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Trends in regional inequalities between 1910 and 1930 in Hungary and the successor states

Introduction – problems and debates

This article is a contribution to a debate that emerged during the commemoration year of the Trianon Peace Treaty. Recently a map has been published in Balázs Ablonczy's latest work on the topic[1], illustrating the remarkable territorial inequalities in historical Hungary before WWI (in 1910, Fig. 1). The map led to debates, because it implicitely claimed that most of the lost territories were underdeveloped (with the exception of Vojvodina), though this was not a brand new idea[2]. This also implied that historical Hungary was a bad governor of these territories – which were dominated by national minorities –, that way confirming some of the statements of the historians of the successor states[3]. Furthermore, the author's statement, that the borders drawn in Trianon had already existed in 1910

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1 B. Ablonczy, *Ismeretlen Trianon – Az összeomlás és a békeszerződés történetei 1918–1921*, Budapest 2020. p. 213-215.

2 See: G. Gyáni, *Történészdiskurzusok*, Budapest 2002. His opinion was criticized by the daily press in 2020.

3 This also implies that the remainder area of Hungary was not the most underdeveloped, economically unviable region of agrarian wage labourers, and this may also reason why the restoration of both economy and general living standards (HDI) was quicker than expected. For this see: Zs. Szilágyi, *Az életminőség területi különbségeinek változása Magyarországon a 20. század első harmadában*, [in:] *Területi egyenlőtlenségek nyomában a történeti Magyarországon: Módszerek és megközelítések*, eds. G. Demeter and J. Szulovszky, Budapest–Debrecen 2018, p. 255-334; B. Tomka, *The economic consequences of World War I and the Treaty of Trianon for Hungary*, „Regional Statistics" 2020, no. 1, p. 82-101; Idem, *Gazdasági növekedés, fogyasztás és életminőség. Magyarország nemzetközi összehasonlításban az első világháborútól napjainkig.* Budapest 2011; Idem, *A Trianon-traumától a sikeres alkalmazkodásig. Új hangsúlyok az 1920-as évek magyar gazdaságának vizsgálatában*, „Kommentár" 2013, no. 5, http://kommentar.info.hu/iras/2013_5/a_trianon-traumatol_a_sikeres_alkalmazkodasig, 16 VII 2020; Idem, *Gazdasági rekonstrukció Magyarországon az első világháború után: régi és új szempontok*, [in:] *Gróf Bethlen István és kora*, Budapest 2014, p. 75-95.

in socio-economic sense[4] triggered a debate during the conference organized at the Central Statistical Bureau[5]. Some misunderstood or misinterpreted the author's statement, and warned that decision-makers in Versailles did not have in mind to draw boundaries based on economic reasonability or differences in development[6]. But neither did we intend to claim this: we only wanted to draw the attention that the coincidence of economically peripheral areas with territories inhabited dominantly by ethnic minorities just aggravated the situation further due to the synergism, while a territorially more evenly balanced development would just do the opposite: it could have been a mitigating factor for the existing tensions. When the population recognised that regions dominated by ethnic Hungarians were more prosperous (and the picture on Fig. 1 suggests this), it easily led to the conviction among the representatives and historians of minority groups that modernisation went parallel to „magyarisation". (Data in Table 1 suggests that the higher the proportion of Hungarian-speaking population, the greater the level of development is.) This „by-product" of modernization often led to an anti-modernist sentiments among national minorities. However, nationalism was considered as a key driving factor of the successful modernization and increasing economic performance of the state even acknowledged by Gellner[7]. In our opinion, this polarized economic situtation in Hungary should have been coped with in the long run: even if the war had not been lost, polarization still would have been a strong destabilizing factor for the country in the next decades.

In other words, beyond social problems (minoritiy rights, suffrage question, land question) a regional problem was also abundant in dualist Hungary. Can responsible factors for this poor picture be identified? Was this situation a result of intentional interference or of neglect? If it was intentional, who bears the responsibility for this?

The present article investigates how the regional pattern of inequalities in 1910 changed by 2010 focusing on the possible short-term effect of new boundaries. In other words the article analyses how the pattern of development was modified by the new economies 10 years after the dissolution of the Hungarian Kingdom. Were the new states better governors of the acquired regions? Did the difference between the former center and the peripheries diminish? Were there any pros-

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4 G. Demeter, *Történeti kérdések földrajzi szemszögből: mi az, amit másképp lát egy földrajzos? A Trianonhoz vezető út regionális aspektusai*, „Történeti Földrajzi Közlemények" 2017, no. 3-4, p. 22-36. esp. p. 30. cited also by Á. Kincses, G. Tóth, *Magyarország térszerkezetének változásai 1870-től napjainkig*, „Statisztikai Szemle" 2020, no. 6, p. 522-546. esp. 524.

5 Conference material was publised in „Regional Statistics" 2020, no. 1.

6 L. Gulyás, *Trianon hatása a Kárpát-medence régióinak fejlődésére*, „Közép-Európai Közlemények" 2010, no. 4, p. 140-147; The debate is also mentioned at Á. Kincses, G. Tóth, *Magyarország térszerkezetének változásai*, esp. 524.

7 E. Gellner, *Nations and Nationalism*, Ithaca 1983.

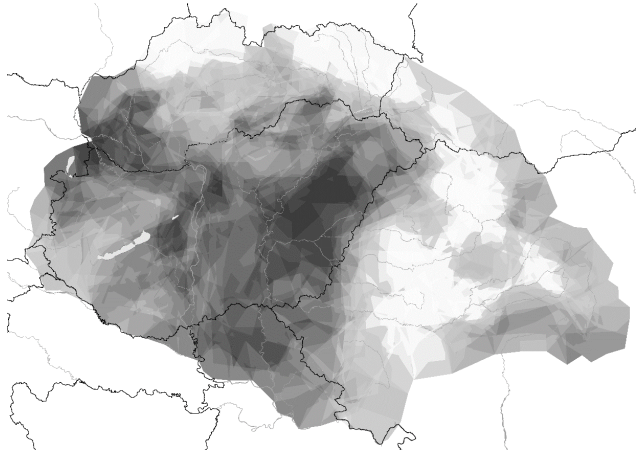
perous areas that turned into backward regions between 1910 and 1930? Which regions were winners of the changes?

