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DEVELOPMENT PERSPECTIVES IN ITALY: REGIONAL  
DIFFERENCES AND THE ROLE OF CREDIT

**Abstract**

The efficiency of the banking system is a major determinant of economic development. The international financial crisis of 2007 had severely affected the financial markets of many countries, causing a prolonged economic recession in Italy. Among the Italian regions, strong differences exist between the Centre-North and the South. Several socioeconomic gaps depict different local socioeconomic and financial systems. In this paper, we investigate the differences among groups of regions starting from the credit markets, extending the analysis to the real issues of the economy and including the main resource for the long-term development in advanced economies: the human capital. The aim is to analyze how the “structural distances” among regions, in terms of potential economic development, have changed after the 2007 crisis and the lack of economic recovery. We compare the analysis referred to two years, representative of the period before and after the bursting of the speculative bubble in the US. In this manner, we can compare two representations of the regional gap.

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**KEYWORDS:** CREDIT, ECONOMIC DEVELOPMENT, HUMAN CAPITAL, REGIONAL ANALYSIS.

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## **1. Introduction**

The consequences triggered by the bursting of the 2007 financial speculative bubble in the US have revealed structural weaknesses of many Western countries, generating difficulties and instability for several years, both in the financial and in the real markets. The problems imported along with the weaknesses of banks and businesses have caused an economic downturn, inducing a prolonged recession in some national markets. The financial origin of the crisis has caused a fast expansion of its effects worldwide due to the interconnections of the global market, and the nature of the crisis provoked persistent adverse effects in several financial systems.

Western economies have responded differently to the negative effects described above; the United States, where the speculative bubble burst, returns to growth in 2010, while in Europe the countries of the Mediterranean area have led to a widening instability originated at least during the period of the introduction of the Euro. In a context of general economic slowdown and rising unemployment, households and businesses have accused banks to have interrupted the regular flow of funding directed to consumption and investment since 2008. In fact, the European financial system has been affected in early 2008, the following year the outbreak of the speculative bubble. However, the structural difficulties of some countries were already evident and therefore appeared for their severity. Limits and constraints were immediately imposed by supervisory authorities to prevent infection by the institutions with balance sheets at risk, thus severely restricting the activities of many banks. The control authorities are faced with a sort of trade-off between restrictive policies on banks activities and the rising risk of bank default (Bernauer and Koubi 2002), in a context of growing risk for the financial system and a general economic slowdown.

Several causes imposed a restriction in the normal functions of the banks: the lack of liquidity in the European banking system, the growing perception of default risk and the more stringent rules on the selection of new debtors. On the opposite side, the demand for credit was influenced from the deterioration of corporate balance sheets and from the difficulty in repaying maturity debts. This has caused the rising share of the so-called marginal borrowers (Woo 2003), with scarce chances of restructuring the bonds to maturity, and a greater risk of bankruptcy. In summary, the financial nature

of the crisis has had a consistent impact on the financial needs of businesses (Bernauer and Koubi 2002) and consumer households.

The continuing adverse conditions in the financial markets have caused problems and instability for many banks, resulted in: the decrease of the value of the banks' assets, the alarm for the future hoarding of capital, the network effects among banks, the uncertainty and the scarcity of private savings caused by the imposed requirement to hold additional funds (among others see Brunnermeier 2009). On one hand, the wrong choices in the composition of the credit securities portfolio of banks have made it difficult to grant further loans during the recession period (e.g. in some cases under-capitalization and low liquidity), risking of going outside the parameters of control of their budget. On the other hand, the economic difficulties for businesses and households have induced delays and difficulties in repaying debts, as well as the consequent structural change in the demand for loans because of missing signs of economic recovery.

The demand and the supply side of credit have both affected the trend of the granting of credit. The increase in costs during the financial crisis and the sovereign crisis have impacted differently on the demand for loans, according to the elasticity of the same demand with respect to the cost, while there has been no different intensity from the side of bank rationing (see, on the Italian case, Del Giovane *et al.* 2013).

