Culture, Institutions and Financial Development

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Abstract: When culture and institutions coevolve, which means that these are changing simultaneously and in the same direction, financial development is facilitated. In contrast, when institutions and the cultural background deviate from this development, their asynchronous and different direction changes may lead to a series of failed attempts to implement a modernized financial development framework. Thus, the purpose of the paper is to highlight whether the institutional and cultural backgrounds operate in a complementary or substitute way in terms of their role in financial development. An unbalanced panel dataset comprising 98 countries over the last four decades (1981–2019) is used. The empirical results indicate that both the institutional background and the cultural background positively affect financial development. Furthermore, there is a complementary relationship between the institutional background and the cultural background in terms of their role in financial development; when both sizes are at a strong level, this leads to the highest level of financial development, while when at least one or both are at a weak level, the financial development is lower. Moreover, the interaction term of the two sizes has a positive and statistically significant effect on financial development in all tests performed. Lastly, the institutional background seems to have a greater impact on the formation of the level of financial development in relation to the cultural background. To upgrade the financial development of their economies, policymakers have to realize economic policies that change the institutional background and simultaneously change the cultural background in the same direction.

1. Introduction

The creation and structure of institutions and therefore economic outcomes are affected by all the values and beliefs of individuals as well as the views that the individual has formed during their lifetime. Economic outcomes and institutions in turn can influence the way individuals act, think and make decisions, thus generally influencing their

cultural background. The cultural background—in this sense—as an informal institution is a component of the broader concept of institutions (North, 1990).

At the same time, the prevailing view is that the cultural background and institutions interact and evolve (Petrakis and Kostis, 2014; Petrakis et al., 2017; Kafka et al., 2020) complementary and reciprocal feedback (Alesina and Giuliano, 2015). In this sense, the same institutions can operate differently depending on the cultural background in which they will be applied. The cultural background in turn can change depending on the institutional background (Alesina and Giuliano, 2015).

The evolution of institutions and the cultural background does not always present a course of simultaneous development in time and in the same direction, a fact that has significant implications for economies. In other words, institutions may change in the same direction as the cultural background, but these changes may not be compatible with the time at which the end result comes.

The literature on the issue of the coevolution of the cultural background and institutions has focused, in recent years, on the natural selection that takes place in both genes and institutions, and which is thought to lead to the coevolution of these two concepts (Cavalli-Sforza and Feldman, 1981; Durham, 1992; Feldman and Zhivotovsky, 1992; Soltis et al., 1995; Boyd and Richerson, 2002; Bowles et al., 2003; Bowles, 2006; Choi and Bowles, 2007; Gintis, 2007). Some institutions and behaviors may offer an individual or individuals a competitive advantage in their work of action (Lewis and Steinmo, 2012).

In general, however, there may be an incompatibility in the evolution of the institutional and cultural background which is expressed either because (Kafka et al., 2020) (a) the institutions change but the cultural background does not change, (b) the cultural background change but the institutions do not change respectively, (c) both the institutions and the cultural background are evolving but their stagnant balance is not characterized by the optimal complementary combination between institutions and cultural attitudes and (d) a change in institutions may be accompanied by incompatibility in cultural behaviors, and vice versa. The latter form of incompatibility is also what is characterized as the worst form of incompatibility in the course of evolution between the two concepts.

The purpose of this article is to highlight the link between institutional and cultural backgrounds and how this link affects the financial development of economies. In other words, the aim is to determine whether the institutional and cultural backgrounds function in a complementary or substitute way in terms of their role in financial development, contributing to the discussion on whether or not they are evolving. For this purpose, the effects of the institutional and cultural backgrounds on financial development are determined, individually and in combination. The analysis is based on a sample of 98 countries, over a period of four decades (1981–2019), based on the constraints posed by the data relating to the cultural background of societies.

The order of the paper is as follows: The second section presents the literature review on the effects of institutions and culture on financial development. In the third section, the data and methodology used are described, and in the fourth section, the empirical analysis and the discussion of the results are presented. Finally, in the fifth section, the conclusions of the analysis are presented.

2. Literature Review

There is a wide body of literature that examines the determinants of financial development. A great part of this literature concentrates on the effects of institutions on financial development (Claessens and Laeven, 2003; Detragiache et al., 2005; Law and Demetriades, 2006; Beck and Levine, 2008; Fernández and Tamayo, 2015), while in recent years, empirical works have emerged that examine the role of national culture on financial development (Herger et al., 2008; Dutta and Mukherjee, 2012; Klein and Klein, 2017; Ang, 2019; Ahunov and Hove, 2020).

