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BRINGING PUTNAM TO THE EUROPEAN REGIONS
ON THE RELEVANCE OF SOCIAL CAPITAL FOR ECONOMIC GROWTH

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Abstract

One of the most influential contributions to the study of political culture of the 1990s was Robert D. Putnam's book on the positive impact that interpersonal trust supposedly has on economic welfare and the effectiveness of political institutions in Italy. *Making Democracy Work* showed in bivariate correlations that progress depends largely on the social capital manifest in the Italian regions. We evaluate this hypothesis in a wider sample of regions by analysing quantitatively the role that political culture has on economic growth in the regions of the European Union (EU). We first develop a neoclassical growth model and incorporate political culture variables into this framework. Our cross-sectional regression results cast some doubts on the generalizability of Putnam's bold claims. The analysis particularly shows, in accordance with standard models of economic growth, that economic rather than cultural factors are the most forceful determinants of growth in the European regions. Only one dimension of political culture, the intensity of social communication, has the expected positive impact.

When Robert D. Putnam published *Making Democracy Work* in 1993, commentators immediately heralded this book as a major breakthrough. *The Economist* even went as far as ranking this 'great work of social science ... alongside de Tocqueville, Pareto, and Weber'.[1] The academic discussion that the volume incited was equally intensive, but, by contrast, much more prosaic. While Putnam's work certainly contributed to the revival of political culture as an important theoretical concept, some critics questioned the logic of his broad generalizations or doubted the reliability of some of the chosen indicators (e.g. Goldberg, 1996; Levi, 1996; Maraffi, 1994; Tarrow, 1996; Whiteley, 1997; Jackman and Miller, 1998). In this article, we take issue with one of Putnam's central hypotheses and test whether a distinctive and well developed political culture furthers economic growth.

Making Democracy Work examines the relationship between civic traditions and economic development in a comparison of the Italian regions. Putnam (1993: 152) describes the bivariate results he obtained with his collaborators Robert Leonardi and Raffaella Y. Nanetti as 'powerful – almost mesmerizing' and concludes:

> A region's chances of achieving socioeconomic development during this century have depended less on its initial socioeconomic endowments than on its civic endowments. [The] contemporary correlation between civics and economics reflects primarily the impact of civics on economics, not the reverse (Putnam, 1993: 157).

In Putnam's view, it is largely a region's reliance on horizontal social networks that is conducive to economic growth. Hence, if individuals are able to communicate and cooperate freely in non-hierarchical associations, they start to trust each other and thereby strengthen the social capital of their society.

Although Putnam's work contributed to the renaissance of political sociology, no conclusive judgement is yet in sight on whether or not the envisaged nexus between culture and economic growth really exists. One reason for this stalemate is that, to some extent, researchers are using different research designs and rely, in contrast to Putnam, more often on the national state rather than the individual region as a unit of analysis. Further, examinations differ with respect to the control variables, temporal domain and the definition of culture.

It does not come as a surprise therefore that empirical research has brought about very different results so far. Whiteley (1998: 17; see also Whiteley, 1997), for instance, shows in a pooled cross-section that the impact of social capital on growth is ‘at least as strong as the influence of human capital or education’ and a variable measuring the influence of convergence between poor and rich states. Commenting upon the studies by Granato et al. (1996a, 1996b) and Swank (1996), Jackman and Miller (1996a, 1996b; 1998), conversely, are much more sceptical and stress the need for examinations that at least try to account for the mediating influence that institutions exert on human behaviour.

While relying as closely as possible on Putnam’s definitions and research design, we extend the framework of analysis to the regions of the EU. Our statistical analysis strongly suggests that the effect of a series of variables measuring different facets of political culture on economic growth is ambiguous. While strong communicative ties within a regional society turn out to be positively related to growth, ‘trust’ seems to have a negative impact on regional economic performance. Moreover, post-materialist values reduce growth rates while materialist values improve economic performance.

The remainder of the article is structured as follows. We shall derive the hypotheses after a brief review of the literature on the nexus between political culture and economic growth. Next, we introduce our research design, operationalize the theoretical concepts and present our data sources. We conclude with a presentation and discussion of the statistical results.

