Financial liberalization, growth, productivity and capital accumulation: The case of European integration

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Motivation

- investigation of direct and indirect growth effects in a specific context of European economic and monetary integration
  - ✓ distinguishing between output growth, productivity growth and capital accumulation
  - ✓ splitting the effects of financial globalization between the impact coming from the EU-membership and from the euro adoption
  - ✓ trying to assess the impact of the process on three country groups within the EU: East, PIIGS and core

Literature review

- standard approach

  - ✓ opening of financial transactions leads to intensified capital flows from capital-abundant towards capital-scarse regions (Barro et al. 1995; Gourinchas and Jeanne 2006)

  - ✓ empirical results rather inconclusive: support for the growth-enhancing hypothesis (Bekaert et al. 2005; Quinn and Toyoda 2008) along with studies reporting only weak or mixed evidence (Rodrik 1998; Edison et al. 2002)

- more sophisticated context

  - ✓ indirect growth effects through improved factor productivity (Mishkin 2006, Kose et al. 2009a), reduction of capital constraints (Acemoglu & Zilibotti 1997), financial development (Baltagi et al. 2009)

  - ✓ empirical analyses rather supportive both implementing country-level data (Bonfiglioli 2008; Kose et al. 2009a) and industry-level data (Bekaert et al. 2011)

Stylized facts (1)

- dynamic process of financial integration over the last decades observed both in terms of flows and stocks

