Wind of Change? Cultural Determinants of Maternal Labor Supply

Barbara Boelmann (Cologne)
Anna Raute (QMUL)
Uta Schönberg (UCL, IAB)

1st May 1954 East Berlin
Motivation

- Women – in particular mothers – work less than observationally similar men
- This paper: **cultural determinants** of maternal labor supply
- Existing literature stressed
  - persistence of culture and deep historical roots (e.g. Fernández, 2007, Fernández & Fogli, 2009, Alesina et al. 2013)
  - but also some episodes of sudden change (see Giuliano 2016; 2018) in gender norms and female labour supply

➔ When does culture persist and when does it change?
  - Do migrants adhere to “childhood culture” or adjust to “current culture”?
  - Can migrants (from a more gender egalitarian culture) induce a change in behavior of “natives” from a more gender traditional culture?

Definition culture
Unique setting of German division

Division after WWII
- East: state-socialist country, encouraged full-time labour force participation of mothers
- West: traditional male bread-winner model
  ➢ In 1989, female LFP in East was 89% vs. 56% in West

Reunification 1989
- Two cultures thrown together, same institutional setting
- Large-scale migration
- Increased social interactions between East and West Germans

→ Exploit to understand better:
  Persistence of childhood culture vs change through exposure in adulthood

1) Experience of migrants
2) Impact of migrants on natives
Sneak peek: Experience of migrants

Does childhood culture matter when immersed in a different current culture?

- Epidemiological approach of internal, first-generation migrants
- Robustness
  - Look at unobservables using auxiliary survey data
  - Compare to internal migrants and within commuting zones ("migration effect")
  - Oster bounds

→ Cross-border migrants: Large **asymmetry in persistence of childhood culture**
  - West Germans behave like East Germans when exposed to less traditional culture
  - East Germans adhere to less traditional childhood culture

→ Return migrants: Learning likely one channel
Do less traditional East German migrants affect maternal labor supply decisions of more traditional West German natives?

- **DiD** in West German firms around time of reunification: high vs low share of East German colleagues
- **Robustness**
  - Test robustness to large array of time-changing firm characteristics before birth as well as future firm characteristics
  - Use alternative control group (same employment growth)
  - Placebo regressions using men and older women

→ **Migration as a vehicle for cultural diffusion**: East German migrants speed up return to work of West German mothers
Story of the two Germanies
Divided Germany

- 1945: separation into Soviet (East) and Allied occupation zone (West)
- 1949: two states were officially established
Divided Germany – Policies

GDR (East):
• Equality of women proclaimed goal of state-socialist governments
• GDR propagated duty to work
• Policies to reconcile work and family: e.g., “Baby year“ (1 year fully paid maternity leave), wide-spread childcare availability
→ High labour force participation of mothers

FRG (West):
• Promoted more conservative male-breadwinner model
• System deterred mothers from working (full time), e.g. lack of child care, tax and benefit system
→ Women stayed home after they had child or went back part time after extended break
Divided Germany – Mama vs. Mutti

Federal Republic of Germany (FRG)
Capitalism

German Democratic Republic (GDR)
Socialism

Baking is fun with BACKIN
Divided Germany – Mama vs. Mutti

Federal Republic of Germany (FRG) – Capitalism

German Democratic Republic (GDR) – Socialism

Mum is coming home in 10 minutes...
Fall of the Iron Curtain and reunification

November 9 1989

- East Germany takes over West Germany’s political, economic and legal institutions (including maternity leave legislation)

October 3 1990

- Social interactions through migration and commuting
Do you agree: A pre-school child suffers if mother works?

Source: Own calculations based on European Value Survey (2008)
Data & descriptives
German social security records
• 50% random sample of employed women in Germany born between 1946 and 1994
• Complete daily employment history for each woman, including leave of absence due to childbirth
• Firm (establishment) identifiers to explore social interactions at firm level
• Full population data to get info on woman’s colleagues

→ Focus on labour market transitions after first births
→ Births between 2003 and 2006: mothers made education and labour market decisions after reunification
Why to we focus on transition around first birth?

