

RESEARCH ARTICLE

Rule of law as a determinant of the export performance of Italian provinces

Dario D’Ingiullo^{1*} , Claudio Di Bernardino², Iacopo Odoardi¹ and Davide Quaglione¹

¹Department of Philosophical, Pedagogical and Economic-Quantitative Sciences, University “G. d’Annunzio” of Chieti-Pescara, Viale Pindaro, 42, 65127 Pescara, PE, Italy and ²Department of Neuroscience & Imaging, University “G. d’Annunzio” of Chieti-Pescara, Via dei Vestini, 33, 66100 Chieti CH, Italy

*Corresponding author. Email: dario.dingiullo@unich.it

(Received 5 March 2022; revised 16 November 2022; accepted 16 November 2022; first published online 6 January 2023)

Abstract

Our article presents an empirical investigation of the relationship between the export performance of Italian provinces and the quality of their local institutions, specifically the rule of law, over the period 2004–2016. According to the results obtained by different econometric approaches (OLS, FE, SYS-GMM), in general a secure and well-defined legal framework – by reducing transaction costs and uncertainty, facilitating capital accumulation and an increase in the firms’ scale of production – is associated with better export performance. Interestingly, when the analysis is replicated at the level of the Italian macro-areas (North, Centre and South), the results indicate that the rule of law has a statistically significant and positive association with export performance only in northern provinces, thus suggesting that the effectiveness of this institutional dimension might depend on the level of development of the socio-economic and institutional features at the local level, i.e. only when a set of suitable economic incentive mechanisms are already in place.

Key words: Export performance; institutional quality; Italian provinces; rule of law

JEL codes: F14; P25; P48

1. Introduction

Regional export is acknowledged as an important engine of regional economic development. Such a foreign component of the regional aggregate demand, in fact, is typically related to the production of goods and services in which the region is specialized, implying output levels higher than the local demand (Aydalot, 1985; Stabler, 1970). Acquiring more refined evidence on the determinants of regional export is essential for identifying the factors that affect the competitiveness of local economies and hence their possibilities of growth, considering that the export channel could nowadays be even more strategic for recovering from the negative economic impact of the coronavirus disease 2019 pandemic.

Among the elements that contribute to reinforce regional competitiveness and on which economists tend to agree is the ‘primary’ role of institutions¹. The theoretical and empirical literature known as *new institutional economics* includes interdisciplinary contributions that investigate the channels through which the institutional setting affects economic performance. Institutions, by their functioning, regulate numerous aspects, ranging from the political system to the protection of

¹Institutions, according to the definition proposed by North (1991), represent the ‘rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction’ (p. 97). More specifically, they consist of both formal and informal rules (norms, laws, statutes, regulations, social norms, conventions, and traditions) that act as incentives which promote certain social interactions.

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rights. Their capacity to favour, among other things, regional economic development (Rodríguez-Pose, 2013), innovation (Rodríguez-Pose and Di Cataldo, 2015), and entrepreneurship (Agostino *et al.*, 2020) is largely recognized. Attention is being paid also to the relationship between institutional quality and export performance (Álvarez *et al.*, 2018; Méon and Sekkat, 2008): better institutions increase trade flows, particularly those related to specialized production, which in turn fosters economic growth (Dollar and Kraay, 2003). This is even more important in the increasingly challenging globalized economy characterized by specific comparative advantages, production specialization and the need for continuous innovation (Grossman and Helpman, 1990), where the protection of investment outputs (e.g. knowledge and new technologies) and the need for safeguards of trade in rapid exchanges, are crucial factors.

Levchenko (2007) and Nunn (2007) have contributed to the understanding of the mechanisms through which institutions affect trade: better formal and informal institutions are a source of ‘institutional comparative advantage’ that fosters international exchange. A well-developed institutional framework contributes to trade and must be considered an important source of economic growth, development, and welfare (Barbero *et al.*, 2021). Furthermore, among the institutional dimensions, Nunn (2007) finds that the rule of law ‘explains more of the global pattern of trade than countries’ endowments of capital and skilled labor combined’ (p. 570). This has supported the development of a theoretical and empirical literature on contracting institutions and trade which demonstrates how the integrity of contracts and their enforcement are crucial drivers of export, as they underpin international trade which, in turn, favours economic growth and development (Haggard *et al.*, 2008).

Anderson and Young (2006) provide one of the first overview of the consequences of imperfect contract enforcement by showing that enforcement imperfections reduce international trade as much as a tariff on risk-neutral traders. The connection between the ‘capacity to contract’ and trade has been emphasized also in Haggard *et al.* (2008 p. 207): ‘some trade can take place in the form of barter or exchanges in which transactions clear immediately, but more complex transactions require the ability to make and receive promises about future actions. This is particularly true of financial transactions, which, from a legal point of view, are primarily contracts.’ Therefore, ‘secure property rights and the capacity to contract over time and space also permit trade and a corresponding increase in the efficiency of resource allocation, including through the development of the financial system.’ Furthermore, incompleteness of contracts creates an incentive for a trader to carry out opportunistic behaviour aimed at appropriating the rights of another trader. This pushes traders (especially exporters who run the risk of non-payment) to carry out expensive ‘monitoring and contract enforcement activities’ that discourage them from international participation because of the high costs associated with these operations (Yu *et al.*, 2015). In sum, the rule of law, ‘capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence’ (Kaufmann *et al.*, 2011: 223), is the most appropriate institutional dimension to focus on to assess whether and to what extent a secure and well-defined legal framework, reducing uncertainty and transactions costs, can be associated with export performance.

This relationship is built on strong theoretical connections between the rule of law, the competitiveness of production, and growth of exports. Theory predicts that regions with better contracting institutions establish sounder economic incentives that virtuously shape economic agents’ choices and strategies (Agostino *et al.*, 2020; North, 1991): transaction costs and uncertainty are reduced, which favours entrepreneurship, production and exchange; an institutional comparative advantage is gained which yields better export capabilities of some industries – such regions tend to specialize in contract-intensive industries and to export more of those goods the costs of which are sensitive to the quality of institutions (Nunn, 2007); and the accumulation of physical and human capital is favoured (Rodrik *et al.*, 2004) – which implies greater capabilities of exploiting economies of scale (Aron, 2000) as well as technological and knowledge spillovers.

The existing empirical evidence is almost exclusively country-centric (Álvarez *et al.*, 2018; Méon and Sekkat, 2008; Nunn, 2007). However, it is widely shared that important and pronounced institutional differences exist also between the regions within a country (Charron *et al.*, 2014; Nifo and Vecchione, 2014; Rodríguez-Pose and Zhang, 2019), and that the role of institutions in affecting regional export performance is still an important and understudied black box (Barbero *et al.*, 2021). From an intra-national perspective, there are, as far as we know, only two empirical studies that focus on the effect of institutions on regional exports. Márquez-Ramos (2016) assesses the impact of the institutional dimension of trade agreements on exports for Spanish regions over the period 2000–2008. Barbero *et al.* (2021) shows that the quality of government (measured through the European Quality of Government Index) is a fundamental determinant of trade between European regions.