Regarding the role of institutions, Fernández and Tamayo (2015) identify three main sources of differences in the institutional framework that cause differences in financial development: (a) the inherited legal tradition regarding the way private property rights are held in an economy; (b) the emphasis societies have placed on the

development of markets; and (c) the historical development of the economies that allow for discrete changes in specific institutional arrangements.

Khan et al. (2019a, 2019b) conclude that institutional quality is a significant prerequisite to financial development either for advanced economies such as the USA or for emerging and growth-leading economies. They suggest that policymakers and researchers have to consider the importance of institutions to come up with realistic estimations and policy inputs. Moreover, Aluko and Ibrahim (2020) conclude that financial development positively affects economic growth through the institutional quality of the countries.

However, there are some institutional aspects that seem to matter more than others (Law and Azman-Saini, 2008; Gazdar and Cherif, 2014). Law and Azman-Saini (2008) suggest that the rule of law, the political stability and government effectiveness play a vital role in influencing banking sector development and that regulatory quality does contribute to financial development but only when a threshold level of regulatory quality development has been attained. Gazdar and Cherif (2014) show that in Middle East and North Africa (MENA) countries, over the period of 1984–2007, law and order are the most relevant determinants of banking sector development, while corruption and investment profiles are of secondary importance. They also point out that investment profiles are the most relevant determinant of stock market development and liquidity.

Legal institutions seem to play a critical role in financial development. Beck and Levine (2008) state that in countries where legal systems enforce private property rights, support private contractual arrangements and protect the legal right of investors, savers are more willing to finance firms and financial development is achieved.

There is also literature that examines the role of political institutions on financial development (Haber, 2007; Huang, 2010; Marcelin and Mathur, 2014). Haber (2007) points out that democracy and authoritarianism play crucial roles in the incentives of bankers and political entrepreneurs. Huang (2010) points out that a democratic transformation is typically followed by an increase in financial development, while concluding in a positive effect of institutional improvement on financial development at least in the short run. Moreover, Marcelin and Mathur (2014) suggest how to get around some institutional attributes to spearhead financial intermediation and economic growth through a set of institutional and banking reforms.

Regarding the role of culture on financial development, Stulz and Williamson (2003) stress that differences in culture are critical for the level of financial development. Dutta and Mukherjee (2012) state that while culture evolves in the form of greater trust, control and other traits, individuals' attitudes towards the financial market change, and they engage in greater financial transactions and better financial development. Herger et al. (2008) suggest that there is only limited evidence that cultural beliefs significantly hamper financial development.

Ang (2019) concentrates on the cultural value of individualism, noting that higher levels of individualism lead to a higher level of financial development. Klein and Klein (2017) conclude that higher control of life can modify transaction costs, which in turn leads to different levels of financial development. Ahunov and Hove (2020) point out that financial literacy is lower in countries where the power distance and uncertainty avoidance are high, and individualism is lower. For masculinity, indulgence and long-term orientation, they find no significant impact.

In addition, there are limited works that examine the role of institutions and culture on financial development simultaneously. Mukherjee and Dutta (2013) investigate the role of political institutions and culture in creating an efficient financial infrastructure for a country. They show that both political institutions and culture jointly promote financial development while behaving as complements. Moreover, Khan et al. (2019b) find that national culture significantly moderates financial development through their positive interaction with institutional quality.

3. Methodology and Data

In order for the present article to examine the relationship between the substitution or complementarity of the cultural and institutional backgrounds, the link between each variable and financial development is initially sought. Later, their simultaneous effect on financial development is examined in order to highlight the relationship of complementarity or substitution. The data for the financial development come from the Financial Development

Index of the International Monetary Fund (IMF). These data are converted from annual to average for each wave of analysis (1981–1984, 1990–1994, 1995–1998, 1999–2004, 2005–2009, 2010–2014, 2017–2019)[1].

To measure the cultural background, a comprehensive measure was used which emerges as the first principal component of a principal component analysis (PCA) series of cultural values of societies. The cultural values that make up the cultural background are trust, control of life, respect, independence, honesty, competition affinity and work ethic. The variables honesty, acceptance of competition and work ethic resulted from individual principal component analysis (PCA) using selected variables from the World Values Survey (WVS) and the European Values Study (EVS) to express each variable. The first major component for the overall measurement of the cultural background follows a normalization on a scale of 0 to 10 (according to Williamson and Mathers, 2011), with 0 indicating a weak cultural background and 10 a strong cultural background[2].

