Transformation of the employment base in Czech rural regions
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ABSTRACT
The transformation process of post-communist economies in Central Europe has entered its third decade. The region has undergone processes such as restructuralisation, privatisation, globalisation and the beginning of the EU integration process. This paper focuses specifically on the transformation process in Czech rural regions, from the perspective of diversification of their economic base and related employment development. It describes two decades of change – 1991–2001 and 2001–2011. In the first decade the changes enhanced centre-periphery divergence, while in the second decade a new opportunity-driven development evolved. The emerging spatial economies are highlighted by comparing case studies of border and central rural regions. The regionalisation is operationalised at the level of LAU 1 regions. The results have policy implications in relation to diversification/specialisation strategies in rural development policy; there are also suggestions for further research on the quality of observed changes.

ARTICLE HISTORY
Received 3 October 2014; Accepted 26 January 2016

KEYWORDS
Transformation; rural regions; diversification; Czechia; tertiarisation

INTRODUCTION
The collapse of Communism in the late 1980s brought new development prospects to countries in Central Europe, namely Czechia, Slovakia, Poland and Hungary. They faced transformation from a centrally planned to a market economy, then the European Union integration process. Moreover, they had to adjust to processes including globalization and technological and cultural turn (Daniels, Bradshaw, Shaw, & Sidaway, 2008). In contrast to Western Europe, all these processes took place over a very short period. Now, more than 20 years of post-Communist transformation gives us a better understanding of the market economy and its development impacts in the region of Central Europe. While the early years were characterized by the catch-up process, the past decade has brought many new development incentives in the region. Therefore, in the first decade of transformation the most fundamental changes were related to the restructuralization of national, and consequently regional, economies accompanied by productivity change. The second
decade was characterized by more place-specific and regionally based strategies driving local development. The whole process is related to both external and internal forces, in other words opportunity-driven and inherited development factors.

This paper reflects on these transformation changes in the Czech rural regions. At the beginning of transformation they were left behind (Baum, Trapp, & Weingarten, 2004), as a result of the convergence process. The focus on large cities led to increasing internal inequalities, mainly between the centre and the periphery and the west and the east (Abrhám, 2011). By considering this development discrepancy, we aim to investigate the existing post-transition spatial inequalities and the evolving process of increasing service sector employment. The fundamental question is whether this is resulting in regional convergence in Czechia.

The evidence is derived from the adjustment of rural economies to global shifts and employment growth through diversification. The paper also considers agricultural specificities in Czechia and compares development in borderlands and in the inner space that is fuelled by the performance of Prague as the regional and national centre. The region's location is a major source of internal and external development drivers.

The paper is organized as follows. The literature on diversification of regional economic base gives the background for the empirical case study. The methodology is then described, followed by the introduction of the transformation process in Czechia and the specific rural context. Thereafter, the results in relation to the observed processes of tertiarization, diversification and geographical differentiation are illustrated through two examples (Český Krumlov and Pelhřimov). The main outcomes and policy recommendations are summarized in the concluding section.

Theoretical background on regional diversification and research methodology

In addition to the tertiarization of global economies (Breitenfellner & Hildebrandt, 2006), this research is based on the debate around the diversification of the regional economic base and its changing structure during and after the transformation process. It questions whether the ongoing process satisfies the conditions necessary for maintaining economic stability while sustaining a positive and stabilizing employment evolution. In the literature, diversification of the regional economic base is closely associated with positive growth and regional stability (Mason & Howard, 2010; Trendle, 2006), although there is also evidence for the benefits of specialization (Nissan & Carter, 2010). The outcomes of both strategies may be further conditioned by the size of the region (Mason & Howard, 2010), the specific regional structure of sectors and their interrelationships (Dissart, 2003; Shearmur & Polèse, 2005) and/or the diversity of neighbouring regions (Shearmur & Polèse, 2005). Moreover, the character of transition within the global production shift (Smith & Miller, 2002) from a production to a service-oriented economic base is considered to be an important source of influence.