In Europe, the above-mentioned problems have occurred in many countries because of the strong austerity imposed on the public accounts. The Mediterranean area has greatly suffered from the international financial crisis and in countries such as Italy and Spain, the well-known structural weaknesses have been worsened by exogenous difficulties. The areas characterized by inefficient financial market were the most affected, decreasing the possibility of intervention in support of local banks. Therefore, the credit rationing was not caused only by the supply side of financing, despite banks have partially interrupted the monetary policy interventions.

This study, with the analysis on the Italian case, is a preliminary investigation to test a research hypothesis. The aim of this paper is to analyze the context of the Italian regions widening the themes of the efficiency of the local credit market with variables related to socioeconomic development. The relationships of mutual needs between the action of the banks, in particular those local, and the process of economic development is known in the economic literature (see Section 2). The complex structural

differences in the field of economic growth and efficiency of financial systems between the Centre-North and the South of Italy are well known and confirmed as described in Section 3. Our analysis is aimed to observe whether the differences in terms of income, economic development and access to credit among the different areas of the country have expanded during the period following the international financial crisis of 2007. In this work, we do not estimate the capacity or the effect of specific socioeconomic variables with reference to the structural weakness of the financial system of precise areas. We know that some regions' deficits are strong and present for years, and that the greater efficiency of the credit market and the economic vitality of some regions may have helped to mitigate the exogenous effects of the crisis.

## **2. The role of credit in the economic development**

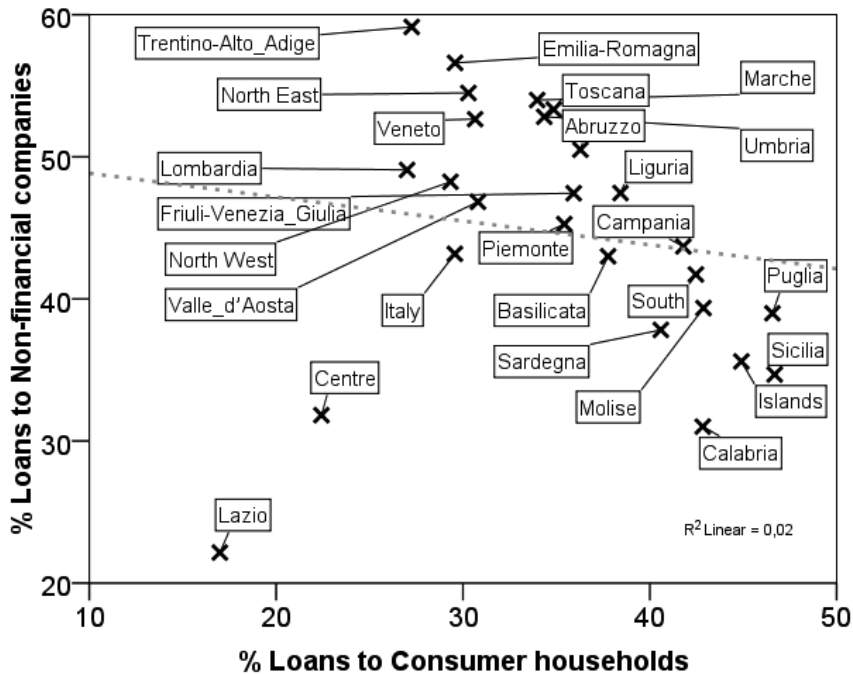
Close interrelations exist between the financial market (in particular the granting of credit) and the economic growth process (Fry 1988). The financial market redirects resources towards the production sector, as it has the information (and economies of scale) to do so efficiently (among others Stiglitz and Weiss 1981), i.e. it moves from areas (or sectors) in surplus to those in deficit. At the same time, the evolution of the economic environment needs and promotes a stronger and more secure financial market. According to this, there is a full efficiency in the allocation of the resources when economic agents are free to act, and for this reason, multiple sources of debt financing must exist, with different levels of investment risk.

