

Entrepreneurship and the business cycle: a way out of the bust?

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What will I do?

- Entrepreneurship and the cycle
 - Philipp Köllinger and Roy Thurik, 2009, *Entrepreneurship and the business cycle*, Discussion paper TI09-xxx/3, Tinbergen Institute, Erasmus University Rotterdam
- Conclusions
- Recession and its remedies
- Entrepreneurship and its many faces

Theoretical background

- What is the relationship between entrepreneurial activity and the business cycle?
- Hypothesis 1: ‘Entrepreneurial activity is constant over the business cycle’
 - Bernanke and Gertler (*AER*, 1989)
 - Carlstrom and Fuerst (*AER*, 1997)
- Hypothesis 2: ‘Entrepreneurship is pro-cyclical’
 - Rampini (*JME*, 2004)

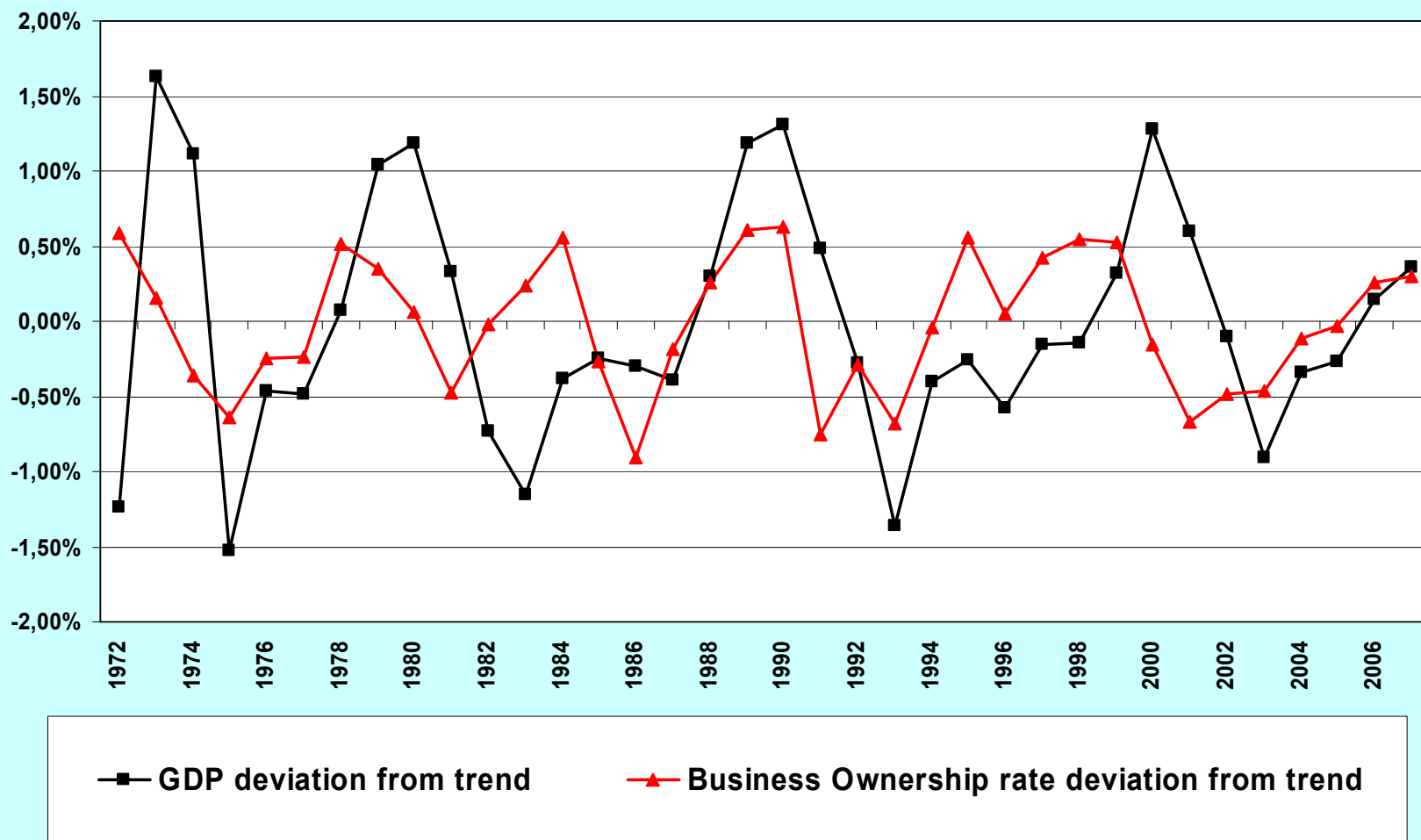
Data

- 22 OECD countries, annual data for 1972-2007
- Sources:
 - Compendia 2007.1 (business ownership rate)
 - See van Stel (*IEMJ*, 2005)
 - OECD (GDP and unemployment rate)
- Variables:
 - Business ownership rate
 - Self-employed and incorporate business owners
 - In % of labor force (employed + unemployed)
 - Harmonized across countries and over time
 - GDP in national currencies and constant prices (2000)
 - Standardized unemployment rates

