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**How does the various sectors of the financial market influence growth
around the globe?**

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ABSTRACT

We explore the links between financial markets, institutional quality and economic growth. We document that the unconditional effect of finance on growth is ambiguous. This variation is caused by regional bloc, income level and legal origin differences. Our results suggest that, for financial development (banking sector, insurance sector, stock market) to elicit positive effect on growth, there needs to be an effective institutional framework in place. However, in cases where finance in itself elicits positive effect on growth, further tightening of the institutional framework could be harmful to growth; hence, must be done with caution. Policy implications are discussed.

Keywords – Bank profitability; Europe & Central Asia; Latin America and the Caribbean; Middle East & North Africa; Sub-Saharan African; East Asian & Pacific.

1. Introduction

Indeed, governments, financial institutions, and other stakeholders are particularly interested in the finance-growth nexus. This relationship has been one of the key topics in development economics research over the years, particularly after the work of Schumpeter (1911). Through the benefit of these studies, governments can formulate proper growth enhancing financial policies. In this framework, the causality between financial development (FD) and economic growth can be properly quantified and assessed. Consequently, policies designed to increase/decrease financial flows within an economy would impact on economic growth. Hence, the development of the financial sector is key on policy agenda. It is important to consider the relationship between financial development and economic growth from both theoretical and empirical perspectives. Notwithstanding the already huge attention given to this topic in the finance literature, this study differs from the previous studies in the following ways.

First, we argue that, good economic or political institutions can moderate the impact of financial development on economic growth. Thus, the impact of financial development on growth may depend on the soundness of the institutional environment. The idea behind this is that, poor institutional environment may hinder the function of financial system. For instance, in countries with good institutions that protect investor and creditor rights, banks are confident to give loans and are empowered to enforce debt recoveries and, in some cases, repossess collateral in the event of failure of debt payments. Also, in a good institutional environment, the insured is confident to purchase insurance products as claims can be made and collection done efficiently. These are usually countries where insurance companies are properly regulated and supervised and hence payment of claims are made when requested. This confidence leads to the purchase of more insurance packages leading to increased premiums and development of the sector. For stock markets in particular, good institutional environment gives shareholders the power and right to vote for company directors and thus hold them accountable. When this happens, corporate governance is strengthened and managers act in the best interest of the owners and consequently the company. For these reasons, the study examines how the quality of institutions and their enforcement differ across countries and how they affect the financial sector in promoting economic growth.

Second, as these institutions give creditors and shareholders the rights, these rights may also inherently depend on the legal rules in the jurisdiction of the rights. One may ask, does being a shareholder in France give an investor the same privileges as being a shareholder in the United States, India or Mexico? Would a secured creditor in Germany fare as well when a borrower defaults as one in Italy or Sri Lanka, with the value of the collateral assumed the same in all cases? Law and the quality of its enforcement are potentially important determinants of what rights investors hold and how these rights are protected. Since these protections can go a long way to determine investors' financing of firms, corporate finance may therefore turn on these laws and their enforcement. As asserted by La Porta et al. (1998), laws in different countries are typically not written from scratch but rather transplanted –voluntarily or otherwise- from a few legal families or traditions (Watson 1974). The authors indicate that commercial laws come from two broad traditions: common law, which is English in origin, and civil law, which derives from Roman law. Within the civil tradition, there are only three major families that modern commercial laws originate from: French, German, and Scandinavian. The French and the German civil traditions, as well as the common-law tradition, have spread around the world through a combination of conquest, imperialism, outright borrowing, and more subtle imitation. The resulting laws reflect both the influence of their families and the revisions specific to the individual countries. The political channel stresses that legal traditions differ in the priority they give to the rights of individual investors vis-à-vis the state and this has repercussions for financial development. The adaptability channel holds that legal traditions differ in their ability to adjust to changing commercial circumstances and legal systems that adapt quickly will foster financial development more effectively. Despite the theoretical importance of the impact of the law and its enforcement on demand for finance, existing empirical research has not examined the extent to which legal origins matter in the impact of financial development on economic growth. Thus, in this study, we examine how the impact of financial development affect economic growth in the presence of quality institutions in different legal origins.

Third, while most of these studies have either focused on only banks or stock market development in the financial sector, the insurance sector has received little attention in

these studies. The insurance sector is prominent in the financial sector (Lee et al., 2013) and it is vital for economic growth (Chang et al., 2013; Ward & Zurbruegg, 2000). In 1964, the United Nations Conference on Trade and Development proposed that besides stock market and banking, insurance also plays an important role in promoting economic growth (Hou & Cheng, 2017). Particularly, development in the insurance sector is important as the sector is gradually growing and proving to be a key sector in the financial system. The global insurance industry has seen an annual growth rate of over 10% since 1950, far exceeding that of global economic development (Browne et al., 2000; Haiss and Sümegi, 2008). Indeed, Insurance companies perform their basic function of transferring risk and providing indemnification of losses which encourages entrepreneurs to undertake business risks more confidently. This allows businesses to focus more on their productive activities, thereby improving their efficiency and productivity and ultimately economic growth. For individuals, purchasing insurance helps them to sustain a continuous consumption of their wealth despite damage or loss. For businesses, insurance helps them to operate in a cost-effective manner with its inherent risk transfer. With this, businesses are able to take on credit that otherwise would not have been provided by banks or other credit providers for fear of loss without such guarantee. Further, as indicated by Balarezo and Nielsen (2017), insurance also provides protection against risks emanating from business expansion. For these reasons it is pertinent to examine the role of the insurance sector on economic growth. In this study therefore, we use these three financial systems (banks, insurance and stock markets) and study their impact of economic growth. This is done because, there is already existing evidence that the type of financing may matter.

Fourth, we examine the FD, institutions and growth nexus in the context of the development status of the countries. Indeed, the level of development of a country may determine how organized its financial sector is and how strong its institutions are. High income countries are more likely to have strong financial sector and strong institutions than low income groups. This may be as a result of the factors of production investing more in the financial sector and hence demanding more and better financial services and products. In a growing economy, more credit is needed as well as better financial systems to support the growth. In these, there should be a concomitant proper institutional

framework to support the growth in the financial sector and the economy. The study therefore examines the differences in the FD-institutions-Growth nexus due to different income groups of the countries.

The rest of the study is arranged as follows: Section 2 gives a brief review of the relevant literature. Section 3 deals with the methodology adopted for the study. Section 4 focuses on data description and trends. Section 5 deals with the empirical results and discussion of findings whereas Section 6 concludes and gives some policy recommendations.