• Child penalties key driver of gender inequality (Kleven et al. 2019; Angelov et al., 2018)

• Gender norms particularly salient around childbirth (Kuziemko et al. 2020) → relevant margin when it comes to cultural differences between East and West

• Allows us to condition on extensive set of pre-birth characteristics (just before birth; during 3 years prior to birth)
  • Control set I: age, education, occupation, wage at birth, full-time at birth
  • Control set II: + work history 3 years prior to childbirth

→ compare women who were on the same career trajectory before birth
Many East German mothers act according to social and institutional norms of former GDR (even 20 years after reunification)
Strategy 1:
Movers: East Germans in West

How persistent is childhood culture when moving to a new culture?
• Builds on epidemiological approach (Fernández 2007, Giuliano 2007, Fernández and Fogli 2009)
• Compares
  • East Germans who migrated to West Germany to “native” mothers
  • within the same (West German) local labour market and workplace
• Birth years 2003-2006

→ Experience of migrants themselves
→ Captures persistent effect of less traditional childhood culture when fully immersed to a more traditional current culture (as a minority)
Large differences even after substantial exposure to West German culture

<table>
<thead>
<tr>
<th>Panel A: 4 years after childbirth</th>
<th>same local labor market</th>
<th>same local labor market, controls set I</th>
<th>same local labor market, controls set II</th>
<th>same firm, controls set II, long-term migrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>regularly employed</td>
<td>0.101***</td>
<td>0.0857***</td>
<td>0.0849***</td>
<td><strong>0.0792</strong>* <strong>0.00821</strong></td>
</tr>
<tr>
<td>(excluding marginal employment)</td>
<td>(0.00671)</td>
<td>(0.00717)</td>
<td>(0.00700)</td>
<td><strong>0.0776</strong>* <strong>0.0120</strong></td>
</tr>
<tr>
<td>employed</td>
<td>0.0795***</td>
<td>0.0600***</td>
<td>0.0587***</td>
<td>0.0622***</td>
</tr>
<tr>
<td>(including marginal employment)</td>
<td>(0.00679)</td>
<td>(0.00692)</td>
<td>(0.00650)</td>
<td><strong>0.0671</strong>*</td>
</tr>
<tr>
<td>full-time employed</td>
<td>0.0589***</td>
<td>0.0570***</td>
<td>0.0568***</td>
<td>0.0509***</td>
</tr>
<tr>
<td>(including marginal employment)</td>
<td>(0.00442)</td>
<td>(0.00430)</td>
<td>(0.00435)</td>
<td><strong>0.0615</strong>*</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.009</td>
<td>0.042</td>
<td>0.043</td>
<td><strong>0.304</strong></td>
</tr>
<tr>
<td>local labor market*year of birth FE</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Firm FE</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>Mothers' characteristics at birth</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Pre-birth employment history</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>N East German migrants</td>
<td>14,959</td>
<td>14,789</td>
<td>14,789</td>
<td>9,352</td>
</tr>
<tr>
<td>N West German natives</td>
<td>322,803</td>
<td>311,717</td>
<td>311,717</td>
<td>194,269</td>
</tr>
</tbody>
</table>

(comparison literature)
Robustness checks

- Observables: Results robust to the inclusion of various individual controls
- Unobservables
  - Work-related attitudes (SOEP): East German migrants not different to East German stayers
  - Partner (SOEP): Spousal income differences too small to explain much of the gap
  - Household savings and savings rates similar (SOEP)
- Migration effect, e.g. family network
  1. Use West German internal migrants as alternative comparison group: migrated same distance within West Germany (280 km)
  2. Restrict our sample to firms only operating in five integrated local labour markets where moving is less costly
- Oster (2019) bounds: assume extreme differences between East German migrants and West German stayers to gauge how important selection on unobserved characteristics could be

→ Our results are robust!
Strategy 2: Movers: West Germans in East

Is the West German culture as persistent as the East German one?
Strategy movers: intuition

• Compares
  • West Germans who migrated to East Germany to “native” mothers
  • within the same (East German) local labour market and workplace
• Birth years 2003-2006

→ Experience of migrants themselves
→ Captures persistent effect of more traditional childhood culture when fully immersed to a less traditional current culture (as a minority)
## West Germans in East Germany

