Abstract

The centre-periphery relation is a dual model (Nemes Nagy, 1998), several meanings of which can be defined, like locational, development or social dualism. This paper is meant to analyse one example of the manifestation of development – in other words: economic – dualism: this is the spatial realisation of access or exclusion that can be experienced in case of credit institute activities.

An important starting point for the issue is the business philosophy and operational distinction of Hungarian actors in the credit institute market (a segment of the representatives of global commercial banks and locally embedded savings cooperatives), and the analysis of the geographical range of their activities (Kovács, 2014a; 2017), and also the survey of their relationship to developed centre regions and lagging peripheral areas.

I analysed this questions with the functional distance indicator, which is a relatively new approach of the financial proximity in the evaluations of the Hungarian banking sector. This indicator uses some social, economic and physical data for the explanation of dualities between commercial and cooperative banks.

Keywords: urban–rural, density of bank branches, access, network of finance institutes, credit institutes

INTRODUCTION

Role of the Finance Sector in Modern Economy

In the theoretical literature of economics the role of finance sector and intermediate financial institutes is unquestionable, as they are deeply embedded into the global production and supply systems, and each of the economic activities needs the operation of the finance sector in some way (Gál, 2010), which is underlined also by a significant amount of empirical facts.

In the literature on economics there is no consensus on whether the condition of a nation state, its growth potential and the finance sector that evolved in the framework of the national economy are in interdependencies and if so, what is the direction of this relationship (Mérő, 2003; Demirgüç-Kunt, 2010). The three main elements of this professional discourse can be briefly summarised as follows:

1) The financial intermediate sector has no measurable impact on the growth of the national economy – say important theory experts, and defend this idea using the empirical findings from the United States (Lucas, 1988; Stern, 1989; Chandavarkar, 1992; Levine, 1997).
2) Robinson (1952) is less sceptic, in her study we can detect the cause and effect relationship between financial mediation and growth, inasmuch as economic growth, the development of the businesses and their needs for finance create a demand for the actors of the bank sector, which then have a follower, dependant position in the system of the national economy.

3) The writer of this essay shares a third cause and effect relationship – which is given the most publicity, anyway – that realises a relationship just opposite than the previous one. We can read it already in the entrepreneurship theory of Schumpeter that a modern bank offers operational resource and opportunity for the businesses to develop and innovate, which in turn has an impact on the growth of the economy (Schumpeter, 1912). This train of thought is developed further by Hicks during the examination of the industrialisation of England (1969), demonstrating that the finance sector played a dominant role in the growth of the economy by its capital mobilising and financing activities (Mitchell, 1970; Bekaert, Harvey, & Lundblad, 2005; Beck, Demirgüç, Kunt, & Martinez-Peria, 2010).

We can see thus that financial service institutes are present in contemporary economy – among other things – as actors of external financing, they are important factors in local processes and development, and so in my paper I will analyse the correlations between them theirs, using the examples of dualities.

**Theory of the Territorial Analysis of the Network of Finance Institutes**

The neoclassical theories founding the framework conditions for financial globalisation argue in favour of the integrated national banking systems, emphasising their advantages in the economies of scales and focusing on the fact that not only the operation of the market is optimal but so is the distribution of finance institutions, and capital flows always act in the direction of the equalisation of territorial disparities among regions (Kohn, 1998). In this system, equilibrium prices and resource allocation will emerge regardless of institutions and institutional structures of financial services so the centralised decision-making and management can be a good solution too. (Merton and Bodie, 2005).

To the contrary, the post-Keynesian approach argues in favour of the institutional system with local and regional embeddedness, saying that this better serves the interests of a given territory (municipality, region) than the local branches of a national commercial bank, and uneven financial flows are interpreted as a basic characteristic of the financial markets (Chick and Dow, 1988). They argue that the redistribution of finances flowing from the peripheries
into the centres shows significant backwardness, as sales at the more remote points of the network of branches are coupled with higher transaction and monitoring expenses (McKillop and Hutchinson, 1991). The surveys by Berger and Udell (1995) proved that larger universal banks are less interested in crediting riskier smaller businesses (and municipalities and private persons) in the peripheries, and so locally operating banks remain as the main channels in satisfying the financial needs of these actors (Gál, 2012).