2.0 Review of literature

Empirical literature on finance–growth causality remains mixed (Ghirmay, 2004; Hassan et al., 2011). Adu et al. (2013) conclude that the overall effect of financial development on growth is highly sensitive to the choice of indicators. Levine et al. (2000) did a cross–country study and shows a positive relationship between financial intermediary development and economic growth. Rioja and Valev (2004) also found similar results. More recently, Mishra and Narayan’s (2015) study of 43 developed and developing countries show that financial development positively (negatively) affects growth as long as a country’s level of financial development is above (below) their cross– sectional averages. Calderon and Liu (2003), and Masten et al. (2008) also found that financial development contributes more to growth in developing countries than in developed countries. Breitenlechner, Gächter and Sindermann (2015) using data for 74 countries find that while financial development is indeed positively linked to GDP p.c. growth in normal, non-crisis times, larger financial sectors lead to significantly worse economic outcomes in the case of a banking crisis. Arayssi and Arayssi (2017) examined the growth effects of financial development in MENA countries and found that the impact of finance on growth was positive pre-Arab Spring, but lost significance post-Arab Spring.

Some studies (Cecchetti and Kharroubi, 2012; Arcand et al., 2012; Law and Singh, 2014) have found an inverted U–shaped relationship implying that financial development is only good up to a point after which it becomes deleterious although Adeniyi et al. (2015) disagree. Beck, Georgiadis and Straub (2014) find that an expansion of credit has a positive effect on per capita output growth only up to a point. Beyond this threshold the

impact of finance on growth is not statistically significant anymore. The authors find that the estimated non-linear relationship may stem from the omission of factors not considered in the literature so far. Rioja and Valev (2004) pointed out that financial development exerts a strong positive effect on economic growth only when it has achieved a certain level or threshold; below this threshold, the effect is at best uncertain.

Studies like that of Demetriades and James (2011), find that while bank liabilities in Sub-Saharan Africa are found to follow (but not lead) economic growth, the link between bank credit and growth is altogether absent. Kaminsky and Reinhart (1999) however, remain pessimistic and argue that development of the financial sector does not necessarily translate into higher growth and may even distort sustained path towards development. Few studies even though limited have also examined the role of institutions in the finance-growth nexus even in small samples. Hassan et al. (2011) find that the liberalization of political institutions, property rights, and political pluralism are important factors to enhancing growth in China. They argue that institutional and governance quality can constitute constraints for growth. Levine (1999) shows that legal and regulatory institutions matter for financial development, and are connected through long-run economic growth. Law, Azman-Saini, and Ibrahim (2013) using 85 cross-country data, examines whether the growth effect of financial development in countries with distinct levels of institutional development differs. Their results demonstrate that there is a threshold effect in the finance-growth relationship. They found that the impact of finance on growth is positive and significant only after a certain threshold level of institutional development has been attained. Until then, the effect of finance on growth is nonexistent. Demetriades and Law (2006), who, using a linear interaction model, found that financial development has larger effects on economic growth when the financial system is embedded within a sound institutional framework.

3.0 Methodology

3.1 Data and sources

Data was taken from 1990 to 2014. Our initial sample comprised all the countries in the world. However, countries that provided sufficient data for the purposes of the analysis were taken. Overall, we used 138 countries.

3.1.1 Main variables and controls

The data for growth measured by GDP per capita at 2005 constant prices was taken from the Global Financial Development Database (GFDD). Also, data on the measures of financial development namely: bank credit to GDP (*bank*), Life Insurance Premium to GDP (*lip*), Non-Life Insurance Premium to GDP (*nlip*) and Stock Market Capitalization to GDP (*stock*) were also taken from the GFDD. We also use Total Insurance Premium (*tip*) which is the sum of *lip* and *nlip*. For some countries, data may be available for either *lip* or *nlip* for a particular year. Due to this, the calculation for *tip* is only done for the year where data is available for both *lip* and *nlip*. The controls include gross secondary enrolment ratio (*Ser*), infrastructure which is mobile and fixed line subscription per 100 inhabitants (*Infra*), trade openness which is the sum of imports and exports as a ratio of gross domestic product and total government expenditure as a ratio of gross domestic product (*gov*) were taken from the World Development Indicators (WDI).

On the institutional quality variables, we adopt two measures. One is the polity regime extracted from Polity IV dataset conducted by Marshall et al. (2017). This index (*polity2*) assesses the degree of democracy relative to autocracy, which is scaled from -10 to 10 with 10 indicating strongly democratic and -10 strongly autocratic. We use the variable *Polity2* from the Polity IV project as our institutional quality measure. The construction of this variable considers the competitiveness and openness of the regime, the nature of political participation, and the extent of checks on executive authority. It ranges from -10 to 10, with the following categories: (i) -10 to -6 indicates an autocracy, (ii) -5 to 5 an anocracy, and (iii) 6 to 10 a democracy. The index allows us to evaluate if a country's polity can shape the relationship between financial development and economic growth. The second measure is the Civil Liberties (*cl*) constructed by the Freedom House. This variable

ranges from 1 to 7 with higher values implying worst institutions. Countries and territories with a rating of 1 enjoy a wide range of civil liberties, including freedoms of expression, assembly, association, education, and religion. They have an established and generally fair legal system that ensures the rule of law (including an independent judiciary), allow free economic activity, and tend to strive for equality of opportunity for everyone, including women and minority groups. To maintain consistency in interpreting our empirical results, we reverse the civil liberties index so that a higher score represents higher civil liberties.

3.1.2 Data categorization

We categorize the countries into regions according to the World Bank classification. These are: Europe & Central Asia (ECA), Latin America & Caribbean (LAC), South Asia (SA), East Asia and Pacific (EAP), Sub-Saharan Africa (SSA), Middle East & North Africa (MENA), and North America (NA). We also classify the countries according to their income groups according to the World Bank. The main classifications are: High Income Countries (HIC), Upper Middle-Income Countries (UM), Lower Middle-Income Countries (LM) and Low-Income Countries (LIC).

As explained earlier, we also account for the legal origin of the countries. Numerous studies explain the role of legal origin in shaping a countries institutional framework and its consequence of financial development and growth. We therefore classify our sample into the various legal origins (British Common Law, French Civil Law, German Civil Law and The Nordic) explained In Literature. The classification follows the recent studies of La Porta et al. (2008) and La Porta et al. (1998). In the analysis, we also combine French Civil Law, German Civil Law and the Nordic into Civil Law countries. Because the Nordic origin has a perfect score for all the institutional quality variables, we do not present separate regression for this group. The classifications of the legal origins are shown in Appendix A.

