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Law, Economic Growth and Human Development

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Abstract

This paper cuts adrift the mainstream approach to the legal-origins debate on the law-growth nexus by integrating both overall economic and human components in our understanding of how regulation quality and the rule of law lie at the heart of economic and inequality adjusted human developments. Findings summarily reveal that legal-origin does not explain economic growth and human development beyond the mechanisms of law channels. As a policy implication results support benefits of the rule of law and quality of regulation as channels to economic growth and human development.

JEL Classification: I0; K2; K4; O1; P5

Keywords: Law; economic growth; human development; developing countries

1. Introduction

Enforcement of contracts and property rights lie at the heart of economic and human developments. During the past decade, our understanding of the historical evolution of various institutional mechanisms to cope with the issues has been greatly enhanced in particular by the law and finance literature initiated by La Porta et al. (1998). While the scope has been broadened to include growth at country, industry and firm levels, the human development dimension has been sidelined in the so-called legal origins debate that centres on the relative merits of common-law versus civil-law and on the impact these two different legal regimes exert on financial structures, corporate governance and industrial organization. Our paper cuts adrift this mainstream approach by integrating both overall economic and human components in the law-growth nexus. Given the relative importance of African countries as transplant colonies (neo-colonies) of Western legal traditions, the dire human and economic conditions existing there and the on-going debate on the Millennium Development Goals (MDGs), a focus on the continent could lead to findings with very appealing policy implications. We also aim to broaden the scope of our analysis by integrating dummies that lay emphasis on the positions of sub-Saharan and North African countries which have been largely neglected in the “legal origin debate”.

Hitherto most empirical work on the law-growth nexus has been of global appeal and based on very limited data. In the aftermath of the pioneering work of La Porta et al. (hence LLSV, 1998) ¹, the need to collect data that could proxy law standards became a subject to

¹ Macro-economic law quality data on the African continent was unavailable before the pioneering work of LLSV (1998). The first working paper pertaining to the study was published by the National Bureau of Economic Research

concern in World Bank Development Indicators. Today to the best of our knowledge and as far as we have perused, the absence of a study that reflects the African continent in the light of findings from pioneering studies (and resulting hypotheses) is deserving of examination. As we must have emphasized above the African continent is an ideal premise for assessing the outcomes of first works because, it is lagging behind in terms of growth and human development on the one hand, on other it was (is) subject to colonialism (neocolonialism) and thus a fertile ground to investigate what role colonial law legacies have (are) played (playing) in overall economic and human developments. Literature on law-finance (growth) nexus can be classified into the following strands.

The first strand includes a growing body of work which suggests that cross-country differences in legal origin account for cross-country differences in financial development and growth. LLSV (1998) pioneered this strand and since then many authors have taken from them in asserting the edge English common-law countries have over their French civil-law counterparts in prospects of financial development. Emphasis has been made on the fact that English common-law traditions (French civil-law traditions) furnish the strongest (weakest) legal protection to shareholders and creditors (LLSV, 1998, 2000). This scale has been tipped to other aspects of management and government: more informative accounting standards(LLSV,1998), better institutions with less corrupt governments(LLSV,1999) as well as more efficient courts(Djankow et al.,2003). It is worth noting that this strand has been largely focused on understanding ‘*if*’ legal-origins matter in financial development. The issue of ‘*why*’ legal-origins matter remained elusive until Beck et al.(2003) assessed some theories to address the concern.

(NBER) in 1996. Data on the quality of regulation and the rule of law for the African continent saw light as from that same year.

In the second strand of the literature Beck et al.(2003) shed some lights on the issues of ‘*why*’ legal origins matter in finance by empirically assessing two law channel-based theories. The political channel lays emphasis on how legal traditions differ in the priority they attribute to the rights of individual-investors vis-à-vis the state. It follows that countries that champion investors’ rights should have greater prospects for financial development. The adaptability channel postulates that legal traditions differ in their capacity to adjust and adapt to changing business circumstances. This implies countries in which legal systems provide for adjustments with respect to changing and evolving circumstances should have higher prospects for financial development. Therefore this strand solves the “why” puzzle in asserting that legal origin matters in financial development because traditionally, legal origins differ in their ability to adjust and adapt efficiently to changing and evolving economic situations.

In the third strand we find literature championing the nexus that financial development greatly contributes to a country’s overall economic growth (McKinnon, 1973). This optimism has been shared and empirically supported at the country level (King & Levine, 1993; Levine & Zervos, 1998; Allen et al., 2005), as well as at industry and firm levels (Jayaratne & Strahan, 1996; Rajan & Zingales, 1998).

The fourth strand looks at the law-finance (growth) relationship. It provides evidence for links among law, finance and economic growth at firm, industry and country levels (Demirguc-Kunt & Maksimovic, 1998; Beck & Levine, 2002).

The fifth strand that is largely focused on African countries is pioneered by the Mundell (1972) conjecture, which theorized that Anglophone countries shaped by British activism and openness (to experiment) would naturally be rewarded by higher levels of financial development than their francophone neighbors (influenced by French reliance on monetary rules and

automaticity)². Recent literature on the African continent has either wholly (Agbor, 2011) or partially (Asongu, 2011) confirmed the edge English common-law countries have in growth and finance prospects respectively³. Historically it should be noted that the partition of Africa into British and French spheres in the 19th century resulted in the implementation of two dissimilar colonial policies⁴. The contribution of the present paper to the literature differs from those of Agbor (2011) and Asongu (2011) by: (1) investigating the law-growth nexus on the African continent and using a North African (sub-Saharan African) dummy to distinguish the effects of North African (sub-Saharan African) countries; (2) using law indicators to assess the relationship between legal origin and development (economic and human)⁵; (3) utilizing much novel data⁶ for more focused and updated policy implications⁷.