Theoretical overview and derivation of hypotheses

The concept of political culture has played a central role in the social sciences at least since Weber’s ([1921] 1972) classic treatise on the role that Calvinism played in economic growth. Yet the hypothesis that the success of a society depends not only on its incentive structure but also on a broad set of cultural factors remained largely unexplored. This lamentable situation only changed substantially with the publication of Robert D. Putnam’s (1993) evaluation of the impact that civic traditions have on the economic performance of Italian regions. *Making Democracy Work* relied at least implicitly on earlier work, especially Banfield’s (1958) classic exploration of the cultural limits to growth in the Mezzogiorno. Putnam’s treatment of cultural factors, by contrast, departed significantly from the concepts used in earlier studies. He particularly stated that one specific facet of political culture (namely the social capital that a society accumulates through trust, norms, and networks) plays a crucial role.[2] In his view, these distinctive features of a social entity can improve the efficiency of a society by helping to overcome collective action problems. He illustrated this effect through the example of a rural community in which mutual trust allows ‘each farmer to get his work done with less physical capital in the form of tools and equipment’ (Putnam, 1993: 167).

Putnam’s empirical finding echoes the central tenet of the literature on social capital. Both Bourdieu (1983) and Coleman (1990), for instance, expect that social capital, once established, facilitates interaction. If one group member trusts another individual, regardless of the expectation that this personal ‘investment’ will be reciprocated at some point, the human capital stock of a society grows. According to Faist (1995), social capital is ultimately the network one is bound into.

Putnam further contended that only horizontal networks have these beneficial consequences, assuming that vertical information transmission is comparatively unreliable and that in an authoritarian structure sanctioning upwards is unlikely. In his view, ‘Only a bold or foolhardy subordinate, lacking ties of solidarity with peers, would seek to punish a superior’ (Putnam 1993: 174). This observation is the base for the hypothesis that hierarchically structured organizations such as the Church and the Mafia are conducive to bad government. Since the influence of these organizations differs regionally in Italy, successful forms of government are more likely to emerge in those parts of Italy where the horizontal networks are strong. The regions of Tuscany and Veneto rather than the Mezzogiorno are supposedly blessed with governments that help stimulate the economy.

Drawing a line from a society’s network structure to its economic growth rates, Putnam and his collaborators traced the economic gap between northern and southern Italy back to the different civic traditions that had their origin in the 11th century. Putnam rejects the possibility of an inverse causal arrow and writes: ‘The civic regions did not begin wealthier, and they have not always been wealthier, but so far as we can tell, they have remained steadfastly more civic since the eleventh century’ (1993: 153). Simple bivariate correlations between civic traditions and three indicators of socioeconomic development by and large confirm this hypothesis.[3] In sum, Putnam conceives of social capital as an exogenous facet of political culture and believes that regions with a high level of social capital are conducive to economic growth. This is in contrast to Coleman (1988) who modelled social capital endogenously (see Jackman and Miller, 1998).

While helping to reinvigorate the study of political culture, Putnam’s equally simple, bold, and elegant explanation received much attention and criticism.[4] Boix and Posner (1998), for instance, criticise it on the grounds that social capital just as any other form of capital can be produced as well as destroyed within a short period of time. In their view, it is implausible that certain levels of social capital survive 600 years of history. Interestingly, some of Putnam’s follow-up articles argue that social capital in the United States has been destroyed in decades rather than in centuries. The deplorable trend has in his eyes led to the development of a society which is ‘bowling alone’. Laitin (1995) attacks the big bang character of Putnam’s account while Goldberg (1996) qualifies it as ‘teleological’. Similarly, some Italian scholars who reviewed the book, most notably Maraffi (1994), contend that *Making Democracy Work* overestimates the impact that the Italian dukes supposedly had on the course of history. Sabetti (1996) points out with reference to Cattaneo (1957) that Putnam did not discuss some classic Italian explanations of the crisis in the Mezzogiorno. Goldberg (1996) also shows that some of the tests lead to less straightforward results than claimed in *Making Democracy Work*; a result that is strongly echoed in the evaluation by Jackman and Miller (1996a). Be that as it may, Putnam contends that the trend continues to be influential into the present period, stating that ‘Over the past two decades since the birth of the regional governments, civic regions have grown faster than regions with fewer associations and more hierarchy’ (Putnam 1993: 176).

Unsurprisingly, this strong conclusion awoke the research interest of a considerable number of comparativists. Table 1 summarizes the most important studies that have been written on the relationship between culture and growth during the last few years.

