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Law and finance in Africa

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Abstract

This paper assesses how legal-origin influences financial development through regulation quality and the rule of law. It uses data collected after pioneering works on the law-finance nexus to assess hypotheses resulting there-from in the context of Africa. Distinctions are made between English, French, French sub-Saharan, Portuguese and North African countries in how their legal origins affect financial intermediary dynamics of depth, efficiency, size and activity. In terms of policy implications results support the benefits of law channels to financial development in the continent.

1. Introduction

Hitherto most empirical work on the law-finance nexus has been of global appeal and based on very limited data. After the pioneering study of La Porta et al. (hence LLSV, 1998) the need to collect data that can best proxy law standards became a priority in the World Bank Development Indicators. Today as far as we have perused, the absence of a study that reflects the African context in the light of outcomes of pioneering studies and resulting hypotheses is deserving of examination. The big appeal of this paper is that to the best of our knowledge it is

the first of its kind to use data collected after pioneering works on the law-finance nexus to assess hypotheses resulting from those pioneering works exclusively in the context of Africa[1]. The African continent is an ideal premise for the assessment of outcomes of first works because not only is it lagging behind financially; it has also been a fertile ground for neocolonialism[2]. The relationship between legal origin and the finance-growth nexus has been investigated in the literature via various strands of research. For the interest of making our paper's road-map clear it is logical to club them into five categories.

The first strand consists of a growing body of work which suggests that cross-country differences in legal-origin explain cross-country differences in financial development and growth. LLSV (1998) pioneered this strand and many authors have since taken from them in the assertion that English common-law countries have better prospects for financial development than French civil-law countries. They posit that countries with common-law traditions (French civil-law traditions) furnish the strongest (weakest) legal protection to shareholders and creditors (LLSV, 1998, 2000). The edge of English legal-origin over French colonial legacy has been generalized and extended to many other aspects of management and government: more informative accounting standards(LLSV,1998), better institutions with less corrupt governments(LLSV,1999) and more efficient courts(Djankov et al.,2003). While this strand has been largely dedicated to understanding '*if*' legal-origin matters in financial development, the concern of '*why*' legal-origin matters remained elusive until Beck et al.(2003) assessed some theories to address the issue.

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[1] Macro-economic law quality data on the African continent was not available before the pioneering work of LLSV (1998). The first working paper of this work was published by the National Bureau of Economic Research (NBER) in 1996. Data on the quality of regulation and the rule of law for the African continent saw light from that same year.

[2] Neocolonialism from a law/political perspective is the perpetration of colonial legacy (legal traditions) through economic and political means. Most pioneering studies focused on exploring how (LLSV, 1998) and why (Beck et al., 2003) legal traditions matter in financial development.

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

In the third strand we find literature championing the nexus that financial development significantly contributes to a country's overall economic growth (McKinnon, 1973). This optimism is 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).

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

The fifth strand largely dedicated to 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 with higher levels of financial development than

their francophone neighbors (geared by French reliance on monetary stability and automaticity)[3].

Recent literature on the African continent has wholly (Agbor, 2011) or partially (Asongu, 2011) confirmed the edge of English common-law countries in growth and finance prospects respectively[4]. Historically it should be noted that the partition of sub-Saharan Africa into British and French spheres in the 19th century resulted in the implementation of two distinct colonial policies[5].The contributions of the present paper to the literature differs from those of Agbor (2011) and Asongu (2011) by: (1) investigating the law-finance nexus in the whole of the African continent and using North-African (sub-Saharan African) dummies to distinguish the effects of North African (sub-Saharan African) countries; (2) using law indicators to assess the relationship between legal origin and finance[6]; (3) utilizing much recent data for more focused and updated policies implications[7]. Beside these specific appeals, as we must have mentioned earlier to the best of our knowledge this is the first paper to empirically verify the Mundell(1972) and La Porta et al.(1998)[8] hypotheses in the African continent using law channels.

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[3] "*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).

[4] While Agbor (2011) assesses 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 the African continent.

[5] 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 decentralized, flexible and pragmatic policies. Economic ambitions dominated British colonial activities who sought to transform their colonies into commercially viable trading countries through the indirect-rule: producing raw material and consuming British manufactures. The French on their part propagated their imperial ambitions through the policy of assimilation.

[6] While Agbor(2011) used channels of education and trade in investigating 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 growth and welfare. In this study we shall use law channels.

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

[8] The outcome reveals that common-law countries generally have the strongest legal protection of corporate shareholders and creditors, while French civil law countries are the weakest in legal protection of investors (La Porta et al., 1998; page 1).

The rest of the paper is organized in the following manner. Section 2 discusses the various law channels while the dynamics of financial intermediary development are looked at in Section 3. Data sources and methodology are revealed and outlined respectively in Section 4. Empirical analyses and discussion of results are reported in Section 5, followed by a conclusion in Section 6.

2. Law channels and finance theory

2.1 Regulators quality

In the regulatory-quality channel we posit that a legal system that allows for independent bodies that set rules, oversee them and sanction those who fail to respect them is more likely to create favorable conditions for financial development. This is because the power of the government in business activities is largely limited by the presence of the independent bodies that check the organs of power and government. Most French civil-law countries are characterized by little decentralization, absence of federations, no senates at the parliamentary levels, appointment of judges and governors by the central government…etc, which greatly reduces the power of regulatory quality. On the other hand, regulatory organs in English common-law countries are not appointed by government and not subject to allegiance to the powers that be. This independence guarantees greater regulatory quality and consequently better conditions for respect of the rule of law.

2.2 Rule of law

The rule-of-law channel holds that legal traditions differ in their emphasis on law vis-à-vis the rights of the state and private property rights (from the premise of financial development). While countries with civil-law origin provide for legal systems that tend to emphasize the rights

of the state rather than those of private property, common-law legal traditions champion private-property rights that provide favorable conditions for financial development. As emphasized by Beck et al.(2003), a powerful state will tend to create policies and institutions that divert the flow of competitive financial intermediary market. Furthermore, a powerful state would interfere in financial markets and create adverse conditions for financial development. Therefore we join LLSV (1998) in asserting that countries with French civil-law legacies will nurse legal systems that engender negative effects on financial development.

3. Financial intermediary dynamics and law

3.1 Financial depth

Borrowing from Asongu (2011) we posit that the quantity of money supply in the economy (M2) and the amount of money held by deposit money banks (Liquid liabilities) depend on legal origins. Financial depth should be higher in countries with English common-law than in countries with French civil-law legacy because the former provides more appealing conditions to openness (trade and capital) and competition. It follows that an economic atmosphere where openness and competition are championed will breed an ideal environment that increases money velocity or financial depth at overall economic (M2) and bank (Liquid liability) levels.

3.2 Financial efficiency

As emphasized by Asongu (2011) countries with French civil-law legacy will turn to experience higher levels of financial intermediary allocation efficiency both at bank (banking system efficiency) and economic (financial system efficiency) levels. French financial traditions have always emphasized the passive nature of monetary policy, the importance of exchange stability with convertibility and the explicit need for deposit insurance. A substantial deterrent to

bank-run is the presence of exchange rate stability with the country's main trading partners. Since English common-law systems with no explicit deposit insurance and monetary independence have sacrificed stability for monetary experience and better developed financial institutions, they turn to lend-out less of mobilized funds(in order to avoid bank-run).

