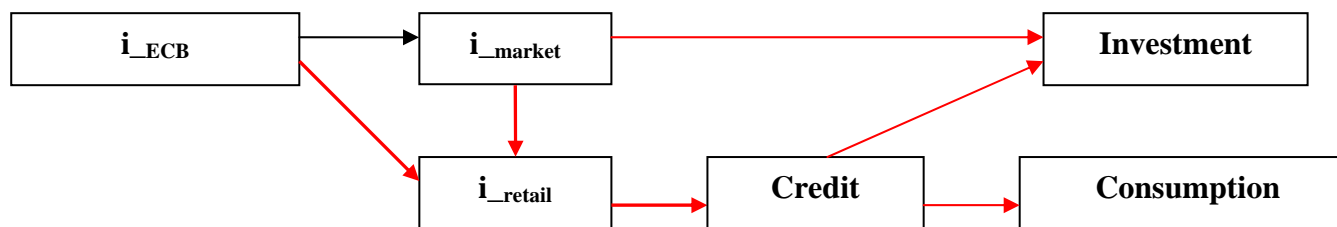
Bilateral exchange movements are identical! But not the competitiveness (once costs and prices adjustments are taken into account). Price-elasticities also differ.

ii. Asset price channels (stock and house prices)



Each causal link is a potential source of heterogeneity. But this channel may be of minor importance for France and Germany.

iii. interest rate channel : in the IS / LM model, it simply goes from the interest rate to the investment decisions. In practice, the interest rate determined by the ECB does not directly influence final decisions :



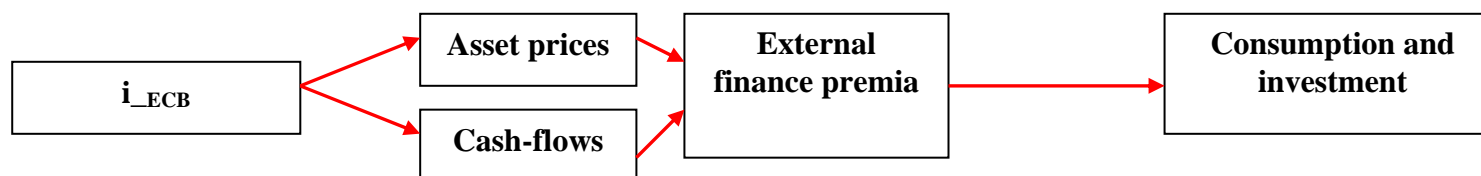
- Financial markets and especially money and bonds market are integrated (Jappelli & Pagano, 2008) \Rightarrow transmission of the monetary policy interest rate to the market interest rate may not be of particular interest here

- **pass-through between monetary policy or market interest rates to retail markets** and the sensitivities of investment, and credits to market and retail bank interest rates.

Why such a heterogeneity?

- competition among banks, competition between bank and financial markets, size of banks, concentration, size of firms, debt of non financial firms and households ... (see Penot, 2002)

iv. Credit channel (bank-lending channel and balance-sheet channel)



The bank-lending channel describes under which conditions a monetary policy tightening is transmitted to the banks' balance-sheet and then to the firms' ability to raise funds.

Asymmetric information (adverse selection and moral hazard) are highlighted. It must not be seen as a substitute of the other channels but rather as a complement of the interest rate channel.

The asymmetries also stem from the size of banks and firms, switching costs, debt of agents...

⇒ MP transmission is asymmetric due to heterogeneities. The role of banks may be crucial... Next we present some macro evidence, we present the main characteristics of the financial systems and we focus on the pass-through of monetary policy to retail bank interest rates.

