

Judit Kapás

Professor
Institute of Economics
Faculty of Economics and Business
University of Debrecen, Hungary
E-mail: judit.kapas@econ.unideb.hu

HOW CULTURAL VALUES AFFECT ECONOMIC GROWTH: A CRITICAL ASSESSMENT OF THE LITERATURE¹

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Abstract

Recently there has been a burgeoning empirical literature analysing how culture affects economic development. This field of research is currently developing further at the border between growth theory and institutional economics. This paper summarizes, and gives a detailed criticism of, this literature. Following the two major routes suggested by the critiques, the author proposes a possible path for further progress in the field.

Keywords: *culture, social capital, trust, economic growth*

1. INTRODUCTION

Although Adam Smith (1759) was the first to analyse how norms, beliefs, morality and culture affect economic development, an upsurge of interest in the role of culture has occurred only recently. Probably the most prominent contribution to the field which is not recent – besides Adam Smith's book –, is the influential work by Max Weber (1930). Weber used religiosity to express culture and argued that Protestantism played a crucial role in the development of capitalism. Following this line of research, nowadays some studies, such as Landes (2000), Sen (2002), Boettke (2001), or Greif (1994) argue that differences

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in culture matter for long-run development.² However, this theoretical-historical approach to the effects of culture on development is quite weak; the dominant branch is empirically oriented.

The quantitative analyses on the impact of culture have been made possible by the emergence of cross-cultural datasets such as (1) the World Values Survey (WVS) (Inglehart 1997), (2) the Hofstede dataset (Hofstede 1980, 2001); (3) the Schwartz Value Survey (SVS) (Schwartz 1994, 2006), and (4) the Global Leadership and Organizational Behavior Effectiveness Research Program (GLOBE) dataset (House et al. 2014). The aim of this paper is to summarize, and give a detailed criticism of, the empirical literature dealing with relationship between culture and growth³, and, on this basis, to propose a possible path for further progress in the field.

Up to the present time an extensive literature has developed which is diverse in terms of the measure of culture used in the analyses undertaken, their empirical strategies, and the samples of countries or regions they use. Due to this diversity, it is not easy to find a categorization criterion. What seems to be clear at first glance is that there is a line within this literature focusing on social capital (trust). Besides this, we will divide the literature into early and recent investigations, because these differ at least in one important respect: recent studies apply much more sophisticated econometrics.

The paper is organized as follows. In section 2 we will summarize the early literature, in section 3 the literature focusing on the growth-effect of social capital (trust), and in section 4 we will review the recently published literature. The next section will provide a structured criticism of the empirical literature on the impact of culture on economic growth. In section 6, based on this criticism, we will propose a possible path for further progress in the field.

2. THE EARLY LITERATURE

The number of papers using religiosity as a proxy for culture is relatively limited. One of the most influential papers is Barro and McCleary (2003), which examines the impact of *church attendance* and *religious beliefs* on economic growth. In their panel regression they use World Values Survey (WVS) data as well as two other reports on religion. They find that economic growth is positively related to the extent of religious beliefs, notably a belief in heaven and hell, but negatively to church attendance. To deal with the potential problem of

² "If we learn anything from the history of economic development, it is that culture makes almost all the difference. (Here Max Weber was right on.)" (Landes 2000:2).

³ Accordingly, we will not review those empirical studies in which the dependent variable in the empirical analysis is a variable different from a measure of economic performance. In this paper growth is understood in broad terms, since different authors use different measures in their empirical investigations: "Economic growth occurs whenever people take resources and rearrange them in ways that make them more valuable" (Romer 2008).

endogeneity, they also use an instrumental variables framework. McCleary and Barro (2006) basically reaffirm the same results; the only difference is that here the empirical strategy is a cross-country design.

Probably the most important early investigation is found in Hofstede (1980). The hypothesis behind the empirical analysis is that cultural differences may be the primary source for growth differences across countries. Here the dependent variable is the growth rates between 1960 and 1970, and the sample includes only high-income countries. Basically, the hypotheses are given empirical evidence: *individualism* is negatively, while *uncertainty avoidance* is positively associated with economic growth.

In Franke et al. (1991), the authors widen the above analysis in such a way that, in addition to Hofstede's cultural values, they include measures from the Chinese Values Survey (Hofstede and Bond 1988), as well. At the end of the day, the regression contains four Western and four Chinese values. On a sample of only 18 countries they regress these cultural variables on lagged growth rates for two periods, 1965-1980 and 1980-1987. The results indicate that more than half of the variance in growth rates can be explained by differences in cultural variables.