The efficiency of financial intermediation affects the degree and the rapidity of development of each economic context (see Castagna *et al.* 2016). Only banks have expertise and utility of structuring financial products for the various categories of borrowers, as well as of reducing the typical limitations and imperfection of the credit market.

Therefore, the credit represents an essential resource for the economic development of a country, and it is necessary to create virtuous circles that base their effect on the local economy especially in conditions of economic recession. As already observed by Schumpeter (1934), the intermediation role of banks, considering the saving of households and the needs of entrepreneurs, has a key role in the innovation and development processes. During recession periods, the (scarce) resources must be allocated according to local development and policy plans. The control of the flows of credit is

also required. It must be considered that a strong expansion of private credit (to households) compared to that for the purchase of real estate, can be a forecaster of crises for the banking system. This happens because of the increasing banks' balance sheets vulnerability, while there is less hazard if businesses credit increases, moderated by the expectation of the associated increase in income due to the financed (productive) investments (Büyükkarabacak and Valev 2010). We show the relationship between the resources for investment and consumption in the following graph.

**Figure 1. Percentage of loans granted to non-financial companies and to households (on total loans) in the Italian regions and macro areas, year 2016**

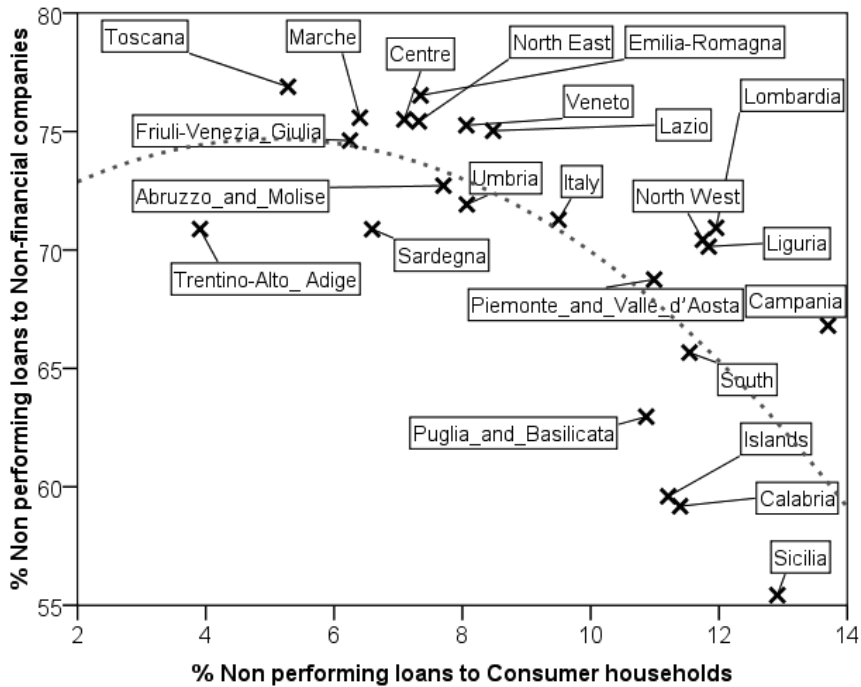


Source: our elaborations on Banca d'Italia data

Companies receive on average more resources (on the total available) in the Centre and North, while the southern families get a higher proportion for

consumption. Of course, the shift of loans to households and the high unemployment rate in the South induce a greater percentage of problems related to the repayment of loans by households, as shown in Fig. 2.

