Human resources and competition policy from an economic perspective

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"The secret of my success is that we have gone to exceptional lengths to hire the best people in the world" - Steve Jobs

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Human Resources

- Human resources are defined as skills and knowledge embedded in workers:
    - Education, training, and experience
- Human resources are crucial for the economic success of:
    - Individual firms (Hatch & Dyer, 2004)
    - Regions (Gennaioli et al., 2013)
    - Nations (Hanushek & Woessmann, 2008)

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Labor Market Imperfections

- Recent evidence shows that labor markets are highly concentrated:
    - Ashenfelter et al. (2010), Azar et al. (2018)
- Wages are negatively correlated with labor market concentration:
    - Azar et al. (2017)
- Covenants not compete impede mobility, innovation and entrepreneurship:
    - Marx et al. (2009), Samila & Sorenson (2011)

Competition Policy for Labor Markets

- Competition policy authorities have paid little attention to labor markets:
  - False(?) belief that labor markets are competitive (Marinescu & Posner, 2019)
  - Some labor market issues outside the scope of competition laws (e.g., in the EU)
- "Hot" issue among competition policy authorities and academics worldwide

Outline

I.   Human resources as an "ordinary" input

II. Knowledge transfer and creation

III. Efficiency defense

IV. Kaiser, Kongsted & Rønde (2015)

V.   Implications for competition policy

HUMAN RESOURCES AS AN "ORDINARY" INPUT

Market Power in Labor Markets

- In principle, labor markets can be defined as other markets:

    - Geographic definition (e.g., commuter zone)
    - "Product" definition (e.g., industry/profession)

- "Inverse" SSNIP test, using wage changes

- Recent evidence shows that many labor markets are highly concentrated:

    - Azar et al. (2017), Ransom and Sims (2010)

The Problem of Monopsony
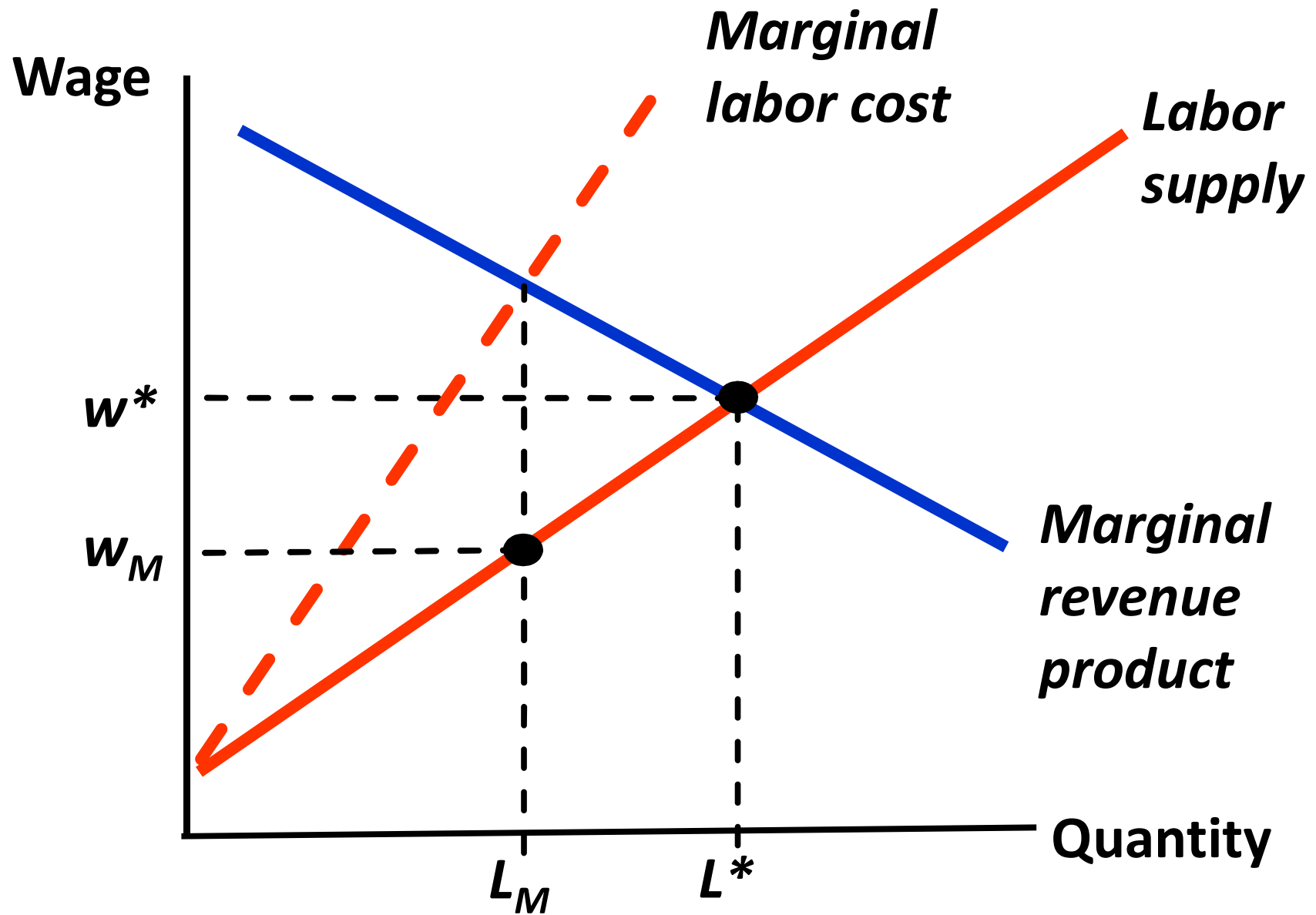
Old Problems in New Disguises

