
Technology catch-up in Europe: Issues and policies for new Member States



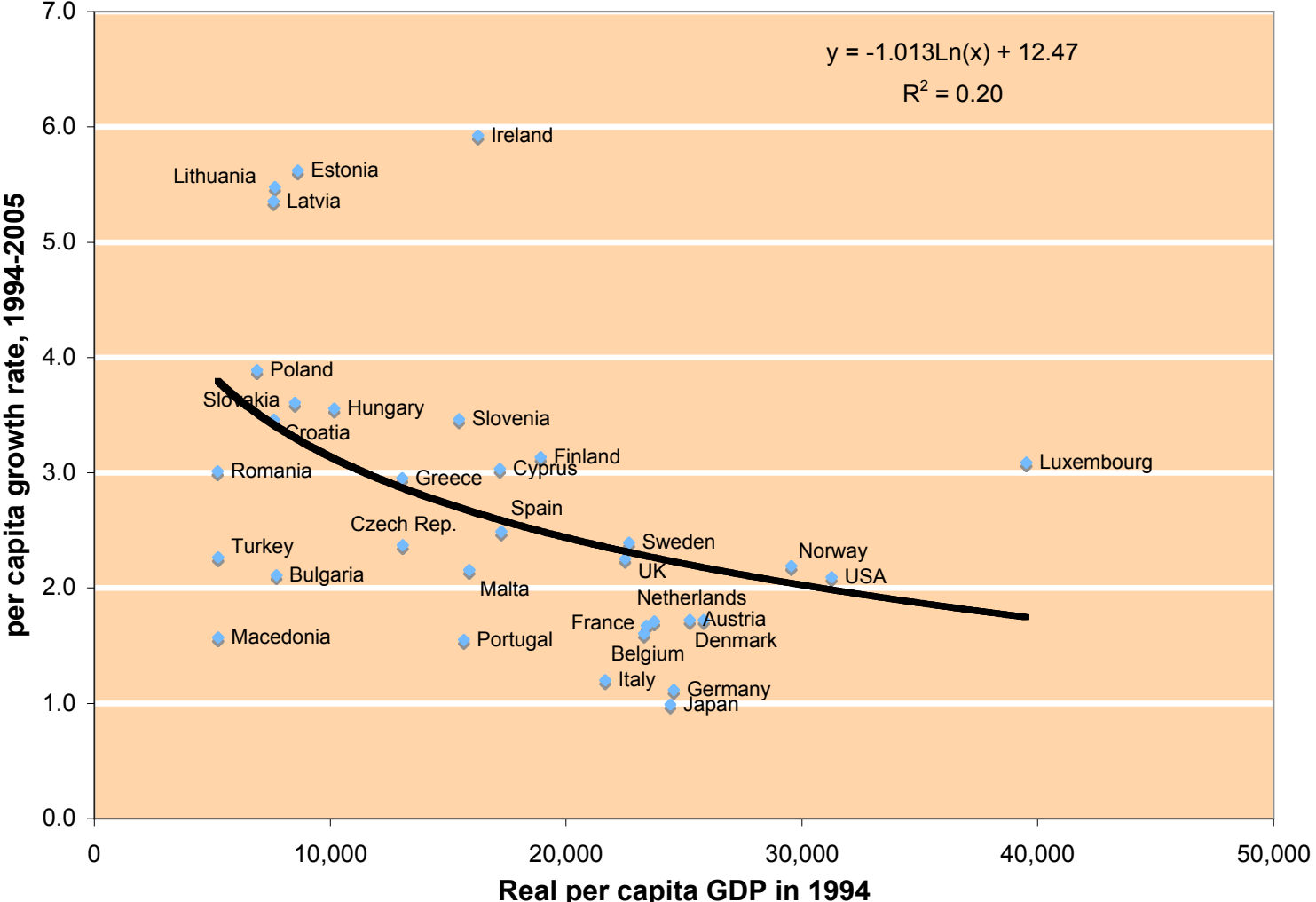