2. Monetary policy in France and Germany : some macro evidence

- Asymmetries of MP transmission are analyzed in a series of paper (see Mojon & Peersman, 2003 for example) → asymmetries are confirmed but the magnitude is uncertain (Penot, 2002). We just present a quick update of this literature and focus on the special cases of France and Germany during the EMU period.
- VAR analysis of the MP transmission:
 - Variables: GDP, Inflation, short term rates, long term rates, real effective exchange rate (real terms and first differentiated).
 - Sample period: from 1996 to 2007 (quarterly data) – Implicit hypothesis : no break in the couple of years before 1999.
 - 4 models : (GDP, Π , IRS) - (GDP, Π , IRS, IRL) - (GDP, Π , REER, IRS) - (GDP, Π , REER, IRS, IRL)

We focus on the decomposition of variance of GDP and inflation. Which shocks contributed to the GDP or inflation variance?

Decomposition of variance	<i>GDP</i>		<i>Inflation</i>	
	France	Germany	France	Germany
IRS				
2 nd quarter	21.8	4.4	0.99	0.05
8 th quarter	19.95	6.77	14.35	0.35

Decomposition of variance	<i>GDP</i>		<i>Inflation</i>	
	France	Germany	France	Germany
IRS				
2 nd quarter	15.40	5.08	1.47	0.00
8 th quarter	10.34	6.24	2.55	1.19
IRL				
2 nd quarter	18.19	1.61	12.19	2.14
8 th quarter	17.94	1.53	14.68	2.21

Decomposition of variance	GDP		Inflation	
	France	Germany	France	Germany
IRS				
<i>2nd quarter</i>	0.32	4.90	0.63	0.00
<i>8th quarter</i>	0.50	5.62	0.66	1.04
IRL				
<i>2nd quarter</i>	0.87	1.72	1.26	2.11
<i>8th quarter</i>	0.83	1.62	1.30	2.17
REER				
<i>2nd quarter</i>	20.15	1.10	1.79	0.04
<i>8th quarter</i>	25.0	2.31	1.83	0.14

As a conclusion, it can be said that a regular substantial difference between France and Germany has occurred. The monetary channel is always revealed in the case of France (either via the interest rate, short or long, or the exchange rate); whereas none or less can be found in Germany.

- 2nd step: estimates of the aggregate demand equation: same dataset but a parsimonious model

We get similar results: MP transmission is significantly revealed for France (long term interest rate seems to be the key variable in the transmission channel). It is less significant in Germany except for the REER and not always correctly signed.

	<i>Germany</i>			<i>France</i>		
<i>Constant</i>	0.0015 (0.00)	0.0014 (0.00)	0.0014 (0.00)	0.0019 (0.00)	0.0019 (0.00)	0.0020 (0.00)
<i>GPD(-1)</i>	0.0326 (0.83)	0.166 (0.29)	0.077 (0.63)	0.21 (0.13)	0.14 (0.32)	0.14 (0.41)
<i>IRS(-1)</i>	0.0022 (0.06)		0.0019 (0.10)	-0.0014 (0.09)		0.0004 (0.66)
<i>IRL(-5)</i>		-0.0015 (0.14)	-0.0016 (0.10)		-0.002 (0.00)	-0.0021 (0.02)
<i>TCER(-2)</i>	-0.0011 (0.04)	-0.0016 (0.01)	-0.0013 (0.03)	-0.0011 (0.02)	-0.0011 (0.01)	-0.0005 (0.37)
<i>Adj-R squared</i>	0.18	0.19	0.23	0.16	0.27	0.14
<i>Jarque – Bera</i>	1.16 (0.56)	1.04 (0.59)	0.80 (0.67)	2.19 (0.33)	0.17 (0.91)	0.62 (0.73)

Note: p-value in brackets.

Lessons from econometrics on macro aggregates ?

- i. MP shocks contributed more to the GDP growth in France
- ii. MP is rather transmitted through the movements of the long term interest rates
- iii. Effect on GDP growth is asymmetric and stronger in France
- iv. the exchange rate channel is still alive

3. The German and French financial systems: a brief comparison

Generally, the German financial system is characterized as a bank-based oriented system in opposition with the US or the UK's market-based system. France would be in a middle position.