**Panel A: 4 years after childbirth**

<table>
<thead>
<tr>
<th></th>
<th>same local labor market</th>
<th>same local labor market, controls set I</th>
<th>same local labor market, controls set II</th>
<th>same firm, controls set II</th>
<th>same firm, controls set II, long-term migrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>regularly employed</td>
<td>-0.00446</td>
<td>0.0146**</td>
<td>0.0172***</td>
<td>0.0122</td>
<td>-0.0123</td>
</tr>
<tr>
<td>(excluding marginal employment)</td>
<td>(0.00802)</td>
<td>(0.00652)</td>
<td>(0.00607)</td>
<td>(0.0116)</td>
<td>(0.0254)</td>
</tr>
<tr>
<td>employed</td>
<td>0.00615</td>
<td>0.0210***</td>
<td>0.0232***</td>
<td>0.0249**</td>
<td>0.000743</td>
</tr>
<tr>
<td>(including marginal employment)</td>
<td>(0.00910)</td>
<td>(0.00761)</td>
<td>(0.00723)</td>
<td>(0.0123)</td>
<td>(0.0217)</td>
</tr>
<tr>
<td>full-time employed</td>
<td>-0.0228***</td>
<td>-0.00401</td>
<td>-0.0000473</td>
<td>0.00113</td>
<td>-0.0224</td>
</tr>
<tr>
<td></td>
<td>(0.00607)</td>
<td>(0.00472)</td>
<td>(0.00469)</td>
<td>(0.0115)</td>
<td>(0.0187)</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.011</td>
<td>0.084</td>
<td>0.114</td>
<td>0.379</td>
<td>0.385</td>
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<tr>
<td>Local labor market*year of birth FE</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Firm FE</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Mothers' characteristics at birth</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Pre-birth employment history</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>N East German natives</td>
<td>66,195</td>
<td>63,894</td>
<td>63,894</td>
<td>38,859</td>
<td>17,450</td>
</tr>
<tr>
<td>N West German migrants</td>
<td>4,211</td>
<td>4,135</td>
<td>4,135</td>
<td>2,332</td>
<td>593</td>
</tr>
</tbody>
</table>

→ East-West gap much smaller in size than in West German firms and disappears with long exposure. **robustness**
Results so far

• East Germans adhere to less traditional childhood culture
• West Germans migrants deviate from more traditional childhood culture

→ Asymmetric adjustment:

• Peer pressure from East German colleagues and economic incentives (Giavazzi, Petkov, and Schiantarelli 2019)

• Learning from colleagues: West German mothers are uncertain about effects of maternal employment and learn from an East German environment (e.g. Fernandez 2013; Fogli and Veldkamp 2011)

• Change in preferences/identity for West German women
Strategy 3: West German return migrants

Do West German women adjust behaviour even after past exposure?
Return migrants: intuition

• Compares
  • West German return migrants with past exposure to East
  • with West German colleagues who always remained in West

• Birth years 1997-2006

→ Captures effects of past full immersion to less traditional culture
→ Speaks to learning vs peer pressure
### Panel A: 4 years after childbirth

<table>
<thead>
<tr>
<th></th>
<th>same local labor market</th>
<th>same local labor market, controls set I</th>
<th>same local labor market, controls set II</th>
<th>same firm, controls set II</th>
<th>relative to return migrants within West Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>regularly employed</strong></td>
<td>0.0369***</td>
<td>0.0426***</td>
<td>0.0433***</td>
<td>0.0387**</td>
<td>0.0437***</td>
</tr>
<tr>
<td>(excluding marginal employment)</td>
<td>(0.00967)</td>
<td>(0.00926)</td>
<td>(0.00924)</td>
<td>(0.0171)</td>
<td>(0.0147)</td>
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<tr>
<td><strong>employed</strong></td>
<td>0.00650</td>
<td>0.0125</td>
<td>0.0132</td>
<td>0.0296*</td>
<td>0.0116</td>
</tr>
<tr>
<td>(including marginal employment)</td>
<td>(0.0106)</td>
<td>(0.00983)</td>
<td>(0.00976)</td>
<td>(0.0170)</td>
<td>(0.0142)</td>
</tr>
<tr>
<td><strong>full-time employed</strong></td>
<td>0.0567***</td>
<td>0.0482***</td>
<td>0.0481***</td>
<td>0.0319*</td>
<td>0.0485***</td>
</tr>
<tr>
<td>(excluding marginal employment)</td>
<td>(0.00905)</td>
<td>(0.00937)</td>
<td>(0.00938)</td>
<td>(0.0163)</td>
<td>(0.0118)</td>
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<tr>
<td>Local labor market*by year of birth FE</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Firm FE</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Mothers' characteristics at birth</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Pre-birth employment history</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>N West German return migrants</td>
<td>1,962</td>
<td>1,948</td>
<td>1,948</td>
<td>1,368</td>
<td>834,204</td>
</tr>
<tr>
<td>N West German &quot;natives&quot;</td>
<td>834,204</td>
<td>825,771</td>
<td>825,771</td>
<td>598,032</td>
<td>5,420</td>
</tr>
</tbody>
</table>
Strategy 4:
Arrival of East German colleagues in West German firms