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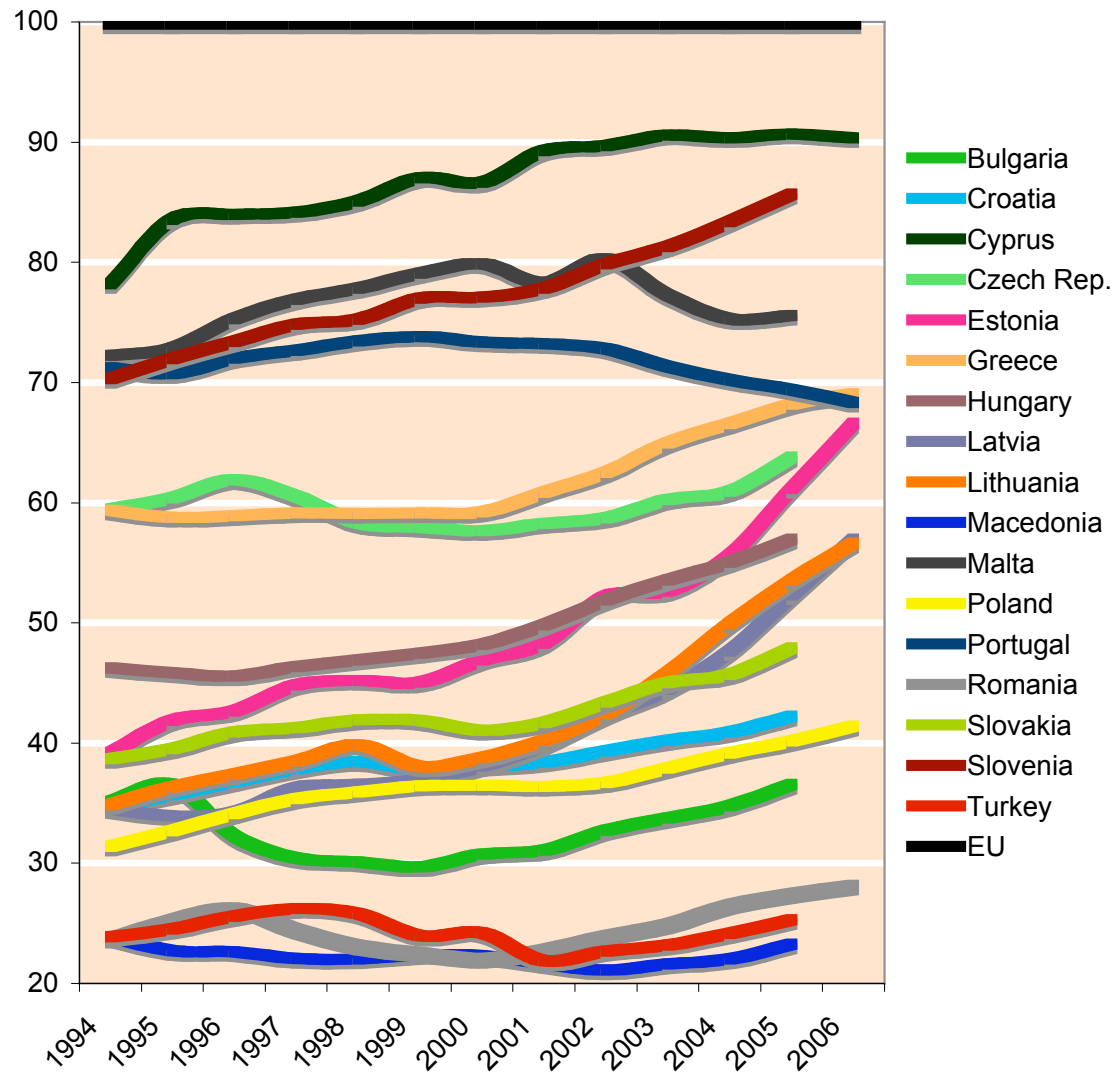
Catching-up in economic theory