Decomposition of trend and cycle

- Business cycle is defined as GDP deviations from long term growth trend
 - Decomposition using the Hodrick-Prescott filter (*JMCB*, 1997)
 - with a smoothing parameter of 6.25 for annual data (Ravn and Uhlig, *RES*, 2002)
- Business ownership cycleidem
- Unemployment cycleidem

Average deviations from trend across 22 countries



Cyclical time patterns of real GDP

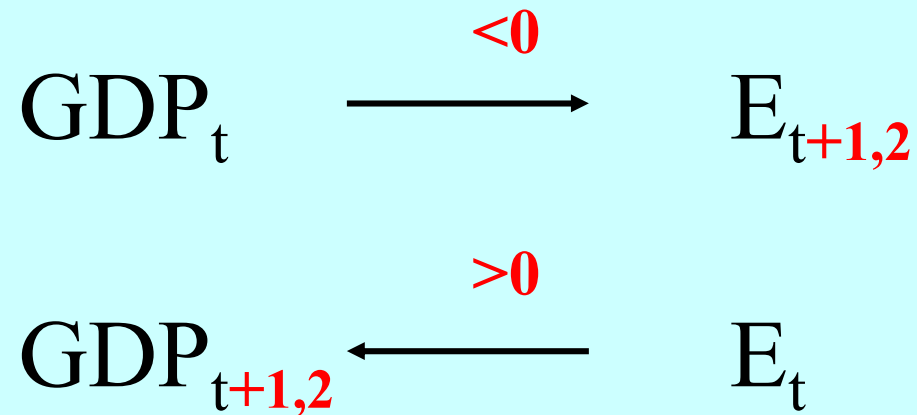
	Bivariate correlation of real GDP cycle with						
Lags of ↓ in years	t-3	t-2	t-1	t	t+1	t+2	t+3
Business-ownership rate cycle	-0.01 (N=726)	0.08** (N=748)	0.10*** (N=770)	0.03 (N=792)	-0.06* (N=770)	-0.11*** (N=748)	-0.08** (N=726)
Unemployment cycle	0.09** (N=726)	0.18*** (N=748)	-0.03 (N=770)	-0.45*** (N=792)	-0.34*** (N=770)	0.05 (N=748)	0.20*** (N=726)
* denotes significance at >90% confidence ** denotes significance at >95% confidence *** denotes significance at >99% confidence Data for 22 OECD countries 1972-2007.							

Granger causality test business-ownership cycle → GDP cycle: significant >95%

Granger causality test GDP cycle → business ownership cycle: significant >99%
 (based on VAR including cycles of business ownership, GDP and unemployment)

→ **Entrepreneurship is an early indicator of the cycle in most countries and years**