3.3 Financial size

The relative importance of openness and competition should induce a broader financial system in common-law countries than in their civil-law counterparts. In the presence of a competitive atmosphere (where a country is opened to trade and capital as championed by English common-law), increase in financial transactions and institutions will have a direct impact on broadening the size of the financial system.

3.4 Financial activity

Financial activity is a corollary of financial depth as the later is the immediate result of the former. Countries that are opened and competitive will turn to induce greater economic activity which naturally goes hand in glove with financial activity. It follows that countries with common-law legacies have greater levels of financial activity than those with civil-law origin.

4. Data and Methodology

4.1 Data

We examine a sample of 38 African countries with British, French and Portuguese legal origins (see Appendix 1). While our law and control variables are obtained from African Development Indicators (ADI) of the World Bank (WB), financial intermediary development indicators are gotten from the Financial Development and Structure Database (FDSD). Owing the very novel nature of law indicators, data span is from 1996 to 2008. We include origin of

countries in our data to account for endogeneity. As pointed-out by Beck et al. (2003) from Berkowitz et al. (2002), it is paramount to distinguish between legal origin countries (United Kingdom, France, the U.S.A, Germany, Austria and Switzerland) which constituted the legal traditions from transplant countries which received the legal legacies. For the purpose of our paper this isn't much of an issue because legal origins are primarily used as instruments. We classify collected data into the following four categories.

4.1.1 Law indicators

a) Regulatory Quality

According to the World Bank the quality of regulation captures perceptions on the ability of the government to formulate and implement sound policies and regulations that enable and foster private sector development. The concept is measured by both representative[9] and non-representative[10] sources. This indicator is appreciated in percentile rank from 0 to 100.

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[9] Representative sources include: 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, competition between businesses, regulation arrangements ,investment profiles, tax effectiveness, efficiency of the country's tax collection system, degree of clarity and transparency in rules, and assessment of the quality of business laws.

[10] Non-representative sources include: trade policy, 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 affect fairness of competition, how price control affect pricing of products of industries, 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, 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.

b) Rule of Law

This indicator captures perceptions on the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of property rights, the courts, the police, contract enforcement, as well as the likelihood of crime and violence. It is measured in percentile rank from 0 to 100 from a plethora of criteria with representative[11] and non-representative[12] sources.

What is crucially worth noting is that these two measures incorporate the four indicators considered by Beck et al. (2003) in theorizing the political and adaptability channels of law. We may even add more flesh to the bone in asserting that our indicators go much further than theirs; in fact they are a summary or reflection of a plethora of indicators mentioned on the footnotes pertaining to their definitions and elucidations above.

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[11] 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, 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, 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, judicial independence, level of impartiality of investors, and threat of crime to business.

[12] Non-representative sources include: Property rights and rule based on governance, family fear of crime, family mistrust in police, rate of family victimization by 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, personal security and protection of private property, and enforcement of patent and copyright protection.

4.1.2 Financial intermediary variables

Financial intermediary variables are obtained after computations from the FDSD. We stop short of collecting data on financial markets because Ivory Coast is the sole country in Francophone sub-Saharan Africa (of French civil-legal origin) with information on stock markets. Beyond this fact, the regional nature of its financial market renders it even harder to disentangle individual contributions of the eight West African countries that make-it up(seven French legal origin countries and one Portuguese legal tradition country). On the contrary, we found many English law tradition countries with stock market information (Ghana, Kenya, Malawi, Mauritius, Namibia, Nigeria, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe…etc). The four North African countries also possess stock market data. However since majority of countries do not, this disparity poses a practical difficulty of coming-up with harmonious evaluation criteria for the financial market data. We are then poised to limit our analysis to the financial intermediary sector. Classification of the following indicators is in line the FDSD (Demirgüç-Kunt et al., 1999) and recent empirical law-finance literature (Asongu, 2011).

a) Financial depth

We proxy financial depth both from overall-economic and financial system perspectives by indicators of broad money supply (*M2/GDP*) and financial system deposits (*Fdgdp*) respectively. Both variables in ratios of GDP should robustly check each other as either account for over 97% of information in the other (see Appendix 2).

b) Financial efficiency

Here neither do we refer to the profitability-oriented concept of financial efficiency nor to the production efficiency of decision making units in the financial sector (via Data Envelopment

Analysis: DEA). What we yearn to address is the ability of banks to effectively fulfill their fundamental role of transforming mobilized deposits into credit for economic operators. We acknowledge two measures for banking-system-efficiency and financial-system-efficiency (respectively 'bank credit on bank deposits: *Bcbd'* and 'financial system credit on financial system deposits: *Fcfd'*). Like in the case of financial depth, these two financial intermediary allocation efficiency proxies can check each other as they represent more than 87% of variability in one another (see Appendix 2).

c) Financial size

Consistent with the FDSD we appreciate financial intermediary activity as the ratio of "deposit bank assets" to the "total assets" (deposit bank assets on central bank assets plus deposit bank assets: *Dbacba*). It is unfortunate we could not find another indicator of financial size despite a thorough search, numerous computations and deepened correlation analyses.

d) Financial activity

Financial intermediary activity here is defined as the ability of banks to grant credit to economic operators. We measure bank-sector-activity with "private domestic credit by deposit banks: *Pcrb*" and financial-sector-activity with "private credit by domestic banks and other financial institutions: *Pcrbof*". Here again, the later indicator checks the former as it represents more than 93% of information in the former (see Appendix 2).

4.1.3 Instrumental variables

We examine traditional legal origin dummies for the English, French and Portuguese colonial legacies. In order to improve our contribution to the literature we add dummies for sub-Saharan Africa (SSA) and North Africa. These dummies are primarily used as instruments. But

for the SSAfrican dummy which reflects about 85% of the French 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 accordance with the literature (Levine & King, 1993; Hassan et al., 2011). We shall therefore control for inflation, trade, population growth, GDP growth, GDP per capita growth as well as government's general final consumption expenditure in the law-finance regressions. These control variables are obtained from ADI of the WB.

4.1.5 Brief comparative analyses from Table 1

Table 1 shows comparative summary statistics for the English, French, sub-Saharan French, Portuguese and North African countries. A close look suggests that contrary to popular consensus North African countries on average dominate in financial intermediary aspects of depth, size and activity. What is also quite remarkable is the overwhelming dominance of countries with French civil legal origin in financial intermediary efficiency. Law indicators are also found to be highest on average in North African countries and least in Portuguese and French sub-Saharan countries. These figures provide us forehand with the basis of including sub-Saharan and North African dummies in the empirical analysis. Preliminary evidence on differences in levels of trade and inflation is in line with the law-finance (growth) theory. English countries manifest higher levels of trade because they traditionally have legal systems that provide for openness (in trade and capital) and competition: this is in accordance with Agbor (2011). On the other hand it is not unexpected that countries with French legal tradition should have the lowest levels of inflation. French colonial legacy is focused on lowering levels of

inflation because their former colonies have sacrificed financial independence and monetary

experience for exchange stability (Mundell, 1972).