- Catching=up and convergence analysis are central issues within growth theory.
- Endogenous (or new growth) and evolutionary theories (technology gap) point to the importance of technology for catching-up.
- Islam (2003) identified 7 different types of convergence:
 - Convergence within an economy vs. convergence across economies
 - Convergence in terms of growth rate vs. convergence in terms of income level
 - β -convergence and α -convergence
 - Absolute convergence vs. conditional convergence
 - Global convergence vs. club-convergence
 - Income-convergence vs. total factor productivity convergence
 - Deterministic convergence vs. stochastic convergence
- Issues for closing the technology gap:
 - Backwardness (Gerschenkron) and technological opportunities (Amramovitz)
 - Social (Abramovitz), technological (Richardson) and dynamic (Teece) capabilities.
 - Absorptive capacity (Cohen and Leventhal)
 - National Learning Systems (Viotti)

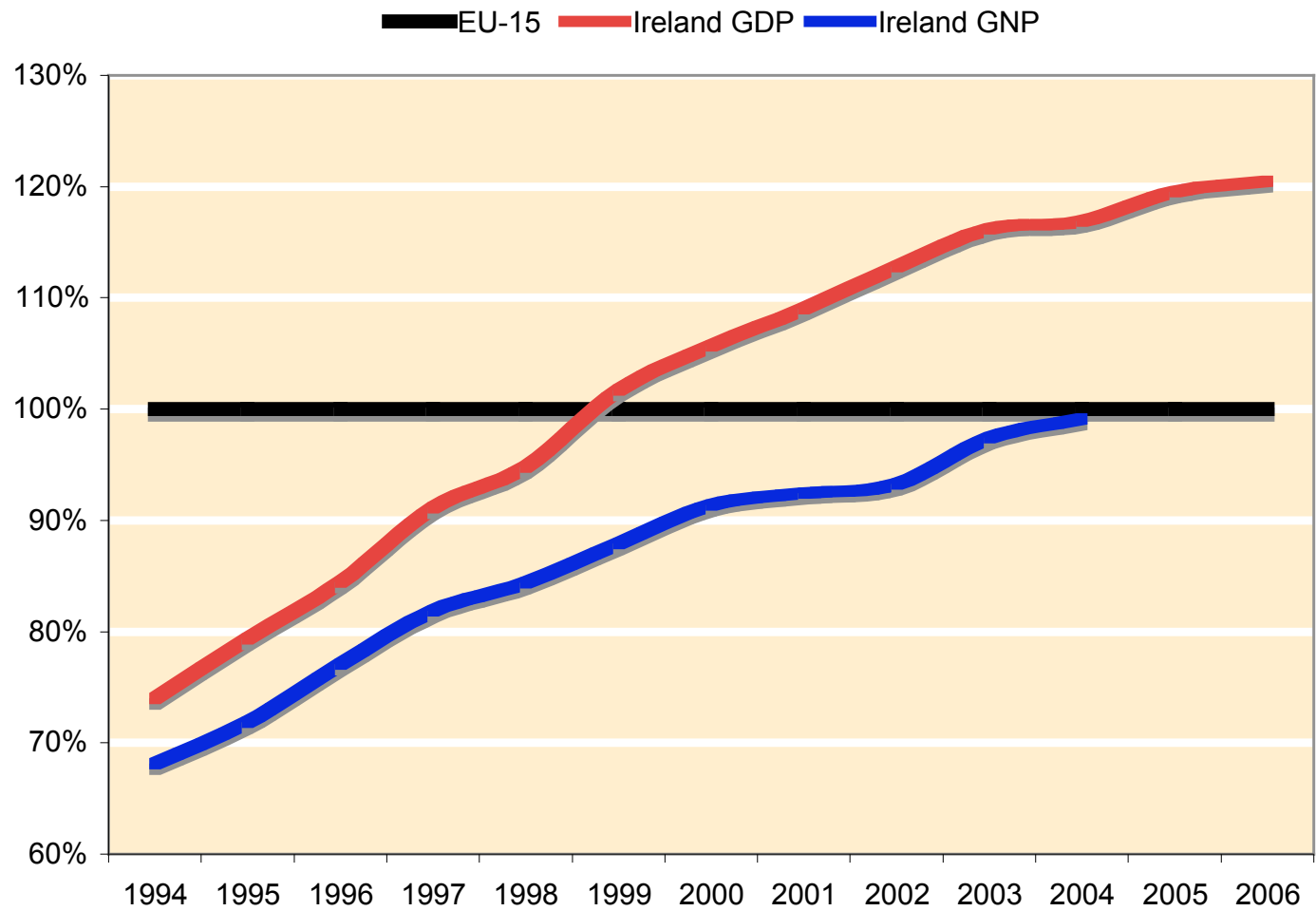
Convergence in GDP across Europe



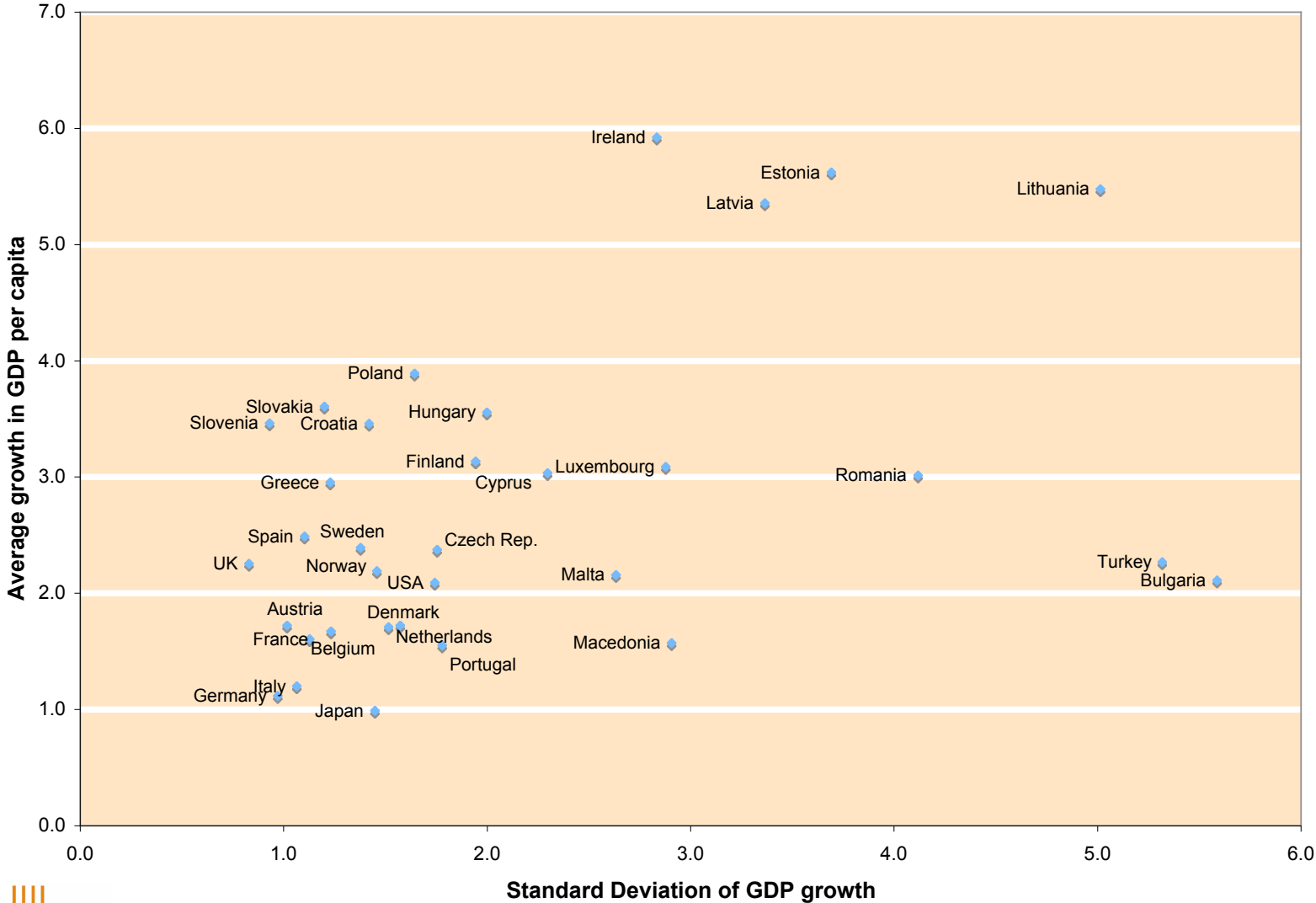
The evolution of convergence



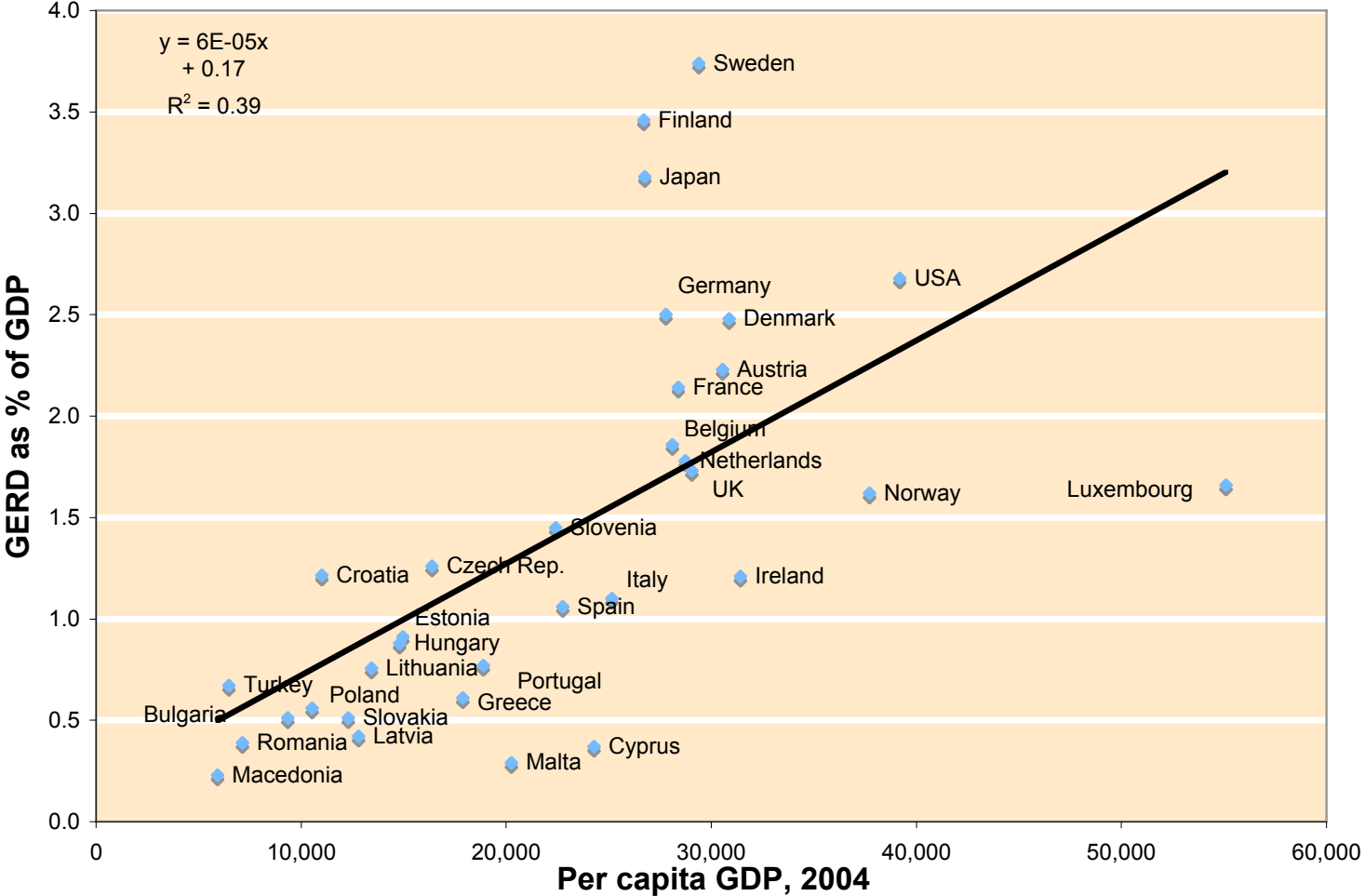
A celtic Tiger?