The way the various cultural values were calculated was based on other empirical works in the relevant literature: generalized trust (Inglehart, 1988; Tabellini, 2008, 2010; Bützer et al., 2013; Kostis et al., 2018), respect (Tabellini, 2008, 2010), independence and control of life (Tabellini, 2008, 2010; Bützer et al., 2013; Kostis et al., 2018) and honesty, competition affinity and work ethic (Bützer et al., 2013; Kostis et al., 2018).

To measure the institutional background, the Economic Freedom of the World Index was used, an indicator generated by the Fraser Institute (Gwartney et al., 2019). The construction of the index is based on 42 sub-indices and is set on a scale from 0 to 10, with 10 representing the best performance. Despite the availability of alternative indicators to express the institutional background of economies (such as the Heritage Foundation's Economic Freedom Index and the protection against the risk of expropriation by the ICRG), the Fraser Institute's index was used as the most appropriate due to its long history and because of the size of the sample of countries covered by this index.

For the empirical documentation of the objectives of the chapter, an unbalanced panel dataset comprising 98 countries was used. The time period of the analysis concerns the period 1981–2019. Due to restrictions on the availability of data that make up the variable cultural background as well as the fact that these data are available in waves of more than one year, the analysis was based on seven (7) total waves. Six (6) of these waves come from WVS and are 1981–1984, 1990–1994, 1995–1998, 1999–2004, 2005–2009 and 2010–2014. For the period 2017–2019, the data were obtained from EVS (2nd publication of data, July 2019). In addition, data from EVS (EVS 1981, 1990, 1999, 2008) complement the country sample in the remaining 6 WVS waves.

In order to assess the relationship between cultural and institutional backgrounds separately in financial development as well as their relationship to each other (substitute or complementary), the following assessment, Equation (1), was performed.

Note that Equation (1) is substandard for the analysis, as for the clarification of the relationships, the following were estimated: (a) the effect of the cultural background and (b) the institutional background separately on financial development, (c) the effect of both variables simultaneously on the dependent variable, (d) the effect of their product and (e) their ratio, separately, on the dependent variable. The product of the two concepts was used as a control measure of their complementarity in the sense that the higher their product, the larger the two sizes, while the smaller their product, the lower the values of the two variables.

$$Financial\ Development_{it} = \alpha_i + \beta_1 * Culture_t + \beta_2 * Institutions_{it} + \gamma * X_{it} + \delta * Z_{it} + \lambda_t + u_{it} \qquad (1)$$

where i represents each economy of the sample under analysis ($N_{max} = 113$) and t represents the corresponding wave ($T_{max} = 7$). The dependent variable *Financial Development* refers to the Financial Development Index. The variables *Culture* and *Institutions* are the variables that express the cultural and institutional backgrounds of societies, respectively, the variable X represents the product or the ratio of the two concepts, Z is a vector of control variables, a_i is a constant term that represents some country-specific effects in order to record the impact of

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[1] The analysis is based on these sub-waves due to the availability of cultural background data which—as described later in this section—are published by WVS and EVS in waves.

[2] The 0 to 10 harmonization was conducted to make the measurement of the cultural background similar to that of the institutional background, as the institutional background used below is measured on a scale of 0 to 10.

unobserved and timeless heterogeneity in countries and λ_t is a dummy variable for each wave of the sample, which controls specific effects per wave that are common in all countries.

Estimates were made through fixed effects analysis (FE), which allows the specific heterogeneity per economy using a different constant term per economy and can be estimated using the ordinary least squares (OLS) method. In addition, time variables were included for each wave in order to incorporate in the analysis time effects that are common to all countries in the sample. In addition, country-specific clustered robust estimates of the standard errors were made in order to check the correlation and heteroskedasticity for each economy.

The results were subjected to a robustness check by adding control variables to the analysis. This concerned the integration of various combinations of control variables in the analysis and observation of whether the effect of the relationship between cultural and institutional backgrounds on financial development changes or not.

According to previous studies that assess the relationship between cultural and institutional backgrounds and macroeconomic outcomes (Williamson, 2009; Williamson and Mathers, 2011; Mathers and Williamson, 2011), a Z-vector that includes various control variables was also included. Regarding the control variables, the level of unemployment was used since its effects on financial development have been highly investigated in the relevant literature (Gatti and Vaubourg, 2009; Shabbir et al., 2012; Ilo, 2015; Ogbeide et al., 2015; Bayar, 2016). Public debt was also used as a control variable for financial development (Hauner, 2009; Ismihan and Ozkan, 2012; İlgün, 2016). Moreover, the size of agricultural lands on financial development was used (Byamugisha, 1999; Yazdi and Khanalizadeh, 2014; Cagliarini and Rush, 2011).

