Adoption is not Development:
First Mover Advantages in the Diffusion of New Technology

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Discussion

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Set Up

- R&D is costly and *takes time*
- Intermediate steps are not observed (secrecy)
- Firms are initially symmetric

Results

- Leader and Follower (Lead Time)
- Leader more profitable than Follower
- First mover advantage increasing in Complexity (K)

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R&D:Leaders versus Followers

Capturing Returns to Innovation		
	% firm that consider protection mechanism very effective or crucial	
	Legal Protection	Strategic Protection
Chemical	36%	87%
IT	18%	82%
Mechanical Engineering	28%	82%
Food	26%	66%
Textile	8%	75%
Wood	19%	65%
Other	25%	75%
Average	**24%**	**75%**

Legal Protection (patents, copyrights and brand names), Strategic Protection (Secrecy, Complexity and/or lead time)
Own elaboration based on Veugelers and Cassiman (1998)

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Towards a model of R&D…

- Secrecy versus observability of R&D progress?
- Lead time? ($S = T_F - T_L$?) increasing in complexity
- Leader and Follower have different costs: spillovers from Leader to Follower? Imitation? $K_S > K_W$
- Uncertainty?
  - Other SPE with some preemption. Lower profits leader.
  - Can K be known with certainty?
- Patents? Increasing complexity (K) follower? Preemption incentive stronger?
- Incumbent versus Entrant: who is more likely to be leader or follower?
- Adoption versus development: does the comparison make sense?
- Non-monotonicity profits of Leader and Follower in K?

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