The rest of the paper is partitioned in the following manner. Section 2 discusses economic growth and human development while Section 3 looks at various channels in the law-growth theory. Data sources and methodology are revealed and discussed respectively in Section

² “*The French and English traditions in monetary theory and history have been different... The French tradition has stressed the passive nature of monetary policy and the importance of exchange stability with convertibility; stability has been achieved at the expense of institutional development and monetary experience. The British countries by opting for monetary independence have sacrificed stability, but gained monetary experience and better developed monetary institutions.*” (Mundell, 1972; pp.42-43).

³ While Agbor (2011) investigates how legal-origin affects economic performance, Asongu (2011) proposes four theories in assessing why legal-origin matters in growth and welfare. Both studies are focused on the sub-Saharan part of Africa.

⁴ The British and French implemented two different colonial policies. While the French imposed a highly centralized bureaucratic system that clearly underlined empire-building, the British on their part administered pragmatic, flexible and decentralized policies. Economic ambitions dominated British colonial activities who sought to transform their colonies into commercially viable trading countries (partners) through the indirect-rule: producing raw material for their industries and consuming British manufactures. The French on their part propagated imperial ambitions through a policy of assimilation.

⁵ While Agbor (2011) used channels of education and trade to investigate how colonial origin affects the economic performance of sub-Saharan African countries, Asongu (2011) on his part has used financial channels in explaining why colonial legacy matters in economic growth and welfare. In this study we use law channels.

⁶ The Inequality adjusted Human Development Index we use to proxy human developed was first introduced in the 2010 Human Development Report. Beyond this truism data on regulatory quality and rule of law from African Development Indicators of the World Bank have been largely unexplored due to their limited time series properties (data collection began only in 1996).

⁷ While Agbor (2011) used data ranging from 1960 to 2000, that of Asongu (2011) varied from 1986 to 2008. We shall use data ranging from 1996 to 2008.

4. Empirical analysis and discussion of results are reported in Section 5. We conclude with Section 6.

2. Economic growth and human development

2.1 Economic growth

We define economic growth as the increasing capacity of the economy to meet up with the wants of members of societies that constitute it. It can be appreciated either at macro or micro-economic levels. In the context of this paper we define macro and micro levels by GDP and GDP per capita growth respectively.

2.2 Human development

Human development is a multi-dimensional and complex phenomenon. We hereby refer to the economic sense of the term where-by some crucial aspects of the proper livelihood of citizens in a country are taken into account. Examples of aspects of this terminology that fall within the framework of our paper are: life expectancy, literacy, education, standards of living...etc. We equally intend to lay emphasis on the politico-economic aspect of the term because it may also be used to distinguish whether a country is developed or not as a result of the impact of its economic policies on the quality of life of its citizens. Such politico-economic measures include regulatory quality and the rule of law which we address below.

3. Law channels and development theory

3.1 Regulatory quality

For this channel we postulate that a legal system that enables independent bodies to set-up rules oversee their application and sanction those who fail to respect them is more likely to foster favorable conditions for economic growth and human development. Aspects of regulatory

quality like unfair competitive practices, price controls, discriminatory tariffs, discriminatory taxes, excessive protections, burden of administrative regulations, distortional tax system, import barrier, cost of tariffs as obstacle to growth, degree of competition in local market, ease of starting a company, laxity of anti-monopoly policy, how ineffective environmental regulations hurt competitiveness, foreign investment nature, banking & Finance, administered prices and market prices, ease of market entry for new firms...etc tend to affect growth in economic and human terms in one way or the other. If the power of the government in business activities is largely limited by the presence of independent bodies that ensure regulatory quality, then the likelihood of development is greater. While most French civil-law countries are characterized by little decentralization, appointment of judges and governors by the central government...etc, English common-law countries traditionally have regulatory organs that are not appointed by government and therefore not subject to any form of allegiance to the power that be in their commitment to regulatory quality. It follows that the independence of regulatory organs in English common-law countries naturally provides them with an edge in development over French civil-law countries.

3.2 Rule of law

This channel lays emphasis on the fact that legal traditions differ in their focus on law vis-à-vis the rights of the state and private property. Therefore legal systems that champion private property ownership and intellectual property rights have the tendency to create favorable conditions for economic and human developments. Conversely, legal systems that put more emphasis on the power of the state to the detriment of private property rights create conditions that deter development at both overall economic and human levels. A logical result is that countries with common-law tradition provide better development conditions than those with

civil-law traditions. These assertions are in line with the literature (LLSV, 1998; Beck et al., 2003).

4. Data and Methodology

4.1 Data

We examine a sample of 38 African countries with British, French and Portuguese legal origins (see Appendices 1 and 2). Due to the limited nature of data on human development, we are obliged to narrow down to primary database (Panel A of Appendix 1) to a second data-set (Panel B of Appendix 1) of 28 countries. Countries with Portuguese legal origin are absent in the second data-set. We use the first dataset to account for the effects of legal tradition on growth and the second for the effects of legal origin on human development. All variables are taken from African Development Indicators (ADI) of the World Bank (WB). Owing the limited span of data on regulatory quality and rule-of-law, both datasets span from 1996 to 2008. We also add the legal origin of countries in the dataset in order to account for endogeneity. As pointed-out by Beck et al. (2003) from Berkowitz et al. (2002), it is crucial to distinguish between legal origin countries (France, United Kingdom, the U.S.A, Germany, Austria and Switzerland) which formed the legal traditions from countries in which the legal legacies were transplanted. However this fact doesn't pose any concern to this paper because legal origins are primarily used as instruments. Data collected could be classified in the following categories.

