The importance of mismatch in schooling

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Introduction

1. How to improve the movement of labor between different parts of the labor market?
2. Are mismatch problems important barriers to growth?

Introduction

But what is mismatch?

Mismatch

Mismatch from the vantage point of

- labor markets
  - is demand finding supply?
- schooling
  - is supply meeting demand?

Mismatch

Dimensions of mismatch:

- spatial, sectoral, occupational, educational

Causes of mismatch:

- search frictions, information, wage rigidity

Indicators of mismatch:

- persistence differences in the level of unemployment across groups
- joint existence of vacancies and unemployed

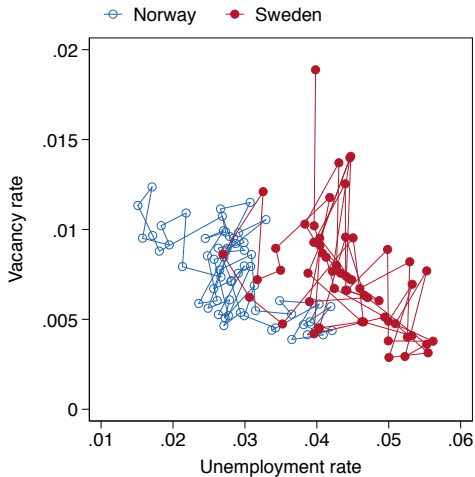Can often also be explained by specific human capital, amenities

Mismatch

So what do we know about mismatch?

- ▶ are potential matches being made?
    - ▶ Beveridge curve
- ▶ are existing matches Pareto efficient?
    - ▶ compare schooling to job requirements

Mismatch

Beveridge Curve for Norway

Supply of skills

The education literature that studies mismatch compares:

- required schooling in the job
- actual schooling of the worker

A worker is considered to be mismatched if

- required schooling $\neq$ actual schooling

A worker is

- overschooled: required > actual
- underschooled: required < actual

Supply of skills

The Program for the International Assessment of Adult Competencies (PIAAC) is a large-scale study that was developed under the auspices of the Organization for Economic Cooperation and Development (OECD)

The PIAAC questionnaire included an item where respondents were asked about the educational requirements of their current job

For Norway we find that 49% is mismatched

- ▶ 18% is overschooled
- ▶ 31% is underschooled

Supply of skills

Wage returns to (mismatched) schooling

	OLS	ORU
Schooling	0.043***	
	(0.003)	
Required		0.046***
		(0.003)
Over		0.031***
		(0.007)
Under		-0.018***
		(0.005)

Supply of skills

Example matching of workers...

		Required	
		Low	*High*
Actual	*Low*	30 Matched	10 Mismatched (Under)
	High	30 Mismatched (Over)	30 Matched

Mismatch rate = 10 + 30 / 100 = 0.4

Supply of skills

...which can be improved by reassigning 10 workers

		Required	
		Low	*High*
Actual	*Low*	40 Matched	0 Mismatched (Under)
	High	20 Mismatched (Over)	40 Matched

Structural mismatch rate = 20 / 100 = 0.2

Supply of skills

We can thus decompose the observed mismatch rate:

$$\underbrace{Observed}_{0.4} = \underbrace{Assign}_{0.2} + \underbrace{Structural}_{0.2}$$

Supply of skills

Mismatch decomposition

	Observed	Assign	Structural
Mismatch	0.49	0.23	0.26
Overschooled	0.18	0.05	0.13
Underschooled	0.31	0.18	0.13

Supply of skills

Wage consequences of reassignment

	Change in wages	
Overall	-0.5%	-0.1%
- Mismatched	-1.8%	-0.4%
- Overschooled	-7.8%	-10.8%
- Underschooled	+4.2%	+10.0%

Wage specification: (O+R+U)   (O+R+U)##(O+R+U)

Supply of skills

On face value substantial mismatch between workers schooling and job requirements

- 50% report discrepancy
    - 50% misassignment
    - 50% structural

But reassignment has little impact on average wages and mostly involves a transfer from overschooled to underschooled workers

Therefore no evidence of productive mismatch <u>given</u> the skills of workers

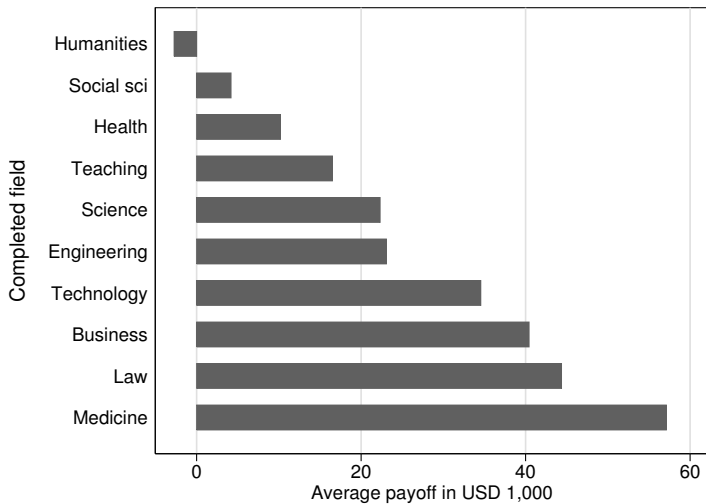But do workers enter the labor market with the right skills?