In rural areas, the notion of diversification of the economic base entered the discussion due to the changing importance of agriculture in rural areas. Moreover, the viability of rural economies and desirably stable rural employment development have been conditioned by the regionally differentiated potential to substitute employment decline in the agricultural sector with employment generated in other sectors. As a result, the transformation from specialized (mostly agriculture-based) rural economies to diversified (mixed) economies is considered to provide more stable employment growth. Saraceno (2002) rightly describes this shift and its impact on viability in rural areas when she says ‘people may leave the farming activity but not necessarily the rural areas because they are able to find off-farm jobs nearby […]’ (p. 14).

Studies on the structural transformation of agriculture in Czechia (Bičík & Jančák, 2005) and changes in the age structure of the agricultural labour force (Spěšná, Pospěch, Nohel, Drlík, & Delín, 2009) resulting from post-transition development provide background on the development prospects of the employment base in rural areas. The sector shrank in terms of the number of jobs and the propensity of generational change decreased threatening the sector's
Recent rural development in Czechia has been shaped by a counter-urbanization trend (Šimon, 2014) and a boom in farmers’ markets (Spilková & Perlín, 2013). Though the Eastern part of the European Union copies the trends evolving in the West, they have taken different evolutionary trajectories.

In the example here, the rural is empirically defined using a demographic approach (Murray, 2008) using a differentiation characteristic at the level of regions. These regions correspond to EUROSTAT LAU-1 regions (local administrative units; okresy in Czech). The approach is operationalized using Organisation for Economic Co-operation and Development (OECD) methodology (2010), employing a population density indicator. Due to changes in administrative boundaries and in order to maintain comparability of the data across the period 1991–2011, 13 of 21 regions classified as predominantly rural (PR) are used for the analyses (Figure 1).

Firstly, the transformation is assessed from the perspective of sector employment change. This gives the background for the presence of new sectoral settings as a result of restructuralization and related development. In this case, tertiarization of the rural employment base is investigated. In the later phase, differentiated development in the rural regions is explored in order to emphasize the emergence of a new spatial economics in the core–periphery relationship that, more than the rurality itself, influences regional employment development.

In the second step, the focus is on the process of diversification of the rural economic base, assessed by calculating the national average (NA) (Dissart, 2003) and its dispersion over the 10-year intervals. The equation for NA is constructed as follows:

\[
NA = \frac{\sum_{i=1}^{N} (X_i - \hat{X}_i)^2}{\hat{X}_i}
\]

where \(X_i\) is the \(i\)th sector’s share of economic activity in the region; \(\hat{X}_i\) is the national sectoral share of economic activity in the \(i\)th sector; and \(N\) is the number of sectors in the region.

**Figure 1.** LAU-1 regions (OECD typology) OECD (2010) categories of regions: predominantly urban (PU), intermediate (IN) and predominantly rural (PR). The division is based on the share of population living in rural settlement units (population density less than 150 inhabitants/km²), which can be up to 15% (PU), 15–50% (IN) and more than 50% (PR).
The higher the value of NA, the more specialized is the regional economic structure. The stability of observed shifts is evaluated against the national level. Pre-transformation, the rural areas were more specialized, while later diversification is considered to have brought stability due to changes in the agricultural sector.

**Background information on the Czech transformation**

Czechia’s post-Communist transformation is comparable with other Central Europe countries. However, some specific characteristics related to Czechia need to be highlighted. Firstly, the uniqueness of the case study is in the unique location of the country within the West–East boundary until the fall of the Berlin Wall. The consequence for regions located on this border was increased state control and strictly regulated economic development of the area. Secondly, in the pre-transformation period Czechia was known for its industrial tradition. In some cases the industrial base was stronger than the agricultural, in contrast to other post-Communist countries. Therefore, openness of the economy and the collapse of traditional consumer markets also affected employment change. Thirdly, changes related to the agricultural sector (namely restitution, privatization, transformation of state and collective farms) shaped the transformation process in rural areas, particularly the ease with which the employment structure shifted.