Considering their basic philosophy, one of the goals of the local-regional banking systems is retaining the financial resources of the regions, the slowing down of the outflow of capital; however, they are strongly dependant on the economy of the respective region, more susceptible to crises and parts of the development of their regions. A local institution is better embedded into the economy and society, and so in this case the so-called functional or operational distance is smaller (Torluccio, Cotugno, & Strizzi, 2011). This means that the finance institution knows the space where it operates, and has a significant amount of social capital. Evidently, the more a centralised banking system dominates in a given country, the larger the functional distance in addition to the operational one. Parallel to the increase of functional distance, local knowledge is decreasing, the organisation is not embedded, so a more centralised organisational structure is more detrimental for regional economic development (Alessandrini, Presbitero, & Zazzaro 2009; Cotugno, 2011). Cole, Goldberg, and White (2004) verified with their research the role of local banks in the crediting of SMEs in more backwards regions, and so in the development of the economy of the respective area: they demonstrated that the crediting decisions of local finance institutes were not exclusively based on quantitative (hard) information also applied by international commercial banks: soft factors coming from local knowledge and personal interactions also play significant role. Surveys also verified that locally bound and social network based banking is also an effective tool for the decrease of informational asymmetry (Boot, 2000), the decline in the distance between the client and the bank positively affects the crediting willingness of the bank (Ferri and Messori, 2000; Guiso et. al., 2004; Elyasiani and Goldberg, 2004).

On the other hand, a centralised banking system has better chances of survival in crisis periods and economic downturns, but the autonomy of the branches and their access to information are more limited than in the regional model and the outcome of this dependence may be worse performance (Gál, 1998). The post-Keynesian criticism of less regionalised banking systems under national control reminds us to the fact that in times of regional recessions it is always the rationalisation of the branch networks of peripheral regions, in a backward situation anyway, that happens first (Dow, 1994).
METHODOLOGY OF THE TERRITORIAL ANALYSIS OF FINANCE INSTITUTE NETWORKS, DATA USED

The aim of this paper is the analysis of the duality that can be seen in the Hungarian financial services sector, in addition to their regional relevances. Taking into consideration the routing tables of the National Bank of Hungary, responsible for the supervision of the intermediate financial sector, the paper maps the presence of the credit institutes of different types (savings cooperatives and commercial banks) at various levels of the settlement network.

As regards the types of distances that are interpreted in the field of financial services, the indices of physical distance and operational distance were demonstrated by Kovács (2014a, 2017), and so now we want to present new results in relation to functional distance (Alessandrini et al., 2009). Functional distance takes into consideration, in addition to the simple physical branch–centre (and decision-making) distance, the disparities of the socio-economic indices (participation willingness, development level of non-governmental sector, housing conditions) of the respective territorial units, and also the diverse economic structures (breakdown of employees by sectors). Thus, besides the physical distance component ($FD_j^1$) the index also analyses the level of social capital of the territorial unit (region) that gives home to the respective bank branch and its centre ($FD_j^2$), and also the differences between the economic structures of the two regions in question ($FD_j^3$). It is clear that in an optimum case the two regions are the same, the volume of functional distance is zero, while its increase leads to a growing number of financing limits in the respective region. Functional distance has a positive correlation to the financial assets of the businesses, the cash-flow sensitivity of investments and correlates negatively to the possibility of indebtedness or overdrawing according to the result of Alessandrini et al. (2009). The following formula can be used to calculate its value:

\[
FD_j^1 = \frac{\sum \left( \text{branch}_j \times \ln(1 + KM_{j_2}) \right)}{\text{number of branches}_j}
\]

\[
FD_j^2 = \frac{\sum \left( \text{branch}_j \times \ln(1 + |SC_j - SC_z|) \right)}{\text{number of branches}_j}
\]

\[
FD_j^3 = \frac{\sum \left( \text{branch}_j \times \ln(1 + \sum_{h=1}^{n} |W_{h_j} - W_{h_z}|) \right)}{\text{number of branches}_j}
\]

\[
FD_j^* = FD_j^1 \times FD_j^2 \times FD_j^3
\]
Variables in the formulas are as follows:

branch \( j \) is the analysed bank branch, the analysis to be performed with all of bank and savings bank branches

\( j = 1 \ldots z \) is the index used to indicate the respective territorial units, in this case provinces

\( KM_{jz} \) – distance between the centre of the operational area of the given bank branch and the centre of the territorial unit home to the bank directorate, in kilometres

\( SC_j \) – value of the social capital typical for the respective territorial unit

\( W_{hj} \) – weight of respective sectors in the given territorial units, in per cent, where \( h = 1 \ldots m \) indicates the respective economic sectors.