Supply of skills

Post-secondary education system in Norway

- public & centralized
- selects students on high school performance
- regulates supply through enrollment

Does supply meet demand?

Supply of skills

Substantial payoffs to fields of study

Source: Kirkebøen, L., E. Leuven and M. Mogstad (2014)
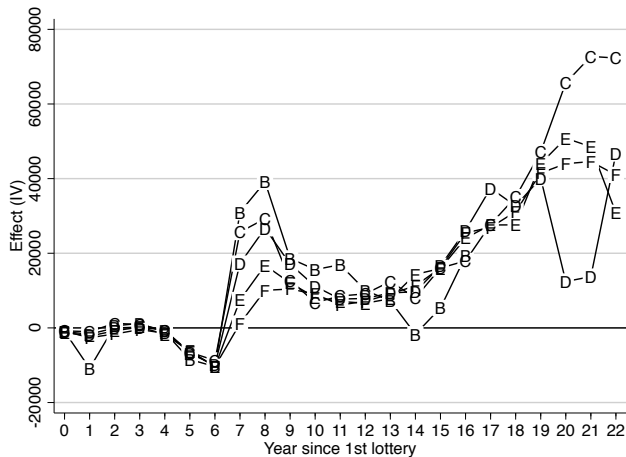
Supply of skills

The current system select students predominantly on high school performance:

- ▶ but in many fields high school GPA is a poor predictor of earnings!
  (Table 4, Kirkebøen et al. 2015)

Supply of skills

Student selection, Intermezzo

The NL selects medical school students using a lottery

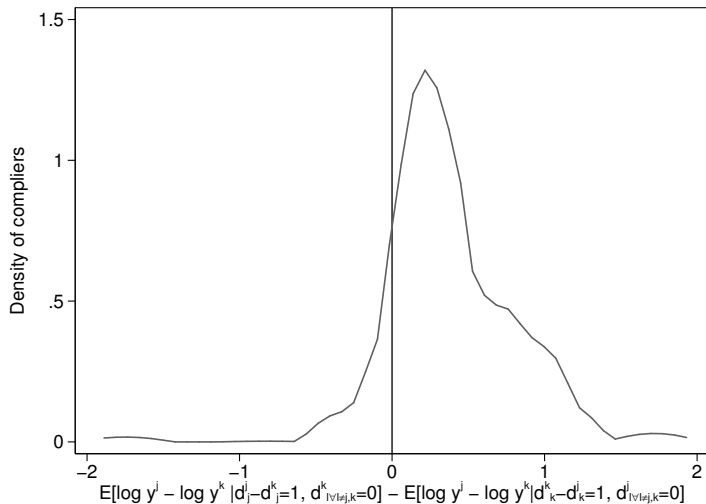Source: Ketel, Leuven, Oosterbeek & Van Der Klaauw (2015)

Choice based on comparative advantage means

$$\left.\frac{inc(business)}{inc(teaching)}\right|_{\text{business people}} > \left.\frac{inc(business)}{inc(teaching)}\right|_{\text{teachers}}$$

Or: "I choose what I'm relatively good at"

Supply of skills
Evidence based on comparative advantage

Source: Kirkebøen, L., E. Leuven and M. Mogstad (2014)

Supply of skills
Changing capacity

Supply driven reform:

- ▶ Use payoff estimates and observed choice behavior to calculate the payoff to changing capacity

Supply of skills
Changing capacity

Demand driven reform:

- drop selection based on high school grades
- introduce fees that reflect (relative) cost of enrollment

Summary

Are matches not occurring?

Little indication of mismatch of existing matches in the labor market <u>conditional</u> on skills

- ▶ we need more research on this topic

Reasons to expect that the supply of skills is not meeting demand

- ▶ <u>capacity</u> not demand driven
- ▶ <u>selection</u> not (relevant) skill driven

Reconsider how many we educate and who we educate

References

- Leuven, E. and H. Oosterbeek. (2011).
  Overeducation and mismatch in the labor market. In:
  E. Hanushek, S. Machin and L. Woessmann, eds.
  Handbook of the Economics of Education. Elsevier.
- Kirkebøen, L., E. Leuven and M. Mogstad (2014).
  Field of study, earnings and selection. NBER
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