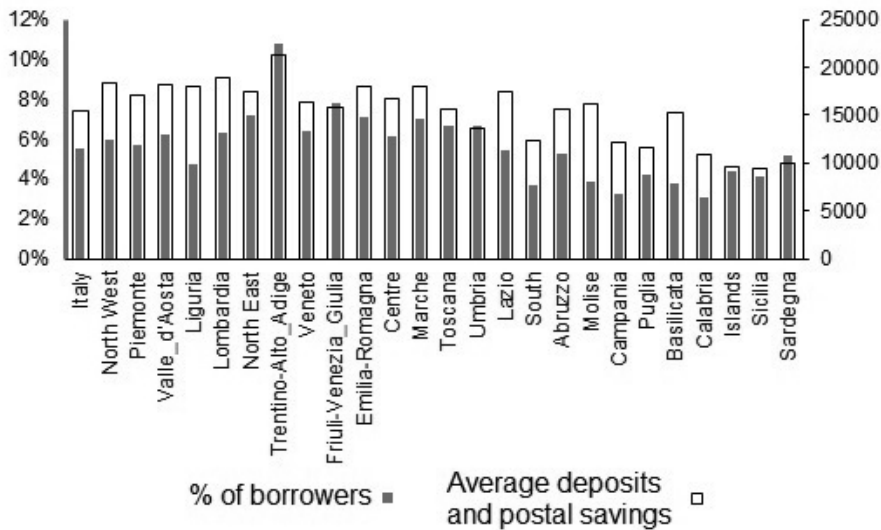
**Figure 2. Percentage of non-performing loans referred to non-financial companies and to households in the Italian regions and macro areas, year 2016**



Source: our elaborations on Banca d'Italia data

As in the previous graph, the division between the Centre-North and South is evident, both for individual regions and for the average of each macro area. Moreover, we observe that lower unemployment and higher efficiency of local systems allow northern citizens to have more savings and a greater capacity to borrow.

**Figure 3. Percentage of borrower on the total population (on bank credit, grey - left vertical axis) and average bank deposits and postal savings (in Euro, black - right vertical axis) in the Italian regions and macro areas, year 2016**



Source: our elaborations on Banca d'Italia data

A relevant aspect concerning local development policies through the equilibrium and control of the financial system is the attention to the smallest local areas.

At the local level, an efficient financial system should include banks which provide the appropriate tools for business and, in the case of small and medium enterprises (SMEs), that support, by consulting, the decision-making processes of production and investment. In countries like Italy, the entrepreneurial system is largely composed of SMEs, severely affected by

the economic recession. In a condition of scarce financial resources, the smallest enterprises could be forced to make greater use of the so-called trade credit (Atanasova and Wilson 2003), that are payment terms agreements between suppliers and customers.

The knowledge of the local area is, on one hand, useful to banks to advise local businesses in a professional manner and, on the other hand, valuable to identify the strengths and weaknesses of the enterprises, thus decreasing the risk of their funding. Moreover, the closer relations among households, businesses and banks expert of the local area would contrast speculative behaviors.

In fact, the presence of a large number of small businesses in the same geographical area, with limited financial resources, requires a higher integration among local banks and businesses' needs. This situation should be present in industrial districts, according to an idea of efficient founding by considering the localized production contexts. In particular, mutual and cooperative banks are more related to industrial districts and organized areas (for the creation and evolution of the districts see, among many contributions, Marshall 1920; Porter 1998; Becattini 1987 and 1989, for the Italian case). Obviously, the role and prerogatives of districts have changed over time, as well as the needs in terms of financial requests to the local banks. Especially in backwards areas, local banks should demonstrate usefulness by financing small enterprises and encouraging the creation of new businesses (Cesarini *et al.* 1997).

### **3. A regional analysis**

The aim of this work is to observe how the connected aspects of the credit market efficiency and the characteristics of the socioeconomic systems have influenced on the many gaps among the Italian regions after the 2007 economic crisis.

We consider the close relationship between the efficiency of the credit market and the degree of economic development of an area by observing how these aspects are verified in the Italian regions. In particular, through an useful analysis to grouping regions into homogeneous groups for economic characteristics, we want to see if the inclusion of different variables from the efficiency of lending (for which regional disparities are well-known, see Colantonio *et al.* 2012; Mattoscio *et al.* 2014) can mitigate the effects of the



international prolonged financial crisis, whose effects have occurred in Italy since 2008.

The case of Italian regions is explanatory because they represent very different socio-economic backgrounds in terms of income and economic development, as it is evident from a comparison of the GDP *per capita* considering as base the average national income (= 100), for which there are values of about 120 for the regions of the North and less than 70 for the South (year 2013, on SVIMEZ data).