- The German 3-pillar banking system / The French banking system
 - Germany: commercial banks (with the 4 largest : Deutsche Bank, Dresdner Bank, Commerzbank and HVB), public banks (federal or state government banks: the Sparkassen and Landesbanken) and cooperative banks form the model of what is called “universal banks”. All institutions are more or less involved in the usual retail banking activities (deposit, loans, funds transfers, etc).
 - France: the AFB banks (French association of banks) which are commercial banks and the network of cooperative and mutual banks

- The number of credit institutions : advantage for Germany

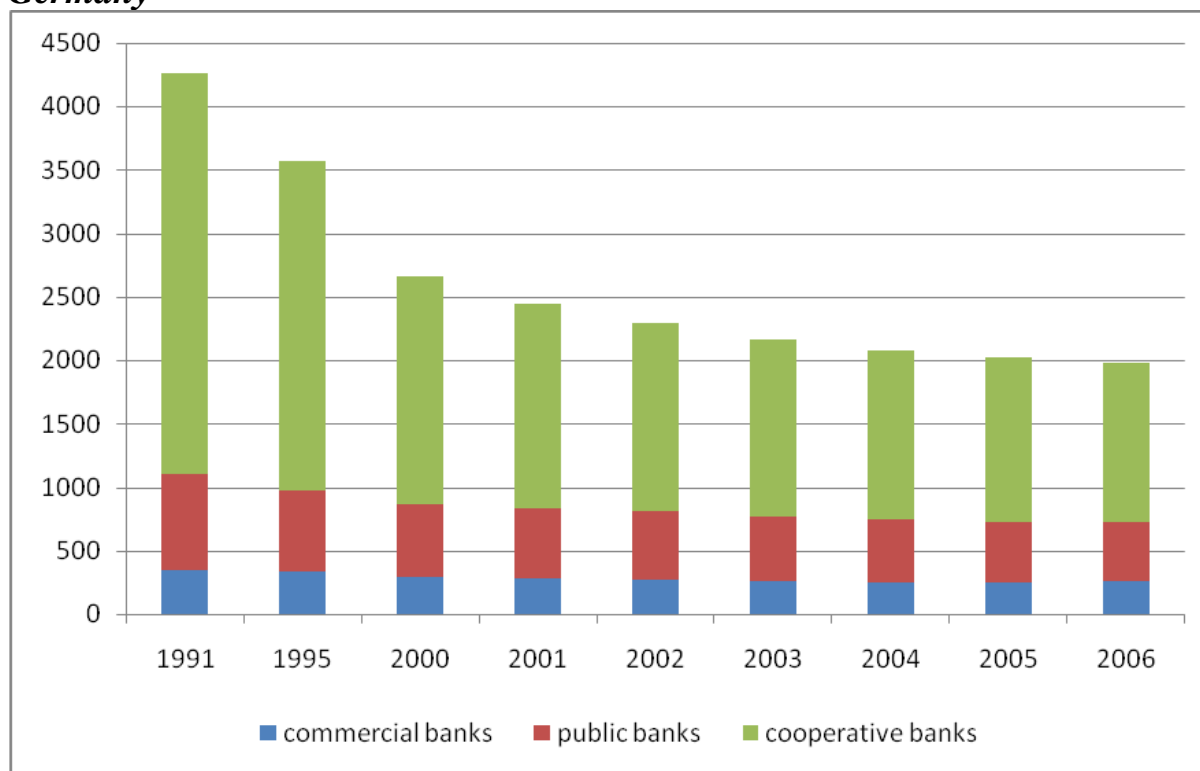
The number of banks in Germany largely exceeds their number in France but in each country, but it decreases regularly since the beginning of the 90's because of the deregulation of the banking system.

