

Comments on "The Root Cause of Economic Growth under Capitalism" by Michael Jaffe

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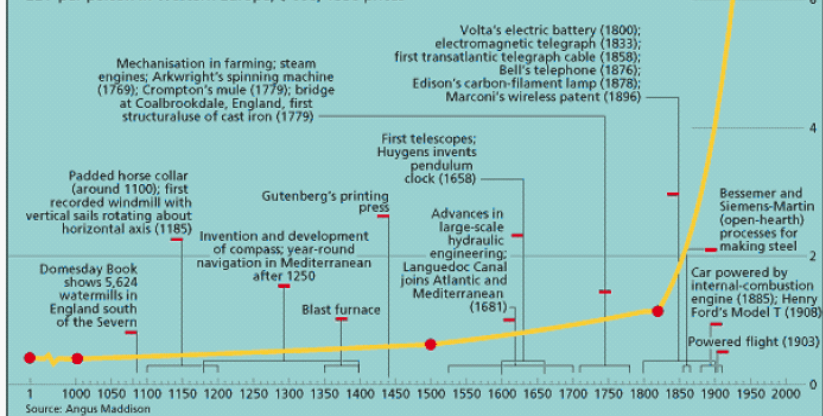
November 2011

The Research Question

- Fact: sustained Growth in Capitalistic Societies
- Propose a verbal model of the engine of growth in a capitalistic world based on the the role of firms
- A new micro-fundation of endogenous growth:
 - Market not a necessary feature
 - Competing heterogeneous firms is the key

Take-off

GDP per person in Western Europe, \$'000, 1990 prices



Motivation

- Fact 1. Sustained growth is not only a feature of capitalism
 - Positive growth before Industrial Revolution (IR)
 - Big take off takes place after the IR
- Fact 2. Sustained Growth does not happen in all capitalistic societies (No convergence)
 - <http://www.columbia.edu/~xs23/Indexmuppet.htm>

- Engine of growth is firms' competition through cost-reducing activities
- Firm selection produces productivity improvements in the aggregate: similar to Schumpeter Creative Destruction
- Sources of growth:
 - cost-reducing (profit seeking) firms' competition
 - Creative Destruction

- Technological Innovation not necessary
- Cost Reduction:
 - Capital intensity
 - Developing existing technologies/machineries
 - New Technology/Innovation
 - Learning-by-doing
 - Improvising organization
 - Cutting labor costs (wages)

Comments

- Not clear why the market is not a necessary institution
- Not clear why this is different from Marx (profit-driven innovation) and Schumpeter (Creative Destruction)
- Innovation doesn't have to come from major technological breakthrough
 - Incremental innovation
 - Development of existing technology/products (focus on D more than R)
 - Organizational change

Firm Heterogeneity and Creative Destruction

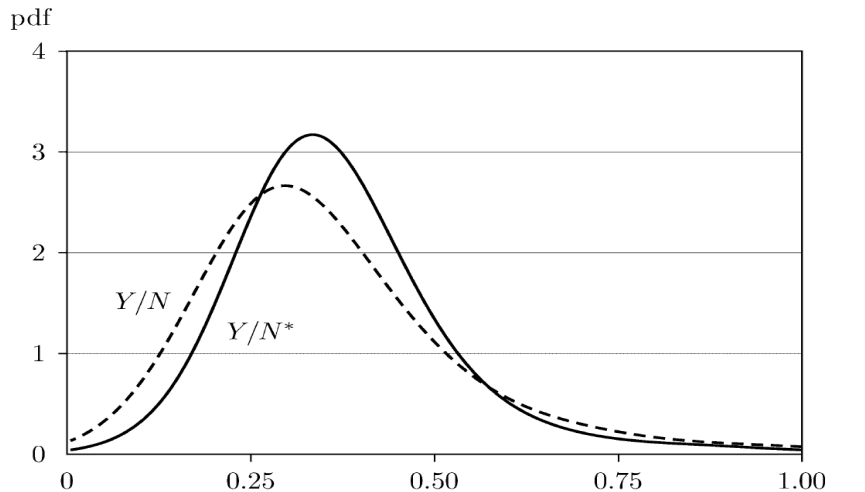
- Symmetric firms (equilibrium): Endogenous Growth Theory (e.g. Aghion and Howitt, 1992, Grossman and Helpman, 1991, Romer 1990)
 - Engine of growth is profit driven introduction of new product/machines (Romer), of new quality of existing products/machines replacing the old (Creative Destruction)
- Heterogeneous firms
 - Similar innovation dynamics but size/productivity heterogeneity across firms/product leading to heterogeneous growth rates
 - New generation of endogenous growth models: Klette and Kortum (2004), Akcigit and Kerr (2011), Acemoglu Cao (2011), Atkeson and Burstein (2011)

Firm Heterogeneity and Creative Destruction

- Existing models so far not satisfactory in terms of some microeconomic predictions
- Too much “creative destruction”; in practice, most of R&D from existing firms and plants. E.g.: Bartelsman and Doms (2000) and Foster, Haltiwanger and Krizan (2000): entry and exit account for about 25% of average TFP growth, with the remaining accounted for by continuing plants.
- Too much entry by “large firms” — entering firms are small; many are unsuccessful, but some grow rapidly (Akcigit and Kerr, 2010).
- Also for policy analysis: What are the implications of “industrial policy” on innovation in reality?
- E.g., bailout of GM and Ford or lowering entry barriers.

Heterogeneous productivity

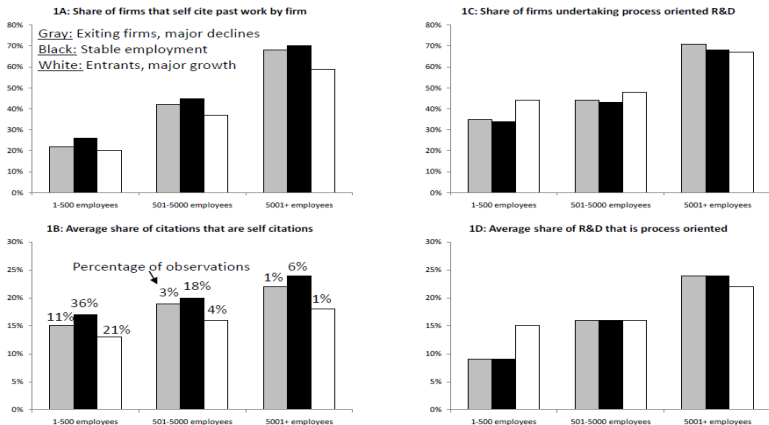
- Mortensen and Lentz (2008) Danish firm-level data



Heterogeneous growth

- Firm-size and Innovation inputs and outputs (Akcigit and Kerr, 2011)

Fig. 1: Exploitation R&D behavior among US firms
Distributions of firm size and growth



Notes: Figure shows basic regularities on firm R&D and patenting for innovative firms that conduct R&D or file patents. Data are taken from US Census Bureau's Longitudinal Business Database. The database provides information on firm characteristics, firm development, and firm performance.