

Cash Holdings in Germany and the Demand for "German" Banknotes: What role for cashless payments?

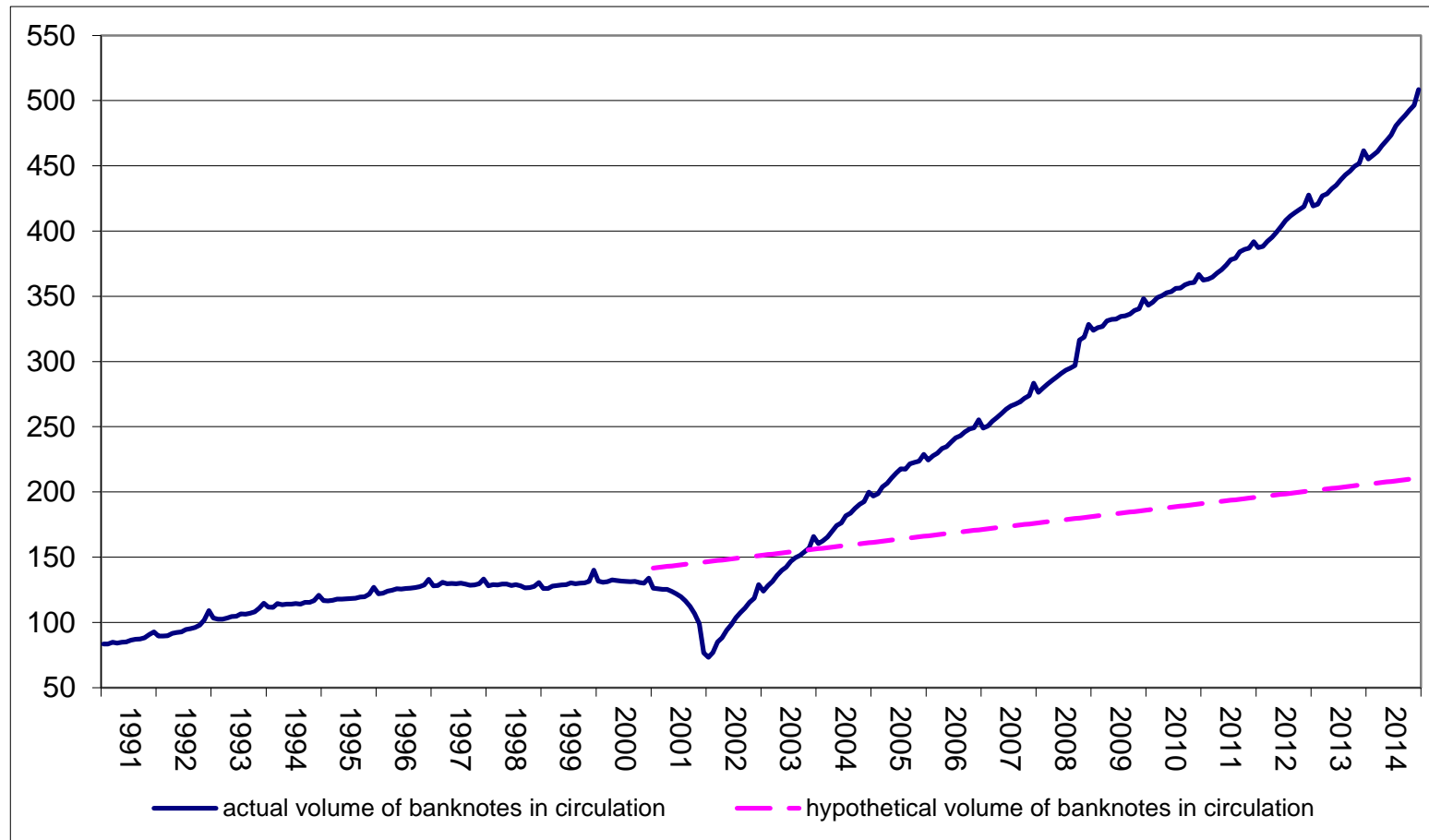
Prof. Dr. Franz Seitz

(Weiden Technical University of Applied Sciences)

