Law, Finance and Investment: does legal origin matter?

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Abstract

This paper assesses if legal origin explains domestic, foreign, private and public investments through financial intermediary channels of depth, efficiency, activity and size. Findings show that legal origin matters in the finance-investment nexus; though its ability to explain aggregate investment dynamics only through financial intermediary channels is limited in the cases of private and public investments.

JEL Classification: E22; K2; K4 ; P50

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1. Introduction

The law-finance nexus pioneered by La Porta et al. (1998ab) has long been the subject of much economic research, debate and controversy. One of these controversies centers on the dominance of English common-law countries in financial development prospects (Asongu, 2011abc). More so two important components have been significantly missing in the legal origins debate: investment and Africa. Investment and finance undoubtedly remain key determinants of growth and development in the African continent. The issue addressed in this paper is the importance of legal origins in explaining cross-country differences in financial factors that are exogenous to aggregate investment dynamics. The work could contribute to the law-finance (growth) literature by providing a hitherto unexplored dimension of the Legal Origins Theory. The current recapitulation of the legal origins literature (La Porta et al., 2008) fails to account for an African study that focuses on the effects of colonial legacy on the finance-investment nexus. A reason for this missing component could be traced to scanty statistics on law indicators in the African continent a decade past. Therefore, the added appeal of this paper is its use of novel data collected after pioneering works on the law-finance nexus to assess hypotheses resulting there-from.

The Legal Origin Theory on which this work is based traces the different strategies of common and civil law to different ideas and strategies about law and its purpose that England and France developed centuries ago. These broad strategies and ideas were incorporated into specific legal rules, but also into the organization of the legal system, as well as the human beliefs and capital of its participants. With conquest of new territory and colonization, human capital, legal ideologies and rules were transplanted as well. In spite of much legal evolution and amendment of law over time (La Porta et al., 1998b) the fundamental strategies and assumptions

of each legal system survived and have continued to exert substantial influence on financial and investment outcomes. This theory may be summed up in one sentence from Zweigert and Kötz(1998): *"the style of a legal system maybe marked by an ideology, that is, a religious or political conception of how economic and social life should be organized"*(p.72). This paper seeks to assess how *these styles* of different legal systems have survived over the years and continue to exert substantial influence on aggregate investment factors through financial dynamics in the African continent. The novel approach of classifying *these styles* into English, French, French sub-Saharan African, Portuguese and North African countries provides an exhaustive and thorough insight into an African perspective of the legal origin debate: hitherto unexplored. For clarity of purpose and motivation, the literature pertaining to this paper will be clubbed into two main strands: why legal origin matter in economic performance and the scope of the law-finance nexus.

1.1 Why does legal origin matter in economic performance?

For organizational purposes literature that has been dedicated to addressing the concern of why legal origin matter in economic performance could be classified into three main categories.

In the first category, several papers consider ownership of particular economic activities and government regulation. Djankov et al.(2002) observe the number of steps an entrepreneur must complete in order to begin operating a business legally, a number that in 1999 varied from two in Australia and Canada to twenty-one in the Dominican Republic. They assess the impact of such entry-regulation on corruption and the size of the unofficial economy. Djankov at al.(2003a) probe into government ownership of the media which remains extensive around the world, especially the television. Botero et al.(2004) construct indices of labor market regulation

and assess their influence on labor force participation rates and unemployment. Mulligan and Shleifer (2005a, 2005b) examine one of the ultimate forms of government intervention in private military conscription.

The second category of papers assesses the effects of legal origins on the features of the judiciary and other government organs on the one hand, and on the hand the effects of those (features of the judiciary) on the security of property rights and contract enforcement. Djankov et al. (2003b) investigate the formalism of judicial procedures in various countries and its effects on the time it takes to evict a nonpaying tenant or to collect a bounced check. This factor can be given a broader interpretation as the efficiency of contracts enforcement by courts and in fact turns out to be significantly correlated with the efficiency of debt collection by Djankov et al. (2006). La Porta et al. (2004) adopt a very different approach and collect data from national constitutions on judicial independence and the acceptance of appellate court rulings as a source of law. They inquire after whether judicial independence contributes to the security of property rights and the quality of contract enforcement.

In the third category, several studies in the aftermath of La Porta et al. (1997, 1998a) assess the effects of legal origins on investor protection and then the effect of investor protection on financial development. Some literature pertaining to this category looks at stock markets. La Porta et al.(1998a) measure of anti-director rights has been replaced by a measure of shareholder protection through securities laws (La Porta et al., 2006) and by another measure of shareholder protection from self-dealing by corporate insiders via corporate law(Djankov et al., 2008). As dependent variables, these studies use such measures as dividend payouts (La Porta et al., 2000a), the ratio of stock market capitalization to GDP, the voting premium, the pace of public offering activity(Dyck and Zingales,2004), Tobin's Q(La Porta et al., 2002) and ownership

dispersion(La Porta et al.,1999a). Forecast for each of these variables emanate from standard agency models of corporate governance in which investor protection guides external finance (Shleifer & Wolfenzon, 2002). Another set of literature in this category looks at creditor rights. A case in point is the La Porta et al.(1997,1998a) measure from bankruptcy law that has been updated by Djankov et al.(2007) who also examine several subjective assessments of the quality of private debt markets. La Porta et al. (2002) focus on the state involvement in financial markets by assessing government ownership of banks. Djankov et al.(2006) use a different approach to creditor protection by looking at the actual efficiency of debt enforcement, as appreciated by creditor recovery rates in a hypothetical case of a firm that is insolvent. This later studies probes into the common criticism that it is law enforcement, rather that rules of books, which count in investor protection by integrating legal rules and features of efficiency measure.

All these categories help elucidate why legal origins play a role in financial development and growth. To come to grasp with the investment dimension of our paper, it is worthwhile to examine the current scope of the law-finance (growth) nexus.

2.2 The scope of the law-finance nexus

The motivation of our paper requires the scope of literature on the law-finance nexus to be classified into four strands.

The first strand consists of a growing body of work which suggests that cross-country variances in legal origin explain cross-country differences in financial development. La Porta at al.(1997,1998ab) pioneered this strand and ever since, many an author have followed suit in the assertion that English common-law countries have better prospects for financial development than their French civil-law counterparts. They postulate that countries with common-law legacies (French civil-law origins) provide for the strongest (weakest) legal protection to creditors and

shareholders (La Porta et al., 1998ab, 2000ab). The edge common-law countries have over those with civil-law has been extended to other aspects of government and management: better institutions with less corrupt governments (La Porta et al., 1999b), more informative accounting standards (La Porta et al., 1998b), more efficient courts(Djankov et al., 2003b). Whereas this strand has been largely dedicated to understanding "if" legal-origin count in financial development, the concern of "why" legal origin matter (as outline in Section 2.1) constitute the second strand.

Among studies indentified in this second strand, to avoid monotony we shall elucidate one very important contribution to the literature not highlighted in Section 2.1. Beck et al.(2003) shed some light on the issue of "why" legal origin matter in financial development by empirically assessing two channel-oriented 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. Thus, championing investors rights should induce financial development. The adaptability channel postulates legal traditions vary in their capacity to adapt to changing business conditions. Therefore, countries in which legal systems provide for adjustments with regard to changing and evolving circumstances should naturally be rewarded with higher levels of financial development. In summary this strand provides some light on 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 conditions.

In the third strand we find literature championing the law-finance (growth) nexus which is based on a positive finance-led-growth nexus (McKinnon, 1973). This assertion is shared at 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). Thus we find evidence of the link among law, finance and economic growth at firm, industry and country levels (Demirguc-Kunt & Maksimovic, 1998; Beck & Levine, 2002).

The fourth strand 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 French counterparts(shaped by Francophone reliance on monetary stability and automaticity)[1]. Recent legal origin literature has either wholly (Agbor, 2011) or partially (Asongu, 2011a) confirmed the superiority of English common-law over civil-law legal systems in growth and finance prospects respectively[2]. From a historical perspective, the partition of sub-Saharan Africa into British and French sphere in the 19th century resulted in the implementation of different colonial policies[3]. An important finding in Asongu (2011a)[4] debunked the dominance English common-law countries in prospects of financial development.

[1] "*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).

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

[3] The British and French implemented two very different colonial policies. While the French imposed a highly centralized bureaucratic system that clearly underlined empire-building, the British 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 an imperial ambition through the policy of assimilation.

