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Tribalism and Financial Development

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Abstract

We assess the correlations between tribalism and financial development in 123 countries using data averages from 2000-2010. The tribalism index is used to measure tribalism whereas financial development is measured from perspectives of financial intermediary and stock market developments. The long-term variable is stock market capitalisation while short-run indicators include: private and domestic credits. We find that tribalism is negatively correlated with financial development and the magnitude of negativity is higher for financial intermediary development relative to stock market development. The findings are particularly relevant to African and Middle Eastern countries where the scourge is most pronounced.

JEL Classification: E62; H11; H20; G20; O43

Keywords: Tribalism; Financial Development

1. Introduction

Much work has been devoted to assessing the relationship between financial development and economic development (Levine, 1997, 2005; Ang, 2008). To this end, many angles have been explored over the past decades, notably: the role of the State (Rajan & Zingales, 2003; Ang, 2013a; Becerra et al., 2012); law and finance theory (La Porta et al., 1997, 1998; Beck et al., 2003); power and information credit-oriented theories (Aghion & Bolton, 1992; Djankow et al., 2007; Stiglitz & Weiss, 1981); endowment theory (Beck et al., 2003); culture

(Stulz & Williamson, 2003); genetic distance (Ang & Kumar, 2014); social capital (Guiso et al., 2004), macro-finance (Rajan & Zingales, 1998; Baltagi et al., 2009) and human capital (Kodila-Tedika & Asongu, 2015).

There is another strand of the literature which is sustaining that nations with high ethnic diversity are less likely to develop strong financial systems owing to contradictory positions (Easterly & Levine, 2003; Beck et al., 2003). This theoretical postulation has not withstood empirical scrutiny. Ang and Kumar (2014) have empirically verified this theory without going at length to test the robustness of their results, essentially because it has not been the main line of inquiry motivating their study. Moreover other recent studies by Ang (2013) on the one hand and Kodila-Tedika and Asongu (2015) on the other hand, have not yielded conclusive results: with positive and negative insignificant signs respectively.

The purpose of this study is to articulate the importance of division within a nation. To this end, we steer clear of prior exposition by employing an indicator of tribalism, in place of ethnic fragmentation, while maintaining the same mechanisms by which tribalism affects financial development documented by Easterly and Levine (2003) and Beck et al. (2003). Accordingly, tribalism is a doctrine that consists of favouring (without reason) individuals from a given tribe or set of tribes. Hence, this proxy is more holistic compared to ethnic diversity. Mankou (2007) views tribalism as a sort of ethnic instrumentation, which entails according Jacobson and Deckard (2012) germs of, *inter alia*: rent seeking, corruption, inequality, ethnic diversity, indigenous population and group grievance.

In light of the above, we postulate that tribalism inhibits financial development. With the two axiomatic definitions in mind, it is logical to infer that ethnic favouritism results more from tribalism than simply ethnic diversity. Hence the scenario could also be qualified in terms of ethnic dominance. In other words, classical indicators of ethnic diversity that are employed in mainstream literature are limited in articulating the proxy or what they represent. Moreover, as we have stated earlier, the tribalism concept is of broader scope. For instance, political tribalism can be distinguished from monetary tribalism. The former consisting of an ethnocratic tendency with the aim of according tribal privileges in the distribution of positions that confer authority within a nation. It gives priority or

exclusivity to the needs of a certain tribe or group of tribes in the distribution of collective resources, which have indiscriminately been accumulated by the collective efforts of a plethora of tribes within a nation.

Monetary tribalism consists of circulating money parsimoniously among hands, most often within a tribe or predominantly among a group of tribes. This allocation which is by definition sub-optimal would substantially inhibit financial development. It reduces innovation and essential interactions needed for financial system expansion. In essence, Burgess et al. (2010) and Frank and Rainer (2012) have shown that ethnic favouritism is detrimental to development because it confers a negative externality on education. Meanwhile, education positively affects financial development (Kodila-Tedika & Asongu, 2015) and could break the boundaries of conservatism created by tribalism (Berman, 1998). Moreover, Eifert et al. (2010) have established that ethnic identification is important in political competition. Following Banerjee and Pande (2007), it is logical to infer that tribalism could substantially influence political leaders to engage in inefficient-friendly practices and adopt policies that are unfavourable to financial development. Berman (1998) also shows that within such a political atmosphere, the doctrine of tribalism leads to conservatism and creates rent seeking elites. Given the above, the contribution of the present study is straight forward and simple to follow: we assess the link between tribalism and financial development.