Table 1: Comparative Statistics

Stats	Data	Financial Intermediary Development Variables							Law Variables		Control Variables						Instrumental Variables				
		Depth		Efficiency		Activity		Size	Reg. Qua.	Rule of Law	Infl.	Trade	Popg	Gov. Exp.	GDPg	GDP pcg	Eng.	Frch.	Port.	Frssa	Nafri
		M2	Fdgdp	Bcbd	Fcfd	Pcrb	Pcrbof	Dbacba													
	English	0.382	0.330	0.613	0.694	0.205	0.254	0.727	0.378	0.407	10.79	87.88	2.096	16.09	4.654	2.49	---	---	---	---	---
	French	0.267	0.190	0.840	0.858	0.153	0.161	0.729	0.305	0.278	3.748	65.31	2.577	12.62	4.146	1.55	---	---	---	---	---
Mean	Portuguese	0.346	0.252	0.496	0.495	0.143	0.143	0.701	0.267	0.259	112.57	94.20	2.172	13.18	6.404	3.916	---	---	---	---	---
	Frenchssa	0.198	0.128	0.860	0.873	0.108	0.110	0.684	0.280	0.243	3.873	63.40	2.832	11.96	4.076	1.236	---	---	---	---	---
	Northafrica	0.656	0.542	0.721	0.754	0.393	0.417	0.895	0.422	0.472	3.959	68.45	1.450	14.70	4.616	3.135	---	---	---	---	---
	Data	0.323	0.255	0.708	0.750	0.174	0.197	0.725	0.332	0.330	18.84	77.64	1.450	14.14	4.597	2.202	0.421	0.473	0.105	0.394	0.105
	English	0.274	0.255	0.279	0.505	0.199	0.317	0.265	0.185	0.216	14.87	46.61	0.869	5.72	3.70	3.50	---	---	---	---	---
	French	0.176	0.156	0.281	0.304	0.142	0.156	0.178	0.148	0.175	8.744	28.85	1.16	4.73	4.21	3.96	---	---	---	---	---
S.D	Portuguese	0.216	0.207	0.185	0.177	0.141	0.141	0.272	0.164	0.250	574.06	34.92	0.382	4.44	7.12	6.87	---	---	---	---	---
	Frenchssa	0.062	0.055	0.241	0.254	0.052	0.056	0.158	0.135	0.156	9.55	30.20	1.102	4.848	4.48	4.12	---	---	---	---	---
	Northafrica	0.179	0.156	0.367	0.416	0.195	0.211	0.120	0.135	0.141	3.581	20.29	0.334	2.782	2.303	2.304	---	---	---	---	---
	Data	0.232	0.218	0.301	0.409	0.170	0.240	0.228	0.171	0.211	193.5	39.88	1.02	5.41	4.45	4.24	0.494	0.499	0.307	0.489	0.307
	English	0.001	0.001	0.177	0.209	0.001	0.001	0.017	0.044	0.029	-100	17.85	-1.07	5.41	-16.7	-17.1	---	---	---	---	---
	French	0.069	0.029	0.143	0.144	0.020	0.020	0.331	0.054	0.019	-100	21.57	0.591	2.650	-12.6	-15.1	---	---	---	---	---
Min.	Portuguese	0.102	0.054	0.133	0.137	0.011	0.011	0.110	0.044	0.014	-3.50	36.80	1.414	6.331	-28.1	-29.6	---	---	---	---	---
	Frenchssa	0.069	0.029	0.188	0.178	0.020	0.020	0.331	0.054	0.019	-100	21.57	0.707	2.650	-12.6	-15.1	---	---	---	---	---
	Northafrica	0.318	0.235	0.143	0.144	0.041	0.041	0.627	0.156	0.105	18.67	38.36	0.591	6.77	-2.22	-3.59	---	---	---	---	---
	Data	0.001	0.001	0.133	0.137	0.001	0.001	0.017	0.044	0.014	-100	17.85	-1.07	2.65	-28.1	-29.6	0.00	0.00	0.00	0.00	0.00
	English	1.279	1.054	1.574	2.606	0.810	1.624	1.155	0.792	0.810	132.82	255.0	4.23	35.13	27.46	22.61	---	---	---	---	---
	French	1.057	0.858	1.718	1.646	0.704	0.698	1.264	0.698	0.610	31.11	156.8	10.56	28.76	33.62	29.06	---	---	---	---	---
Max.	Portuguese	0.802	0.739	0.807	0.806	0.477	0.478	0.999	0.556	0.767	4145	179.0	3.03	21.28	20.61	17.11	---	---	---	---	---
	Frenchssa	0.410	0.309	1.718	1.646	0.246	0.279	1.003	0.698	0.519	31.11	156.8	10.56	28.76	33.62	29.06	---	---	---	---	---
	Northafrica	1.057	0.858	1.277	1.614	0.704	0.698	1.264	0.688	0.610	0.339	124.6	1.923	19.35	12.21	10.59	---	---	---	---	---
	Data	1.279	1.054	1.718	2.606	0.810	1.624	1.264	0.792	0.810	4145	255.0	10.56	35.13	33.62	29.06	1.00	1.00	1.00	1.00	1.00
	English	199	199	206	199	199	199	201	160	159	193	208	208	193	208	208	---	---	---	---	---
	French	226	226	231	226	226	226	231	180	180	220	225	234	222	234	234	---	---	---	---	---
	Portuguese	52	52	52	52	52	52	52	40	40	52	39	39	39	52	52	---	---	---	---	---
Obs.	Frenchssa	187	187	192	187	187	187	192	150	150	181	186	195	183	195	195	---	---	---	---	---
	Northafrica	52	52	52	52	52	52	52	40	40	52	52	52	52	52	52	---	---	---	---	---
	Data	477	477	489	477	477	477	484	380	379	465	472	481	454	494	494	494	494	494	494	494

S.D: Standard Deviation. Min: Minimum. Max: Maximum. Obs: Observations. M2: Monetary Base. Fdgdp: Financial system deposits. Bcbd: Bank credit on Bank deposits. Fcfd: Financial system credit on Financial system deposits. Pcrb: Private domestic credit by deposit banks. Pcrbof: Private domestic credit by financial institutions (deposit money banks and other financial institutions). Dbacba: Deposit bank assets on central bank assets plus deposit bank assets. 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.

4.2 Methodology

4.2.1 Estimation method

Following Beck et al. (2003) and recent empirical literature (Agbor, 2011; Asongu, 2011) we employ a Two-Stage-Least Squares (TSLS) with dummies of legal origins as instrumental variables. This estimation technique has the particular advantage of addressing the issue of endogeneity: the instrumental variable estimator can avoid the bias that Ordinary Least Squares estimates suffers when explanatory variables in a regression are correlated with the error term. Beyond this fact, the object of our paper which is to evaluate how legal origins affect finance through proposed law channels requires an Instrumental Variable (hence IV) estimation method. In this approach we shall adopt the following steps:

-justify the use of a TSLS over an Ordinary Least Squares (OLS) estimation technique via the Hausman-test for endogeneity;

-show that instrumental variables (legal origins) are exogenous to the endogenous components of explaining variables (law channels), conditional on other covariates;

-verify the instruments are valid and not correlated with the error-term in the equation of interest through an Over-identifying restriction (OIR) test.