Table 1. Relationship among development level, ethnicity, and religion

Development deciles	Industrial earners, % (Regional Development Index of: Pénzes, 2014)	Proportion of population able to speak Hungarian, % Győri-method (2006)	Proportion of Roman Catholics, % RDI	Proportion of Protestants, % RDI	Proportion of Greek Catholics and Orthodox, % RDI
Lowest	5,8	3,3	51	8,1	34,9
2	6,4	9,2	48	13,1	31,7
3	7	24,2	51,9	12,6	28,7
…	…	…	…	…	…
8	12,5	65,0	45,7	15,6	26,2
9	16,5	67,3	47	16,5	21,1
Highest	34,7	66,9	54,9	13,4	11,2
Total	17,3	54,6	49,2	14,3	23,8

Source: J. Pénzes, *Fejlettségi különbségek és centrum-periféria viszonyok a történelmi Magyarországon. Összehasonlító módszertani vizsgálat*, [in:] *Területi egyenlőtlenségek nyomában…* 2018, p. 85-116. esp. 114.

Figure 1. Regional disparities in aggregated development level in Hungary in 1910



Darker colours indicate higher level of development

Source: For the aggregated variables see Table 2. Map published in B. Ablonczy, *Ismeretlen Trianon*, p. 214-215.

The analysis of such questions implicitely also assesses the development policies of the successor states (if a periphery remained backward up to the present despite the changes in borders and policital regimes, it is a serious criticism to the regional development policies); and seeks answer whether the disintegration of an economic space is justifiable of not. Both are politically (and financially too) sensitive questions. Our hypothesis is that soon after the border changes the regional pattern of the development level began to change, which refers to the direct interference of politicians.

According to the literature territorial inequalities generated by the government policies were natural consequences of the liberal economic policies[8] pursued not only in Hungary but elsewhere as well at the turn of the 20th c. This policy rendered the peripheries as suppliers of raw material and workforce in this kind of national division of labour and in return they received processed material. This led to a shortage of capital or decrease in purchase power, and to constant migration towards the developing centres (and abroad), where assimilation processes (either intentional or not) often took place more effectively. Who is the one to blame for economic polarization that indirectly stressed ethnic differences too?

According to the Williamson hypothesis[9], at the beginning of the capitalist transformation, inequalities would naturally increase not only in social but also in spatial terms, regardless of the economic policies pursued. Does this mean that practically there is no one to blame for the economic division of the country? Hungarian scholars did accuse Habsburg economic policy doing the same, when Habsburgs created the internal customs boundary in 1754, rendering Hungary into a producer of raw materials and products of low added value. We do not want to analyse the relevance of these accusations, but, if the Hungarian scholars' opinion on this topic was worth discussion in scientific literature, it is evident that similar allegations of the historians of the successor states regarding their nations' economic position in Greater Hungary should not be refused *ab ovo*. If the geographical periphery also became an economic periphery by the beginning of the 20th century (while in the 18th c. Upper Hungary was the most developed region,

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[8] Balaton (2010, 2016) considers the evolution of peripheries in Hungary as the direct result of the government policy. This conviction was rare among Hungarian historians before 1945. See: P. Balaton, *The Székely Action (1902–1914). The Example of Regional Economic Development in Austro-Hungarian Monarchy*, „Ungarn Jahrbuch, Zeitschrift für Interdisziplinäre Hungarologie" 2016, 33 (17), p. 223-236; Idem, *Regionális gazdaságfejlesztés – a felvidéki akció. A Földművelésügyi Minisztérium zsolnai kirendeltsége (1908–1919)*, [in:] *Vidéktörténet II. Életvilágok és társadalmi gyakorlatok a 18-20. században*, eds. G. K. Horváth, G. Csikós, I. Hegedűs and J. Ö. Kovács, Budapest 2017, p. 157-187. According to the theory of 'unbalanced growth', industrialisation as a strategy to diminish territorial gaps, had evident limits. A. Hirschman, *The strategy of economic development*, New Haven, CT. 1958.

[9] J. G. Williamson, *Regional inequality and the process of national development: a description of the patterns*, „Economic Development and Cultural Change" 1965, no. 1, p. 3-84.

and the Great Plains were devastated by Ottomans) without any official establishment of similar barriers as it happened in 1754, the question that naturally arises is why could this happen, and who is responsible for that? The Williamson hypothesis is unable to answer this, but another theory, the Tobler-hypothesis[10] may give an explanation. It says that neighboring territorial entities normally have (should have) similar features, so instead of sudden fractures and „fault lines", a gradual transition, a gentle sloping development level should be observed. But in Hungary this was not the case in several regions: there was a sudden drop along the future Romanian-Hungarian border and beyond the transversal railway (Bratislava-Levice-Košice-Užhorod-Carei-Satu Mare-Oradea-Arad) in the north and the east. These fault lines almost coincide with future borders. Implicitely this also means that Hungarian governments during the dualistic period (1867–1918) are indeed responsible for the territorial inequalities and the synergic effect it had caused in connection with the minority question. The government was not always negligent towards the problems, but its interference was only able to increase tensions and the suspicion of ethnic minorities that there is a firm distinction between primary and secondary citizens: the (unintentional) failure of the Ruthenian Action and the moderate success of the Székely Action suggested that there is a government preference of borderlands inhabited by ethnic Hungarians[11]. The overheated development of Budapest, as future imperial center had its high price.

Our statements were more welcomed by statisticians and geographers, and the Central Statistical Bureau asked us to carry out the investigation for year 2000 – covering the whole region. The reason was to identify the shifts and changes in underdeveloped regions in the long run[12]. Nonetheless, this was also a politically sensitive question as it not only implied a criticism of different political courses (communism, the success of changes after 1990, etc.) and development planning policies, but implicitely it also involves criticism towards the economic and ethnopolicy of successor states – if there happened to be any correlation between over/underdevelopment and ethnicity.