- Market sharing agreements:
    - "No poaching agreements"
    - DOJ vs. six high-tech companies
    - Modelling sector in various countries

- Price coordination:
    - Sharing of wage information (e.g., Todd vs. Exxon Corp)
    - Different competition policy authorities have addressed this issue, incl. JPN

Old Problems in New Disguises

- No systemic analysis of labor market effects in merger control:

  - Common issue in all jurisdictions

- Merger control is likely to be the area where the current debate will have the most profound effect

- Important work to be done:

  - Market definition
  - Extending use of existing tools

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Old Problems in New Disguises

- Few cases concerning abuse of dominance in labor markets

- Recent example is Falck vs. Danish Competition Authority (2019):

  - Falck lost tender for ambulance services
  - Paramedics are scarce and specialized
  - Falck used "dirty tricks" to prevent paramedics from switching to the winner

KNOWLEDGE TRANSFER AND CREATION

R&D and Economic Growth

- R&D is an engine of growth:
  - Aghion & Howitt (1992), Abramovitz (1993)
- Knowledge created can - in principle - be used by everybody:
  - Knowledge is a "non-rival" input
- "Intellectual human capital":
  - US biotech industry is located where the pioneers worked (Zucker et al., 1998)
  - Knowledge is embedded in the scientist

Intellectual Human Capital

- Mobility leads to knowledge transfer:
    - Surveys (Mansfield, 1985)
    - Patent files (Almeida and Kogut, 1999)
    - Litigation (Hoti et al., 2006)

- Mobility leads to knowledge acquisition for the sending and the receiving firm:
    - Corredoira & Rosenkopf (2010)
    - Agrawal et al. (2006)