The rest of the study is organised as follows. Section 2 discusses the data and methodology. The empirical analysis and presentation of results are covered in Section 3. Robustness checks are presented in Section 4. We conclude with Section 5.

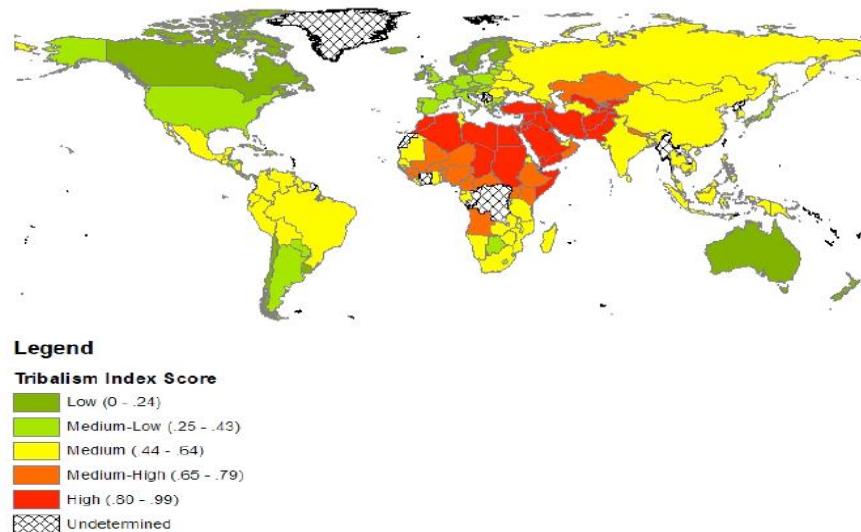
2. Empirical strategies and data

2.1 Data

The study investigates cross-sectional average data between 2000-2010 from 123 countries. To measure tribalism, we use the tribalism index data from Jacobson and Deckard (2012). It represents a weighted aggregate of detailed components, ranging from a hypothetical lowest score (of 0) to the highest score (of 1).

Figure 1 shows that there exist substantial variations in tribalism across the world. The highest levels can be found primarily developing countries, with the tendency in Africa and the Middle East most pronounced.

FIGURE 1: SPATIAL REPRESENTATION OF THE TRIBALISM INDEX



The dependent variable entails short-run and long-run measures of financial development, respectively in terms of financial intermediary development and stock market development. The former measurement which is consistent with Asongu (2013a) appreciates financial intermediary activity with private domestic credit and domestic credit (allocated to both to the private and public sectors of the economy). Following Kodila-Tedika and Asongu (2015), we use stock market capitalization as a percentage of GDP to measure the latter. It is complemented with domestic credit for robustness checks. The choice of the dependents variable is consistent with recent stock market performance and development literature (Asongu, 2012a, 2013b; Ang & Kumar, 2014).

The choice of control variables is also motivated by recent financial development literature (Ang & Kumar, 2014). They include: trade openness, creditor rights, financial openness, legal origins (British, German, French and Scandinavian), tropics and latitudes. The definitions of these variables and their sources are provided in the appendix. Following Kodila-Tedika and Asongu (2015), we discuss the expected signs concurrently with the results.

The summary statistics is also presented in the appendix. It informs us that: (i) the variables are comparable from the mean values and (ii) we can be

confident from the standard deviations that reasonable estimated nexuses would emerge.