3.2 General model specification

The general model that we follow is specified below:

$$GDP_{it} = \beta_0 + \beta_1 FD_{it} + \beta_2 INST_{it} + \beta_3 (FD_{it} * INST_{it}) + \sum_{j=1}^4 \beta_{4j} Controls_{jit} + \varepsilon_{it} \quad (1)$$

Where $i = 1, 2, \dots, N$ represents each country in the panel; and $t = 1, 2, \dots, T$ refers to the time period in the panel. GDP is the real per capita GDP, FD are the financial development indicators which include: Life Insurance Penetration (*lip*); Nonlife Insurance Penetration (*nlip*); Total Insurance Penetration (*tip*); bank credit to GDP (*bank*); Stock market capitalization to GDP (*stock*). INST are the institutional quality variables which include *polity2* from the Polity IV Project (Marshall et al., 2017) and Civil liberty (*cl*) index of freedom house (Freedom House, 2017). We take the natural log of GDP and the financial development indicators. The controls include gross secondary enrolment ratio (*ser*), infrastructure which we also take the natural logarithm of mobile and fixed line subscription per 100 inhabitants (*Infra*), trade openness which is the sum of imports and exports as a percentage of GDP and total government expenditure as a percentage of GDP (*gov*).

The parameters β_1 and β_2 represent the long-run elasticity estimates of GDP with respect to FD and INST, respectively. The primary objective of this study is thus to estimate the parameters in Eq. (1) and to conduct panel tests on the causal nexus between the variables. When $\beta_3 > 0$, this would mean that financial development and institutional quality acts as complements to cause an increase in economic growth while a $\beta_3 < 0$ would mean they are substitutes.

3.3 Estimation techniques

We use the Ordinary Least Square Panel Corrected Standard Errors (OLS-PCSE) estimation of Beck and Katz (1995) which deals with heteroskedasticity. The OLS-PCSE employs a sandwich type estimator of the covariance matrix which is robust to the presence of non-spherical errors.

4.0 Mean statistics

Table 1 shows the mean statistics of the variables for the various groups examined. Comparing the various six regions, we see that MENA has the highest GDP more than the world average followed by the EAP region. The region with the least GDP is the SA region. ECA has the largest market in for both insurance markets (*lip* and *nlip*). This was followed by the EAP region. SSA is the region with the third largest *lip* market followed by the LAC as the fourth largest market. Despite the MENA region having the largest GDP, this region has the least *lip* market even though the region is the fourth largest in terms of *nlip*. For *nlip*, SA region has the least market. It can also be seen that the EAP region has the largest banking sector market (*bank*) with an average of 68.02% of bank credit to private sector as a ratio of gross domestic product above the world average of 41.13%. This was followed by the ECA region with a percentage of 61.53%. The SSA region has the least developed banking sector with 16.54% below the world average. In terms of stock market development, EAP has the largest market with 67.38% market capitalization (*mkt*) as a share of gross domestic product. SA is the region with the least stock market size with 22.69% below the world average of 45.89%. With regards to the income groups, we generally see the HIC have higher levels of *gdp* and the financial development indicators. The LIC recorded the least *gdp* as well as the financial development indicators. For the legal origin group, the British common law countries have the largest *gdp* compared with all the Civil law countries combined. However, the Nordic countries have the highest *gdp* when we segregate the civil law origins. The region also has the highest financial sector development using all the variables. If we however consider the British common law origins and the combined Civil law origin countries, we see that the British common law countries has the highest financial development in terms of *lip*, *nlip*, *bank* and *mkt*. the control variables show variations across regions, income groups and law origins.

Table 1. Mean statistics

Regions								
Variable	Source	World	EAP	ECA	LAC	MENA	SA	SSA
<i>gdp</i>	GFDD	9797.41	9757.91	19891.77	3853.57	11875.08	671.40	1239.03
<i>lip</i>	GFDD	1.29	2.01	2.06	0.74	0.35	0.73	0.84
<i>nlip</i>	GFDD	1.21	1.18	1.66	1.23	0.91	0.42	0.80
<i>tip</i>	GFDD	2.51	3.20	3.74	1.97	1.26	1.14	1.62
<i>bank</i>	GFDD	41.13	68.02	61.53	29.95	39.90	27.30	16.54
<i>mkt</i>	GFDD	45.89	67.38	47.04	30.87	49.30	22.69	33.05
<i>polity2</i>		3.74	3.06	7.53	7.24	-4.86	4.86	0.98
<i>cl</i>	Freedom house	0.42	0.39	0.64	0.40	0.20	0.25	0.28
<i>trade</i>	WDI	79.96	105.87	92.55	70.53	83.16	43.70	67.19
<i>infra</i>	WDI	58.20	59.91	93.32	52.86	60.74	22.86	22.23
<i>ser</i>	WDI	74.49	73.89	98.97	73.86	77.22	50.46	34.35
<i>gov</i>	WDI	15.81	13.45	18.45	12.91	17.94	9.39	15.33
Income groups								
Variable		LIC	LMIC	UMIC	HIC			
<i>gdp</i>	GFDD	331.43	1105.38	3817.72	25761.17			
<i>lip</i>	GFDD	0.13	0.40	1.08	2.43			
<i>nlip</i>	GFDD	0.50	0.76	1.22	1.74			
<i>tip</i>	GFDD	0.62	1.15	2.30	4.19			
<i>bank</i>	GFDD	11.61	24.32	38.28	69.75			
<i>mkt</i>	GFDD	12.58	27.38	37.25	60.33			
<i>polity2</i>		0.63	1.58	4.00	6.60			
<i>cl</i>	Freedom house	0.24	0.26	0.33	0.68			
<i>trade</i>	WDI	54.03	77.27	83.07	91.41			
<i>infra</i>	WDI	12.51	32.87	55.66	99.73			
<i>ser</i>	WDI	23.10	56.04	76.79	100.48			
<i>gov</i>	WDI	14.42	13.07	15.45	18.78			
Legal origin								
Variable		British	Civil	French civil	German civil			
<i>gdp</i>	GFDD	10749.34	9437.95	6457.54	15057.12			
<i>lip</i>	GFDD	2.12	0.98	0.69	1.60			
<i>nlip</i>	GFDD	1.35	1.15	1.00	1.61			
<i>tip</i>	GFDD	3.50	2.14	1.69	3.26			
<i>bank</i>	GFDD	46.66	38.99	31.93	61.87			
<i>mkt</i>	GFDD	57.01	40.14	38.50	38.26			
<i>polity2</i>		3.57	3.80	2.80	7.03			
<i>cl</i>	Freedom house	0.42	0.42	0.35	0.59			
<i>trade</i>	WDI	87.70	77.19	74.16	92.38			
<i>infra</i>	WDI	55.36	59.24	49.99	86.58			
<i>ser</i>	WDI	70.82	75.51	68.21	93.09			
<i>gov</i>	WDI	15.54	15.91	15.09	17.93			