Without going into details[13], during the last hundred years remarkable changes are observable: the formerly underdeveloped western Slovakia (western Upper Hungary) became one of the most developed regions of modern Slovakia, while the formerly developed southeastern Slovakia inhabited mainly by ethnic

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[10] W. R. Tobler, *A Computer Model Simulating Urban Growth in the Detroit Region*, „Economic Geography" 1970, p. 234-240.

[11] P. Balaton, *The Székely Action* and L. Braun, *A hegyvidéki akció története 1897–1910 között*, Debrecen 2017 (unpublished PhD dissertation, University of Debrecen).

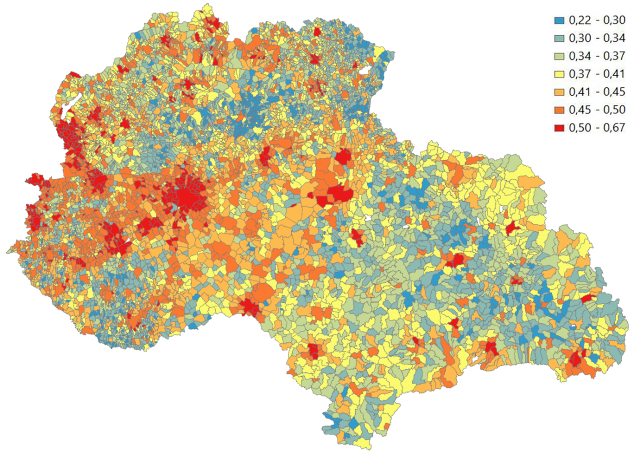
[12] For detailed description in English see: G. Demeter, *Estimating regional inequalities in the Carpathian Basin – Historical origins and recent outcomes (1880–2010)*, „Regional Statistics" 2020, no. 1, p. 23-59.

[13] *Ibidem*.

Hungarians fell back. (Of course, there were other regions falling back, like East-Slovakia, not dominated by ethnic Hungarians). The same is true for Transylvania: the Central Transylvanian ethnic contact zone with mixed Romanian and Hungarian population fell back, as well as the stripe along the Hungarian-Romanian border, dominated by ethnic Hungarians did so; the land of Saxons also became a backward region, while other territories (with Romanian majority), like Caraş-Severin emerged and stagnated even after the collapse of the communist heavy industry there. The situation based on 10 indicators is shown on Fig. 2.

The trends could have served arguments for the reasonability of the territorial changes in 1920, if differences observed in 1910 had diminished by 2010. However, they did not, things often just reversed, which is an argument *pro* those who refuse the economic reasonability of the border changes[14]. In other words, for many regions, border changes were not a success story at all.

Figure 2. Aggregated development level based on the 10 single variables in the 2000s[15]



Source: G. Demeter, *Estimating regional inequalities…*

[14] G. Demeter, *Bevezetés*, [in:] *Területi egyenlőtlenségek nyomában…* 2018, p. 7-14.

[15] Variables available: the proportion of houses built between 2001 and 2010 measured as a share of total dwellings; *the proportion of the population who finished only (or failed to finish) primary school;* the proportion of the population with a degree (higher education); the proportion of unemployed in total population; the proportion of employed in total population; *the migration rate between 2001 and 2010 (average); the ageing index (correlates with death rate); the proportion of houses connected to the sewerage system;* the number of persons/household (household size); *income / capita*. The whole dataset was normalised for the three countries and was thus considered as one entity for this examination. Indicators similar to those used in the investigation for 1910 are *Italicised*.

Changes in development level between 1910 and 1930

The previous investigation led us to ask the question: when did these transformations begin? It was evident that the dynamism of development differed even in the 1910s and dynamic regions did not always coincide with developed regions: dynamism and development stage are two different aspects. (Fig. 3 illustrating the trends between 1880 and 1910 draws the attention that there were developed, but at the same time decelerating, declining regions in 1910). Some signs show, that there were remarkable changes early in the 1930s[16]. For example, the southern Slovakian regions that returned Hungary temporarily in 1938 showed critical situation regarding local finances, whereas they were among the prosperous in the 1910s[17]. To check the immediate consequences of the border changes on the levels of development we carried out a systematic regional investigation for the 1930s based on numerous indicators in order to make it comparable with our previous calculations[18].

In order to measure the pattern and direction of changes, the situation in 1910 was used as a reference point for comparison. Development levels were measured to the former socio-economic and political center (Budapest). As single variables did not always show clear picture, as it was proved on the example of tax-burdens and incomes[19], complex approach was needed: the investigation of Zsolt Szilágyi used 6 variables[20], that of János Pénzes used another 6 indictors after dimension

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16 G. Demeter, *Az 1938–1941 között visszatért területek fejlettsége és szerepe az anyaország és az utódállamok gazdaságában a különféle történeti narratívák tükrében*, „Pro Minoritate" 2019, no. 3, p. 35-69.