The northern regions have been affected by the crisis before the South because of the higher international relations, but the openness to foreign markets helped to recover its economic efficiency more quickly. In addition, the efficiency of banks and the vitality of the entrepreneurial system have led to a positive support from the domestic demand. In this sense, the role of the local credit markets is evident in the possibilities of businesses and consumer households to obtain loans (Colantonio *et al.* 2012).

The lower funding opportunities in the South, in a context of rising unemployment, forced to move credit flows from productive purposes to support consumption. It is evident particularly in the southern area, observing the expansion of consumer credit (Banca d'Italia, Statistic Bulletin, various years), that in advanced economies should represent an alternative type of consumption and in these contexts describes a clear support for subsistence consumption.

In this paper, we use a Multidimensional scaling analysis (MDS) to represent the changes that occurred in the Italian context before and after the international financial crisis, knowing that the structural weaknesses that characterize some areas of the country existed for a long time. The aim is to observe the changes in the "distance" in socioeconomic terms considering the period before the effects of the outbreak of the speculative bubble in the United States, and the period of the failure economic recovery. The integration of several socioeconomic variables can help to reinforce the reflections on the local financial systems, being evident the structural distance of local credit markets (Mattoscio *et al.* 2014).

With the application of MDS, we represent the 20 regions in a two-dimensional graph, in which the positioning of the cases and the possible grouping is influenced by the variables analyzed. This is done by defining relations between regions in terms of proximity (or distance) with respect to the selected data for the two periods.

The three main areas of our interest are represented by the following variables:

*credit*

- loans to financial companies (Banca d'Italia data);
- loans to non-financial companies – industry excluding construction (Banca d'Italia data);
- loans to non-financial companies – construction (Banca d'Italia data);
- loans to non-financial companies – services (Banca d'Italia data);
- loans to producer households (Banca d'Italia data);
- loans to consumer households and others (Banca d'Italia data);

*economic development*

- GDP *per capita* (ISTAT and SVIMEZ data);
- import/GDP ratio (ISTAT, ICE and SVIMEZ data);
- export/GDP ratio (ISTAT, ICE and SVIMEZ data);
- unemployment rate (ISTAT data);
- employment rate (ISTAT data);
- labour productivity in industry excluding construction (ISTAT data);
- labour productivity in business services (ISTAT data);

*human capital*

- adults participating in lifelong learning (ISTAT data);
- secondary education attainment level (ISTAT data);
- young people who dropping out of school (ISTAT data);
- level of education of the adult population (ISTAT data).

The *per capita* values of loans to households and businesses have been obtained considering the values of the resident population (ISTAT data) and of registered businesses (Unioncamere data). For the 2013 analysis, the missing data on the two types of labour productivities were replaced with 2012 data. The first group of variables represents the average granting of credit to major categories of borrowers, the second group represents the economic vitality and the development potential. The last group of variables has been chosen to represent an essential resource of the advanced economies (see, among many contributions, Becker 1964; Levine 1998), i.e. the skills and the abilities embedded in the labour force and obtained through vocational training and educational processes.

In the following tables, indicators on the quality of the results of the analyses (Tab. 1) and the choice of the size of the charts (Tab. 2) are highlighted.

**Table 1. Indicators for the two MDS analyses**

|        | 2007 analysis | 2013 analysis |
|--------|---------------|---------------|
| Stress | 0,07308       | 0,08237       |
| RSQ    | 0,97538       | 0,97050       |

Source: our elaborations on Banca d'Italia, ISTAT, SVIMEZ, ICE, Unioncamere data

**Table 2. Selection of the number of dimensions for the representation of the data for the two MDS analyses**

| Iteration            | S-stress | Improvement |
|----------------------|----------|-------------|
| <i>2007 analysis</i> |          |             |
| 1                    | 0,11522  |             |
| 2                    | 0,07808  | 0,03714     |
| 3                    | 0,07053  | 0,00755     |
| 4                    | 0,06783  | 0,0027      |
| 5                    | 0,06679  | 0,00103     |
| 6                    | 0,06638  | 0,00041     |
| <i>2013 analysis</i> |          |             |
| 1                    | 0,11824  |             |
| 2                    | 0,07902  | 0,03922     |
| 3                    | 0,07354  | 0,00548     |
| 4                    | 0,07176  | 0,00178     |
| 5                    | 0,071    | 0,00075     |