[4] *"This paper proposes and empirically validates four theories of why legal origin influences growth and welfare through finance. It is a natural extension of "Law and finance: why does legal origin matter?" by Thorsten Beck, Asli Demirgüç-Kunt and Ross Levine (2003). We find only partial support for the Mundell(1972), La Porta et al. (1998) and Beck et al.(2003) hypotheses that English common-law countries tend to have better developed financial intermediaries than French civil-law countries. While countries with English legal tradition have legal systems that improve financial depth, activity and size, countries with French legal origin overwhelmingly dominate in financial intermediary allocation efficiency. Countries with Portuguese legal origin fall in-between"* (Asongu, 2011a; p.1).

In effect, Asongu (2011c)[5] uses an "inflation-uncertainty" theory to boost theoretical validity and empirical justification as to why French civil-law countries have higher level of financial allocation efficiency. Some emphasis in this debate has also been tilted towards human development, with Asongu (2011d) assessing the link among law, economic and human development.

Based on the scope of this literature, as far as we have perused the influence of colonial legacies on financial development has been greatly covered in the literature (La Porta et al., 1998b, 1999b, 2000b; Djankov, 2003b; Beck et al., 2003). However the investment dimension of the legal origins debate remains missing for the African continent. A reason for this missing component could be traced to scanty statistics on law indicators in the continent a decade past. Therefore, the added appeal of this paper is its use of novel data collected after pioneering works on the law-finance nexus to assess hypotheses resulting there-from. Investment and finance undoubtedly remain key determinants of growth and development in the continent. The issue addressed in this paper is the importance of legal origins in explaining cross-country differences in financial factors that are exogenous to aggregate investment dynamics. The motivation is the paper could contribute to the law-finance (growth) literature by providing a hitherto unexplored dimension of the Legal Origins Theory. In line with the amendment of law over time hypothesis(La Porta et al.,1998b), the novel approach of classifying legal origins into English, French, French sub-Saharan African, Portuguese and North African countries provides an

[5] *"The dominance of English common-law countries in prospects for financial development in the legal-origins debate has been debunked by recent findings. Using exchange rate regimes and economic/monetary integration oriented hypotheses, this paper proposes an "inflation uncertainty theory" in providing theoretical justification and empirical validity as to why French civil-law countries have higher levels of financial allocation efficiency. Inflation uncertainty, typical of floating exchange rate regimes accounts for the allocation inefficiency of financial intermediary institutions in English common-law countries. As a policy implication, results support the benefits of fixed exchange rate regimes in financial intermediary allocation efficiency"* (Asongu, 2011c; p.1).

exhaustive and thorough insight into an African perspective of the legal origins debate: hitherto unexplored.

The remainder of the paper is organized in the following manner. Section 2 discusses hypothetical financial channels between investment dynamics and legal origins. Data sources and methodology are revealed and outlined respectively in Section 3. Empirical analysis and discussion of results are reported in Section 4. We conclude with Section 5.

2. Law, legal-origin, finance and investment theory

2.1 The financial depth channel

Borrowing from Demirgüç-Kunt et al.(1999) and Asongu(2011a), we postulate that the quantity of money supply in the economy(M2) and the amount of money held by deposit money banks(Liquid liabilities) denote the financial depth channel. From monetary theory, financial depth is directly linked to the velocity of money which depends on economic activity. Economic activity is exogenous to investment and thus it could undoubtedly be inferred that financial depth is a channel to investment. Consistent with the law-finance theory, financial depth should be higher in countries with English common-law than in countries with French civil-law legacy, because the former provides for a more appealing atmosphere for openness (capital and trade) and competition. It results that economic conditions that favor openness and competition will naturally be rewarded with higher levels of financial depth at overall economic (M2) and bank (Liquid liabilities) levels. The above dialectical analysis could be summed up in one hypothetical sentence: common-law countries would exert a higher bearing on financial depth for investment.

2.2 The financial efficiency channel

The positive link between financial allocation efficiency and investment is crystal clear. In line with Asongu (2011c) French civil-law countries will turn to experience higher levels of financial intermediary allocation efficiency both at bank (banking system efficiency) and economic (financial system efficiency) levels. This is partly due to the low level of inflation typical of fixed exchange rate regimes that are characteristic of French civil-law countries in the African continent. It logically follows that French civil-law countries should exert a higher impact on investment through allocation efficiency than English common-law countries.

2.3 The financial size channel

The relative importance of openness and competition should induce a broader financial system in common-law countries than in those with French civil-law. With a competitive atmosphere (in which a country is opened to trade and capital as emphasized by common-law tradition), increase in financial transactions and institutions will have a direct impact on broadening the size of the financial system. Thus, it logically follows that on average the financial size of civil-law countries will induce less investment than that of their common-law counterparts.

2.4 The financial activity channel

Financial activity is a corollary of financial depth as the later is a direct result of the former (Asongu, 2011a). In the explanation provided in Section 2.1, we should expect English common-law countries to experience higher levels of financial activity and correspondingly greater levels of investment.

3. Data and Methodology

3.1 Data

We assess a sample of 38 African countries with French; British and Portuguese legal origins (see Appendix 1). Consistent with legal amendments over time (La Porta et al., 1998b) we add dummies of French sub-Sahara and North Africa to the list of instrumental variables. The data (non-financial) is obtained from African Development Indicators (ADI) of the World Bank and range from 1996 to 2007 due to constraints in availability of law indicators (which only date from 1996). Financial intermediary variables in line with Demirgüç-Kunt et al.(1999) are obtained through computations from the Financial Development and Structure Database (FDSD). As highlighted by Beck et al. (2003) from Berkowitz et al. (2002), it is important to distinguish between legal origin countries (United Kingdom, the U.S.A, France, Germany, Austria and Switzerland) which make-up the legal traditions from transplant countries which received the legal legacies. For the purpose of this work, this doesn't pose much of an issue because legal origins are fundamentally used as instruments. In a bid for clarity, collected data is classified into the following categories.

3.1.1 Financial channels

. We stop short of collecting data on financial markets because Ivory Coast is the only country in Francophone sub-Sahara Africa (French civil-legal origin) with information on stock markets. Beyond this truism, 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). Conversely, 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 have stock market data. However since majority of countries do not, this disparity poses a practical hitch of coming-up with harmonious evaluation criteria for the financial market data. We are therefore 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 very recent law-finance literature (Asongu, 2011ab). The following financial channels are narrowed from a plethora of financial development indicators (see Appendix 2). First and foremost we take all financial intermediary development indicators in the FDSD into account. Then we perform a correlation analysis based on the conceptual framework for financial dynamics of depth, efficiency, size and activity (Demirgüç-Kunt et al., 1999). Lastly our selection of variables pertaining to each dynamic is shaped by usages in the finance-growth literature and our ambition to present robust results for each financial intermediary dynamic.

a) Financial depth

We evaluate financial depth both from overall-economic and financial system prisms by indicators of broad money supply (*M2/GDP*) and financial system deposits (*Fdgdp*) respectively. Both variables in ratios of GDP should robustly check one another as either account for over 97% of information in the other (see Appendix 3).

b) Financial efficiency

Here neither do we refer to the profitability-focused concept of financial efficiency nor to the production efficiency of decision making units in the financial sector (through Data Envelopment Analysis: DEA). What we yearn to address is the ability of banks to effectively meet-up with their fundamental role of transforming mobilized deposits into credit for economic

operators. We account for two measures: banking-system-efficiency and financial-system-efficiency (respectively 'bank credit on bank deposits: *Bcbd'* and 'financial system credit on financial system deposits: *Fcfd'*). These two financial intermediary allocation efficiency proxies can also check each other as each represent more than 88% of variability in the other (see Appendix 3).

c) Financial size

Borrowing from the FDSD we proxy financial intermediary activity as the ratio of "deposit bank assets" to "total assets" (deposit bank assets on central bank assets plus deposit bank assets: *Dbacba*). Unfortunately we could not find another indicator of financial size despite an exhaustive search, thorough literature review, numerous computations and correlation analyses.

d) Financial activity

The paper defines financial intermediary activity as the ability of banks to grant credit to economic operators. We appreciate bank-sector-activity with "private domestic credit by deposit banks: *Pcrb*" and measure financial-sector-activity with "private credit by domestic banks and other financial institutions: *Pcrbof*". For robustness purpose, the later indicator checks the former as it represents more than 93% of information in the former (see Appendix 3).

3.1.2 Investment dynamics

Our investment variables entail: Gross Domestic Investment, Foreign Direct Investment, Gross Public Investment, Gross Private Investment and Gross Fixed Capital Formation. The very high correlation between domestic investment and fixed capital formation (see Appendix 3) compels us to drop the later in preference for the former.