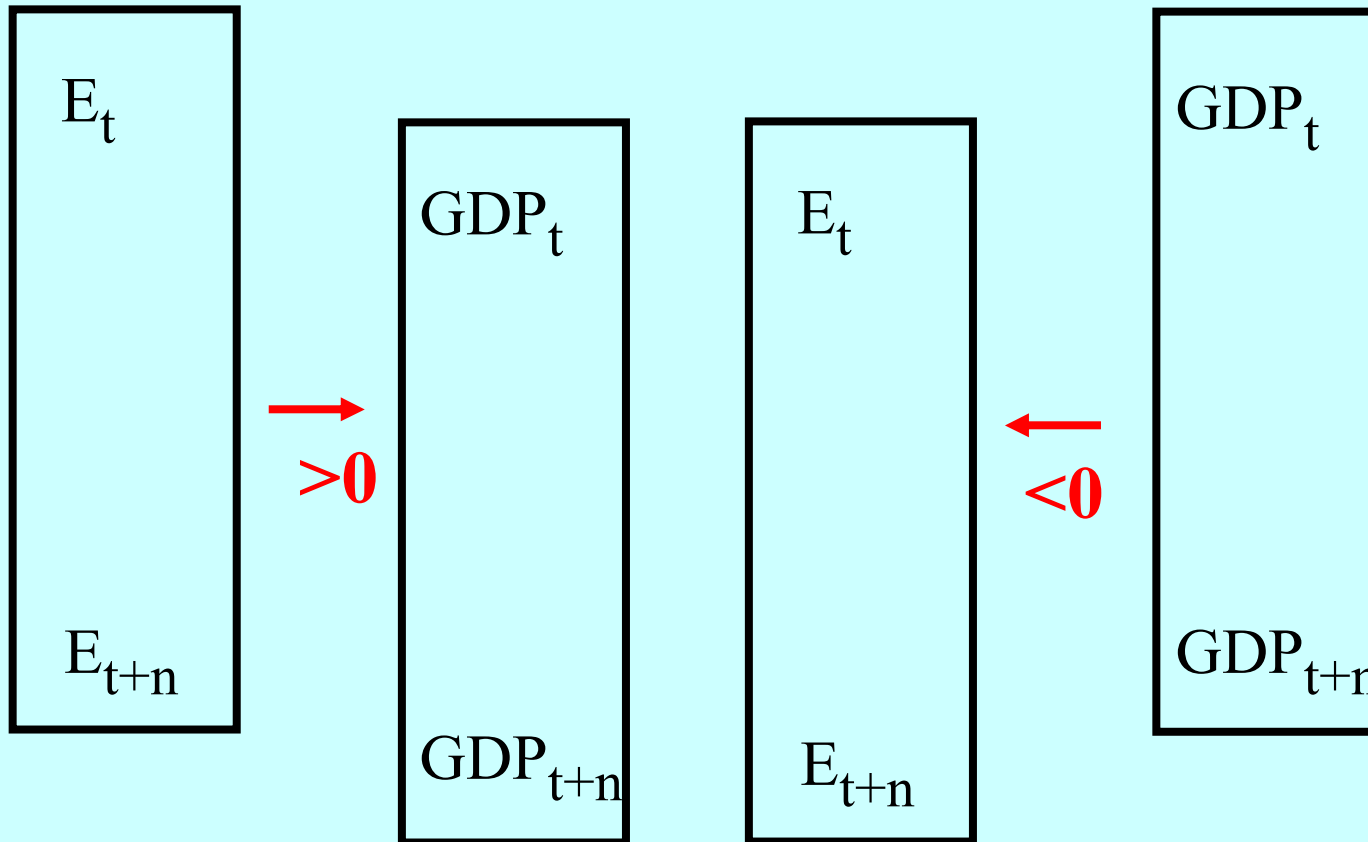
Two relationships



Granger causality test business-ownership cycle \rightarrow GDP cycle: significant >95%
Granger causality test GDP cycle \rightarrow business ownership cycle: significant >99%
(based on VAR including cycles of business ownership, GDP and unemployment)

\rightarrow Entrepreneurship is an early indicator of the cycle in most countries and years

Playing with lags



Just playing with data but ...

- There is much conceptual evidence that entrepreneurship leads to economic growth
 - spillovers and innovation
 - competition
 - newness through turbulence
 - variation and learning
 - share of self-employed
- Carree and Thurik (*Kluwer*, 2003), Audretsch et al. (*Oxford*, 2006), Van Praag and Versloot (*SBE*, 2008), Erken et al. (*Jena*, 2008)
- Economic cycle leads the entrepreneurship cycle
 - Opportunity costs; opportunities; sensitivity to downward movements

Unemployment and entrepreneurship

	Bivariate correlation of business-ownership cycle with						
Lags of ↓ in years	t-3	t-2	t-1	t	t+1	t+2	t+3
Unemployment cycle	-0.01 (N=726)	0.06* (N=748)	0.07** (N=770)	0.01 (N=792)	-0.08** (N=770)	-0.08** (N=748)	-0.05 (N=726)
* denotes significance at >90% confidence ** denotes significance at >95% confidence ** denotes significance at >95% confidence Data for 22 OECD countries 1972-2007.							

Granger causality test business-ownership cycle → unemployment cycle: not significant

Granger causality test unemployment cycle → business ownership cycle: significant >99%
 (based on VAR including cycles of business ownership, GDP and unemployment)

→ Refugee effect (necessity entrepreneurship), see Thurik et al. (*JBV*, 2008)

Entrepreneurship and the duration of recessions

Fixed effects Poisson estimation on duration of recessions in years	
	Coefficient
Business ownership trend	-4.13**
<i>Model diagnosis</i>	
N	792
LR test for unobserved heterogeneity	0.02
Hausman test for 'fixed effects'	0.15
* denotes significance at >90% confidence ** denotes significance at >95% confidence Data for 22 OECD countries 1972-2007.	

→ More entrepreneurship means shorter recessions

Conclusion 1

- Entrepreneurship leads the way out of recessions in most cases
 - Rejects earlier theoretical hypotheses
 - New empirical finding
 - Remaining heterogeneity across countries and time
- More entrepreneurship leads to shorter recessions
 - Entirely new result
- Policies for encouraging entrepreneurship during the crisis
 - Do not raise unemployment benefits
 - Koellinger and Minniti (*EL*, 2009)
 - Bureaucracy and market entry regulations
 - Grilo and Thurik (*ICC*, 2008)
 - Van Stel et al. (*SBE*, 2007)
 - Financial support (e.g. tax based venture capital funds)

Conclusion 2

- Is our current crisis different?
- Explanations of economic growth
 - Audretsch and Thurik (*ICC*, 2001)
- Entrepreneurship has many faces!