gdp: GDP per capita 2005, *lip*: life insurance premium, *nlip*: non-life insurance premium, *tip*: total insurance premium, *bank*: bank credit to private sector as a ratio of GDP, *mkt*: market capitalization as a ratio of GDP, *polity2*: Polity2, *cl*: civil liberties, *trade*: sum of imports and exports as a ratio of GDP, *infra*: natural logarithm of mobile and telephone subscription per 1000 inhabitants, *SER*: secondary enrolment ratio, *gov*: government expenditure a ratio GDP.

5.0 Regression Results

Here, we present the results and discussion of the estimations done. Our discussion follows the various groupings (regions, income groups and legal origins) as well as the

type of financial development and institutional quality variables used. In the results, all estimation diagnostics point a significant fit of the regression models.

5.1 Finance, institutions and growth -Regions

In Tables 2, 3 and 4, we answer the question of how insurance development has contributed to growth around the world. We further explore this relationship within the various regional blocs while using alternative measures of institutional quality. In Table 2a for instance, we find insurance development measured by life insurance premiums (*lip*) to impact negatively on growth although not in all our estimations. This significant negative effect of insurance development on growth is also seen across the various regional blocs at least in one of our estimations techniques even when we segregate our sample. Institutional quality (measured by *cl*) was found to be statistically significant in translating into growth benefits in our full sample. This relationship is largely consistent in our sub-samples. To provide comprehensive perspective to the insurance-growth nexus, we interact institutional quality with insurance development to ascertain how institutional quality moderates the insurance –growth nexus. We find the interactive term to rather exert a positive and significant influence on our dependent variable-a relationship that is largely consistent in our full sample and sub-samples (except for MENA).

We interpret the results to mean that insurance development on its own may not be an effective channel through which growth may be achieved. Insurance development on levels exhibits an ambiguous effect on economic growth. While we do not discount the findings of Alhassan & Fiador (2014) that a unidirectional causality runs from aggregate insurance to economic growth to support the ‘supply-leading’ hypothesis, our findings suggest that the positive influence of insurance on growth is made possible with the existence of effective institutions that are able to help channel the efforts of insurance development within the financial market through to the real economy thereby increasing economic growth. This relationship is robust across our alternative measures of institutional quality. Again, when we use *polity2* rather than *cl* as institutional quality variable, we find that the relationship between insurance and growth is ambiguous.

However, when moderated by *polity2*, we see insurance influencing growth in our full sample and also in the various sub samples of regional blocs. Therefore, the moderating role played by institutional quality within the finance- growth nexus is not dependent on the type of institutional measure.

Table 2. Insurance market development (lip), institutions and growth – regional estimations

Variable	World		EAP		ECA		LAC		MENA		SA		SSA	
<i>lip</i>	-0.0888*** (0.0167)	0.0886*** (0.0129)	0.1484*** (0.0415)	0.1168*** (0.0258)	0.2316*** (0.0321)	0.1658*** (0.0364)	0.1947*** (0.0446)	-0.0081 (0.0718)	0.0391 (0.0803)	0.1311*** (0.0377)	-0.9581*** (0.2296)	0.1725 (0.1184)	-0.0498 (0.0304)	0.0397*** (0.0144)
<i>cl</i>	0.9468*** (0.0633)		1.8242*** (0.2809)		0.8530*** (0.0867)		0.7073*** (0.1002)		1.9815** (0.8674)		3.0840*** (0.9087)		-0.0735 (0.3332)	
<i>lip x cl</i>	0.5208*** (0.0284)		0.1420 (0.1119)		0.2211*** (0.0432)		-0.0332 (0.0747)		-0.9648* (0.5443)		4.2766*** (0.6782)		0.1814*** (0.0869)	
<i>polity2</i>		0.0250*** (0.0039)		0.0363*** (0.0080)		0.0990*** (0.0111)		0.0350** (0.0174)		-0.0144 (0.0103)		0.0449*** (0.0124)		-0.0223*** (0.0086)
<i>lip x polity2</i>		0.0240*** (0.0016)		0.0155*** (0.0029)		0.0279*** (0.0036)		0.0245*** (0.0088)		0.0282*** (0.0050)		0.0341*** (0.0084)		0.0033 (0.0025)
<i>trade</i>	0.0015*** (0.004)	0.0021*** (0.0005)	-0.0037*** (0.0014)	-0.0048*** (0.0012)	0.0004 (0.0006)	0.0012** (0.0058)	-0.0065*** (0.0007)	-0.0053*** (0.0007)	0.0024 (0.0015)	0.0019 (0.0016)	-0.0124*** (0.0028)	-0.0068** (0.0028)	0.0042*** (0.0011)	0.0048*** (0.0010)
<i>infra</i>	0.4727*** (0.0205)	0.4610*** (0.0231)	0.3670*** (0.0621)	0.3185*** (0.3185)	0.4546*** (0.0599)	0.4711*** (0.0605)	0.5816*** (0.0496)	0.6352*** (0.0516)	0.6643*** (0.0944)	0.4574*** (0.0862)	0.2390*** (0.0455)	0.1973*** (0.0510)	0.3135*** (0.0354)	0.3164*** (0.0357)
<i>ser</i>	0.0175*** (0.0010)	0.0208*** (0.0010)	-0.0006 (0.0037)	0.0145*** (0.0031)	0.0046*** (0.0013)	0.0071*** (0.0014)	-0.0005 (0.0016)	0.0040** (0.0017)	0.0282*** (0.0036)	0.0281*** (0.0037)	0.0104*** (0.0028)	0.0043 (0.0030)	0.0262*** (0.0019)	0.0246*** (0.0015)
<i>gov</i>	-0.0011 (0.0027)	0.0010 (0.0028)	0.0910*** (0.0149)	0.1067*** (0.0157)	-0.0211*** (0.0057)	-0.0222*** (0.0059)	-0.0296*** (0.0056)	-0.0352*** (0.0060)	0.0206 (0.0136)	0.0279** (0.0128)	-0.1135*** (0.0247)	-0.1547*** (0.0328)	0.0075** (0.0032)	-0.0077** (0.0031)
constant	168.0619*** (6.1645)	161.1746*** (6.6994)	100.9074*** (24.3868)	110.4862*** (21.0821)	115.815*** (10.5453)	104.7364*** (10.6207)	156.7991*** (16.1564)	179.688*** (16.6498)	203.1159*** (30.1748)	116.3289*** (27.5208)	102.9836*** (24.5903)	84.8656*** (28.9039)	232.7402*** (22.7211)	229.4138*** (21.9612)
No. of Obs.	2031	2021	172	172	784	784	352	352	260	252	76	76	352	350
Wald X2	11234.19***	9339.70***	1525.70***	1516.14***	3397.89***	2698.15***	688.84***	578.33***	811.57***	1295.41***	388.75***	282.89***	2075.83***	2123.66***
R.sq	0.8381	0.8222	0.8914	0.8861	0.8205	0.81	0.6412	0.6026	0.7016	0.7462	0.8532	0.7965	0.8218	0.8329