Our paper contributes to filling this gap, being the first attempt to analyse the economic effects of institutions on export performance at a more refined spatial resolution. We empirically investigate whether, during the period 2004–2016, the heterogeneity of the institutional quality (in particular, the rule of law dimension) among the 103 Italian provinces can be related to their markedly different export performance (Beretta *et al.*, 2005).

To this aim, this article makes use of a unique database obtained by matching the regional (NUTS-3) export dataset elaborated by the Italian National Institute of Statistics (ISTAT's 'Coeweb' dataset) and the rule of law indicator provided by Nifo and Vecchione (2014, updated in 2021), built by considering the number of property crimes, the number of crimes reported, trial times, magistrates' productivity, level of tax evasion and irregular employment.

The econometric analysis adopts the System Generalized Method of Moments (SYS-GMM) of Blundell and Bond (1998) to determine the effect of the rule of law on Italian provinces' exports during the period 2004–2016 while controlling for a set of determinants of consolidated exports. The choice of this estimator is based on its capacity to take into account identification issues due to reverse causality and potential omitted variables.

In addition, the high territorial heterogeneity within the country of Italy (e.g. Cavalieri *et al.*, 2020) has prompted us to investigate the effects of the rule of law on exports by grouping the provinces into three geographical macro-areas: North, Centre, and South. They are historically characterized, even before the unification of the country in 1861, by different territorial, social and economic characteristics that have prompted differing paths of development (Felice, 2013). Furthermore, the existing literature demonstrates how the effects of institutions on several economic outcomes, among which economic specialization and (therefore) export competitiveness, could vary between geographical areas having substantial socioeconomic and institutional differences (see Agostino *et al.*, 2020; Álvarez *et al.*, 2018). The northern provinces are those favoured by a higher level of technological development, which provides better perspectives for exports (Ciriaci and Palma, 2008). The southern provinces are instead disadvantaged in both export dynamics (Ciriaci and Palma, 2008) and the quality of local institutions (e.g. Daniele and Marani, 2011), which, for example, can hinder the birth of new businesses, as can happen in this less dynamic market (Rungi and Biancalani, 2019). The latter group of provinces is also the only one that benefits from aid from the national government (with measures drawing from the European Regional Development Fund), such as the Italian Export South Plan 2 (*Piano Export Sud 2*)², whose aims are the expansion of the export share from southern regions and the adaptation of businesses in numerous sectors to be permanently present in international markets. The export performance of central provinces is in an intermediate position (Sterlacchini, 2001).

This paper is structured as follows. In Section 2 we present the empirical strategy by presenting the data and the econometric model. Section 3 is devoted to the discussion of the results for Italy and the three macro-areas. Section 4 provides the main conclusions.

²<https://www.ice.it/it/piano-export-il-sud> Retrieved on 08.07.2022

2. Econometric analysis

2.1. Data and descriptive analysis

As already highlighted, the Italian provinces (NUTS-3) are the economic unit of investigation in our analysis. Before presenting in detail the data used, one preliminary remark is needed about our choice to focus on the provincial level. We are aware that the definition of NUTS is based on the existing administrative units in the European Union (EU) Member States, and that they do not necessarily adequately capture or reflect the geographic reality of economic activity; in fact, complementary statistically defined geographic units, such as Local Labour Markets (LLMs, or Local Market Areas), have been designed in order to rewire territorial systems according to more specific economically functional criteria, and have been used in research related to export performance (see for instance Cainelli *et al.*, 2017; but see also the same authors, 2014, for a contrary argumentation). However, we do believe that, for the aim of this paper, the NUTS-3 level is a more suitable geographical level than that of the LLMs³. LLMs are based on the functional criterion of commuting patterns, so they reflect the behaviour of persons employed with respect to their places of residence and the location of their employment. Therefore, LLMs are particularly suitable for the study of phenomena the spatial extent of which is well represented by Travel-To-Work-Areas and commuting flows (Eurostat, 2020; Lasagni, 2011), which is not the case of the present paper. Rather, some knowledge and technological spillover effects are better captured at the NUTS-3 scale, since LLMs in several cases are too small to take them all into account⁴ (Cainelli *et al.*, 2014; Brunello and De Paola, 2008; see also Bannò *et al.*, 2015, in which empirical evidence is provided of the existence of several and important knowledge spillovers at the NUTS-3 level affecting export capabilities). The fact remains that if a rule of law indicator could be built for LLMs, an analysis at this territorial level would provide interesting, complementary insights.

2.1.1. Dependent variable

The dependent variable in our analysis is the export propensity (or export performance, equivalently), calculated as the ratio between exports and Gross Domestic Product (GDP) (Méon and Sekkat, 2008). Total exports are collected by ISTAT in the 'Coeweb' dataset, while the GDP is provided by EUROSTAT. Italian provinces show significant disparities in terms of export propensity (see Figure A1 in the Appendix provided as supplementary material⁵).

2.1.2. Contracting institutions

The *rule of law* represents our key regressor and is obtained from the dataset elaborated by Nifo and Vecchione (2014). Figure A2 in the supplementary material⁶ shows the spatial distribution of this variable, highlighting significant differences between the North, Centre and South.

³Besides the following economic arguments, the creation of a 'statistical-data based' bottom-up 'rule of law' indicator for LLMs would be unfeasible, since none of the data underlying the elementary indexes used to build the 'rule of law' indicator are available at either the LLM or at the municipality level.

⁴Three additional considerations might, in our opinion, further support the choice of the NUTS-3 level: (1) one of the components of the rule of law indicator is the estimation of irregular employment, and it would be paradoxical and inconsistent if the empirical evidence were derived on the basis of a geographical breakdown based on mobility flows by (only) regular workers (i.e. which in itself neglects the essence of one of the elementary indexes); (2) the rule of law's elementary indexes related to the actions of the judiciary in the territory (number of crimes, duration of trials, magistrate productivity) imply that the key explicative variable in our paper, and the corresponding policy area, have a territorial extension coinciding with the geographic competence of court districts. In Italy, there are approximately 140 judicial districts (the general rule is one for each provincial capital), the number and geographic coverage of which are thus much better approximated by provinces (NUTS-3); (3) the adoption of the NUTS-3 level allows for a full comparability with the findings of other papers in the literature on the economic effects of institutional quality.

⁵The supplementary material can be retrieved at: https://drive.google.com/file/d/14Bcaue2alcwjRaJseRAX9MmfTRnpl1D/view?usp=share_link

⁶In the supplementary material a more detailed description of the rule of law index calculated by Nifo and Vecchione (2014) can be found.

2.1.3. Control variables

The often large socioeconomic, industrial and demographic differences at the provincial level lead us to consider a set of structural characteristics of the exporting areas. In fact, a marked socioeconomic heterogeneity within the Italian territorial context has led to the development of areas with different advantages and strengths/weaknesses in terms of provincial export performance (Shin *et al.*, 2006).

A 1-year lag of the dependent variable ($export_{i,t-1}$) is included in the analysis, thus accounting for the fact that export propensity can be characterized by some idiosyncratic factors such as for instance: trade relationships, export base, increasing returns in the acquisition of information and knowledge on external markets (Casillas, Moreno and Acedo, 2012; Van Beveren and Vandebussche, 2010), as well as sunk costs incurred to enter new markets (Ayllón and Radicic, 2019).

