



The impact of Competition Policy on Productivity Growth

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Competition and productivity...

between
firms effect

- **Market selection**: competition increases the market share of more efficient firms
- **Entry**: competition facilitates entry by low-cost potential entrant (and **Exit**)

within firm
effect

- **X-efficiency**: competition improves the incentive to reduce production costs

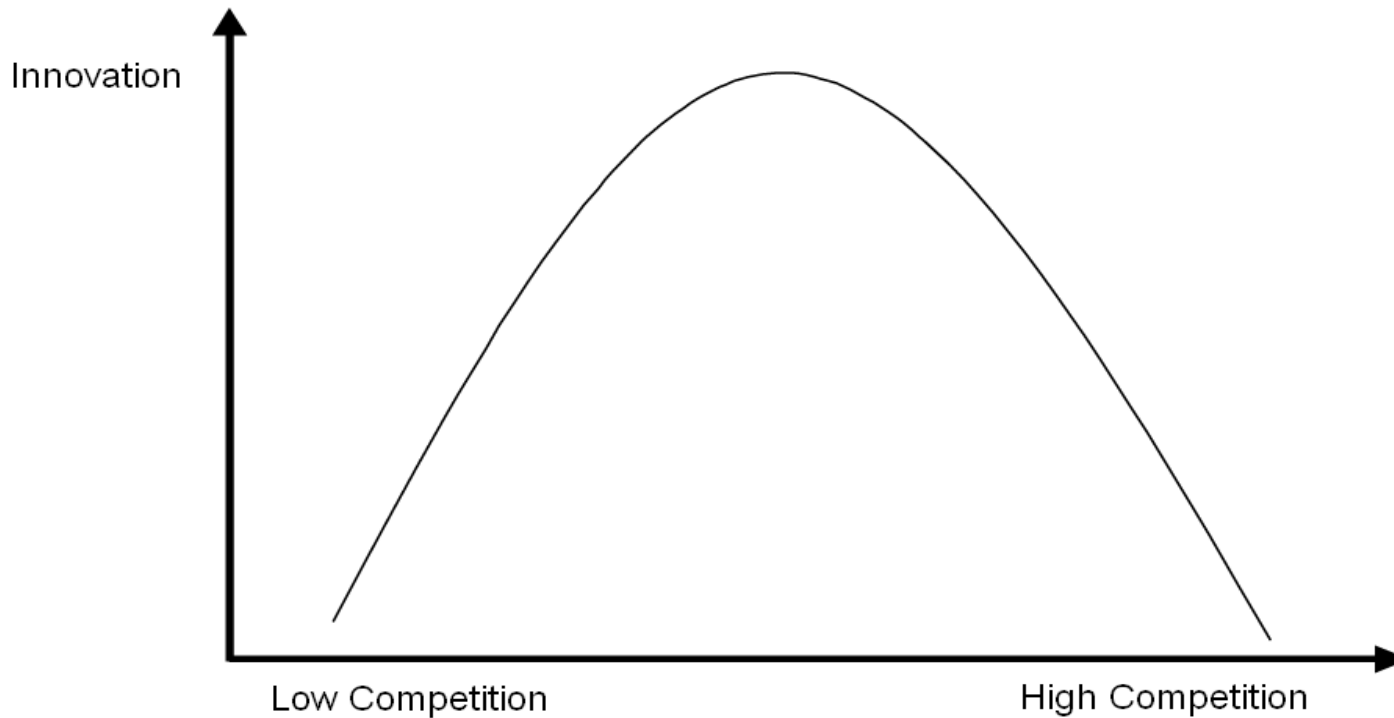


Competition and innovation

- Aghion et al (2005)
 - **Schumpeterian effect**: in unleveled markets more competition reduces the incentive of laggard firms to innovate
 - **Escape competition effect**: in leveled markets more competition increases the incentive of all firms to innovate



Competition and innovation: an inverted-U relationship





From competition to Competition Law

- Can we extend the previous results to CL?
- Does Competition Law *always* increase competition?
- I believe it does not (or should not):
 - Efficiency defense
 - Competition law only bites in uncompetitive markets



