

Every ending is a new beginning:

The impact of entrepreneurship in socialist Poland on economic growth 1995–2020

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JEL codes

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Introduction

“Celebrate endings—for they precede new beginnings.”

Jonathan Lockwood Huie

Theories of economic growth draw on various factors, among which we can distinguish human resources, capital and investment, knowledge, innovation, and entrepreneurship, as well as regional characteristics such as the size of the population – the labour and sales market, the associated population density and accessibility in a broad sense. These factors are cumulative, which makes it problematic to identify causal links between them: for example, it is difficult to indicate unambiguously whether it is capital investment that causes growth or is simply the result of previous growth. This is mainly due to the lack of available pure-experimental conditions in which the economy is just emerging, so that it is possible to follow its development in real time from its inception. Therefore, quasi-experimental techniques are usually used to study the factors of economic growth, which in practice are unable to identify the original factors of growth.

In this paper, however, we aim to employ a natural experiment in which Poland before and after the introduction of the market economy in the early 1990s is analysed. The aim of the analysis is to determine how the economic situation at the end of the People's Republic of Poland (in 1988) influenced the development of Polish municipalities between 1995 and 2020. This would make it at least partly possible to identify the primary factors initiating economic growth. We are aware that the 1980s saw a significant boom in the private sector in the People's Republic of Poland, which meant that in 1988 its share in some municipalities reached as much as 44% (except for agriculture). Nevertheless, typical factors and mechanisms of the market economy which could shape economic growth were lacking then. Such mechanisms appeared only in the 1990s, causing a huge shock to the emerging economy.

Empirical strategy

Considering the above, the aim of the analysis is to determine the impact of the conditions existing at the end of the People's Republic of Poland (1988) on the level of economic growth measured by 1) the change in the level of income per capita, 2) the change in the size of labour resources and 3) the level of start-ups in municipalities in the period 1995-2020. Since in different periods this impact could have been different, especially in the initial period when the economy was struggling to respond to the shock of political transformation, the magnitudes of the explained variables are calculated for five-year periods. Separate analyses have been prepared for each of these periods.

The factors explaining growth include a number of variables from 1988–89, including the share of the private sector in the economy, the share of manufacturing, investment expenditure in the socialised economy, the share of employees in science and technology development and expenditure in this sector, the share of employees with higher education, as well as the size of the potential market, population density and distance to administrative centres of (former) voivodeships. In addition, growth factors were introduced for neighbouring municipalities, selected according to different criteria, reflecting the varying scale of the effects of growth poles on development.

The study employed a wide range of data sources, starting with 2,939 city and municipality books from the National Census conducted on 6 December 1988 ("Population. Housing

conditions"), statistical yearbooks for 49 provinces from 1990–95, as well as data from the Statistics Poland Local Data Bank for 1995–2020. All name changes, mergers, and separations of municipalities during the study period were also tracked to ensure comparability of data. Financial figures were recalculated for 2020 considering the general level of inflation in the country and the denomination of the Polish currency (zloty). Hence, the administrative breakdown and historical financial figures reflect the status as of 2020.

Findings

In 1988, the private sector was mainly concentrated in the territory of the former Russian and Austro-Hungarian partition (see Figure 1a). The share of the private sector in total employment reached up to 91%, which seems surprising when we talk about the end of the socialist period. However, the 1980s were a period of loosening of obstacles to private economic activity, and the picture shown in Figure 1 is clearly the result of this process. Moreover, such a high share of the private sector in the economy inevitably resulted from the high share of employment in agriculture, as shown in Figure 2. Poland was definitely an agricultural country where this sector accounted for 92% of employment in some municipalities. Only cities and industrialised Silesia (in the south and south-west) were characterised by relatively low levels of employment in agriculture. Figure 2b also indicates the historical context of agriculture. The former Russian part shows almost exclusively private ownership, while the former German areas, especially the northwest, are almost exclusively large state farms.