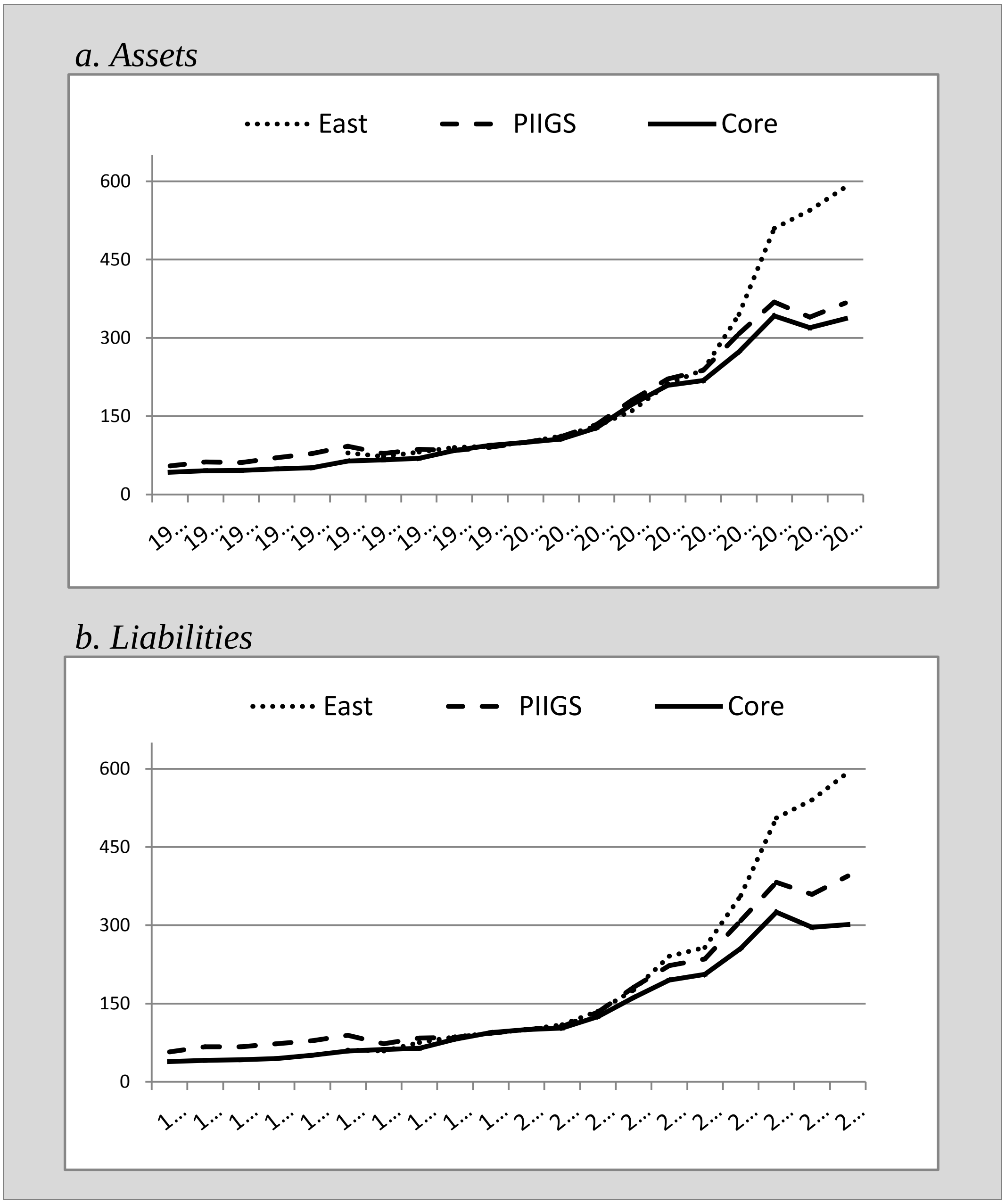

Figure 1 Stock of assets (*a*) and of liabilities (*b*) in the EU.

Stylized facts (2)

- parallel, continuing productivity as well as GDP growth

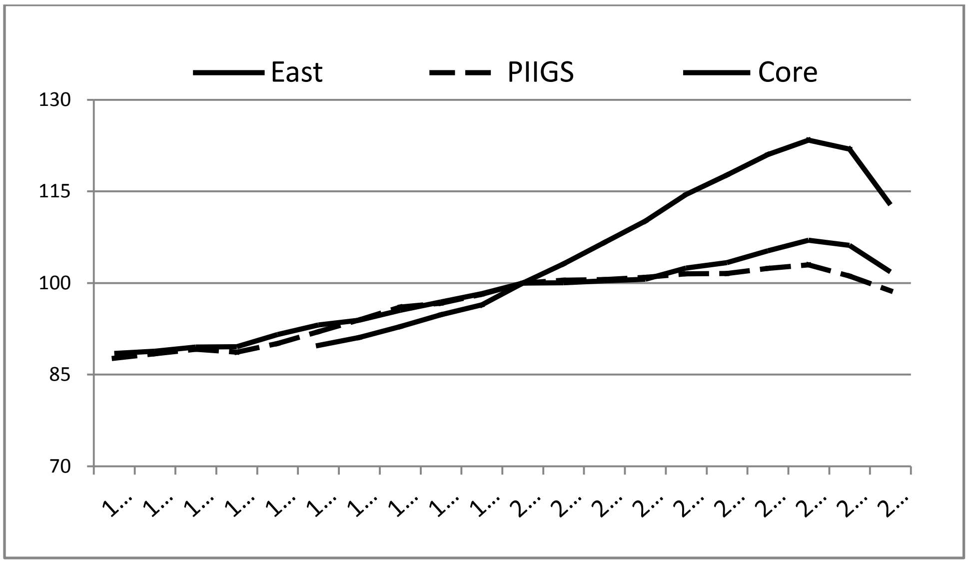

Figure 2 Development of TFP in the EU.