Thus our methodology will include the following models:

First-stage regression:

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

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

Second-stage regression:

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

In the 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 denote the error terms. Instrumental variables are the five legal origin dummies. *Frenchssa*: dummy for French SSA.

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

Logically the choice of endogenous regressors (control covariates) at the second stage of the TSLS method is very crucial. These covariates must a priori be justified by an underlying theory in which instruments explain them. In this study we choose Trade[13], Inflation and GDPg as endogenous control variables. From theoretical and historical assessments legal-origins (instruments) are exogenous to the amount of trade because, English common-law was based on openness (and competition) where colonies were fashioned to be trading societies (raw material producers and consumers of British manufactures) while French civil-law countries were not. From Mundell (1972), we can infer that countries with French civil-law origin prefer monetary stability over monetary experience, implying inflation is explained by legal tradition (instruments). English legal origin countries turn to grow faster (GDPg growth) than their French civil-law counterparts (Agbor, 2011); this provides evidence that GDPg is an endogenous variable of control. Thus we use all control variables under consideration (outlined in Section 4.1.4) in the first stage regressions but only control for Trade, Inflation and GDP growth at the second stage of the regressions.

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[13] This has been recently verified by Agbor (2011) in sub-Saharan Africa.

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 financial development, the ability of legal origin to explain cross-country disparities in the quality of regulation and rule of law indicators, and the ability of the exogenous components of the law channels (quality of regulation and rule of law) to account for cross-country differences in financial development.

5.1 Legal origins and financial intermediary dynamics

In Table 2, we regress our financial intermediary development indicators on the British, French (or French SSA), Portuguese and North-African legal origin dummies and also test for their joint significance. The constant captures the Scandinavian legal origin. Results of the Fisher tests in Table 2 show that distinguishing African countries by legal origin helps explain cross-country differences in financial depth, efficiency, size and activity. Thus this confirms the findings first brought to light by LLSV (1998), backed by Beck et al. (2003) and recently confirmed by Asongu (2011) using four law-finance theories. Even after controlling for trade, inflation, population growth, government expenditure and GDP growth, the legal origin dummies enter jointly significantly in all regressions at a 1% significance level.

The outcome in Table 2 also reveals that while English legal-origin countries on average have substantially higher levels of financial intermediary depth, size and activity, their French legal-origin counterparts on average overwhelmingly dominated in financial intermediary efficiency. Countries with Portuguese legal-origin fall in-between. This confirms recent findings of Asongu (2011) and Agbor (2011) in law-finance and law-economic performance literatures respectively which focused on Africa. Our addition of two dummies

to the analysis sheds some light on the nature of North-African countries and their French SSAfrican neighbors. The former dominates English legal origin countries in financial depth and activity, while the later (SSA-French) have on average lower levels of financial depth, efficiency and size when compared to average levels of other countries within the French sphere of legal-origin influence. A common-sense inference is that Francophone North African counties dominate their SSA-Francophone counterparts in financial intermediary dynamics of depth, activity and size.

Table 2: Financial dynamics and legal-origin regressions

		Financial Depth		Financial Efficiency		Financial Activity		Financial Size	
		Model 1	Model 1*	Model 2	Model 2*	Model 3	Model 3*	Model 4	Model 4*
		M2	Fdgdp	Bcbd	Fcfd	Pcrb	Pcrbof	Dbacba	Dbacba
	English	0.351*** (8.860)	0.208*** (9.148)	0.968*** (15.68)	0.421*** (6.550)	0.171*** (5.828)	0.239*** (5.374)	0.587*** (15.41)	0.499*** (16.42)
	French	0.196*** (5.077)	---	1.160*** (19.18)	---	0.067*** (2.993)	---	0.549*** (18.92)	---
Legal origin dummies (Instruments)	Frchssa	---	0.045** (2.257)	---	0.704*** (13.10)	---	0.130*** (2.864)	---	0.502*** (18.97)
	Portuguese	0.449*** (9.689)	0.217*** (5.889)	0.896*** (12.21)	0.420*** (4.449)	0.147*** (4.520)	0.178*** (3.380)	0.741*** (16.23)	0.578*** (11.70)
	Nafri	0.382*** (13.74)	0.410*** (15.74)	-0.164*** (-3.721)	0.423*** (6.132)	0.249*** (11.00)	0.307*** (7.687)	0.187*** (6.866)	0.597*** (17.10)
	Trade	0.001*** (6.066)	0.001*** (7.509)	-0.001*** (-4.982)	-0.001*** (-2.635)	---		0.0009*** (3.771)	0.002*** (8.321)
	Inflation	-0.003*** (-4.500)	-0.000*** (-2.691)	-0.003*** (-2.719)	---	-0.002*** (-3.720)	-0.002** (-2.513)	-0.003*** (-4.109)	-0.0001*** (-3.067)
Control Variables	Gov. Exp	---	---	---	0.021*** (5.825)	0.004*** (2.810)	0.007*** (3.991)	0.006*** (3.570)	---
	GDPg	---	-0.004** (-2.206)	---	---	---	---	---	0.005** (1.983)
	Popg	-0.032*** (-3.470)	---	-0.057*** (-3.807)	---	---	-0.036*** (-3.080)	---	---
F-test(for Instruments)		77.41***	212.12***	17.79***	249.4***	36.49***	71.52***	24.16***	679.75***
Adjusted R²		0.525	0.775	0.192	0.779	0.301	0.545	0.256	0.916
Observations		415	428	425	423	413	413	404	433

M2: Monetary Base. Fdgdp: Financial system deposits. Bcbd: Bank credit on Bank deposits. Fcfd: Financial system credit on Financial system deposits. Pcrb: Private domestic credit by deposit banks. Pcrbof: Private domestic credit by financial institutions. Dbacba: Deposit bank assets on central bank assets plus deposit bank assets. Popg: Population growth. Gov.Exp: Government Expenditure. GDPg: GDP growth. GDPpcg: GDP per capita growth. *, **, ***: significance levels of 10%, 5% and 1% respectively. Student t-statistics are presented in brackets.

The edge of financial efficiency SSA-Francophone countries have over North African countries (which are predominantly French[14]) could be explained by part of Mundell's(1972) conjecture which has been recently elucidated by Asongu(2011)[15].

5.2 Legal origins and law channels

Table 3 based on equations (1) and (2) assesses whether legal origin explains cross-country differences in the law indicators which characterize the law channel. We regress the proxies for regulation quality and rule of law on the legal origin dummy variables. We report the F-tests of whether the legal origin dummy variables taken together explain significantly cross-country divergences in law indicators. It can logically be concluded that legal origin helps explain cross-country variations in the quality of regulation and rule of law indicators of the law channel at a 1% significance level. It is worth noting that this is the first condition for the use of a TSLS methodology which requires that, the endogenous components of exogenous regressors in the equation of interest be explained by the instruments(legal-origins) conditional on other covariates(control variables).