While Putnam’s analysis remained at a purely bivariate level, most researchers immediately moved to multivariate research designs, systematically incorporating the insights from neo-classic growth theory and occasionally relying on pooled cross-sections. However, all prominent studies rely on the national state rather than the region as the basic unit of analysis.[5] Paul Whiteley (1997; 1998), for instance, shows in a comparison of 34 countries over a period of 22 years that a neo-classical model of economic growth gains dramatically from the incorporation of cultural variables. High levels of social capital promote growth, and this is regardless of the economic structure or even the degree of democracy that characterizes the political system. Furthermore, cultural variables are just as powerful predictors as education or human capital, variables that are typically used in the empirical tests of economic growth theory.

The insights that can be gained from the exchange between Granato et al. (1996a; 1996b), Jackman and Miller (1996a; 1996b) and Swank (1996) are less straightforward. The authors of these articles all rely on the national state as a unit of analysis and employ cross-sections to estimate the impact of cultural factors on economic growth. While Granato et al. (1996a; 1996b) believe in the superiority of refined models of economic growth, Swank (1996) stresses the importance of different cultural factors to those favoured by the research group centred around Ronald Inglehart. In Swank’s view, corporatist and Confucianist values drive economic growth. According to Jackman and Miller (1996a: 635), culture does not have systematic effects on growth. They conclude that ‘further attempts to refine and test the case of political culture along the lines we have addressed ... are unlikely to be productive” (1996a: 654).[6]

This position is based on an institutional research design which proves more fruitful than culturalist explanations in the macroquantitative tests. Their particular criticism is that the conclusion of the other studies relies heavily on the incorporation of dummy variables. Granato et al.

Table 1 Summary of statistical studies of the culture–growth relationship

Author(s)	Temporal domain and unit of analysis	Estimation techniques	Control variables	Main findings
Putnam et al. (1993)	11th century to the early 1990s	Bivariate correlations (19th and 20th century only)	None	High levels of civic culture promote growth
Whiteley (1997; 1998)	1970–1992 34 countries	Panel OLS regression	Education, convergence, democracy	Neo-classical models that incorporate cultural variables are superior to traditional models of economic growth
Granato et al. (1996a; 1996b)	25 countries Mean rate of growth 1960–1989	Cross-section OLS regressions	GDP per capita in 1960, education, investment, (post-) materialism	Models incorporating culture are more powerful than neo-classical models
Swank (1996)	25 countries Mean rate of growth 1960–1989	Cross-section OLS regression	Corporatism, Confucianism	Communitarian polities, a correlate of social capital, are an important prerequiste of growth
Jackman and Miller (1996a; 1996b)	25 countries Mean rate of growth 1960–1989	Cross-section OLS regression	Education invest-ment, colonialism	The right mix of institutions is the key variable promoting economic growth

(1996a; 1996b) control for the impact of certain Asian countries, while Swank (1996) employs two dummy variables to account for corporatist and Confucianist values.

The controversy over the relative impact of cultural factors on economic growth has thus not yet led to a clear result. One reason for this impasse might be that authors rely on different notions of culture or employ other temporal and spatial domains than Putnam and his collaborators. A further (and much less resolvable) issue is the different conceptualization of social capital: while Putnam and Inglehart perceive it as an almost given structural attribute of a society, rationalists, such as Coleman or Jackman and Miller, see it rather as a consequence of other features of a society.

This study contributes to this debate in a multivariate evaluation of Putnam's original claim. In contrast to most other studies, we rely on the same unit of analysis as Putnam. Our comparison of the regions of the EU has the particular advantage that economic disparities within the countries do not confound our results. A further difference between our study and the literature is that we use a neo-classical model of economic growth (Solow, 1956; Swan, 1956) as a starting point. We will particularly control for growth of the regional capital stock and economic catch-up (Barro and Sala-i-Martin, 1992). The notion of convergence can be traced back to Gerschenkron (1962), who maintained that growth prospects increase with 'economic backwardness'. All other influences being equal, poor countries tend to grow faster. We also control for national economic conditions such as the government's share of GDP, the degree of economic openness and national investment.

Most economic studies of growth patterns in the European regions have confirmed the hypotheses which can be derived from neo-classical growth theory and confirm the notion that European regions form a convergence club. Controlling for national conditions, Barro and Sala-i-Martin (1995), for instance, show that unconditional beta-convergence within European regions is about 2 percent and tends to be stable over time. This means that 50 percent of the initial income gap will vanish in 35 years and 90 percent in 115 years. Armstrong (1995), Barro (1997) and others also support the hypothesis that there is a trend towards economic convergence in the EU. Neven and Gouyette (1995) contend that the Internal Market Programme somewhat slowed down the process of catching up. Armstrong (1995) confirms that the trend was more pronounced in the 1960s.