Does horizontal transmission of culture happen with moderate exposure?
Arrival of East colleagues: intuition

- Exploit differential inflow of East Germans across smaller firms (at most 500 FTE) in same industry/labour market after reunification
Arrival of East colleagues: What do we pick up?

- Exposure to less traditional peers in own, more traditional culture
- Effect on “natives” in host country

- complements literature on
  - peer effects of maternal employment (e.g., Maurin and Moschion 2009 and Nicoletti et al. 2018)
  - and immigration/culture literature (Jarotschkin and Zhuravskaya 2019; Schmitz and Weinhardt 2019)
Confounding factors

• **Local labour market** and **industry specific trends**
  ➢ Deals with self-selection of East Germans into growing labour markets and industries
  ➢ Accounts for potential migration effects on wages and employment

• **Key concern:** Firms that hired many East Germans are firms that are doing well, which in turn affects post-birth labour market outcomes of mothers
  ➢ Test robustness to large array of time-changing firm characteristics before birth as well as future firm characteristics
  ➢ Use alternative control group (same employment growth)
  ➢ Placebo regressions using men and older women
**Effect of East German colleagues – 4 years after childbirth**

<table>
<thead>
<tr>
<th>Panel A: 4 years after childbirth</th>
<th>local labor market and industry by year of birth FE (1)</th>
<th>individual controls set II (2)</th>
<th>firm controls (at birth) (3)</th>
<th>firm controls (at birth and 1 or 4 years after birth) (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>regularly employed</td>
<td>0.0130***</td>
<td>0.0123***</td>
<td>0.0110**</td>
<td>0.0160***</td>
</tr>
<tr>
<td></td>
<td>(0.00438)</td>
<td>(0.00445)</td>
<td>(0.00508)</td>
<td>(0.00575)</td>
</tr>
<tr>
<td>full-time employed</td>
<td>0.00149</td>
<td>0.00211</td>
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<td>0.00750</td>
</tr>
<tr>
<td></td>
<td>(0.00381)</td>
<td>(0.00361)</td>
<td>(0.00433)</td>
<td>(0.00486)</td>
</tr>
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<td>Local labor market*year of birth FE</td>
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<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Industry*year of birth FE</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Mothers' characteristics at birth</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Pre-birth employment history</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Firm characteristics at birth</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Firm characteristics 4 (Panel A) and 1 (Panel B) years after birth</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>

- 10% points increase in share increases probability of employment by 1.6% points.
- Operates through part-time employment
Evidence for horizontal spillovers through migration

• After 1 year: treated mothers  (results)  
  • are more likely to have returned to work and work full time

• After 4 years: treated mothers  
  • More likely to be working (part-time)  
  • More likely to stay with prebirth employer  
  • Mothers more likely to stay put with same firm and job

• Threshold effect: Substantial migration shock needed (≥10 pp)  (results)

• Heterogenous spillovers:  (results)  
  • female colleagues and immediate peers in same occupation have stronger effect

→ Arrival of more „progressive“ peers affects West German mothers’ maternal labour supply, but exposure needs to be substantial
Take away

Asymmetry when cultures interact
- For East Germans, less traditional childhood culture persistent
- For West Germans, exposure to less traditional culture in adulthood positively and permanently affects maternal labor supply
- Learning a key driver of asymmetry

Migration can bring about cultural change
- Full immersion is not needed for transmission of culture
- But substantial shock is needed
- Workplaces important social network for cultural change

→ One reason for persistent motherhood penalties in gender traditional cultures might be the lack of direct contact to more gender egalitarian cultural values and beliefs
Thank you!

barbara.boelmann@uni-koeln.de
a.raute@qmul.ac.uk
u.schoenberg@ucl.ac.uk