A line of the empirical literature on the effects of culture on growth has been developing within political science, relying to a large extent on Putnam (1993) and Inglehart (1990). While this literature, in general terms, also builds its empirical analyses on various economic theories, it suffers from certain shortcomings in econometrics. The best example of this type of paper is Jackman and Miller (1996). Here the concern is about the impact of the *political culture* on various macroeconomic measures. In order to proxy political culture the authors take Inglehart's (1990) six measures based on survey data. The empirical investigations explore the idea that the relationship between political culture and growth is very weak, if not in-existent, a conclusion that challenges Inglehart's (1990) findings.

One bias in Jackman and Miller (1996) may be that the sample consists only of the most advanced countries, and another that the model used in the empirical investigation is a reduced form version of the growth model; accordingly, the possibility that adequate control variables have been omitted cannot be ruled out (Swank 1996). From the viewpoint of model specification, Granato et al. (1996) can be considered an important improvement on Jackman and Miller (1996), leading to quite different results. Granato et al. (1996) constructs two measures of culture, namely, *achievement motivation* and *post-materialist values* (based on data from WVS), and includes them in a baseline endogenous growth model. The major finding is that both variables are significant predictors of economic growth, together with the traditional economic factors.

Edwards and Patterson (2009) extend the analysis of Granato et al. (1996) in several ways. First, they repeat the estimation of the same growth

regression for different periods of time and samples of countries. Their results cannot confirm those of Granato et al. (1996). Their possible answer to this inconsistent impact of culture across time and samples is that the essential meaning of culture has changed. Second, Edwards and Patterson (2009) deal with the problem of the possible endogeneity of culture, which was not the case in Granato et al. (2009). After instrumenting achievement motivation and post-materialism they find that achievement motivation is a significant explanator for long-term growth rates, but the other cultural variable is not. In sum, their results show that the links between culture and growth are not as clear as was found by Granato et al. (1996).

Besides the above paper, Swank (1996) is another study to highlight and refine the results of Granato et al. (1996). This theory-driven empirical analysis includes two new variables to express political culture, namely *Confucian statist* and *social corporatist systems*. Both are expected to matter for economic growth via two mechanisms. First of all, rent-seeking and free-riding behavior may be reduced in corporatist states, and in the case of the Confucian statist polities, there may be a direct pay-off related to industrial policies. Secondly, these two communitarian policies, through the promotion of consensus and concertation, may tend to produce political stability, which, in its turn, promotes economic growth. To test these hypotheses, Swank (1996) uses the growth model of Granato et al. (1996). First, he replicates their results for the sake of comparison, then he includes a dichotomous variable for Confucian statist and social corporatist systems. The communitarian polities model, in which he does not include Granato et al.'s (1996) two variables, proves to be superior on statistical grounds to that of Granato et al. (1996). The major finding, namely that the two communitarian polities have a positive significant impact on growth is robust to the variations in the sample composition.

3. THE SOCIAL CAPITAL (TRUST)-GROWTH LITERATURE

While early studies developed mainly outside economics, “the opening through which culture entered the economic discourse was the concept of trust” (Guiso et al 2006:29). In this literature trust is seen as a proxy for culture. The trust⁴-growth literature started with Putnam et al. (1993) which is the first study to investigate the economic effect of social capital, which “has opened a Pandora’s box of research” (Casey 2004:96) where trust is seen as the most important dimension of social capital⁵ (e.g., Fukuyama 1995). In their book Putnam et al. (1993) analyse Italian regions and argue that the critical factor in explaining

⁴ Interpersonal trust is associated with the confidence that a partner will not exploit the vulnerabilities of the other, that is, she will not behave in an opportunistic way. This is the meaning of trust as “generalized morality” (Tabellini 2008).

⁵ Putnam et al. (1993:167) defines social capital as those “features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating co-ordinated actions”.

differences in the economic performance of various Italian regions can be found in regional differences in social structure. The study finds that in regions with a horizontal social structure, based on trust and shared values, social capital is higher, and economic outcomes are greater.

This work has been followed up by numerous analyses⁶, of which Knack and Keefer (1997) is the most influential. Inspired by Putnam et al. (1993) the two scholars associate social capital with interpersonal *trust* and *civic cooperation*. To measure them, they take data from the WVS.⁷ Knack and Keefer (1997) investigates the effect of social capital on economic performance in a cross-country regression on a sample of 29 developed countries. First of all, they find that both cultural variables significantly affect economic growth⁸, but more importantly, when including an interaction term of trust and GDP per capita in the regression besides trust and civic cooperation, they arrive at some very interesting results which are in line with certain related economic theories. More specifically, they provide evidence that both trust and civic cooperation are stronger in countries with higher and more equal incomes, with institutions that restrain the predatory actions of chief executives, and with better-educated and ethnically homogeneous populations. Their results are robust to the use of alternative control variables. As another line of robustness checks, Knack and Keefer (1997) regresses trust on output per worker, physical and human capital per worker and total factor productivity. Trust is found to be significantly correlated with all these variables except for total factor productivity.

