Differences in Opportunities?

Wage, employment, and house-price effects on migration

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Background

- Persistent regional economic differences across Britain

	Mean across regions	Standard deviation
Unemployment rate 2007	5.6	1.1
Employment rate 2007	78.6	2.7
Weekly earnings 2007 (£)	530.0	70.1
House prices 2006	196,900	53,867

Source: *Regional Trends* vol 40, 2008

- Only 2% of the population in Britain migrated to another region in 2006 (NHSCR and ONS)

The paper in a nutshell:

1) Want to understand the individual/household migration choice and what affects it

2) Previous micro-studies focus mainly on the reasons for leaving a location

3) Propose a model of migration choice that considers opportunities that people face in destinations

4) Study how different groups of people react to these incentives

5) Consider the household, looking at wage and employment opportunities of both spouses in a couple

6) Combine different data sources

Human capital approach to migration

Migration is an investment. The returns are a function of:
- expected wage rates at alternative locations
- probability of getting (retaining) those wage rates
- value of money wages in different locations (price levels)
- migration costs

This paper: What are the effects of regional differences in
- expected individual wages
- unemployment rates
- job tenure
- house prices
- and of migration costs

on internal migration in Britain, 1993-2008?

Empirical evidence (UK): aggregate studies

unemployment differential

     –

house-price differential

     –

wage differential

     +   but: a) less important for migration into contiguous regions
                b) less important for older workers
                c) more important if combined with employment growth
                d) special role of South East, evolving over time

Pissarides/McMaster 1990; Jackman/Savouri 1992; Cameron/Muellbauer1998;
Hatton/Tani 2005; Murphy et al. 2006

Empirical evidence (UK): micro studies I

individual unemployment

+	Pissarides/Wadsworth 1989; Hughes/McCormick 1994; Boheim/Taylor 2002; Gregg et al. 2004; Andrews et al. 2008
0	Henley 1998; Buck 2000

council tenancy

–	Hughes/McCormick 1981; Pissarides/Wadsworth 1989; Gregg et al. 2004
0	Andrews et al. 2008

private rental

+	Buck 2000; Boheim/Taylor 2002, Gregg et al. 2004; Andrews et al. 2008
–	Pissarides/Wadsworth 1989

working wife

–	Mincer 1978; Juerges 1998; Nivalainen 2004; etc.

Empirical evidence (UK): micro studies II

origin wages

–	Hughes/McCormick 1994
+	Pissarides/Wadsworth 1989
0	Andrews et al. 2008

origin unemployment

–	Hughes/McCormick 1981, 1994; Henley 1998
0	Pissarides/Wadsworth 1989, Boheim/Taylor 2002
+	Andrews et al. 2008

origin unemployment * individual unemployment

0	Pissarides/Wadsworth 1989, Hughes/McCormick 1994

origin house prices

0 (+)	Pissarides/Wadsworth 1989; Hughes/McCormick 1994; Boheim/Taylor 2002

→ mixed results, need to incorporate opportunities in destination

Approaches to incorporating destination info

- Relate origin info to national average (Pissarides/Wadsworth 1989)

- Model migration decision and destination choice sequentially (Molho 1987; Hughes/McCormick 1994)

- Assigning potential destinations based on observed migration (Enchautegui 1997)

  - origin: region of residence at time t

  - destinations of migrants: chosen destinations

  - destinations of non-migrants: weighted average of all possible destinations, where weights are locational choices of migrants and origin is excluded

Incorporating destination characteristics into analysis

Predicted wage, unemployment rate, job tenure and house price is:

- in origin = value in region of residence at time t
- in destination = weighted average of value at all possible destinations, where weights are locational choices of migrants

Example: household in West Midlands, 2000

→pred. unemployment in origin for household head is 5.1%

→pred. unemployment in destination is 5.0%, this is weighted ø pred. unemployment in 8 Regions of England plus Scotland & Wales. Weights are migration flows from West Midlands in 2000.

Δ unemployment rate = -0.1%

Data

- British Household Panel Survey 1993-2008 (16 waves)
  Annual survey of 5,500 households (10,000 individuals in 1991)

- Labour Force Survey 1993-2008
  Quarterly rolling survey of 60,000 households at private addresses

- Halifax Housing Research 1993-2008
  Data on sales prices of houses by region

- National Health Service Central Register 1993-2008
  Maintains register of patients registered with GPs. Best source for annual migration data in Britain.

Empirical approach I

Migration =   f(Δ expected individual wage, Δ unemployment,
                   Δ job tenure, Δ house prices, migration costs)

Estimation of expected wage differentials using LFS:

- Estimate region and time-specific log hourly wage equations (11x16 estimates): age, age square, highest educational degree (5 dummies), non-white, work interruption in last year, partner

- Correct for female selection into employment (Heckmann 1979). Identification: number of children under 5, over 5

- Predict wages for each individual in each location and year

- Obtain expected log wages in origin. Expected log wages in destination are weighted average of wages in alternative locations, leaving out the origin

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Empirical approach II

- Unemployment: regional unemployment rates by gender, education level, age-group and year (LFS)

- Job tenure by gender, education level, age-group and year (LFS)

- House prices: real average log house price by year and region; also Δ in log house prices (Halifax)

- Destinations: Inter-regional migration by age-group (NHSCR)