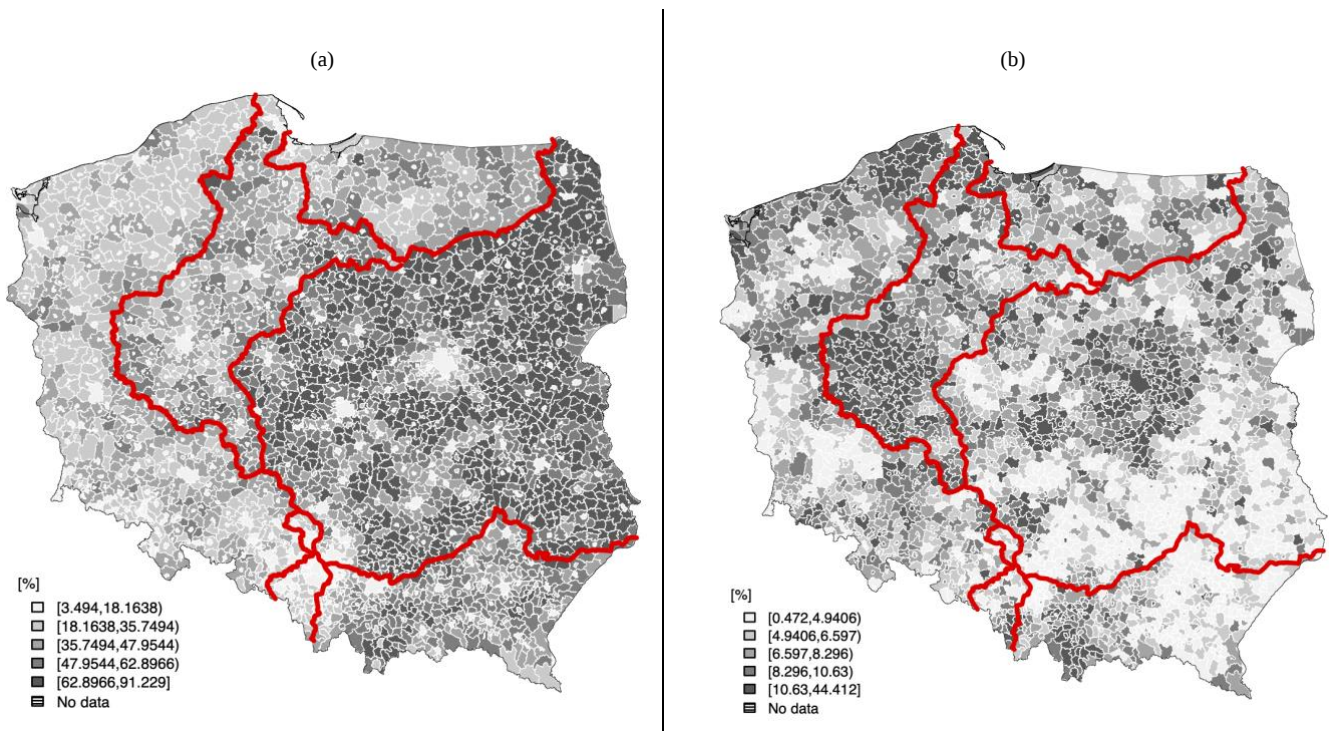


Figure 1. The proportion of private (not-socialised) sector in the economy in 1988 including agriculture (panel a) and excluding agriculture (panel b)

However, the study focuses on the private sector outside agriculture (see Figure 1b), as entrepreneurship should not be associated with the agricultural sector and farms. However, the context presented in Figures 1 and 2 is highly relevant, as it shows that in many cases, we seek to find links between a small percentage of employment outside agriculture and an increase in the income level of the whole economy in each statistical unit.