An advantage of the paper by Knack and Keefer (1997) is that it tries to explore the channel through which trust can affect economic growth. Due to various data constraints, the authors can only consider two possible channels: the impact of trust on the strength of property and contractual rights, and the impact of trust on the performance of the government. The results provide evidence that trust may improve the efficiency of the government and contract enforceability. Knack and Keefer (1997) is an important paper in the field, providing strong empirical evidence for the direct and indirect effects of trust on growth.

Zak and Knack (2001), in some respects, is an extension of Knack and Keefer (1997), by confirming its main findings, but at the same time, providing new insights, as well. The hypotheses Zak and Knack (2001) tests are derived from a theoretical model regarding trust. This is a model with investors and

⁶ Another work involving Putnam, namely Helliwell and Putnam (1995) is a further contribution to the follow-up literature. The authors find the same positive relationship between social capital and economic growth in the regions of Italy, but here they do not include generalized trust in their measure of social capital.

⁷ The question used in the WVS to assess the level of *trust* is: "Generally speaking, would you say that most people can be trusted, or that you can't be too careful with dealing with people?" Trust is measured as the percentage of respondents in each country that replied "most people can be trusted". To measure *civic cooperation*, they use several questions such as whether the individual feels justified in keeping money that he or she has found, or evades taxes if he or she has the chance.

⁸ According to the results, a 10 percentage point increase in trust is associated with an increase in growth of four-fifths of a percentage point (Knack and Keefer (1997:1260).

brokers, in which the investors are subject to moral hazard by the brokers. After formulating testable hypotheses from the model, Zak and Knack (2001) run cross-country growth regressions on a sample of 42 countries to test them. As in Knack and Keefer (1997), this paper measures trust with data from the WVS (answers to the same question). The results suggest that a one standard deviation (15 percentage points) increase in trust will lead to 1 percentage point increase in growth rates (Knack and Zak 2001:307). To control for the possible endogeneity of trust in the growth regression the authors run 2SLS regressions, using the Catholic, Muslim and Christian Orthodox share of the population as instruments. Here the results are robust to the choice of the human capital variable (which was not the case in Knack and Keefer 1997). They also use an interaction term of trust and per capita GDP, which allows them to prove the existence of the low-trust poverty trap. Similarly to Knack and Keefer (1997), Zak and Knack (2001) also analyses the determinants of trust, namely formal institutions and population heterogeneity. The most interesting results come from these investigations: much of the influence of formal institutions and population heterogeneity on growth occurs through their impact on trust. So, Zak and Knack (2001) are able to identify trust as a channel, and not only a factor on its own to induce growth.

The paper by Beugelsdijk et al. (2004) explicitly and extensively analyses the robustness of the results on the relationship between trust and economic growth derived by the above-mentioned two seminal papers (Knack and Keefer 1997, and Zak and Knack 2001). They provide robustness analyses along four dimensions. First, they focus on the statistical significance of the trust variable.⁹ Second, they explore the robustness of the results on trust in terms of effect size. Thirdly, they analyse the sensitivity of results by using different proxies for the variables that are always included in a Barro-type growth regression (e.g., initial income, human capital). Fourth, they change the sample of countries.¹⁰ The results reveal that Zak and Knack (2001) are very robust along the first two dimensions, which is not the case for Knack and Keefer (1997) which is robust only to a very limitedly extent. Beugelsdijk et al. (2004) also shows that the improvement in robustness is due to the inclusion of countries with relatively low scores of trust; accordingly, as they conclude, the empirical literature on trust and growth is mainly plagued by data constrains rather than the biases resulting from omitted variables.

Whiteley (2000) examines the relationship on a cross section of 34 countries for the period between 1970 and 1992. To measure social capital, he uses an index of three indicators from the WVS. These are questions about trusting members of one's own family, trusting fellow citizens, and trusting people in general. He obtains very similar results to those of the above studies: social capital has a positive significant effect on economic growth, with a size

⁹ In these investigations they change the set of conditioning variables in the regressions.

¹⁰ They start with the 29 countries of Knack and Keefer (1997), then gradually add the 12 countries with which Zak and Knack (2001) extends the analysis.

comparable to that of human capital and convergence. The results seem to be robust after various robustness checks are carried out.