This paper looks more deeply into the changing rural economies not from the perspective of decreasing agriculture employment but from the newly established resilience achieved through the diversified economic base and globally adjusted shifts. Moreover, the emerging spatial economies are examined. The originality of the paper is based on the level of analysis (LAU-1 regions) and the period covered (1991–2011), which incorporates 2011 Census data. Two different decades of transformation driven by different political and economic environments are presented. All data are provided by the Czech Statistical Office and Regional Information Service.

The changing rural economic base is shown in Figure 2, by overall and sector employment. Two extremes may be observed during the period of transformation – the sharpest employment

![Figure 2. Employment change by sectors in Czechia (CZ) and chosen rural regions (PR), 1991–2011 (1991 = 100).](image)
growth was in the service sector between 1991 and 2001, and the sharpest employment decline was in agriculture.

At the beginning of the transformation, almost one-quarter of rural employment was provided by agriculture (Table 1). The tertiarization process, characterized by the increase in service employment share, was strongest during the period 1991–2001 and lasted till 2011. The first wave of the process is to some extent attributed to the fact that prior to 1991 much service employment was statistically incorporated into the agriculture or manufacturing sectors, as the labour force was integrated in production conglomerates (Breitenfellner & Hildebrandt, 2006). However, in 1991–2011 rural economies entered into the process of tertiarization, which brought greater diversity to the rural economies.

The transformation process is assessed from the perspective of employment diversification. At the beginning of the observed period rural regions were the most specialized (Table 2). This specialization may be due to the higher share of employment in agriculture in rural regions, relative to the national share (Table 1). However, the mean value of NA decreased and service sector employment grew. This resulted in employment diversification in rural regions and, in the period 1991–2001, employment growth. By looking at the extreme values in respective years, the differences decreased slightly.

### Geographical differentiation of transformation process

Two geographical categories of rural regions are distinguished by location (Figure 1):

- **Group A**: regions located on the former Iron Curtain border (Český Krumlov, Domažlice, Jindřichův Hradec, Klatovy, Prachatice, Tachov and Znojmo).
- **Group B**: regions located in the inner Czechia (Havlíčkův Brod, Jičín, Louny, Pelhřimov, Rakovník and Svitavy).

The evidence for the transformation process in these regions is presented in Table 3. To illustrate better the differentiated outcomes with respect to geographical location and the emergence of new spatial economies, LAU-1 regions Český Krumlov (group A) and Pelhřimov (group B) are described in more detail. In 1991 these two regions had a very similar level of regional employment specialization with quite similar employment sector shares. However, the transformation led to differentiated outcomes.

### Table 1. Employment shares by sector in the economically active population, Czechia (CZ) and selected rural regions (PR), 1991–2011.

|        | 1991 | 2001 | 2011 |
|--------|------|------|------|
| PR     |      |      |      |
| Primary| 23.1%| 11.6%| 9.6% |
| Secondary| 39.3%| 44.9%| 40.7%|
| Tertiary| 25.6%| 28.7%| 43.4%|
| CZ     | 11.6%| 4.4% | 6.0% |
|        |      |      |      |
|        | 6.0% | 2.7% |
|        | 36.9%| 32.9%|
|        | 47.0%| 54.5%|

### Table 2. National average (NA) measured in the chosen rural regions, 1991–2011.

|        | 1991 | 2001 | 2011 |
|--------|------|------|------|
|        |      |      |      |
| Mean   | 0.13 | 0.08 | 0.06 |
| SD     | 0.04 | 0.04 | 0.03 |
| Minimum| 0.07 | 0.03 | 0.01 |
| Maximum| 0.23 | 0.17 | 0.14 |
Table 3. Regional diversification, sectoral employment and employment growth, 1991–2011.