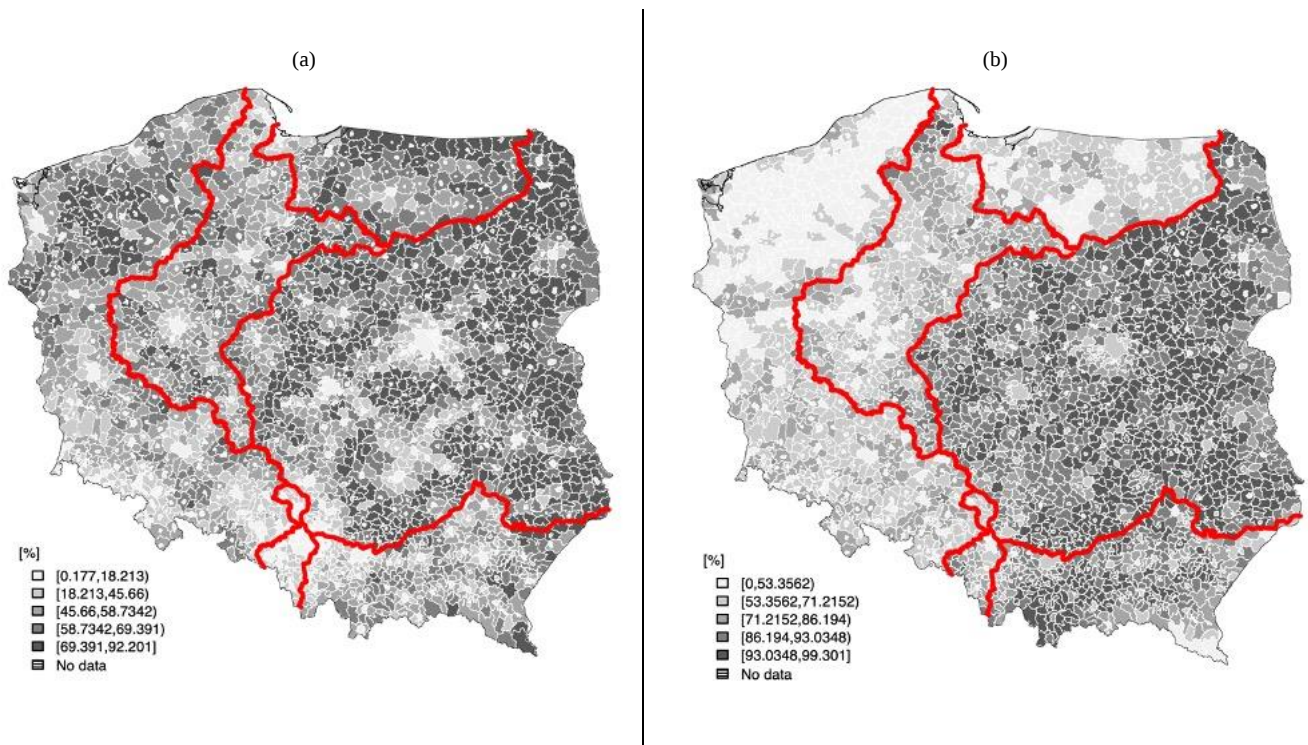


Figure 2. The proportion of agriculture in the economy in 1988 (panel a) and the proportion of private sector in agriculture in 1988 (panel b)

Outside agriculture, the private sector shapes a slightly different pattern. We can see a significant level of the private sector around Warsaw, Łódź, Kraków, Katowice, as well as widely spread around Poznań, Bydgoszcz, Toruń and in the coastal belt from Szczecin to Gdańsk (see Figure 1b). The level of employment in the private sector is not substantial, in 4/5 of statistical units it does not exceed 10%. The highest share reaches 44.5%.

Figure 3 depicts the relationship between the proportion of private sector in non-agricultural economy in 1988 and income growth in municipalities in 1995–2019. While we can see that this relationship exists, it is not entirely straightforward. Evidently, the structure of the economy and its knowledge-intensity may be of some importance.