According to Barbero *et al.* (2021) the relationship between institutions and trade may be affected by the productive structure of a particular place. To take this into account in the analysis, we include two variables that capture the sectoral structure of the exporting province. We consider the degree of *specialization*, since export performance is strictly related to the competitiveness of the regional production destined to the external markets, which in turn requires the region to reach, in export sectors, production scales which are typically bigger than those needed to meet the local demand. Furthermore, easier intra-industry knowledge spillovers due to the specialization in these few sectors increases the participation of firms in international exchange also due to the lower costs of acquiring information about 'foreign countries, markets, clients, and competitors' (Cainelli *et al.*, 2014: 946). Secondly, we include in the model the percentage of total employment in the manufacturing sector (*manufacturing employment*) because, though a trend to deindustrialization is a concern in almost all the advanced countries (Sarra *et al.*, 2019), tradeable commodities are predominantly manufactured goods and differences in the level and the trend of the share might still be significant (also depending on the initial conditions) at the local level, with provinces more specialized in manufacturing activities experiencing higher benefits in terms of productivity, export and growth (Dauth and Suedekum, 2016).

We also include a control variable related to the province's level of development of banking (*banking*), proxied by the provincial share of large bank branches in the total. In fact, the development of the banking and financial systems not only affects the ability to contract over time and space and thus the rule of law (Haggard *et al.*, 2008), but is also a significant boosting factor on the export propensity of Italian provinces (Bartoli *et al.*, 2014; Beretta *et al.*, 2005, find that this nexus is particularly important for foreign banks and for Italian banks with foreign affiliates, which is a reason for using the provincial share of large bank branches as the control variable) as well as on the first-time export entry of small enterprises (as highlighted by Lo Turco and Maggioni (2017) with regard to the Turkish manufacturing sector).

According to the literature, further elements influence export performance. Human capital, by complementing R&D activities and positively affecting local productivity, has been recognized as an additional determinant of export intensity (Bournakis and Tsoukis, 2016). The positive relationship between human capital⁷ and export intensity is found, mainly at the firm level, for both the manufacturing (Roper *et al.*, 2006) and the service sectors (Conti *et al.*, 2010). However, some papers find that the relationship between export performance and human capital is not statistically significant. This is one of the findings in Eickelpasch and Vogel (2011), once the authors control for unobserved heterogeneity, and also in Brodzicki *et al.* (2018). Other studies focus on the role of human capital in export by differentiating between intensive (average export value per product) and extensive (number of export products) margins: for instance, Andersson and Johansson (2010) show that cross-regional variations in endowments of human capital influence the latter rather than the former.

Moreover, a greater thickness of foreign networks (for instance through personal linkages) and better information about foreign markets that stem from imports tend to increase the propensity to

⁷Measured in several ways, such as the average years of schooling of the population, the highly educated labour share, the number of workers with at least three years of university education employed, labour cost per employee.

export (Sjöholm, 2003). As a consequence, in our model we control for the share of tertiary educated individuals (*graduates*) in the resident population and for level of imports divided by GDP (*import*).

Finally, since being in the inland or on the coast, as well as the transport related infrastructures, are features that may influence export performance at the local level (Bensassi *et al.*, 2015), we include in the model two dichotomous variables which take value one when the province is coastal (*coast*) and when the province hosts an *airport*.

In the supplementary material we present the definitions and the detailed sources of our variables (Table A1), the summary statistics, followed by the three macro-areas North, Centre and South (Table A2), and the correlation matrix of the variables included in the econometric model (Table A3). The latter shows that no multicollinearity issues, which could bias the estimation results, are present among the explanatory variables.

2.2. The econometric approach

Based on the background provided in Section 2.1, we assume that the provincial export performance can be modelled as follows:

$$\text{export}_{i,t} = \alpha + \beta_1 \text{export}_{i,t-1} + \beta_2 \text{ruleoflaw}_{i,t} + \sum_{j=1}^J \gamma_j X_{ji,t} + \mu_i + \tau_t + \varepsilon_{i,t} \quad (1)$$

where the period covered by our dataset is 2004–2016 ($T = 13$), while the number of Italian provinces (N) is equal to 103. In Equation (1), the share of exports in the provincial GDP represents our proxy of the propensity to export (*export*), while *rule of law* is our proxy of the quality of this specific dimension of the local institutions. In order to take into account the persistence of the export phenomenon, a 1-year lag of the dependent variable ($\text{export}_{i,t-1}$) is included among the regressors. The set of control variables, previously described in Section 2.1, is denoted by $X_{ji,t}$.

We estimate Equation (1) using ordinary least squares (OLS) (model 1) and, as suggested by the Hausman test, a fixed-effects estimator (FE) (model 2).

Yet, the choice of including, among the covariates, the lagged dependent variable forces us to discard *a priori* static panel approaches such as fixed- or random-effects models. In a dynamic panel data framework characterized, as in our case, by a ‘small T , large N ’ structure, these approaches lead to a biased estimate of the coefficient associated with the lagged dependent variable (Nickell’s bias, 1981).

Furthermore, the possible existence of reverse causality between export and the rule of law, as well as the high path-dependence of some variables (such as the rule of law indicator at the provincial level) prompted us to adopt the SYS-GMM estimator developed by Arellano and Bover (1995) and Blundell and Bond (1998). This approach is an extension of the difference-GMM estimator elaborated by Arellano and Bond (1991) in which an equation in levels is considered in addition to the equation in first differences, and the various endogeneity issues (related to the presence of a lagged dependent variable, time-invariant individual effects, and reverse causality) can be properly addressed.

The adoption of internal instruments to address the endogeneity issue due to the reverse causality between exports and the rule of law could raise some concerns about the adequacy of the SYS-GMM estimator. However, we verified the validity of all moment conditions (by implementing Hansen’s (1982) J test of over-identifying restrictions, which resulted in being not statistically significant), and the absence of second-order autocorrelation is confirmed (by adopting the Arellano and Bond test, which resulted in being not statistically significant as well), the SYS-GMM proves to be a suitable method for a dynamic panel model (Granato *et al.*, 2015).

Furthermore, to preserve the power of the test of over-identifying restrictions, the number of instruments should be kept lower than a maximum threshold given by the number of units under observation: in our case the 103 Italian provinces (Roodman, 2009). In order to maintain the same lag structure for each specification while complying with this rule of thumb, the lagged dependent variable

and the rule of law variables are treated as endogenous and instrumented with their second and third available lags for the differences equation, with the most recent lags of the first differences for the levels equation, and with all the control variables⁸.

Finally, in the literature just referred to, spatial dependence has taken on a growing role (Rey and Montouri, 1999) which has more recently led to empirical applications that embed spatial interactions and individual fixed effects (Elhorst *et al.*, 2010). For these reasons, we control anyway for spatial dependence by estimating, through a Maximum Likelihood estimator (Yu *et al.*, 2008), a dynamic spatial autoregressive panel (dySAR) and a dynamic spatial Durbin model (dySDM) including time-invariant individual characteristics and time-period fixed effects. These models can detect if and to what extent spatial spillover effects between neighbouring provinces do exist by including among the set of covariates the spatial lag of the dependent variable at t and $t - 1$, and only in the dySDM model, the spatial lag of all the other independent variables.