However, new growth theory has shown that it is not exclusively economic factors that determine growth (Aghion and Howitt, 1998), and accordingly it incorporates a technological component into the production function. In the opinion of Hansson and Henrekson (1997) a sufficient degree of social capability is a necessary condition for catching-up, because a poorer country must be sufficiently sophisticated to be able to assimilate more advanced technology from abroad. This influential literature also shows that international economic openness, as expressed through the reduction of capital controls, tariffs and non-tariff barriers to trade is an important prerequisite of the international diffusion of technology and knowledge (Grossman and Helpman, 1991: 238).

As we have argued above, from an empirical perspective it remains unclear whether political culture and social capital should be considered standard determinants of economic growth alongside economic and institutional variables, as Putnam and his followers have tried to prove since the publication of *Making Democracy Work*. In order to test Putnam's hypothesis we summarize the different influences on economic growth in two general hypotheses. We start by generalizing baseline hypotheses that reflect the insights of mainstream economic literature on the determinants of economic growth. Hypothesis 3, by contrast, states that different levels of political culture can be responsible for different levels of economic growth.

H1: The lower the initial level of per capita income, and the higher the level of capital formation in a region of the EU, the faster it grows economically.
H2: The higher the level of public investment and the more open a region is to cross-border flows of capital, technology and ideas, the faster it grows economically.
H3: The more advanced the political culture of a region in the EU the faster it grows economically.

We will test the third hypothesis by using different measures of political culture. The research design is outlined below.

Research design

Our analysis is based on a cross-sectoral evaluation of the determinants of growth in the regions of the EU. We will use a standard OLS regression model to test the political culture hypothesis that Putnam and his collaborators forcefully advanced in *Making Democracy Work*. Since political culture is a multidimensional concept, we will lay on different variables to measure its possible impact. We include measures of the political communication structure, the level of trust, and of the prevalence of traditional educational attitudes in a region. Especially the first and the second indicator are measures of the social capital endowment of a region and reflect the diverse forms that social networks can take.

Our most encompassing model to test the political culture hypothesis looks as follows:

$$\partial GDPC_{i,80\text{–}96} = \alpha + \beta_1 \ln GDPC_{i,80} + \beta_2 \partial CAP_{i,80\text{–}96} + \beta_3 GOV_{i,80\text{–}92} + \beta_4 OPEN_{i,80\text{–}92} + \sum\gamma CULTURE_{i,t} + \varepsilon$$

where ∂GDPC is the change in GDP per capita from time t_0 to t_1, lnGDPC is the natural log of per capita income in the region in 1980, ∂CAP is the capital formation on the regional level, GOV is the share of government consumption, OPEN is openness as measured by Penn World Tables, and $\sum$CULTURE adds up a variety of measures of social capital.

We will rely on the NUTS II categorization (*Nomenclature des Unités Territoriales Statistiques-II*) which the European Commission has developed to identify the regions within the EU.[7] This categorization is unproblematic for most federal states as the regions correspond to the subterritorial states such as the German *Länder*, the *Comunidad Autónomas* in Spain, the Italian *Regione*, or the *Régions* in Belgium. The regional policy of the EU has, however, also led to the distinction between similarly sized regions in some of the unitary states. Quite often, the demarcations are thus not completely arbitrary, but reflect the differentiation between distinctive cultural and economic entities that have continued to exist despite an eventual centralization of the political system and the ensuing lack of autonomy at the regional level.

Since we do not possess longitudinal data on the development of social capital in the regions, we will employ a cross-sectional regression design to test our hypotheses. We will assess the impact of the different predictors on the average yearly growth rate that 58 regions of the EU experienced in the period from 1980 to 1996. The regions were found in accordance with one of the NUTS II categorizations of the European Commission, which distinguished in the period under examination 73 regions of this type. Unfortunately, Eurostat does not report regional growth and investment rates for Austria, Denmark, Ireland, Portugal, and Sweden. Moreover, we eliminated East German Länder from the sample because these regions only became part of the Western political system in the early 1990s and exhibit exceptional growth patterns.