Following Putnam et al. (1993), a few studies have examined whether social capital is a prerequisite for prosperity at the sub-national level. Schneider et al. (2000) is one example. This paper analyses how political culture and social capital affects growth on a wider sample of the regions of Europe between 1980 and 1996. To measure social capital the authors take data from Eurobarometer, and not the WVS. After running standard OLS regressions they find that strong doubts are raised regarding Putnam's hypothesis: they argue that Putnam et al. (1993) overstate the effect of social capital on the growth of Italian regions; the impact of culture on economic growth is marginal, at best. Their results warn us that the relationship between social capital and growth may be conditional.

Casey (2004) is the only study dealing with British regions. The author tries to comprise the "original" meaning of social capital by constructing an index from *civic engagement*, *trust* and *associations* based not only on WVS data, but British Social Attitudes data, as well. As a measure of economic performance, he uses a composite index, too. The statistical methods applied by Casey are not very sophisticated (including only correlations): the main finding is that the Putnam social capital index is robustly correlated with the economic performance index. Even the author admits that no causality is highlighted by his analysis and no economic policy can be based upon it.

Beugelsdijk and Van Schaik (2005a) is another paper looking at regional differences in Europe in the field of social capital-development. The main components of their social capital index are *trust* and *civic engagement*, the data for both are taken from European Values Studies for 1990, and by applying factor analysis one comprehensive measure is created for social capital. In their empirical investigations they relate this measure to economic development and regional economic growth in 54 western European regions in 7 countries. As a measure of economic performance, Beugelsdijk and Van Schaik (2005a) calculate regional growth differentials by relating the regional GDP per capita to the country mean.¹¹ They come to a very similar conclusion to that drawn by many others: after controlling for initial levels of GRP per capita, social capital is positively and significantly related to regional economic growth.

With the intention of answering the question of whether the findings of Putnam et al. (1993) on Italian regions can be generalized, the two authors mentioned above refine their investigations in another paper (Beugelsdijk and Van Schaik 2005b). Instead of constructing a composite index for social capital, here they use separate measures for its two dimensions: *generalized trust* and *associational activities*. They also renew the regression analysis, by modifying the specification, but more importantly, by providing an extensive set of

¹¹ As they argue, an advantage of using relative data versus non-relative data is the direct control for national growth rates that might bias regional growth rates.

robustness checks. As for the regression specification, they include additional control variables. What they find is to some extent different from their previous results, and from Knack and Keefer's (1997): trust is not a significant determinant of regional growth, but active group membership¹² is, a result that partly confirms Putnam et al.'s (1993) hypothesis. These results seem to be very robust after running 5 different types of robustness checks.

Berggren et al. (2007) provides an extensive robustness analysis concerning the link between trust and growth, and discovers that this relationship is less robust than claimed by earlier studies. As one dimension of robustness checks, the authors look at whether the results are stable over time, by using data for the 1990s, as opposed to the time period involved in earlier studies (1970-1992). Extreme bound analysis and robust regression methods, and the combination of the two are other types of robustness checks they apply. Their basic OLS results indicate the same positive and statistically significant relationship between trust and economic growth found in previous studies. But the robustness results point to four new facts: when removing four outliers, the estimated coefficient is almost halved; statistical significance at the 5 percent level is obtained at a much lower percentage than what has been found before; when conducting extreme bound analysis without outliers, the trust coefficient is statistically significant at the 5 percent level in 10.1 percent of all regressions; the distribution of estimated trust coefficients is more widespread compared with the previously studied sample of countries. The authors conclude "even though trust may not be robustly related to growth, it could still be important to some degree – and at least as important as many other "classic" variables" (Berggren et al. 2007:271).

Akçomak and ter Weel (2009) is unique in the literature in the sense that it focuses on the indirect effects of social capital on economic growth. As a channel through which social capital induces growth rates, this paper identifies innovation. The theoretical framework is as follows: "A higher social capital stock, which is determined by historical institutions, increases the incidence of innovation. The reason for this is that investments in innovative activities are risky and capital providers want to receive commitment from researchers that their money is well spent. This is easier in an environment in which people trust each other. In turn, this increases income" (*ibid* p. 546). To test the above, Akçomak and ter Weel's (2009) empirical strategy consists of three steps. First, they establish the causal relationship between social capital and growth, second, they examine the link between social capital and innovation, and third, they apply 3SLS strategy. Throughout the empirical investigation trust is instrumented by historical institutions such as early literacy, past political institutions and universities. The data source for social capital is the European Social Surveys and the European Values Study Surveys, and for innovation it is Eurostat's regional database. Akçomak and ter Weel's (2009) results augment to a great extent those

¹² Civic engagement, or in other words, associational activity, is divided into different categories, such as active and passive group membership (Beugelsdijk and Van Schaik 2005b).

of the cross sectional studies: for 102 regions in Europe, this paper provides evidence for the fact that innovation has a strong positive impact on growth, the former being significantly affected by social capital, but social capital does not have a significant effect on growth. In other words, unlike previous studies the estimations do not suggest a direct role for social capital, but an indirect one. These results are valid and robust.