2.2. Empirical specification

Consistent with recent financial development literature (Ang & Kumar, 2014; Kodila-Tedika & Asongu, 2015), the specification in Eq. (1) examines the effect of tribalism on financial development across 123 countries.

$$FD_i = \alpha_1 + \alpha_2 Trib_i + \alpha_3 C_i + \varepsilon_i \quad (1)$$

Where: FD_i ($Trib_i$) represents a financial development (Tribalism) indicator for country i , α_1 is a constant, C is the vector of control variables, and ε_i the error term. FD includes: private domestic credit, domestic credit and stock market capitalisation. $Trib$ is the *Tribalism index* from Jacobson and Deckard (2012) while C entails: *creditor rights protection, trade openness, financial openness, legal origins, tropics and latitude*. In accordance with the underlying literature, the interest of Eq. (1) is to estimate if Tribalism affects financial development by Ordinary Least Squares (OLS) with standard errors that are consistent with heteroscedasticity.

Given that outliers may substantially affect the estimated coefficients, we are still consistent with the underlying literature by using Iteratively Reweighted Least Squares and Least Absolute Deviations (LAD) as alternative specifications. While the specification of the former can be adjusted from Eq. (1), we devote space to clarifying the LAD specification. For the purpose of simplicity, let ' FD ' and ' $Trib$ and C ' from Eq. (1) be y and x respectively. Such that, the θ th (or 0.5th quantile) estimator of financial development is obtained by solving for the following optimization problem:

$$\min_{\beta \in R^k} \left[\sum_{i \in \{i: y_i \geq x_i' \beta\}} \theta |y_i - x_i' \beta| + \sum_{i \in \{i: y_i \geq x_i' \beta\}} (1-\theta) |y_i - x_i' \beta| \right] \quad (2)$$

Where $\theta \in (0,1)$. As opposed to OLS which is fundamentally based on minimizing the sum of squared residuals, with LAD, the weighted sum of absolute deviations are minimised. Hence, the LAD is the 0.50th quantile (or $\theta=0.50$) which is

obtained by approximately weighing the residuals. The LAD of financial development or y_i given x_i is:

$$Q_y(\theta / x_i) = x_i' \beta_\theta \quad (3)$$

where the slope parameters are modelled for the θ th specific quantile. This formulation is analogous to $E(y / x) = x_i' \beta$ in the OLS slope where parameters are examined only at the mean of financial development. For the model in Eq. (3) the dependent variable y_i is the financial development indicator while x_i contains a constant term, *creditor rights protection*, *trade openness*, *financial openness*, *legal origins*, *tropics* and *latitude*. The LAD is increasingly employed to complement OLS estimations in development literature, *inter alia*: corruption (Billger & Goel, 2009; Okada & Samreth, 2012) and financial development (Asongu, 2014) studies.

3. Estimation results

This section presents the estimated results from Eq. (1). It can be noticed that tribalism has a negative correlation with financial development. The relationship is consistently significant even after the control for macroeconomic and institutional factors. Hence, the findings are in line with the theoretical underpinnings enunciated in the introduction.

Most of the significant control variables display the expected signs. First, it has been established in the literature that improvement in creditor rights promotes financial development (Beck et al., 2013). This is principally because the institutional web for formal rules and informal characteristics that govern how creditors are treated within a nation affect the degree of financial activity within the underlying economy. Second, the impact of financial openness on financial development depends on the proxy used for the latter. In essence, it depends on whether the measurement is financial depth (money supply or liquid liabilities), financial efficiency (bank credit/bank deposits), financial size (deposit bank asset/total assets) or financial activity (credit). In our case, we have used private domestic credit because it represents credit that is actually given to private investors within an economy, as opposed to economic measurements capturing financial deposits, which may not end-up circulating due to surplus liquidity

issues. In light of the intuition, greater financial openness logically entails greater financial activity within a domestic economy. This logic is consistent with the sign for financial openness.

Third, on the legal origin variables, countries with German and Scandinavian origins are dropped owing to issues of multicollinearity and overparameterization. Fourth, latitude representing the distance from the Equator is positively linked with financial development because countries in the North are relatively more developed. Fifth, given that most less developed countries are concentrated around the tropics, it is logical for a variable proxying for tropics to be negatively correlated with financial development.