Efficiency defense

- Williamson (1968): Economies as an Antitrust Defense
- Defense: A conduct (or a merger) that **reduces competition** is permitted if it generates efficiencies that outweigh the welfare losses due to **less competition**

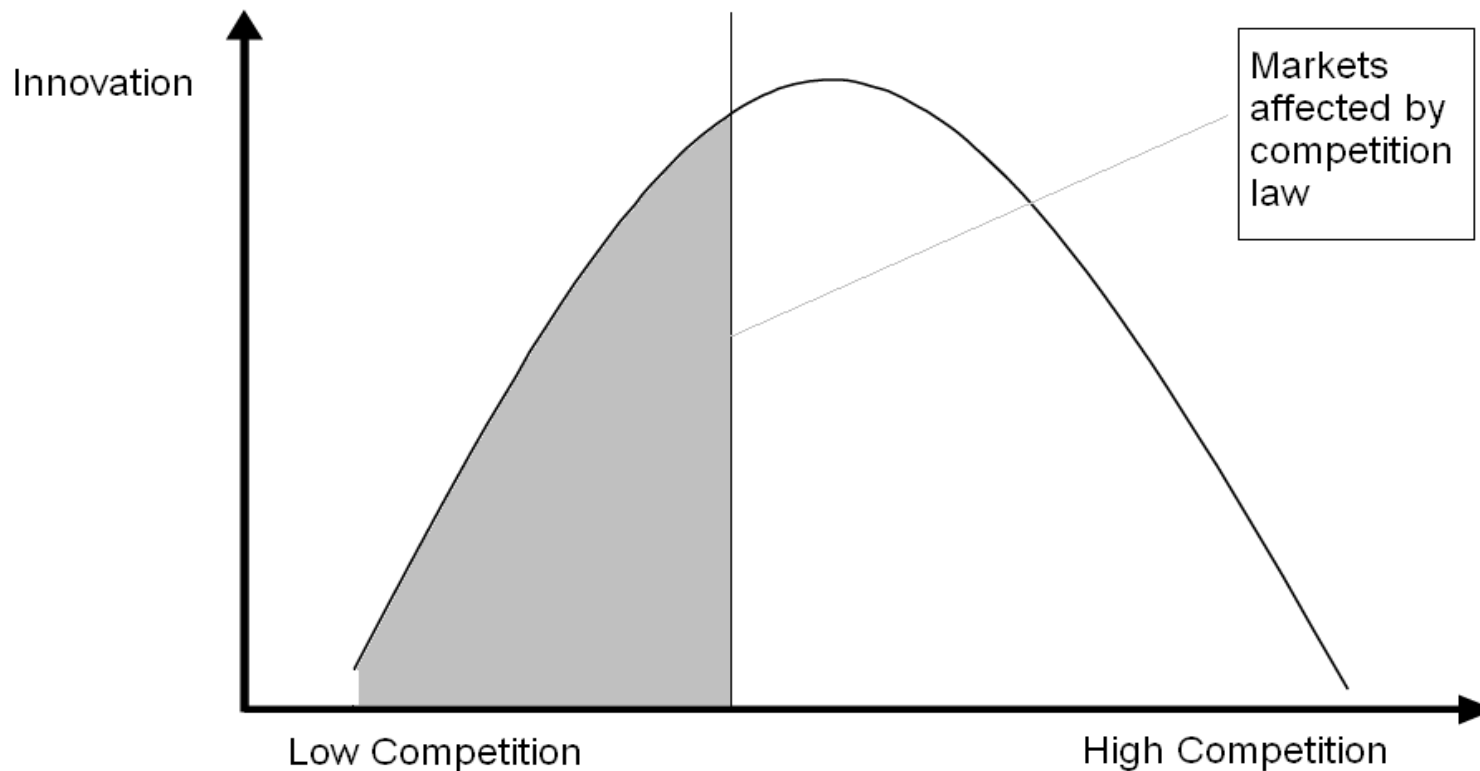


Competition Law and the “initial” degree of competition

- Competition Law increases competition if the initial competition is **low**
- Competition Law does not alter the level of competition if the initial competition is **high**
 - Merger thresholds
 - Safe harbors
 - Dominance for unilateral conducts



Competition Law and innovation: still an inverted-U relationship?