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

In Table 3, we proxy finance using non-life insurance premium (*nlip*). Again, the relationship between *nlip* and growth is ambiguous. In our full sample and sub samples, we record both significant positive and negative relationship between the two. The effect of our alternative measures of institutional quality on growth is also ambiguous as both positive and negative relationships are recorded. We again interacted our institutional quality measures and our measure of finance- in this case *nlip*. Our results show that an unequivocally significant positive relationship between the interactive term and our measure of financial development in our full sample. However, the relationship varies in our sub samples. In the particular case of LAC for example (see Table 3a), *nlip* exerts positive impact on growth. However, the interactive term between *nlip* and the institutional quality variables results in a significant negative relationship with our dependent variable. These results mean that while institutional quality may assist in translating the gains of finance to growth in general, this may not be the case in all areas. We conjecture that in areas where finance is already contributing positively to growth, having stringent institutional checks and controls only seek to reduce insurers' efficiency therefore their negative contribution to economic growth. For policy makers, if finance is already contributing to growth, tightening up the regulatory environment will only hurt non-life insurers' contribution to growth. A similar situation is recorded for ECA when *polity2* is used as proxy for institutional quality. This suggests that given the environment, the nature of institutional quality variable to improve matters if the goal is to ensure that non-life insurance contributes positively to growth.

Table 3. Insurance market development (nlip), institutions (cl) and growth – regional estimations

Variable	World	EAP	ECA	LAC	MENA	SA	SSA							
<i>nlip</i>	-0.1185** (0.0484)	0.2639*** (0.0372)	1.6554*** (0.1346)	0.8717*** (0.0699)	-0.1197 (0.0905)	-0.1518 (0.1193)	0.7402*** (0.1493)	0.0768 (0.1179)	1.2328*** (0.2468)	-0.0311 (0.0934)	-1.3828** (0.5953)	-0.2112 (0.1448)	-0.1367** (0.0765)	0.1131*** (0.0371)
<i>cl</i>	0.4299*** (0.0969)		1.7768*** (0.2139)	1.3017*** (0.1311)			0.8733*** (0.1748)		3.1911*** (0.7777)		5.6263** (2.3918)		-0.4374** (0.1911)	
<i>nlip x cl</i>	1.2418*** (0.1105)		-1.5343*** (0.2666)				0.7755*** (0.1721)		-0.9220** (0.3767)		5.0400* (2.5971)		1.0155*** (0.2899)	
<i>polity2</i>		-0.0018 (0.0036)		0.0505*** (0.0061)			0.1071*** (0.0106)		-0.0076 (0.0099)		-0.0512*** (0.0106)		-0.0361 (0.0303)	
<i>nlip x polity2</i>		0.0408*** (0.0045)		0.0375*** (0.0081)			0.0520*** (0.0126)		0.0505*** (0.0160)		0.0052 (0.0170)		-0.0256 (0.0185)	
<i>trade</i>	0.0005 (0.0004)	0.0006 (0.0005)	-0.0105*** (0.0010)	-0.0082*** (0.0010)	-0.0012* (0.0006)	0.0005 (0.0007)	-0.0064*** (0.0007)	-0.0057*** (0.0007)	0.0012 (0.0016)	-0.0003 (0.0018)	-0.0054* (0.0030)	-0.0065** (0.0028)	0.0051*** (0.0009)	0.0050*** (0.0009)
<i>infra</i>	0.4519*** (0.0198)	0.4600*** (0.0223)	0.3219*** (0.0414)	0.3169*** (0.0400)	0.7917*** (0.0604)	0.9272*** (0.0666)	0.4972*** (0.0559)	0.5613*** (0.0556)	0.8296*** (0.1016)	0.7107*** (0.0945)	0.3425*** (0.0555)	0.3624*** (0.0590)	0.3205*** (0.0320)	0.3109*** (0.0339)
<i>ser</i>	0.0174*** (0.0009)	0.0214*** (0.0009)	0.0018 (0.0023)	0.0053** (0.0024)	0.0092*** (0.0015)	0.0188*** (0.0018)	0.0023* (0.0013)	0.0055*** (0.0015)	0.0266*** (0.0038)	0.0280*** (0.0039)	0.0142*** (0.0029)	0.0176*** (0.0037)	0.0236*** (0.0019)	0.0247*** (0.0017)
<i>gov</i>	0.0011 (0.0029)	0.0017 (0.0029)	0.0049 (0.0110)	0.0252** (0.0104)	-0.0077 (0.0069)	-0.0189** (0.0087)	-0.0302*** (0.0050)	-0.0369*** (0.0056)	0.0223* (0.0127)	0.0305** (0.0121)	-0.0172 (0.0246)	0.0294 (0.0325)	-0.0082** (0.0325)	-0.0082** (0.0039)
constant	152.1592*** (6.4963)	151.2529*** (7.3849)	57.7716*** (14.8802)	51.6146*** (14.1296)	161.4193*** (11.2568)	174.1289*** (12.3459)	131.1263*** (18.4938)	149.9219*** (18.7147)	280.2771*** (32.7299)	207.4115*** (31.3808)	143.6393*** (30.0259)	152.1489*** (34.5848)	210.3635*** (17.4713)	200.3148*** (19.1195)
No. of Obs.	2160	2152	191	191	823	823	370	370	268	262	84	84	386	384
Wald X2	12277.94***	9778.70***	3601.29***	2422.53***	2280.35***	1542.64***	647.47***	609.92***	914.53***	863.59***	251.89***	250.66***	2416.52***	2387.12***
R.sq	0.8272	0.8013	0.9405	0.9375	0.7677	0.7064	0.6288	0.6029	0.698	0.708	0.699	0.6902	0.8152	0.8189