The only paper discovering a negative relationship between trust and growth is Roth (2009). The theoretical underpinning for a possible negative relationship between trust and growth is the collective action theory of Olson (1982), which emphasizes the possible negative effect of the accumulation of too many special interest groups hampering the efficient actions of the government. Roth (2009), as opposed to the above studies on the trust-growth relationship which rely on a cross sectional design, uses panel data and runs fixed-effects regressions for a 41-country sample over the period from 1980 to 2004 with a total of 129 observations. His major finding is that economic growth is negatively related to trust, which is mainly driven by certain countries that exhibit the highest negative relationship in the sample. Roth's further investigations also reveal that when excluding transition countries from the sample, the relationship becomes curvilinear, meaning that in low-trust countries an increase in trust leads to higher growth, but in high-trust countries an increase in trust leads to a decrease in growth. But, interestingly, if he analyses the relationship in a cross section of countries, the positive association of trust with growth detected by many, appears. Although Roth's (2009) results are statistically robust, and supported by Olson's (1982) theory, he warns that his results may suffer from omitted variable bias, or measurement errors or misspecification.¹³

The research question of Ahlerup et al. (2009) is also unique in the social capital-growth literature because the authors' primary interest lies in understanding whether social capital substitutes or complements formal institutions in economic growth. To derive hypotheses for the empirical analysis the authors develop a simple model of a sequential investment game between a lender and a producer in which both a formal institution (enforceability of contracts by courts) and trust is included. The model suggests that the effect of trust is nonlinear and depends on the quality of institutions. The results obtained from a standard cross-country Barro-type growth regression provide evidence that trust (measured by the usual WVS question data) and formal institutions (measured as the *quality of the government*¹⁴) substitute each other in growth: both trust and formal institutions have a positive and significant impact on growth, and their interaction term is also significant, but negative. In the

¹³ Helliwell (1996), to some extent, endorses Roth's paper (2009) by pointing to a negative relationship between trust and economic performance. As a measure of economic performance he uses productivity growth. Clearly, this is the only cross-country study that finds negative link between trust and economic performance.

¹⁴ Quality of the government is the average of ICRGs measures of corruption, law and order, bureaucracy quality.

interpretation of Ahlerup et al. (2009) this indicates that the marginal effect of social capital decreases with better institutions: trust matters the most when formal institutions are weak. On the other hand, the marginal effect of an improvement in institutions depends on the level of trust. Accordingly, the relationship between trust and institutions is mainly about substitution.

4. THE RECENT LITERATURE

Tabellini (2008, 2010) opens up a new branch in the analysis of the impact of culture on development by introducing and pioneering the use of a composite measure based on answers to four WVS questions, diverging in this way from the social capital concept. The variables he focuses on are *trust*, *respect*, *individual self-control*, and *obedience*.¹⁵

In his 2010 paper (Tabellini 2010) he shows that the aggregate variable constructed from the four introduced above significantly correlates with current development in different regions of Europe, after controlling for country fixed effects and for school enrolment in 1960. He assumes that trust, respect and individual self-control serve as rules governing and stimulating interaction between individuals, whereas obedience is thought to limit economic interaction and development by decreasing risk-taking, which is important for entrepreneurship. He also uses an instrumental variable estimation because of his suspicion that the causal effect of culture is endogenous to economic development. His finding is that the data do not reject the hypothesis that the effect of the two historical variables (past literacy and past political institutions) on regional output only operates through culture. When it comes to the question of whether the effect of culture is direct or indirect, his results suggest that the effect of culture on output operates mainly or exclusively through the functioning of government institutions, at least within Italy. A plausible interpretation of the findings of this paper is that cultural differences are so important because they bring about a different functioning of the same formal institutions, and that culture is central to the mechanism through which past institutions influence the functioning of current institutions.