- Mobility costs:

  employment status
  partner's employment status
  housing tenure
  number of children aged 0-4 and 5-16 in household
  age
  partner

  household income
  living in South East

Estimation samples

- BHPS (migration choice)
  - individuals aged 18-58
  - in labour force (employed/unemployed)
  - interviewed 2 consecutive waves
  - couples: head of household (90% men) and merge partner information
  - migration: Crossing a regional boundary between t and t+1, distance>50km
  - 33,425 household-year observations, 470 migrant households (1.4%)

- LFS (regional log wage estimates)
  - employees of working age (18-64)
  - not in full-time education
  - drop top and bottom 0.5% of hourly wage distribution
  - >2 million wage observations each for men and women
  - n=708-4,995 (men) n=743-5,082 (women)

Personal characteristics of migrants and non-migrants

	Migrants	Non-migrants
n	*470 (1.4%)*	*32,955*
Age	31	36
Partner	35%	54%
No. of children<5	0.18	0.16
No. of children≥5	0.29	0.50
South East	45%	29%

Employment transitions by migrant status (row percent.)

	Migrants, *t*+1		
t	employed	unemployed	other
employed (89%)	87	4	9
unemployed (11%)	66	12	22
t	Non-migrants, *t*+1		
employed (93%)	94	2	4
unemployed (7%)	35	42	23

Housing transitions by migrant status (row percent.)

t	Migrants, t+1			
	owner outright	owner mortgage	council tenant	private renter
owner outright (13%)	15	30	2	53
owner mortgage (56%)	6	55	3	36
council tenant (7%)	6	24	38	32
private tenant (24%)	11	37	4	48
t	Non-migrants, t+1			
owner outright (13%)	87	9	1	3
owner mortgage (64%)	3	95	0	2
council tenant (13%)	1	5	90	4
private tenant (10%)	2	15	5	77

Migration estimates, base model

Random effects probit model of migration

	Coef.	
Δ ln wage	0.32	(0.93)
Δ ln wage partner	-0.70	(1.36)
Δ unemployment rate	0.05	(0.99)
Δ ln unemployment partner	-0.02	(0.18)
Δ ln job tenure	0.73**	(3.22)
Δ ln job tenure partner	-0.02	(0.05)
Δ ln house prices	-0.30	(1.39)
Δ ln house-price growth	0.31	(0.41)
Other controls	yes	

**significant at 1%

Migration estimates, base model cont.

	Coef.	
Unemployed	0.29**	(3.64)
Partner employed	-0.17	(1.61)
Partner unemployed	0.10	(0.37)
Partner	-0.06	(0.55)
Home owner mortgage	-0.002	(0.02)
Council tenant	-0.26*	(2.18)
Private tenant	0.36**	(3.89)
Children < 5	0.10	(1.40)
Children ≥ 5	-0.07	(1.63)
Age	-0.02**	(6.69)
Female	0.17*	(2.97)
ln household income	0.18**	(3.87)
South East	0.10	(0.93)

**sign, at 1%, *sign. at 5%

Migration estimates, wage interactions

	Base	Employment status t	Employment status t+1
Δ ln wage	0.32 (0.93)		
Δ ln wage * employed		0.14 (0.37)	0.51 (1.33)
Δ ln wage * unemployed		1.52** (2.37)	0.64 (0.78)
unemployed	0.29** (3.64)	0.27** (3.25)	0.29** (3.62)
Other controls	yes	yes	yes

**sign at 1%

→ Unemployed react most to wage opportunities

Migration estimates, partner wage interactions

	Base	Employment status t	Employment status t+1
Δ partner ln wage	-0.70 (1.36)		
Δ partner ln wage * employed		-0.91 (1.57)	-0.28 (0.49)
Δ partner ln wage * unemployed		3.34 (0.23)	-3.17 (0.88)
Δ partner ln wage * inactive		-0.62 (0.65)	-0.93 (1.04)
Partner employed	-0.17 (1.61)	-0.17 (1.64)	-0.17 (1.52)
Other controls	yes	yes	yes

→ Negative effect of partner's expected wage gain

Migration estimates, job tenure interactions

	Base	Employment status t	Employment status t+1
Δ ln job tenure	0.73** (3.22)		
Δ ln job tenure * employed		0.81** (3.26)	0.65** (2.81)
Δ ln job tenure * unemployed		0.08 (0.13)	-0.38 (0.59)
unemployed	0.29** (3.64)	0.29** (3.60)	0.29** (3.71)
Other controls	yes	yes	yes

**sign at 1%

→ Employed individuals react to job stability differentials

Migration estimates, house price interactions

	Base	Housing tenure t	Housing tenure t+1
Δ ln house price	-0.30 (1.39)		
Δ ln house price* owner outright		-0.68[+] (1.93)	-0.81* (2.26)
Δ ln house price* owner mortgage		-0.31 (1.33)	-0.51* (2.05)
Δ ln house price* social tenant		-0.05 (0.13)	-0.12 (0.36)
Δ ln house price* private tenant		-0.13 (0.39)	0.50 (1.28)
Δ ln house price growth(t-1,t)	0.31 (0.41)	0.28 (0.36)	0.38 (0.50)
Other controls	yes	yes	yes

**sign at 1%, *sign at 5%, [+]sign at 10%

→ Home owners post migration are deterred by high house prices

Conclusions

- By introducing destination information into migration models our results come closer to those of aggregate studies
- In contrast to aggregate studies we can identify the incentives across population subgroups.

We find that:

- Unemployed people more likely to migrate & migrate in response to wage opportunities
- Employed people are responsive to job security
- High wage expectations of a partner tend to impede migration but generally no significant impact on family migration → "tied migrants"
- House price growth has no impact on migration
- House price differentials important for home owners post migration