4.1.1 Law indicators

a) Regulatory Quality

With respect to the World Bank the quality of regulation captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit

and foster private sector development. The concept is appreciated by both representative⁸ and non-representative⁹ sources. This indicator is measured in percentile rank from 0 to 100.

b) Rule of Law

This indicator measures perceptions of the extent to which economic agents have confidence in and abide by rules of society, particularly on the quality of property rights, the courts, contract enforcement, the police, as well as the likelihood of crime and violence. The measurement is in percentile rank from 0 to 100 from a plethora of criteria from representative¹⁰ and non-representative¹¹ sources.

⁸ Representative sources include: unfair competitive practices, price controls, discriminatory tariffs, discriminatory taxes, excessive protections, foreign investment nature, banking & Finance, administered prices and market prices, ease of market entry for new firms, competition between businesses, regulation arrangements, investment profiles, tax effectiveness, efficiency of the country's tax collection system, burden of administrative regulations, distortional tax system, import barrier, cost of tariffs as obstacle to growth, degree of competition in local market, ease of starting a company, laxity of anti-monopoly policy, how ineffective environmental regulations hurt competitiveness degree of clarity and transparency in rules, and assessment of the quality of business laws.

⁹ Non-representative sources include: trade policy, access to capital market (foreign and domestic), how ease of doing business is not a competitive advantage for the country, freedom of foreign investors to acquire control in domestic companies, how public sector contracts are sufficiently open to foreign bidders, non-distortional nature of real personal taxes, business regulatory environment, problematic nature of tax regulations for the growth in business, problematic nature of customs and trade regulations for growth in business, competition, price liberalization, trade & foreign exchange system, competition policy, conditions for rural financial services development, investment climate in rural businesses, access to agricultural input and produce markets, business regulatory environment, trade policy, how protectionism in the country affects fairness of competition, how price control affects pricing of products of industries, non-distortional nature of real corporate, how banking regulation hinders competitiveness, how labor regulations hinder business activities, impairment of economic development by subsidies, ease to start business.

¹⁰ Representative sources include: violent crime, organized crime, fairness of the judicial process, enforcement of contracts, speediness of judicial process, confiscation/expropriation, intellectual property rights protection, private property protection, cost of common crimes on business, cost of organized crime on business, pervasiveness of money laundering through banks, effectiveness of police, independence of the judiciary from political influence of government (citizens or firms), efficiency of legal framework to challenge the legality of government action, strength of intellectual property protection, strength of financial assets protection, settlement of economic disputes, justice in commercial matters, intellectual property protection, effectiveness of arrangements for the protection of intellectual property, security rights and property transactions, trafficking of peoples, rate of illegal donations to parties, percentage of unofficial or unregistered firms, rate of tax evasion, confidence in the police force, confidence in the judicial system, rate of victimization of crime, independence of the judiciary, respect of law in relation between citizens and the administration, security of persons and goods, organized crime and activity, effectiveness of the fiscal system, effectiveness of the judicial system, security of property rights, security of contracts between private agents, government respect for contracts, judicial independence, level of impartiality of investors, and threat of crime to business.

What is important to note here is that these two law-measures encompass the four indicators considered by Beck et al. (2003) in theorizing the political and adaptability channels of law. Our indicators even go further than theirs as they are a summary of a plethora of measures mentioned on the footnotes pertaining to their definitions and elucidations above.

4.1.2 Growth and human development variables

While growth at overall economic and human levels are measured by GDP growth and GDP per capita growth respectively, human development is appreciated by the Inequality adjusted Human Development Index (IHDI). The Human Development Index (HDI) is a composite statistic used by the World Bank to rank countries by levels of human development. It is a comparative measure of life-expectancy, literacy, education and standards of living worldwide. The 2010 Human Development Report was the first to adjust HDI with inequality factors (income, education and life expectancy). Therefore this work has the added appeal of using a recently unexplored indicator of human development.

4.1.3 Instrumental variables

We assess legal origin dummies for the English, French and Portuguese colonial legacies. In order to ameliorate our contribution to the literature we add dummies for sub-Saharan Africa (SSA), and North Africa. These dummies are used as instruments. But for the SSAfrican dummy which reflects about 85 % (dataset without IHDI) and 80 % (dataset with IHDI) of the French

¹¹ Non-representative sources include: Property rights and rule based on governance, family fear of crime, trust in courts of law, trust in police, trust in property rights and rule based governance, accountability of the judiciary, trust in the police, trust in the Supreme Court, degree of common practice of tax evasion, degree of social justice, family mistrust in police, rate of family victimization by crime, personal security and protection of private property, and enforcement of patent and copyright protection.

legal origin dummy, all other dummies reflect quite distinct information or variability (see Appendix 2).

4.1.4 Control variables

Our control variables are in line with the literature (Levine & King, 1993; Hassan et al., 2011). We shall therefore control for inflation, trade, population growth, as well as government's general final consumption expenditure in the law-development regressions. These control variables are all in ratios of GDP and obtained from ADI of the WB.

4.1.5 Brief comparative analyses from Tables 1 & 2

Comparative summary statistics for countries with English, French, sub-Saharan-French, Portuguese and North African decent are discussed in Tables 1 and 2. A close scrutiny suggests that contrary to popular consensus, North African countries which have predominantly French civil-law origin dominate in GDP growth, GDP per capita, human development, regulation quality and the rule of law. As expected countries with English common-law overwhelming lead in trade while countries with French civil-law origin have the lowest levels of inflation. Preliminary assessment of differences in levels of trade and inflation is consistent with the law-finance (growth) theory. English countries manifest higher levels of trade because they traditionally have legal systems that provide for competition and openness (in trade and capital). This is in accordance with Agbor (2011). On the other hand, countries with French legal tendencies averagely have the lowest levels of inflation because the French colonial legacy is focused on lowering levels of inflation since former French colonies have sacrificed financial independence and monetary experience for exchange stability (Mundell, 1972).