A decrease is also observed in France but the deregulation occurred sooner in France (during the 80's)

	2002	2003	2004	2005	2006
Germany	2365	2226	2147	2089	2048
France	989	939	897	854	829

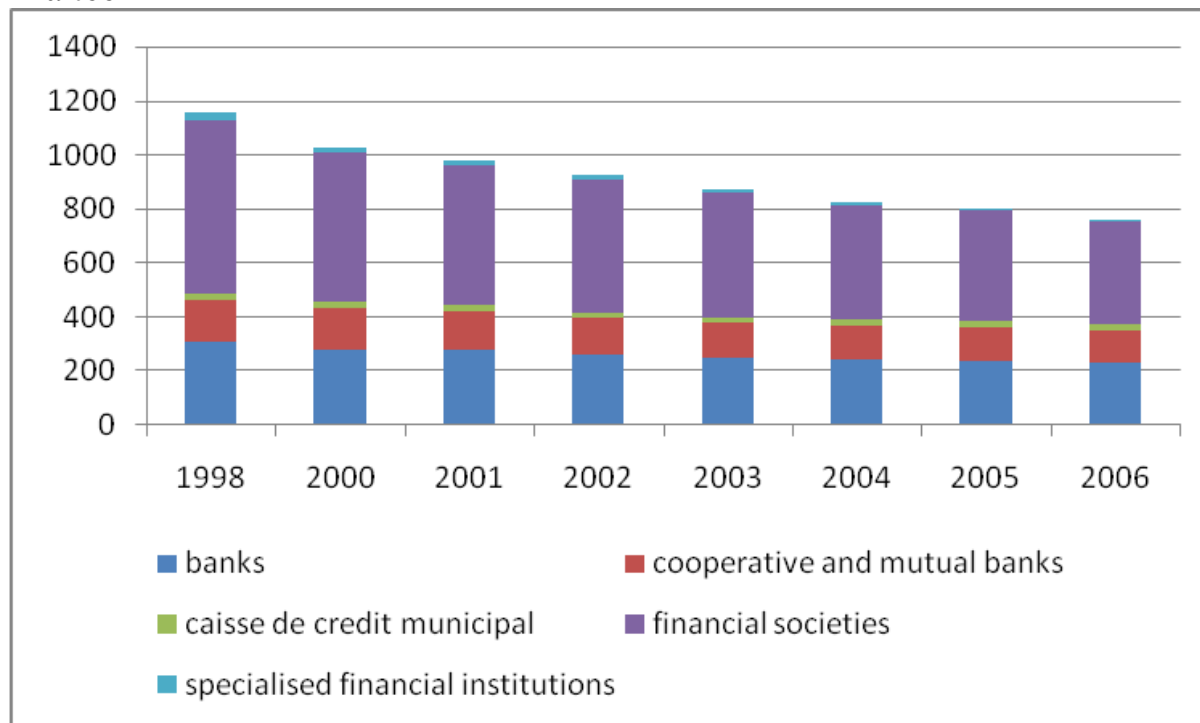
Source: ECB, "EU banking structures", October 2007.

