Migration, Wages, and Tradition: Obstacles to Entrepreneurship in East Germany

Zoë Kuehn

Universidad Carlos III de Madrid

London, January 17th 2010
Why has East Germany’s economic performance been so poor since its reunification with West Germany?

Can its poor performance be linked to a misallocation of entrepreneurial talent and a resulting lack of entrepreneurship?
Motivation

Observations

- GDP per capita in East Germany has been below 70% of that of West Germany for the last 15 years.

- Unemployment rates in East Germany and Berlin ($\approx 20\%$) are twice as high as rates in West Germany.

- East Germany is growing slower than other transition countries ($1.2\%$ vs. $3-4\%$ p.a 1996-2007).

- There is a lack of entrepreneurship in East Germany.
## Motivation

**Lack of Entrepreneurship in East Germany**

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of Enterprises per 1000 inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Germany</td>
<td>33.8</td>
</tr>
<tr>
<td>(incl. firms with zero employment)</td>
<td></td>
</tr>
<tr>
<td>Czech Republic</td>
<td>79.2</td>
</tr>
<tr>
<td>Hungary</td>
<td>52.4</td>
</tr>
<tr>
<td>Poland</td>
<td>35.4</td>
</tr>
</tbody>
</table>

The Organisation for Economic Co-operation and Development (OECD) and its Local Economic and Employment Development Programme has been working with the Federal Ministry of Transport, Building and Urban Affairs (BMVBS) since 2005 on an analytical and practical project on Strengthening entrepreneurship in East Germany as a critical lever for economic growth and employment creation. OECD(2007)
**What do I do?**

- Build a model of occupational choice with parental background as a determinant of managerial ability (Hassler and Rodríguez Mora 2000, Lucas 1978, span-of-control model).

- Entrepreneurs pass on information about how to run a business to their children.

- Intelligence of entrepreneurs determines growth.

- Extend model to study reunification of East and West Germany with a focus on:
  - Unrestricted Mobility of East Germans
  - Wage Policy fixing East German wages as fraction of West German wages and above labor productivity
  - Importance of parental background in entrepreneurship for setting up a business in West Germany.

- Run counterfactual experiments.
Findings

- Under the current reunification scenario with relative moving costs decreasing over time, all mobile East Germans will end up leaving East Germany.

- Alternative integration scenarios that lead to more entrepreneurs, less unemployment, and more economic growth in East Germany are:
  - Flexible Wages in East and West Germany
  - No parental background in entrepreneurship in West Germany
  - Migration restrictions.

- However, in case migration is restricted Germany as a whole suffers welfare losses.
Contributions

- General equilibrium model that explicitly links lack of entrepreneurship to low economic growth in East Germany.

- Applies established theory on social mobility and economic growth to the context of economic transition.

- Addresses implications for economic growth arising from the historical unique context of a generation without parental background in entrepreneurship.

- Provides some quantification of the implications for the case of East Germany.
Basic Model

- Economy
  - continuum of agents of mass one, $L_t^0 + L_t^1 = 1$.
    - $L_t^0$: whose parents were workers
    - $L_t^1$: whose parents were entrepreneurs
  - live for one period/generation (25 years)
  - in $t + 1$ replaced by a child of random intelligence.

- Government
  - income taxation
  - unemployment insurance scheme.

- Agents’ Endowments
  - one unit of productive time
  - innate intelligence
  - parental background
  - bequests from parents ($x_t$).

- Agents’ Choices
  - occupation (unemployed, worker, entrepreneur)
  - work/produce, consume, bequest (one good).

- Markets are competitive.
Managerial ability ($z_t$) is defined as the product of innate intelligence ($q$) and parental background ($p$)

$$z_t^p = q(1 + \phi_t p)$$

where

$$p = \begin{cases} 
1 & \text{if one's parent was an entrepreneur} \\
0 & \text{else.}
\end{cases}$$

and $\phi_t$ measures importance of parental background.
Key Feature—Endogenous Growth

- Technological growth \( (g_t) \) is an increasing function of entrepreneurs’ intelligence \( (\bar{Q}_{t-1}) \)

\[
g_t = h(\bar{Q}_{t-1})
\]

with \( \frac{\partial h(\bar{Q}_t)}{\partial Q_t} > 0 \)

and where

\[
\bar{Q}_{t-1} = L_{t-1}^0 \int_{\hat{Z}_{t-1}^0} qf(q) dq + L_{t-1}^1 \int_{\hat{Z}_{t-1}^1} qf(q) dq.
\]

Intelligence of entrepreneurs with working parents

→ Externality of occupational choice on economic growth.
### Extended Model

#### Reunification of East and West Germany

- **Initial Condition**
  - All East Germans are children of workers
  - TFP in East lower than in West Germany ($A_t^* < A_t$).