3.1.3 Instrumental variables

We assess traditional legal origin dummies for the French, English and Portuguese colonial legacies. In order to improve our contribution to the literature we add dummies for North Africa and sub-Saharan Africa (SSA). The dummies are primarily used as instruments. But for the SSAfrican French dummy which reflects about 85% of the French legal origin dummy, all other dummies reflect quite distinct information or variability (see Appendix 3).

3.1.4 Control variables

Our control variables are in line with the finance-growth literature (Levine & King, 1993; Hassan et al., 2011). We shall thus control for trade, population growth, inflation, GDP growth, GDP per capita growth as well as government's general final consumption expenditure in the investment-finance regressions.

3.1.5 Choice of endogenous explaining variables for control at the second-stage of the TSLS

The choice of endogenous covariates for control at the second-stage of the TSLS estimation method is very imperative for goodness of fit and model specification. These covariates must a priori be justified by an underlying theory in which they are endogenous to the instruments. Borrowing from the law-finance literature (La Porto at al., 1998b; Beck et al., 2003; Asongu 2011b) we control for regulation quality and the rule of law at the second-stage of the TSLS approach.

3.1.6 Brief comparative analysis from Table 1

Table 1 shows comparative summary statistics for the English, French, French sub-Saharan, Portuguese and North African countries. A close look suggests that while English, Portuguese (but for Private investment) and North African (but for Foreign investment) are

above average (data mean) in investment dynamics, French sub-Saharan and French countries as well below continental averages. Sub-Saharan French countries on average have lower levels of investment than the overall French mean. Regarding law variables only English common-law and North African countries are above the continental averages; French countries surpass French SSAfrican and Portuguese countries with the later (but for the rule of law) edging over the latest.

From the financial development perspective, contrary to popular consensus North African countries on average dominate in financial intermediary aspects of depth, size and activity. What is also quite remarkable and consistent with recent law-finance literature (Asongu, 2011abc) is the overwhelming dominance of countries with French civil legal origin in financial intermediary efficiency. Law indicators are also found to be least in Portuguese and French sub-Saharan countries and highest on average in North African countries. These figures justify the basis of including sub-Saharan and North African dummies in the empirical analysis.

While countries with French civil-law have the lowest levels of inflation, English common-law countries (with the exception of Portuguese countries) reflect the highest level of trade. These preliminary findings from comparative summary statistics are in line with our expectations and consistent with the law-finance (growth) literature (Asongu, 2011ab; Agbor, 2011)[6].

[6] With the exception of Portuguese countries, English countries reflect higher levels of trade because they traditionally have legal systems that provide for openness (in trade and capital) and competition: this is in line with Agbor (2011). Conversely it is not unexpected that countries with French legal tradition should have the lowest levels of inflation. French colonial monetary legacy is focused on lowering levels of inflation because their former colonies have sacrificed financial independence and monetary experience for exchange stability (Mundell, 1972; Asongu 2011ac).

3.1.7 Brief analysis of tests of difference in means from Table 2

The purpose of the test for the difference in means between samples (legal origins) of the population (African continent) is to assess whether differentiating various indicators by legal origin is really worthwhile. Therefore, statistically significant differences in the means between various instruments across variables indicate that classifying African countries by legal origins helps explain cross-country variations in the indicators under consideration.

In Table 2(but for private investment in Panel B) there is significant evidence of differences in instrument-means across variables. It is not unexpected that not all tests should be significant to justify the adoption of legal origin dummies as instruments (La Porta et al., 1998b; pp.1131-1148).

3.2 Methodology

Borrowing from the law-finance (growth) literature, we adopt the Two Stage Least Squares (TSLS) estimation technique with legal origin dummies as instrumental variables (Beck et al., 2003; Agbor, 2011; Asongu, 2011 abcd). This estimation method has the particular edge of addressing the concern for endogeneity. The Instrumental Variable (IV) estimator can therefore avoid the bias that Ordinary Least Squares (OLS) estimates experience when covariates in the regression are correlated with the error term. More so, the object of this paper is to investigate how legal origins affect investment dynamics through financial channels; which requires an IV estimation technique. This proposed approach will engender the following steps:

-first of all our preference for a TSLS over an OLS estimation method will be justified by a Hausman-test for endogeneity;

-then, we shall verify that instrumental variables are exogenous to the endogenous components of explaining variables (financial channels), conditional on other covariates (control variables);

-last but not the least, the validity of the instruments will be tested through an overidentifying restrictions (OIR) test.

This highlighted methodology will entail the following models.

First-stage regression:

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

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

Second-stage regression:

$$Investment_{it} = \gamma_0 + \gamma_1(Finance)_{it} + \beta_i X_{it} + \mu \quad (3)$$

In the three equations, X is a set of control variables. For the first/second and third equations, v and u, denote the disturbance terms respectively. The instruments are the five legal origin dummies with *Frenchssa*: denoting the Francophone SSAfrican dummy.

Table 1: Comparative Summary Statistics

Stats	Data	Financial Intermediary Indicators							Investment Variables					Law Vles		Control Variables						Instrumental Variables				
		Depth		Efficiency		Activity		Size																		
		M2	Fd	Bcbd	Fcfd	Pcrb	Pcrbf	Dba	GDI	FDI	PrivI	PubI	FCF	R.Q	R.L	Infl	Tra	Popg	G.E	GDPg	GDPpc	Eng.	Frch.	Port.	Frssa.	Nafri.
	English	0.377	0.32	0.60	0.68	0.20	0.24	0.71	23.2	4.36	13.3	7.42	20.7	0.37	0.40	10.4	87.3	2.10	16.1	4.61	2.45	---	---	---	---	---
	French	0.26	0.18	0.84	0.86	0.14	0.15	0.71	19.7	2.18	12.8	6.36	19.3	0.30	0.27	3.3	64.4	2.59	12.7	4.12	1.52	---	---	---	---	---
Mean	Portuguese	0.34	0.24	0.49	0.48	0.13	0.13	0.68	21.4	4.67	10.7	10.6	21.4	0.26	0.25	121	93.9	2.19	13.0	6.31	3.80	---	---	---	---	---
	Frenchssa	0.19	0.12	0.86	0.88	0.10	0.10	0.67	18.3	2.04	12.1	6.15	18.3	0.28	0.24	3.37	62.6	2.85	12.1	4.04	1.19	---	---	---	---	---
	Northafrica	0.64	0.53	0.72	0.75	0.38	0.41	0.88	24.8	2.83	14.3	8.38	22.9	0.41	0.47	3.63	66.7	1.45	14.9	4.58	3.10	---	---	---	---	---
	Data	0.31	0.24	0.70	0.75	0.17	0.19	0.71	21.2	3.31	12.9	6.96	20.0	0.33	0.32	19.4	76.8	2.35	14.2	4.56	2.15	0.42	0.47	0.10	0.39	0.10
	English	0.27	0.25	0.27	0.49	0.19	0.30	0.26	10.4	5.89	7.65	4.22	9.45	0.18	0.21	15.2	46.0	0.88	5.77	3.78	3.58	---	---	---	---	---
	French	0.17	0.15	0.28	0.30	0.13	0.15	0.17	7.74	4.03	6.60	2.78	7.14	0.14	0.17	8.86	28.7	1.19	4.71	4.31	4.06	---	---	---	---	---
S.D	Portuguese	0.21	0.20	0.18	0.18	0.13	0.13	0.27	4.37	2.52	4.58	1.57	4.37	0.16	0.25	597	35.8	0.37	4.54	7.33	7.08	---	---	---	---	---
	Frenchssa	0.05	0.05	0.24	0.25	0.05	0.05	0.14	7.58	4.27	6.66	2.61	7.36	0.13	0.15	9.68	30.2	1.13	4.83	4.58	4.22	---	---	---	---	---
	Northafrica	0.17	0.15	0.36	0.42	0.19	0.21	0.10	4.58	2.52	5.73	3.47	3.30	0.13	0.14	3.06	19.1	0.33	2.57	2.34	2.35	---	---	---	---	---
	Data	0.23	0.21	0.30	0.40	0.16	0.23	0.22	8.95	5.08	7.01	3.56	8.16	0.17	0.21	201	39.5	1.04	5.41	4.56	4.34	0.49	0.49	0.30	0.48	0.30
	English	0.00	0.00	0.17	0.20	0.00	0.00	0.01	3.48	-5.7	0.27	0.09	3.48	0.04	0.02	-10	17.8	-1.0	5.41	-16.7	-17.1	---	---	---	---	---
	French	0.06	0.02	0.14	0.14	0.02	0.02	0.33	4.30	-8.6	-2.4	1.39	4.31	0.05	0.01	-10	21.5	0.59	2.65	-12.6	-15.1	---	---	---	---	---
Min	Portuguese	0.10	0.05	0.13	0.13	0.01	0.01	0.11	18.3	1.63	5.97	8.55	18.3	0.04	0.01	-3.5	36.8	1.45	6.33	-28.1	-29.6	---	---	---	---	---
	Frenchssa	0.06	0.02	0.21	0.22	0.02	0.02	0.33	4.30	-8.6	-2.4	1.39	4.31	0.05	0.01	-10	21.5	0.70	2.65	-12.6	-15.1	---	---	---	---	---
	Northafrica	0.31	0.23	0.14	0.14	0.04	0.04	0.62	16.8	0.26	2.40	3.56	16.3	0.15	0.10	0.33	38.3	0.59	10.3	-2.22	-3.59	---	---	---	---	---
	Data	0.00	0.00	0.13	0.13	0.00	0.00	0.01	3.48	-8.6	-2.4	0.09	3.48	0.04	0.01	-10	17.8	-1.0	2.65	-28.1	-29.6	0.00	0.00	0.00	0.00	0.00
	English	1.27	1.05	1.40	2.60	0.75	1.52	0.99	63.7	33.2	43.9	25.0	63.5	0.77	0.81	132	224	4.23	35.1	27.4	22.6	---	---	---	---	---
	French	0.97	0.78	1.71	1.64	0.60	0.66	0.99	60.1	34.5	49.5	13.7	59.7	0.69	0.61	31.1	156	10.5	28.7	33.6	29.0	---	---	---	---	---
Max	Portuguese	0.78	0.71	0.80	0.80	0.44	0.44	0.99	30.9	8.58	21.7	13.9	30.9	0.55	0.76	4145	179	3.03	21.2	20.6	17.1	---	---	---	---	---
	Frenchssa	0.36	0.27	1.71	1.64	0.24	0.27	0.99	60.1	34.5	49.5	13.7	59.7	0.69	0.51	31.1	156	10.5	28.7	33.6	29.0	---	---	---	---	---
	Northafrica	0.97	0.80	1.27	1.61	0.60	0.66	0.99	33.6	10.4	27.2	15.1	31.2	0.68	0.61	18.6	108	1.92	19.3	12.2	10.5	---	---	---	---	---
	Data	1.27	1.05	1.71	2.60	0.75	1.52	0.99	63.7	34.5	49.5	25.0	63.5	0.77	0.81	4145	224	10.5	35.1	33.6	29.0	1.00	1.00	1.00	1.00	1.00
	English	187	187	191	187	187	187	186	143	157	153	167	164	144	143	178	192	192	179	192	192	---	---	---	---	---
	French	210	210	214	210	210	210	214	208	159	198	203	208	162	162	203	212	216	210	216	216	---	---	---	---	---
Obs	Portuguese	48	48	48	48	48	48	48	12	12	12	12	12	36	36	48	36	36	36	48	48	---	---	---	---	---
	Frenchssa	174	174	178	174	174	174	178	172	135	168	173	172	135	135	167	176	180	174	180	180	---	---	---	---	---
	Northafrica	48	48	48	48	48	48	48	48	36	42	42	48	36	36	48	48	48	48	48	48	---	---	---	---	---
	Data	445	445	453	445	445	445	448	363	328	363	382	384	342	341	429	440	444	425	456	456	456	456	456	456	456

