SHORT ARTICLE

One market fits all? Market access and the origins of the Italian north–south divide

Anna Missiaia

ABSTRACT

Italy’s economic development since its unification in 1861 has been characterized by extensive regional inequality. Northern regions were the frontrunners of modern industrialization in the late 19th century, while southern regions never closed the gap. New Economic Geography (NEG) proposes market access as the main driver of regional income differentials. But is its effect homogeneous across regions? The NEG hypothesis is here for the first time considered for the north and the south of Italy separately in the period 1871–1911. Following previous work by the author, both domestic and total market potentials are taken into account as possible drivers of regional gross domestic product (GDP) per capita. The results differ for the two macro-areas: in the south, both market potentials have a strong role in determining the levels of GDP per capita, but they do not affect the growth rates from period to period; and in the north, only domestic market potential is significant in both levels and growth rates. These results point to different dynamics at the sub-national level that should be further qualified by extending the analysis from the NUTS-2 to the NUTS-3 level. The policy implication is that market-oriented measures might not be effective for the most disadvantaged regions before other prerequisites for growth are achieved.

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INTRODUCTION

Italian regional development has been characterized, both today and in the past, by a large degree of regional inequality in several socioeconomic dimensions. Figure 1 illustrates the development of relative gross domestic product (GDP) per capita, the main indicator of regional performance, across the Italian regions from 1871 to 2009. Although the current trend of increasing inequality has attracted the attention of scholars and policy-makers, a growing literature is focusing also on the historical origins of this economic dualism. In spite of a more nuanced north–south gap before the First World War, the idea that the first industrialization of the 19th century was a turning point for the formation of the north–south gap is well established.

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Classic contributions in looking at this period are, for instance, Toniolo (1990) and Fenoaltea (2011). More recently, Felice (2015a) suggested that in spite of the limited growth of GDP per capita achieved by Italy between the unification of 1861 and Second World War, the transformations taking place in this period were fundamental in shaping the subsequent economic path of the 1950s and 1960s. There is a vivid debate on the possible drivers of regional inequality in action before the Second World War; candidates range from human and social capital, quality of institutions, physical geography to access to markets.

Empirical research on this can be placed within the New Economic Geography (NEG) literature. Several empirical studies have attempted to prove that access to markets is conducive to economic development. Redding and Venables (2004) and Head and Mayer (2011) test this hypothesis for a large sample of countries, while Martínez-Galarraga, Tirado, and González-Val (2015) look at the regional level for Spain from a historical perspective. Market access in these studies is measured using the concept of market potential, which is often based on actual trade flows through the coefficients of a gravity model, such as in Redding and Venables (2004) and Head and Mayer (2011).

In the case of a lack of trade statistics, the standard formulation by Harris (1954) based on regional GDP and distances across regions can be applied. This latter is used by Missiaia (2016), where the NEG hypothesis is tested for post-unification Italy. The author shows that domestic rather than total (domestic plus foreign) market potential explains regional GDP across all Italian regions, challenging the long standing view that the north industrialized first because of better access to international markets (Daniele & Malanima, 2011). The radically different geographic distribution of the two measures of market access in Figures 2 and 3 is illustrative of how they can have such a different impact on regional GDP per capita.

This paper takes a first step forward compared with the existing literature and considers for the first time the possibility that different formulations of market access might have a different

Figure 1. Gross domestic product (GDP) per capita of the Italian regions using historical borders, 1871–1911 (Italy = 100). Sources: Felice (2015b) for 1871–1911; and Brunetti, Felice, and Vecchi (2011) for 2009.

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impact across space. In particular, it tests whether both domestic and total market potential had a different impact on GDP per capita within the north of the country relative to the south during its early industrialization. The research question is whether the stylized picture of home market

**Figure 2.** Domestic market potential in the Italian regions, 1871–1911 (Italy = 100). Source: Missiaia (2016).

**Figure 3.** Total market potential in the Italian regions, 1871–1911 (Italy = 100). Source: Missiaia (2016).
being the only determinant of the level and the growth of regional GDP per capita is true for all regions, regardless of their development stage.