Germany



Source: Deutsche Bundesbank

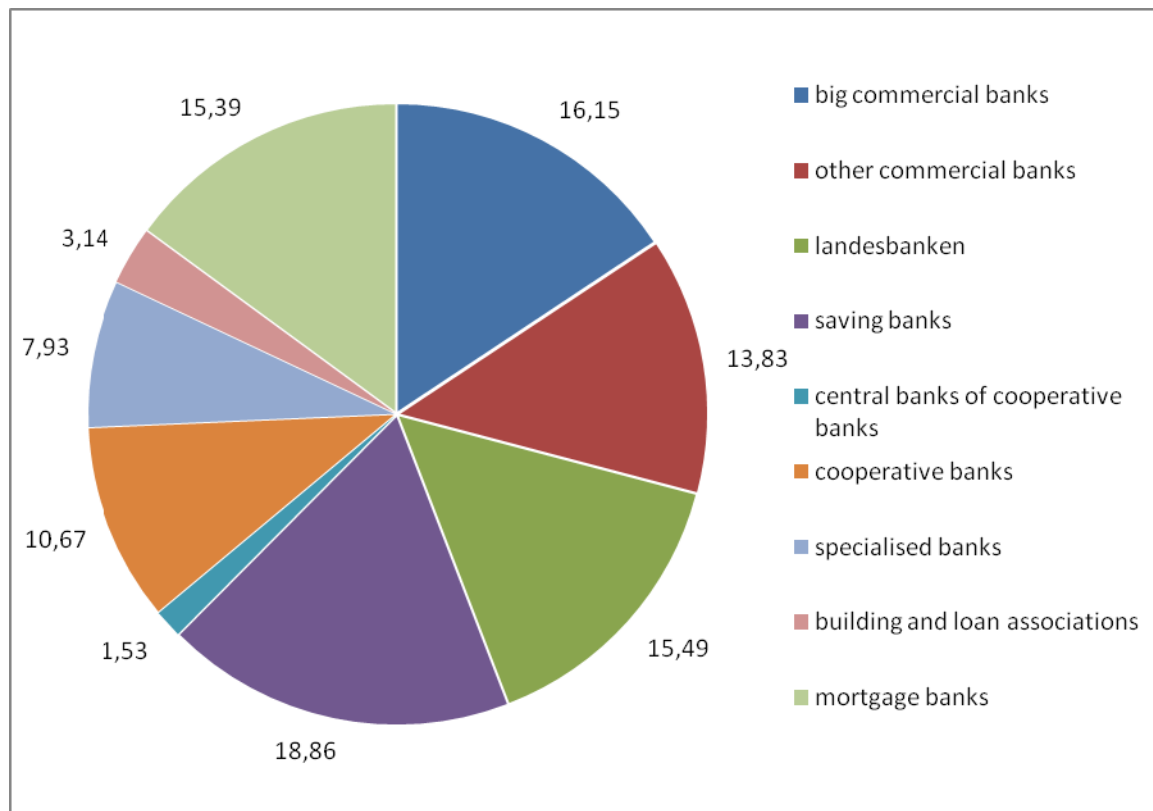
France



Source: Annual report of the CECEI (2006)

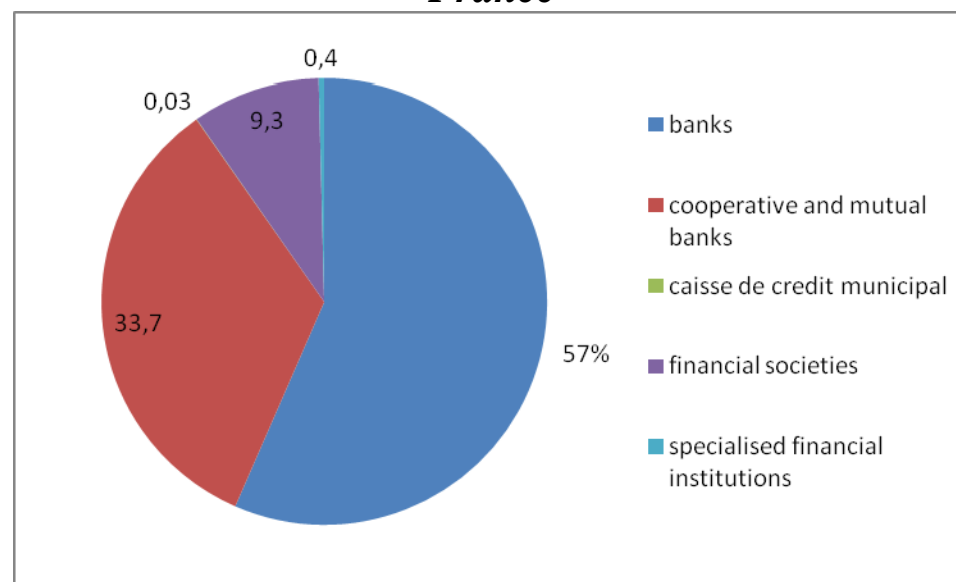
⇒ Despite deregulation, the proportion of loans issued by German banks is more dispersed and the market shares of the 5 largest credit institutions are higher in France.