Table 1. OLS estimates of the impact of tribalism on financial development

	1	2	3	4	5	6	7
Tribalism	-1.543*** (0.353)	-1.607*** (0.347)	-1.644*** (0.375)	-1.409*** (0.381)	-1.247*** (0.376)	-1.087*** (0.314)	-1.270*** (0.322)
crights		0.113*** (0.041)	0.118*** (0.043)	0.096*** (0.036)	0.052 (0.043)	0.050 (0.035)	0.057 (0.036)
trade_open			-0.091 (0.188)	-0.246 (0.199)	-0.285 (0.215)	-0.243 (0.221)	-0.149 (0.211)
fin_open				0.124*** (0.039)	0.159*** (0.049)	0.096* (0.055)	0.087 (0.053)
legor_uk					-0.180 (0.247)	0.052 (0.286)	0.123 (0.278)
legor_fr					-0.359 (0.230)	-0.151 (0.279)	-0.149 (0.274)
legor_ge						dropped (dropped)	dropped (dropped)
legor_sc							dropped (dropped)
lat_abst							0.939*** (0.332)
kgatrstr							-0.373* (0.201)
Constant	1.385*** (0.214)	1.233*** (0.215)	1.304*** (0.293)	1.121*** (0.306)	1.343*** (0.329)	0.873** (0.378)	1.225*** (0.435)
Observations	60	60	60	60	60	60	60
R ²	0.308	0.369	0.372	0.429	0.470	0.534	0.561

Notes: .01 - ***; .05 - **; .1 - *; *Crights*: creditor rights protection. *trade_open*: trade openness. *fin_open*: financial openness. *legor_uk*: United Kingdom Legal origin. *legor_fr*: French Legal origin. *legor_ge*: German Legal origin. *legor_sc*: Scandinavian Legal origin. *lat_abst*: latitude. *Kgatrstr* : tropics.

4. Robustness checks

In Section 4, we perform robustness checks in a number of ways. First, by employing alternative specification techniques to control for outliers, notably: Iteratively Reweighted Least Squares (IRWLS), the procedure proposed by Hadi (1992) and the LAD method in Eq. (2). Second, by employing alternative financial development indicators, namely: domestic credit for short-term finance and stock market capitalization for long-run financial development. Third, in order to account for additional unobserved heterogeneity, we control for other effects like: social trust, institutions, income levels, continents and intelligence. The robustness checks in the first and second is based on Column 7 of Table 1. For brevity and lack of space, we only report the independent variables of interest and the information criteria for validity of models.

Table 2 presents results that control for outliers. The empirical approach follows Huber (1973) on the use of IRWLS. As has been noted by Midi and Talib (2008), in comparison to OLS, the procedure has the advantage of producing robust estimators because they simultaneously fix any concern arising from the presence of outliers and/or heteroskedasticity (non-constant error variances). In the second column, the technique of Hadi (1992) is employed to detect outliers. The following countries are detected and excluded from the estimation: Mali, Egypt, Belgium, Niger, Netherlands, Senegal, Syria, United Kingdom, Bangladesh, Algeria, Morocco, Pakistan, Tunisia and Turkey. In Column 3, the result with LAD is presented, with standard errors that are bootstrapped with 1000 repetitions. The correlations between tribalism and financial development are consistent with those in Table 1.

Table 2: Controlling from outliers

	IRWLS	Hadi (1992)	LAD
Tribalism	-1.273*** (0.384)	-1.651** (0.748)	-1.189** (0.569)
Constant	1.458*** (0.357)	2.029*** (0.564)	1.388** (0.675)
Number of observations	60	46	60
R ²	0.700	0.552	

Notes: .01 - ***; .05 - **; .1 - *; A constant and all control variables (i.e., creditor rights, trade openness, financial openness, trade openness x financial openness, legal origins dummies and geographic variables) used in Table 1 are included in the estimations but the results are not reported to conserve

space. Figures in parentheses are robust standard errors.

In Table 3, we employ domestic credit and stock market capitalization as alternative measurements of financial development for further robustness purposes. The former (latter) is a short (long)-term measurement for financial intermediary (stock market) development. The findings which confirm the direction of the underlying relationships further reveal that irrespective of the measurement of financial development employed, but for the lower degree of association with stock market capitalization, the sensitivity of tribalism is almost the same. This is essentially because the magnitude of the estimate corresponding to domestic credit is broadly consistent with those from private domestic credit in Table 1.