Table 1: Comparative Statistics (Data without IHDI)

		Growth		Law Variables		Control Variables			Instrumental Variables					
		GDPg	GDP pcg	Reg. Qua.	Rule of Law	Infl.	Trade	Popg	Gov. Exp.	Eng.	Frch.	Port.	Frssa	Nafri
Mean	English	4.654	2.49	0.378	0.407	10.79	87.88	2.096	16.09	---	---	---	---	---
	French	4.146	1.55	0.305	0.278	3.748	65.31	2.577	12.62	---	---	---	---	---
	Portuguese	6.404	3.916	0.267	0.259	112.57	94.20	2.172	13.18	---	---	---	---	---
	Frenchssa	4.076	1.236	0.280	0.243	3.873	63.40	2.832	11.96	---	---	---	---	---
	Northafri	4.616	3.135	0.422	0.472	3.959	68.45	20.29	14.70	---	---	---	---	---
	Data	4.597	2.202	0.332	0.330	18.84	77.64	1.450	14.14	0.421	0.473	0.105	0.394	0.105
S.D	English	3.70	3.50	0.185	0.216	14.87	46.61	0.869	5.72	---	---	---	---	---
	French	4.21	3.96	0.148	0.175	8.744	28.85	1.16	4.73	---	---	---	---	---
	Portuguese	7.12	6.87	0.164	0.250	574.06	34.92	0.382	4.44	---	---	---	---	---
	Frenchssa	4.48	4.12	0.135	0.156	9.55	30.20	1.102	4.848	---	---	---	---	---
	Northafri	2.303	2.304	0.135	0.141	3.581	20.29	0.334	2.782	---	---	---	---	---
	Data	4.45	4.24	0.171	0.211	193.5	39.88	1.02	5.41	0.494	0.499	0.307	0.489	0.307
Min.	English	-16.7	-17.1	0.044	0.029	-100	17.85	-1.07	5.41	---	---	---	---	---
	French	-12.6	-15.1	0.054	0.019	-100	21.57	0.591	2.650	---	---	---	---	---
	Portuguese	-28.1	-29.6	0.044	0.014	-3.50	36.80	1.414	6.331	---	---	---	---	---
	Frenchssa	-12.6	-15.1	0.054	0.019	-100	21.57	0.707	2.650	---	---	---	---	---
	Northafri	-2.22	-3.59	0.156	0.105	18.67	38.36	0.591	6.77	---	---	---	---	---
	Data	-28.1	-29.6	0.044	0.014	-100	17.85	-1.07	2.65	0.00	0.00	0.00	0.00	0.00
Max.	English	27.46	22.61	0.792	0.810	132.82	255.0	4.23	35.13	---	---	---	---	---
	French	33.62	29.06	0.698	0.610	31.11	156.8	10.56	28.76	---	---	---	---	---
	Portuguese	20.61	17.11	0.556	0.767	4145	179.0	3.03	21.28	---	---	---	---	---
	Frenchssa	33.62	29.06	0.698	0.519	31.11	156.8	10.56	28.76	---	---	---	---	---
	Northafri	12.21	10.59	0.688	0.610	0.339	124.6	1.923	19.35	---	---	---	---	---
	Data	33.62	29.06	0.792	0.810	4145	255.0	10.56	35.13	1.00	1.00	1.00	1.00	1.00
Obs.	English	208	208	160	159	193	208	208	193	---	---	---	---	---
	French	234	234	180	180	220	225	234	222	---	---	---	---	---
	Portuguese	52	52	40	40	52	39	39	39	---	---	---	---	---
	Frenchssa	195	195	150	150	181	186	195	183	---	---	---	---	---
	Northafri	52	52	40	40	52	52	52	52	---	---	---	---	---
	Data	494	494	380	379	465	472	481	454	494	494	494	494	494

S.D : Standard Deviation. Min : Minimum. Max : Maximum. Obs: Observations. Reg.Qua: Regulation Quality. Infl: Inflation. Popg: Population growth. Gov.Exp: Government Expenditure. GDPg: GDP growth. GDPpcg: GDP per capita growth. Eng: English legal origin. Frch: French legal origin. Port: Portuguese legal origin. Frssa: French sub-Saharan Africa. Nafri: North Africa. IHDI: Inequality adjusted Human Development Index.

Table 2: Comparative Statistics (Data with IHDI)