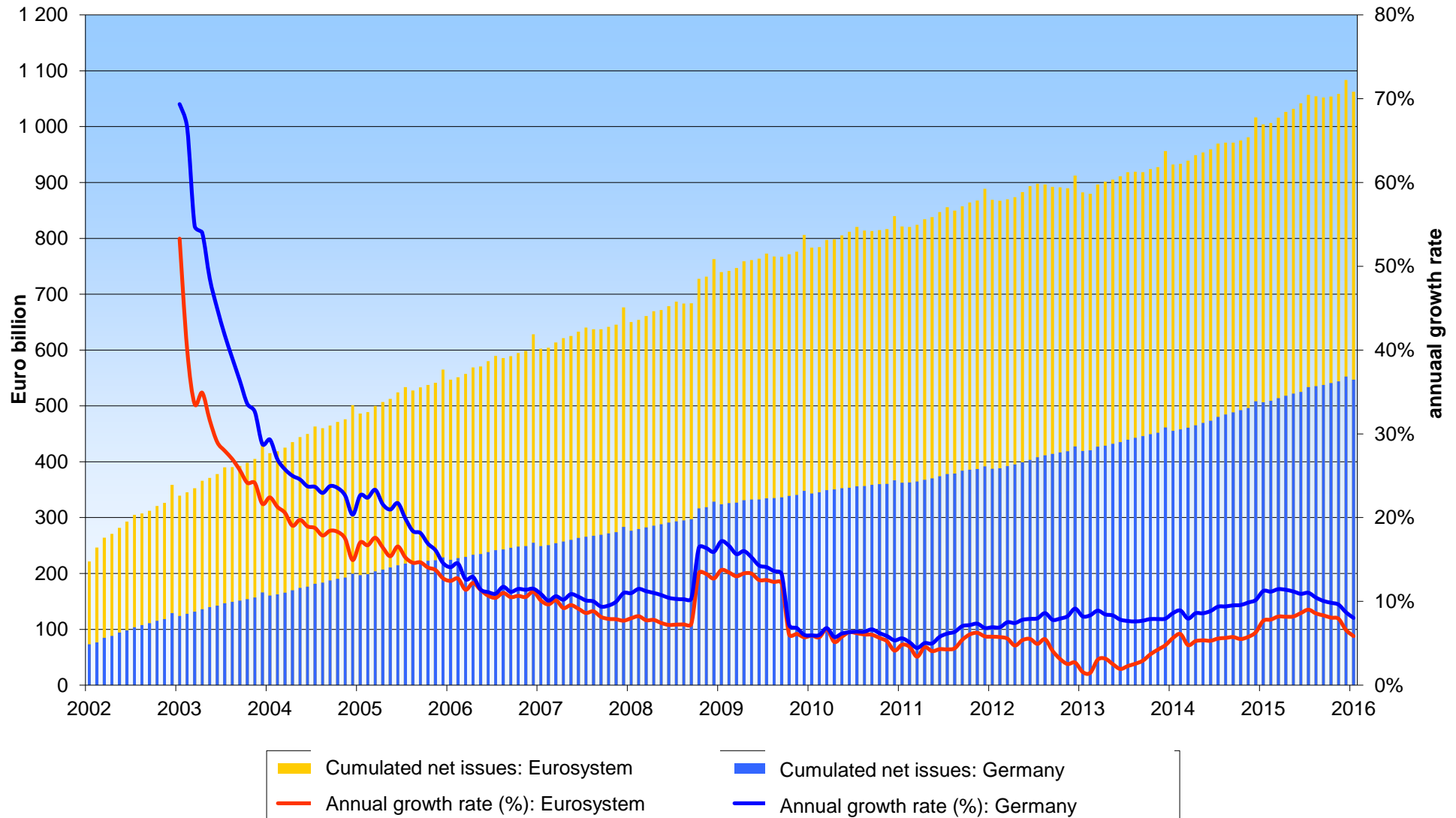
*"...the demand for currency
may have properties
nothing like what one would
expect from textbook
models of money demand."
(S. Sumner, 1994)*