S.D: Standard Deviation. Min: Minimum. Max: Maximum. Obs: Observations. M2: Monetary Base. Fd: Financial system deposits. Bcbd: Bank credit on Bank deposits. Fcfd: Financial system credit on Financial system deposits. Pcrb: Private domestic credit by deposit banks. Pcrbf: Private domestic credit by financial institutions. Dba: Deposit bank assets on central bank assets plus deposit bank assets. R.Q: Regulation Quality. RL:Rule of Law. Infl: Inflation.Tra: Trade. Popg: Population growth. GE: Government Expenditure. GDPg: GDP growth. GDPpc: GDP per capita growth. Popg: Population growth. Vles: Variables.GDI: Gross Domestic Investment. FDI: Foreign Direct Investment. PrivI: Gross Private Investment. PubI: Gross Public Investment. . Eng: English legal origin. Frch: French legal origin. Frssa: French Sub Saharan Africa. Port: Portuguese legal origin. Nafri: North Africa.

Table 2: Test of difference in means

Panel A: Financial Intermediary Development Dynamics

		Financial Depth: Monetary Base					Financial Depth: Financial System Deposits				
		Eng	Fr	Por	Frssa	Nafri	Eng	Fr	Por	Frssa	Nafri
Legal origin dummies (Instruments)	Eng	0	**5.12**	0.84	**8.63**	**-6.42**	0	**6.74**	**1.97**	**10.1**	**-5.39**
	Fr		0	**-2.79**	**4.98**	**-14.0**		0	**-2.37**	**5.03**	**-14.3**
	Por			0	**8.10**	**-7.62**			0	**7.14**	**-7.79**
	Frssa				0	**28.9**				0	**-29.6**
	Nafri					0					0

		Financial Efficiency: Banking System Efficiency					Financial Efficiency: Financial System Efficiency				
		Eng	Fr	Por	Frssa	Nafri	Eng	Fr	Por	Frssa	Nafri
Legal origin dummies (Instruments)	Eng	0	**-8.7**	**2.74**	**-9.85**	**-2.52**	0	**-4.4**	**2.71**	**-4.68**	-0.93
	Fr		0	**8.34**	-0.79	**2.56**		0	**8.25**	-0.55	**2.04**
	Por			0	**-10.0**	**-3.91**			0	**-10.0**	**-4.09**
	Frssa				0	**3.25**				0	**2.55**
	Nafri					0					0

		Financial Activity: Banking System Activity					Financial Activity: Financial System Activity				
		Eng	Fr	Por	Frssa	Nafri	Eng	Fr	Por	Frssa	Nafri
Legal origin dummies (Instruments)	Eng	0	**3.00**	**2.07**	**6.18**	**-5.92**	0	**3.68**	**2.37**	**5.81**	**-3.53**
	Fr		0	0.52	**3.95**	**-9.90**		0	0.81	**4.00**	**-9.60**
	Por			0	**2.52**	**-7.29**			0	**2.25**	**-7.57**
	Frssa				0	**-17.2**				0	**-17.1**
	Nafri					0					0

		Financial Size				
		Eng	Fr	Por	Frssa	Nafri
Legal origin dummies (Instruments)	Eng	0	-0.16	0.76	**1.80**	**-4.35**
	Fr		0	1.19	**2.75**	**-6.55**
	Por			0	-0.27	**4.82**
	Frssa				0	**9.27**
	Nafri					0

Panel B: Investment Dynamics

		Domestic and Foreign Investments: Domestic Investment					Domestic and Foreign Investments: Foreign Investment				
		Eng	Fr	Por	Frssa	Nafri	Eng	Fr	Por	Frssa	Nafri
Legal origin dummies (Instruments)	Eng	0	**3.58**	0.60	**4.87**	-1.03	0	**3.83**	-0.18	**3.78**	1.51
	Fr		0	-0.72	**1.87**	**-4.36**		0	**-2.10**	0.27	-0.93
	Por			0	1.40	**-2.35**			0	**2.08**	**2.17**
	Frssa				0	**-5.70**				0	-1.05
	Nafri					0					0

		Private and Public Investments: Private Investment					Private and Public Investments: Public Investment				
		Eng	Fr	Por	Frssa	Nafri	Eng	Fr	Por	Frssa	Nafri
Legal origin dummies (Instruments)	Eng	0	0.60	1.13	1.48	-0.85	0	**2.87**	**-2.64**	**3.32**	-1.36
	Fr		0	1.08	1.04	-1.41		0	**-5.29**	0.74	**-4.08**
	Por			0	0.69	**2.02**			0	**5.89**	**2.20**
	Frssa				0	**-2.03**				0	**-4.61**
	Nafri					0					0

Eng: English. Fr: French. Por: Portuguese. Frssa: French Sub-Saharan Africa. Nafri: North Africa. Values in bold are t-statistics of at least 10% significance level. Significance of t-statistics is governed by both one and two tailed p-values.

4. Cross-country regressions

In this section we present results from cross-country regressions to assess the importance of legal origin in explaining cross-country variances in investment, the ability of legal origin to explain cross-country differences in the financial channels and the ability of the exogenous components of the financial channels to account for cross-country differences in investment.

4.1 Legal origins and investments

As presented in Table 3, we regress investment dynamics on the French, British, French sub-Saharan, Portuguese and North African legal origin dummies and then test for their joint significance. Panel A presents results without control variables while Panel B does. In either case we find significant evidence at 1% level that distinguishing countries by legal origin helps explain cross country differences in aggregate investment dynamics (*F*-statistics). It is also worth noting that (but for population growth) all control variables have the rights signs and enter significantly in all regressions.