It is visible that the data demand of this complex index exceeds that of the simpler indicators, and so in addition to the already cited data series by the National Bank of Hungary we also used the data of the Hungarian Central Statistical Office (HCSO), the National Regional Development and Spatial Planning Information System and the National Election Office (Országos Választási Hivatal, OVH). As the adaptation of the model of functional distance in Hungary is still in its infancy, we are only able to demonstrate in this place the findings that we achieved from the data filtered for Baranya County.

**FINDINGS**

Direct access to the operation of credit institutes, to basic products cannot be an expectation, due to the character of the service (Beluszky and Győri, 2006; Kovács, 2017), it is obvious then to examine what services we find at the certain tiers of the settlement hierarchy. The analysis started with the emergence of a new institutional structure, which can be approximated by 1998. Fig. 1 reveals several pieces of information: we can see, on the one hand, the significant decrease in the number of bank and savings cooperative branches in the examined period in smaller settlements (with less than 5,000 inhabitants), as opposed to the tendencies of growth visible in settlements with more than 10,000 inhabitants. On the other hand, the effect of the recession going on since 2008 can also be seen, as the proportion of branches decreased by 2018 both in Budapest and the big cities of Hungary, due to the branch closures generated by the crisis reactions mentioned before.

The main reason behind the slight growth in the share of settlements with less than 10,000 inhabitants is rather the significant decrease in the number of branches in the big cities, and not so much the increase of the service units present in smaller settlements. If we also take the breakdown of the population by settlement hierarchy level into consideration, we can see that
both the smallest settlement category and Budapest are underrepresented in the network, as the proportion of the branches within the total network is below the proportion of the residential population within the total population of Hungary, whereas an opposite tendency can be seen e.g. in the settlement category with 1000–1999 inhabitants where the occurrence of branches exceeds the weight of this settlement category in the total population of Hungary.

**Figure 1** Distribution of the branch network of credit institutions by settlement size, 1998–2018 (%)

If we break down credit institutes into commercial banks and cooperative credit institutes working on the principle of association, we can gain further information that is demonstrated in Fig. 2. A long process started in the 1990s as a result of which the number of credit institute branches and agencies in Hungary significantly increased, but as we can see, this concerned settlements with larger numbers of inhabitants in the first place (regional centres, county centres, middle towns). To the opposite, central organisations of savings cooperatives were usually located in small towns or big villages and by their agencies they reached the smaller settlements as well (Rajnai, 1999).

It is palpable that the network has continuously developed over the last 25 years, adapting to the regulations and economic environment. For the rural businesses, farms and municipalities, these cooperatives are the only financial service providers now. This exclusive financial service provider function seems to be justified, as both former empirical findings (Gál, 2009; Kovács, 2011) and an analysis of the network of branches of commercial banks
and savings cooperatives in 2014 demonstrated that one-fifth of the Hungarian population lived in settlements where the only financial service provider is some local savings cooperative.

**Figure 2** Presence of banks and savings cooperatives in different settlement size categories, 2017 (%)

![Figure 2](image)

Source: Kovács (2017)

**Figure 3** District level values of the functional distance, 2018

![Figure 3](image)

Legend: 1 – Budapest; 2 – FD < 60% of the national average; 3 – 60% of the national average < FD < national average; 4 – national average < FD < 140% of the national average; 5 – FD > 140% of the national average

Source: edited by the author, using data by the National Bank of Hungary and HCSO
Using the index of functional distance at district level we can see that those districts feature higher values that have no centre of any financial institute, and also in those areas on the average where we find centres of both commercial banks and savings cooperatives. In the latter case it is typically the districts of county centres and larger settlements. A territorial disparity can be seen, with the higher indicator values of the western and the eastern edges of Hungary, besides the relatively positive values of the regions in the central part of Hungary. The smallest values of functional distance can be seen in Budapest, as most of the commercial banks operate their headquarters in Budapest, also, a large proportion of the units operating locally belong to these organisations (Fig. 3).

Approaching the narrower region of our analysis, Baranya County, we looked at which settlements chose smaller savings cooperatives, more embedded locally, as their primary financial partner. Of the total of 301 municipal self-governments of the county, 116 (38.5%) chose as their account keeping financial institute one savings cooperative of the five such institutions operating in Baranya county before their integration in 2017. We have to remark that the cooperatives still operate, but with a smaller number of institutes after their union, with the same network of agencies but under different names. Of the five savings cooperatives, the largest one as regards the number of their municipal clients is the Szigetvár Savings Cooperative (31 municipalities), and the smallest one is the Mohács Savings Cooperative (18). The service zones for municipalities are shown in Fig. 4.