The analysis here is conducted at the NUTS-2 level, which for Italy in this period comprises of 15 regions for each of the four benchmark years in the panel. Such a number of observations is of course limited when running the model separately for two sub-national macro-areas. Nevertheless, this tentative analysis suggests that to understand fully the dynamics between growth and market, it is important to look at different sub-national macro-areas. GDP per capita in the north appears as positively affected only by domestic market potential, both in levels and in growth rates while total market potential appears not to be a driver for GDP per capita. In the south, both domestic and total market potentials determined the levels of GDP per capita but there was no effect of the growth rates, suggesting a diminishing role for market access for the lower income regions.

The early experience of Italy can be relevant when considering market-oriented policies for regionally diverse developing countries; market access might not be associated with higher levels of GDP per capita at every stage of economic development. This addition to the literature brings a new perspective on the role of market access since existing studies at country level often assume that market access has a homogeneous effect on growth in all regions. This study suggests that these dynamics can be more complicated.

The concept that a driver of economic growth could work differently in areas at different stages of industrialization is not yet fully developed in the historical literature. This is of course relevant also from a contemporary perspective, when, for instance, common trade policies are applied to entire countries. This is not only a conceptual contribution but also a methodological one, as it highlights the importance for future research of focusing on smaller geographical units in order to capture fully the geographic complexity of the NEG framework. Further research using higher frequency datasets, on both this and other case studies, could further develop this line of research.

The paper is organized as follows. The next section explains the methodology and sources used. The third section shows the results separately for north and south. The fourth section discusses the results. Section five concludes with some policy implications.

**METHODOLOGY AND SOURCES**

The model employed here is largely based on Missiaia (2016), which in turn was an adaptation in historical perspective of Head and Mayer (2011).

The estimating equation (1) is the following:

$$ GDP_{i,t} = \beta_i \text{Market Potential}_i + \alpha_1 \text{Share Active Population}_i + \alpha_2 \text{Population Density}_i + \alpha_3 \text{Railway Density}_i + \sum \theta_t \text{Year} + \gamma_i \text{Region}_i + \epsilon_t $$

where GDP per capita of region $i$ is the dependent variable, while the main variable of interest is market potential. Here market potential is calculated following the formulation by Harris (1954), which defines the market potential of region A as the sum of the total GDP of all neighbouring regions of region A, weighted by the inverse of their distance from region A. The GDP of region A is also included, weighted by a measure that takes into account the area of the region. Later refinements have replaced plan distance with transport costs, as in Missiaia (2016).

Market potential here is used both in its domestic formulation (including only the Italian regions) and its total formulation (including both Italian regions and the main trading partners of Italy). The regional controls are the share of the active population in the total population in the region, the population density in the region calculated as the population per square kilometre, and
the railway density calculated as the kilometers of railways per square kilometer in the region. All variables are expressed as elasticities.

The model is estimated by pooling the five existing benchmark years for regional GDP for the period (10-year intervals from 1871 to 1911). The model is estimated separately for two broadly defined macro-areas: the north and the south. Although other partitions have been used in the literature to group the Italian regions, there are insufficient observations to run the model for more than two macro-areas. The regions that are considered here as north include Venetia, Lombardy, Piedmont, Liguria, Emilia, Tuscany, Latium, Umbria and Marches; the rest of the regions are considered south.2

The data set used here is the same as Missiaia (2016), which contains information on transport costs, railway and sea distances and employment for the 15 Italian regions. The sources used range from primary ones such as railway companies’ publications and population censuses to secondary ones that reconstruct, for instance, shipping costs and railway densities. All the sources are illustrated in detail in Missiaia (2016). The next section moves on to the results.