1. Some (stylized?) facts

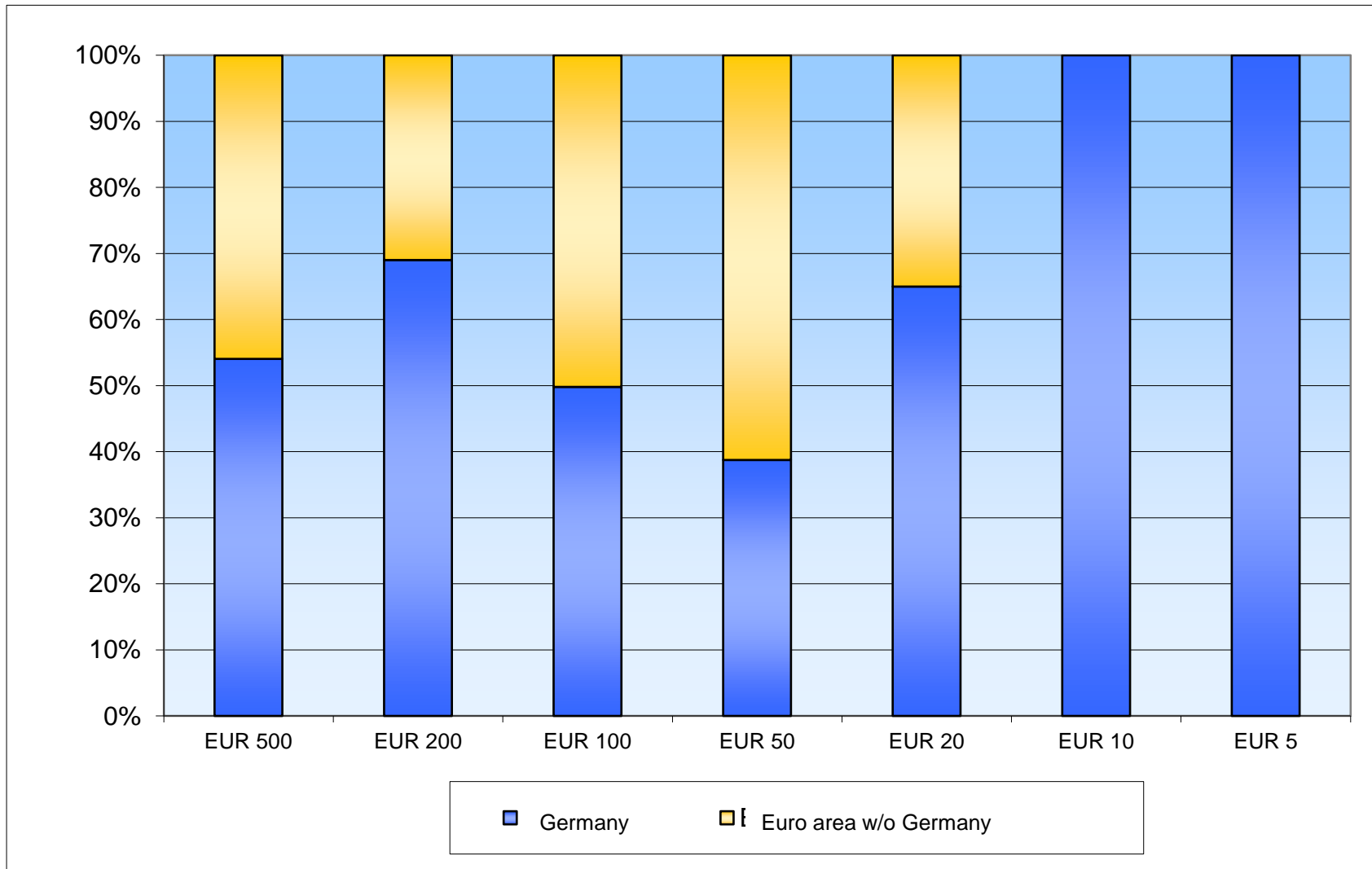
German banknotes in circulation (€ bn)