Source: our elaborations on Banca d'Italia, ISTAT, SVIMEZ, ICE, Unioncamere data

In Table 1, the value of the RSQ is good and the Stress index is acceptable being less than 0,15. Table 2 shows, for both cases, that there is a strong decrease of the index with the second iteration, thus indicating a good approximation of the graph to the two dimensions.

The following table shows the choice of the variables which are represented on the axes and then determine the positions of the 20 regions in the two-dimensional space.

To bring the graphical representation on the convention of the reading of Cartesian graphs, we use a symmetrisation with respect to the vertical axis, which equals to change the sign of the coordinate on the horizontal axis.

This is possible by the consistency of the signs of most of the variables representing the *dimension 1* as observable in the following Table (except, of course, the unemployment rate), placing the regions with higher average values for almost all the variables in the right part of the graphs.

**Table 3. Correlations between variables and dimensions ( $r > |0,6|$ )  
(<sup>a</sup> in case of lower values of  $r$  for a variable, the highest value between the 2 dimensions is shown)**

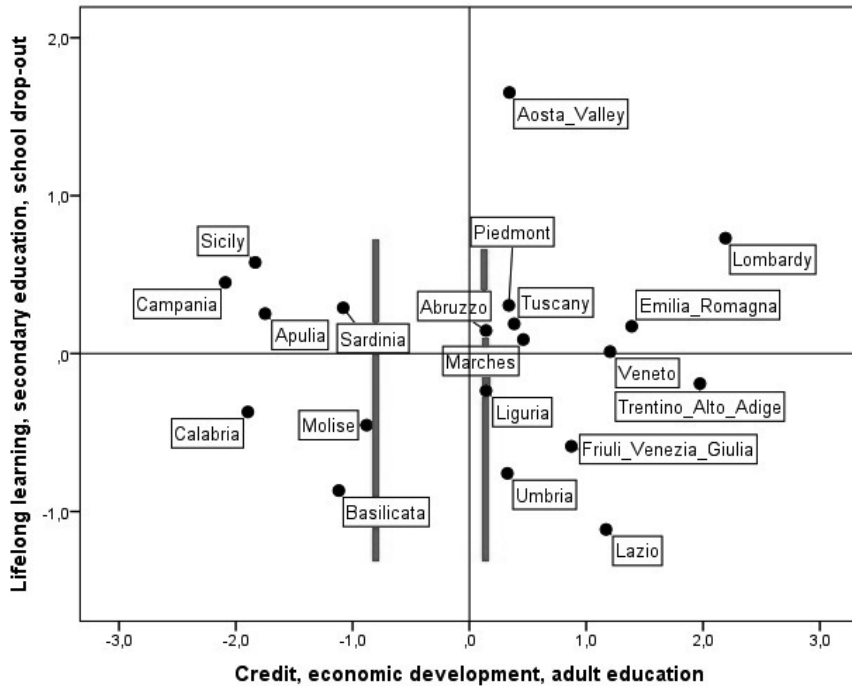
| <i>Variables</i>                                | <i>2007 analysis</i>  |                    | <i>2013 analysis</i> |                    |
|---|-----------------------|--------------------|----------------------|--------------------|
|   | <i>Dimension 1</i>    | <i>Dimension 2</i> | <i>Dimension 1</i>   | <i>Dimension 2</i> |
| Loans to financial companies                    | -0,57838 <sup>a</sup> | –                  | -0,68285             | –                  |
| Loans to non-finan. comp. – industry            | -0,90143              | –                  | -0,92402             | –                  |
| Loans to non-financial companies – construction | -0,87095              | –                  | -0,95014             | –                  |
| Loans to non-finan. comp. – services            | -0,8804               | –                  | -0,92059             | –                  |
| Loans to producer households                    | -0,67472              | –                  | -0,71502             | –                  |
| Loans to consumer hous. and others              | -0,92182              | –                  | -0,90897             | –                  |
| GDP <i>per capita</i>                           | -0,9293               | –                  | -0,9441              | –                  |
| Import/GDP ratio                                | -0,62285              | –                  | -0,449 a             | –                  |
| Export/GDP ratio                                | -0,6776               | –                  | -0,71321             | –                  |
| Unemployment rate                               | 0,919191              | –                  | 0,925106             | –                  |
| Employment rate                                 | -0,94572              | –                  | -0,95645             | –                  |
| Labour productivity in industry excl. con.      | -0,70902              | –                  | -0,79577             | –                  |
| Labour productivity in business services        | -0,57739 <sup>a</sup> | –                  | -0,69612             | –                  |
| Adults participating in lifelong learning       | –                     | -0,78551           | -0,60687             | –                  |
| Secondary education attainment level            | –                     | -0,70278           | –                    | -0,87534           |
| Young people who dropping out of school         | 0,622566              | 0,687917           | –                    | 0,805879           |
| Level of education of the adult population      | 0,729612              | –                  | 0,715951             | 0,656245           |