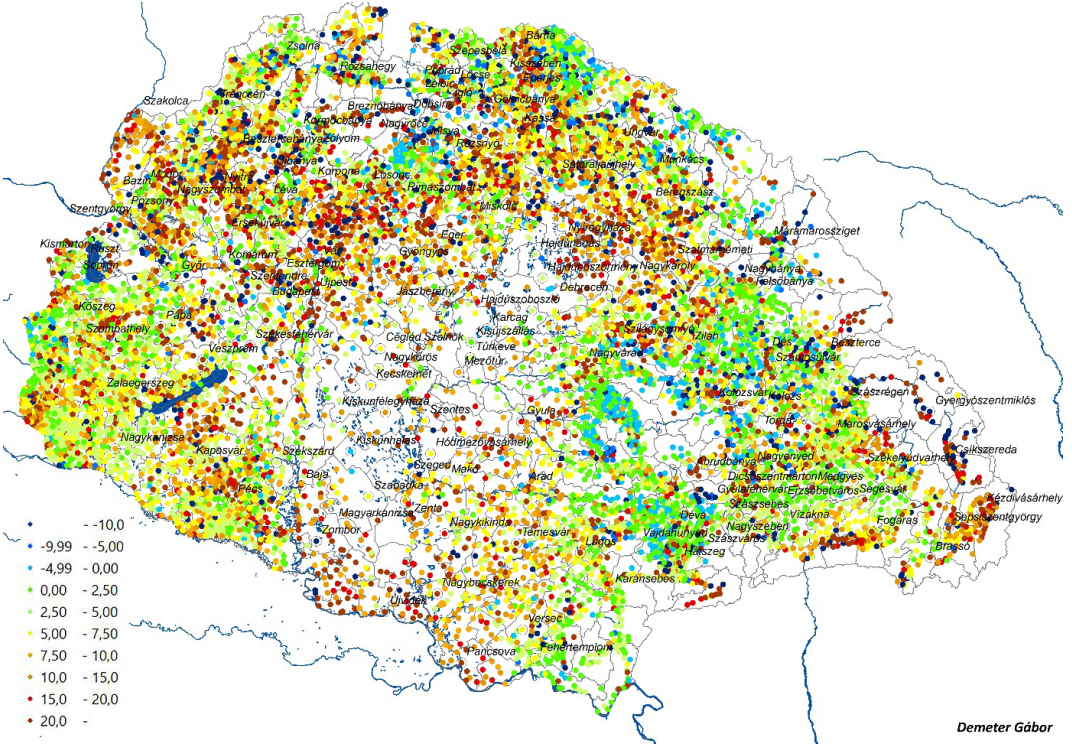
17 See map in: „Magyar Statisztikai Közlemények" 1943, no. 1, p. 115.

18 Long term effects (up to present) on border regions are investigated by J. Pénzes, *The impact of the Trianon Peace Treaty on the border zones – an attempt to analyse the historic territorial development pattern and its changes in Hungary*, „Regional Statistics" 2020, no. 1, p. 60-81.

19 These showed different, sometimes even contradictory pictures. For example, based on direct taxes per capita, Slovakian, Ruthenian and Transylvanian regions were not overburdened economically in 1910 and this would challenge the stance of historians of the neighboring countries. But measuring direct tax burdens to local land revenues or to local settlement wealth (we have settlement level data for both in 1910, see: http://www.gistory.hu/g/en/gistory/otka) would result in a different picture, which would confirm the point of view of the historians in the successor states, that ethnic regions (except for Saxons and Vojvodina-Banat) were overburdened. See text in English G. Demeter, *Estimating regional inequalities…*, for Fig. 1-5 there.

20 He used 6 variables, because the first similar attempt of Győri and Mikle (2017), executed at district level between 1910–2010, but only for the present-day territory of Hungary, used these 6 too, and Szilágyi wanted to make his results comparable with theirs. See: Zs. Szilágyi, A Kárpát-medence fejlettségi membránja (1910). *A fogalomalkotás és a vizualizálás egy lehetséges módszertani megoldása, az eredmények kontextualizálási kísérlete*, [in:] *Területi egyenlőtlenségek nyomában…* 2018, p. 47-85; R. Győri, Gy. Mikle, *A fejlettség területi különbségeinek változása Magyarországon, 1910–2011*, „Tér és társadalom" 2017, no. 3, p. 144-164.

Figure 3. Aggregated dynamism of development in Hungary between 1880 and 1910 based on 6 variables*



Source: own study

* Including the increase of literacy rate, increase in railway accessibility, improvement in industrial employees, change in number of smallholders compelled to do daily wage labour, change in net land income per capita.

reduction by PCA[21] and the research done by Demeter used 27 socio-economic indicators first, later reduced to 12. In 1910 the area of the country was characterized by serious regional disparities, and, what is more important, the delimitation of zones characterized by backwardness was stable regardless of the methods and variables involved in the investigations (Table 2). This means that the location of peripheries seems to be unquestionable (only the extent of the gap between developed and backward regions can be disputed) in 1910. (The main backward regions are shown on Fig. 1).

Table 2. Indicators used in different investigations to delimit cores and peripheries (2018)

Zsolt Szilágyi (5)	János Pénzes (6)	Gábor Demeter (27, then 12)
Literacy rate above 6 years, 1910		Literacy rate, 1910
Deaths receiving medical treatment (%)		Deaths receiving medical treatment, %
Houses of good quality (%), 1910		Houses of poor quality, 1910, %
Migration rate, 1901–1909		Migration rate, 1901–1909
Earners in industry and tertiary (%), 1910	Industrial earners, %	Industrial earners, %
		Tertiary earners, %
R. Győri, Gy. Mikle	Infant mortality	Death rate or infant mortality
	Earner/non-earner ratio	Earner/non-earner ratio
	Cadastral net income per inhabitant	Cadastral net income per inhabitant
	Direct state burden per capita, 1909	Direct state burden per capita, 1909
	Net income of settlements per capita	Net income of settlements per capita
		Agrarian transports, t / 1000 prs
	derived from the variables by PCA	Distance from railway, m, 1890
		Smallholders compelled to search for daily wage labour %, 1910
		Overlay of single maps, aggregation

Source: G. Myrdal, *Economic theory and underdeveloped regions*, New York 1963.

A comparison of development levels in two time horizons may raise several methodological problems. First, we were only able to measure the changes compared to Budapest, because there is no detailed data on Romania prior to 1920, therefore we cannot measure the development level of Transylvania to Bucharest in 1910 and 1930. Second, we had to abandon the settlement-level approach because of the lack of data. (Furthermore, the Romanians reshaped the admin-

[21] J. Pénzes, *Fejlettségi különbségek és centrum-periféria viszonyok…* He searched for independent variables among the available at the same time he wanted to fit his research to the modern methods applied to indicate territorial inequalities, that way making the results on 1910 comparable to 2010. However this meant that numerous variables had to be got rid of, because PCA requires normal distributions of data. The method of Demeter (simple map overlays of single indicators) was to balance this disadvantage, however it meant that not only independent variables were involved in the investigation, but those that showed great correlation were also used up.

istration in Transylvania, when implementing communes composed of several villages, which were handled separately in 1910). Thus, instead of settlements we focused on districts in our investigation, which offered a more transparent picture. This is not unique: Pénzes, Győri and Jakobi[22] also carried out their investigations at district level when searching for underdeveloped regions. Unfortunately, neither districts had the same territorial extent: we have more than 600 from 1910 and less than 450 in 1930. This means that the produced maps can't be overlain on each other (in order to create a map of differences), though their visual comparison still can illustrate the changes. The number of available indicators was another limiting factor: while in 1910 there was only one statistical bureau covering the whole investigated area, in 1930 the situation changed, and the executed censuses were not always coinciding regarding the applied methods and indicators. (The same problem occurred in 2010). Furthermore, even the relevance of certain census questions might change over time. In order to handle these problems, we used the district level data of Rónai, who harmonized the different censuses in 1945 for the 1930s.[23] Then we tried to identify the common set of variables for 1910 and 1930 (using proxies if applicable), then reset the values to indicate development distances from Budapest.