Empirical Literature

- Competition and productivity: Nickell (1996); Blundell et al. (1999); Aghion et al. (2004, 2009); Griffith and Harrison, (2004)
- Product market regulation and productivity: Nicoletti and Scarpetta (2003)
- Effectiveness of CP: Dutz and Hairy (1999); Dutz and Vagliasindi (2000); Voigt (2009)
- Buccirossi, Ciari, Duso, Spagnolo and Vitale, (2013) *Review of Economics and Statistics*



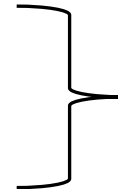
Objective of the Competition Policy Indicators (CPIs)

- develop a set of measures for evaluating the **effectiveness** of competition policy and for identifying the features of the policy that have an **impact** on its performance
- objective of competition policy
 - deter anticompetitive behavior, while
 - not chilling any behavior that improves competition and social welfare



Determinants of deterrence (in general)

- Level of the sanction (any loss on the violator if caught and condemned) (S)
- (Perceived) probability of conviction (P)
- Probability of errors (E)
 - Type I error: false conviction
 - Type II error: false acquittal



Both reduce deterrence



Competition policy factors that affect deterrence

- **independence** of the CA with respect to political or economic interests (E)
- the degree of **separation** between the adjudicator and the prosecutor (E)
- the **quality of the law** on the books (E)
- the level of **loss** that firms (and their employees) can expect to suffer as a consequence of a conviction (S)
- the type of **investigative powers** held by the CA (P) (E)
- the amount and the quality of the **financial and human resources** the CA can rely on in performing its tasks (P) (E)



Table 4.2: The high-level indexes.

Overall competition policy				
Antitrust 3/4)				Mergers (1/4)
Hard-core Cartels (1/3)	Abuses (1/3)	Other agreements (1/3)		
Institutional features (2/3)	Formal independence (1/6)	Formal independence (1/6)	Formal independence (1/6)	Formal independence (1/3)
	Separation of powers (1/6)	Separation of powers (1/6)	Separation of powers (1/6)	Separation of powers (1/3)
	Quality of the law (1/6)	Quality of the law (1/6)	Quality of the law (1/6)	Quality of the law (1/3)
	Powers during investigation (1/6)	Powers during investigation (1/6)	Powers during investigation (1/6)	
	Sanction policy and damages (2/6)	Sanction policy and damages (2/6)	Sanction policy and damages (2/6)	
Enforcement features (1/3)	Resources (2/3)	Resources	Resources	Resources (2/3)
	Actual sanctions and cases (1/3)			Number of cases (1/3)



Empirical analysis: basic elements and main result

- Empirical assessment of the impact of competition policy on total factor productivity growth
 - Panel data (22 industries, 13 countries, 10 years)
 - Country, industry and time fixed effects
 - Endogenous growth model
 - Observable industry-country specific factors: trade openness, R&D, human capital
- Main Result: Competition policy (Aggregate CPI) appears to have a **positive and statistically significant impact** on total factor productivity growth



Empirical analysis: disaggregated CPIs

- All dimensions of competition policy are important but:
 - The **Antitrust CPI** has a stronger effect than the **Merger CPI**
 - The quality of the **Institutional features** matters
 - The level of **enforcement** is less important (but this may be due to poor information)



Empirical analysis: interactions

- Competition Policy interacts with other policies and other conditions
 - The impact of competition policy is stronger in industries with less sector-specific regulation (**manufacturing**)
 - The effect of competition policy is larger for countries-industries **far away from the technology frontier**
 - The effectiveness of competition policy depends also on:
 - The quality of the **institutions** in general
 - The quality of the **judiciary** in particular



Conclusions and policy implications

- Competition is an important element in any strategy to spur **growth**
- All elements of CP are important, yet **detering anticompetitive conducts** is crucial
- It is essential to design properly the **institutional features** of CP
- **Technological gap** is not a valid reason to delay a valid CP regime
- CP is not a substitute for other public policies; strong **complementarities** with the judiciary and other institutions