The estimates are obtained by adopting a k -nearest neighbours connectivity matrix (W) that takes into account the 8 nearest provinces for each of the 103 Italian provinces. The choice of $k = 8$ is suitable for considering the influence of the neighbouring provinces while avoiding unconnected regions (Panzerà and Postiglione, 2022). Yet, as a robustness check, Table B1 (supplementary material) shows that the estimates based on different connectivity matrices (values of k equal to 2, 4, and 6) do not show any differences worthy of note.

3. Empirical results

3.1. Italy

In the first step of the analysis, we consider the 103 provinces altogether. We present the results of 5 different models approaches: OLS and FE estimates (model 1 and 2, respectively), SYS-GMM (3), dySAR (4) and dySDM (5).

The results in columns 1–3 of Table 1 show a positive and statistically significant beta parameter of the lagged level of exports, confirming that export performance has some path-dependence: the current export propensity is partly explained by past export propensity.

As far as our key regressor is concerned, the rule of law in the province is positively related to export performance: it plays a significant and positive role even in model 3, where the coefficient⁹ of the variable is 0.33. Such empirical evidence suggests that the call for greater awareness about the role of this institutional dimension in local economic growth (Haggard *et al.*, 2008) can be extended also to provincial export performance, thus implying that the improvement of the quality of the dimensions underlying the rule of law should be considered as a priority policy target at the local level. Several studies, especially in the field of political science, have highlighted the possible policy levers to enlarge the rule of law base of a region: increasing the quality of contract enforcement (Kaufmann *et al.*, 2011); reducing the degree of tax evasion as well as the likelihood of crime and violence (Głowacki *et al.*, 2021; Kaufmann *et al.*, 2011); increasing magistrate productivity, which runs through a reduction of trial times (Nifo and Vecchione, 2014); protecting legal certainty, and property rights (Haggard *et al.*, 2008).

As for the control variables, the employment in the manufacturing sector, the import propensity and the level of specialization have in general a significant and positive association with provincial export performance. These results are in line with the findings and the predictions in the previous literature (see Section 2.1). As for the employment share in the manufacturing sector, its connection

⁸For the three macro-areas, given the lower size of the groups (46 provinces in the North, 21 in the Centre, and 36 in the South), we have used only the second lag of the instrumented variables in combination with the 'collapse' option of STATA 14 to further limit the number of instruments for the first differences equation, while we keep the same lag structure for the level equation.

⁹It must be noted that the coefficient associated with the rule of law is higher in the SYS-GMM model than in the OLS one, which raises a possible concern that some of the internal instruments may be not valid to address the alleged issue of reverse causality between the rule of law and exports.

Table 1. Estimation results for all the Italian provinces

Dependent variable	OLS export (1)	FE export (2)	SYS-GMM export (3)	dySAR export (4)	dySDM export (5)
$Export_{i,t-1}$	0.9128*** (0.0131)	0.6487*** (0.0196)	0.7725*** (0.0658)	0.7506*** (0.0123)	0.7517*** (0.0125)
Rule of law	0.0983*** (0.0282)	0.1884** (0.0752)	0.3321** (0.1406)	0.1750*** (0.0607)	0.1697*** (0.0613)
Import	0.0677*** (0.0098)	0.2255*** (0.0175)	0.1528*** (0.0418)	0.1900*** (0.007)	0.1916*** (0.0075)
Manufacturing employment	0.0696*** (0.0175)	0.0908 (0.0721)	0.1551** (0.0788)	0.0372 (0.0654)	0.0408 (0.0741)
Specialization	0.0014 (0.0512)	0.3382** (0.1405)	0.0187 (0.1208)	0.3357*** (0.1281)	0.3953*** (0.1399)
Graduates	0.0102 (0.0226)	-0.0114 (0.0312)	-0.0013 (0.0321)	-0.0089 (0.0283)	-0.0099 (0.0291)
Banking	0.0225** (0.0098)	0.0579*** (0.0192)	0.0351* (0.0181)	0.0593*** (0.0168)	0.0439** (0.0192)
Airport	0.0006 (0.0088)		-0.0031 (0.0217)		
Coast	0.0279*** (0.0088)		0.0558** (0.0244)		
Constant	0.1445 (0.094)	0.5798* (0.3182)	0.0536 (0.1741)		
ψ				-0.0215 (0.0609)	0.0121 (0.0659)
ρ				0.0374 (0.0638)	0.016 (0.0703)
$WRule\ of\ law$					-0.0052 (0.1477)
$WImport$					-0.0082 (0.0533)
$WManufacturing\ employment$					-0.2522* (0.1445)
$WSpecialization$					-0.7713*** (0.2679)
$WGraduates$					0.0741 (0.0966)
$WBanking$					0.0425 (0.041)
Observations	1236	1236	1236	1236	1236
Provinces	103	103	103	103	103
Time effects	Yes	Yes	Yes	Yes	Yes
Provincial effects	No	Yes	Yes	Yes	Yes
R ²	0.985	0.689	-	0.978	0.97

(Continued)

Table 1. (Continued.)

Dependent variable	OLS export (1)	FE export (2)	SYS-GMM export (3)	dySAR export (4)	dySDM export (5)
Hausman FE/RE ($p > \chi^2$)	–	268.8 (0.00)	–	–	–
Moran's I (p-value)	0.046 (0.21)	0.019 (0.52)	0.071 (0.07)	0.022 (0.47)	0.005 (0.74)
Arellano-Bond (1)	–	–	0.000	–	–
Arellano-Bond (2)	–	–	0.742	–	–
Number of instruments	–	–	83	–	–
Hansen's J test	–	–	0.314	–	–

Source: our elaborations. ISTAT, Bank of Italy, and Nifo and Vecchione (2014) data.

Note: *statistically significant at the 10%; **statistically significant at 5%; *** statistically significant at 1%. Standard errors clustered by provinces are given in parenthesis. Except for the *rule of law*, all the variables are expressed in logarithm.

with better export performance at the provincial level is theoretically well grounded. As Altenburg and Rodrik (2017: 3) clarify, ‘manufacturing creates particularly large knowledge spillovers which enhance productivity in non-manufacturing activities. [...] Most manufacturing goods are easily tradable and can therefore be exported to world markets almost without demand restrictions; this allows countries to reap economies of scale even when their internal market is constrained by low purchasing power and small population size.’

The positive relationship between import and export propensity can be related to the fact that exporting firms that are also import-oriented have some additional strengths (e.g. reduction of cultural barriers, business partners) compared to those that are only export-oriented, and have an experience that drives proactive behaviour (Holmlund *et al.*, 2007, on Finnish SMEs)¹⁰. Even productive specialization and banking development show positive and statistically significant coefficients, in line with the existing evidence.