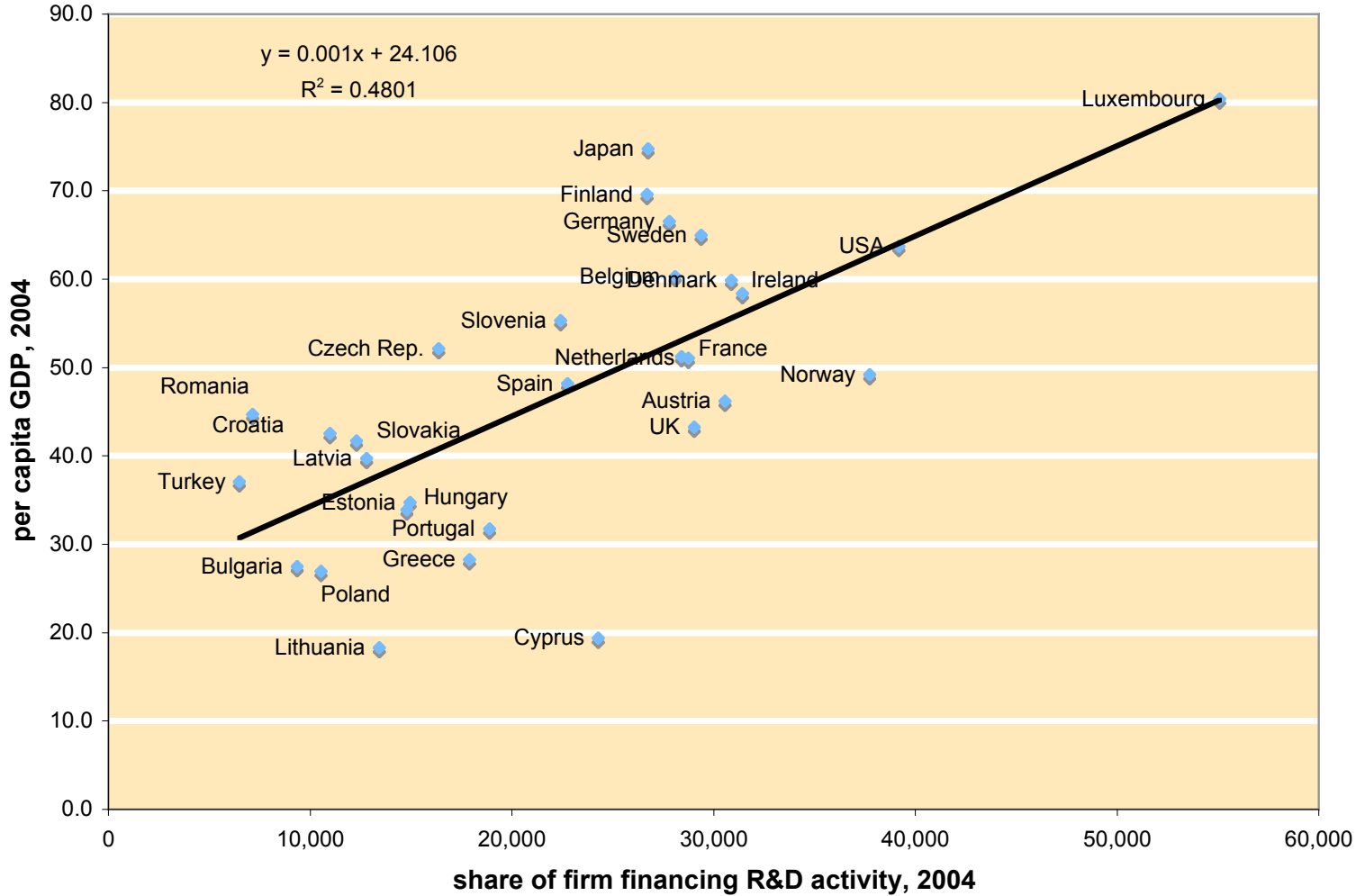
Volatility and Growth, 1994-2005



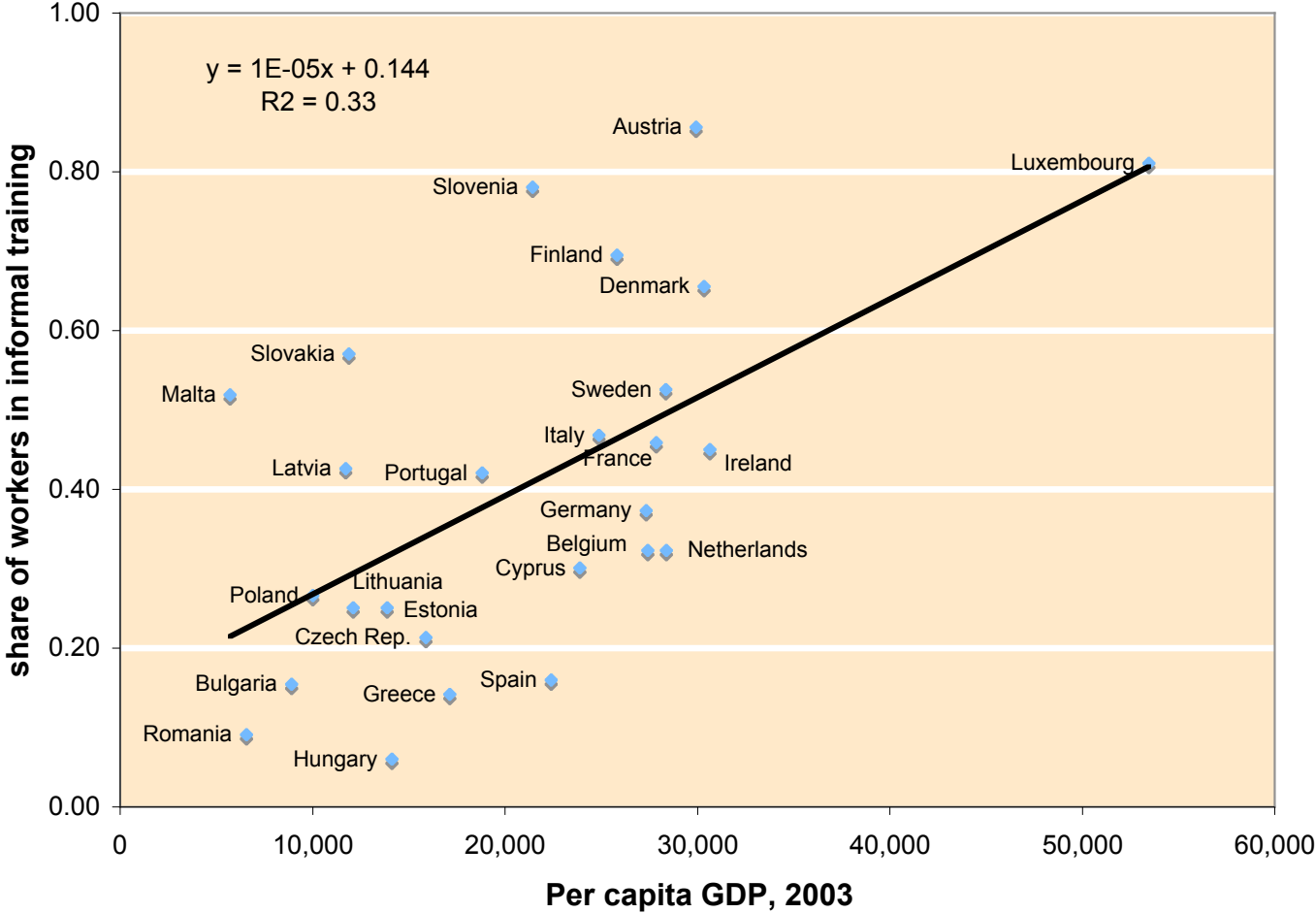
R&D and the level of income



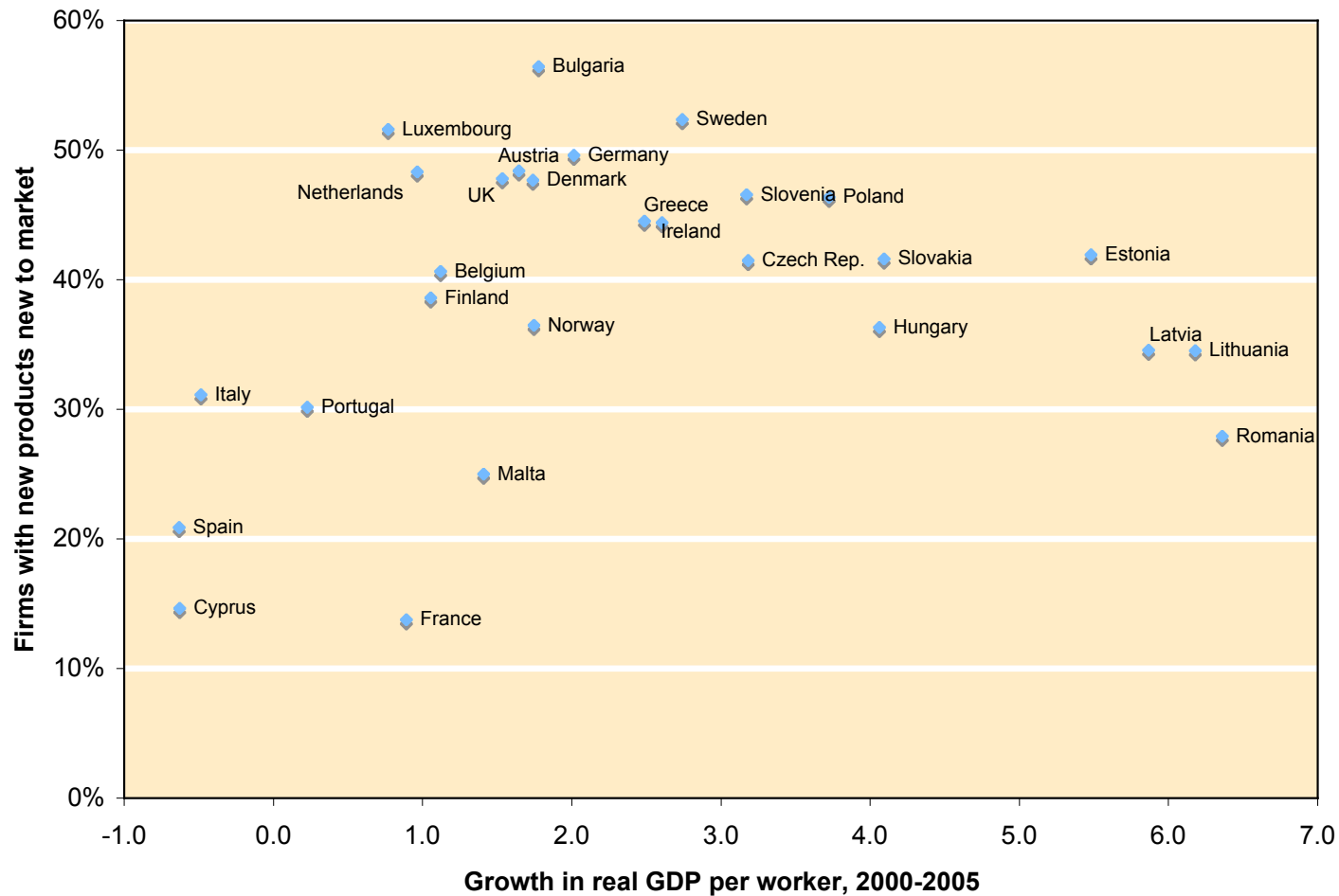
Share of GERD financed by firms



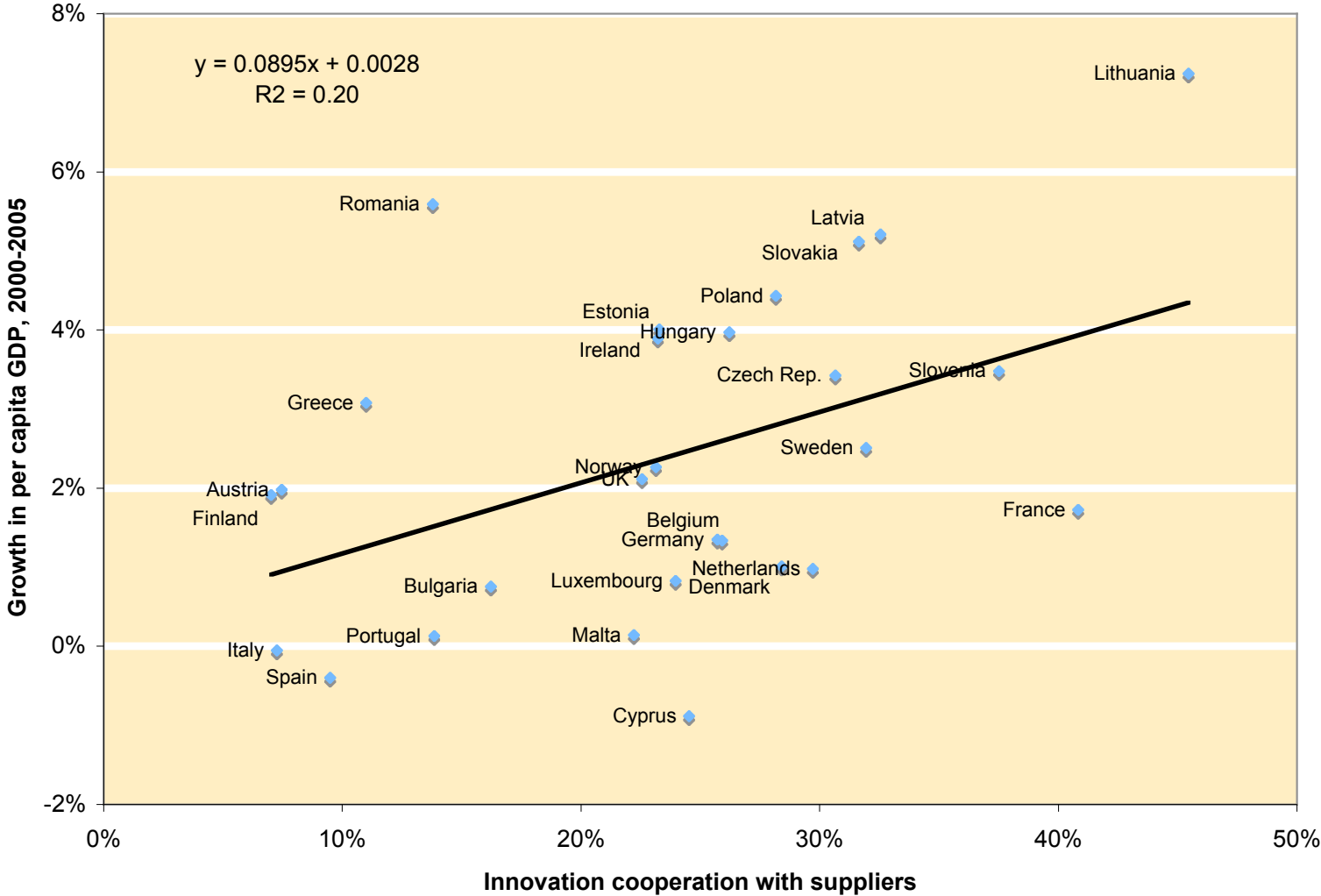
Share of workers with informal training



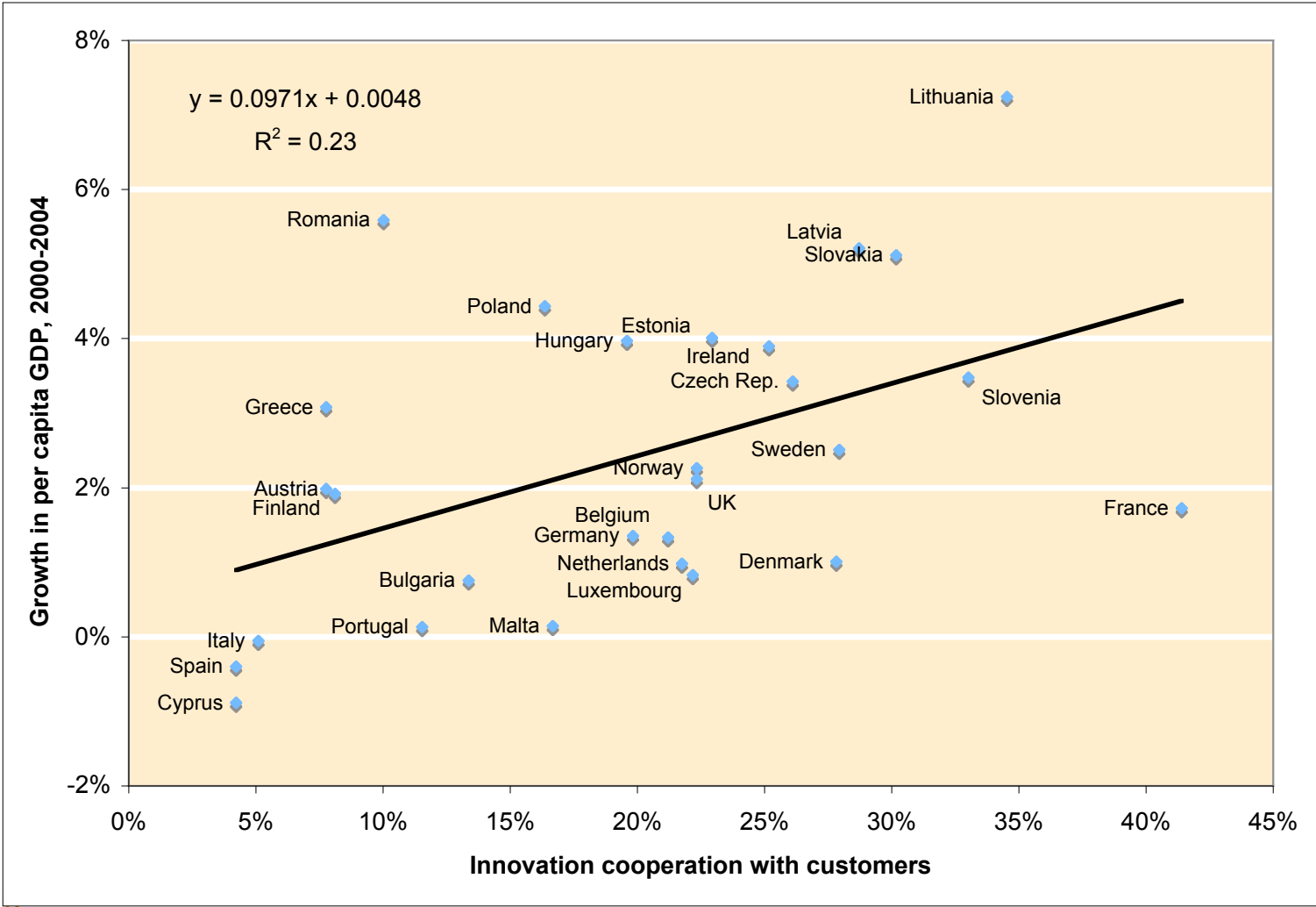
Product innovation and economic growth