		Growth and Development			Law Variables		Control Variables			Instrumental Variables					
		GDPg	GDP pcg	IHDI	Reg. Qua.	Rule of Law	Infl.	Trade	Popg	Gov. Exp.	Eng.	Frch.	Port.	Frssa	Nafri
Mean	English	4.620	2.558	0.504	0.390	0.393	12.387	89.00	2.012	15.772	---	---	---	---	---
	French	4.300	1.692	0.430	0.298	0.275	3.877	63.51	2.596	12.76	---	---	---	---	---
	Frenchssa	4.258	1.375	0.385	0.270	0.237	4.041	61.05	2.873	12.08	---	---	---	---	---
	Northafri	4.616	3.135	0.636	0.422	0.472	3.959	68.45	1.450	14.70	---	---	---	---	---
	Data	4.426	2.032	0.459	0.334	0.321	7.325	73.784	2.367	13.917	0.392	0.607	---	0.500	0.142
S.D	English	2.487	2.550	0.102	0.186	0.227	16.74	43.46	0.685	5.856	---	---	---	---	---
	French	4.198	3.948	0.125	0.148	0.178	8.983	28.75	1.189	4.822	---	---	---	---	---
	Frenchssa	4.482	4.127	0.082	0.132	0.159	9.876	30.01	1.126	4.980	---	---	---	---	---
	Northafri	2.303	2.304	0.053	0.135	0.141	3.581	20.29	0.334	2.782	---	---	---	---	---
	Data	3.62	3.48	0.122	0.170	0.207	13.35	37.51	1.059	5.436	0.489	0.489	---	0.500	0.350
Min.	English	-4.975	-7.797	0.376	0.044	0.029	-100.00	17.85	0.548	5.416	---	---	---	---	---
	French	-12.67	-15.15	0.204	0.054	0.019	-100.00	21.57	0.591	2.650	---	---	---	---	---
	Frenchssa	-12.67	-15.15	0.204	0.054	0.019	-100.00	21.57	0.707	2.650	---	---	---	---	---
	Northafri	-2.227	-3.591	0.521	0.156	0.105	0.339	38.36	0.591	6.774	---	---	---	---	---
	Data	-12.67	-15.15	0.204	0.044	0.019	-100.00	17.85	0.548	2.650	0.000	0.000	---	0.000	0.000
Max.	English	11.28	8.906	0.743	0.792	0.810	132.82	209.41	3.165	35.13	---	---	---	---	---
	French	33.62	29.062	0.721	0.698	0.610	31.11	156.86	10.56	28.76	---	---	---	---	---
	Frenchssa	33.62	29.06	0.544	0.698	0.519	31.11	156.86	10.56	28.76	---	---	---	---	---
	Northafri	12.21	10.59	0.721	0.688	0.610	18.67	124.63	1.923	19.351	---	---	---	---	---
	Data	33.62	29.06	0.743	0.792	0.810	132.82	209.41	10.564	35.13	1.000	1.000	---	1.000	1.000
Obs.	English	143	143	143	110	110	141	143	143	130	---	---	---	---	---
	French	221	221	221	170	170	207	212	221	209	---	---	---	---	---
	Frenchssa	182	182	182	140	140	168	173	182	170	---	---	---	---	---
	Northafri	52	52	52	40	40	52	52	52	52	---	---	---	---	---
	Data	364	364	364	280	280	348	355	364	339	364	364	---	364	364

S.D : Standard Deviation. Min : Minimum. Max : Maximum. Obs: Observations. Reg.Qua: Regulation Quality. Infl: Inflation. Popg: Population growth. Gov.Exp: Government Expenditure. GDPg: GDP growth. GDPpcg: GDP per capita growth. Eng: English legal origin. Frch: French legal origin. Port: Portuguese legal origin. Frssa: French sub-Saharan Africa. Nafri: North Africa. IHDI: Inequality adjusted Human Development Index.

4.2 Methodology

4.2.1 Estimation method

In accordance with Beck et al. (2003) and recent empirical literature (Agbor, 2011; Asongu, 2011) we employ a Two-Stage-Least Squares (TSLS) methodology with dummies of legal origins as instrumental variables. This estimation technique has the particular advantage of looking at the issue of endogeneity. Thus the instrumental variable estimator can avoid the bias that Ordinary Least Squares (OLS) estimates suffer-from when explanatory variables in a regression are correlated with the disturbance term. More so the context out paper (use of legal origin as instruments) requires an Instrumental Variable (IV) estimation method. In the approach we shall adopt the following steps:

- provide justification for the use of a TSLS approach over an OLS estimation technique through the Hausman-test for endogeneity;
- show that instrumental variables (legal origins) explain the endogenous components of explaining variables (law channels), conditional on other covariates;
- check the validity of the instruments via an Over-identifying restriction (OIR) test.

Our methodology includes the following models:

First-stage regression:

$$LawChannel_{it} = \gamma_0 + \gamma_1(British)_{it} + \gamma_2(French)_{it} + \gamma_3(Portuguese)_{it} + \gamma_4(NorthAfrica)_{it} + \alpha_i X_{it} + v \quad (1)$$

$$LawChannel_{it} = \gamma_0 + \gamma_1(British)_{it} + \gamma_2(Frenchssa)_{it} + \gamma_3(Portuguese)_{it} + \gamma_4(NorthAfrica)_{it} + \alpha_i X_{it} + v \quad (2)$$

Second-stage regression:

$$Development_{it} = \gamma_0 + \gamma_1(Qualityofregulation)_{it} + \gamma_2(Ruleoflaw)_{it} + \beta_i X_{it} + \mu \quad (3)$$

In all three equations, X is a set of exogenous variables that are included in some of the second stage regressions. For the first/second and third equations, v and u , respectively represent the error terms. Instrumental variables are the five legal origin dummies. ‘*Development*’ encompasses GDP growth, GDP per capita growth and human development. *Frenchssa* is the dummy for French SSA.

4.2.2 Choice of endogenous regressors for control at the second-stage of the TSLS

The quality of control covariates at the second stage of the TSLS method is very crucial. These covariates for control must be justified by an underlying theory in which instruments are exogenous to them. In this study we adopt Trade and Inflation as endogenous variables of control because they are backed by the underlying law-growth theory and can be explained by the instruments. For instance the law-growth theory historically and empirically demonstrates that trade in English common-law countries will be greater than in French civil-law countries because traditionally, the former countries are more opened(in trade and capital) and competitive(Agbor,2011). On the other hand countries with French legal tendencies should have the lowest levels of inflation because french colonial legacy has focused on sacrificing financial independence and monetary experience for exchange stability (Mundell, 1972). A close comparative scrutiny of tables 1 and 2 justify the choice of these variables (Trade and Inflation)¹².

¹² Inflation is lowest for French countries and Trade significantly higher in English countries with respect to their French counterparts.

5. Cross-country regressions

This section presents the results from cross-country regressions to assess the importance of legal origin in explaining cross-country variance in economic growth and human development, the ability of legal origin to explain cross-country differences in regulation quality and rule of law indicators, and the ability of the exogenous components of the law channels to account for cross-country differences in economic growth and human development.