MARKET ACCESS WITHIN THE NORTH AND THE SOUTH

In this section the estimation results of the model are shown separately for the north and the south. Table 1 shows the results first for the south and then for the north, in both levels and growth rates. The reason for looking at both is that the regression results in levels give a sense of the broad long-run determinants of the relative positions of the regions, while the regression results in growth rates are informative on the short-run changes in the relative market access of the regions and how these affect changes in GDP per capita. For the southern regions (columns 1–4) the level of GDP per capita is much more clearly affected by market potential when regressing using levels (columns 1–2) compared with regressing using growth rates (columns 3–4). This is the case for both domestic and total market potential. Moreover, the coefficients are higher for total market potential than for domestic market potential. For growth rates, the results suggest that, after unification, neither total nor domestic market potential explains much of the growth rates of GDP per capita within the south.

The picture looks quite different in columns (5–8), where the sample is restricted to the northern regions. In this case, total market potential is never significant while domestic market potential is significant when using levels, with a fairly high coefficient compared with the south (1.002 versus 0.702) and when using growth rates. Domestic market potential is therefore a stronger predictor of GDP per capita within northern regions.

Given the rather low number of observations, especially for the model in first differences, the same model is also estimated by pooling all regions, but including an interaction term between market potentials and a dummy variable for the south Table 2.

The results of the estimation confirm that the national effect of domestic market potential is driven by the northern regions. It is positive and significant overall but the interaction with the dummy south is negative. Estimating the same model with growth rates, domestic market potential is again the only significant variable, but in this case there is no negative sign on the interaction with the south.

DISCUSSION

The tentative estimation, in both levels and growth rates, of a model containing a sub-national perspective brings some interesting insights into the relationship between economic growth and market access. The results suggest that total market potential affected the level of GDP per capita within the south but not within the north. Moreover, growth rates in market potential of both types did not affect the growth rates of GDP per capita in the south but they did in the north.
Table 1. Gross domestic product (GDP) per capita and market potential in the south and the north, 1871–1911 (pooled ordinary least squares (OLS) regression).

|                  | South                  |                  |                  |                  | North                  |                  |                  |                  |
|------------------|------------------------|------------------|------------------|------------------|------------------------|------------------|------------------|------------------|
|                  | (1) OLS                | (2) OLS          | (3) OLS          | (4) OLS          | (5) OLS                | (6) OLS          | (7) OLS          | (8) OLS          |
| Log Domestic MP  | 0.702***               | 1.022***         |                  |                  |                        |                  |                  |                  |
|                  | (0.144)                | (0.323)          |                  |                  |                        |                  |                  |                  |
| Log Total MP     | 1.646**               | −0.155           |                  |                  |                        |                  |                  |                  |
|                  | (0.631)                | (0.358)          |                  |                  |                        |                  |                  |                  |
| Log Share Active Pop | 0.674*                | 0.360            | 0.537**          | 0.838***         |                        |                  |                  |                  |
|                  | (0.350)                | (0.486)          | (0.237)          | (0.300)          |                        |                  |                  |                  |
| Log Pop Density  | −0.257                | −0.335*          | 0.537**          | 0.838***         |                        |                  |                  |                  |
|                  | (0.163)                | (0.182)          | (0.237)          | (0.300)          |                        |                  |                  |                  |
| Log Railway Dens | −0.0328               | −0.00626         | −0.144           | −0.116           |                        |                  |                  |                  |
|                  | (0.0531)               | (0.0571)         | (0.0928)         | (0.102)          |                        |                  |                  |                  |
| Dlog Domestic MP | 0.319                 |                  |                  |                  | 1.977***              |                  |                  |                  |
|                  | (0.559)                |                  |                  |                  | (0.329)               |                  |                  |                  |
| Dlog Total MP    | 1.943                 |                  |                  |                  | 0.0814                |                  |                  |                  |
|                  | (1.121)                |                  |                  |                  | (0.594)               |                  |                  |                  |
| Dlog Share Active Pop | −0.0358              | 0.263            | −0.0951          | −0.601           |                        |                  |                  |                  |
|                  | (0.621)                | (0.700)          | (0.590)          | (0.684)          |                        |                  |                  |                  |
| Dlog Pop Density | −0.0571               | 0.607            | −0.146           | 0.250            |                        |                  |                  |                  |
|                  | (0.560)                | (0.508)          | (0.384)          | (0.604)          |                        |                  |                  |                  |
| Dlog Railway Dens | 0.156                 | −0.0243          | −0.164**         | −0.195*          |                        |                  |                  |                  |
|                  | (0.206)                | (0.0569)         | (0.0633)         | (0.0991)         |                        |                  |                  |                  |
| Constant         | −9.949***             | −32.18***        | 0.683            | −19.30**         | −6.54***              | 0.351            |                  |                  |
|                  | (3.452)                | (14.35)          | (0.830)          | (7.388)          | (9.033)                | (0.176)          |                  |                  |