From a comparative view-point, English common-law countries on average overwhelmingly dominated both in the quality of regulation and the rule of law. They are

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[14] With the exception of Egypt.

[15] "We propose financial intermediary allocation efficiency channels based on two factors: bank system efficiency and financial system efficiency. We postulate that countries with French civil-law origin should have legal systems that provide for greater levels of allocation efficiency because their banks lend-out a greater chunk of mobilized funds (deposits). French tradition has always stressed the passive nature of monetary policy, the importance of exchange stability with convertibility, and the need for explicit deposit insurance. On the other hand English common-law systems with no explicit insurance deposits and monetary independence have sacrificed stability for monetary experience and better developed monetary institutions. Therefore a greater proportion of deposits mobilized by bank are retained in common-law countries to avoid bank-run. A substantial deterrent to bank-run is exchange rate stability which is championed by French civil-law countries. Thus empirically, French civil-law countries with high levels of allocation efficiency should improve faster in growth and welfare" (Asongu, 2011; pp.7-8).

closely followed by countries with Portuguese legal-origin. French speaking SSA and North-Africa closely follow the overall French average but when French-SSA is directly compared to North Africa, the later has a bit of an edge. These results are consistent with the law and finance theory which expresses the dominance of Anglophone legal regimes. These findings are also in line with the theoretical initiatives and empirical validity of the political and adaptability channels expressed in Beck et al. (2003)[16].

Table 3: Law and legal-origin regressions

		Regulatory Quality				Rule of Law			
		Model 5	Model 5*	Model 5**	Model 5***	Model 6	Model 6*	Model 6**	Model 6***
Legal origin dummies (Instruments)	English	0.371*** (28.48)	0.454*** (17.38)	0.357*** (26.09)	0.245*** (8.751)	0.395*** (25.46)	0.429*** (9.086)	0.383*** (24.14)	0.244*** (7.063)
	French	0.286*** (21.92)	0.363*** (12.31)	---	---	0.247*** (15.97)	0.263*** (5.639)	---	---
	Frchssa	---	---	0.280*** (19.92)	0.186*** (7.949)	---	---	0.243*** (15.02)	0.086*** (3.227)
	Portuguese	0.267*** (10.35)	0.390*** (10.75)	0.267*** (9.831)	0.212*** (5.693)	0.259*** (8.441)	0.473*** (8.242)	0.259*** (8.484)	0.293*** (6.324)
	Nafri	0.115*** (4.131)	0.069** (2.367)	0.333*** (12.14)	0.238*** (7.521)	0.188*** (5.684)	0.158*** (4.791)	0.376*** (11.89)	0.238*** (7.305)
Control Variables	Trade	---	---	---	---	---	0.0008*** (3.129)	---	0.001*** (4.097)
	Inflation	---	-0.001* (-1.684)	---	---	---	-0.003*** (-3.456)	---	-0.002*** (-2.616)
	Gov. Exp	---	---	---	0.007*** (4.622)	---	---	---	0.007*** (4.332)
	GDPg	---	0.005** (2.407)	---	---	---	---	---	---
	GDPpcg	---	---	---	0.005** (2.317)	---	---	---	---
	Popg	---	-0.035*** (-3.537)	---	---	---	-0.026*** (-2.190)	---	---
F-test(for Instruments)		13.71***	11.17***	353.82***	251.86***	25.16***	24.99***	275.58***	232.80***
Adjusted R²		0.091	0.149	0.788	0.813	0.160	0.305	0.744	0.837
Observations		380	348	380	346	379	346	379	315

Popg: Population growth. Gov.Exp: Government Expenditure. GDPg: GDP growth. GDPpcg: GDP per capita growth. *, **, ***: significance levels of 10%, 5% and 1% respectively. Student t-statistics are presented in brackets.

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[16] "Consistent with the law and finance theory, Table 3 indicates that British common law countries have significantly greater judicial independence, i.e., less state control over the judiciary, and significantly more adaptable legal systems than do French legal origin countries. Specifically, the tenure of Supreme Court judges and their ability to control administrative cases are all, on average, greater in British common law countries. Similarly, the use of case law and the ability to use equity rather than statutory law in making judgments are, on average, greater in British common law countries"(Beck et al.,2003; p.667)

5.3 Examination of law channels using a simple instrumental variable procedure

Table 4 looks at two issues: (1) whether the exogenous components of the law indicators explain financial development (depth and efficiency) and (2) if legal origins explain financial development through some other mechanisms other than the law channels. To make this assessment we use the TSLS estimation methodology. So here we integrate equation (3) into the estimations. In either combination of equations (1) and (3) or equations (2) and (3), two pairs of four legal origins are used as instrumental variables (French and French-SSA are not applied simultaneously). Even when all five instruments are used, second-stage results do not change significantly[17]. Estimated coefficients of equations on the law channels provide information on whether the quality of regulation or rule of law influences financial development after controlling for potential endogeneity. Hence it looks at the first issue introduced above. The second issue is addressed by the test for overidentifying restrictions (OIR), whose null hypothesis argues that the instruments are not correlated with the error term of the equation of interest: equation (3). Thus a failure to reject this null hypothesis indicates instruments are valid while its rejection implies legal origins also explain financial development through some other mechanisms other than the law channels. Therefore when the endogenous control variables are integrated into the TSLS estimation (as in the 5th, 6th, 9th and 10th columns of Table 4), results of OIR-test become a general specification of the validity of the instruments. We include these variables to assess the robustness of the findings

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[17] 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 sort of 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 integrate both of them. We do not find any substantial difference in results. This routine is respected for results in tables 5 and 6. Our use of the five dummies provides us with enough degrees of freedom for the OIR-test for instrument validity.

by controlling for other potential exogenous determinants of financial development (which are also theoretically and empirically endogenous to instruments) as emphasized by the law-finance theory (see Section 4.2.2).