5.1 Legal origins and development

In Table 3, we regress our growth and human development indicators on the legal origin dummies and also test for their joint significance. The Scandinavian legal origin is measured by the constant. Results in Panel A show that distinguishing countries by legal origin helps explain cross-country differences in growth and human development. Even after controlling for trade, inflation and government expenditure, the legal origin dummies enter jointly significantly in all regressions at 1% significance level. Growth in GDP and GDP per capita is highest in countries with Portuguese civil-law origin, followed by English common-law countries, then North-African countries and lastly French-speaking countries of SSA. On effects on human development, the same order is respected but with Portuguese countries absent (as the regressions are based on the second data set).

Table 3: Development and legal origin regressions

Panel A: Regressions unconditional on other covariates							
		Economic Growth				Human Development(IHDI)	
		GDP Growth(GDPg)		Welfare(GDPpcg)			
		Model 1	Model 1*	Model 2	Model 2*	Model 3	Model 3*
Legal Origin Dummies (Instruments)	English	4.629*** (14.97)	4.434*** (14.24)	2.399*** (8.229)	2.338*** (8.004)	0.484*** (64.96)	0.457*** (45.82)
	French	4.079*** (13.20)	---	1.298*** (4.452)	---	0.390*** (61.40)	---
	Frenchssa	---	4.076*** (12.78)	---	1.236*** (4.130)	---	0.385*** (44.03)
	Portuguese	6.404*** (10.45)	6.404*** (10.37)	3.916*** (6.775)	3.916*** (6.756)	---	---
	Northafrica	0.399 (0.603)	3.507*** (5.632)	1.561** (2.504)	2.550*** (4.366)	0.222*** (16.72)	0.522*** (31.55)
F-stats(for instruments)	3.846***	132.34***	7.227***	39.006***	170.95***	1850.86***	
Adjusted R ²	0.017	0.516	0.036	0.236	0.483	0.938	
Observations	494	494	494	494	364	364	

Panel B: Regressions conditional on other covariates							
		Economic Growth				Human Development(IHDI)	
		GDP Growth(GDPg)		Welfare(GDPpcg)			
		Model 4	Model 4*	Model 5	Model 5*	Model 6	Model 6*
Legal Origin Dummies (Instruments)	English	5.994*** (7.683)	4.092*** (6.206)	2.180*** (4.472)	1.919*** (4.214)	0.405*** (25.14)	0.276*** (17.08)
	French	5.078*** (8.628)	---	1.133*** (2.768)	---	0.335*** (26.68)	---
	Frenchssa	---	3.871*** (7.550)	---	0.919** (2.339)	---	0.251*** (19.26)
	Portuguese	8.368*** (8.947)	6.992*** (7.835)	5.509*** (7.329)	5.280*** (7.161)	---	---
	Northafrica	0.503 (0.897)	3.417*** (5.359)	1.569*** (2.735)	2.318*** (4.042)	0.226*** (19.31)	0.415*** (25.52)
Control Variables	Inflation	-0.006 (-0.400)	0.008 (0.552)	---	---	---	---
	Trade	-0.007 (-1.538)	-0.002 (-0.432)	0.002 (0.537)	0.004 (1.136)	0.001*** (11.02)	0.001*** (12.70)
	Gov. Exp.	-0.043 (-1.154)	0.019 (0.560)	---	---	-0.002*** (-2.784)	0.001** (2.092)
F-stats(for instruments)	3.659***	85.285***	12.028***	43.821***	140.73***	1709.36***	
Adjusted R ²	0.037	0.588	0.085	0.313	0.623	0.962	
Observations	414	414	472	472	338	338	

* ** ***: significance levels of 10%, 5% and 1% respectively. GDPg: GDP growth. GDPpcg: GDP per capita growth. IHDI: Inequality adjusted Human Development Index. Frenchssa: French sub-Saharan Africa. Student t-statistics are presented in brackets.

5.2 Legal origins and law channels

Table 4 below assesses whether legal origin explains cross-country differences in the law indicators which are characterized by the regulation quality and rule of law channels.

Table 4: Law channels and legal origin regressions

Panel A: Regressions unconditional on other covariates					
	Quality of Regulation		Rule of Law		
	Model 7	Model 7*	Model 8	Model 8*	
Legal Origin Dummies (Instruments)	English	0.371*** (28.48)	0.357*** (26.09)	0.395*** (25.46)	0.383*** (24.14)
	French	0.286*** (21.92)	---	0.247*** (15.97)	---
	Frenchssa	---	0.280*** (19.92)	---	0.243*** (15.02)
	Portuguese	0.267*** (10.35)	0.267*** (9.831)	0.259*** (8.441)	0.259*** (8.242)
	Northafrica	0.115*** (4.131)	0.333*** (12.14)	0.188*** (5.684)	0.376*** (11.89)
F-stats(for instruments)	13.71***	353.82***	25.16***	275.58***	
Adjusted R ²	0.091	0.788	0.160	0.744	
Observations	380	380	379	379	
Panel B: Regressions conditional on other covariates					
	Quality of Regulation		Rule of Law		
	Model 9	Model 9*	Model 10	Model 10*	
Legal Origin Dummies (Instruments)	English	0.469*** (18.36)	0.237*** (8.056)	0.550*** (18.68)	0.184*** (5.878)
	French	0.371*** (12.57)	---	0.376*** (11.09)	---
	Frenchssa	---	0.177*** (7.274)	---	0.073*** (2.805)
	Portuguese	0.402*** (11.14)	0.281*** (6.440)	0.454*** (10.95)	0.260*** (5.614)
	Northafrica	0.077*** (2.654)	0.241*** (7.676)	0.132*** (3.946)	0.231*** (6.909)
Control Variables	Inflation	-0.001* (-1.724)	---	-0.003*** (-3.713)	---
	Trade	---	0.0003 (1.361)	---	0.001*** (4.367)
	Pop. growth	-0.030** (-3.110)	---	-0.044*** (-3.915)	---
	Gov. Exp.	---	0.006*** (3.981)	---	0.008*** (4.396)
F-stats(for instruments)	12.080***	255.35***	25.46***	252.21***	
Adjusted R ²	0.137	0.820	0.261	0.819	
Observations	348	335	347	334	