Our examination is based on standard data sources. To gather data on the different facets of political culture, we relied on the Eurobarometer survey 44.0 (EB_44) which was carried out between October and November 1995 (Zentralarchiv, 1996). We created average values per region for four indicators of political culture. First, DISCUSS was created calculating the regional means of EB_44 variable V34, which asks: 'When you get together with your friends, would you say you discuss political matters frequently, occasionally, or never'. This indicator takes values between 1 and 3 with a decreasing intensity of political discussions. However, we have recoded this variable so that values vary between 0 and 2 with an increasing intensity of political discussion. Hence, we expect the estimated coefficient of our recoded variable to be *positive*.

The second variable of interest, TRUST, is based on EB_44 variables V298-V312: 'Now I would like to ask you about how much trust you have in people from various countries'. We used only those answers that give information about trust in people from the country in which the interviewed person lives. Again, we have recoded the original values of the variable, so that 0 means 'tend not to trust' and 1 stands for 'tend to trust'. We therefore expect a positive sign, that is the more people trust their compatriots, the higher the growth rates.[8]

Finally, we constructed two variables that explore societal opinion about the main role of school (UB_44: V344-V356). 'Prepare children for future life', 'prepare children for job' and 'learn to work together' indicate an orientation towards economic well-being, that is materialist values (ECONVAL); while 'teach culture', 'develop one's personality, creativity, abilities', 'develop one's interest and curiosity', 'teach values', and 'teach ethics' describe an orientation towards cultural values (CULVAL). A positive sign of the coefficient indicates a positive impact of materialist values on growth. We expect the estimated coefficients to differ significantly and predict that the coefficient of ECONVAL is larger than the coefficient of CULVAL, the latter perhaps even showing a negative sign. The operationalization of these two variables reflects the common distinction in political sociology to differentiate between political cultures with neo-liberal or postmaterial orientation (Inglehart, 1988; 1990; 1997).

In addition, OPEN measures the average share that exports had in the national-level GDP during the examination period, GOV is average government consumption of GDP. All national-level data are from Penn World Tables Mark 5.6.

The impact of social capital and political culture

This section contains the results that we obtained in our tests of the Putnam hypothesis on the impact of political culture on economic growth. We start with some descriptive findings and show in Figure 1 that average growth rates in the sample of regions vary significantly and are roughly normally distributed.

Figure 1 clearly depicts considerable differences in regional growth rates. The highest growth rates can be found in the poorer European regions, especially in Portugal, Ireland and southern Italy, while Swedish, Dutch and the wealthier British regions have experienced the slowest growth. This variance of the dependent variable is matched by high variation on the independent variables. Discursive practices are most common in the Netherlands and least so in Germany. However, Germans seem to be most trustful, whereas Italians are the least. In addition, materialist dispositions prevail in Germany, Ireland and Northern Ireland,

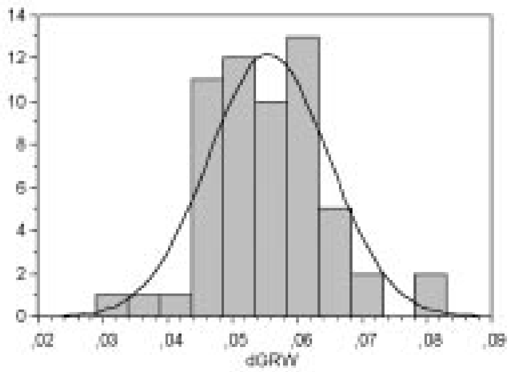

Figure 1 Average growth rates in a cross-section of regions (1980–96)

while Italians deem soft values most important.

We report in Table 2 whether these influences have a statistically significant influence. The macroquantitative tests demonstrate on the one hand that adding different measures of social capital to the baseline model improves the fit of the model significantly. On the other hand, while the estimated coefficients of the standard growth model variables all have the expected sign, the variables measuring social capital do not. This is a first indication that the findings generated in the Italian context do not necessarily find confirmation if we widen the scope of analysis. The contradictory results should, on the contrary, warn us against simplified interpretation of the possible nexus between culture and welfare.