Taking into consideration the mentioned constraints for 1930 the variables selected for the analysis are indicated in Table 3. The district-level values were superimposed on each other and an aggregated map (Fig. 6)[24] was created to illustrate development level. Prior to the creation of the map, as a preliminary investigation we extended our examination to a larger area including most parts of former Cisleithania (but without Galicia) and the Romanian Kingdom. The reason for this was to check the possible character of differences on a larger area (whether there are fault lines, or gentle slopes) before labelling those found along the new borders in 1930. In addition, we also split the countries into smaller historical regions. For example Czech lands and Slovakia were investigated separately, as well as Hungary, Transylvania and the former area of the Romanian Kingdom were so. Vojvodina was also a separate subregion. This means that some of the borders between the regions resembled to the old, prewar boundaries, while others represented the new borders. That way we managed to compare the character of pre-1920 and post 1920 borders too.

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22 Jakobi used the LISA method, which was based on the Tobler hypothesis, that is indicating neighboring sub-regions with similar character for each indicator (low-low, high-high value neighbors). Á. Jakobi, *A térbeli elhelyezkedés differenciáló szerepe a 20. század eleji Magyarországon*, [in:] *Területi egyenlőtlenségek nyomában…* 2018, p. 117-145.

23 A. Rónai, *Közép-Európa Atlasz*, Balatonfüred 1945.

24 As high values in case of death rate or infant mortality, illiteracy and agrarian density are negative features, whereas in all the other cases high values represent positive features, the latter were added, while the former were subtracted from the sum to the get the aggregated development level.

Table 3. Connection between variables processed by PCA

Rotated component matrix	Component	
	1	2
agrarian density (agrarian inhabitant per 1 sq km)	0,323	**–0,728**
proportion of industrial earners (%)	**–0,850**	0,040
death rate	**0,885**	0,088
natural population increase	**0,630**	–0,130
illiteracy rate (%)	**0,821**	–0,189
arable land from total (%)	0,046	**0,923**
average yield of wheat (q/ha)	**–0,724**	0,390
income from meadows (ha)	**–0,715**	–0,461
proportion of officials and free-lanced	–0,323	0,133

Source: original data from: A. Rónai, *Közép-Európa Atlasz*, Balatonfüred 1945. Raw data are processed by the author.

As first step we identified the relationships between the indicators with the aid of a correlation matrix, which confirmed that most of the indicators are not independent. Then these variables underwent a PCA in order to reduce the dimension number of indicators and to illustrate the results on a two-dimensional diagram. The nine variables were grouped into 3 factors. Factor 3 contained bureaucracy only, while Factor 1 included demographic indicators, the ratio of industrial earners and the output per hectare in agriculture. The latter two showed strong and negative correlation with the demographic indicators and positive with each other, showing that there is no agrarian progress without industrialization[25]. Instead

[25] Or no industrialization without agrarian progress? Correlation (p=0,665) does not refer to cause-consequences relationships, it simply indicates whether there is relationship between two variables or not. So the historical debate, which was first: industrial (marxists) or agrarian revolution, cannot be decided unless partial correlation or regression is used (M. Ivanov, M. Kopsidis, *Was Gerschenkron Right? Bulgarian Agricultural Growth during the Interwar Period in the Light of Modern Development Economics*, „Südost-Forschungen" 2015, no. 1, p. 44-48). What is evident, there was a strong negative correlation (r under –0,75) between ratio of industrialization and mortality, which proves the relation between improving health conditions and industrial revolution. (However, great regional discrepancies can be observed: in Romania for example r value was only –0,494). The results of the regression analysis (Table 4) proved that it is the level of industrialization which influences agrarian production the most in the region (beside the extent of available arable land): every 1% increase in the number of industrial employees caused a 4% increase in crop production per hectare. This relationship even showed regional pattern as confirmed by Fig. 5. Investigations on partial correlations also showed that even alphabetisation influences the relationship between industrialization and agrarian output (r = 0,66 dropped back to 0,34 if illateracy was involved).

of the original indicator values characteristic for the districts, the so-called factor score values were spared and illustrated on a two-dimensional diagram.

If the more than 850 districts are illustrated on a diagram (Fig. 4) then one may recognize that the Austrian and Czech districts occur in a well-delimited separate space, isolated from other regions, which denies the existence of the Tobler hypothesis there: instead of gradual sloping in development a sudden drop occurs. Though the dissolution of Austria-Hungary happened a decade before the census data processed here, it is still surprising that (1) the differences between the two major constituents of Austria-Hungary were so remarkable in the 1930s; (2), which implicitely means that Czechoslovakia, as a new political entity was unable to integrate its eastern parts within that 10 years. This state was divided in terms of economic development. If we investigate the chart further, one may observe, that transition is observable between the development levels of the former territories of Transylvania and the Romanian Kingdom – the spaces covered by the districts did overlap. The districts belonging to Slovakia are completely scattered and overlap with Hungary (without Transylvania and Vojvodina). In other words, areas of similar development existed in 1930 along the Czechoslovakian-Hungarian border, contrary to the situation observed along the Hungarian-Romanian (Transylvanian) border: Transylvanian districts did not mix with Hungarians and occupied a separate space in the diagram in 1930 (but they remain mixed with Slovakian and Romanian districts). Knowing that the situation was similar in 1910, as there was a sudden drop in development level towards the east (Fig. 1), one may come to the conclusion that the situation in this segment did not ameliorate by 1930. The districts of Vojvodina also overlapped with the districts of Hungary in 1930 (but separated themselves from Transylvania or Romania), which means that the new border did not polarize the differences in the south during that 10 years. Furthermore, this also implies that the differences in the level of development in the former area of the Hungarian Kingdom were often smaller in 1930 (despite the fact that now these districts belonged to 4 different political entities), than for example the differences between Czech and Slovak districts (belonging to the same political entity).