The variable proxying human capital turns out to be not statistically significant in any of the models. As already mentioned in Section 2.1, there are other reported cases with analogous findings in the literature, so this is not entirely surprising. However, there is no doubt that this result is not aligned with the prevailing evidence, and there are several possible explanations for this. One could be related to the different ways of measuring human capital: we used the only proxy variable available at the provincial level, so we could not check alternative options. Another, more substantial, set of possible explanations is rooted in the extreme heterogeneity of both the levels and the dynamics over time of the provincial export level of sophistication. In some provinces, the complexity of exports has increased, implying a change in its sectoral structure towards more knowledge- and human capital-intensive productive activities, for which these local capabilities are the engine of productivity growth and, consequently, of competitiveness in international markets. Some of these provinces are located in the less developed areas of the country and follow a distinct pattern vis-à-vis neighbouring provinces (the so-called ‘islands of complexity’, see Coniglio *et al.*, 2016). In other provinces, the complexity of exports has decreased, presumably as a result of the increasing prevalence of exported goods and services characterized by a high intensity of physical capital, the competitiveness of which is not necessarily linked to local knowledge and human capital endowments, but rather to the exploitation of scale economies.

Lastly, the presence of coastal areas is positively associated with export performance (in models 1 and 3), while the coefficient related to the presence of at least an airport is not statistically significant (this might be explained on the grounds that air cargo has a marginal role in Italy’s international freight).

In the spatial regressions (models 4 and 5 in Table 1), two features emerge. First, in both models the parameters estimated for the spatial lag of the dependent variable W_{export} (ρ), the spatio-temporal interactions corresponding to the spatial lag of the dependent variable W_{export} at $t-1$ (ψ), and the coefficients associated to the spatial lag of almost all the independent variables ($Wruleoflaw$ and WX) are all not significant. These results may be eventually due to the inclusion of both individual (i.e. provincial) and temporal effects, sometimes linked to a reduction of spatial autocorrelation (Benedetti *et al.*, 2020). Second, the dynamic spatial panel estimation also confirms stable relationships between export and our set of covariates.

A sensitivity analysis has been carried out (results in the supplementary material) to test the determinants of export propensity in alternative econometric models. We begin by estimating the basic model with the rule of law and then adding: the ratio of imports to GDP, the manufacturing employment, the specialization index, the share of tertiary educated, the financial risk, the two dummies¹¹. As can be observed, the results appear to be quantitatively and qualitatively in line with the complete model.

¹⁰Small and medium enterprises.

¹¹In the supplementary material, we also present the correlation between the residuals and the predicted values of the dependent variable (see Figure D1).

Table 2. SYS-GMM estimation results by macro-areas (North, Centre, and South)

Sample of Italian provinces	SYS-GMM	SYS-GMM	SYS-GMM
	North (6)	Centre (7)	South (8)
$Export_{i,t-1}$	0.7547*** (0.0709)	0.8948*** (0.0463)	0.7457*** (0.0709)
Rule of law	0.2502** (0.124)	-0.0014 (0.196)	0.2056 (0.2288)
Import	0.0724*** (0.0214)	0.0669** (0.0278)	0.1940*** (0.0548)
Manufacturing employment	0.1518** (0.0683)	0.1003 (0.0765)	0.2988*** (0.1127)
Specialization	0.1336 (0.103)	0.1041 (0.1652)	0.2349 (0.2491)
Graduates	0.0385 (0.0343)	-0.0266 (0.0405)	0.0396 (0.0557)
Banking	0.0317** (0.0156)	0.0574 (0.0392)	0.0372 (0.038)
Airport	0.0128 (0.0177)	-0.0245 (0.0245)	0.0527 (0.0501)
Coast	0.0104 (0.0228)	0.0197 (0.0177)	0.1294*** (0.0457)
Constant	0.0177 (0.1642)	0.5108 (0.3132)	0.6659 (0.5356)
Observations	552	252	432
Provinces	46	21	36
Time effects	Yes	Yes	Yes
Provincial effects	Yes	Yes	Yes
Arellano-Bond (1)	0.000	0.000	0.000
Arellano-Bond (2)	0.387	0.862	0.856
Number of instruments	43	43	43
Hansen's J test	0.643	1.000	0.773

Source: our elaborations. ISTAT, Bank of Italy, and Nifo and Vecchione (2014) data.

Note: *statistically significant at the 10%; **statistically significant at 5%; *** statistically significant at 1%. Standard errors clustered by provinces are given in parenthesis. Except for the *rule of law*, all the other variables are expressed in logarithm.

3.2. Within macro-areas: North, Centre, and South

In this section, we present the results for the northern, central, and southern provinces. As seen in Section 2.1, the institutional conditions are intimately connected to the territorial disparities between the macro-areas. In fact, the consolidated socioeconomic differences across the three aggregates also include differences in the efficiency of the functioning of institutions (Giannola *et al.*, 2016; Malanima and Zamagni, 2010). Regarding the possible effects on our topic, the disparities between the macro-areas in the effective quality of local institutions may be reflected in their export performance (D'Ingiullo and Evangelista, 2020; Lasagni *et al.*, 2015).

In Table 2 we report the more robust results of SYS-GMM estimator for the three groups of provinces, while the estimates of OLS and FE are reported in the supplementary material (Tables A4, A5, respectively).

The evidence shown in Table 2 confirms commonalities, on the one hand, but also marked differences between the macro-areas, on the other, with regard to the factors that influence local exports. The persistence of the export phenomenon over time ($Export_{i,t-1}$) is an aspect that emerges in all groups, but it is stronger in the Centre, historically more accustomed to competition in international markets.

Interestingly, there are significant differences between North, Centre and South in terms of the relation between the rule of law and export propensity. The northern provinces are the only ones for which the rule of law shows a positive and statistically significant relationship with export performance (model 6 in Table 2), which adds one more dimension to the contrast between the northern regions

and the rest of Italy¹². The mechanisms, processes and institutions that secure contract enforcement and reduce transaction costs in a framework of incomplete contracts positively contribute to export intensity where a favourable social and economic background exists. In other words, a secure and well-defined legal framework is a driver of export performance only when a set of suitable economic incentive mechanisms are already in place. More dynamic areas of the country, characterized by more innovative and contract-intensive sectors, benefit the most from formal institutions. This confirms the fact that socioeconomic and institutional features determine the different effectiveness of institutional dimensions across Italian macro-areas (Agostino *et al.*, 2020). The less evolved contexts (or, to speak as do Guerrieri and Iammarino, 2006, the areas with lower contextual dynamism) that characterize the Centre and the South, instead, might be the reason for the lack of a statistically significant relationship between the rule of law and the export propensity, because of lower quality of the institutions (Boschma *et al.*, 2016) or the higher presence of inefficiencies (e.g. O'Brien, 2013) which shape inappropriate underlying economic incentives. The cooperative and civic culture present in more developed areas could make institutions work better (e.g. Huysseune, 2003), and in turn, the rule of law, or more generally, local institutions, can help to explain the gaps in economic performance among the macro-areas (Agostino *et al.*, 2020).

As concerns the control variables, the coefficients of import propensity and employment in the manufacturing sector are statistically significant and have the expected sign in nearly all macro-areas and models.

The level of banking development, instead, is positive and statistically significant only in the northern provinces. This might be related to a lower cost of credit and a lower probability of being rationed in the North (Accetturo *et al.*, 2022; Albareto *et al.*, 2022).