The four measures suggested by Tabellini are extensively used by Williamson in several empirical studies. In her 2009 paper (Williamson 2009) she investigates the relationship between formal and informal institutions (culture) and how the interaction between the two can impact development. To measure formal institutions, she uses the political institutions of Glaeser et al. (2004) and develops an index for formal institutions by using the first principle component of four measures. In order to measure informal institutions (culture), she relies on Tabellini (2010). She develops a culture index based on the four variables described above. Then she calculates the difference between the formal and

¹⁵ As a kind of self-criticism, he acknowledges that the way in which he treats culture is largely a black box (Tabellini 2010:711). See also section 5.

informal (culture) indices with the aim of measuring the strength of formal institutions vis-à-vis the informal ones. Her results, in an important respect, are different from those of Tabellini because she identifies a dominant effect of informal institutions (culture): strong informal institutions are determinants of economic development regardless of the strength of the formal institutions.

More recently, she and her co-author (Williamson and Mathers 2011) show that culture, and the economic institutions associated with economic freedom are both independently important for economic growth, where culture is measured by the above-mentioned culture index.¹⁶ They find that when controlling for both culture and economic freedom simultaneously, the strong association between culture and growth becomes much weaker, while, overwhelmingly, economic freedom retains a positive and highly significant relationship with economic growth. According to them, this suggests that culture and economic freedom may act as substitutes. To some extent this result conflicts with that of Williamson (2009) since here culture becomes less significant in the growth regression when certain institutions are in place.

Mathers and Williamson (2011) is another paper which investigates how the interaction between culture and economic freedom affects economic prosperity. By including culture in the analysis the authors aim to provide a partial explanation for why the same institutions lead to different economic outcomes. They find that culture enhances the impact of economic freedom on growth by about 10 percentage points. Their results suggest that the same economic institutions combined with different cultures have diverse outcomes.

Voigt and Park (2008), as proxies for values and norms (culture) use the GLOBE study on culture, leadership and organization, in which different values and norms reflect firm behaviour, in particular different leadership models. Voigt and Park's (2008) hypothesis is that in the long-run there will be a close correspondence between culture (values and norms) and institutions, since those institutions which are incompatible with the prevalent values and norms are likely to disappear. They use a simultaneous equation approach and examine the influence of culture both directly and indirectly via institutions. As for the direct effect of culture, their results are rather mixed: when using the rule of law as a measure for institutions, culture does not have a significant effect beyond that of the rule of law; when using a measure of political institutions, some values have a significant effect. As for the indirect effect of culture, the results are not convincing either way. In sum, Voigt and Park (2008) find that some norms matter for economic development, but this impact greatly depends on the choice of institutional proxy.

¹⁶ Johnson and Lenartowicz (1998) is an early, but very preliminary, attempt to link culture to economic freedom, and accordingly, to economic development. The idea is that culture affects the extent to which countries are economically free. To express culture, this paper uses the data of both Hofstede and Schwartz. However, the empirical model is underspecified, the sample is very small (25 countries) and there are no robustness checks.

Gorodnichenko and Roland (2010, 2011) analyse the effect of the three main measures of culture (the WVS, the Hofstede data and the Schwartz Values Survey) on output per capita. In the 2011 paper they find that the Hofstede's *individualism index* is always significant, whereas this is not the case for most cultural variables. Among the Schwartz variables¹⁷, *embeddedness* is significant with a negative effect, and *affective autonomy*, *intellectual autonomy*, and *egalitarianism* are also jointly positively significant.

In their more detailed analysis (Gorodnichenko and Roland 2010), they assume that culture plays a key role in stimulating innovations and hence explaining long-run economic growth. They hypothesize that culture is a basic force underlying formal institutions and long-run growth. They find that there is a two-way causality between culture and institutions, thus suggesting that institutions are in part determined by culture. They show empirically a strong causal effect from culture to long-run growth and the level of innovation. Their findings are consistent with the predictions of their theory, indicating that a more individualist culture should lead to more innovation and hence greater economic development. They clearly show that culture makes an important contribution to economic development which is independent of institutions. In terms of magnitudes, culture explains income differences across countries at least as much as institutions.

Maseland's (2013) focus is on explaining how culture affects institutions, and as a by-product, per capita GDP. Relying on a literature in biological psychology, he proposes using a new instrument for culture when regressing culture on institutions. This variable is the prevalence rate of *Toxoplasma gondii*¹⁸. It has been shown that infection with this parasite has an effect on individual personality: a stronger focus on competition and personal achievement, at the expense of concerns for others, and reduced conscientiousness, and morality (Flegr et al. 1996). These changes in personality make people more opportunistic and suspicious of the behaviour of others, and reduce the level of trust in society (Maseland 2013:115). As a measure for culture Maseland (2013) uses the first principle component of four measures (power distance, individualism/collectivism and uncertainty avoidance, from Hofstede (2001), and distrust (WVS)), and for institutional quality he used the first principal component of the Worldwide Governance Indicators' sub-categories. By using the IV estimation strategy with *Toxoplasma gondii* as an instrument, his main finding is that culture exercises a significant effect both on institutions and per capita GDP. Its results are robust for a large set of control variables.