To sum it up, there was a great (and inherited) „fault line" along rivers Leitha and Morava still observable in 1930, whereas towards the east the differences in development level diminished gradually: most of the regions there occupied overlapping space in the chart, verifying the Tobler hypothesis in these cases. This was confirmed by the discriminant-analysis carried out as a control investigation. Using 4 variables referring to industrial employees, wheat output per hectare, literacy rate and ratio of public servants, automatic reclassification brought a 55% success rate. Czech and Austrian regions overlapped, but they were well discernable from all the other groups (areas). In the case of (small) Hungary success rate of reclassification of districts grew above 75%, whereas it remained under 50% in

the sourrounding countries. This may refer to the fact that the past 10 years were not enough to overprint former patterns and to integrate territories of different development. The border regions can be reclassed also to the other side of the boundary: 40% of Croatian and 50% of Serbian districts were classified as Transylvanian by the SPSS software, while 30% of the Transylvanian districts were classified as „Old Romanian"[26].

Table 4. Factors influencing wheat yields/ha (*standard beta*, *linear regression*)

R = 0,766	**Standardized Coefficients Beta**
agrarian density	0,111
death rate	–0,357
illiteracy rate	–0,142
proportion of arable land (%)	*0,375*
income from meadows	–0,055
industrial earners (%)	*0,241*
natural population increase	–0,173

Source: original data from: A. Rónai, *Közép-Európa Atlasz*, Balatonfüred 1945. Raw data are processed by the author.

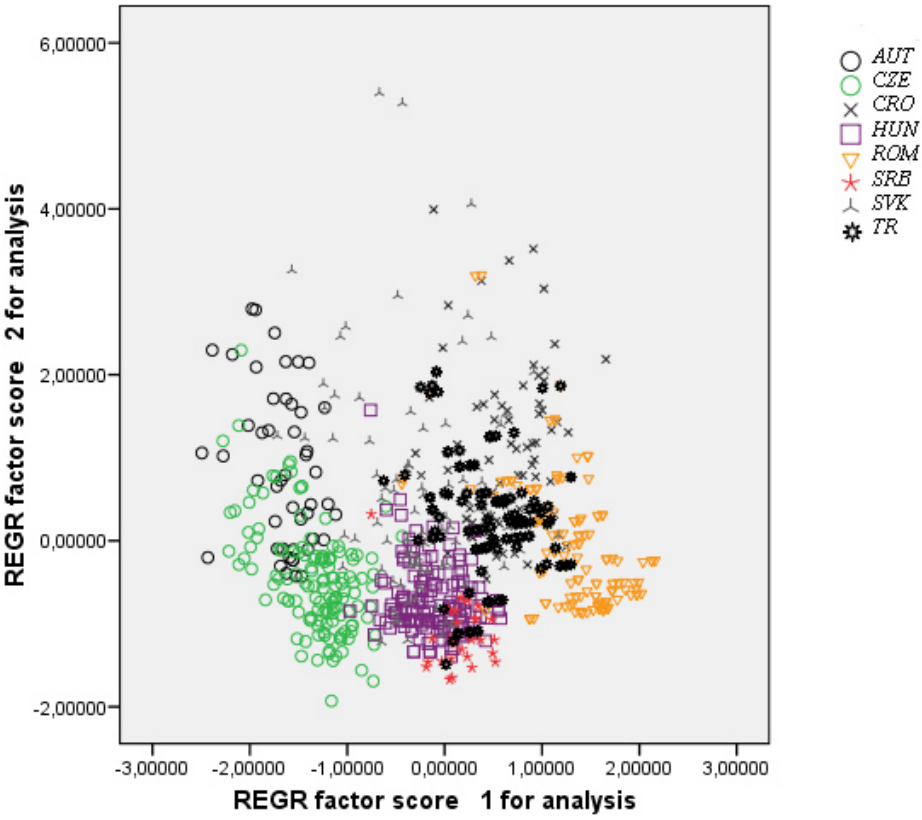
The question is, whether this „fuzzyness" is an inherited feature and the new states were simply unable to overprint this, or the situation is rather a consequence of the new economic policies that halted further divergence[27]. This led us to reduce the investigation to the area of prewar Hungary, which was covered by some 450 disctricts.

[26] If the number of variables is increased to 10, then the rate of successful reclassifications increases to 80% in Austria, Old Romania and Vojvodina, and to 60% in Slovakia and Transylvania. In that case 20% of the Slovakian districts was classified as Hungarian, 20% of Serbian and 10% of Romanian districts were classified as Transylvanian, while 15% of Transylvanian districts was identified as 'Old Romanian'. See: G. Demeter and Zs. Radics, *A gazdasági fejlettség regionális különbségeinek vizsgálata az Osztrák–Magyar Monarchia utódállamaiban járásszintű adatok alapján*, „Történeti Földrajzi Közlemények" 2015, no. 2, p. 233-246.

[27] There are some phenomena pointing towards this too. Railway density decreased along the new boundaries of Hungary, whereas elsewhere new intraregional connections were established, in order to redirect the links between regions integrated into new state conglomerates. Vršecký emphasizes the great development in literacy rate in Slovakia within 10 years when comparing the progressing areas with the progress of railways. M. Vršecký, *Souvislosti rozmístění socioekonomických charakteristik obyvatelstva a hospodářství ve vztahu k železniční síti v Československu v letech 1921 a 1930.* Diploma thesis, Praha 2015.