The propensity to export of the central provinces is highly path dependent. This finding might be related to the so called Third Italy, areas of the (north-eastern and) central Italy characterized by crafts-based small firms clustered in specialized industrial districts, the export performance of which have benefited from the increased competitiveness due to the adoption of more flexible production (Shin *et al.*, 2006).

The South shows a greater role of manufacturing in export performance in the period considered, probably as a result of the recovery occurring for decades due to price competitiveness strategies and low domestic demand (Basile, 2001). The export performance of the provinces of the South also relies on having a direct access to the sea, as suggested by the positive and significant coefficient related to coasts. This result could stem from the growing importance of exchanges with Mediterranean countries, which make the South the area with the highest 'Mediterranean specialization' (by sea), with great repercussions in many productive sectors (Ungaro, 2016).

4. Conclusions

We have presented an empirical investigation of the relationship between the export performance of Italian provinces and the quality of their local institutions, with particular reference to the rule of law

¹²Following the suggestion by one of the anonymous referees, we have carried out a supplementary analysis in which macro-areas which provinces belong to are controlled for, in order to verify whether the results of statistical significance of the rule of law regressor in the regression involving all of the provinces (Table 1) and lack of statistical significance of the same variable for Centre and South in the regressions with separate macroareas (Table 2) could be explained by the lack of a macroarea control in the regression involving all of the provinces. If that were the case, this would mean that the rule of law variable in the regression with all of the provinces presented in Table 1 would be capturing a positive effect on the export actually due to other features (omitted, i.e. not controlled for) which in the North are correlated with the rule of law. Therefore, we extended the model adding alternatively a dummy variable which takes value 1 if the province belongs to the North or a categorical variable taking value 1 if the province belongs to the North and 2 if it belongs to the Centre. The results obtained in both cases are in line with those in Table 1 (these additional estimations are available from the Authors upon request), which strengthens the hypothesis that it is precisely the institutional quality of the province, rather than its being a northern one, to contribute to its export performance.

component. According to the different approaches adopted in our econometric analysis (OLS, FE, dySAR, dySDM, SYS-GMM), in general a secure and well-defined legal framework (with low rates of criminality and tax evasion, higher efficiency of the police and the administration of justice, low weight of the underground economy – all dimensions of the rule of law sub-index) is associated with better export performance. This finding is consistent with the theoretical literature, whereby the rule of law –by reducing transaction costs and uncertainty, facilitating capital accumulation and the increase in the production scale of firms– contributes to the productivity and the competitiveness of the local economy, indirectly improving also its export performance.

For the 103 Italian provinces examined, the rule of law adds to the drivers of export performance already investigated in the literature, the role of which is mostly confirmed even in our analysis: pro-activity and openness to international markets –developed through import and past export activities, higher share of the manufacturing sector –which ensures economies of scale and intersectoral spillovers, an outlet to the sea, are all positively associated with export intensity.

Interesting insights come from the analysis by geographic macro-area (groups of northern-central-southern provinces), which confirms significant disparities between the North and the less developed rest of the country, even in terms of the rule of law. The SYS-GMM results indicate that the rule of law has a statistically significant and positive association with export performance only in the northern provinces, thus suggesting that the effectiveness of this institutional dimension might depend on the level of development of the socioeconomic and institutional features at the local level. In fact, the results by area may have been conditioned by structural aspects rooted in the Italian context. Large disparities characterize several ‘economic and social indicators across different regions of the country, which testify the multifaceted nature of the Southern lag’ (Nifo *et al.*, 2017: 1050): a significant heterogeneity characterizes also the local economic vitality, which varies greatly between the more export-oriented northern provinces and the southern ones, with the Centre in an intermediate position.

These considerations offer room for further investigation, especially in order to obtain a better understanding of the reasons why, and the mechanisms through which, the rule of law is relevant for northern provinces and not for the others. There are several possible explanations from the theoretical point of view.

The effectiveness of the rule of law might be affected by the quality of other institutional dimensions, such as the ‘government effectiveness’ or the ‘regulatory quality’: for instance, the local endowment of social and economic facilities, as well as the business environment, are aspects that, complementing the rule of law, determine its actual importance.

Another possible reading of this evidence is that the shortcomings of a context like the Italian one, characterized by an often non-transparent and anything but simplified legislation, might be compensated for by the local presence of established social norms, relational capital, and interorganizational relations among independent firms (Rus and Igljč, 2005), all features that might give substance to the rule of law by enhancing the level of trust perceived by entrepreneurs and consequently the incentive to invest and innovate.

On the other hand, given that the goods and services exported by northern regions are characterized by a higher level of ‘sophisticatedness’ –so that the related sectors are typically more contract-intensive– compared to the other macroareas, it is perfectly reasonable that the rule of law constitutes an institutional comparative advantage that produces better export capabilities in the north of Italy.

Understanding in detail which specific mechanisms are at work is a necessary step to make more granular and sounder policy recommendations that go beyond a general reference to the need to improve the quality of the local institutions. Furthermore, as clarified above, further research is needed also to refine the empirical analysis, to probe more deeply into the issue of endogeneity, and to better identify the causal nexus between the dependent and independent variables.

Supplementary material. The supplementary material for this article can be found at <https://doi.org/10.1017/S1744137422000480>