- **Markets**
  - common for goods and capital
  - locally separated for labor.

- **Migration**
  - access labor market of other region to work or set up business
  - pay fixed moving cost ($\eta_t$)
  - mobile ($\theta$) and immobile ($1 - \theta$) individuals.

- **Policy**
  - East German wages are set to be $(1 - \lambda_t)$ West German wages
  - Subsidy: East German rental rate is $(1 - \chi_t)$ West German rate.

- **Equilibrium**
  - East German labor market does not clear
  - Involuntary unemployment in East Germany.
West Germans can migrate to East Germany and set up a business

- **Advantages**
  - lower labor costs: \((1 - \lambda_t)w_t\)
  - lower rental rate: \((1 - \chi_t)R_t\).

- **Disadvantages**
  - lower TFP: \(A^*_t\)
  - moving cost: \(\eta_t\).

West Germans only set up a business in East Germany if discounts on wages and rental rate of capital large enough to offset reduced TFP.
East Germans can choose to

- be unemployed: $v_t = \varsigma \mathbb{w}_t$

- work in East Germany: $(1 - \psi_t)(1 - \tau_t^u - \tau)(1 - \lambda_t)\mathbb{w}_t q + \psi_t \mathbb{v}_t$
  - where $\psi_t$ is the probability of involuntary unemployment in East Germany

- work in West Germany: $(1 - \tau_t^u - \tau)\mathbb{w}_t q - \eta_t^* j$

- set up a business in East Germany: $\pi_t(z_t, A_t^*, \lambda_t, \chi_t)$

- set up a business in West Germany: $\pi_t(z_t, A_t, \eta_t^* j)$
Results Reunification

In East Germany:
- High rates of out-migration (7%)
- Most intelligent entrepreneurs set up businesses in West Germany (38%)
- Few entrepreneurs (4% vs. 8% West)
- High rates of involuntary unemployment (22.5%)
- Low TFP growth (< 1% vs. 1.6% West)
- Low output (1/3 of West German GDP p.c.).

In West Germany:
- Inflow of most able workers and entrepreneurs
- Financing investment aids for East Germany (93% of Gov Revenue from West; 10% to East)
- Contributing to unemployment insurance paid out to a large extent in East Germany (93% from West; 65% to East).
Mechanisms behind Results

- Given a lack of entrepreneurial parental background, East Germans face initial disadvantage for setting up a business.
- Wage setting policy; i.e. wages above labor productivity reduce incentives to set up businesses in East Germany.
- Attractive outside option to migrate to West Germany draws in most intelligent East Germans.
- Immobile individuals stay behind and join the ranks of the unemployed.
Counterfactual experiments to evaluate alternative integration scenarios for East Germany:

- **Flexible Wages**
  - Wages in East Germany adjust freely $\Rightarrow$ More entrepreneurs, higher output, less unemployment, more growth, most out-migration for East Germany; lower output for West Germany, higher output for all of Germany

- **Integration into a society of high generational occupational mobility**
  - Value of Parental Background zero $\Rightarrow$ More entrepreneurs, higher output, less unemployment, more growth, more out-migration for East Germany; lower output for West Germany, highest output for all of Germany

- **No Migration**
  - All individuals are immobile $\Rightarrow$ More entrepreneurs, highest output, less unemployment, more growth; lowest output for West Germany, lower output for all of Germany.
Conclusions

- Explicitly modeled mechanisms that link a lack of entrepreneurship to low economic growth in East Germany.
- Tested candidates – Migration, Wages, and Tradition and found that each pose obstacles to entrepreneurship and economic growth.

Further Implications

- Model has implications for situations where migration and occupational choice interact.
- Can be used to evaluate migration policies.