¹⁷ The Schwartz variables will be presented in detail in the next section.

¹⁸ *Toxoplasma gondii* is a parasite commonly found in the intestines of cats and other felines which can cause latent infection among humans. Prevalence rates differ across countries.

5. CRITICISM OF THE LITERATURE

The criticism vis-à-vis the empirical analysis of the impact of culture on growth is widespread, but three main debatable issues emerge in particular. First of all, the empirical studies lack of clear conceptualization and a well-developed theoretical framework. Second, the measurement of culture can be criticized on many grounds. Third, a number of difficulties can be associated with the econometrics used in the literature. In relation to the above three issues, several critical arguments are put forward, the majority of which concern the literature on trust, which is the most developed in the field, as can be seen from the above review.

On the theoretical side, some of the most prominent scholars in the field draw attention to the vague concept of culture¹⁹: according to Tabellini (2010), culture is a “black box”, which is an impediment to the further development of research in the field. The above review also shows that every time scholars refer to *culture* they simply reduce its meaning to a much narrower concept, such as *trust* or *church attendance*, and many others; and depending on which particular meaning is used, the empirical results may be different. This may suggest that culture must be regarded as a multidimensional concept (e.g., Klasing 2013, Beugelsdijk and Van Schaik 2005b, Bjornskov 2006). Here one can agree with Herrmann-Pillath (2014) who argues that the econometrics of culture simply shows that there is an impact of *something* on economic performance, but we do not know what it is exactly.

The main line of the criticism concerning the measurement is that it lacks any theoretical framework. According to Beugelsdijk (2006), the major problem regarding the culture (social capital)-growth literature is the mismatch between the theoretical foundations of culture and its empirical operationalization: the conceptualization is at the micro level, referring to micro units such as individuals (or firms), but in the empirical investigations culture is used as an aggregate macro variable, as with the growth rate or investment variables. Furthermore, Beugelsdijk (2006) thinks that “we do not measure what we think we measure” (*ibid* p. 373), i.e., the WVS trust question is a bad measure.²⁰ To provide evidence for this opinion, he shows that in the sample of Zak and Knack (2001) the WVS trust question correlates highly with the good functioning of formal institutions; accordingly, trust is just an element in a broader measure of institutions. Not only the WVS, but the Hofstede dataset is criticized, too, for measuring culture in a rather *ad hoc* or pragmatic way: Schwartz (1994, 2006) argues that Hofstede’s (2001) dimensions of culture lack

¹⁹ As Moore (1999:75) puts it: “We are trying to do empirical research on a fragile conceptual base. The concept of trust remains elusive, and useful empirical measures still evade us.”

²⁰ For instance Glaeser et al. (2000) finds that a survey question about trust predicts trustworthiness much better than it does trusting behavior. Beugelsdijk and Maseland (2011), and Miller and Mitamura (2003) point out that the WVS trust question is ambiguous: it is not clear what “generally speaking” means (see footnote 7). As a consequence, there may be doubts as to whether it really measures generalized trust among those who do not know each other.

any *a priori* theorizing about culture, and he proposes a theory-driven measure for culture (more details in the next section).

As for the econometric problems, many (e.g., Durlauf 2002, Durlauf and Fafchamps 2005, Beugelsdijk et al. 2004, Beugelsdijk 2006) illustrate the basic econometric difficulties with the culture (social capital) literature: robustness (sensitivity) and endogeneity. Both issues were to some extent discussed in the above review. For instance Beugelsdijk et al. (2004) and Berggren et al. (2007) provide robustness checks and report that the results of previous studies are less robust than claimed. When it comes to IV strategy in the empirical investigations, the list of instruments is quite wide-ranging. While instrumental variables used in the most recent studies are more convincing about their exogeneity, the instruments of earlier studies may be weak instruments (Fehr 2009) because it is quite easy to find arguments supporting their direct effect on growth.

Bearing in mind these three critical issues in the field, what suggestions could be made to ensure further progress? First of all, one needs theory-based testable hypotheses when analysing the role of culture (Guiso et al. 2006). Furthermore, since culture has several dimensions (e.g., Klasing 2013) the effects of various cultural dimensions must be analysed separately from one another to see the potentially different effects produced. That is, one needs to evaluate the impact of each particular cultural phenomenon rather than evaluating the impact of their “aggregate” (Tambovtsev 2015). To sum up, researchers in the field should move towards testing theory-based hypotheses about the impact of a particular cultural dimension or component on economic performance and highlight the mechanism of this impact.

