O Brother, where art thou?: A spatial model of the family

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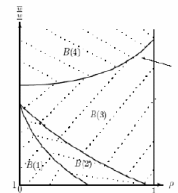
Motivation – Research Questions

❑ In theory: geographic mobility has an impact on employment and economic growth.
❑ In practice: low geographic mobility, especially in Europe.
❑ Previous research mainly focused on impact of labour market institutions/regulations on mobility.

❑ **This paper:** How do family-related factors affect children's geographic mobility?
❑ To what extent are decisions of young adults at the beginning of their working career influenced by:
   1. long-term care demands of their parents?
   2. presence of an alternative caregiver such as a sibling?
   3. state of the labour market at their parents' place of residence?

The Model: An Overview

❑ Two period, three-player game.
❑ Players: Two adult children, o and y, an elderly parent p.
❑ "Location Game" (Period 1) → children decide sequentially and non-cooperatively where to live and where to seek employment.
❑ "Caregiving Game" (Period 2) → parents require attention and care → adult siblings bargain over how to share the responsibility of their parents.

❑ **Key result:** Equilibrium exists in which siblings are geographically more mobile than only children.
❑ Siblings are more likely to become movers if a potential for increased earnings opportunities exists outside their parents' region of residence in comparison to only children.
❑ Only children respond to a higher extent to anticipated parental needs dependency.
❑ Siblings are more mobile due to
   a) shared family responsibilities
   b) strategic behaviour
   than only children.

Bargaining Equilibrium in the "Caregiving Game"

• Fix arbitrary actions (l_o, e_o) and (l_y, e_y). For each $i, j \in \{o, y\}$, define:

$$\theta_i \equiv \left[\frac{G\left(1 + \delta_i^e\right)}{w_i\left(1 + \delta_i^p\right)} \right].$$

Then the equilibrium negotiated caregiving shares provided by o and y are

$$s_o^h = \frac{g^h + \theta_o - \theta_y}{2} \quad \text{and} \quad s_y^h = \frac{g^h - \theta_o + \theta_y}{2}.$$

• Note: Caregiving shares are systematically pegged to the siblings relative wage rates and the their locations relative to that of their parents.

Equilibrium in the "Location Game"

▪ B(1): Kids live and work at home
▪ B(4): Kids become movers
▪ B(3): Siblings move, only children stay
▪ B(2): First-born siblings move, second-born siblings and only children stay

Empirical Predictions

1. Siblings exhibit higher rates of geographic mobility: they are more likely to become movers if a potential for increased earnings opportunities outside the parents' region of residence exists
2. A higher likelihood of parental needs for assistance reduces only children's propensity to move further away.
3. Due to higher geographic mobility, adult siblings whose parent live in economically depressed regions have on average
   (a) higher labour earnings; (b) a lower risk of unemployment, (c) higher full-time employment rates, d) lower rates of economic inactivity
   than only children from economically comparable regions.

The Data

❑ SOEP, social network questions.
❑ Key dependent variable: child-parents' geographic distance.
❑ Categorical variable: (1) child-parent live in same house or household; (2) in the same neighbourhood; (3) same town, but more than 15 min. walk; (4) in different town, ≤ 1 hour travel time; (5) further away.
❑ **Age of the oldest parent:** measure and proxy for parental needs uncertainty.
   We assume that children's expectation of parental dependency is increasing with parents' age.
❑ **Local labour markets at parents' region of residence:** high/low unemployment, rural/urban areas.

Empirical Results

❑ Siblings have a higher likelihood to live further away from their parents' residence than only children.
❑ In particular siblings from economically poor regions (high unemployment regions, rural areas) are more mobile than only children.
❑ As a result of higher mobility, siblings from regions with high unemployment rates have better labour market outcomes than only children.
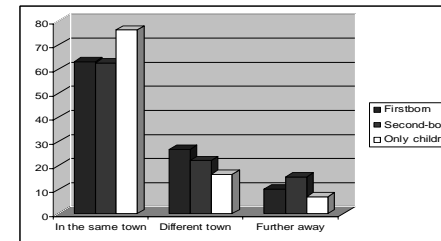
Graph 2: Distance between parents and children

Table 5: Child-parents geographical distance

	Parametric model		Semi-parametric model	
	Coef.	s.e.	Coef.	s.e.
Daughters	-0.189	0.093	-0.123	0.010
Married	0.347	0.108	0.549	0.133
Higher Edu.	0.613	0.098	0.544	0.126
Firstborn	0.386	0.115	0.541	0.124
Second-born	0.464	0.122	0.499	0.133
Age of the oldest parent	-0.029	0.008	-0.025	0.010
Par. homeowner	-0.327	0.116	-0.341	0.118
Parents live in high UE region	0.214	0.125	0.207	0.111

Table 6: Distance between parents and children by the age of the oldest parent.

AGE OF OLDEST PARENT	Only Children	Siblings	First-born	Second-born
> 60	RF	1.223** (0.251)	1.141** (0.275)	1.250** (0.282)
> 65	RF	1.841** (0.435)	1.728** (0.506)	1.955** (0.493)

Conclusions

❑ Presented a two-stage bargaining model.
❑ In equilibrium: Siblings have a higher propensity to mover further away from their parents' residence than only children.
❑ Using data from the SOEP, we find empirical evidence that supports our theory.
❑ Siblings (both firstborn and second-born) are more mobile than only children.
❑ Only children respond to a higher extent to expected parental dependency (measured as the age of the oldest parent) by locating closer to their parents.