Table 3. Alternative measures of financial development

	Domestic credit/GDP	Stock market capitalization/GDP
Tribalism	-1.551*** (0.515)	-0.593* (0.304)
Constant	1.989** (0.828)	0.649** (0.267)
Number of observations	60	54
R ²	0.558	0.610

Notes: .01 - ***; .05 - **; .1 - *; A constant and all control variables (i.e., creditor rights, trade openness, financial openness, trade openness, financial openness, legal origins dummies, and geographic variables) used in Table 1 are included in the estimations but the results are not reported to conserve space. Figures in parentheses are robust standard errors.

For further robustness check purposes, we control for other effects to confirm the baseline results. These include: social trust, institutions, income levels, intelligence and regions (Africa, Europe, Asia, Americas and Oceania). The definitions of these variables and their corresponding sources are provided in the Appendix. The control for these additional indicators can broadly be considered as controlling for the unobserved heterogeneity not accounted for in baseline regressions.

The following findings are established. First, the fact that social trust is positively linked to financial development confirms the antagonistic role of tribalism which entails limited trust or trust confined within a certain tribe or groups of tribes. According to Guiso et al. (2004), nations with high levels of

social trust are endowed with households that invest less in cash, which have greater access to formal institutional credit (measured as financial activity in our study). Second, the positive role of institutions in financial development has been substantially covered in the financial development literature (Beck et al., 2003; Asongu, 2012b). Third, high-income is associated with higher levels in financial development. This is the case with advanced countries relative to their less developed counterparts. Fourth, the positive role of intelligence, proxied by the intellectual quotient (IQ), is consistent with Kodila-Tedika and Asongu (2015). Fifth, on continental influences, Asia is dropped due to concerns about multicollinearity while Oceania is not significant. Africa, Americas and Europe are negatively correlated with increasing magnitudes respectively.

Table 4. Controlling for other effects

	Add Social trust	Add Institution	Add income	Add continent	Add IQ
Tribalism	-1.358*** (0.471)	-0.795*** (0.284)	-1.022*** (0.283)	-1.595*** (0.389)	-1.094*** (0.274)
Social trust	1.452*** (0.496)				
Institution		0.090*** (0.025)			
Income			0.260*** (0.045)		
Africa				-0.433*** (0.141)	
Europe				-0.620*** (0.230)	
Asia				(dropped)	
Americas					-0.559** (0.260)
Oceania					0.188 (0.192)
IQ					0.031*** (0.006)
Constant	1.418*** (0.506)	0.908** (0.446)	-0.486 (0.383)	1.865*** (0.394)	-1.225** (0.573)
Number of observations	53	60	59	60	59
R2	0.654	0.683	0.717	0.692	0.730

Notes: .01 - ***; .05 - **; .1 - *; A constant and all control variables (i.e., creditor rights, trade openness, financial openness, trade openness x financial openness, legal origins dummies and geographic variables) used in Table 1 are included in the estimations but the results are not reported to conserve space. Figures in parentheses are robust standard errors.

5. Concluding implications

We have assessed the correlations between tribalism and financial development in 123 countries using data averages from 2000-2010. The tribalism index is used to measure tribalism whereas financial development is measured from perspectives of financial intermediary and stock market developments. The long-term indicator is stock market capitalisation while short-run variables include: private and domestic credits. We find that tribalism is negatively correlated with financial development and the magnitude of negativity is higher for financial intermediary development relative to stock market development. These findings are robust to alternative estimation techniques and control for a plethora of factors.

Tribalism could diminish financial development by limiting: (i) money supply, financial depth, liquid liabilities or the proportion of money circulating within the banking sector; (ii) bank efficiency (bank credit on bank deposits) if credit is restricted within certain tribal confines and (iii) stock market capitalisation due to the fear of losing tribal control on businesses.