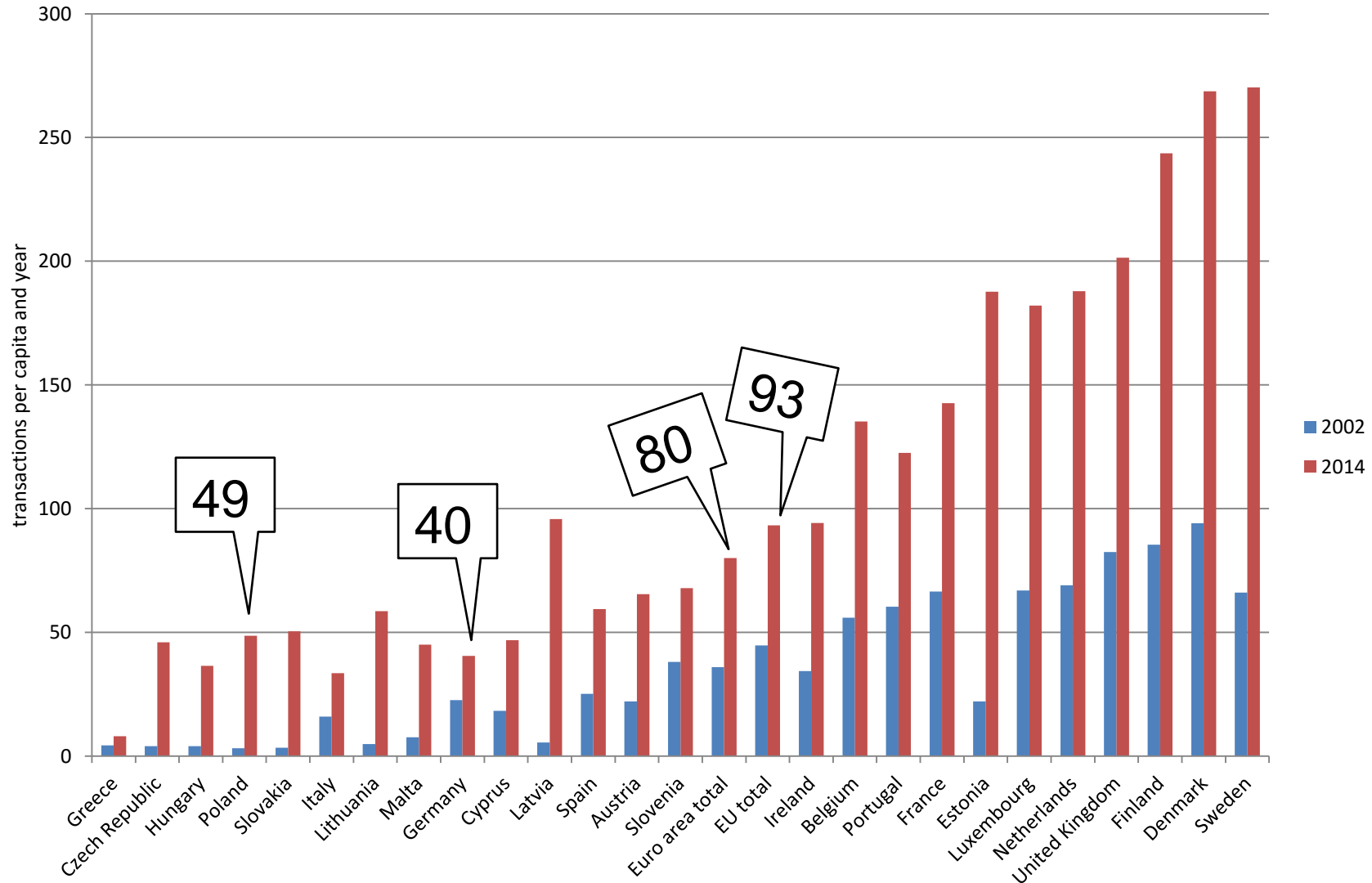
EMU: Total cash in circulation



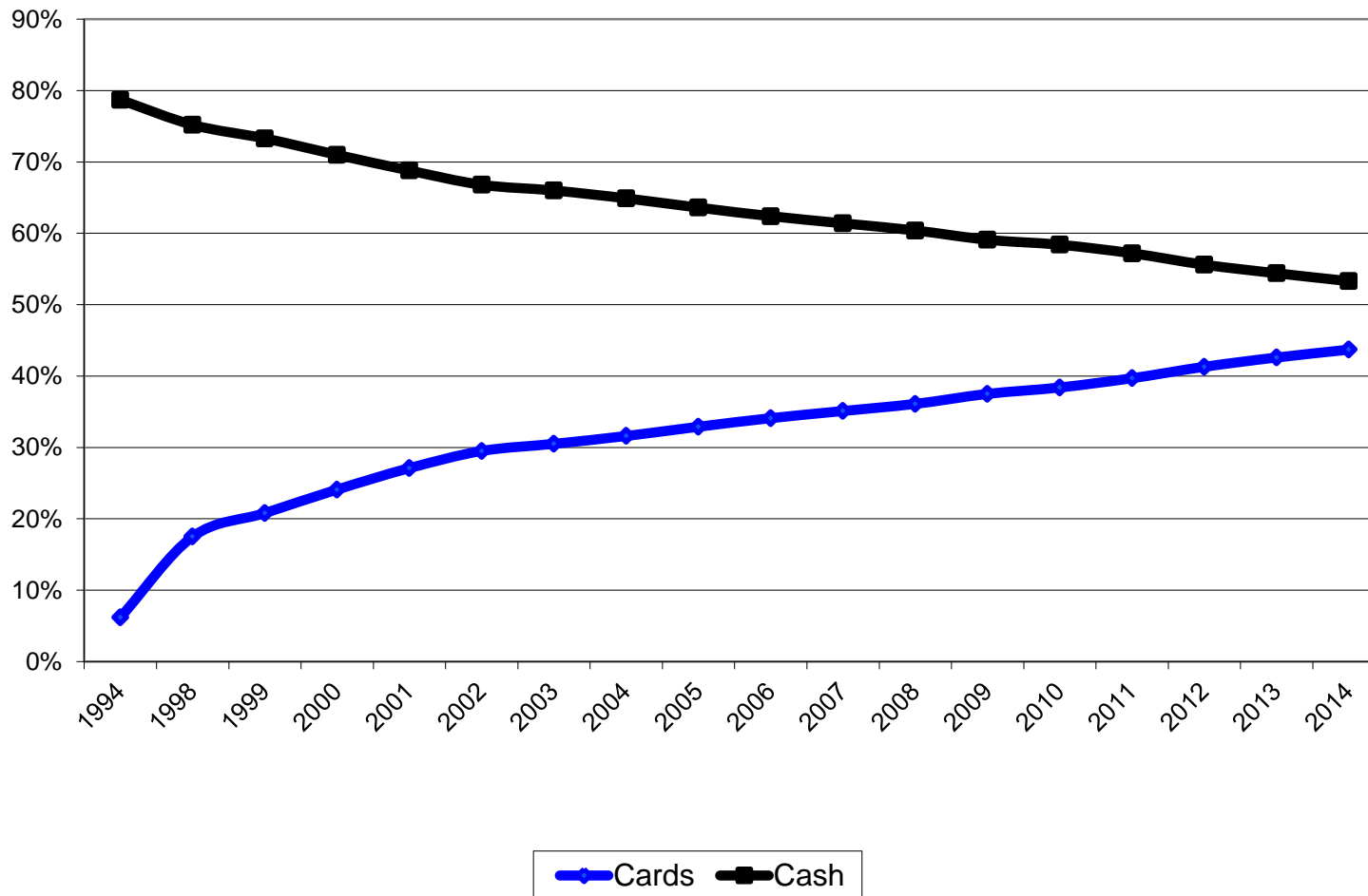
Banknotes: (Net) issue shares