Germany



Source: Deutsche Bundesbank

France



Source: Commission bancaire report, 2006

Market shares of the 5 largest credit institutions, in % of total assets

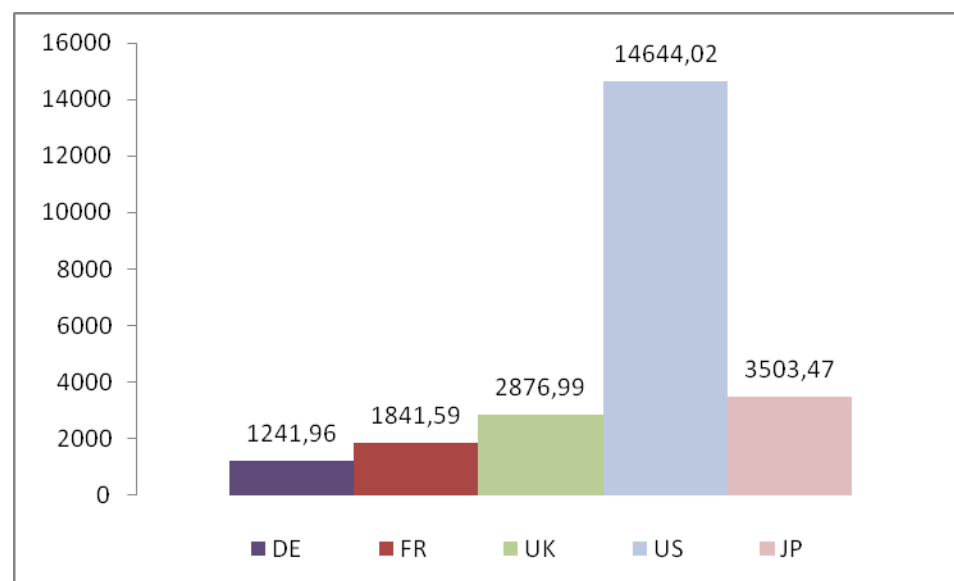
	2002	2003	2004	2005	2006
Germany	20,5	21,6	22,1	21,6	22
France	44.6	46.7	49.2	52.3	52.3
EU 25	38.3	39.8	41	42.2	42.1

Sources: ECB (2007), "EU banking structures", p. 53.

- Market capitalization : advantage for France

German market capitalisation is very low compared to other major economies like the US, UK, Japan and even France: It represented 53.5 % of the GDP in 2006 vs. 102 % for France

Market capitalization, billions of euros, 2006



Source: Eurostat

- In summary: broadly speaking the size of Germans' banks is smaller compared to France, the bank-industry relationship are stronger in Germany. In France, the banking system is more concentrated and

there may be more competition among banks and between banks and financial markets. In Germany, SMEs are still relying heavily on banks to finance their investment (Deeg, 2007).

4. The retail bank interest rate pass-through

- The pass-through of MP rate to the retail bank interest rates is representative of the asymmetries of the MP transmission. It may be the direct consequence of the differences in the banking system.
- Following De Bondt (2002), we estimate an error correction model :

$$\Delta br_t = \gamma + \phi \Delta mr_t - \alpha (br_{t-1} - \beta mr_{t-1}) + \varepsilon_t$$

The formulation is implicitly based on a marginal cost pricing model where the bank applies a mark-up on the marginal cost of funds $\Rightarrow (mr)$ should be a market rate corresponding to the maturity of the bank interest rate (br). But it was more direct to consider the money market interest rate in order to assess the transmission of MP.