On average, results indicate that French legal origin countries have substantially lower levels of foreign investment, but overwhelmingly dominate in private investment. Portuguese countries are dominant in domestic, foreign and public investments. But for foreign investment and slightly public investment, sub-Saharan French countries stand significantly below French civil-law countries' averages in domestic and private investments. Whereas English common-law countries and Portuguese countries almost tie in domestic and foreign investments, North African countries joint them only in the tie of domestic investment and have significantly slimmer levels of foreign investments. Results of the control variables are

broadly consistent with the relevance of trade, inflation, government expenditure, GDP growth and GDP per capita growth in the investment-growth literature.

From the perspective of private investment, these initial findings are not consistent with the law-finance literature (La Porta et al., 1998b; Beck et al., 2003) where-in, English common-law countries which champion private property rights vis-à-vis those of the state should inherently reflect higher levels of private investment than French civil-law countries that emphasized state-power. The overwhelming dominance of French and French sub-Saharan African countries (Models 7 and 7*) in prospects of financial development therefore debunks this consensus in the law-finance literature. Reasons for this contradiction could entail the following. (1) The time series properties of our data. While La Porta, et al. (1998b) and Beck et al. (2003) do not provide time spans for their data because such was not necessary (as their studies were founded on facts for the most part), this paper is based on data ranging from 1996 to 2007; most probably collected after publication of the first working paper pertaining to the pioneering work of La Porta et al.(1998b). (2) With increasing globalization and economic integration, it is logical certain civil law traditions might be influenced by common-law traditions are vice-versa. A case in point in the African continent is the presence civil-law UEMOA countries in ECOWAS: largely dominated by countries of common-law traditions like Nigeria and Ghana. This explanation is consistent with the literature on the amendment of laws over time. (La Porta et al., 1998b; p. 1119). (3) Another insight in accordance with recent empirical findings could be borrowed from Asongu (2011c) where-in French civil-law countries are characterized by low levels of inflation resulting from their fixed exchange rate regimes. The corresponding inflation-predictability existing there-in could be the source of their overwhelming dominance in private investments. This

interpretation is further vindicated by the negative significant inflation coefficient in the private investment regression.

Table 3: Investments and legal origins

		Panel A: Investment regression without control variables							
		Domestic Investment		Foreign Investment		Private Investment		Public Investment	
		Model 1	**Model 1***	Model 2	**Model 2***	Model 3	**Model 3***	Model 4	**Model 4***
	English	**22.842*** (31.10)**	**21.625*** (26.28)**	**4.368*** (10.82)**	**4.253*** (10.47)**	**13.300*** (22.61)**	**12.450*** (19.96)**	**7.279*** (27.20)**	**6.961*** (25.68)**
	French	**18.924*** (29.30)**	---	**2.195*** (5.256)**	---	**12.838*** (24.83)**	---	**6.075*** (23.92)**	---
Legal origin Dummies (Instruments)	Frenchssa	---	**18.300*** (24.65)**		**2.049*** (4.739)**	---	**12.110*** (20.57)**	---	**6.158*** (23.36)**
	Portuguese	**21.409*** (8.547)**	**21.409*** (7.616)**	**4.671*** (3.245)**	**4.671*** (3.221)**	---	**10.742*** (4.877)**	**10.667*** (10.81)**	**10.667*** (10.66)**
	Northafrica	**4.959*** (3.650)**	**19.457*** (13.70**	**-0.081 (-0.091)**	**1.420* (1.675)**	---	**10.828*** (9.094)**	**1.963*** (3.479)**	**6.393*** (11.83)**
F-test for Legal origin		**8.972***	**417.24***	**5.334***	**38.491***	**563.95***	**248.637***	**11.793***	**391.14***
Adjusted R^2		0.061	0.821	0.038	0.315	0.756	0.732	0.078	0.803
Number of observations		363	363	328	328	363	363	382	382

		Panel B: Investment regressions with control variables							
		Domestic Investment		Foreign Investment		Private Investment		Public Investment	
		Model 5	**Model 5***	Model 6	**Model 6***	Model 7	**Model 7***	Model 8	**Model 8***
	English	**13.265*** (8.974)**	**10.856*** (7.445)**	**6.067*** (8.977)**	**4.505*** (9.134)**	**5.527*** (4.808)**	**3.474*** (3.059)**	**4.767*** (9.003)**	**4.465*** (8.325)**
	French	**11.326*** (10.81)**	---	**4.056*** (4.784)**	---	**6.713*** (7.968)**	---	**4.218*** (9.993)**	---
Legal origin Dummies (Instruments)	Frenchssa	---	**9.557*** (8.528)**	---	**2.208*** (5.023)**	---	**5.609*** (6.228)**	---	**4.293*** (9.812)**
	Portuguese	**12.688*** (5.238)**	**12.540*** (4.906)**	**6.956*** (4.608)**	**4.830*** (3.300)**	**4.391** (2.244)**	**4.229** (2.006)**	**8.493*** (8.087)**	**8.841*** (8.617)**
	Northafrica	**5.081*** (4.441)**	**10.185*** (6.950)**	-0.850 (-0.957)	1.076 (1.291)	**2.220** (2.259)**	**4.683*** (3.719)**	**2.173*** (3.972)**	**4.660*** (7.624)**
	Inflation	**-0.081** (-2.553)**	**-0.071** (-2.057)**	**-0.071*** (-3.531)**	**-0.074*** (-3.652)**	**-0.071*** (-2.760)**	---		---
	Trade	**0.086*** (7.941)**	---	---	---	**0.072*** (8.341)**	---	**0.022*** (5.024)**	---
Control Variables	GDPg	**0.542*** (5.361)**	---	---	---	**0.338*** (4.103)**	---	**0.094** (2.338)**	---
	GDPpcg	---	**0.675*** (5.666)**	---	**0.151* (1.749)**	---	**0.331*** (3.638)**	---	**0.092** (2.099)**
	Popg	---	---	**-0.551** (-2.068)**	---	---	---	---	---
	Gov. Exp	---	**0.676*** (9.084)**	---	---	---	**0.518*** (8.403)**	---	**0.145*** (4.942)**
F-test for Legal origin		**25.491***	**350.00***	**6.567***	**27.958***	**18.803***	**219.66***	**13.502***	**285.06***
Adjusted R^2		0.303	0.878	0.084	0.350	0.240	0.783	0.140	0.817
Number of observations		338	338	302	302	338	363	382	382

Frenchssa: French Sub-Saharan Africa. GDPg: GDP growth. GDPpcg: GDP per capita growth. Gov. Exp. Government Expenditure. Popg: Population growth rate. *, **,***; significance at 10%, 5% and 1% respectively.

4.2 Legal origins and financial channels

Table 4 assesses whether legal origin explains cross-country differences in the indicators which characterize the financial channel. This is the first condition for the

Instrumental Variable (IV) estimation technique which requires that the instruments (legal origins) explain financial channels conditional on other covariates (control variables). This is in line with equations (1) and (2) specified in Section 3.2. We regress the proxies for financial dynamics of depth, efficiency, size and activity on the legal origin dummy variables. Due to issues related to over-parametization and multicolinearity the paper avoids using the French and French sub-Saharan dummies in the same regressions. We assess whether the exogenous components of legal origins explain financial indicators both in the presence (Panel B) and absence (Panel A) of control variables, such that we have eight regressions for each panel. We report the Fisher (F)-test of whether legal origin dummy variables taken together explain significantly cross-country variations in financial channels. Clearly from significance of estimated coefficients, the instruments are exogenous to cross-country variations in financial depth, efficiency, activity and size. Also the validity of the *F*-test at 1% significance level illustrates that legal origins taken together jointly substantially elucidate financial development differences across countries. Variables that are controlled for are all significant.

The outcome in Table 4 also shows 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 exert dominance in financial intermediary efficiency. Countries with Portuguese legal-origin fall in-between. This confirms recent findings of Asongu (2011abc). The addition of two dummies to the analysis sheds some light on the nature of North-African countries and their French SSAfrican neighbors. While the former dominates English legal origin countries in financial depth and activity, the later (SSA-French) has on average lower levels of financial depth, efficiency and size when

compared to average levels of other countries within the French legal-origin influence. A logical inference is that Francophone North African countries dominate their SSA-Francophone counterparts in financial intermediary dynamics of depth, activity and size.

