

# The links between unemployment and new business formation in Poland

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# Research background

## The links between unemployment and the formation of new business

### ▪ Positive relationship between unemployment and entrepreneurship

- **Unemployment-push effect:** entrepreneurship as a form of escape from unemployment - **necessity entrepreneurship** (Block & Wagner, 2010)
- Determinants of unemployment-push effect:
  - the specificity of the business activity (e.g. the capital and knowledge requirements): is expected, especially in small-scale easy-to-enter industries (Roman et al., 2013);
  - the intensity of economic tensions: the push effect is disproportionately stronger when economic circumstances are worse (Congregado et al., 2009).

### ▪ Negative relationship between unemployment and entrepreneurship

- **Prosperity-pull effect:** the emerging market opportunities encourage people to set up businesses (**opportunity entrepreneurship**). Conversely, limited number of business opportunities during market downturn hampers entrepreneurship (Rampini, 2004)
- High unemployment rate (especially structural unemployment) may curtail market entry for businesses because the unemployed usually have fewer entrepreneurial skills and less capital available than employed individuals (van Stel & Storey, 2004).

# Research gap

## Territorial specificity as a determinant of unemployment push-effect

- **higher vulnerability** of entrepreneurship to unemployment fluctuations might be expected **in local units with relatively high intensity of problems in the labour market** (e.g. high unemployment) and a relatively high share of operational service activities (Cala, 2018; Roman et al., 2013)
- **the structural problems of lagged economies may mitigate the positive effect of the unemployment rate on business entry rate.** This may hamper, in particular, the emergence of new knowledge-based industries, since in lagged regions the demand for such goods and services is smaller, less stable and less diverse (Kantis et al., 2005)

# Research aim:

- to assess the direction and strength of the impact of unemployment rate on the number of newly registered service businesses in Poland,

*taking into account both the internal specificities of that sector and the specificities of the local economy in 2003–2018*

# Research hypotheses:

- H1: In the 2003–2018 period, growing unemployment contributed to a subsequent increase in the number of newly registered service businesses.
- H2: The impact of unemployment on the number of newly registered service businesses was stronger in lagged local units in comparison to developed ones.

# Research methodology

1. **Service sector (NACE Rev. 2) as a research subject - the knowledge-intensity criterion in service typology (the share of employees with tertiary education)** (*Glückler & Hammer, 2011; Cyrek, 2012, pp. 186–187*).
  - operational (OP) services: trade, transportation, and accommodation and food service activities – sections G, H, I (the large numbers of less skilled employees).
  - knowledge-based (KB) services:
    - business-oriented services (financial and insurance, real estate, professional and technical, administrative and support service activities – sections K, L, M, N)
    - and social services (education, human health and social work activities – sections P, Q).
  
2. **Local approach** (Caree, 2002) - 379 local administrative units (poviats):
  - Less developed LUs – 259;  
an unemployment rate was permanently higher than the national average in 2003–2018 (17.4%; national average 14.7%);
  - Developed LUs – 120  
permanently below-average unemployment rate in 2003–2018 (8.7%)

# Research methodology

## 3. Verifying the cause-and-effect links between unemployment rates and entrepreneurship

$$\ln Y_{ij,t} = \alpha_0 + \alpha_i \ln X_{i,j,t-1} + \beta_i Z_{j,t-1} + (\alpha_j + \mu_t + \varepsilon_{j,t})$$

where:

- $Y_{i,j,t}$  — gross entry rate in specific service section  $i$  in LU  $j$  in year  $t$ ,  
(the number of new service businesses entered into the REGON registry per 1,000 inhabitants) (Fritsch et al. (2015); Konon et al. (2018))
- $X_{i,j,t-1}$  — unemployment rate in LU  $j$  in year  $t-1$ ;
- $Z_{j,t-1}$  — set of control variables in LU  $j$  in year  $t-1$   
(demographic structure, urbanisation rate, share of services in the employment structure, industrial tradition, Infrastructure development; opportunity cost - average monthly gross wages)

- Driscoll-Kraay fixed effects estimators (robust with regard to very general forms of cross-sectional, spatial and temporal dependence) (Hoechle, 2007).
- Breitung panel unit root test
- A robustness check: GMM estimator (to solve the endogeneity problem)
- Data source: Polish Central Statistical Office dataset (CSO; Local Data Bank).