Table 4: Second Stage Financial Depth and Efficiency regressions

		Panel A: Second Stage Financial Depth regressions							
		Financial Depth							
		Monetary Base				Financial System Deposits			
		Model 7 M2	Model 7* M2	Model 7** M2	Model 7*** M2	Model 8 Fdgdp	Model 8* Fdgdp	Model 8** Fdgdp	Model 8*** Fdgdp
Law Channels	Reg. Quality	1.021*** (9.113)	---	3.459*** (3.222)	---	0.823*** (26.68)	---	2.981*** (1.805)	---
	Rule of Law	---	1.026*** (10.99)	---	1.958*** (6.889)	---	0.833*** (32.84)	---	1.815*** (6.623)
Control Variables	Trade	---	---	-0.011** (-2.309)	-0.004** (-3.447)	---	---	-0.009** (-2.311)	-0.004*** (-3.688)
	Inflation	---	---	0.002* (1.725)	0.0008* (1.754)	---	---	0.002* (1.805)	0.0009** (-3.688)
Hausman test		68.204***	68.008***	178.38***	124.61***	26.37***	25.93***	152.76***	139.83***
OIR(Sargan) test		79.152***	63.359***	0.246	3.811	93.69***	77.017***	1.081	0.532
P-values		[0.000]	[0.000]	[0.884]	[0.148]	[0.000]	[0.000]	[0.582]	[0.766]
Weak I. Test(F-stats)		381.01***	335.03***	---	---	325.5***	235.11***	---	---
Adjusted R²		0.161	0.397	0.005	0.227	0.232	0.466	0.011	0.218
F-stats		---	---	21.62***	102.53***	---	---	19.36***	78.066***
Observations		365	364	326	325	365	364	326	325

		Panel B: Second Stage Financial Efficiency regressions							
		Financial Efficiency							
		Banking System Efficiency				Financial System Efficiency			
		Model 9 BcBd	Model 9* BcBd	Model 9** BcBd	Model 9*** BcBd	Mod. 10 FcFd	Mod. 10* FcFd	Mod.10** FcFd	Mod.10*** FcFd
Law Channels	Reg. Quality	2.046*** (32.05)	---	2.056*** (26.89)	---	2.159*** (30.46)	---	2.015*** (4.240)	---
	Rule of Law	---	1.957*** (24.95)	---	-0.845 (-1.424)	---	2.083*** (23.93)	---	0.138 (0.307)
Control Variables	Trade	---	---	---	0.012*** (4.786)	---	---	0.0005 (0.255)	0.008 (4.330)
	Inflation	---	---	-0.0006 (-1.024)	-0.002** (-2.513)	---	---	---	---
Hausman test		184.08***	250.73***	161.27***	304.01***	84.35***	157.2***	78.47***	162.35***
OIR(Sargan) test		87.274***	93.86***	79.65***	18.31***	54.08***	64.12***	51.10***	40.26***
P-values		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Weak I. Test(F-stats)		325.58***	235.11***	---	---	---	235.11***	---	---
Adjusted R²		0.037	0.00007	0.035	0.002	0.091	0.011	0.072	0.047
Fisher-stats		---	---	---	85.44***	---	---	---	---
Observations		375	374	353	333	365	364	346	345

M2: Monetary Base. Fdgdp: Financial system deposits. Bcbd: Bank credit on Bank deposits. Fcfd: Financial system credit on Financial system deposits. Reg: Regulation. *, **, ***: significance levels of 10%, 5% and 1% respectively. (): z-statistics. Chi-square statistics for Hausman test. LM statistics for Sargan test. [ ]:p-values.

Results in Table 4 support both law indicators are channels to financial intermediary depth (panel A) and efficiency (panel B). This solves the first issue. Results of OIR-test to

address the second issue reveal (but for the 5th, 6th, 9th and 10th columns of panel A) that legal origins also explain financial development through other mechanisms than law channels (legal origins also explain trade and inflation).

Table 5: Second Stage Financial Activity and Size regressions

		Panel A: Second Stage Financial Activity regressions							
		Financial Activity							
		Banking System Activity				Financial System Activity			
		Mod.11 Pcrb	Mod.11* Pcrb	Mod.11** Pcrb	Mod.11*** Pcrb	Mod.12 Pcrbof	Mod.12* Pcrbof	Mod.12** Pcrbof	Mod.12*** Pcrbof
Law Channels	Reg. Quality	**0.556*** (26.25)**	---	**2.089*** (3.603)**	---	**0.635*** (20.28)**	---	**2.058*** (3.844)**	---
	Rule of Law	---	**0.562*** (26.79)**	---	**1.158*** (7.357)**	---	**0.643*** (20.25)**	---	**1.240*** (6.587)**
Control Variables	Trade	---	---	**-0.006*** (-2.646)**	**-0.002*** (-3.815)**	---	---	**-0.006*** (-2.629)**	**-0.002*** (-3.118)**
	Inflation	---	---	**0.001* (1.729)**	0.0003 (1.334)	---	---	0.0009 (1.488)	0.0001 (0.577)
Hausman test		**0.007**	**9.111***	**98.83***	**46.12***	1.549	**3.56***	**28.35***	**20.02***
OIR(Sargan) test		81.31***	51.20***	**0.172**	6.099**	39.85***	19.72***	**1.744**	**1.880**
P-values		[0.000]	[0.000]	**[0.917]**	[0.047]	[0.000]	[0.000]	**[0.418]**	**[0.390]**
Weak I. Test(F-stats)		**325.58***	**235.11***	---	---	325.58***	235.11***	---	---
Adjusted R²		0.383	0.384	0.135	0.299	0.330	0.284	0.164	0.261
F-stats		---	---	**23.54***	**106.23***	---	---	**35.19***	**97.09***
Observations		365	364	326	325	365	364	326	325

		Panel B: Second Stage Financial Size regressions			
		Financial Size			
		Financial Size		Financial Size	
		Mod.13 Dbacba	Mod.13 * Dbacba	Mod.13** Dbacba	Mod.13*** Dbacba
Law Channels	Reg. Quality	**2.225*** (43.24)**	---	**1.881*** (4.520)**	---
	Rule of Law	---	**2.156*** (34.40)**	---	**0.576*** (2.370)**
Control Variables	Trade	---	---	0.001 (0.637)	**0.006*** (6.266)**
	Inflation	---	---	0.0007 (1.617)	-0.0001 (-0.324)
Hausman test		**466.34***	**477.61***	**275.42***	**400.91***
OIR(Sargan) test		23.06***	51.35***	14.14***	30.41***
P-values		[0.000]	[0.000]	[0.000]	[0.000]
Weak I. Test(F-stats)		**325.58***	**235.11***	---	---
Adjusted R²		0.239	0.207	0.134	0.094
F-stats		---	---	**547.09***	**584.34***
Observations		372	371	331	330

Pcrb: Private domestic credit by deposit banks. Pcrbof: Private domestic credit by financial institutions. Dbacba: Deposit bank assets on central bank assets plus deposit bank assets. Reg: Regulation. *, **, ***: significance levels of 10%, 5% and 1% respectively. (): z-statistics. Chi-square statistics for Hausman test. LM statistics for Sargan test. [ ]:p-values.

The consistency of the OIR-test results in the 5th, 6th, 9th and 10th columns of panel A is suggestive there is a likelihood of better results when controlling for other exogenous

potential determinants of financial development(trade and inflation). Our use of the TSLS methodology is also justified by the rejection of the null hypothesis of the Hausman-test[18] in all 16 regressions.

Following the same analytical logic as expressed in the explanation of results in Table 4, Table 5 addresses the two issues of whether the exogenous components of the law indicators explain financial development (activity and size) and whether legal origin explains financial development beyond the law indicators. We use the same TSLS methodology described above. The validity of the Hausman-test in 11[19] of the 12 regressions justifies our TSLS estimation technique.

On the concern of the first issue results provide support for the law channel indicators explaining financial development (financial activity and size for panels A and B respectively). The OIR-test results for the second issue are consistent with those in Table 4 in revealing, legal origin also explains financial activity and size through other mechanisms than law channels. When other determinants of financial development are controlled for, the instruments are valid (5th, 9th and 10th columns of Panel A). These suggest the use of an extended Instrumental Variable (IV) procedure could yield even more robust and appealing results.

