A Theory of Firms and Markets

Vipin P. Veetil

Department of Economics
George Mason University

vpudiyad@gmu.edu
Overview

1. The Problem
2. Related Literature
3. The Model
4. Results
5. Future Work
Coase’s Question

“In view of the fact that while economists treat the price mechanism as a co-ordinating instrument, they also admit the co-ordinating function of the “entrepreneur,” it is surely important to enquire why co-ordination is the work of the price mechanism in one case and of the entrepreneur in another.” - Coase (1937)
Theories of Firm and Markets

- Team Production (Alchian and Demsetz 1972) and Asset Specificity (Williamson 1975)
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- Markets too can solve problems associated with opportunistic behavior: Folk Theorem (Hart 1989)

- Markets too may be thought of as team production (Young 1928, Arrow 1994)
What is the basic economic problem?

“...a problem of the utilization of knowledge not given to anyone in its totality” - Hayek (1945)
Mechanisms for solving the basic economic problem

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- Firms
  - Centralize knowledge
Mechanisms for solving the basic economic problem

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  - Compute plans
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- Example: Awesome Ketchup and Great Tomatoes
Properties of Dispersed Knowledge

- Dynamism (Hayek 1945)
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- Tacitness (Polyani 1966)
Properties of Dispersed Knowledge

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- Tacitness (Polyani 1966)
  - How easy is it to communicate knowledge?
Relative cost of using firms and markets

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  - Lower Pareto Efficiency than market
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- Market
  - Transaction Cost
The greater the dynamism and tacitness of knowledge, the lower the relative cost of the market mechanism.
Coordination Problem

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- Short-firm, Hierarchy = 2
- Tall firm, Hierarchy = 10
Dynamism and Tacitness

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- Carelessness, $t$
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  - $t \in (0, 1)$, probability of error in every instance of communication
Efficiency

![Graphs showing Efficiency vs Dynamism and Efficiency vs Tacitness]
Transactions Cost

- Dynamism vs. Transactions
- Tacitness vs. Transactions
- Tall firm vs. Short firm
Summary of Results

- Dynamic knowledge: with sufficient transactions markets reach higher efficiency than firms. Hierarchy dampens the impact of dynamic knowledge on firms.
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- Markets are a more optimal arrangement than firms if the gains in allocative efficiency exceed transaction costs.
The Architecture of an Economic System
Future Work

- Endogenize price formation
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- Study firm structures
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- Study market structures: why is the NYSE different from New York’s Fish market?
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- Study market structures: why is the NYSE different from New York’s Fish market?
- What factors determine whether and how well an economy ‘finds’/‘computes’ optimal architecture?
- Incorporate the computational complexity of problem faced by entrepreneur-coordinator
Thank you!