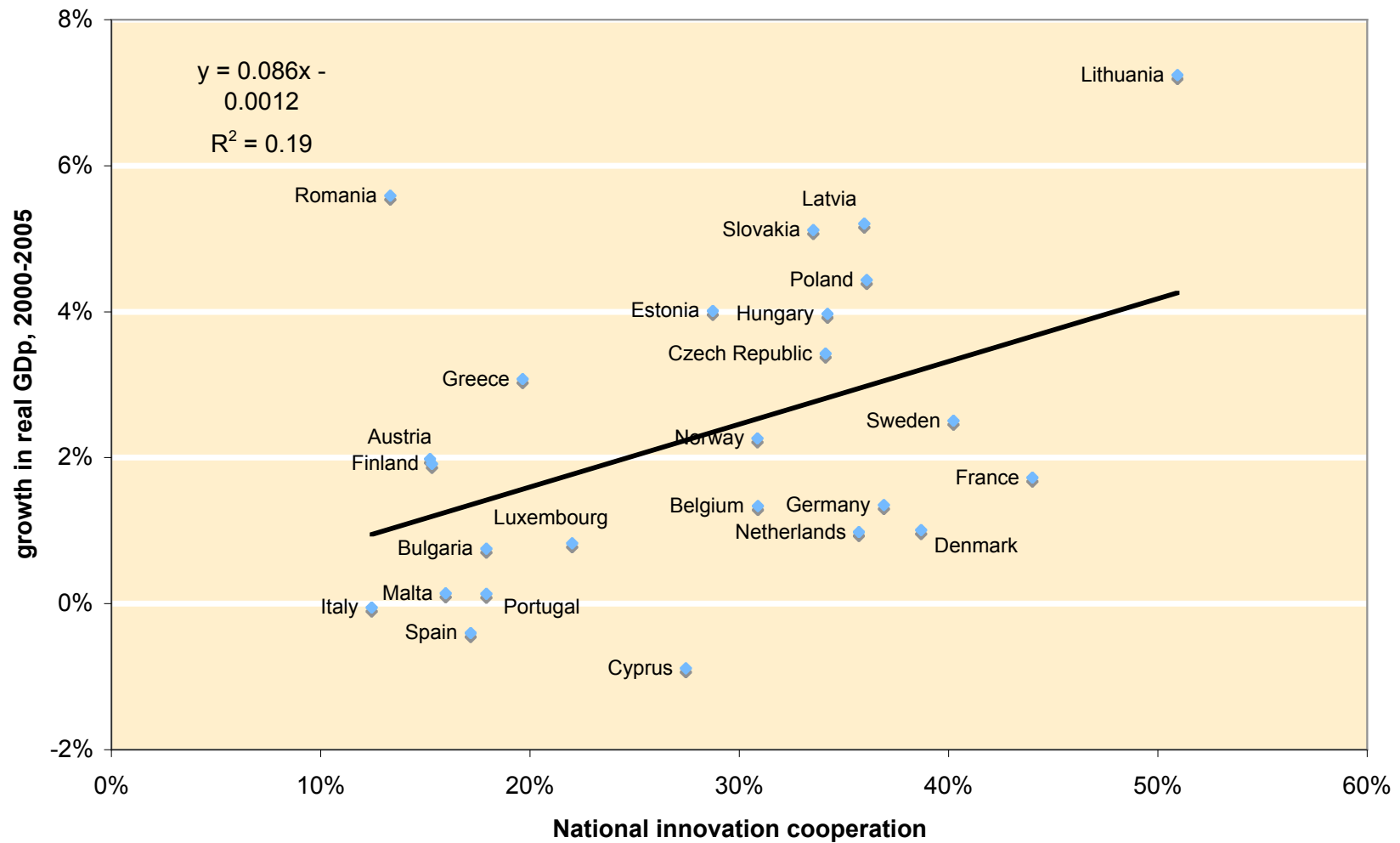
Innovation cooperation with suppliers



Innovation cooperation with customers



National innovation cooperation



Some issues to consider (RINDICATE)

- Learning is essential for catching-up
 - path-dependent and cumulative, organization of the firm, learning to learn, tacit and codified, etc.
 - includes: adapting to local conditions, experimentation, preventive maintenance, quality systems, training, innovation, searching for outside knowledge and skills, S&t links, in house R&D (Viotti).
- Supplier and customer relationships essential part of learning.
- Governance of the learning system (OECD Monit project)
 - Do the structures of decision-making at public and private levels capture the potential technological spillovers between sector?
 - vertical linkages within the policy learning process itself: links between policy conception, implementation, and evaluation.
 - functional alignment requires cohesion with wider economic, social and political forces, aiming at 'sustainability'
 - The need for regional development and avoiding fragmentation.
 - The need for long-term vision and planning.