The four models M1 to M4 differ in two dimensions: Models M1 and M2 include a proxy for the existence of cultural values, models M3 and M4 replace this variable by a measure for economic values. In addition, the models M2 and M4 control for the impact of the national economic setting on the region's economic performance, while M1 and M3 ignore the potential effect. Note, that though the national economy affects regional growth rates, the estimated coefficients of the variables of our

Table 2 Multivariate regression results

	M1	M2	M3	M4
Intercept	0.1666	0.1655	0.1570	0.1641
	(8.203)****	(8.144)****	(7.610)****	(8.0876)****
lnGDPC t1	–0.0257	–0.0282	–0.0253	–0.0305
	(–4.109)****	(–4.447)****	(–3.818)****	(–4.594)****
dCAPITAL	0.1329	0.1450	0.0769	0.1000
	(5.097)****	(5.390)****	(3.348)***	(4.083)****
GOV		0.0007		0.0008
		(1.626)		(2.0158)**
OPEN		0.0001		0.0001
		(1.721)*		(2.529)**
DISCUSS	0.0235	0.0267	0.0159	0.0218
	(3.250)***	(3.666)****	(2.239)**	(3.105)***
TRUST	–0.0375	–0.0453	–0.0284	–0.0408
	(–3.060)***	(–3.519)****	(–2.336)**	(–3.219)***
ECONVAL			0.0300	0.0358
			(1.583)	(1.967)*
CULVAL	–0.1260	–0.1010		
	(–2.624)**	(-2.077)**		
N	58	58	58	58
adj. R^2	.561	.578	.526	.575
RMS-residual	0.006	0.006	0.006	0.006
F-Stat	15.562****	12.166****	13.630****	12.008****

Notes: dependent variable: average growth rate of per capita income.
t-statistics (two-tailed test) in parentheses.
* significant at the 10% level, ** significant at the 5% level, *** significant at the 1% level, **** significant at the 0.1% level.

main interest remain fairly robust to the inclusion of this variable.

The estimated coefficients of the convergence variable $lnGDPC_{t-1}$ reported in Table 2 turn out to be highly significant in all models, thereby confirming once more the relevance of convergence across countries.[9] Physical capital accumulation equally correlates with growth in a positive way.[10] DISCUSS is positively and significantly correlated with growth; TRUST, however, turns out to have a negative impact on economic performance. This is certainly surprising. In this way, the results clearly show the superiority of economic factors over cultural variables in the explanation of growth. In a second step we test the robustness of our estimates by adding basic national macro-economic variables to the growth equation (M2 and M4), thereby estimating the impact of the national economy on regional growth rates.

The results show a clear impact of the state on regional economic activities. This holds true for economic openness and to a lesser degree also for government consumption. Both variables turn out to be positively related to growth on the regional level. The estimated coefficients of the culture variables vary little and all variables remain significantly related to growth. The results that we obtained for the cultural factors are, by and large, significant. However, only DISCUSS has the predicted positive impact on growth. TRUST, perhaps the most important element of Putnam's argument, is negatively related to growth. Open to further research and discussion is the fact that while an orientation towards economic well-being (ECONVAL) is positively correlated with economic performance, the opposite holds true for orientation towards cultural values (CULVAL).

Hence, on the one hand we may conclude that the level of communication exerts the influence predicted by Putnam. The results indicate that regions where citizens talk more often with friends about politics and where the horizontal social networks seem well developed experienced growth rates exceeding the average of the less politicized entities. On the other hand, trust in compatriots does not seem to support economic performance. Instead, the more people trust, the lower (ceteris paribus) the growth rates of the regional economy. This result is certainly surprising for all those scholars who have studied the impact of this variable on a society throughout the past few years. It is also possible that the negative result is a consequence of our use of aggregated survey data. Future studies should explore whether or not alternative measures of trust could change the sign. A particularly fruitful avenue of research could be the incorporation of behavioural variables such as interest rate spreads to inflation or to the London Inter-Bank Offered Rate (LIBOR).

The table also shows that the export orientation of the national economy is one key to prosperity if we control for other influences, and government consumption stimulates growth. The latter result, however, should be interpreted with caution, because government spending also tends to reduce private investment via taxation.

Our estimates confirm that standard neo-classical factors have by far the largest impact on economic performance. One standard deviation rise in the growth rate of the capital stock increases growth rate by about 0.5 percent. Cultural factors, however, seem to be as important as, for instance, economic openness. Openness and discursive practices both increase GDP per capita by approximately 0.3 percent (again applying standard deviations as denominator).

Conclusion

This paper has addressed a puzzle that has preoccupied political economists at least since Weber's (1972 [1921]) pathbreaking study on the impact of Calvinism on economic growth. We have particularly evaluated Putnam's (1993) claim that different civic traditions have contributed to the uneven political and economic development in Italy.