Notes: Heteroskedastic robust standard errors are shown in parentheses. *, ** and ***Coefficient significantly different from zero with a 10%, 5% and 1% confidence level respectively. The dependent variable in columns (1–2) and (5–6) is the log of gross domestic product (GDP) per capita in current prices. The dependent variable in columns (3–4) and (7–8) is the difference of log of GDP per capita between time t and t – 1. Market potentials are in current prices. Region clustering not performed because of the too low number of clusters.
when domestic market potential is considered. If access to international markets mattered more for the south compared with the north in reaching the level of GDP per capita observed in the period, but not its growth rates from period to period, market access could be regarded as an early driver of regional inequality within Italy.

These suggestions are in line with the view that the southern economy, until the invasion of agricultural products from the United States in the 19th century, benefited from its relatively good access to international trade. A well-known study by Morilla, Olmstead,

|                      | (1) OLS | (2) OLS | (3) OLS | (4) OLS |
|----------------------|---------|---------|---------|---------|
| Log Domestic MP      | 0.895***|         |         |         |
|                      | (0.175) |         |         |         |
| Log Domestic MP*South| −0.121**|         |         |         |
|                      | (0.0470)|         |         |         |
| Log Total MP         |         | 0.413   |         |         |
|                      |         | (0.270) |         |         |
| Log Total MP*South   |         | −0.0574 |         |         |
|                      |         | (0.0415)|         |         |
| Log Share Active Pop | 0.0609  | 0.335   |         |         |
|                      | (0.243) | (0.251) |         |         |
| Log Pop Density      | 0.184   | 0.254   |         |         |
|                      | (0.194) | (0.261) |         |         |
| Log Railway Dens     | −0.0152 | 0.0129  |         |         |
|                      | (0.0364)| (0.0427)|         |         |
| Dlog Domestic MP     |         | 1.253***|         |         |
|                      |         | (0.334) |         |         |
| Dlog Domestic MP*South|         | 0.0957  |         |         |
|                      |         | (0.178) |         |         |
| Dlog Total MP        |         | 0.497   |         |         |
|                      |         | (0.494) |         |         |
| Dlog Total MP*South  |         | −0.323  |         |         |
|                      |         | (0.499) |         |         |
| Dlog Share Active Pop|         | 0.111   | 0.363   |         |
|                      |         | (0.288) | (0.432) |         |
| Dlog Pop Density     |         | 0.136   | 0.332   |         |
|                      |         | (0.351) | (0.316) |         |
| Dlog Railway Dens    |         | −0.109**| −0.0616 |         |
|                      |         | (0.0521)| (0.0550)|         |
| Constant             | −13.38***| −5.522 | −0.270  | 0.228   |
|                      | (3.330) | (5.564) | (0.194) | (0.192) |
| Year fixed effects   | Yes     | Yes     | Yes     | Yes     |
| Region fixed effects | Yes     | Yes     | Yes     | Yes     |
| Region clustering    | No      | No      | No      | No      |
| Observations         | 80      | 80      | 64      | 64      |
| $R^2$                | 0.963   | 0.954   | 0.873   | 0.806   |