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

In Table 4, we consolidate both life insurance premiums and non-life insurance premiums in order to ascertain the overall contribution of the insurance industry on growth-both in our full sample and sub samples. The results of our estimation show that the influence of total insurance premium (*tip*) on growth is ambiguous. Depending on the measure of institutional quality variable and particular sub sample, the effect may be significantly positive or negative. However, when we interact institutional quality and *tip*, the effect is significantly positive on our dependent variable both in our full sample and sub samples (except for LAC and MENA) irrespective of the measure of institutional quality used. This is evidence to the fact that for the insurance industry to be properly positioned to elicit positive effect on the economy, institutions that ensure regulatory compliance need to be strengthened. In doing so however, special attention should be given to the nature of institutional variable to strengthen and also the geographical location of the said economy.

In Tables 5, we proxy finance using banking sector development (*bank*). Here, we find finance to exert an ambiguous effect on growth. In our full sample, both significant positive and negative relationships are recorded. This is same for the various sub samples. This suggests that banking sector per se does not automatically translate into economic growth. When we interact banking sector development with institutional quality, we record a significant positive relationship with the dependent variable (except for SSA and ECA). The results show that growing the banking sector with the sole aim of improving economic growth may not be an ideal situation. For the economy to be affected by the positive growth within the banking industry, an effective institutional structure that can keep participants of the banking industry in check needs to be in place. However, for SSA and ECA, having a growing banking sector is enough to increase economic growth. Putting in place more stringent institutional framework may hurt economic growth.

Table 4. Insurance market development (tip), institutions and growth – regional estimations

Variable	World	EAP	ECA	LAC	MENA	SA	SSA							
<i>tip</i>	-0.1133*** (0.0363)	0.1606*** (0.0305)	0.9194*** (0.1062)	0.4954*** (0.0621)	0.1641** (0.0785)	0.0818 (0.1148)	0.6237*** (0.1018)	0.1284 (0.1146)	0.1992 (0.1699)	0.1730*** (0.0675)	-1.3031*** (0.2758)	0.2324* (0.1249)	-0.1003 (0.0670)	0.1087*** (0.0335)
<i>cl</i>	-0.0881 (0.0970)		2.6908*** (0.3569)		0.7950*** (0.0921)	0.0698*** (0.0074)	0.6024*** (0.1921)		3.0585** (1.3982)		0.1312 (1.0054)		-0.6487*** (0.1839)	
<i>tip x cl</i>	0.9200*** (0.0575)		-0.3216 (0.2229)		0.4465*** (0.0921)		-0.0167 (0.1974)		-1.8903** (0.9310)		5.8248*** (0.8805)		0.7338*** (0.2021)	
<i>polity2</i>		-0.0207*** (0.0038)		0.0015 (0.0075)			-0.0308*** (0.0102)			-0.0620*** (0.0101)		0.0261** (0.0104)		-0.0285*** (0.0057)
<i>tip x polity2</i>		0.0450*** (0.0035)		0.0417*** (0.0053)		0.0466*** (0.0114)		0.0687*** (0.0151)		0.0388*** (0.0117)		0.0420*** (0.0095)		0.0156*** (0.0060)
<i>trade</i>	0.0014*** (0.0004)	0.0018*** (0.0005)	-0.0047*** (0.0011)	-0.0045*** (0.0010)	-0.0003 (0.0006)	0.0008 (0.0006)	-0.0076*** (0.0007)	-0.0070*** (0.0007)	0.0024 (0.0015)	0.0013 (0.0017)	-0.0127*** (0.0028)	-0.0111*** (0.0031)	0.0051*** (0.0010)	0.0053*** (0.0009)
<i>infra</i>	0.4626*** (0.0206)	0.4554*** (0.0224)	0.1908*** (0.0526)	0.1990*** (0.0506)	0.6994*** (0.0635)	0.7789*** (0.0685)	0.4350*** (0.0514)	0.4789*** (0.0520)	0.6798*** (0.0985)	0.5546*** (0.0911)	0.2409*** (0.0468)	0.1859*** (0.0514)	0.3136*** (0.0335)	0.3162*** (0.0347)
<i>ser</i>	0.0172*** (0.0010)	0.0199*** (0.0010)	-0.0067** (0.0030)	0.0143*** (0.0031)	0.0054*** (0.0014)	0.0115*** (0.0017)	-0.0022 (0.0015)	0.0006 (0.0015)	0.0295*** (0.0039)	0.0284*** (0.0041)	0.0110*** (0.0026)	0.0046 (0.0031)	0.0211*** (0.0021)	0.0209*** (0.0018)
<i>gov</i>	-0.0020 (0.0028)	-0.0012 (0.0027)	0.0428*** (0.0088)	0.0577*** (0.0142)	-0.0130** (0.0061)	-0.0193*** (0.0020)	-0.0348*** (0.0052)	-0.0391*** (0.0051)	0.0128 (0.0039)	0.0192 (0.0130)	-0.1087*** (0.0234)	-0.1530*** (0.0341)	-0.0095*** (0.0034)	-0.0096*** (0.0032)
constant	162.6885*** (6.3926)	153.9125*** (6.9319)	37.5348* (20.5752)	60.1571*** (19.2324)	152.3505** (11.8227)	149.3546** (12.2204)	99.0212*** (17.5007)	109.209*** (17.3275)	218.4335** (31.9094)	150.09*** (29.4836)	102.5242** (26.0723)	64.8136** (30.3900)	219.6145*** (22.2465)	215.6393*** (21.9872)
No. of Obs.	2029	2021	172	172	784	784	352	352	258	252	76	76	352	350
Wald X2	11558.67***	9979.30***	2103.91***	3063.11***	2758.21***	1880.67***	847.57***	764.58***	808.80***	1188.08***	350.18***	239.26***	2229.50***	2338.76***
R.sq	0.8372	0.8193	0.9307	0.9167	0.7773	0.7412	0.6910	0.6736	0.6934	0.7270	0.8418	0.7799	0.8294	0.8397

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

Table 5. Banking sector development (bank), institutions and growth – regional estimations