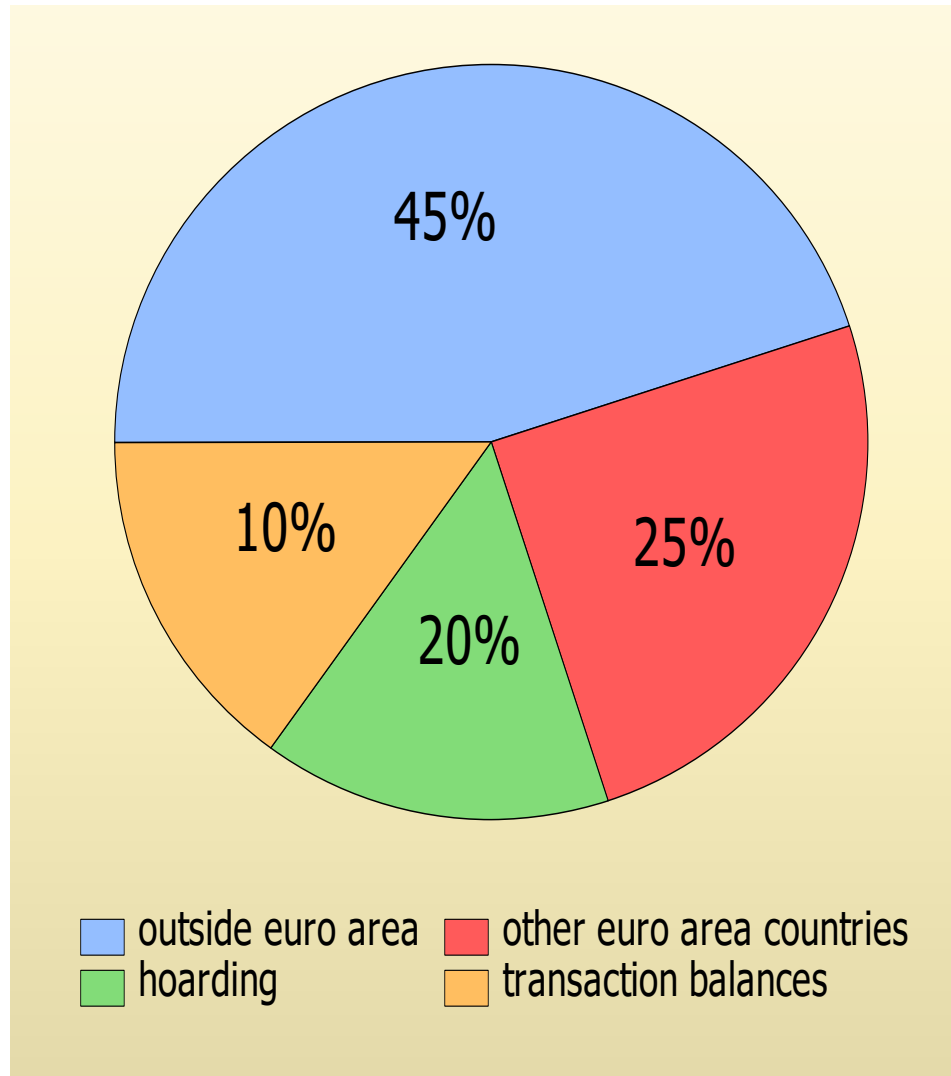
Card payments per capita and year



Cards and cash at the POS (share in retail turnover)