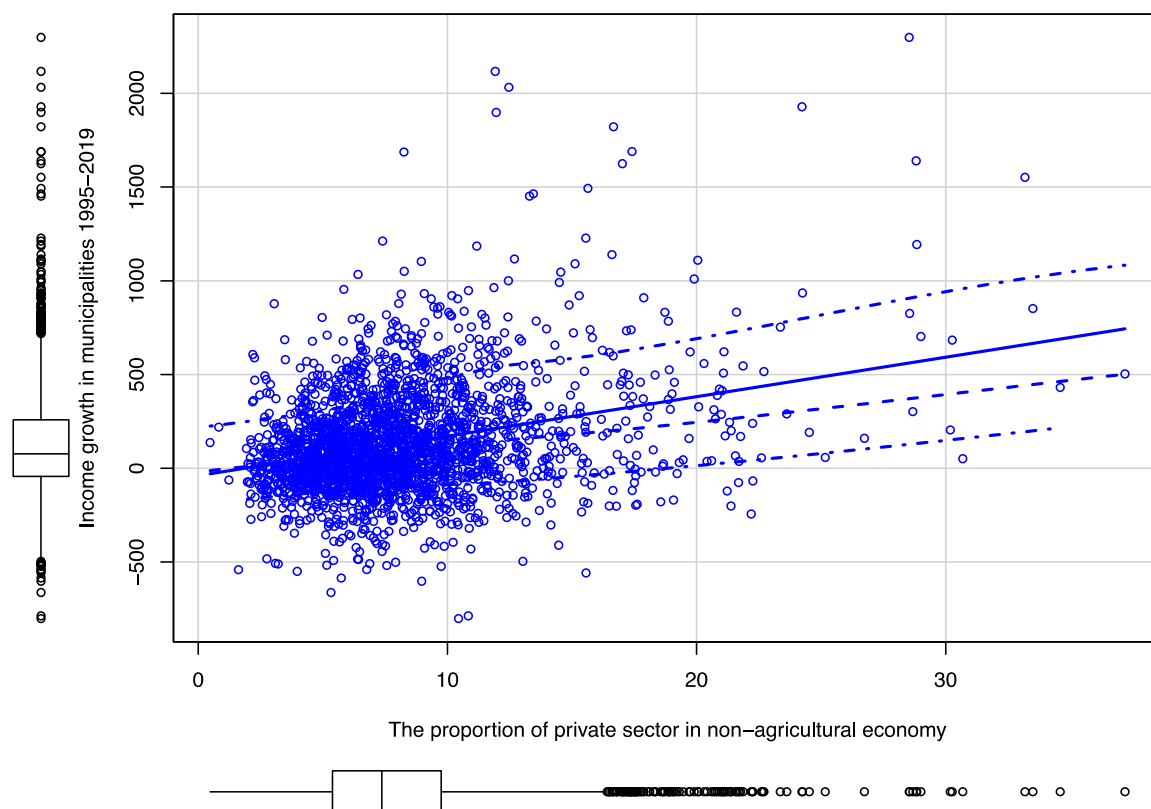


Figure 3. The relationship between the proportion of private sector in non-agricultural economy in 1988 and income growth in municipalities in 1995–2019

Table 1. The regression of nominal income growth 1995–2019 on private employment in non-agricultural sectors in 1988 per total workforce

	Dependent variable:				
	Nominal income growth in municipalities 1995–2019				
	(i)	(2)	(3)	(4)	(5)
Private employment in non-agricultural sectors in 1988 (per total workforce)	0.496*** (0.018)	0.411*** (0.021)	0.398*** (0.021)	0.282*** (0.023)	0.300*** (0.024)
Share of manufacturing in 1988		0.161*** (0.021)	0.130*** (0.022)	0.109*** (0.022)	0.116*** (0.022)
Share of market services in 1988					–0.002 (0.026)
Share of non-market services in 1988					–0.085*** (0.030)
Population Density in 1988			0.074*** (0.021)	–0.106*** (0.024)	–0.104*** (0.024)
Share of knowledge industries in 1988				0.025 (0.019)	0.013 (0.019)
Share of employed with higher education in 1988				0.331*** (0.027)	0.387*** (0.034)
Constant	0.001 (0.018)	0.001 (0.018)	0.001 (0.017)	0.002 (0.017)	0.002 (0.017)
Observations	2,413	2,413	2,413	2,413	2,413
R2	0.243	0.262	0.265	0.312	0.314

Adjusted R2	0.242	0.261	0.265	0.310	0.312
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Note: *p<0.1; **p<0.05; ***p<0.01

ONLY CITIES:

Table 2. The regression of nominal income growth 1995–2019 on private employment in non-agricultural sectors in 1988 per total workforce (ONLY CITIES)

	Dependent variable:				
	Nominal income growth in cities 1995–2019				
	(i)	(2)	(3)	(4)	(5)
Private employment in non-agricultural sectors in 1988 (per total workforce)	0.377*** (0.028)	0.334*** (0.029)	0.301*** (0.029)	0.204*** (0.027)	0.214*** (0.028)
Share of manufacturing in 1988		0.182*** (0.032)	0.097*** (0.035)	0.119*** (0.029)	0.110*** (0.031)
Share of market services in 1988					–0.028 (0.033)
Share of non-market services in 1988					–0.018 (0.033)
Population Density in 1988			0.133*** (0.023)	–0.101*** (0.024)	–0.097*** (0.024)
Share of knowledge industries in 1988				–0.079*** (0.023)	–0.083*** (0.023)
Share of employed with higher education in 1988				0.503*** (0.028)	0.526*** (0.035)
Constant	0.064* (0.036)	–0.042 (0.040)	–0.041 (0.039)	–0.259*** (0.036)	–0.242*** (0.039)
Observations	821	821	821	821	821
R2	0.179	0.210	0.242	0.454	0.455
Adjusted R2	0.178	0.208	0.239	0.451	0.451