In line with the above arguments, Manski (2000) clearly states the two possible paths for further development: (1) empirical researchers need to be much clearer on the questions they address²¹, and (2) empirical studies need to be based on better data, if possible on experiments. The first route means that we need to move from an analysis of generalities to that of specific relationships, since it will facilitate more precise and comprehensive modelling of causal mechanisms. The second route involves trying to find the kind of cultural data that is based on some *a priori* theorizing about the effects and, accordingly, captures a well-defined dimension of culture.

6. HOW SHOULD WE MAKE FURTHER PROGRESS?

The two routes emerging from the above critiques are quite clear, but the question which remains is what concrete steps could be taken. In what follows we

²¹ Durlauf and Fafchamps (2005:1689) argue in the same way: “empirical analyses need to step back from grandiose approaches to social capital and focus on the more mundane but potentially far more fruitful task of analyzing specific social components to individual behavior”.

will make suggestions regarding both routes that might help advance future research in the field.

Bearing in mind the multidimensional character of the culture as proposed by several scholars, my argument is that Boettke et al.'s (2008) theory of institutional stickiness can be a useful theoretical framework for "unbundling" culture. Similarly to the way in which these authors categorize different institutions on the basis of their degree of stickiness, we propose to distinguish various layers of culture based on their stickiness. Deeply embedded cultural values are the *core* to which other cultural layers and institutions stick. Furthermore, particular cultural layers differ in terms of the extent of their stickiness. Consequently, what I argue is that instead of dealing exclusively with the "aggregate" culture, it is worth differentiating various layers of the culture, based on their stickiness, and one has to analyse their effects separately.

We have good reasons to assume that particular cultural layers exercise different effects on economic development; accordingly, empirical investigations on particular layers will be concerned with much more specific questions than the rather "grandiose" ones which feature in the current literature. Of course, here there is no space to develop the layer model of culture; only various preliminary ideas can be discussed. First, I must emphasize that the variables used in the literature can belong to different cultural layers. The deepest layer, i.e., the *core* to which other layers are stuck, is those individual values that serve as guidelines for individuals' actions, and basically cannot change. Trust, in Tabellini's sense, belongs to another layer, since trust is not exogenous in economic growth, but rather endogenous, and depends upon individuals' circumstances, and can change if these circumstances change. As a third layer we would mention various attitudes or religiosity that can change relatively frequently, and are less sticky.

The second route proposed above is related to the measurement of culture: measurement should be based on theoretical grounds. Since, as argued above, culture is a multidimensional concept, its measurement should relate to the measurement of a particular layer. International survey-databases are hard to develop and scholars are reluctant to initiate them. So we would not argue that such databases would be needed; instead, I intend to draw the attention to an already existing database that has not (yet) been widely used by researchers. This database is the Schwartz Values Survey, which has been built since 1988 by Shalom Schwartz (Schwartz 1994, 1999, 2006), and, importantly, on theoretical foundations.

The theory behind the database has been developed in cross-cultural psychology, and centres on individual values. Based on a clear and unambiguous definition²², Schwartz sees values as the *core* of culture which are exogenous to individuals and do not change. The survey questions and the variables derived

²² Values are the rich complex of meanings, beliefs, practices, symbols, and norms that that guide people in their actions.

from them rely on *a priori* theorizing, rather than *ad hoc* examination of data. The starting point for Schwartz (1994, 1999, 2006) is that all societies confront three basic issues when forming the social relations, and the answers to these questions are inherently different in different societies. Schwartz identifies 7 values, forming an integrated system. To measure them, the database contains 56 abstract items that have reasonably equivalent meanings in each country. To sum up, the Schwartz Values Survey provides “better” data than the WVS or Hofstede, so future research should rely on it to a greater extent, especially when it comes to an analysis of the deepest cultural layer.

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Judit Kapás

Profesor
Ekonomski institut
Ekonomski fakultet
Sveučilište u Debrecenu, Mađarska
E-mail: judit.kapas@econ.unideb.hu

KAKO KULTURNE VRIJEDNOSTI UTJEČU NA EKONOMSKI RAST: KRITIČKI PREGLED LITERATURE

Sažetak

U posljednje vrijeme svjedočimo naglom porastu znanstveno-istraživačke literature koja proučava utjecaj kulture na ekonomski razvoj. Ovo područje istraživanja nastavlja se razvijati na granici teorije rasta i institucionalne ekonomije. Ovaj rad sažima i daje detaljan kritički pregled ove literature. Slijedeći dva glavna pravca koja preporučuju kritičari, autor predlaže mogući pravac za daljnji napredak u ovom području.

Ključne riječi: kultura, društveni kapital, trust, ekonomski rast.

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