Variable	World	EAP	ECA	LAC	MENA	SA	SSA							
<i>bank</i>	0.0057*** (0.0010)	0.0036*** (0.0008)	0.0045* (0.0023)	0.0041*** (0.0010)	0.02115*** (0.0019)	0.0036 (0.0040)	-0.0083*** (0.0020)	-0.0316*** (0.0053)	-0.0073 (0.0048)	0.0024 (0.0022)	-0.1250*** (0.0137)	-0.0618*** (0.0109)	0.0047 (0.0035)	0.0005 (0.0030)
<i>cl</i>	0.8082*** (0.1094)		0.2410 (0.5990)		2.1403*** (0.1459)		-0.1438 (0.1858)		0.79112 (1.8010)		-11.1917*** (1.6365)		-0.5077 (0.3241)	
<i>bank x cl</i>	0.0031*** (0.0012)		0.0127*** (0.0049)		-0.0157*** (0.0020)		0.0212*** (0.0038)		-0.0015 (0.02384)		0.4578*** (0.0535)		0.0020 (0.0066)	
<i>Polity2</i>		-0.0387*** (0.0048)		-0.0231** (0.0093)		0.0496*** (0.0114)		-0.0942*** (0.0165)		-0.1381*** (0.0190)		-0.1182*** (0.0400)		-0.0287*** (0.0065)
<i>bank x polity2</i>		0.0009*** (0.00001)		0.0009*** (0.0001)		0.0006 (0.0004)		0.0041*** (0.0007)		0.0018*** (0.0004)		0.0068*** (0.0014)		0.0008** (0.0003)
<i>trade</i>	0.0006 (0.0004)	0.0010* (0.0005)	-0.0019 (0.0012)	-0.0029*** (0.0009)	-0.0000 (0.0006)	0.0015** (0.0006)	-0.0057*** (0.0007)	-0.0050*** (0.0008)	0.0029** (0.0013)	-0.0001 (0.0014)	-0.0140*** (0.0028)	-0.0060** (0.0029)	0.0053*** (0.0007)	0.0052*** (0.0007)
<i>infra</i>	0.4347*** (0.0179)	0.4820*** (0.0194)	0.3724*** (0.0619)	0.3075*** (0.0495)	0.6187*** (0.0554)	0.8593*** (0.0552)	0.6558*** (0.0451)	0.6903*** (0.0467)	0.6751*** (0.0950)	0.6570*** (0.0853)	0.3193*** (0.0393)	0.3765*** (0.0531)	0.3081*** (0.0311)	0.3241*** (0.0300)
<i>ser</i>	0.0158*** (0.0009)	0.0193*** (0.0009)	0.0078*** (0.0023)	0.0140*** (0.0020)	0.0086*** (0.0012)	0.0157*** (0.0014)	0.0010 (0.0015)	0.0042*** (0.0015)	0.0272*** (0.0038)	0.0258*** (0.0035)	0.0110*** (0.0020)	0.0141*** (0.0022)	0.0250*** (0.0018)	0.0234*** (0.0018)
<i>gov</i>	0.0027 (0.0023)	0.0054** (0.0029)	0.0502*** (0.0106)	0.0671*** (0.0095)	-0.0082 (0.0057)	-0.0065 (0.0069)	-0.0126*** (0.0042)	-0.0150*** (0.0046)	0.0270** (0.0133)	0.0375*** (0.0118)	-0.0588*** (0.0202)	0.0070 (0.0206)	-0.0086*** (0.0029)	-0.0064** (0.0030)
constant	164.594*** (5.9066)	177.4862*** (6.1861)	104.8679*** (26.0905)	90.9279*** (17.7833)	155.6386*** (10.1918)	193.8259*** (10.1334)	179.1052*** (14.1971)	196.5343*** (14.4989)	175.7877*** (27.9814)	147.9974*** (26.2796)	123.4753*** (25.0511)	114.7227*** (30.9644)	208.274*** (15.4560)	207.582*** (14.4807)
No. of Obs.	2329	2315	198	198	840	840	396	396	287	275	84	84	487	485
Wald X2	15574.18***	13334.85***	2438.23***	1967.53***	3315.30***	2723.37***	658.13***	553.47***	720.48***	917.46***	494.36***	381.50***	3222.31***	2964.68***
R.sq	0.8308	0.8205	0.8916	0.9082	0.8249	0.7911	0.5996	0.5732	0.6554	0.7068	0.8457	0.7778	0.8142	0.8215

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

Again, in Table 6, we see the ambiguous nature with which stock market development impacts economic growth. Even in our full sample, depending on the estimation technique, we see both significant positive and negative relationship with the dependent variable. However, when we interact stock market development with institutions, the relationship is consistently positive irrespective of our measure of institutions. This goes to suggest that the capital market requires effective institutional environment to be in place for its development to translate into the growth of the real side of the economy.

Largely we have recorded an equivocal relationship between finance and growth around the world. Depending on the measures of finance and institutional quality as well as the nature of the sub sample, the effect of finance on growth could be either positive or negative. However, when we interact institutional quality with our measures of finance, the relationship with our dependent variable becomes largely positive. Mindfully, in some of our sub samples the effect of the interactive term on economic growth has been negative. It is useful to add that this happened in the sub samples where measures of finance at levels already impacted positively on growth. The implication of these findings is that, for finance to elicit positive effect on growth, there needs to be in place, an effective institutional framework. However, in cases where finance in itself elicits positive effect on growth, further tightening of the institutional framework must be done with caution.

Table 6. Stock market development (mkt), institutions (cl) and growth – regional estimations