Table 4: Financial development and legal origins

Panel A: Financial dynamic regressions without control variables

		Financial Depth		**Financial Efficiency**		**Financial Activity**		**Financial Size**	
		M2	Fdgdp	BcBd	FcFd	Pcrb	Pcrbof	Dbacba	Dbacba
		Model 9	**Model 9***	Model 10	**Model 10***	Model 11	**Model 11***	Model 12	**Model 12***
	English	**0.350*** **	**0.294*** **	**0.609*** **	**0.648*** **	**0.183*** **	**0.223*** **	**0.702*** **	**0.668*** **
		(25.58)	**(23.03)**	**(30.92)**	**(21.67)**	**(17.22)**	**(14.00)**	**(43.16)**	**(35.81)**
	French	**0.189*** **	---	**0.860*** **	---	**0.104*** **	---	**0.685*** **	---
		(13.81)		**(43.56)**		**(9.783)**		**(42.59)**	
Legal origin	Frenchssa	---	**0.123*** **	---	**0.884*** **	---	**0.108*** **	---	**0.673*** **
Dummies			**(9.416)**		**(28.72)**		**(6.609)**		**(35.58)**
(Instruments)	Portuguese	**0.341** **	**0.245*** **	**0.490*** **	**0.488*** **	**0.138*** **	**0.138*** **	**0.681*** **	**0.681*** **
		(12.72)	**(9.805)**	**(12.59)**	**(8.331)**	**(6.621)**	**(4.413)**	**(21.49)**	**(18.70)**
	Northafrica	**0.415*** **	**0.458*** **	**-0.072***	**0.597*** **	**0.263*** **	**0.357*** **	**0.197*** **	**0.720*** **
		(14.32)	**(18.13)**	**(-1.735)**	**(10.12)**	**(11.68)**	**(11.32)**	**(5.776)**	**(19.60)**
Fisher-test for Legal origin		**81.551*** **	**291.307*** **	**40.035*** **	**382.97*** **	**50.42*** **	**108.35*** **	**11.496*** **	**872.67*** **
Adjusted R^2		0.352	0.723	0.205	0.774	0.250	0.492	0.065	0.886
Number of observations		445	445	453	445	445	445	448	448

Panel B: Financial dynamic regressions with control variables

		Financial Depth		**Financial Efficiency**		**Financial Activity**		**Financial Size**	
		M2	Fdgdp	BcBd	FcFd	Pcrb	Pcrbof	Dbacba	Dbacba
		Model 13	**Model 13***	Model 14	**Model 14***	Model 15	**Model 15***	Model 16	**Model 16***
	English	**0.247*** **	**0.257*** **	**0.849*** **	**0.424*** **	**0.311*** **	**0.274*** **	**0.809*** **	**0.353*** **
		(8.907)	**(8.588)**	**(14.67)**	**(6.482)**	**(15.63)**	**(5.644)**	**(28.74)**	**(9.815)**
	French	**0.101*** **	---	**1.104*** **	---	**0.223*** **	---	**0.834*** **	---
		(4.354)		**(18.78)**		**(9.800)**		**(25.05)**	
Legal origin	Frenchssa	---	**0.145*** **	---	**0.715*** **	---	**0.158*** **	---	**0.385*** **
Dummies			**(4.541)**		**(13.10)**		**(3.274)**		**(13.56)**
(Instruments)	Portuguese	**0.257*** **	**0.272*** **	**0.835*** **	**0.435*** **	**0.283*** **	**0.268*** **	**0.802*** **	**0.574*** **
		(6.055)	**(7.308)**	**(11.40)**	**(4.502)**	**(9.958)**	**(4.410)**	**(18.90)**	**(11.74)**
	Northafrica	**0.424*** **	**0.395*** **	**-0.144*** **	**0.430*** **	**0.208*** **	**0.318*** **	**0.120*** **	**0.478*** **
		(15.06)	**(13.60)**	**(-3.198)**	**(6.062)**	**(8.932)**	**(7.765)**	**(3.408)**	**(13.51)**
	Inflation	**-0.0001** **	---	---	---	**-0.003*** **	**-0.003*** **	---	**-0.001***
		(-2.499)				**(-4.446)**	**(-3.045)**		**(-1.787)**
	Trade	**0.001*** **	---	**-0.001*** **	**-0.001** **	---	**-0.0005***	---	**0.001*** **
		(6.598)		**(-3.456)**	**(-2.569)**		**(-1.858)**		**(5.422)**
	GDPg	**-0.004** **	---	---	---	---	---	**0.006*** **	---
Control		**(-2.126)**						**(2.704)**	
Variables	Popg	---	**-0.047*** **	**-0.057*** **	---	**-0.038*** **	**-0.037*** **	**-0.062*** **	---
			(-5.923)	**(-3.923)**		**(-5.218)**	**(-3.170)**	**(-5.701)**	
	Gov. Exp	---	**0.009*** **	---	**0.021*** **	---	**0.008*** **	---	**0.0150*** **
			(6.949)		**(5.541)**		**(4.213)**		**(7.698)**
Fisher-test for Legal origin		**53.054*** **	**248.029*** **	**21.836*** **	**243.46*** **	**42.61*** **	**61.134*** **	**14.106*** **	**759.39*** **
Adjusted R^2		0.436	0.782	0.197	0.784	0.338	0.560	0.130	0.933
Number of observations		404	414	425	402	408	379	436	380

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. Frenchssa: French Sub-Saharan Africa. GDPg: GDP growth. GDPpcg: GDP per capita growth. Gov. Exp. Government Expenditure. Popg: Population growth rate. *, **,***; significance at 10%, 5% and 1% respectively.

4.3 Examination of financial channels using an instrumental variable procedure

The fifth and sixth tables below address two key issues: (1) the concern of whether the exogenous components of financial channels explain investment and; (2) if legal origin explains investment dynamics through other mechanisms than financial channels. To make these investigations we use the TSLS regressions. Thus we involve equation (3) in the first-stage regressions (first and second equations). While the first issue is addressed by the significance of estimated coefficients, the second is looked at by the overidentifying restrictions (OIR) test whose null hypothesis postulates that the instruments (legal origins) are not correlated with the error term in the equation of interest (equation 3). Therefore, a rejection of the null hypothesis of the OIR test is a rejection of the view that legal origins explain investment only through the financial channel. In the second-stage regressions we control for law in terms of regulation quality and the rule of law. Our choice of these variables is in line with the law-finance literature and has been elucidated in Section 3.1.5. In all 32 regressions, control variables are significant for the most part; with the right signs.

Table 5 presents results for domestic (Panel A) and foreign (Panel B) investments. We begin by validating our choice of a TSLS estimation method with a Hausman test of endogeneity for model specification. The null hypothesis of this test posits that estimated coefficients by OLS are not consistent; implying they suffer from endogeneity because the variables in the equation of interest are correlated with the error term. Where the Hausman test fails to reject the null hypothesis (absence of endogeneity) we do not proceed with the TSLS; which is not the case of all sixteen regressions pertaining to the two panels. We also report the Cragg-Donald statistics of the weak instrument test of first-stage regressions.

Table 5: Investment and financial development (Second-Stage regressions)

Panel A: Domestic Investment regressions

		Model 17	Model 17*	Model 18	Model 18*	Model 19	Model 19*	Model 20	Model 20*
	M2	-13.803	---	---	---	---	---	**-15.747***	---
Financial		(-1.644)						**(-1.662)**	
Depth	Fdgdp	---	**-16.982***	---	---	---	---	---	**-18.836***
			(-1.709)						**(-1.676)**
	BcBd	-1.531	---	-0.499	---	---	---	**8.456*****	---
Financial		(-0.415)		(-0.150)				**(3.282)**	
Efficiency	FcFd	---	-2.750	---	-0.426	---	---	---	**7.022****
			(-0.708)		(-0.129)				**(2.325)**
	Pcrb	---	---	-12.915	---	-12.815	---	---	---
Financial				(-1.497)		(-1.491)			
Activity	Pcrbof	---	---	---	-10.848	---	-10.754	---	---
					(-1.330)		(-1.325)		
Financial	Dbacba	**20.308*****	**20.284*****	**21.122*****	**21.183*****	**20.366*****	**20.528*****	---	---
Size		**(3.160)**	**(3.147)**	**(3.582)**	**(3.578)**	**(6.606)**	**(6.663)**		
	Reg. Qua.	---	---	---	---	---	---	---	---
Control									
Variables	Rule of L.	**35.789****	**38.111****	**24.620****	**23.537*****	**25.179*****	**24.009*****	**60.495*****	**62.268*****
		(2.372)	**(2.415)**	**(2.474)**	**(2.379)**	**(2.730)**	**(2.612)**	**(4.595)**	**(4.393)**
Hausman test		**92.631*****	**89.815*****	**64.917*****	**66.604*****	**57.883*****	**60.359*****	**191.30*****	**197.07*****
OIR(Sargan) test		**1.766**	**1.551**	2.998*	3.489*	**3.015**	**3.499**	7.775**	7.539**
P-values		**[0.183]**	**[0.212]**	[0.083]	[0.061]	**[0.221]**	**[0.173]**	[0.020]	[0.023]
Cragg- Donald		3.055	2.823	6.051	6.167	6.731	6.742	4.965	4.335
Adjusted R^2		0.213	0.220	0.218	0.217	0.219	0.217	0.144	0.145
F-stats		**389.09*****	**389.72*****	**454.45*****	**455.29*****	**607.30*****	**608.43*****	**336.90*****	**336.63*****
Observations		257	257	257	257	257	257	260	260