Table 1 presents the descriptive statistics for the variables included in the analysis.

	N	Average	Standard Deviation	Min	Max
Financial Development	665	0.37	0.22	0.01	0.93
Institutions	610	6.57	1.24	2.59	9.12
Culture	152	0.00	1.57	−4.52	4.58
Trust	366	28.40	15.63	2.50	77.40
Control of life	352	15.36	8.52	0.00	43.90
Respect	359	67.87	13.24	14.20	96.30
Independence	364	48.10	18.79	7.90	90.00
Honesty	331	0.00	1.32	−3.84	3.67
Honesty I	354	60.04	14.73	20.30	98.10
Honesty II	338	55.93	15.58	12.60	96.30
Competition affinity	178	0.00	1.12	−1.73	6.14
Competition affinity I	327	26.10	12.32	3.70	66.30
Competition affinity II	183	7.66	6.95	0.30	77.30
Work ethic	335	0.00	1.03	−2.73	2.43
Work ethic I	362	52.85	25.43	2.10	94.60
Work ethic II	338	61.82	14.95	26.10	95.10
Unemployment	539	8.83	6.12	0.17	45.37
Debt	547	52.10	35.10	0.03	344.31
Agricultural Land	603	41.57	21.32	1.00	85.74

Table 1   Descriptive statistics.

4. Empirical Results and Discussion

In order to create the variability of honesty, competition affinity, work ethic and cultural background, the PCA was followed. In each analysis performed, the first principal component was obtained.

More specifically, from the analysis of the main components for the variable "honesty", the first component has an eigenvalue value of 1.751 and interprets 87.60% of the variation. The two sub-variables have a positive effect and form the variable "honesty". From the PCA for the variable "competition affinity", the first component has an eigenvalue of 1.263 and interprets 63.16% of the variation. Therefore, the variable "competition affinity" is positively shaped by both sub-variables. From the PCA for the variable "work ethic", the first component has an eigenvalue value of 1.068 and interprets 53.14% of the variance. The variable "work ethic" is positively shaped by both sub-variables. Based on the above variables, Table 2 presents the PCA for the variable cultural background. As mentioned, this variable was derived from a PCA based on the following variables: trust, control of life, respect, independence, honesty, competition affinity and work ethic.

Trust	0.466
Control of life	−0.226
Respect	0.325
Independence	0.389
Honesty	0.027
Competition affinity	−0.457
Work ethic	−0.507
Eigenvalue	2.463
Variance	35.2%

Table 2 "Cultural background" formation.

From the PCA for the variable "cultural background", the first component has an eigenvalue value of 2.463 and interprets 35.20% of the variation. All the following components, apart from the first one, have quite low eigenvalues and fluctuation values, and for this reason, they are not used in the analysis. Thus, the changing "cultural background" is shaped positively by trust, respect and independence, while it is shaped in a negative way by competition affinity and work ethic (the variables life control and honesty do not seem to play an important role in shaping the first principal component) (Table 2).

In order to assess the effect of the cultural background and the institutional background separately on the GDP per capita, the effect of both variables simultaneously and their product and ratio separately on the GDP per capita, Equation (1) is evaluated for the panel data, of the group of 98 countries, for the seven waves from 1981 to 2019.

The results are shown in Table 3, where the results of the equation estimation (1) are presented without the use of control variables.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Institutional background	0.06 *** (7.11)		0.06 *** (4.65)				0.07 *** (5.88)		0.04 *** (2.68)			
Cultural background		0.06 *** (3.65)	0.04 *** (2.51)					0.04 *** (2.24)	0.03 * (1.66)			
Institutions * Culture				0.01 *** (5.46)						0.01 *** (2.92)		
Institutions/Culture					0.07 * (2.40)						0.04 (0.80)	
Culture/Institutions						−0.14 *** (−2.66)						−0.02 (−0.34)
Unemployment							−0.01 *** (−4.26)	−0.02 *** (−3.03)	−0.01 *** (−3.94)	−0.01 *** (−3.37)	−0.01 *** (4.25)	−0.02 *** (−3.83)
Debt							0.01 *** (4.29)	0.01 *** (4.60)	0.01 *** (4.49)	0.01 *** (4.62)	0.01 *** (4.25)	0.01 *** (4.23)
Agricultural land							−0.01 *** (−3.03)	−0.02 *** (−3.10)	−0.02 *** (−2.69)	−0.02 *** (−2.74)	−0.02 *** (−3.66)	−0.02 *** (−3.68)
N	585	140	129	129	128	129	321	103	101	101	101	101
R^2	41.35%	32.84%	49.42%	46.27%	3.36%	4.07%	39.73%	50.72%	57.41%	56.90%	43.88%	43.45%
F-stat	50.62 ***	13.34 ***	14.42 ***	29.78 ***	5.76 ***	7.08 ***	13.53 ***	9.48 ***	9.91 ***	11.87 ***	9.33 ***	9.00 ***