First, tribalism could restrict financial depth by limiting liquid liabilities when investors within a given tribe choose to employ informal banking institutions for financial transactions. In such circumstances, lending and borrowing are often among tribal affiliations. This substantially affects the amount of money circulating within formal banking establishments. Second, by depositing less in formal financial institutions, investors and citizens with tribalistic tendencies affect the quantity of deposits that can be mobilised within the economy and hence, the amount of credit that can be made available to domestic investors (private and public). Moreover, in formal financial institutions where credit allocation is influenced by tribal ties, tribes that are not favoured may be clouded with higher information asymmetry which could lead to: (i) discriminatory lending practices like higher interest charges and (ii) surplus liquidity issues. Hence, allocation efficiency is negatively affected by tribalism. Third, businesses with strong family and tribal inclinations may be unwilling to trade their shares in stock markets for fear of losing control or according voting rights to other tribes. This is one of the reasons for the slow start of the Douala Stock Exchange (Ake & Ognaligui, 2010).

The negative magnitude of tribalism on short-term financial development is higher than the corresponding relationship with long-run financial development because, it is more likely for the banking sector to be captured by tribalistic practices. Some justifications include: (i) stock market development is more globalised (or opened) relative to financial intermediary market development and (ii) absence of well functioning stock markets in many developing countries.

The findings are particularly relevant to African and Middle Eastern countries where the scourge is most pronounced.

References

- Aghion, P., & Bolton, P., (1992). “An incomplete contracts approach to financial Contracting”. *Review of Economic Studies* 59, pp. 473–494.
- Ake, B., & Ognaligui, R. W., (2010) “Financial Stock Market and Economic Growth in Developing Countries: The Case of Douala Stock Exchange in Cameroon”, *International Journal of Business and Management*, 5(5), pp. 82-88.
- Alesina, A., Devleeschauwer, A., Easterly, W., Kurlat, S. & Wacziarg, R. (2003). “Fractionalization”. *Journal of Economic Growth*, 8, pp. 155-194.
- Ang, J.B., (2008). “A survey of recent developments in the literature of finance and Growth”. *Journal of Economic Surveys* 22, pp. 536–576.
- Ang, J. B., (2013). “Are modern financial systems shaped by state antiquity?”, *Journal of Banking & Finance*, 37 pp. 4038–4058.
- Ang, J. B., & Kumar, S., (2014). “Financial development and barriers to the cross-border diffusion of financial innovation”, *Journal of Banking & Finance* 39 pp. 43–56.
- Asongu, S. A. (2014), “Financial development dynamics thresholds of financial globalisation: evidence from Africa”, *Journal of Economic Studies*, 41(2), pp. 166-195.
- Asongu, S. A. (2012a). “Government Quality Determinant of Stock Market Performance in African Countries”, *Journal of African Business*, 13 (3), pp.183-199.
- Asongu, S. A. (2012a). “Law and finance in Africa”, *Brussels Economic Review*, 55(4), pp. 385-408.
- Asongu, S. A., (2013a). “Real and monetary policy convergence: EMU crisis to the CFA zone”, *Journal of Financial Economic Policy*, 5,(1), pp. 20-38.
- Asongu, S. A., (2013b). “African Stock Market Performance Dynamics: A Multidimensional Convergence Assessment”, *Journal of African Business*, 14, (3), pp. 186-201.
- Baltagi, B.H., Demetriades, P., & Law, S.H., (2009). “Financial development and openness: evidence from panel data”. *Journal of Development Economics* 89, pp. 285–296.
- Banerjee A., & Pande, P., (2007) “Parochial politics: Ethnic preferences and political corruption”, *CEPR discussion paper* No. 6381.
- Becerra, O., Cavallo, E.A., & Scartascini, C., (2012). “The politics of financial development: the role of interest groups and government capabilities”. *Journal of Banking and Finance* 36, pp. 626–643.