**Figure 4** Municipality clients of savings cooperatives operating in Baranya County

Source: edited by the author, using data from the websites of savings cooperatives
In Baranya county, we can see that in addition to the five cooperative credit institutes mentioned before there are eleven commercial banks that operate branch(es) in the county, and so Baranya demonstrates values around the national average in matters in operational distance (Kovács, 2014b). Analysing the indicator of functional distance at the level of branches and then aggregating it by institutions we can see (Tab. 1) that cooperative credit institutes demonstrate smaller average values than commercial banks do, but the latter are more homogeneous as regards the values. This is due to the fact the settlement of their headquarter is almost exclusively in Budapest, and the county branches of the major financial organisations are in harmony with the values in Figure 1 only in the county centres, maybe in the towns of the second order.

Table 1: Values of functional distance of credit institutes in Baranya County, 2017

| Commercial banks               | Value of FD | Savings cooperatives | Value of FD |
|--------------------------------|-------------|----------------------|-------------|
| Budapest Bank                  | 10.39       | Bóly és vidéke       | 3.84        |
| Cofidis                        | 13.49       | Hungária             | 4.52        |
| CIB                            | 13.49       | Mecesekvidéke        | 3.85        |
| Erste                          | 8.83        | Mohácsi              | 3.52        |
| FHB                            | 13.49       | Szentlőrinc-Ormánság | 3.47        |
| K&H                            | 9.31        | Szigetvári           | 3.24        |
| MKB                            | 13.49       |                      |             |
| Növekedési Hitel Bank           | 13.49       |                      |             |
| OTP                            | 8.68        |                      |             |
| Raiffeisen                     | 13.49       |                      |             |
| Unicredit                      | 13.49       |                      |             |
| **AVERAGE**                    | **10.04**   |                      | **3.74**    |

Source: edited by the author, using data by the National Bank of Hungary and HCSO

This evidences are similar, so the average FD-value of commercial banks is higher than the cooperatives’ in some counties (Bács-Kiskun, Békés, Borsod-Abaúj-Zemplén, Csongrád, Jász-Nagykun-Szolnok and Szabolcs-Szatmár-Bereg counties). In other ten counties, this differences are smaller but perceptible. The commercial banks have slightly smaller average FD-values in Nógrád and Vas counties. The largest advantage of the commercial bank is realised in Budapest because of distributions of the branches of the capital city (see in Fig. 2.). The average FD of commercial banks is 0.11, and the cooperatives’ is 7.43 in Budapest.

**SUMMARY**

On the basis of the findings we can say that despite the recent changes in the market conditions and in the interests of the actors on the market of credit institutes, considerable
disparities can be seen between commercial banks in the ownership of global banking groups and savings cooperatives working on the principles of association in how much they see the respective levels of the settlement hierarchy as market targets. In this sense we can talk about a dual situation, coming from the roots of the foundation of the cooperatives, on the one hand, according to which the goal was to improve the situation of financing in the rural areas; on the other hand, there is an economic reason: this is limitation. Such credit cooperatives are usually small; their chances in big cities and at large companies are usually limited by the smaller balance sheet and other budget ceilings. The integration of cooperatives started with Act No. CXXXV of 2013 is meant to remedy this situation (Bodnár, Delikát, Illés,, & Szepesi, 2015), and the creation of regional cooperatives, as a result of which, 12 regional, integrated, better capitalised savings cooperatives remained after mergers and fusions by 2017 (Gál and Kovács, 2018). The main goal of the integration is that a strongest, integrated credit institution should be created by the fusion of these 12 regional cooperatives by 2020, and the new market player will reach approximately 10 per cent market share by 2023 (Nagy, 2018).

Taking a closer look at regional distribution we could see the duality of the two types of institutional networks at the survey of the values of functional distance carried out in Baranya County; also, national data show a kind of east-west and centre-periphery duality.

Our previous findings and the results of this paper demonstrate that despite the approach of the operation of commercial banks and associative savings cooperatives, some territorial disparities have remained visible in the system. The present and the future changes of the cooperatives are still a lot of question marks from the fields of operation and regional roles.

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