*, **, ***: significance levels of 10%, 5% and 1% respectively. GDPg: GDP growth. GDPpcg: GDP per capita growth. IHDI: Inequality adjusted Human Development Index. Frenchssa: French sub-Saharan Africa. Student t-statistics are presented in brackets.

We regress the proxies for law indicators on the legal origin dummy variables. We report F-test of whether legal origin dummy variables taken together explain significantly cross-country variations in the rule of law and regulation quality. Clearly legal origin helps explain cross-country differences in the law indicators as the F-test of the joint significance of these dummies indicate that legal origin is significant at 1% level. Even after controlling for population growth, trade, inflation and final government expenditure, results are still appealing (Panel B). On average British common-law countries dominate in both indicators while French civil-law countries from SSA are least. These findings are consistent with the law-growth theory elucidated above.

5.3 Examination of law channels using a TSLS Instrumental Variable procedure

Table 5 addresses the issues of: (1) whether the exogenous components of the rule of law and regulation quality indicators explain growth and development and (2) whether legal origin explains growth and development through some other mechanisms other than law channels. To make this assessment we use TSLS with heteroskedasticity-consistent standard errors. So at this stage we add equation (3) to the estimations. When combining either equations (1) and (3) or equations (2) and (3), two pairs of four legal origin dummies are used as instrumental variables (we do not use French and SSA-French at the same time). Even when all five instruments are used in a single regression, the second-stage results do not change significantly. What we seek to address by this robustness check is the evident correlation between French countries and French-SSAfrican countries¹³.

¹³ To further investigate if evidence of correlation between the SSAfrican and French dummies have some bearing on the outcome of our regressions, for each model we carried-out three different regressions: the first and second in which we independently verify the validity of the French and SSAfrican dummies as instruments and the third in which we use both of them simultaneously. We do not find any substantial difference in results. Our use of the five dummies provides us with the degrees of freedom sufficient for the OIR-test for instrument validity.

At first glance, our results justify the use of the TSLS estimation method as the null hypothesis of the Hausman-test is rejected in all regressions. This implies OLS estimates are not consistent due of the presence of endogeneity. Secondly we check the validity of our instruments through the OIR-test and find that all instruments are valid. Therefore, the instruments do suffer from the same problem (correlation with the disturbance term) as the endogenous regressors in the equation of interest (equation 3).

The first issue of whether the exogenous components of the rule of law and regulation quality explain economic growth and human development can be appreciated from the significance of their corresponding estimated coefficients. On the second concern of knowing if legal origin explains growth and development through some other mechanisms than law channels, the failure to reject the null hypothesis of the OIR-test in all regressions suggests that legal origins explain economic growth and human development through law channels(when other determinants of growth and development are controlled for). It is also worth noting that regulatory quality has a higher impact on the endogenous variables than the rule of law.

Table 5: Development and Law second stage regressions

		Growth(GDPg)		Welfare(GDPpcg)		Development(IHDI)	
		Model 11	Model 11*	Model 12	Model 12*	Model 13	Model 13*
Law Channels	Reg. Qua.	8.910** (2.062)	---	12.93*** (2.971)	---	1.640** (2.339)	---
	Rule of Law	---	3.030 (0.792)	---	8.046*** (2.576)	---	0.938*** (3.080)
Control Variables	Inflation	0.027** (2.320)	0.023* (1.791)	0.030*** (3.104)	0.026*** (2.872)	-0.009 (-0.698)	-0.015 (-1.037)
	Trade	0.014 (0.618)	0.040** (2.017)	-0.031 (-1.323)	-0.009 (-0.615)	-5.004 (-0.014)	0.003** (2.171)
	Hausman test	93.71***	115.79***	44.60***	50.73***	744.41***	919.95***
	OIR(Sargan) test	0.793	1.595	0.526	0.433	0.708	0.340
	P-values	[0.672]	[0.450]	[0.768]	[0.805]	[0.400]	[0.559]
	Adjusted R ²	0.001	0.001	0.0005	0.002	0.243	0.271
	Fisher-stats	85.02***	39.51***	38.20***	36.60***	36.07***	43.21***
	Observations	339	338	339	338	259	259

*, **, ***: significance levels of 10%, 5% and 1% respectively. GDPg: GDP growth. GDPpcg: GDP per capita growth. IHDI: Inequality adjusted Human Development Index. OIR: Over identifying restrictions test. (): z-statistics. Chi-square statistics for Hausman test. LM statistics for Sargan test. []:p-values.

6. Conclusion

While past works have assessed how legal origin explains financial development, this paper examines the mechanisms by which traditional legal legacies handed down to colonies by former colonial powers affect economic growth. We also use a novel indicator first introduced in 2010 to measure the impact of legal channels on inequality adjusted human development. Our results show that the quality of regulation and rule of law are exogenous to economic growth and human development, with the effect of the former (quality of regulation) higher than that of the later. Findings also reveal that legal origin does not explain economic growth and human development through some other mechanisms than law channels when other potential exogenous determinants of economic growth and human development (consistent with the law-growth theory and empirically valid) are controlled for.