| Group          | Český Krumlov | Do- mažlice | Jindřichův Hradec | Klatovy | Přerov | Tachov | Znojmo | Rakovník | Svitavy | Havlíčkův Brod | Jičín | Louny | Pelhřimov |
|----------------|---------------|-------------|-------------------|---------|-------|--------|--------|----------|--------|---------------|-------|-------|-----------|
| 1991           | A             | A           | A                 | A       | A     | A      | A      | A        | B      | B              | B     | B     | B         |
| National average | 0.14          | 0.14        | 0.17              | 0.13    | 0.14  | 0.17   | 0.23   | 0.11     | 0.09   | 0.09          | 0.07  | 0.11  | 0.12      |
| Primary        | 23.9%         | 23.7%       | 25.1%             | 23.2%   | 23.4% | 24.0%  | 27.0%  | 22.3%    | 21.6%  | 21.6%         | 20.1% | 20.9% | 23.3%     |
| Secondary      | 40.5%         | 38.6%       | 40.8%             | 36.8%   | 37.5% | 32.6%  | 37.0%  | 38.4%    | 44.1%  | 42.8%         | 42.8% | 32.5% | 43.3%     |
| Tertiary       | 24.0%         | 25.2%       | 23.6%             | 26.0%   | 24.9% | 26.4%  | 24.7%  | 27.7%    | 24.5%  | 24.8%         | 25.0% | 31.3% | 25.3%     |
| 2001           | A             | A           | A                 | A       | A     | A      | A      | A        | B      | B              | B     | B     | B         |
| National average | 0.03          | 0.10        | 0.11              | 0.08    | 0.07  | 0.05   | 0.11   | 0.03     | 0.09   | 0.12          | 0.04  | 0.04  | 0.17      |
| Primary        | 7.1%          | 10.0%       | 10.7%             | 10.0%   | 9.3%  | 7.7%   | 11.4%  | 7.9%     | 9.3%   | 10.7%         | 8.0%  | 8.4%  | 12.3%     |
| Secondary      | 42.9%         | 41.5%       | 42.4%             | 40.1%   | 41.3% | 42.0%  | 37.6%  | 36.7%    | 44.5%  | 43.4%         | 42.0% | 33.6% | 42.0%     |
| Tertiary       | 43.8%         | 40.0%       | 42.1%             | 44.8%   | 44.4% | 40.7%  | 46.8%  | 47.8%    | 40.7%  | 41.3%         | 43.9% | 46.8% | 40.2%     |
| Employment growth, 2001/1991 | 8.5%          | 4.5%        | 3.2%              | 5.9%    | 7.2%  | 10.9%  | 7.7%   | −0.2%    | 0.7%   | −0.3%         | 3.3%  | 2.9%  | −4.7%     |
| 2011           | A             | A           | A                 | A       | A     | A      | A      | A        | B      | B              | B     | B     | B         |
| National average | 0.03          | 0.08        | 0.08              | 0.07    | 0.08  | 0.05   | 0.05   | 0.01     | 0.06   | 0.10          | 0.03  | 0.02  | 0.14      |
| Primary        | 5.0%          | 6.7%        | 7.0%              | 6.8%    | 7.1%  | 5.0%   | 5.8%   | 4.4%     | 5.8%   | 6.9%          | 5.0%  | 4.5%  | 8.2%      |
| Secondary      | 37.2%         | 38.8%       | 37.1%             | 36.2%   | 38.2% | 39.9%  | 31.5%  | 31.2%    | 38.6%  | 40.0%         | 38.9% | 34.0% | 39.6%     |
| Tertiary       | 46.9%         | 45.6%       | 46.8%             | 47.7%   | 46.7% | 44.0%  | 48.7%  | 54.8%    | 44.4%  | 44.3%         | 47.8% | 48.7% | 45.5%     |
| Employment growth, 2011/2001 | −12.3%       | −6.5%       | −11.6%            | −13.0%  | −9.5% | −9.2%  | −16.0% | −6.1%    | −10.4% | −7.9%         | −7.1% | −11.0% | −7.2%     |
Table 4. Agricultural land categories in respective regions.

| Category of agricultural land | 1995  | 2000  | 2005  | 2010  |
|-------------------------------|-------|-------|-------|-------|
| Arable land                   | 51.8% | 76.8% | 37.0% | 76.8% |
| Garden                        | 1.6%  | 2.3%  | 1.6%  | 2.3%  |
| Orchards                      | 0.3%  | 0.1%  | 0.3%  | 0.1%  |
| Permanent grassland           | 46.4% | 20.9% | 61.2% | 21.1% |

Figure 3. Change in population numbers in respective regions (1995=100).