Source: our elaborations on Banca d'Italia, ISTAT, SVIMEZ, ICE, Unioncamere data

The horizontal axis (*dimension 1*) is the most representative for both analyses, while on the vertical axis variables of residual interest are present. It should be noted that the correlation of the unemployment rate with reference to all the other variables is in the opposite direction. It is also important to note, in particular for the second axis, that the correlation of the school drops-out with reference to other similar variables has the opposite sign, which obviously is a negative factor considering the human capital factor.

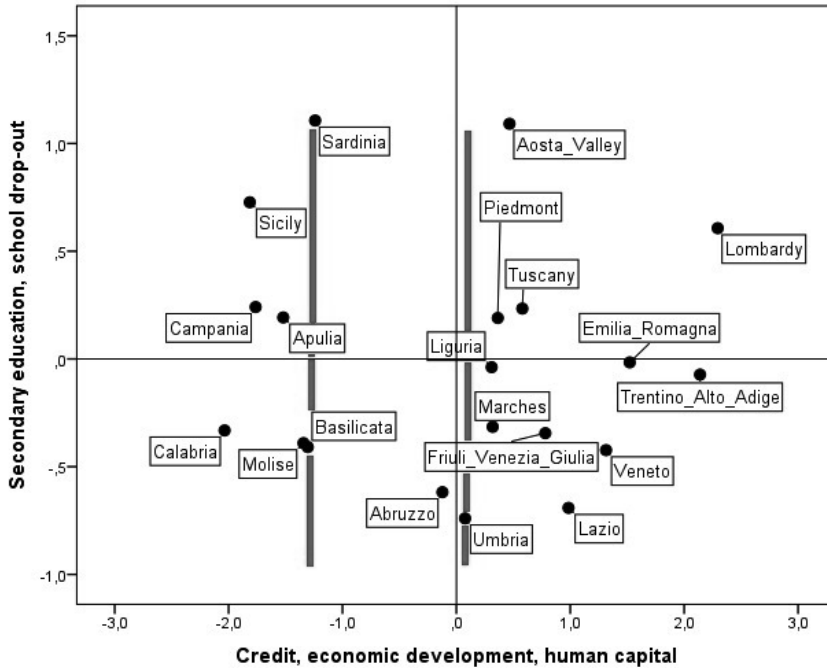
The following two graphs show the results of the analyses described above; in both graphs, the 17 selected variables are represented on the axes.