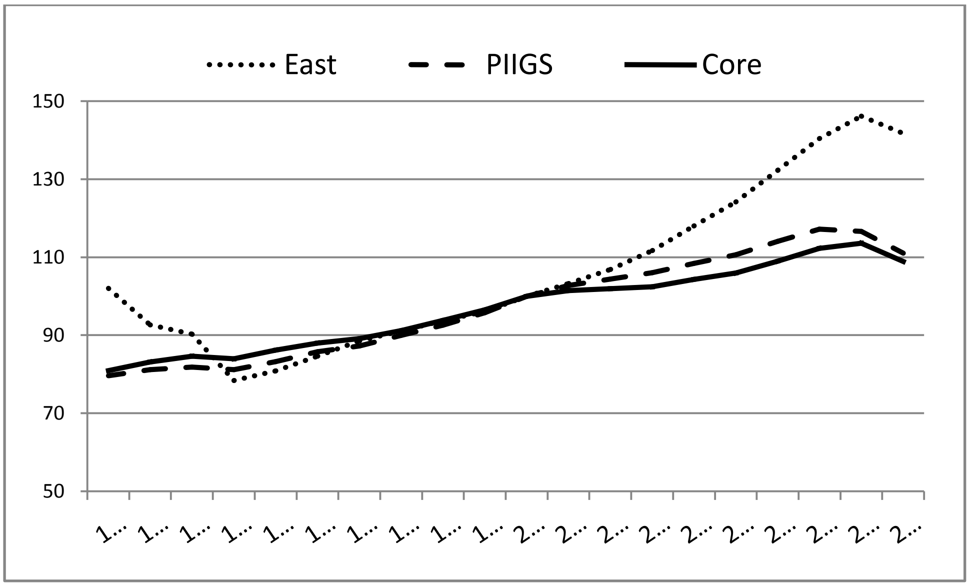

Figure 3 Development of real GDP in the EU.

Methodology and data

- unbalanced panel of 26 EU countries in the period 1990-2007

- annual observations transformed into 3-year non-overlapping averages in order to overcome cyclicality concerns

- dynamic panel estimation implementing difference GMM (Arellano&Bond 1990)

$$\Delta g_{iD} = \beta_1 + (\gamma - 1) g_{i,D-1} + \beta_2^{'} \Delta \mathbf{Z}_{iD} + \beta_3^{'} \Delta \mathbf{F}_{iD} + \Delta \eta_D + \Delta \varepsilon_{iD}$$

- three distinct dependent variables: GDP growth, TFP growth and investment

- financial integration measured alternatively by means of *de jure* (Chinn and Ito, 2008) and *de facto* (IMF BOP) indicators

- controls for the trade openness, government spending, financial development

Results (1)

Dependent variable: *y*						
	(1)	(2)	(3)	(4)	(5)	(6)
y_{iD-1}	-0.128	0.021	0.003	-0.103	-0.073**	-0.067
	(0.051)	(0.057)	(0.048)	(0.062)	(0.027)	(0.052)
Openness	0.062***	0.017	0.066***	0.027*	0.053***	0.048**
	(0.015)	(0.017)	(0.008)	(0.014)	(0.014)	(0.018)
Expendit	-0.004	-0.071**	0.035	-0.076*	-0.048	0.009
	(0.027)	(0.026)	(0.023)	(0.030)	(0.026)	(0.038)
Fin. depth	-0.002	-0.002	-0.015**	-0.005	-0.007	-0.004
	(0.006)	(0.003)	(0.004)	(0.004)	(0.005)	(0.005)
Ch-I (de jure)	0.058***	0.122***				
	(0.015)	(0.020)				
IMF (de facto)		0.008				
		(0.007)				
*Ch-I*IMF*		-0.040**				
		(0.012)				
*Euro*Ch-I*			0.022			
			(0.016)			
*EU*Ch-I*			0.119***			
			(0.024)			
*Euro*IMF*				-0.001		
				(0.002)		
*EU*IMF*				0.008		
				(0.003)		
*East*Ch-I*					0.032**	
					(0.011)	
*PIIGS*Ch-I*					0.176**	
					(0.059)	
*Core*Ch-I*					0.061	
					(0.127)	
*East*IMF*						0.084***
						(0.022)
*PIIGS*IMF*						0.012
						(0.003)
*Core*IMF*						0.006
						(0.007)
Sargan	0.146	0.313	0.094	0.271	0.251	0.248
A-B m2	0.149	0.169	0.415	0.070	0.123	0.181
Obs	98	89	98	91	99	96

Results (2)