GE: Cash demand motives



2. The model: data, specification, results

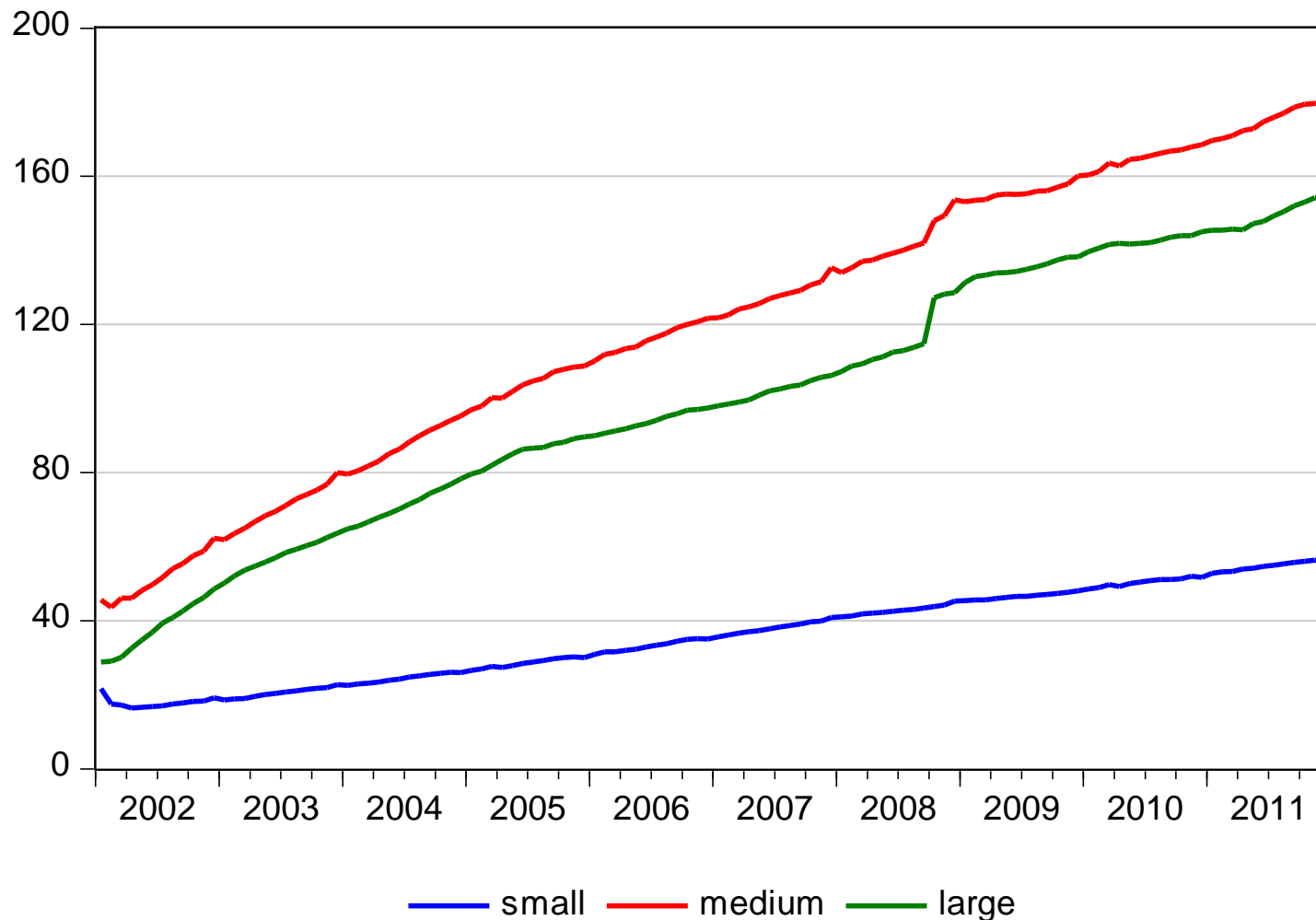
Why cash?

- ▶ Transaction demand,
- ▶ Hoarding, store of wealth
- ▶ Shadow economy,
- ▶ *Alternative payment media*, especially cards,
- ▶ Foreign demand

Data

- ▶ Sample 2002 - 2011
- ▶ Quarterly data
- ▶ Specification in real terms
- ▶ Denominational split:
 - small (€5 - €20)
 - medium (€50 - €100)
 - large (€200 - €500)

Small, medium and large value denominations, in real terms (€ bn)