5.4 Examination of law channels using an extended Instrumental Variable (IV) procedure

Results of tables 4 and 5 have revealed that legal origin will explain financial development beyond its ability to explain cross-country differences in law channels when other determinants of financial development are not controlled for (Assertion 1). On the other

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[18] The null hypothesis of the Hausman –test suggests that OLS estimates are consistent.
[19] But for the 7th column of Panel A.

hand, they have also revealed that when other indicators of financial development (consistent with theory and empirical validity as outlined in Section. 4.2.2) are used as endogenous regressors of control, legal origin does not explain financial development through mechanisms other than law channels (Assertion 2). Therefore this section uses an extended IV procedure to further verify and validated these assertions. Borrowing from Beck et al. (2003) this requires the simultaneous examinations of our law channel indicators.

Table 6: Extended IV procedure with simultaneous law channels

		Panel A: Extended IV Procedure without covariates							
		Financial Depth		**Financial Efficiency**		**Financial Activity**		**Financial Size**	
		Mod. 15 M2	Mod.15* Fdgdp	Mod.16 Bcbd	Mod.16* Fcfd	Mod.17 Pcrb	Mod.17* Pcrbof	Mod.18 Dbacba	Mod.18* Dbacba
Law Channels	Reg. Quality	**-1.435*****	**-1.820*****	**6.961*****	**6.561*****	**-0.886*****	**-1.091****	**4.234*****	---
		(-3.415)	**(-4.209)**	**(6.798)**	**(6.493)**	**(-2.912)**	**(-2.571)**	**(6.592)**	
	Rule of Law	**2.442*****	**2.629*****	**-4.882*****	**-4.388*****	**1.437*****	**1.720*****	**-1.997*****	---
		(5.861)	**(6.131)**	**(-4.826)**	**(-4.380)**	**(4.762)**	**(4.086)**	**(-3.153)**	
Hausman test		118.62***	100.34***	396.27***	154.20***	39.83**	30.30***	578.62***	---
OIR(Sargan) test		23.29***	9.29**	8.902**	7.234*	16.22***	4.82	3.890	
P-values		[0.000]	[0.025]	[0.030]	[0.064]	[0.001]	**[0.185]**	**[0.273]**	---
Adjusted R²		0.400	0.389	0.102	0.119	0.209	0.123	0.115	---
F-stats		---	---	---	---	---	---	---	---
Observations		364	364	374	364	364	364	371	---

		Panel B: Extended IV Procedure with covariates							
		Financial Depth		**Financial Efficiency**		**Financial Activity**		**Financial Size**	
		Mod. 19 M2	Mod.19* Fdgdp	Mod.20 Bcbd	Mod.20* Fcfd	Mod.21 Pcrb	Mod.21* Pcrbof	Mod.22 Dbacba	Mod.22* Dbacba
Law Channels	Reg. Quality	0.463	-0.630	**9.076*****	**8.266*****	0.501	-0.172	**4.240*****	---
		(0.387)	(-0.751)	**(3.761)**	**(3.768)**	(0.714)	(-0.273)	**(3.495)**	
	Rule of Law	**1.680****	**2.144*****	**-5.752*****	**-5.094*****	**0.879****	**1.376*****	**-1.964****	---
		(2.003)	**(3.648)**	**(-3.397)**	**(-3.314)**	**(1.788)**	**(3.105)**	**(-2.252)**	
Control Variables	Trade	**-0.008****	**-0.005****	-0.008	-0.006	**-0.005****	-0.002	-0.004	---
		(-2.225)	**(-1.999)**	(-1.214)	(-0.973)	**(-2.478)**	(-1.505)	(-1.122)	
	GDPg	**0.050***	0.033	0.058	0.036	0.027	0.006	**0.063****	---
		(1.664)	(1.537)	(0.941)	(0.658)	(1.545)	(0.394)	**(2.000)**	
Hausman test		**172.84*****	**152.91*****	**309.10*****	**137.74*****	**84.10*****	**29.77*****	**270.74*****	---
OIR(Sargan) test		0.279	0.717	1.736	1.823	1.121	2.442	0.062	---
P-values		**[0.596]**	**[0.396]**	**[0.187]**	**[0.176]**	**[0.289]**	**[0.118]**	**[0.802]**	---
Adjusted R²		0.086	0.223	0.103	0.129	0.185	0.234	0.048	---
F-stats		**47.35*****	**66.50*****	**41.708*****	**60.35*****	**43.00*****	**67.55*****	**159.23*****	---
Observations		345	345	355	345	345	345	352	---

*, **, ***: significance levels of 10%, 5% and 1% respectively. M2: Monetary Base. Fdgdp: Financial system deposits. Bcbd: Bank credit on Bank deposits. Fcfd: Financial system credit on Financial system deposits. Pcrb: Private domestic credit by deposit banks. Pcrbof: Private domestic credit by financial institutions. Dbacba: Deposit bank assets on central bank assets plus deposit bank assets. Reg: Regulation. (): z-statistics. Chi-square statistics for Hausman test. LM statistics for Sargan test. [ ]:p-values

Panel A of Table 6 expresses a simultaneous examination of law channels without controlling for other determinants of finance. But for the 8th and 9th columns where the null hypothesis of the OIR-test is not rejected, overall results fully justify the first assertion (from

tables 4 and 5).   Panel B which looks at the second assertion fully validates it: with overwhelming failure to reject the null hypothesis of the OIR-test in all seven regressions. It follows that legal origin explains financial intermediary development through no other mechanisms other than law channels when other potential exogenous determinants of finance (justified by the law-finance theory) are controlled for. The use of TSLS is justified by the rejection of the null hypothesis of the Hausman-test in all of the seven regressions.

6. Conclusion

While past works investigated the law-finance nexus from a broad spectrum, the absence of data on Africa rendered it difficult to verify hypotheses resulting from pioneering works on this continent. The African continent is an ideal premise for the assessment of outcomes of first works because, not only is it lagging behind financially, but it was (is) a fertile ground for colonialism (neocolonialism). The big appeal of this paper is that to the best of our knowledge it is the first of its kind to use data collected after pioneering works on the law-finance nexus to assess hypotheses resulting from those pioneering works exclusively in the context of Africa.

Our results partially support the current consensus (LLSV., 1998; Beck et al., 2003) that English common-law countries provide for legal systems that improve conditions for financial depth, activity and size than French civil-law countries. On average Francophone countries with civil-law legal origin dominate in financial intermediary efficiency. Those with Portuguese civil-law origin fall in-between. But for financial efficiency, sub-Saharan African (SSA) French speaking countries are least while North African countries dominate even English common-law countries in financial intermediary dynamics of depth and activity.

SSA French speaking countries dominate the English, Portuguese and North African countries in financial intermediary efficiency as well: this is consistent with recent empirical literature (Asongu, 2011) and past theoretical initiatives (Mundell, 1972).