Panel B: Foreign Investment regressions

		Model 21	Model 22	Model 23	Model 24	Model 25	Model 25*	Model 26	Model 26*
	M2	-4.364	-0.832	---	---	---	---	0.531	---
Financial		(-1.098)	(-0.276)					(0.050)	
Depth	Fdgdp	---	---	-5.021	---	---	---	---	-5.962
				(-1.063)					(-0.454)
	BcBd	**-4.815***	---	**-5.422***	---	---	---	-1.417	---
Financial		**(-1.820)**		**(-1.812)**				(-0.845)	
Efficiency	FcFd	---	---	---	-2.861	---	---	---	-3.779
					(-1.200)				(-1.175)
	Pcrb	---	---	---	---	**-13.550****	---	-13.056	---
Financial						**(-2.119)**		(-1.167)	
Activity	Pcrbof	---	---	---	**-15.36*****	---	-13.88	---	-11.767
					(-1.873)		(-1.572)		(-1.007)
Financial	Dbacba	---	---	---	---	-1.325	-2.379	---	---
Size						(-0.561)	(-0.738)		
	Reg. Qua.	**22.779*****	**10.059*****	**23.738*****	---	---	---	---	---
Control		**(2.894)**	**(3.195)**	**(2.697)**					
Variables	Rule of L.	---	---	---	**25.512*****	**20.156*****	**23.775****	**18.995****	**29.854****
					(2.690)	**(2.665)**	**(2.017)**	**(2.442)**	**(2.164)**
Hausman test		**75.302*****	**48.383*****	**83.220*****	**57.366*****	**25.545*****	**23.361*****	**32.138*****	**30.737*****
OIR(Sargan) test		**1.337**	**6.210**	**1.411**	**0.931**	**2.266**	**3.245**	**1.159**	**0.638**
P-values		**[0.512]**	**[0.101]**	**[0.493]**	**[0.627]**	**[0.321]**	**[0.197]**	**[0.281]**	**[0.424]**
Cragg- Donald		5.536	12.206	4.627	1.277	4.048	1.263	2.038	1.271
Adjusted R^2		0.004	0.041	0.001	0.027	0.010	0.018	0.012	0.012
F-stats		**24.952*****	---	**24.921*****	**22.256*****	**32.541*****	**27.009*****	**24.657*****	**15.203*****
Observations		236	236	236	235	232	232	235	235

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. Rule of L: Rule of Law. *, **,***; significance at 10%, 5% and 1% respectively. (): z-statistics. Chi-square statistics for Hausman test. LM statistics for Sargan test. [ ]: p-values. Weak I. Test (F-stats): Cragg-Donald statistics for Weak Instrument test at first stage regression. OIR: overidentifying restrictions.

The first issue of Panel A (with respect to domestic investment) is addressed by the significance of estimated coefficients which are valid for: financial depth at overall

economic (Model 20) and financial system (Models 17* and 20*) perspectives; financial allocation efficiency at banking system (Model 20) and financial system (Model 20*) standpoints; and financial size (Models 17 to 19). As concerns the second issue, but for Models 18(18*) and 20(20*) the null hypothesis of the OIR test is not rejected for the average part; implying legal origins explain domestic investment only through financial channels. Conversely for Models 18(18*) and 20(20*) the instruments also explain domestic investment through some other mechanisms than the financial depth and efficiency channels.

In the second Panel, the significance of banking system efficiency (Models 21 and 23) and banking system (financial system) activity from Model 25(24) address the first concern. For the second concern the null hypothesis of the OIR test is not rejected in all eight regressions. It follows that legal origins significantly elucidate foreign investment through no other mechanism than banking system efficiency, banking system activity and financial system activity channels.

Table 6 presents results for private (Panel A) and public (Panel B) investments. Justification of the TSLS methodology is provided by the rejection of the null hypothesis of the Hausman test; which applies to all sixteen regressions. With regard to the first issue, financial system depth (Model 30*), banking system efficiency (Models 27 and 28), banking system activity (Model 29) and financial size (Models 29, 29*, 30 and30*) are all significant determinants of private investment. For the second concern, the instruments also explain private investment through some other mechanisms beside the significant financial channels highlighted above. With respect to public investment, banking system activity (Model 32), financial system activity (Model 33*) and financial size (Models 34, 34*) all constitute

significant determinants (first issue). However legal origins also explain public investment beyond these determinants (second issue).

Table 6: Investment and financial development continued (Second-Stage regressions)

		Panel A: Private Investment regressions							
		Model 27	Model 27*	Model 28	Model 28*	Model 29	Model 29*	Model 30	Model 30*
	M2	-2.841	---	---	---	---	---	-8.637	----
Financial		(-0.569)						(-1.642)	
Depth	Fdgdp	---	-4.924	---	---	---	---	---	**-12.047***
			(-0.699)						**(-1.911)**
	BcBd	**5.109***	---	**9.204*****	---	---	---	---	---
Financial		**(1.843)**		**(5.004)**					
Efficiency	FcFd	---	4.409	---	4.351	---	---	---	---
			(1.056)		(1.049)				
	Pcrb	---	---	-8.954	---	**-16.778***	---	---	---
Financial				(-0.786)		**(-1.674)**			
Activity	Pcrbof	---	---	---	-7.560	---	-16.449	---	---
					(-0.698))		(-1.172)		
Financial	Dbacba	---	---	---	---	**14.897*****	**13.617*****	**15.441*****	**13.610*****
Size						**(5.716)**	**(3.563)**	**(6.106)**	**(4.599)**
	Reg. Qua.	**29.830*****	**31.689****	---	**32.592****	---	---	---	---
Control		**(3.140)**	**(2.254)**		**(2.155)**				
Variables	Rule of L.	---	---	**23.271*****	---	15.495	19.466	13.765	**18.801***
				(2.611)		(1.605)	(1.201)	(1.534)	**(1.819)**
Hausman test		**107.86*****	**140.17*****	**98.71*****	**157.32*****	**25.173*****	**25.098*****	**34.204*****	**34.500*****
OIR(Sargan) test		7.144**	6.534**	14.329***	7.453**	8.177**	8.424**	7.623**	6.592**
P-values		[0.028]	[0.038]	[0.000]	[0.024]	[0.016]	[0.014]	[0.022]	[0.037]
Cragg- Donald		5.658	2.428	3.044	0.976	3.251	0.797	5.089	3.946
Adjusted R^2		0.009	0.007	0.031	0.014	0.120	0.102	0.098	0.100
F-stats		**229.70*****	**212.89*****	**280.00*****	**240.69*****	**346.08*****	**308.04*****	**325.26*****	**323.72*****
Observations		260	260	259	260	256	256	256	256

		Panel B: Public Investment regressions							
		Model 31	Model 31*	Model 32	Model 32*	Model 33	Model 33*	Model 34	Model 34*
	M2	-0.132	---	---	---	---	---	---	---
Financial		(-0.058)							
Depth	Fdgdp	---	-0.958	---	---	---	---	---	---
			(-0.399)						
	BcBd	---	---	**4.222*****	---	---	---	---	---
Financial				**(5.517)**					
Efficiency	FcFd	---	---	---	1.026	---	---	---	---
					(0.737)				
	Pcrb	---	---	---	---	-7.482	---	---	---
Financial						(-1.326)			
Activity	Pcrbof	---	---	---	---	---	**-20.07*****	---	---
							(-2.819)		
Financial	Dbacba	---	---	---	---	---	---	**8.076*****	**6.832*****
Size								**(6.563)**	**(2.621)**
	Reg. Qua.	**20.172*****	**20.810*****	---	**17.907*****	---	---	---	5.552
Control		**(8.485)**	**(10.01)**		**(5.774)**				(0.987)
Variables	Rule of L.	---	---	**11.224*****	---	**23.323*****	**31.895*****	2.724	---
				(7.036)		**(7.441)**	**(6.982)**	(1.046)	
Hausman test		**183.54*****	**200.05*****	**131.94*****	**222.97*****	**205.22*****	**224.57*****	**107.65*****	**99.53*****
OIR(Sargan) test		12.040***	11.800***	17.601***	7.420**	32.128***	15.321***	9.928**	9.372**
P-values		[0.007]	[0.008]	[0.000]	[0.024]	[0.000]	[0.001]	[0.019]	[0.024]
Cragg- Donald		16.923***	22.000***	27.471***	12.952***	7.521	2.658	15.723***	4.812
Adjusted R^2		0.009	0.009	0.010	0.001	0.084	0.159	0.005	0.0003
Observations		275	275	280	275	274	274	277	278

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. Rule of L: Rule of Law. *, **,***; significance at 10%, 5% and 1% respectively. (): z-statistics. Chi-square statistics for Hausman test. LM statistics for Sargan test. [ ]: p-values. Weak I. Test (F-stats): Cragg-Donald statistics for Weak Instrument test at first stage regression. OIR: overidentifying restrictions.