- Data : ECB dataset with monthly harmonized statistics since 2003
 - Data on new business volumes
 - Distinction between loans for house purchasing and loans to non financial companies (NFC)
 - Distinction according to the maturity (period of fixed interest rate)
 - For NFC, distinction according to the amount of the loan (more or less than 1 Million euro).

- We focus on :
 - Φ the immediate pass-through
 - β the long-term pass-through
 - α the adjustment speed to the long term equilibrium
 - $\frac{(1-\phi)}{\alpha}$ the mean-adjustment lag

France - Housing loans

	Long term pass- through	Short term pass- through	Adjustment speed	Adjustment- lag
Less than 1 year	0.71	0.05	0.16	6
Between 1 and 5 years	0.57	0.09	0.11	8
Between 5 and 10 years	0.65	0.13	0.08	10
More than 10 years	0.90	0.05	0.05	19

Germany - Housing loans

	Long term pass- through	Short term pass- through	Adjustment speed	Adjustment- lag
Less than 1 year	0.64	0.26	0.28	3
Between 1 and 5 years	0.37	0.37	0.13	5
Between 5 and 10 years	0.25	0.19	0.06	13
More than 10 years	0.20	0.21	0.06	13

France - Loans to Non financial corporates

Amount <1 M €	Long term pass-through	Short term pass-through	Adjustment speed	Adjustment-lag
Less than 1 year	1.01	0.61	0.20	2
Between 1 and 5 years	0.48	0.06	0.15	6
More than 5 years	0.64	0.06	0.08	11

Germany - Loans to Non financial corporates

Amount <1 M €	Long term pass-through	Short term pass-through	Adjustment speed	Adjustment-lag
Less than 1 year	0.79	0.56	0.54	1
Between 1 and 5 years	0.43	0.28	0.12	6
More than 5 years	0.28	0.21	0.09	8

France - Loans to Non financial corporates

Amount >1 M €	Long term pass-through	Short term pass-through	Adjustment speed	Adjustment-lag
Less than 1 year	0.94	0.53	0.43	1
Between 1 and 5 years	0.79	0.01	0.97	1
More than 5 years	0.47	0.31	0.31	2

Germany - Loans to Non financial corporates

Amount >1 M €	Long term pass-through	Short term pass-through	Adjustment speed	Adjustment-lag
Less than 1 year	0.86	0.70	0.49	1
Between 1 and 5 years	0.71	0.20	0.87	1
More than 5 years	0.37	0.60	0.20	2

- Asymmetry is confirmed. The differences observed in the pass-through of MP rates to retail bank interest rates may explain why the MP channel appears stronger.

- Heyer & Timbeau (2006) : household bank rate depend on the interest rate spread → a cut in MP rates would imply a rise in the bank rate:

Equation in the long term of the household debt rate*

	<i>Germany</i>	<i>France</i>
<i>Critical spread</i>	0,035	0,036
<i>Spread of interest rates**</i>		0,025
<i>Unemployment rate</i>		-0,04
<i>Real-estate wealth***</i>		0,05
<i>Dummy liberalization****</i>		0,22

* \ln (household debt / gross disposable income)