Our results support the current consensus (LLSV., 1998; Beck et al., 2003; Agbor, 2011) that English common-law countries provide for legal systems that improve conditions for economic growth and human development than French civil-law countries. Portuguese civil-law countries lie between the French-speaking and North African countries, while French sub-Saharan Africa is slightly below the average of Francophone Africa. As a policy implication results support benefits of the rule of law and quality of regulation as channels to economic growth and human development.

Appendices

Appendix 1: Presentation of legal origin and countries (without IHDI)

Panel A: Countries in dataset without IHDI		
Legal origins	Countries	Num.
English	Botswana, Egypt, Gambia, Ghana, Kenya, Lesotho, Malawi, Mauritius, Nigeria, Seychelles, Seirra Leone, South Africa, Sudan, Swaziland, Tanzania, Zambia.	16
French	Algeria, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo Republic, Côte d'Ivoire, Gabon, Madagascar, Mali, Morocco, Niger, Rwanda, Senegal, Togo, Tunisia.	18
Portuguese	Angola, Cape Verde, Guinea-Bissau, Mozambique.	4
French sub-Saharan Africa	Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo Republic, Côte d'Ivoire, Gabon, Madagascar, Mali, Niger, Rwanda, Senegal, Togo.	15
North Africa	Algeria, Egypt, Morocco, Tunisia,	4
Panel B: Countries in dataset with IHDI		
English	Botswana, Egypt, Ghana, Kenya, Lesotho, Malawi, Mauritius, Nigeria, Sudan, Swaziland, Zambia.	11
French	Algeria, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo Republic, Côte d'Ivoire, Madagascar, Mali, Morocco, Niger, Rwanda, Senegal, Togo, Tunisia.	17
French sub-Saharan Africa	Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo Republic, Côte d'Ivoire, Gabon, Madagascar, Mali, Niger, Rwanda, Senegal, Togo.	15
North Africa	Algeria, Egypt, Morocco, Tunisia,	4

IHDI: Inequality adjusted Human Development Index. Num: Number of countries.

Appendix 2: Correlation analyses

Panel A: Correlation Analysis for the first dataset without the Inequality adjusted Human Development Index(IHDI)														
Growth and Development			Law Variables		Control Variables				Instrumental Variables					
GDPg	GDP pcg	IHDI	Reg. Qua.	Rule of Law	Infl.	Trade	Popg	Gov. Exp.	Eng.	Frch.	Port.	Frssa	Nafri	
1.000	0.971	---	0.020	0.0002	0.078	-0.010	0.220	-0.022	0.010	-0.096	0.139	-0.094	0.001	GDPg
	1.000	---	0.086	0.082	0.072	0.082	-0.017	0.061	0.059	-0.143	0.138	-0.183	0.075	GDPpcg
		---	---	---	---	---	---	---	---	---	---	---	---	IHDI
			1.000	0.799	-0.091	0.046	-0.277	0.193	0.231	-0.149	-0.129	-0.245	0.181	Reg. Qua.
				1.000	-0.090	0.239	-0.347	0.341	0.308	-0.233	-0.116	-0.331	0.230	Rule of Law
					1.000	0.103	0.039	-0.149	-0.035	-0.074	0.172	-0.061	-0.027	Inflation
						1.000	-0.403	0.377	0.228	-0.295	0.124	-0.288	-0.081	Trade
							1.000	-0.332	-0.204	0.229	-0.047	0.400	-0.301	Popg
								1.000	0.309	-0.276	-0.054	-0.331	0.037	Gov. Exp.
									1.000	-0.809	-0.292	-0.688	-0.118	English
										1.000	-0.325	0.851	0.189	French
											1.000	-0.277	-0.117	Portuguese
												1.000	-0.277	Frenchssa
													1.000	Northafrica

Panel B: Correlation Analysis for the second dataset with the Inequality adjusted Human Development Index(IHDI)														
Growth and Development			Law Variables		Control Variables				Instrumental Variables					
GDPg	GDP pcg	IHDI	Reg. Qua.	Rule of Law	Infl.	Trade	Popg	Gov. Exp.	Eng.	Frch.	Port.	Frssa	Nafri	
1.000	0.953	0.003	0.086	0.065	0.028	-0.034	0.209	-0.074	0.043	-0.043	---	-0.046	0.021	GDPg
	1.000	0.176	0.162	0.163	0.016	0.090	-0.082	0.021	0.121	-0.121	---	-0.188	0.129	GDPpcg
		1.000	0.495	0.509	-0.066	0.425	-0.582	0.149	0.297	-0.297	---	-0.608	0.590	IHDI
			1.000	0.853	-0.018	0.180	-0.275	0.203	0.264	-0.264	---	-0.379	0.211	Reg. Qua.
				1.000	-0.038	0.261	-0.351	0.253	0.278	-0.278	---	-0.408	0.298	Rule of Law
					1.000	-0.124	0.029	-0.112	0.313	-0.313	---	-0.237	-0.105	Inflation
						1.000	-0.416	0.333	0.333	0.333	---	-0.331	-0.059	Trade
							1.000	-0.315	-0.269	0.269	---	0.478	-0.353	Popg
								1.000	0.269	-0.269	---	-0.337	0.061	Gov. Exp.
									1.000	-1.000	---	-0.804	-0.119	English
										1.000	---	0.804	0.119	French
											---	---	---	Portuguese
												1.000	-0.408	Frenchssa
													1.000	Northafrica

Reg. Qua: Regulation Quality. Infl: Inflation. Popg: Population growth. Gov. Exp: Government Expenditure. GDPg: GDP growth. GDPpcg: GDP per capita growth. IHDI: Inequality adjusted Human Development Index Eng: English legal origin. Frch: French legal origin. Port: Portuguese legal origin. Frssa: French sub-Saharan Africa. Nafri: North Africa.

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