**Table 1. Fixed effect Driscoll-Kraay/GMM estimates of equation (1)**

*(control variables are included but not reported)*

Estim,	1 All serv.	2 OP	3 KB	4 KB-Buss.	5 KB-Publ.
<b>All LUs (N=379)</b>					
Driscoll-Kraay estimates					
X1	<b>0.076***</b> <b>(0.024)</b>	<b>0.069***</b> <b>(0.015)</b>	<b>0.081***</b> <b>(0.022)</b>	<b>0.106***</b> <b>(0.022)</b>	-0.011 (0.056)
R <sup>2</sup>	0.495	0.508	0.489	0.340	0.574
GMM estimates					
X1	<b>0.078***</b> <b>(0.015)</b>	<b>0.063***</b> <b>(0.015)</b>	<b>0.084***</b> <b>(0.023)</b>	<b>0.100***</b> <b>(0.03)</b>	0.006 (0.033)
R <sup>2</sup>	0.472	0.536	0.460	0.306	0.558
Hansen/Sargan n (p)	0.08	0.47	0.16	0.22	0.30

Notes: \*, \*\*, \*\*\* indicate statistical significance: \* p < 0.1; \*\* p < 0.05; \*\*\*p < 0.01; robust standard errors in parentheses. Time dummies are included but not reported.

For all estimations: F-model test: p<0.00; robust test for differing group intercepts: p<0.001; 2-step GMM estimations Underidentification Kleibergen-Paap LM test: p<0.001; Kleibergen-Paap F-test for weak IV: F>100.00.

Source: own calculations in STATA.

**Table 2. Fixed effect Driscoll-Kraay/GMM estimates of equation (1)**

*(control variables are included but not reported)*

Developed LUs (N=120)					
	6	7	8	9	10
	All serv.	OP	KB	KB-Buss.	KB-Publ.
<b>Driscoll-Kraay estimates</b>					
X1	0.032 (0.027)	-0.005 (0.023)	0.040 (0.025)	<b>0.063***</b> <b>(0.017)</b>	-0.049 (0.081)
R <sup>2</sup>	0.606	0.566	0.661	0.534	0.660
<b>GMM estimates</b>					
X1	0.029 (0.022)	-0.016 (0.023)	<b>0.056*</b> <b>(0.031)</b>	<b>0.076**</b> <b>(0.035)</b>	-0.034 (0.051)
R <sup>2</sup>	0.558	0.585	0.629	0.488	0.644
Hansen/Sargan (p)	0.66	0.73	0.56	0.79	0.31

Less developed LUs (N=259)					
	11	12	13	14	15
	All serv.	OP	KB	KB-Buss.	KB-Publ.
<b>Driscoll-Kraay estimates</b>					
X1	<b>0.156***</b> <b>(0.016)</b>	<b>0.148***</b> <b>(0.011)</b>	<b>0.171***</b> <b>(0.02)</b>	<b>0.214***</b> <b>(0.033)</b>	0.192 (0.056)
R <sup>2</sup>	0.476	0.505	0.430	0.283	0.544
<b>GMM estimates</b>					
X1	<b>0.175***</b> <b>(0.037)</b>	<b>0.148***</b> <b>(0.022)</b>	<b>0.160***</b> <b>(0.031)</b>	<b>0.183***</b> <b>(0.04)</b>	0.067 (0.046)
R <sup>2</sup>	0.491	0.531	0.405	0.256	0.529
Hansen/Sargan (p)	0.09	0.21	0.09	0.11	0.21

Notes: \*, \*\*, \*\*\* indicate statistical significance: \* p < 0.1; \*\* p < 0.05; \*\*\*p < 0.01; robust standard errors in parentheses. Time dummies are included but not reported.

For all estimations: F-model test: p<0.00; robust test for differing group intercepts: p<0.001;

2-step GMM estimations Underidentification Kleibergen-Paap LM test: p<0.001; Kleibergen-Paap F-test for weak IV: F>100.00.

Source: own calculations in STATA.

# Conclusions

- The research results show that both the occurrence and the intensity of the **unemployment-push effect** are **conditioned by territorial factors** connected with the general condition of the local labour market.
- Entrepreneurship forced by unemployment (necessity entrepreneurship) is primarily a characteristic of lagged LUs.
- These features have their implications for local development. The presence of necessity entrepreneurship in lagged local units, hinders the process of their structural modernization. The necessity entrepreneurship is crucial for the longevity of new businesses and for their impact on labour market (creating jobs), as necessity entrepreneurs are more likely to go out of business.



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**Thank you for your  
attention**