Dependent variable: *d(*TFP*)*						
	(1)	(2)	(3)	(4)	(5)	(6)
*d(*TFP*)$_{iD-1}$*	-0.158**	-0.029	-0.131***	-0.075*	-0.106***	-0.057*
	(0.048)	(0.030)	(0.037)	(0.036)	(0.024)	(0.026)
Openness	0.070**	0.034**	0.069***	0.047*	0.058**	0.070**
	(0.021)	(0.026)	(0.015)	(0.022)	(0.021)	(0.021)
Expendit	0.040	0.004	0.059**	-0.005	0.030	0.057*
	(0.022)	(0.015)	(0.021)	(0.021)	(0.020)	(0.027)
Fin. depth	-0.009	-0.007*	-0.008	0.005	-0.011	-0.008
	(0.005)	(0.003)	(0.006)	(0.007)	(0.006)	(0.006)
Ch-I (de jure)	0.043***	0.106**				
	(0.012)	(0.037)				
IMF (de facto)		0.005				
		(0.010)				
*Ch-I*IMF*		-0.061*				
		(0.028)				
*Euro*Ch-I*			-0.001			
			(0.020)			
*EU*Ch-I*			0.101***			
			(0.018)			
*Euro*IMF*				-0.001		
				(0.002)		
*EU*IMF*				0.003		
				(0.002)		
*East*Ch-I*					0.038*	
					(0.015)	
*PIIGS*Ch-I*					0.108**	
					(0.030)	
*Core*Ch-I*					0.064	
					(0.183)	
*East*IMF*						0.029
						(0.021)
*PIIGS*IMF*						0.004
						(0.008)
*Core*IMF*						0.001
						(0.008)
Sargan	0.168	0.245	0.151	0.221	0.198	0.339
A-B m2	0.248	0.306	0.384	0.323	0.260	0.596
Obs	98	89	98	92	100	97

Results (3)

Dependent variable: *k*						
	(1)	(2)	(3)	(4)	(5)	(6)
k_{iD-1}	0.278	0.214	0.465*	0.745***	0.567***	0.602**
	(0.147)	(0.195)	(0.273)	(0.141)	(0.158)	(0.203)
Openness	0.011	-0.013	0.002	0.006	0.002	0.007
	(0.012)	(0.012)	(0.021)	(0.017)	(0.010)	(0.008)
Expendit	-0.005	-0.062**	-0.043*	0.022	-0.003	0.006
	(0.015)	(0.020)	(0.021)	(0.016)	(0.015)	(0.015)
Fin. depth	0.001	-0.003	-0.003	-0.011	-0.004	-0.004
	(0.004)	(0.004)	(0.004)	(0.005)	(0.006)	(0.004)
Ch-I (de jure)	0.086***	0.088***				
	(0.009)	(0.025)				
IMF (de facto)		0.010				
		(0.008)				
*Ch-I*IMF*		-0.013				
		(0.018)				
*Euro*Ch-I*			0.001			
			(0.002)			
*EU*Ch-I*			0.003			
			(0.004)			
*Euro*IMF*				0.015		
				(0.011)		
*EU*IMF*				0.029		
				(0.021)		
*East*Ch-I*					0.047*	
					(0.023)	
*PIIGS*Ch-I*					0.113*	
					(0.056)	
*Core*Ch-I*					0.029	
					(0.049)	
*East*IMF*						0.061***
						(0.008)
*PIIGS*IMF*						0.004
						(0.005)
*Core*IMF*						0.011
						(0.007)
Sargan	0.303	0.065	0.050	0.120	0.104	0.076
A-B m2	0.758	0.347	0.944	0.766	0.846	0.771
Obs	98	89	98	92	100	97

Conclusions

- non negligible positive effects of financial liberalization on economic growth in general and on productivity growth as well as on capital accumulation in Europe

- persistence of the impact due to the EU membership but no additional impact coming from the euro adoption

- most of the positive influence observed on the Eastern European countries and on PIIGS, whereas no impact on the core euro area

- influence coming prevalently from *de jure* and not also from *de facto* financial integration

- better, more complete measures of *de facto* financial liberalization are needed to assess the actual impact of financial globalization