References

- Accetturo, A., G. Albanese, R. M. Ballatore, T. Ropele and P. Sestito (2022), 'Regional inequality in Italy in the face of economic crises, recovery, and the health emergency', *Bank of Italy Occasional Paper*, No. 685.
- Agostino, M., A. Nifo, F. Trivieri and G. Vecchione (2020), 'Rule of Law and Regulatory Quality as Drivers of Entrepreneurship', *Regional Studies*, **54**(6): 814–826.
- Albareto, G., M. Cascarano, S. De Mitri, C. Demma and C. Rossi (2022), 'The banking system and the financing of southern Italian firms', *Bank of Italy Occasional Paper*, No. 684.
- Altenburg, T. and D. Rodrik (2017), 'Green Industrial Policy: Accelerating Structural Change Towards Wealthy Green Economies', in T. Altenburg and C. Assmann (eds), *Green Industrial Policy. Concept, Policies, Country Experiences*, Geneva, Bonn: UN Environment; German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE), pp. 1–20.
- Álvarez, I. C., J. Barbero, A. Rodríguez-Pose and J. L. Zofío (2018), 'Does Institutional Quality Matter for Trade? Institutional Conditions in A Sectoral Trade framework', *World Development*, **103**: 72–87.
- Anderson, J. E. and L. Young (2006), 'Trade and Contract Enforcement', *The BE Journal of Economic Analysis & Policy*, **5**(1): 1–36.
- Andersson, M. and S. Johansson (2010), 'Human Capital and the Structure of Regional Export flows', *Technology in Society*, **32**(3): 230–240.
- Arellano, M. and S. Bond (1991), 'Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations', *The Review of Economic Studies*, **58**(2): 277–297.
- Arellano, M. and O. Bover (1995), 'Another Look at the Instrumental Variable Estimation of Error-Components Models', *Journal of Econometrics*, **68**(1): 29–51.
- Aron, J. (2000), 'Growth and Institutions: A Review of the Evidence', *World Bank Research Observer*, **15**(1): 99–135.
- Aydalot, P. (1985), *Économie Régionale et Urbaine*, Paris: Economica.
- Ayllón, S. and D. Radicic (2019), 'Product Innovation, Process Innovation and Export Propensity: Persistence, Complementarities and Feedback Effects in Spanish firms', *Applied Economics*, **51**(33): 3650–3664.
- Bannò, M., D. Giuliani and E. Zaninotto (2015), 'The Nature of Export Spillovers on Trade: An Analysis at NUTS 3 Level in Italy', *Applied Economics Letters*, **22**(10): 815–819.
- Barbero, J., G. Mandras, E. Rodríguez-Crespo and A. Rodríguez-Pose (2021), 'Quality of Government and Regional Trade: Evidence From European Union regions', *Regional Studies*, **55**(7): 1240–1251.
- Bartoli, F., G. Ferri, P. Murro and Z. Rotondi (2014), 'Bank Support and Export: Evidence From Small Italian Firms', *Small Business Economics*, **42**(2): 245–264.
- Basile, R. (2001), 'Export Behaviour of Italian Manufacturing Firms Over the Nineties: The Role of Innovation', *Research Policy*, **30**(8): 1185–1201.
- Benedetti, R., D. Palma and P. Postiglione (2020), 'Modeling the Impact of Technological Innovation on Environmental Efficiency: A Spatial Panel Data Approach', *Geographical Analysis*, **52**(2): 231–253.
- Bensassi, S., L. Márquez-Ramos, I. Martínez-Zarzoso and C. Suárez-Burguet (2015), 'Relationship Between Logistics Infrastructure and Trade: Evidence From Spanish Regional Exports', *Transportation Research Part A: Policy and Practice*, **72**: 47–61.
- Beretta, E., S. Del Prete and S. Federico (2005), 'Bank Internationalization and Export Propensity: An Analysis on Italian provinces', in L. F. Signorini (ed.), *Local Economies and Internationalization in Italy*, Rome: Bank of Italy, pp. 403–420.
- Blundell, R. and S. Bond (1998), 'Initial Conditions and Moment Restrictions in Dynamic Panel Data Models', *Journal of econometrics*, **87**(1): 115–143.
- Boschma, R., E. Marrocu and R. Paci (2016), 'Symmetric and Asymmetric Effects of Proximities. The Case of M&A Deals in Italy', *Journal of Economic Geography*, **16**(2): 505–535.
- Bournakis, I. and C. Tsoukis (2016), 'Government Size, Institutions, and Export Performance among OECD Economies', *Economic Modelling*, **53**: 37–47.
- Brodzicki, T., L. Márquez-Ramos and S. Umiński (2018), 'The Investigation Into Determinants of Regional Exports Base: Panel Analysis for Spanish and Polish Regions', *Entrepreneurial Business and Economics Review*, **6**(1): 135–151.
- Brunello, G. and M. De Paola (2008), 'Training and Density: Some Evidences From Italian Provinces', *Labour Economics*, **15**(1): 118–140.
- Cainelli, G., E. Di Maria and R. Ganau (2014), 'An Explanation of Firms' Internationalisation Modes, Blending Firm Heterogeneity and Spatial Agglomeration: Microevidence From Italy', *Environment and Planning A*, **46**(4): 943–962.
- Cainelli, G., E. Di Maria and R. Ganau (2017), 'Does Agglomeration Affect Exports? Evidence From Italian Local Labour Markets', *Tijdschrift voor Economische en Sociale Geografie*, **108**(5): 554–570.
- Casillas, J. C., A. M. Moreno and F. J. Acedo (2012), 'Path Dependence View of Export Behaviour: A Relationship Between Static Patterns and Dynamic Configurations', *International Business Review*, **21**(3): 465–479.
- Cavalieri, M., C. Guccio, D. Lisi and I. Rizzo (2020), 'Does Institutional Quality Matter for Infrastructure Provision? A Non-Parametric Analysis for Italian Municipalities', *Italian Economic Journal*, **6**(3): 521–562.

- Charron, N., L. Dijkstra and V. Lapuente (2014), 'Regional Governance Matters: Quality of Government Within European Union Member States', *Regional Studies*, **48**(1): 68–90.
- Ciriaci, D. and D. Palma (2008), 'The Role of Knowledge-Based Supply Specialisation for Competitiveness: A Spatial Econometric Approach', *Papers in Regional Science*, **87**(3): 453–475.
- Coniglio, N. D., R. Lagravinese and D. Vurchio (2016), 'Production Sophisticatedness and Growth: Evidence From Italian Provinces Before and During the Crisis, 1997–2013', *Cambridge Journal of Regions, Economy and Society*, **9**(2): 423–442.
- Conti, G., A. Lo Turco and D. Maggioni (2010), 'Exporters in Services: New Evidence From Italian Firms', *Applied Economics Quarterly*, **56**(1): 73–98.
- Daniele, V. and U. Marani (2011), 'Organized Crime, the Quality of Local Institutions and FDI in Italy: A Panel Data Analysis', *European Journal of Political Economy*, **27**(1): 132–142.
- Dauth, W. and J. Suedekum (2016), 'Globalization and Local Profiles of Economic Growth and Industrial Change', *Journal of Economic Geography*, **16**(5): 1007–1034.
- D'Ingiullo, D. and V. Evangelista (2020), 'Institutional Quality and Innovation Performance: Evidence From Italy', *Regional Studies*, **54**(12): 1724–1736.
- Dollar, D. and A. Kraay (2003), 'Institutions, Trade, and Growth', *Journal of Monetary Economics*, **50**(1): 133–162.
- Eickelpasch, A. and A. Vogel (2011), 'Determinants of the Export Behaviour of German Business Services Companies', *The Service Industries Journal*, **31**(4): 513–526.
- Elhorst, P., G. Piras and G. Arbia (2010), 'Growth and Convergence in A Multiregional Model with Space–Time Dynamics', *Geographical Analysis*, **42**(3): 338–355.
- Eurostat (2020), 'European harmonised Labour Market Areas – Methodology on functional geographies with potential, 2020 Edition', Statistical Working Paper, Office of the European Union, Luxembourg.
- Giannola, A., C. Petraglia and D. Scalera (2016), 'Net Fiscal Flows and Interregional Redistribution in Italy: A Long-Run Perspective (1951–2010)', *Structural Change and Economic Dynamics*, **39**: 1–16.
- Głowacki, K., C. A. Hartwell, K. Karunska, J. Kurczewski, E. Botsch, T. Göhring and W. Priesmeyer-Tkocz (2021), 'The Rule of Law and its Social Reception as Determinants of Economic Development: A Comparative Analysis of Germany and Poland', *Law and Development Review*, **14**(2): 359–400.
- Granato, N., A. Haas, S. Hamann and A. Niebuhr (2015), 'The Impact of Skill-Specific Migration on Regional Unemployment Disparities in Germany', *Journal of Regional Science*, **55**(4): 513–539.
- Grossman, G. M. and E. Helpman (1990), 'Trade, Innovation, and Growth', *The American Economic Review*, **80**(2): 86–91.
- Guerrieri, P. and S. Iammarino (2006), 'Euro-Commentary: The Rise of "Many Mezzogiorni"', *European Urban and Regional Studies*, **13**(2): 167–178.
- Haggard, S., A. MacIntyre and L. Tiede (2008), 'The Rule of Law and Economic Development', *Annual Review Political Science*, **11**: 205–234.
- Hansen, L. P. (1982), 'Large Sample Properties of Generalized Method of Moments estimators', *Econometrica: Journal of the Econometric Society*, **50**(4): 1029–1054.
- Holmlund, M., S. Kock and V. Vanyushyn (2007), 'Small and Medium-Sized Enterprises' Internationalization and the Influence of Importing on Exporting', *International Small Business Journal*, **25**(5): 459–477.
- Huyseune, M. (2003), 'Institutions and Their Impact on Social Capital and Civic Culture: The Case of Italy', in M. Hooghe and D. Stolle (eds), *Generating Social Capital*, New York: Palgrave Macmillan, pp. 211–230.
- Kaufmann, D., A. Kraay and M. Mastruzzi (2011), 'The Worldwide Governance Indicators: Methodology and Analytical Issues', *Hague Journal on the Rule of Law*, **3**(2): 220–246.
- Lasagni, A. (2011), 'Agglomeration Economies and Employment Growth: New Evidence From the Information Technology Sector in Italy', *Growth and Change*, **42**(2): 159–178.
- Lasagni, A., A. Nifo and G. Vecchione (2015), 'Firm Productivity and Institutional Quality: Evidence From Italian industry', *Journal of Regional Science*, **55**(5): 774–800.
- Levchenko, A. A. (2007), 'Institutional Quality and International Trade', *The Review of Economic Studies*, **74**(3): 791–819.
- Lo Turco, A. and D. Maggioni (2017), "Glocal" Ties: Banking Development and SEs' Export Entry', *Small Business Economics*, **48**(4): 999–1020.
- Malanima, P. and V. Zamagni (2010), '150 Years of the Italian Economy, 1861–2010', *Journal of Modern Italian Studies*, **15**(1): 1–20.
- Márquez-Ramos, L. (2016), 'The Role of Institutional Environment in International Trade: The Case of Spanish Regions', *REGION – Journal of The European Regional Science Association*, **3**(2): 125–140.
- Méon, P. G. and K. Sekkat (2008), 'Institutional Quality and Trade: Which Institutions? Which Trade?', *Economic Inquiry*, **46**(2): 227–240.
- Nickell, S. (1981), 'Biases in Dynamic Models with Fixed effects', *Econometrica: Journal of the Econometric Society*, **49**(6): 1417–1426.
- Nifo, A. and G. Vecchione (2014), 'Do Institutions Play A Role in Skilled Migration? The Case of Italy', *Regional Studies*, **48**(10): 1628–1649.

