# Putting the GDR's Legacy Effect under the Microscope:

## Eastern Female STEM Professionals in Reunified Germany.

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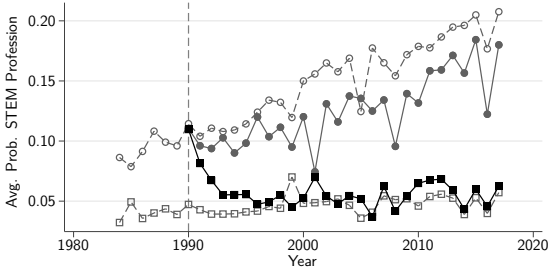
# Motivation

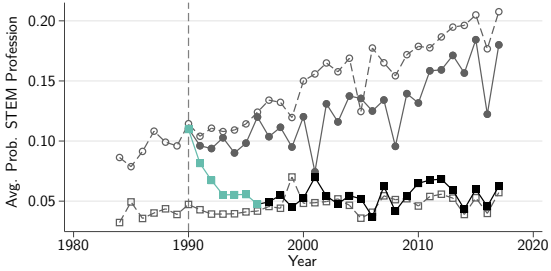
Definition. STEM, field and curriculum centred on education in the disciplines of **S**cience, **T**echnology, **E**ngineering, and **M**athematics (Hallinen, 2024).

Figure: Time Trend (by Region and Gender), 1984–2017



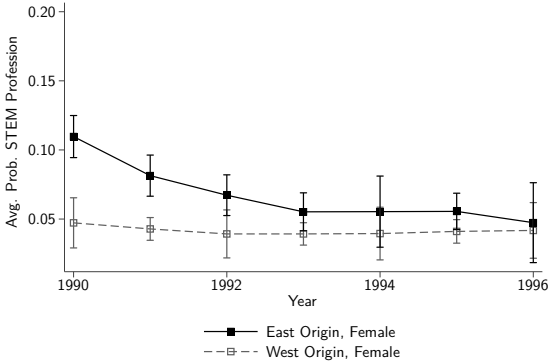

Avg. Bin Size (Std. Dev.): 1,629 (1,400)

Figure: Time Trend (by Region and Gender), 1984–2017




Avg. Bin Size (Std. Dev.): 1,629 (1,400)

Figure: Time Trend (by Region and Gender), 1990–1996




Avg. Bin Size (Std. Dev.): 1,089 (744)

# Previous Literature

- 92% of all **female apprentices** in the GDR were concentrated in thirteen **occupational groups**, compared to five in the FRG (Menschik and Leopol, 1974) **(check source)**.
- **Horizontal segregation** in the labour sector in the GDR was not nearly as high as in the societies of the Western bloc (Lane, 1983).

# Previous Literature

- Of the **female apprentices** who successfully passed their skilled labour examination (*Facharbeiterprüfung*) in 1980, **17%** were in the **STEM field** (Staatliche Zentralverwaltung für Statistik, 1981, p. 293).
- Unlike in the FRG, in the GDR there was the **same school curriculum for boys and girls** with the same **emphasis on science and maths** (Fuchs-Schündeln and Masella, 2016; Lippmann and Senik, 2018).

# Research Question

What drives the downward trend of East German females in STEM professions in the first six years after reunification?

# Empirical Approach

- Compare East German females with East German males.
  - East German males and females should have had the same probability of becoming a STEM professional before the reunification.
  - Examine in what way they each were affected by the reunification.
- Define the treatment as years after unification $\times$ being female (binary).

Table: Examples of Stem Professions (sorted by frequency)

| ISCO-88 Code | Professional title |
|---|---|
| [2149] | Architects, engineers and related scientists |
| [3152] | Health, environmental and quality inspectors |
| [3119] | Materials and engineering specialists |
| [2142] | Civil engineers |
| [3121] | Data processing assistants |
| [3111] | Chemo- and physicotechnician |
| [2145] | Mechanical engineers |
| [3114] | Electronics and telecommunications technology |
| [3120] | Data processing specialists |
| [2144] | Electronics and telecommunications engineers |
| ... | |

# Econometric Specification

$$\begin{aligned} Stem_{itr} =& \beta_0 + \beta_1 Dist\_Reunification_t + \beta_2 Female_i + \\ & \beta_3 Dist\_Reunification \times Female_{it} + X_{itr}\gamma + \epsilon_{itr} \end{aligned} \tag{1}$$

with $Dist\_Reunification_t = Survey\_Year_t - 1990$.

# Data

# Preliminary Results

# Validity

# Main Findings

# Discussion

# Conclusion

# References

Fuchs-Schündeln, N. and Masella, P. (2016). Long-Lasting Effects of Socialist Education. *The Review of Economics and Statistics*, 98(3):428–441.

Hallinen, J. (2024). STEM. https://www.britannica.com/topic/STEM-education. Encyclopedia Britannica. Last updated: 7 May 2024.

Lane, C. (1983). Women in Socialist Society with special reference to the German Democratic Republic. *Sociology*, 17(4):489–505.

Lippmann, Q. and Senik, C. (2018). Math, Girls and Socialism. *SOEPpapers on Multidisciplinary Panel Data Research*, 993-2018. DIW/SOEP Berlin.

# References (cont.)

Menschik, J. and Leopol, E. (1974). *Gretchens rote Schwestern. Frauen in der DDR*. Fischer Verlag.

Staatliche Zentralverwaltung für Statistik (1981). *Statistisches Jahrbuch 1981 der Deutschen Demokratischen Republik*. Staatsverlag der Deutschen Demokratischen Republik.