We also find evidence that legal origin will explain financial development beyond its ability to explain cross-country differences in law channels when other determinants of financial development are not controlled for. On the other hand when other indicators of financial development (consistent with theory and empirical validity) are used as endogenous regressors of control, legal origin does not explain financial development through mechanisms other than law channels. In terms of policy implications results support the benefits of the rule of law and quality of regulation as channels to financial intermediary development in the African continent.

Appendices
Appendix 1: Presentation of legal origin and countries

Legal origin	Countries	Num.
English	Botswana, Egypt, Gambia, Ghana, Kenya, Lesotho, Malawi, Mauritius, Nigeria, Seychelles, Sierra 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

Num: Number of countries.

Appendix 2 : Correlation Analyses

Financial Intermediary Development Variables							Law Variables		Control Variables						Instrumental Variables					
Depth		Efficiency		Activity		Size	Reg.	Rule of				Gov.		GDP						
M2	Fdgdp	Bcbd	Fcfd	Pcrb	Pcrbof	Dbacba	Qua.	Law	Infl.	Trade	Popg	Exp.	GDPg	pcg	Eng.	Frch.	Port.	Frssa	Nafri	
1.000	0.974	-0.07	-0.00	0.74	0.598	0.394	0.402	0.630	-0.06	0.30	-0.46	0.33	-0.05	0.057	0.21	-0.230	0.034	-0.43	0.50	M2
	1.000	-0.04	0.069	0.80	0.685	0.460	0.482	0.682	-0.05	0.32	-0.49	0.37	-0.01	0.101	0.29	-0.283	-0.004	-0.46	0.45	Fdgdp
		1.000	0.870	0.40	0.421	0.259	0.193	-0.008	-0.11	-0.23	0.010	-0.07	-0.09	-0.08	-0.26	0.415	-0.242	0.40	0.01	Bcbd
			1.000	0.53	0.679	0.282	0.302	0.105	-0.08	-0.23	-0.04	0.04	-0.09	-0.07	-0.11	0.250	-0.217	0.24	0.003	Fcfd
				1.00	0.930	0.515	0.619	0.620	-0.06	0.106	-0.41	0.24	-0.02	0.077	0.15	-0.115	-0.063	-0.31	0.450	Pcrb
					1.000	0.454	0.575	0.533	-0.05	0.050	-0.35	0.26	-0.03	0.055	0.19	-0.145	-0.079	-0.29	0.318	Pcrbof
						1.000	0.489	0.455	-0.09	0.210	-0.29	0.27	0.06	0.133	0.007	0.016	-0.036	-0.14	0.258	Dbacba
							1.000	0.799	-0.09	0.046	-0.27	0.19	0.02	0.086	0.231	-0.149	-0.129	-0.24	0.181	Reg. Qua.
								1.000	-0.09	0.239	-0.34	0.34	0.000	0.082	0.308	-0.233	-0.116	-0.33	0.230	Rule of L.
									1.00	0.103	0.039	-0.14	0.078	0.072	-0.035	-0.074	0.172	-0.06	-0.027	Infl.
										1.000	-0.40	0.37	-0.01	0.082	0.228	-0.295	0.124	-0.28	-0.081	Trade
											1.00	-0.33	0.22	-0.01	-0.204	0.229	-0.047	0.40	-0.301	Popg
												1.00	-0.02	0.061	0.309	-0.276	-0.054	-0.33	0.037	Gov. Exp.
													1.000	0.971	0.010	-0.096	0.139	-0.09	0.001	GDPg
														1.000	0.059	-0.143	0.138	-0.18	0.075	GDPpcg
															1.000	-0.809	-0.292	-0.68	-0.118	Eng.
																1.000	-0.325	0.85	0.189	Frch.
																	1.000	-0.27	-0.117	Port.
																		1.00	-0.277	Frssa
																			1.000	Nafri

M2: Monetary Base. Fdgdp: Financial system deposits. Bcbd: Bank credit on Bank deposits. Fcfd: Financial system credit on Financial system deposits. Pcrb: Private domestic credit by deposit banks. Pcrbof: Private domestic credit by financial institutions. Dbacba: Deposit bank assets on central bank assets plus deposit bank assets. 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.

References

Agbor, J.A., (2011), "How Does Colonial Origin Matter for Economic Performance in Sub-Saharan Africa", World Institute for Development Economics Research, Working Paper, No. 2011/27.

Allen, F., Qian, J. & Qian, M., (2005), "Law, finance and economic growth in China", *Journal of Financial Economics*, 77, pp.57-116.

Asongu, S.A., (2011), "Law, finance, economic growth and welfare: why does legal origin matter?". *MPRA Paper* No.33868.

Beck, T., Demirgüç-Kunt, A., & Levine, R.,(2003), "Law and finance: why does legal origin matter?", *Journal of Comparative Economics*, 31, pp. 653-675.

Beck, T., & Levine, R., (2002), "Industry growth and capital allocation: does having a market- or bank-based system matter?" *Journal of Financial Economics,* 64, pp.147–180.

Berkowitz, D., Pistor, K., & Richard, J., (2002), "Economic development, legality and the transplant effect", *European Economic Review*, 47(1), pp. 165-195.

Demirguc-Kunt, A., Beck, T., & Levine, R., (1999), "A New Database on Financial Development and Structure", *International Monetary Fund*, WP *2146*.

Demirguc-Kunt, A., & Maksimovic, V., (1998), "Law, finance, and firm growth", *Journal of Finance*, 53, pp. 2107–2137.

Djankov, S., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A., (2003), "Courts", *Quaterly Journal of Economics*, 118, pp.453-517.

Hassan, K., Sanchez, B., & Yu, J., (2011), "Financial development and economic growth: New evidence from panel data", *The Quarterly Review of Economics and Finance*, 51, pp.88-104.

Jayaratne, J., & Strahan, P., (1996), "The finance-growth nexus: evidence from bank branch deregulation", *Quarterly Journal of Economics*, 111,pp. 639–670.

King, R.,& Levine, R.,(1993), "Finance and growth: Schumpeter might be right", *Quarterly Journal of Economics*, 108, pp.717-738.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R.W., (1998), "Law and finance", *Journal of Political Economy*, 106(6), pp. 1113-1155.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R.W., (1999), "The quality of government", *Journal of Law, Economics and Organization*, 15, pp.222-279.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R.W., (2000), " Investor protection and corporate governance", *Journal of Financial Economics*, 58, pp.141-186.

Levine, R., & King, R.G., 1993. "Finance and Growth: Schumpeter Might be Right", *The Quarterly Journal of Economics*, 108, pp.717-737.

Levine, R., & Zervos,S.,(1998), "Stock market, banks and economic growth", *American Economic Review*, 88, pp.537-558.

McKinnon, R., (1973), Money and Capital in Economic Development. *Brookings Institution Press*, Washington DC.

Mundell, R., (1972), African trade, politics and money. In Tremblay, R., ed., *Africa and Monetary Integration*. Les Editions HRW, Montreal, pp. 11-67.

Rajan, R., & Zingales, L., (1998) "Financial dependence and growth", *American Economic Review*, 88, pp. 559–586.