- Nifo, A., D. Scalera and G. Vecchione (2017), 'The Rule of Law and Educational Choices: Evidence From Italian Regions', *Regional Studies*, **51**(7): 1048–1062.
- North, D. C. (1991), 'Institutions', *Journal of Economic Perspectives*, **5**(1): 97–112.
- Nunn, N. (2007), 'Relationship-Specificity, Incomplete Contracts, and the Pattern of Trade', *The Quarterly Journal of Economics*, **122**(2): 569–600.
- O'Brien, P. (2013), 'Policy implementation in Italy: Legislation, public administration and the Rule of Law', *OECD Economics Department WP*, No. 1064.
- Panzer, D. and P. Postiglione (2022), 'The Impact of Regional Inequality on Economic Growth: A Spatial Econometric Approach', *Regional Studies*, **56**(5): 687–702.
- Rey, S. J. and B. D. Montouri (1999), 'US regional Income Convergence: A Spatial Econometric Perspective', *Regional Studies*, **33**(2): 143–156.
- Rodríguez-Pose, A. (2013), 'Do Institutions Matter for Regional Development?', *Regional Studies*, **47**(7): 1034–1047.
- Rodríguez-Pose, A. and M. Di Cataldo (2015), 'Quality of Government and Innovative Performance in the Regions of Europe', *Journal of Economic Geography*, **15**(4): 673–706.
- Rodríguez-Pose, A. and M. Zhang (2019), 'Government Institutions and the Dynamics of Urban Growth in China', *Journal of Regional Science*, **59**(4): 633–668.
- Rodrik, D., A. Subramanian and F. Trebbi (2004), 'Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development', *Journal of Economic Growth*, **9**(2): 131–165.
- Roodman, D. (2009), 'A Note on the Theme of Too Many Instruments', *Oxford Bulletin of Economics and Statistics*, **71**(1): 135–158.
- Roper, S., J. H. Love and D. A. Higon (2006), 'The Determinants of Export Performance: Evidence for Manufacturing Plants in Ireland and Northern Ireland', *Scottish Journal of Political Economy*, **53**(5): 586–615.
- Rungi, A. and F. Biancalani (2019), 'Heterogeneous Firms and the North–South Divide in Italy', *Italian Economic Journal*, **5**(3): 325–347.
- Rus, A. and H. Iglič (2005), 'Trust, Governance and Performance: The Role of Institutional and Interpersonal Trust in SME Development', *International Sociology*, **20**(3): 371–391.
- Sarra, A., C. Di Berardino and D. Quaglione (2019), 'Deindustrialization and the Technological Intensity of Manufacturing Subsystems in the European Union', *Economia Politica*, **36**(1): 205–243.
- Shin, M. E., J. Agnew, S. Breau and P. Richardson (2006), 'Place and the Geography of Italian Export Performance', *European Urban and Regional Studies*, **13**(3): 195–208.
- Sjöholm, F. (2003), 'Which Indonesian Firms Export? The Importance of Foreign Networks', *Papers in Regional Science*, **82**(3): 333–350.
- Stabler, J. C. (1970), 'Exports and Evolution: The Process of Regional change', in D. McKee, R. Dean and W. Leahy (eds), *Regional Economics: Theory and Practice*, New York: The Free Press, pp. 49–64.
- Sterlacchini, A. (2001), 'The Determinants of Export Performance: A Firm-Level Study of Italian Manufacturing', *Weltwirtschaftliches Archiv*, **137**(3): 450–472.
- Ungaro, A. R. (2016), 'Italy in the Mediterranean: Commercial Challenges, Changing Infrastructure, and new Maritime traffic', in A. Marrone and M. Nones (eds), *Italy and Security in the Mediterranean* (Vol. **26**), Rome: Edizioni Nuova Cultura, pp. 25–45.
- Van Beveren, I. and H. Vandenbussche (2010), 'Product and Process Innovation and Firms' Decision to Export', *Journal of Economic Policy Reform*, **13**(1): 3–24.
- Yu, S., S. Beugelsdijk and J. de Haan (2015), 'Trade, Trust and the Rule of Law', *European Journal of Political Economy*, **37**: 102–115.
- Yu, J., R. De Jong and L. F. Lee (2008), 'Quasi-maximum Likelihood Estimators for Spatial Dynamic Panel Data with Fixed Effects When Both n and T are large', *Journal of Econometrics*, **146**(1): 118–134.