5. Conclusion

The motivations of this paper amongst others have been the importance of investment and finance in the development of the African continent; and the neglect of Africa in the legal origins debate. Some appeals of the work could be grasped from its usage of updated data on law indicators and addition of French sub-Saharan and North African dummies to those used in mainstream literature.

We have observed that contrary to current consensus (La Porta et al., 1998b; Beck et al., 2003) French civil law countries dominate in both private investment and financial allocation efficiency. The fact that Francophone countries also explain private investment through other mechanisms than financial allocation efficiency is not unexpected. Inflation, typical of fixed exchange rate regimes that characterize French countries in the continent remains a significant determinant (Asongu, 2011c).

Most significantly, legal origins matter in the positive relation between financial size and domestic, private and public investments. Legal origin generally matter in investment and finance; though its ability to explain aggregate investment dynamics only through financial intermediary channels is limited in the cases of private and public investments.

Appendices

Appendix 1: Countries selected for the study

Colonial legacy	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 for financial intermediary variable selection

	Dbacba	Llgdp	Cbagdp	Dbagdp	Pcrbgdp	Pcrbofgdp	Bdgdp	Fdgdp	Bcbd
Dbacba	1.000	0.269	-0.519	0.475	0.515	0.464	0.380	0.381	0.271
Llgdp	0.269	1.000	0.099	0.822	0.651	0.551	0.943	0.952	-0.134
Cbagdp	-0.519	0.099	1.000	-0.024	-0.102	-0.112	0.041	0.036	-0.164
Dbagdp	0.475	0.822	-0.024	1.000	0.930	0.839	0.894	0.879	0.254
Pcrbgdp	0.515	0.651	-0.102	0.930	1.000	0.912	0.734	0.716	0.459
Pcrbofgdp	0.464	0.551	-0.112	0.839	0.912	1.000	0.660	0.658	0.350
Bdgdp	0.380	0.943	0.041	0.894	0.734	0.660	1.000	0.991	-0.129
Fdgdp	0.381	0.952	0.036	0.879	0.716	0.658	0.991	1.000	-0.145
Bcbd	0.271	-0.134	-0.164	0.254	0.459	0.350	-0.129	-0.145	1.000

Dbacba: deposit bank assets on central bank assets plus deposit bank assets. Llgdp:monetary base. Cbagdp: Central bank assets on GDP. Dbagdp: Deposit bank assets on GDP. Pcrbgdp: Private domestic credit on GDP. Pcrbofgdp: Private domestic credit of banks and other financial institutions on GDP. Bdgdp: Bank deposits on GDP. Fdgdp: Financial system deposits on GDP. Bcbd: Bank credit on bank deposits

Appendix 3: Correlation Matrix

Financial Intermediary Determinants							Investment Dynamics				Control Variables								Instruments(Legal origins)					
Fin. Depth		F. Efficiency		F. Activity		F.Size					First-Stage Control Variables						2nd Stage							
M2	Fdgdp	BcBd	FcFd	Pcrb	Pcrbof	Dbacb	GDI	FDI	PriI	PubI	Infl	Trad	GDPg	P.C	G.E	Popg	R.Q	R.L	Eng.	Frch.	Frssa	Port.	Nafri	
1.00	0.974	-0.07	0.00	0.74	0.602	0.398	0.26	0.13	0.25	0.06	-0.06	0.29	-0.05	0.05	0.35	-0.45	0.38	0.62	0.21	-0.23	-0.43	0.03	0.49	M2
	1.000	-0.05	0.06	0.80	0.684	0.466	0.29	0.11	0.27	0.06	-0.06	0.32	-0.01	0.10	0.39	-0.48	0.46	0.68	0.29	-0.28	-0.46	-0.00	0.45	Fdgdp
		1.00	0.88	0.39	0.418	0.256	-0.2	-0.2	-0.1	-0.2	-0.11	-0.24	-0.09	-0.09	-0.08	0.00	0.19	-0.01	-0.29	0.44	0.43	-0.24	0.01	BcBd
			1.00	0.53	0.674	0.290	-0.2	-0.2	-0.1	-0.2	-0.08	-0.23	-0.09	-0.08	0.03	-0.05	0.28	0.09	-0.13	0.27	0.26	-0.22	0.00	FcFd
				1.00	0.932	0.526	0.16	-0.08	0.17	-0.09	-0.06	0.09	-0.02	0.07	0.24	-0.40	0.60	0.62	0.15	-0.11	-0.30	-0.06	0.45	Pcrb
					1.000	0.469	0.16	-0.09	0.13	-0.15	-0.05	0.04	-0.03	0.05	0.26	-0.35	0.56	0.53	0.19	-0.14	-0.28	-0.08	0.32	Pcrbof
						1.000	0.35	-0.00	0.31	0.07	-0.09	0.21	0.06	0.13	0.29	-0.30	0.50	0.47	0.00	0.02	-0.14	-0.04	0.26	Dbacba
							1.00	0.52	0.81	0.51	-0.16	0.46	0.19	0.26	0.37	-0.21	0.36	0.45	0.18	-0.18	-0.30	0.00	0.15	GDI
								1.00	0.47	0.28	-0.14	0.44	0.04	0.09	0.31	-0.17	-0.17	0.05	0.19	-0.21	-0.20	0.05	-0.03	FDI
									1.00	0.09	-0.22	0.44	0.12	0.17	0.27	-0.14	0.21	0.33	0.04	-0.01	-0.11	-0.05	0.07	PriI
										1.00	-0.00	0.24	0.13	0.15	0.17	-0.01	0.13	0.25	0.11	-0.17	-0.20	0.18	0.14	PubI
											1.00	0.10	0.08	0.07	-0.15	0.04	-0.09	-0.09	-0.03	-0.07	-0.06	0.17	-0.02	Infl.
												1.00	0.004	0.09	0.38	-0.39	0.04	0.23	0.23	-0.30	-0.29	0.12	-0.08	Trade
													1.00	0.97	-0.02	0.22	0.01	-0.00	0.01	-0.09	-0.09	0.13	0.00	P.C
														1.00	0.06	-0.01	0.07	0.07	0.05	-0.13	-0.17	0.13	0.07	GDPpc
															1.00	-0.33	0.18	0.33	0.30	-0.26	-0.32	-0.06	0.04	G.E
																1.00	-0.27	-0.34	-0.20	0.22	0.39	-0.04	-0.29	Popg
																	1.00	0.79	0.21	-0.13	-0.23	-0.13	0.17	R.Q
																		1.00	0.30	-0.22	-0.32	-0.11	0.23	R.L
																			1.00	-0.80	-0.68	-0.29	-0.11	Eng.
																				1.00	0.85	-0.32	0.18	Frch.
																					1.00	-0.27	-0.27	Frssa
																						1.00	-0.11	Port.
																							1.00	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. R.Q: Regulation Quality. RL:Rule of Law. Infl: Inflation.Trad: Trade. Popg: Population growth. GE: Government Expenditure. GDPg: GDP growth. P.C: GDP per capita growth. Popg: Population growth. Vls: Variables. Lend: Lending rate. Spread: Interest rate spread.GDI: Gross Domestic Investment. FDI: Foreign Direct Investment. PriI: Gross Private Investment. PubI: Gross Public Investment. . Eng: English legal origin. Frch: French legal origin. Frssa: French Sub Saharan Africa. Port: Portuguese legal origin. Nafri: North Africa. 2nd Stage: Second-Stage control variables.

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