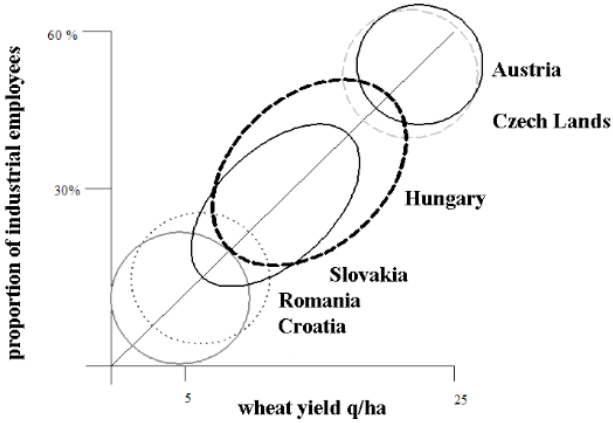
The spatial pattern of cumulative development level of districts in 1930, once belonging to Hungary (the indicator contained meat surplus per capita, infant mortality and potato yields/ha beside the previously mentioned) still indicated the sudden dropback along the new Hungarian-Romanian border (Fig. 6)! Since the situation was the same in 1910 one may come to the conclusion that *a decade under the new rule was unable to decrease the old differences*, and these even became more evidently visible by the cutoff of old links. By 1930 the location of backward areas completely drifted to the new borderline.

Figure 4. Differences in development level of districts belonging to different political entities in the 1930 based on the factor score values of the PCA carried out for the 9 selected variables (Tr – Transylvania, Sr – Vojvodina, Svk – former Upper Hungary, Slovakia within Czechoslovakia, Ro – Romania with 1910 boundaries)



Source: original data from: A. Rónai, *Közép-Európa Atlasz*, Balatonfüred 1945. Raw data are processed by G. Demeter and Zs. Radics, *A gazdasági fejlettség…*

Figure 5. A connection between wheat yields/ha and the level of industrialization and regional differences

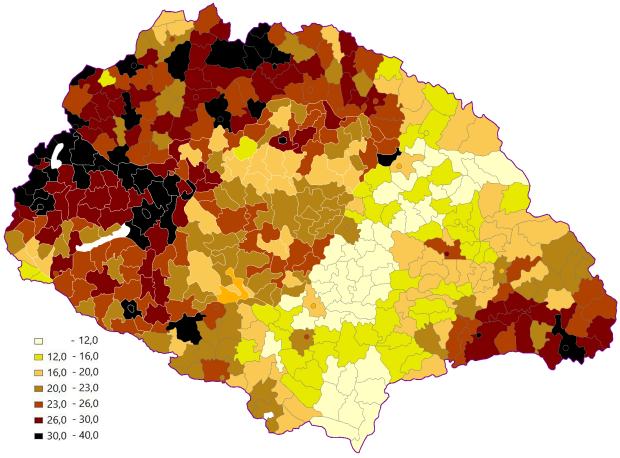


Source: original data from: A. Rónai, *Közép-Európa Atlasz*, Balatonfüred 1945. Raw data are processed by G. Demeter and Zs. Radics, *A gazdasági fejlettség…*

Contrary to this, the Slovakian districts showed better performance. Northern Slovakia was advancing, while the differences in development level along the new border were not so evident, it was characterized rather by „symmetricity". Both underdeveloped and developed Hungarian districts along the border had their „twins" in southern Slovakia at the opposite side of the border. The gradual, concentric character of decrease in development level measured from Budapest that dominated the situation in the 1910s had vanished by 1930; and, in general, the areas along the transversal railway were not among the developed any more. (Neither Budapest was the leading district because of its food shortage). However, Transcarpathia remained a backward area even in 1930, but the underdevelopment of northwestern Slovakia began to fade (its backwardness disappears by 2010). In Transyvania the land of Saxons was still the most progressed in 1930, considering not only towns, but rural regions too, while the land of the Székelys remained at intermediate stage of development as it was in 1910. Caraș-Severin was still below the average in 1930 (in 2010 it was ranked above the regional average), as well as the mountainous regions in general.

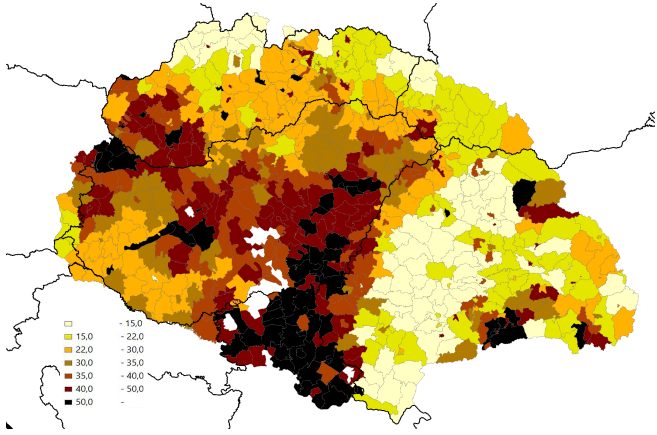
Comparing the situation in 1930 to that in 1910 (as we mentioned the district boundaries were not identical, therefore the two maps can't be overlain) it seems that the districts located in the plains in the south (Vojvodina, Banat, southern Transdanubia) and in southwestern Slovakia and in the vicinity of Prekmurje fell back significantly, whereas the relative position (measured in rankings) of

Figure 6. Aggregated development level of districts in 1930 once belonging to historical Hungary[28]



Source: original data from: A. Rónai, *Közép-Európa Atlasz*, Balatonfüred 1945. Raw data are processed by the author.

Figure 7. Aggregated development level of districts in 1910 in historical Hungary[29]



Source: original raw data are available at www.gistory.hu. Map created by the author.

[28] Variables aggregated: meat surplus per capita, infant mortality, potato yields/ha, agrarian density, proportion of non-agrarian earners, natural population increase, literacy rate, income from meadows/capita, wheat output/ha.

[29] Variables used for the aggregation were: literacy rate, death rate, natural population increase, migration rate, proportion of non-agrarian earners, proportion of medical treatments measured to deaths, proportion of smallholders compelled to do daily wage labour, direct tax per capita, net land revenue per capita, settlement wealth per capita.