Notes: The t-statistics values are displayed in parentheses. *, ** and *** represent statistical significance at 10%, 5% and 1% significance levels, respectively. Each column represents a separate regression. All regressions have included the effect of the time variable (taking into account the effects common to countries in each wave), different constant terms (to take into account the effects on each economy separately) and corrections to standard errors (clustered robust standard errors).

Table 3   The impact of the institutional and cultural background on the financial development of countries.

The regression data (1) demonstrate the positive and statistically significant effect of the institutional background on financial development, as observed for culture in regression (2) as well. Regression (3) combines the institutional and cultural backgrounds to explore the relationship of the substitution or complementarity of both sizes in terms of how they affect financial development. The simultaneous relationship between the institutional and the cultural background is positive and statistically significant for both sizes. The results of regression (3) support the hypothesis of the complementarity of the two concepts.

In regressions (4), (5) and (6), the interaction term (Williamson, 2009) of the two variables is introduced, where in regression (4), it concerns the product of the institutional and cultural backgrounds, while in regressions (5) and (6), it is introduced in their ratio (by alternating the two sizes between the numerator and denominator). Regression (4) confirms the complementary relationship of the two variables as their occurrence has a positive and statistically significant effect on financial development. As the product of the institutional and cultural backgrounds increases (the stronger the two sizes become at the same time), a higher level of financial development is expected. On the contrary, when this product is reduced (the weaker the two sizes at the same time), lower financial development is expected. Regressions (5) and (6) reinforce the conclusions of regression (3) regarding the importance of the institutional background on financial development. In both cases, the role of the institutional background is more important than that of the cultural background in shaping financial development.

The above conclusions empower the complementary relationship between the two variables on the financial development of the countries as well as the particularly great importance of the institutional background on the level of financial development of the economies.

The above results were subject to robustness analysis with the addition of control variables to the analysis (regressions 7 to 12). The conclusion that the institutional and cultural backgrounds have both a positive and a statistically significant relationship with financial development remains, while at the same time, in all cases, it appears that the impact of the institutional background is greater than that of the cultural background.

5. Conclusions

The previous analysis shows the complementary relationship between the institutional and the cultural background regarding their role in financial development, as when both sizes are at a strong level, this leads to the highest level of economic development. When at least one or both are at a weak level, financial development is lower.

In addition, the interaction of the two sizes (product) has a positive and statistically significant effect on financial development in all controls performed, and this is another indication of the complementarity of the two sizes.

The requirements for the coevolution of the institutional and cultural backgrounds are critical for the financial development of an economy. When institutions and the cultural background evolve simultaneously and in the same direction, the process of financial development is facilitated. Conversely, when institutions and the cultural background deviate from coevolution, their asynchronous or different orientation may result in the inability of policymakers to implement the required changes in the institutional and/or cultural backgrounds. The result can be a series of failed attempts to implement a modernized development framework for the institutional and cultural backgrounds of societies, leading to the perpetuation of a low financial development.

Thus, the existence of economic freedom (sufficient size of state, existence of rule of law, access to strong currency, freedom in international trade and satisfactory regulatory environment in bank credit, labor and entrepreneurship) is an important condition for economies. However, when these conditions are accompanied by social behaviors that promote financial development and are related to the trust and independence of individuals (high level of generalized trust, respect and independence), the highest possible level of financial development is achieved.

Of course, satisfactory planning and implementation of policies that will strengthen the institutional background are very difficult in practice. It is also very difficult for the rulers to have the knowledge and also the necessary incentives to choose appropriate institutions to promote financial development. The position that institutional structures are easily recognizable and that an economy can copy the successful institutional framework of another

economy should be carefully considered (Acemoglu and Robinson, 2012). The reason for the failures of planning a strong institutional background is that the efficiency of economic policy and the institutional background is significantly affected by the current cultural values of societies and how ready societies are to accept the changes that accompany these policies.

The analysis of this article presents some disadvantages. Although all available data were used to express the cultural background of societies (from the first to the last wave of WVS and EVS (July 2019), there are several economies that participated in the relevant research only in some of these waves. In addition, the measure used for the institutional background (the indicator of economic freedom) best describes the economic institutions of economies and does not examine the political and social institutions of societies.

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