**Figure 4. Representation of the 20 Italian regions, year 2007**



Source: our elaborations on Banca d'Italia, ISTAT, SVIMEZ, ICE, Unioncamere data  
 Note: the signs of the coordinates on the horizontal axis have been inverted

**Figure 5. Representation of the 20 Italian regions, year 2013**



Source: our elaborations on Banca d'Italia, ISTAT, SVIMEZ, ICE, Unioncamere data  
 Note: the signs of the coordinates on the horizontal axis have been inverted

The two graphs show the extension of the “gap” between the Centre-North and the South of Italy, at the expense of the *Mezzogiorno*. The gap is observed on the horizontal axis because it represents almost all the variables and allows us to observe that both in 2007 and in 2013 the regions are pretty ordered over it, from the most backwards (left side of graph) to the wealthiest (right side). In both analyses, the vertical axis represents only a couple of variables related to human capital with residual interest.

Excluding few outlier cases which are largely due to the second dimension, we see the increasing dispersion of the regions along the axis, so only the Abruzzo region (in the “official” South according to the ISTAT grouping), is located near the central and northern regions. Abruzzo is the only outlier if we consider the grouping of regions on the horizontal axis.

This is a region that is institutionally placed in the southern group while it is geographically located in the Centre and strongly connected with the central regions development path.

Without considering this outlier case, we must note that the “horizontal distance” between the Centre-North and the South in 2007 (see in Fig. 4 between Molise-South and Liguria-North) has increased in 2013 (see in Fig. 5 between Basilicata-South and Umbria-Centre).

The northern area is characterized by a greater possibility for businesses to obtain bank loans and for households to obtain support for consumption. We must also consider that the wealthiest regions of Northern Italy have an income of about twice that of several southern regions. In many cases, the unemployment rate in the South is double than in the North, while the ability to export (observed through the export/GDP ratio) is less than a third in some southern regions respect to the North.

The variables related to human capital are less discriminating, although in the *Mezzogiorno* of Italy (South and major Islands) young people continue their studies in a context of high unemployment, and the NEET rate and the early school dropout are serious social problems. For this reason, the level of education of the adult population does not differ so evident in all regions in the various macro areas, while lifelong learning is more prevalent in the Centre-North (thanks to the presence of the largest and most dynamic businesses).

#### **4. Conclusions**

This work confirms the structural gap between two distinct Italian areas, the wealthiest and most advanced Centre-North and the *Mezzogiorno*. From distinct analyses carried out with reference to 2007, the years before the economic crisis and the prolonged recession, and to 2013, has emerged an increased disparity according to many socioeconomic aspects. The efficiency of the banking system in the North have had an important role in mitigating the adverse effects of the exogenous financial crisis, also thanks to the strength of businesses and the more specific training of human capital.

Furthermore, we notice that there are many variables, in addition to credit, that unite the Italian regions and allow to study the divergence in numerous social and economic aspects. In particular, the differences between the Centre-North and South are shown along the horizontal axis by comparing



the two MDS analysis, since all the regions are aligned and "ordered" along this axis.

After the crisis of 2007 the structural difficulties of the South in the field of local financial systems and the lack of useful resources to encourage business investment and the formation of human capital, have increased the overall gap.

Many considered variables play a key role in explaining the divergence, with reference both to the new variables relating to credit (compare Mattoscio *et al.* 2014), and those linked to the real economy and to the human capital.

In the credit framework, the traditional view that the managers are naturally risk-averse (especially in the South of Italy) and so need different regional incentives to undertake risky may be another explanation of the problem of Italian access credit discrimination (among the many contributions, see Mehran and Rosenberg 2007; Panetta *et al.* 2009; Benmelech *et al.* 2010).

The better organization and efficiency of the financial system in some areas of the country, in addition to greater economic vitality, have allowed a more rapid economic recovery, albeit hampered by international turbulence. In the South, the "distance" from the international markets had initially kept away the effects of exogenous financial markets. Instead, international trade was one of the strengths that allowed the North to reverse the trend, making possible a greater trust in financial markets (and therefore more funding) by supporting domestic demand.

This study is a preliminary analysis to test a research hypothesis to be developed with additional methods and research. Data mining techniques can be used to make possible the study of a larger dataset, extending the analysis to other European countries.

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