- Beck, T., Demirguc-Kunt, A.& Levine, R. (2003). "Law, Endowments, and Finance". *Journal of Financial Economics* 70, pp. 137-181.
- Beck, T., Demirguc-Kunt, A.& Levine, R. (2010). "Financial Institutions and Markets Across Countries and Over Time: The Updated Financial Development and Structure Database". *World Bank Economic Review* 24, pp. 77-92.
- Billger, S. M., & Goel, R. K., (2009), "Do existing corruption levels matter in controlling corruption? Cross-country quantile regression estimates", *Journal of Development Economics*, 90, pp. 299-305.
- Bjørnskov, C. (2008). "Social Trust and Fractionalization: A Possible Reinterpretation". *European Sociological Review*, 24, pp. 271-283.
- Burgess, R., Jedwab, R., Miguel, E. and Morjaria, A. 2010. "Our Turn To Eat: The Political Economy of Roads in Kenya." mimeo, LSE.
- Djankov, S., McLiesh, C.& Shleifer, A. (2007). "Private credit in 129 countries". *Journal of Financial Economics*, 84, pp. 299-329.
- Eifert, B., Miguel, E. and Posner, D. (2010), "Political Competition and Ethnic Identification in Africa".*American Journal of Political Science* 54(2), pp. 494-510.
- Frank, R., & Rainer, I., (2012). "Does the leader's ethnicity matter? Ethnic Favouritism, education and health in sub-Saharan Africa", *American Political Science Review*, 106(2), pp. 294-325.
- Gallup, J. L., Sachs, J. D. & Mellinger, A. (1999). "Geography and Economic Development". Center for International Development (Harvard University), Working Papers No.1.
- Guiso, L., Sapienza, P. & Zingales, L. (2004). "The Role of Social Capital in Financial Development", *American Economic Review* 94, pp. 526–556.
- Hadi, Ali S, (1992). "Identifying multiple outliers in multivariate data". *Journal of the Royal Statistical Society*, 54, pp. 761–771.
- Kaufmann, D., Kraay, A.& Mastruzzi, M. (2010). "The Worldwide Governance Indicators: Methodology and Analytical Issues". *Policy Research Working Paper Series* 5430, The World Bank. Washington.
- Kodila-Tedika, O., & Asongu, S. A., (2015). "The effect of intelligence on financial development: a cross-country comparison", *Intelligence*, 51(July-August), pp. 1-9.
- Lane, P. R., Milesi-Ferretti, G. M., (2007). "The external wealth of nations market: Revised and extended estimates of foreign assets and liabilities, 1970–2004". *Journal of International Economics* 73, pp. 223-250.

- La Porta, R., Florencio, L.-d.-S., Shleifer, A., & Vishny, R.W., (1997). “Legal determinants of external finance”. *Journal of Finance* 52, pp. 1131–1150.
- La Porta, R., Florencio, L.-d.-S., Shleifer, A., & Vishny, R.W., (1998). “Law and Finance”. *Journal of Political Economy* 106, pp. 1113–1155.
- La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2008). “The Economic Consequences of Legal Origins”. *Journal of Economic Literature* 46, pp. 285-332.
- Levine, R., (1997). “Financial development and economic growth: views and Agenda”. *Journal of Economic Literature*, 35, pp. 688–726.
- Levine, R., (2005). Finance and growth: theory and evidence. In: Aghion, P., Durlauf, S. (Eds.), *Handbook of Economic Growth*. Elsevier Science, Netherlands.
- Berman, B. 1998. Ethnicity, Patronage and the African State: The Politics of Uncivil Nationalism. *African Affairs* 97: pp. 305-341.
- Lonsdale, J., (1996), “Ethnicité, morale et tribalisme politique”, *Politique africaine*, 61, pp. 98-115.
- Mankou, B.A. “Le tribalisme” , *Le Portique* [Online], 5-2007 | Recherches, mis en ligne le 14 décembre 2007, <http://leportique.revues.org/1404>. Accessed: 20/05/2015.
- Meisenberg, G. & Lynn, R. (2011). “Intelligence: A Measure of Human Capital in Nations”. *Journal of Social, Political and Economic Studies*, 36(4), pp. 421-454.
- Okada, K., & Samreth, S.,(2012), “The effect of foreign aid on corruption: A quantile regression approach”, *Economic Letters*, 115(2), pp. 240-243.
- Rajan, R.G., & Zingales, L., (1998). “Financial dependence and growth”. *American Economic Review* 88, pp. 559–586.
- Stiglitz, J. E., & Weiss, A., (1981). “Credit rationing in markets with imperfect Information”. *American Economic Review* 71, pp. 393–410.
- Stulz, R.M., & Williamson, R., (2003). “Culture, openness, and finance”. *Journal of Financial Economics* 70, pp. 313–349.