Note: *p<0.1; **p<0.05; ***p<0.01

SELF-EMPLOYED (CITIES):

Table 3. The regression of nominal income growth 1995–2019 on self–employment in non-agricultural sectors in 1988

	Dependent variable:				
	Nominal income growth in cities 1995–2019				
	(i)	(2)	(3)	(4)	(5)
Self-employed in non-agricultural sectors in 1988 (per total workforce)	0.269*** (0.034)	0.241*** (0.030)	0.265*** (0.028)	0.208*** (0.027)	0.209*** (0.027)
Share of white collars in 1988 (per total workforce)		0.439*** (0.030)	0.408*** (0.031)	0.084** (0.038)	0.090** (0.040)
Share of manufacturing in 1988			0.265*** (0.032)	0.194*** (0.030)	0.198*** (0.031)
Share of market services in 1988					0.017 (0.033)
Share of non-market services in 1988					–0.019 (0.034)
Population Density in 1988			0.035 (0.023)	–0.094*** (0.024)	–0.094*** (0.024)
Share of knowledge industries in 1988				–0.042** (0.021)	–0.044** (0.022)
Share of employed with higher education in 1988				0.468*** (0.037)	0.466*** (0.041)
Constant	0.298*** (0.034)	0.298*** (0.030)	0.084** (0.035)	–0.168*** (0.038)	–0.163*** (0.043)
Observations	821	821	821	821	821
R2	0.072	0.265	0.352	0.458	0.458
Adjusted R2	0.071	0.263	0.348	0.454	0.453

Note: *p<0.1; **p<0.05; ***p<0.01

NEIGHBOURHOOD:

Table 4. The regression of income growth 1995–2019 on private employment in non-agricultural sectors in 1988 and NEIGHBOURHOOD

	Dependent variable:				
	Nominal income growth in municipalities 1995–2019				
	(i)	(2)	(3)	(4)	(5)
Private employment in non-agricultural sectors in 1988 (per total workforce)		0.397*** (0.024)	0.363*** (0.031)	0.226*** (0.031)	0.213*** (0.030)
Private employment in non-agricultural sectors in 1988 (per total workforce) neighbourhood	0.413*** (0.019)	0.145*** (0.024)	0.081** (0.032)	–0.018 (0.034)	0.054 (0.034)
Share of manufacturing in 1988			0.096*** (0.031)	0.001 (0.031)	
Share of manufacturing in 1988 neighbourhood			0.082** (0.034)	0.042 (0.033)	
Share of market services in 1988					0.020 (0.029)
Share of market services in 1988 neighbourhood					–0.094** (0.039)
Share of non-market services in 1988					–0.033 (0.031)
Share of non-market services in 1988 neighbourhood					–0.056 (0.044)
Share of knowledge industries in 1988				–0.042* (0.024)	–0.044* (0.024)
Share of knowledge industries in 1988 neighbourhood				0.017 (0.029)	–0.010 (0.030)

Share of employed with higher education in 1988				0.313*** (0.022)	0.339*** (0.030)
Share of employed with higher education in 1988 neighbourhood				0.261*** (0.027)	0.381*** (0.042)
Constant	0.0004 (0.019)	0.001 (0.018)	0.001 (0.017)	0.002 (0.016)	0.002 (0.016)
Observations	2,413	2,413	2,413	2,413	2,413
R2	0.170	0.254	0.273	0.368	0.371
Adjusted R2	0.170	0.253	0.272	0.366	0.369

Note: *p<0.1; **p<0.05; ***p<0.01

The initial conditions are traceable!

the more manufacturing and market services sectors in 1988...

the more private sector outside agriculture in 1988...

the more employees with higher education and working in science & technology in 1988...

...the greater the increase in income growth

neighbourhood matters! There are spatial pattern requiring further spatial analyses

the results are robust (this applies for i.e. start-up rates)