Econometric model

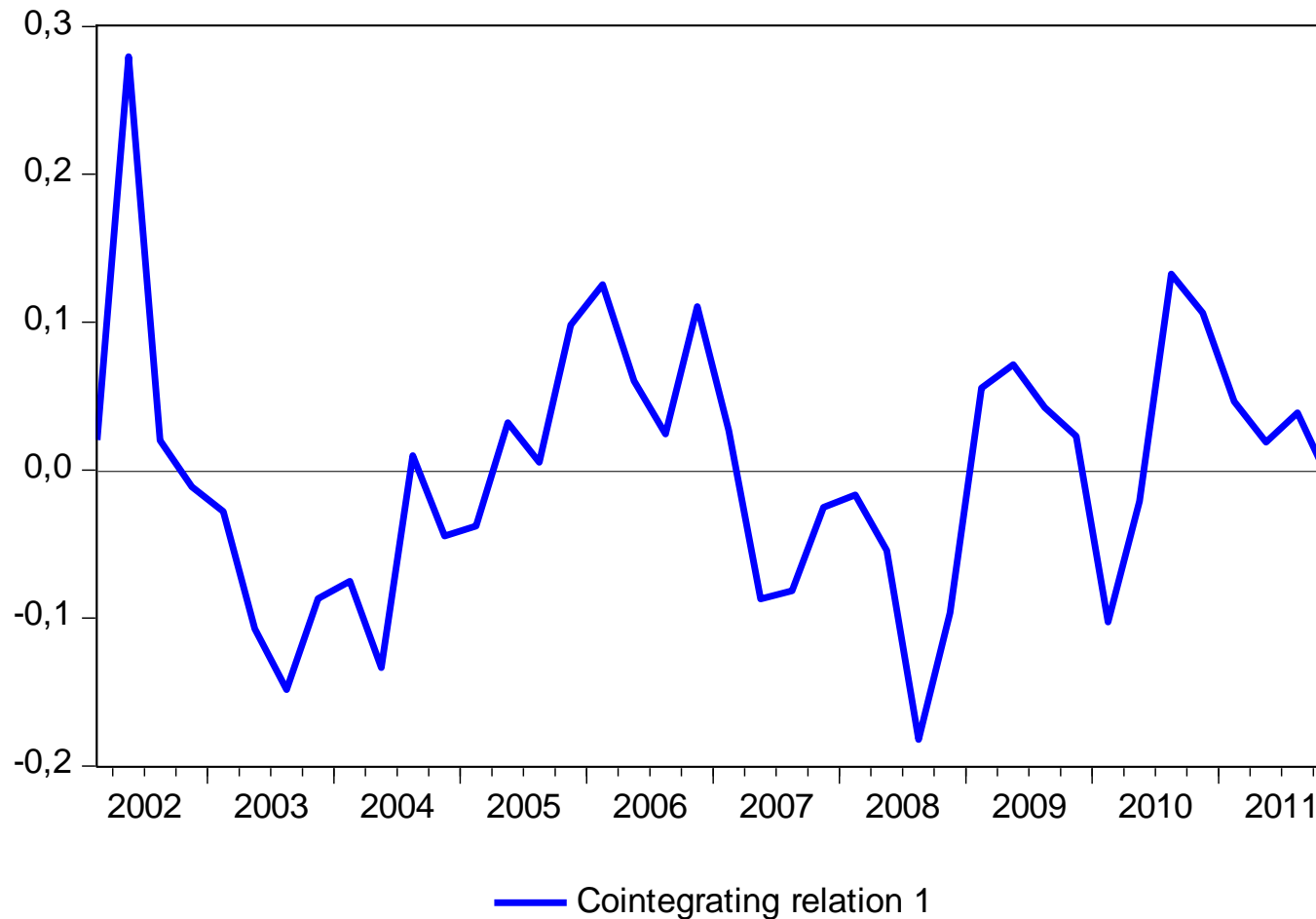
► Cointegration framework

- VECM for small and large
- DOLS for medium
- Unit root testing, lag order selection
- Small-sample adjustment of test statistics
- Exogenous (non-modelled) variables
- Number of cointegration relationships (1)
- Weak exogeneity