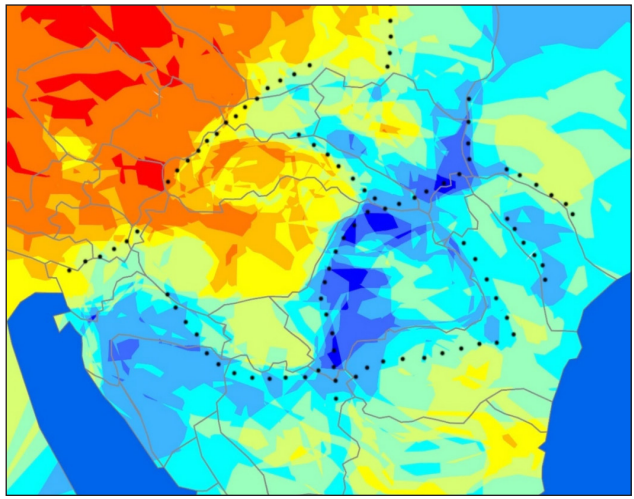
the Székely region even improved by 1930 (Fig. 7). Bistriţa-Nasaud also suffered a serious loss in position, while the situation in Slovakian districts – with the exception of the above mentioned southwestern region – generally improved, not only measured to the situation in 1910, but also if compared to the neighboring Hungarian districts. Generally speaking, there was an evident shift in the most developed areas from Vojvodina to northwestern Transdanubia. The territorial extent of developed regions also decreased in Hungary by 1930. It was especially eastern Hungary that fell back, while southeastern Hungary and the northeastern mountainous region ameliorated its position. This is even confirmed by another investigation based on HDI (composed of literacy, mortality, taxtion) in 1941[30]. The latter also means that the tendencies visible in 1930 before the Great Crisis were not overprinted by the government measures initiated there at the end of the 1930s.

A macroregional outlook

And finally we take an outlook to a larger area to position Hungary and the successor states compared to the development level of their larger neighbors, Germany and the Soviet Union. This is illustrated on Fig. 8. The map is an overlay of Rónai's single variables discussed above extended to the area ranging from Regensburg to Kiev and from Warsaw to Sofia. For the sake of transparency a new value, –1 was assigned to each district belonging to the lower quartile of the interval scale; whereas +1 was assigned as new value for districts belonging to the upper quartile of the interval scale (in case of each variable). Then these reclassed single maps illustrating 1-1 socio-economic indicator were overlain and aggregated (thus we abandoned district level approach). The cartogram shows that the development level of the Slovakian regions in Czechoslovakia and the development level of Hungary was similar in the 1930s, while Transcarpathia, Bukovina and western Transylvania showed the worst aggregated performance. The new borders and new policies were unable to overcome the formerly identified inequalities here on the eve of the Great Economic Crisis. Contrary to this, in Slovakia it seems that the new Slovakian-Hungarian boundary was able to alter the former situation. At macro-level, it is evident that – based on their socio-economic performance – Slovakia and Hungary rather resembled to the Czech Lands and Austria (despite the persisting fault line between Cisleithania and Transleithania that already existed in 1910), while Romania's (including the newly acquired Transylvania) features made the country similar to the Balkans.

[30] G. Bán, *Magyarország fejlettségi vizsgálata a 20. század első felében*, „Új Nézőpont" 2020, no. 4.

Figure 8. Regional differences in development levels in East-Central Europe in the 1930s and their relation with the borders (old and new boundaries are both indicated. Dotted lines mean sudden drops in aggregated development levels)



Source: original data from: A. Rónai, *Közép-Európa Atlasz*, Balatonfüred 1945. Raw data are processed by the author.

Concluding remarks

Our results indicate that there was a significant change in the extent and location of the most developed territories between 1910 and 2010. Some of the changes already began in the 1930s, as confirmed in the text. These changes were partly due to the new policies of the successor states, partly due to the loss of tradictional connections and division of labour. However, the new borders were unable to diminish the regional disparities in all regions, so characteristic in 1910. This means that successor states were either unable to or unwilling to overcome the problem. Between 1910 and 1930 the formerly peripheral Slovakia was developing (but was still far away from the level of the Czech lands), the backward Transylvania and the developed Vojvodina was falling back, such as eastern Hungary, which was among the leading regions in 1910. The areas along the Danube were similarly well-developed despite the new boundary cutting through them. From a broader perspective, the fault line between Austria and Hungary still persisted in 1930, and a similar cleavage occurred between the major constituents of Czechoslovakia. Transylvania showed similar features to „Old Romania" and the Balkans in general by the 1930s.

Abstract

Gábor Demeter

Trends in regional inequalities between 1910 and 1930 in Hungary and the successor states

The present article is a summary of a 5-year research on historical peripheries of Hungary between 1910 and 2010. The identification of peripheral zones in Hungary in 1910 – which geographers failed to do up to now – contributed to the assessment of mistargeted regional development planning policies in the last hundred years. On the other hand it also caused debates, because many of the backward areas coincided with regions dominated by ethnic minorities, thus strengthening the opinion of the historians of the successor states that Austria-Hungary oppressed national minorities.

The first part of the article summarizes the opinions, interpretations, misunderstandings emerging from this debate around mapping of inequalities and the implementation of geographical methods in historical research. The second part of the article goes further and – by drawing up the regional differences in 2010 – evaluates the development policies of the successor states, claiming that these were not better, than in historical Hungary; the successor states were driven by the same convictions and pursued similar policies toward zones inhabited by minorities as Hungary did. We show that there were remarkable shifts in the extension of backward zones and the question naturally arises when this process began. Using the census data of the 1930s we try to analyze whether some of these changes observable by 2010 can be traced back to WWII (or were generated only later), and if yes, whether these are direct consequences of the new borders drawn in 1920 or, contrary, it was the former processes during the Hungarian rule that culminated (implying that the first 10 years of the successor states was a failure regarding the integration attempts of the new territories). For this a distric level complex development level map of the region was created by combining 10 variables and the patterns in the 1930s were compared to those in 1910 and in 2010.

Keywords: Hungary, successor states, development trends, backwardness, borders, peripheries, mapping census data, 1930s, 1910s, 2010s

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