Figure 4. FDI (millions CZK) per 1000 inhabitants in respective regions.
Table 4 shows the changes in the use of agricultural land from 1995 to 2010. It is important to note that in the case of Český Krumlov the loss of state control in the borderland and lack of interest in land cultivation from new land owners after the restitution and privatization led to an increased share of permanent grassland and decline in agriculture employment. In Pelhřimov, the land-use structure has been preserved over the years with a lower primary sector share decline.

By comparing employment change from 1991 to 2001, the employment structure of Český Krumlov moved closer to the national picture and the area recorded employment growth (8.5%), while the preservation of the regionally specialized structure in Pelhřimov resulted in employment decline (–4.7%). These changes may also be attributed to the residential attractiveness of these regions and population in/outflows (Figure 3).

Other factors that contributed to development prospects include, for example, foreign direct investment (FDI) (Figure 4) and the tourist potential of the region (Figure 5). These are both a great source of employment creation incentives, either externally (investment incentives) or internally (tourism potential). As shown in Figure 4, Pelhřimov is more successful in attracting FDI. The reason is the development of an automotive cluster and the availability and price of the labour force, particularly in the early 2000s when the market was developing. The potential of Český Krumlov is connected with higher regional attractiveness for foreign visitors (Figure 5). This is related to improvement in tourism-related services. Employment development of these regions is affected by changes in the traditional sector and other factors closely related to the transformation process characterized as the globalization of production chains or the commercialization of the rural as a brand.

**CONCLUSIONS**

The findings stimulate discussion on whether the change from agriculturally based to diversified rural areas leads to positive developments in rebuilding the new rural economies. To sum up, the transformation process in Czech rural regions brought some important novelties to rural economies. Firstly, the majority of people living in rural areas are now employed in services, which is in accordance with the global shift and the tertiarization process (Breitenfellner & Hildebrandt, 2006). Secondly, the loss of employment in agriculture should be understood in the context of a complex picture of changing land ownership, as a result of processes such as restitution, privatization and transformation (Bičík & Jančák, 2005). The employment loss could be related to increased labour productivity, and thus the improved competitiveness of the sector. The examples of Český Krumlov and Pelhřimov show how the transformation may be coloured by regionally based development factors.
In the field of rural policy and practice it is advisable to reconsider diversification as the provider of economic growth. Firstly, diversification needs to be seen as having an intermediary role. The process of diversification needs to be organized in a more specialized form, e.g., specialized diversification or smart specialization allowing interregional networks to evolve. Secondly, the intermediary role of diversification as a strategy for growth should be weighed against the regional status quo. Strategies should be developed in consideration not only of the regional status quo but also in a wider perspective considering the networks in which regions are involved, and how the diversification fits with the current sector structure. Nevertheless, resilience is a complex issue of both internally inherited and externally developed (and internally utilized) factors.

The results enable the mapping of the general shift from production-based rural economies into the diversified economies of service sector dominance in Czech rural regions. The increased diversity is in many cases related to a new set of skills and knowledge in the labour force. Future research might focus more on qualitative issues related to these adjustments (e.g., educational level, regional share of service employment related to knowledge intensity, and the creation of knowledge spillovers).

**DISCLOSURE STATEMENT**

No potential conflict of interest was reported by the author.

**FUNDING**

This work was supported by the Charles University Grant Agency (GAUK) [grant number 1310514].

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