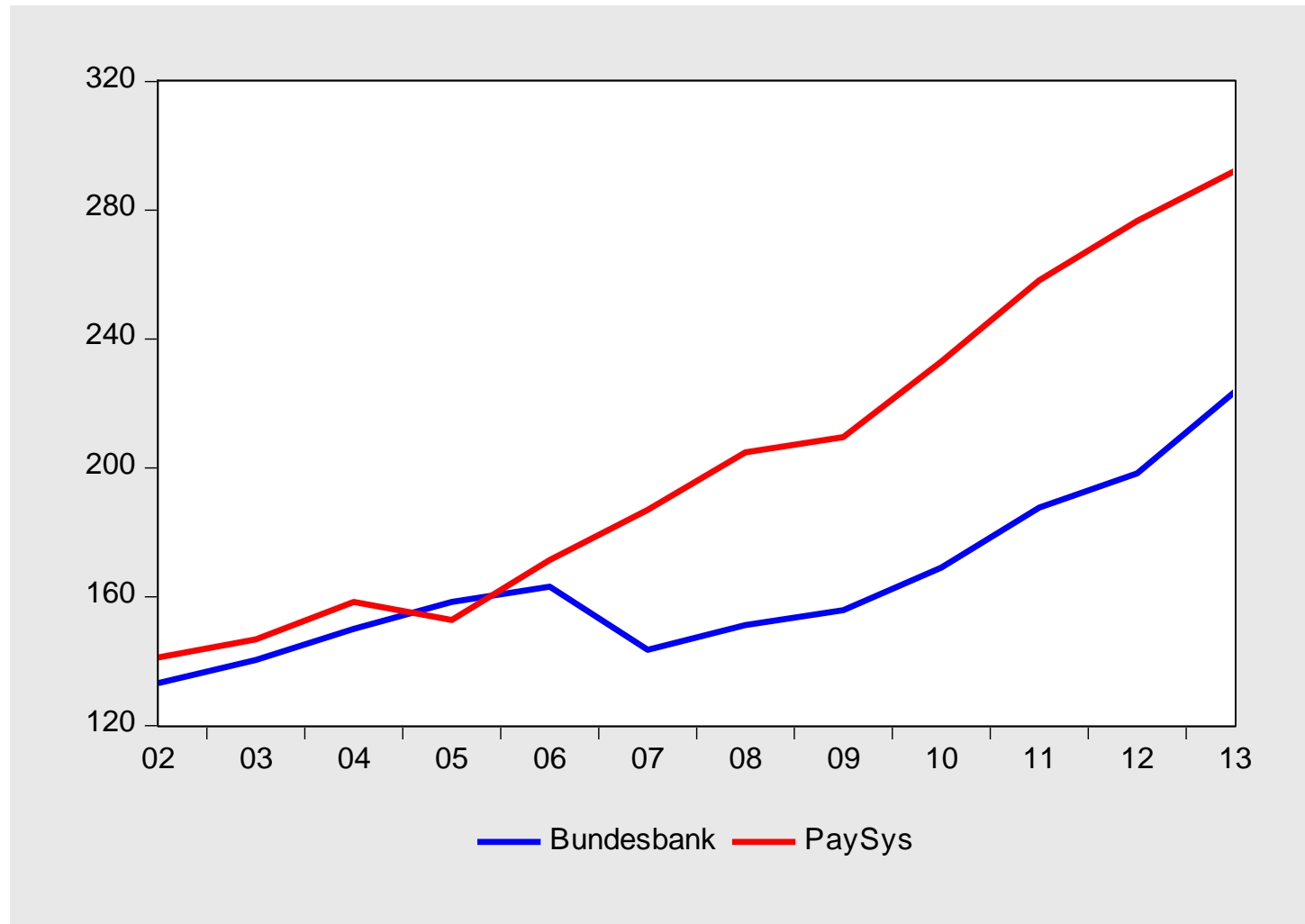
Results

	(1) Small	(2) Medium	(3) Large
Long-term			
<i>cc</i>	8.9 (20.2)	2.8 (3.2)	
<i>eeff</i>	3.1 (15.0)		2.0 (10.7)
<i>i</i>			-0.09 (8.8)
<i>house</i>			0.8 (7.9)
<i>pc_remu</i>		5.0 (11.4)	
Short-term (exogenous)			
<i>ect</i>	-0.17 (-3.9)	-0.19 (0.02)	-0.48 (-5.0)
<i>cards</i>	-0.2 (-1.7)		
<i>d(pc_remu)</i>	0.004 (4.5)	0.22 (0.02)	0.01 (0.01)
<i>i</i>		-0.03 (-2.7)	
<i>d(un)</i>		1.0 (3.4)	
<i>d2008q4</i>		0.09 (0.03)	0.1 (2.5)
<i>d_debt2010q1</i>			0.03 (1.6)
<i>d_2007q4</i>		-0.1 (-1.7)	
Diagnostics			
adj. R ²	0.73	0.99	0.61
s.e.	0.02	0.03	0.04
F stat.	19.0	-	9.8
LM(1)	0.02	-	0.16
LM(4)	0.88	-	0.21
Hansen		>0.2	
Normality	0.98	0.78	0.00

Cointegration relation for small



Volume of card payments in Germany (€ bn)



Summary, conclusion

- ▶ Dynamics of euro notes are, to a large extent, driven by demand from outside the euro area and this demand is predominantly met by Germany
- ▶ Importance: distinguishing different motives of holding cash
 - Diminishing role of transactions motive
 - Increasing role of other motives
- ▶ Influence of cards limited to small denominations. Reasons: dominance of other factors, especially foreign demand, poor data quality and small sample

Thank you very much for your attention!

Any questions?