Mobility Studies

Firm A

Firm B

Lisa was inventor in firm A

Lisa is now inventor in firm B
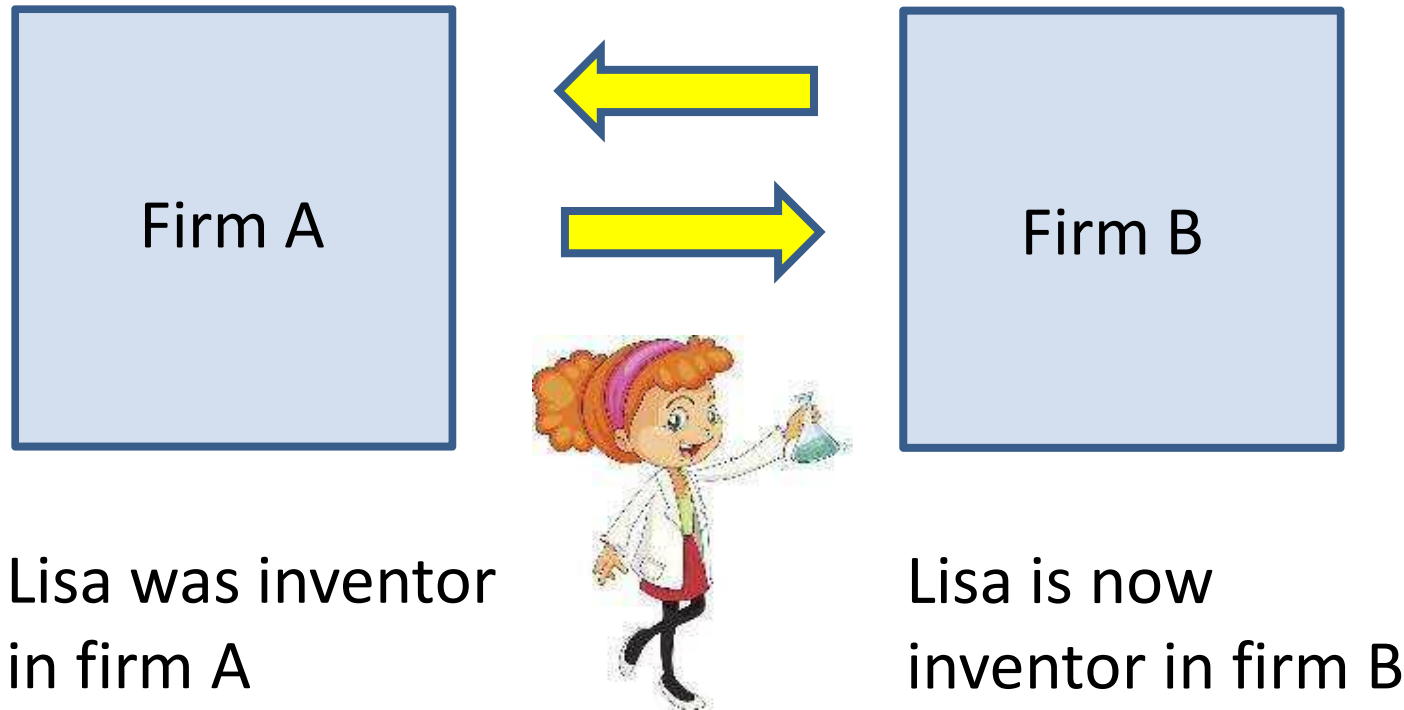
Firm A starts to cite firm B's patents

Firm B starts to cite firm A's patents

Covenants not to Compete

- Clause under which the employee agrees **not** to enter into a similar profession or trade in competition against the current employer

- Such covenants make it harder for employees to use the knowledge acquired in other firms or to start up new ventures

- Trade secret laws may have similar effects

EFFICIENCY DEFENSE

Investments

- Covenants not to compete serve to protect firms' investments in IP:
    - Innovations, customer lists, etc.
- "No poaching agreements" can protect investments in training:
    - In particular, training not specific to the firm
- Judged according to the usual principle:
    - Not too restrictive, no better alternative

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Two Caveats

I. Freedom to leave protects the investment made by a worker:

- Education, training, specific innovation

II. Covenants not to compete as a "Prisoners' Dilemma":

- Total effect of mobility is positive
- Individual incentive to impose covenants not to compete

Kaiser, Kongsted & Rønde (2015)

DOES THE MOBILITY OF R&D LABOR INCREASE INNOVATION?

Total Effect of Labor Mobility?

- Firm receiving a worker gains skills and knowledge

- Firm sending a worker loses skills and embedded knowledge:

  - Exit may also cause disruption

- *Does labor mobility increase total innovation?*

Data Requirements

- Track the mobility of workers:
    - Moves that lead to innovation
    - Moves that do not lead to innovation
- Measure innovation output of firms
- Control for other variables:
    - Size, capital, past performance, etc.
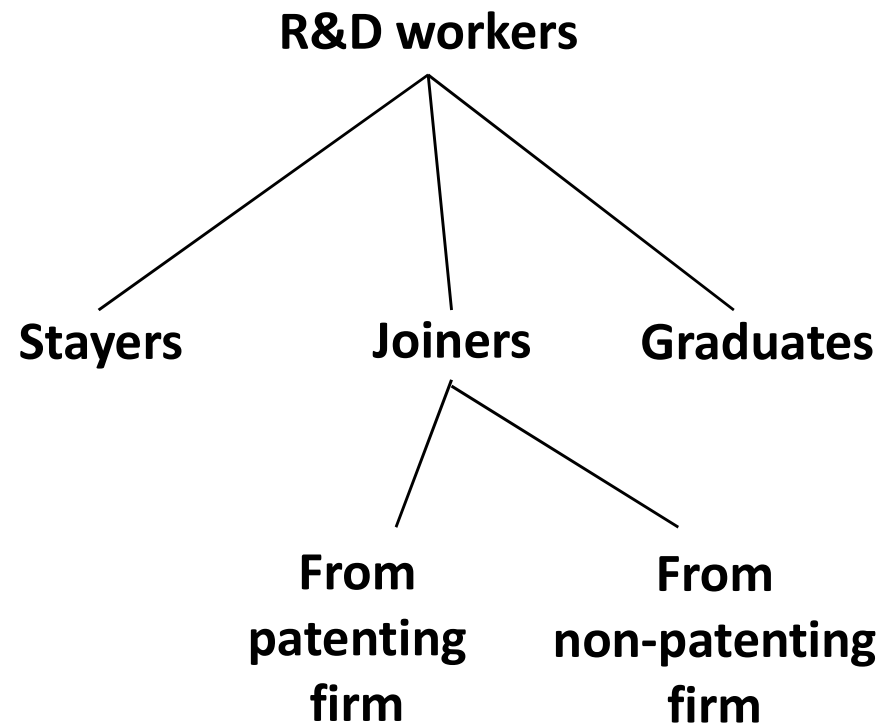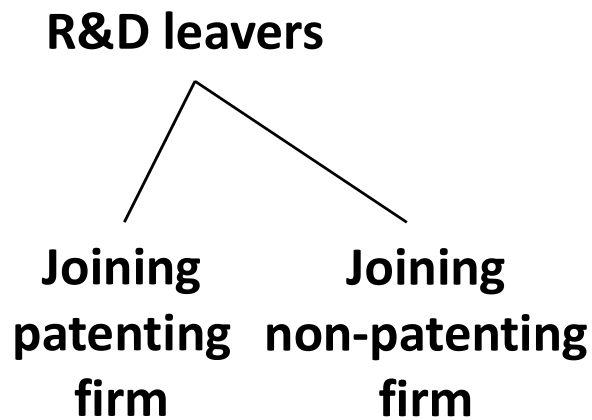
Our Data

European Patent Data	Data on firm variables	Data on mobility

- All patent applications by Danish firms 1978-2004

- Balance sheet data for all Danish firms in patenting sectors 1999-2004

- Detailed data on individual characteristics of the entire Danish labor force 1999-2004

R&D Workers

- Individuals with a technical or scientific degree who perform R&D-related job functions

R&D leavers

```
        Joining          Joining
        patenting      non-patenting
         firm              firm
```

R&D workers

```
   Stayers          Joiners          Graduates

                From            From
              patenting      non-patenting
               firm              firm
```

Relative Patent Productivity

	Patent Productivity	p-Value
Joiners from patenting firms	6.559	0.000
Joiners from non-patenting firms	(2.252)	(0.286)
Leavers to patenting firms	3.309	0.042
Leavers to non-patenting firms	(−0.680)	(0.253)

Note: Productivity relative to a stayer

One Joins, One Leaves

	Leaves to patenting firm		Leaves to non-patenting firm	
	Coef.	p-Value	Coef.	p-Value
Joins from patenting firm	0.019	0.000	0.009	0.018
Joins from non-patenting firm	0.009	0.020	(-0.001)	(0.812)

Note: Absolute increase in patent applications by the focal firm

IMPLICATIONS FOR COMPETITION POLICY

Implications

- Market power should be taken serious, also in labor markets

- Existing tools and methods can be applied to these markets

- Work to be done:

  - Labor market definition

  - "Downward wage pressure"

  - Efficiency defense