** Spread between 10 years interest rate and 3 months interest rate

*** \ln (Real-estate wealth / gross disposable income)

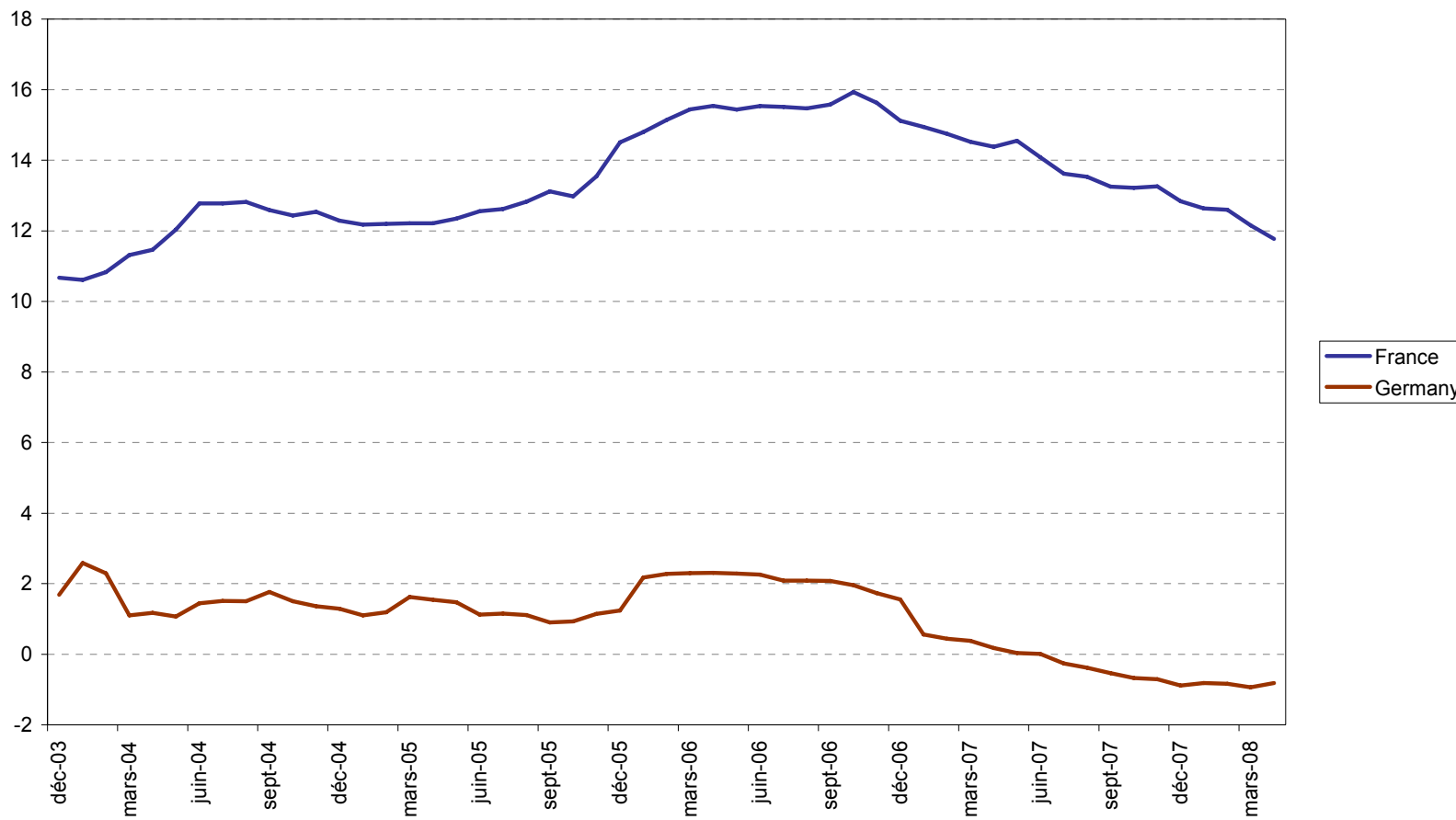
**** Dummy between 1985 and 1991.

Source : Heyer & Timbeau (2006).

- A 1 point decrease in the short term interest rates → the French household debt rate rises by 2,5 % in the long run. It has no effect on the German household debt rate.

- It may contribute to explain why credits to households have been more dynamic in France

Annual growth rate of outstanding amount of loan for house purchasing



5. Conclusion

- The reality of asymmetries has been confirmed by a macro analysis on the MP transmission between France and Germany.
- We have augmented that it may result from differences in the role played by banks in the 2 countries
- The pass-through of MP rates to retail bank rates is part of the story
- What should we do now ?
 - run the same econometrics to estimate the pass-through over a longer data period
 - Estimate a credit equation for France and Germany to gauge the importance of MP for the dynamism of credit growth (households and NFC)