Appendix

Appendix A. Data sources and summary statistics of variables

Table A1
Definitions and Sources of variables.

Variables	Definitions	Sources
Privatecredit	“Value of financial intermediaries credits to the private sector as a share of GDP (excludes credit to the public sector and credit issued by central and development banks), average over 2000–2010”	World Bank WDI online database; Beck et al. (2010)
Domesticcredit	“Comprised of private credit as well as credit to the public sector (central and local governments and public enterprise) as a share of GDP, average over 2000–2010”	World Bank WDI online database; Beck et al. (2010)
Stock marketcapitalization	“Value of listed companies shares on domestic exchanges as a share of GDP, average over 2000–2010”	World Bank WDI online database; Beck et al. (2010)
Creditorrights	“An index of the protection of creditor rights in 2000. It reflects the ease with which creditors can secure assets in the event of bankruptcy. It takes on discrete values of 0 (weak creditor rights) to 4 (strong creditor rights)”	Djankov et al. (2007)
Trade openness	“Sum of exports and imports of goods and services as a share of GDP in 2000”	World Bank WDI online Database
Financial openness	“Sum of gross stock of foreign assets and liabilities as a share of GDP in 2000”	Lane et al. (2007)
LegalOrigins	“Dummy variable that takes a value of one if a country’s legal system is of French, German or Scandinavian Civil Law origin and zero otherwise”	La Porta et al. (2008)
Latitude	“Absolute value of the latitude of a country, scaled between zero and one, where zero is for the location of the equator and one is for the poles”	La Porta et al. (1999)
Tropics	“The percentage of land area classified as tropical and subtropical based on the Koeppen-Geiger system”	Gallup et al. (1999)
Religion variables	“A set of three variables that identifies the percentage of a country’s population in the 1980s that follows Catholic, Muslim and Other religion”	La Porta et al. (1999)
EthnicFractionalization	“An index of ethnic fractionalization, constructed as one minus the Herfindahl index of the share of the largest ethnic groups. It reflects the probability that two individuals, selected at random from a country’s population, will belong to different ethnic groups. The index ranges from 0 to 1 where the higher the value the greater the fractionalization in a country”	Alesina et al. (2003)
InstitutionalQuality	“An overall indicator of institutional quality measured as the sum of the six sub-indices for 2000 from World Bank Governance Indicators (WBGI): voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. Countries with higher values on this index have institutions of greater quality”	Kaufmann et al. (2010)
Social Capital	“Data on trust between individuals in a given country. Measured by taking the percentage of a population that answers ‘Yes’ to the World Value Survey (WVS) question ‘In general, do you think that most people can be trusted?’, supplemented by data from the Danish Social Capital Project, the Latinobarometro and the Afrobarometer”	Bjørnskov (2008)
Intelligence	Average of IQ	Meisenberg and Lynn (2011)

Table A2.
Descriptive statistics

Variables	Observations	Mean	Standard Deviation	Minimum	Maximum
Private credit	180	0.504	0.463	0.019	2.303
Tribalism	60	0.539	0.1886	0.2	0.995
Creditor rights	216	1.826	0.935	0	4
Trade openness	180	0.883	0.509	0.010	3.720
Financial openness	177	2.156	2.521	0.424	23.977
Latitude	208	0.283	0.189	0.0110	0.8
Tropics	165	0.374	0.436	0	1
Catholic	207	0.320	0.360	0	0.991
Muslim	207	0.219	0.353	0	0.999
Protestant	205	0.145	0.233	0	0.998
Domestic credit	180	0.596	0.544	-0.297	3.111
Stock market capitalization	124	0.494	0.584	0	4.238
Ethnic Fractionalization	188	0.440	0.258	0	0.930
Institutional Quality	189	2.338	3.782	-6.654	9.419
Social Capital	111	0.262	0.140	0.034	0.654
Income	180	8.528	1.304	5.561	11.142