Notes: Heteroskedastic robust standard errors are shown in parentheses. *, ** and ***Coefficient significantly different from zero with a 10%, 5% and 1% confidence level respectively. The dependent variable in columns (1–2) is the log of gross domestic product (GDP) per capita in current prices. The dependent variable in columns (3–4) is the difference of log of GDP per capita between time $t$ and $t – 1$. Market potentials are in current prices. Region clustering not performed because of the too low number of clusters.
and Rhode (1999) looks at the case of southern Italy as exporter of high value-added agricultural products. The authors give the example of citrus production in Sicily, which supplied 95% of lemons and 16% of oranges consumed in the United States in 1890. However, the trend in the period before the First World War was negative for the southern Italian exporters because of the competition from more productive agricultural US regions such as California.

Possibly this decline as an exporter explains why the growth rates of total market potential are not significant for the south while the levels are. The results are also consistent with Gagliardi and Percoco (2011) who point to the protectionist policy for the primary sector pursued by the unitary state as a further push for the south to remain agricultural. This was in conjunction with the growing competition from US products on international markets which proved detrimental for southern Italy. Finally, the decline of high-value agricultural exports from the south fits well with the increase in regional inequality in Italy. The idea that countries with a declining share of agricultural exports experience increasing regional inequality has been proposed by Rodríguez-Pose and Gill (2006) for developing countries today and it is confirmed here from a historical perspective.

CONCLUSIONS AND POLICY IMPLICATIONS

This paper considered for the first time the relationship between GDP per capita and market access within the north and south of Italy separately during the first Italian industrialization. Because of the limitations of the data set, this paper should be regarded primarily as a conceptual rather than an empirical contribution. The goal is to encourage a greater focus on the heterogeneity of the effect of market access across regions within a country.

The results in their current form is not without limitations, primarily due to data availability. Currently, regional GDP and market potential indicators are available only at the NUTS-2 level, while the development of NUTS-3 level data, which would facilitate more precise estimates, is still a work in progress. The future availability of NUTS-3 data represents an opportunity to elaborate further on this issue. However, even using NUTS-2 regions, the tendency that emerges for the Italian case is that there was a certain degree of heterogeneity between core and periphery regions.

This preliminary evidence could be relevant for regional policy design in developing countries today. The effect of access to international markets on the regional GDP per capita in these two different parts of Italy was not the same. In the south, both domestic and total market potential had a strong role in determining the levels of GDP per capita, but neither seems to have affected growth rates of GDP per capita. For the north, only the domestic market potential is significant in both levels and growth rates.

This asymmetry suggests that the results at national level should be interpreted with caution when thinking about regional policies. The early Italian experience teaches us that regions with good access to international markets could still lag behind in terms of GDP per capita. Therefore, policies oriented at improving market access of the most disadvantaged regions might not be effective in decreasing regional inequality.

If so, what are the other factors that could foster economic growth in these areas? Previous research on Italy points to other prerequisites for economic growth such as access to basic education or improved institutional quality (Felice, 2015a). In light of the historical experience of Italy, these prerequisites could be regarded as priorities for developing countries today to ensure that the subsequent access to markets in later stages of development benefits all regions. The opening to markets can indeed benefit an economy as a whole, but to achieve regionally balanced development, regions with severe delay in basic socioeconomic factors might not be able to take equal advantage from this process. More geographically refined
estimates will in the future help quantify more precisely how these different factors influenced regional development in the past.

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**NOTES**

1. For reasons of intertemporal consistency, the historical national boundaries of 1871 are used for the entire period.
2. For instance, Felice (2015b) uses north–west, north–east–centre and south. The first two are merged to form the north, without changing in any way the definition of south. This gives a stylized view that is admittedly simplistic but consistent with the intent to provide some preliminary results on the heterogeneous effect of market access across macro-areas.

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