

Putting the GDR's Legacy Effect under the Microscope:

Eastern Female STEM Professionals in Reunified Germany.

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Motivation

- Previous Literature
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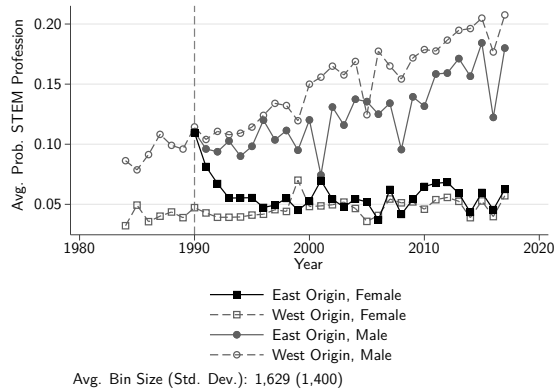
Motivation



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

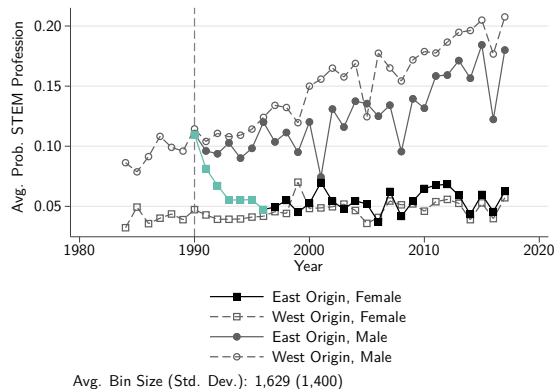


Figure: Time Trend (by Region and Gender), 1984–2017



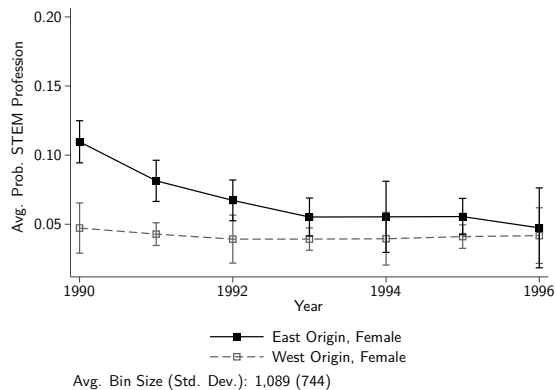
Source: Socio-Economic Panel (SOEP) (2023). Own calculations.

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



Source: Socio-Economic Panel (SOEP) (2023). Own calculations.

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



Source: Socio-Economic Panel (SOEP) (2023). Own calculations.

Previous Literature

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



- ▶ 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 had the same probability of working as a STEM professional in 1990 (what about before?).
 - ▶ Examine in what way they each were affected by the reunification.
- ▶ Define the treatment as **years after unification** \times **being female**.



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 physicot technician
[2145]	Mechanical engineers
[3114]	Electronics and telecommunications technology
[3120]	Data processing specialists
[2144]	Electronics and telecommunications engineers
...	



Econometric Specification

$$Stem_{itr} = \beta_0 + \beta_1 Dist_Reunification_t + \beta_2 Female_i + \beta_3 Dist_Reunification \times Female_{it} + X_{itr}\gamma + \epsilon_{itr} \quad (1)$$

with $Dist_Reunification_t = Survey_Year_t - 1990$.



Data



Preliminary Results

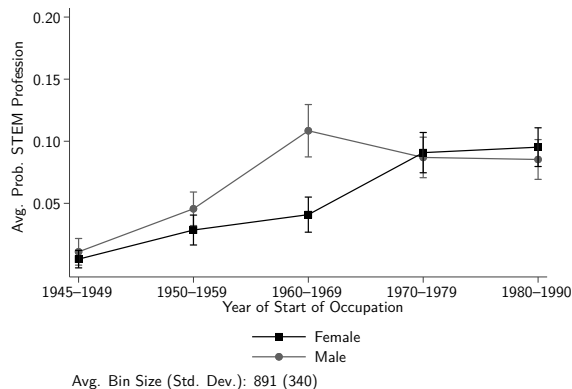




Validity



Figure: Cohorts (Start of Occupation by Gender), 1945–1990



Source: Mayer (1995). Own calculations.



Main Findings

Table: Margins (dy/dx) of Logit Regressions with $y = \text{Being a STEM Professional}$

	(1)	(2)	(3)	(4)
Years after Reunification	-0.0008 (0.0016)	-0.0027 (0.0017)	-0.0027 (0.0017)	-0.0027 (0.0017)
Female	-0.0022 (0.0088)	-0.0032 (0.0088)	-0.0032 (0.0088)	-0.0032 (0.0088)
Years after Reunification \times Female	-0.0121*** (0.0028)	-0.0101*** (0.0029)	-0.0101*** (0.0029)	-0.0101*** (0.0029)
Residence in West Germany		0.0474*** (0.0174)	0.0474*** (0.0174)	0.0474*** (0.0174)
Residence in West Germany \times Female		-0.0517* (0.0309)	-0.0517* (0.0309)	-0.0517* (0.0309)
Observations	14,632	14,632	14,632	14,632



Discussion



Conclusion





References

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