Our results of a macroquantitative model of economic growth in the regions of the EU show that the impact of cultural facets on economic growth is ambiguous and cast some doubts on the generalizability of Putnam's bold claims. This is especially true for the amount of trust that citizens develop in a region towards their compatriots. This indicator is an analytic cornerstone in *Making Democracy Work* and is supposed to further economic growth. Yet our analysis points out that this form of social capital is not conducive to the development of a region. On the contrary, it influences the expansion of the productive forces in a negative fashion. Only one dimension of political culture, the intensity of social communication, had the expected positive impact on economic growth.

The contradictory results remind us that the relationship between culture and growth is subtle, potentially conditional and not nearly as general as some communitarians would have us believe. To resolve the culture puzzle, future studies will have to address the extent to which the social capital structure depends on a region´s institutional setting, as Jackman and Miller (1998) suggest in a recent literature review. It will be particularly important to see how other political considerations influence a region´s growth rate.

Our results confirm the findings of the new growth models which show that a mixture of economic and political factors influence the growth rate in the European regions in a systematic fashion. We believe that cultural and institutional factors might be added to this list of explanatory factors in the future. This requires, however, that political scientists develop careful models which pay sufficient attention to the difficulties involved in disentangling ‘culture’ and ‘institutional structure’. Only models that move beyond monocausal explanations seem adequate in this context.

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Appendix 1 Cross correlation

	LnGDPt0	dCAP	DISCUSS	TRUST	ECONVAL	CULVAL	GOV	OPEN
lnGDPt0	1.00	–0.36	0.49	0.32	0.28	–0.34	0.24	0.30
dCAP	–0.36	1.00	-0.33	0.08	0.22	0.56	–0.38	–0.11
DISCUSS	0.49	–0.33	1.00	–0.18	0.12	0.09	–0.01	–0.13
TRUST	0.32	0.08	–0.18	1.00	0.19	–0.37	0.38	0.33
ECONVAL	0.28	0.22	0.12	0.19	1.00	–0.03	0.01	–0.06
CULVAL	–0.34	0.56	0.09	–0.37	–0.03	1.00	–0.44	–0.34
GOV	0.24	–0.38	–0.01	0.38	0.01	–0.44	1.00	–0.09
OPEN	0.30	–0.11	–0.13	0.33	–0.06	–0.34	–0.09	1.00

Notes

1 This quotation is taken from the cover of Putnam’s *Making Democracy Work*.

2 Coleman (1990: 304) believes that social capital changes the relation between individuals in a way that facilitates action. In his view, social capital enhances productive activity in much the same manner as physical capital and human capital do. A group whose members manifest trustworthiness and place exclusive trust in one another will, for example, be able to accomplish much more than a comparable group which lacks that trustworthiness and trust. Coleman attributes the concept to the writing of Loury (1977; 1981). For an overview see Haug (1997) and Jackman and Miller (1998).

3 It should be noted that these tests are restricted to development, since the second half of the 19th century. Putnam partly uses principal component analysis to build the indicators.

4 Putnam’s analysis particularly contributed to the growing interest in interpersonal trust. See for instance Braithwaite and Levy (1998) and Ostrom (1998) for reviews of the literature and further developments.

5 A partial exception is the study of Mudambi and Navarra (1999) on the influence of political culture on foreign direct investment. These authors treat ‘culture’, however, largely as a substitute for political ideology, showing that Italian regions with leftist leanings receive far less FDI than more conservative regions.

6 Jackman and Miller (1996a) also evaluate the hypothesis by Putnam that civic culture furthers institutional

performance. Their analysis reveals major problems in the construction of the institutional performance indicator.

7 The EU has divided each country into territorial units for administrative and statistical purposes. There exist three types of classifications (NUTS I, II, and III), with the first being the largest and the last being the smallest units by size. The categories do not necessarily correspond to national administrative units.

8 Putnam and his collaborators have also used other indicators to describe the political culture in the Italian regions. They found, for instance, that media usage is an important aspect in this context. Although the Eurobarometer contains some variables on the different sources of information, it was, however, impossible to create an indicator that reliably summarizes a region´s average source of information.

9 For a discussion of convergence in a growth theory context see Mankiw et al. (1992) and Barro and Sala-i-Martin (1995).

10 This correlation is a firmly established fact from the new empirical growth literature: see (among many others) Barro (1991); DeLong and Summers (1991); Levine and Renelt (1992) and Mankiw et al. (1992).

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