Variable	World		EAP		ECA		LAC		MENA		SA		SSA	
<i>mkt</i>	0.0610** (0.0277)	0.1256*** (0.0281)	0.3910*** (0.1134)	0.2088*** (0.0713)	0.1377*** (0.0376)	-0.2343*** (0.0487)	0.1118*** (0.0403)	0.0367 (0.0643)	0.1719 (0.1554)	0.1424 (0.1147)	-1.3291*** (0.2787)	0.1111 (0.0805)	-0.2060** (0.0947)	-0.0599 (0.0428)
<i>cl</i>	0.2681* (0.1428)		1.5829 (0.9940)		0.6317*** (0.2155)		0.8796*** (0.1699)		-2.2868 (2.6779)		-13.6758*** (3.9350)		-2.0967** (0.8359)	
<i>mkt x cl</i>	0.2396*** (0.0400)		-0.0237 (0.2744)		0.2327*** (0.0569)		0.0637 (0.0511)		0.5815 (0.6738)		5.3409*** (1.0876)		0.2403 (0.2352)	
<i>polity2</i>		-0.0353*** (0.0101)		-0.0351 (0.0260)		-0.0754*** (0.0189)		-0.00005 (0.0131)		0.0048 (0.0509)		0.0174 (0.0384)		-0.0183 (0.0156)
<i>mkt x polity2</i>		0.0108*** (0.0033)		0.0205*** (0.0078)		0.0647*** (0.0062)		0.0082 (0.0072)		-0.0128 (0.0138)		-0.0050 (0.0137)		-0.0070 (0.0058)
<i>trade</i>	0.0009** (0.0004)	0.0019*** (0.0004)	-0.0050*** (0.0012)	-0.0055*** (0.0010)	-0.0007 (0.0005)	0.0006 (0.0005)	-0.0075*** (0.0008)	-0.0056*** (0.0009)	-0.0010 (0.0020)	-0.0028 (0.0019)	-0.0132*** (0.0027)	-0.0062** (0.0029)	0.0048*** (0.0008)	0.0022** (0.0011)
<i>infra</i>	0.5665*** (0.0256)	0.6416*** (0.0301)	0.3330*** (0.0631)	0.3681*** (0.0703)	0.4950*** (0.7362)	0.6130*** (0.0832)	0.6849*** (0.0600)	0.7872*** (0.0688)	0.7717*** (0.1251)	0.8357*** (0.1262)	0.3544*** (0.0458)	0.2981*** (0.0562)	0.2108*** (0.0651)	0.1983*** (0.0632)
<i>ser</i>	0.0136*** (0.0012)	0.0204*** (0.0013)	0.0009 (0.0038)	0.0104*** (0.0033)	0.0050*** (0.0013)	0.0105*** (0.0016)	-0.0067*** (0.0021)	0.0004 (0.0020)	0.0264*** (0.0046)	0.0268*** (0.0045)	0.0074*** (0.0023)	0.0123*** (0.0026)	0.0456*** (0.0036)	0.0456*** (0.0033)
<i>gov</i>	0.0115** (0.0050)	0.0127*** (0.0048)	0.1278*** (0.0160)	0.1386*** (0.0160)	-0.00003 (0.0064)	-0.0033 (0.0075)	-0.0150** (0.0084)	-0.0375*** (0.0088)	-0.0141 (0.0177)	0.0047 (0.0172)	-0.1158*** (0.0231)	-0.0343 (0.0281)	-0.0002 (0.0026)	0.0009 (0.0023)
constant	164.8163*** (6.7087)	186.1861*** (7.7482)	100.064*** (20.3846)	124.4054*** (17.0999)	122.2077*** (10.9802)	122.2338*** (7.26296)	175.5744*** (18.1139)	208.5676*** (20.5862)	242.1827*** (41.3437)	245.5265*** (43.0036)	175.0484*** (27.1197)	129.0503*** (30.9932)	160.9755*** (21.0880)	153.5199*** (189119)
No. of Obs.	1634	1625	175	175	727	727	269	269	210	201	74	74	136	136
Wald X2	6887.43***	4730.35***	1440.98***	1454.39***	2148.35***	1647.56***	446.57***	243.25***	532.64***	466.17***	286.76***	295.24***	1341.94***	1442.54***
R.sq	0.798	0.7581	0.8894	0.8838	0.7553	0.7223	0.6289	0.5335	0.6619	0.6906	0.8145	0.7105	0.8989	0.8981

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

5.2 Finance, institutions and growth – Income groups and legal origin

To provide further robustness to our findings, we further segregated our full sample into sub samples of income levels and legal origin. These results are presented in Tables 7 to 16. The results from these estimations are largely consistent with our initial findings. Again, the effect of finance on growth is not consistent. However, when interacted with institutional quality, the effect is consistently positive except in cases where levels of finance already show positive influence on growth. For instance, for lower middle-income countries (see Tables 7), life insurance premium (*lip*) impacts positively on growth but when interacted with institutional quality (*cl* and *polity2*), the effect is negative. Again, the results show the impact of non-life insurance premium (see Tables 9 and 10) and total insurance premium (see Tables 11) on growth is ambiguous. However, when we account for institutional quality, the effect is consistently positive except in cases where finance at levels is already positive. For instance, still for Lower middle-income countries (Table 9, 11 & 15), where the effect of financial development on growth is positive, the interaction between financial development and institutional quality gives a negative effect. In a similar single case, For French civil law countries (Table 14), *bank* impacts growth positively but when interacted with *polity2*, the effect is negative. We observe few instance for low income countries (Tables 15 when stock market development (*mkt*) has a positive impact on growth but when interacted with the institutional quality variable, the becomes negative. Similar results were seen for high income countries (see tables 7, 9, 11, 13, 15) where finance has a direct positive impact on growth but when interacted with *polity2* as institutional quality variable, the interaction term becomes negative. This suggests that, in cases where finance in itself elicits positive effect on growth, further tightening of the institutional framework must be done with caution. We however generally find that, for finance to elicit positive effect on growth, there needs to be in place, an effective institutional framework.

In all our estimations, we control for trade openness, infrastructure, education and government expenditure all of which are known to be drivers of growth. Consistent with extant literature, we find all our control variables to exert significant positive effect on the dependent variable- growth.

Table 7. Insurance market development (lip), institutions and growth – income group estimations

	Low Income		Lower Middle Income		Upper Middle Income		High Income	
<i>lip</i>	-0.1943** (0.0923)	0.0085 (0.0163)	0.2257*** (0.0365)	0.0512*** (0.0123)	-0.0346 (0.0247)	0.0041 (0.0145)	-0.2351*** (0.0378)	0.0054 (0.0193)
<i>cl</i>	2.9572*** (1.0716)		-1.5438*** (0.3874)		0.8245*** (0.1211)		-0.1221* (0.0681)	
<i>lip x cl</i>	0.7305* (0.3914)		-0.7417*** (0.1301)		0.3113*** (0.0643)		0.6840*** (0.0473)	
<i>polity2</i>		-0.0210** (0.0088)		-0.0186*** (0.0042)		0.0333*** (0.0047)		0.0032 (0.0044)
<i>lip x polity2</i>		-0.0012 (0.0036)		-0.0056*** (0.0016)		0.0139*** (0.0018)		0.0341*** (0.0020)
<i>trade</i>	0.0054*** (0.0011)	0.0062*** (0.0010)	0.0004 (0.0008)	0.0004 (0.0009)	-0.0011** (0.0005)	-0.0011** (0.0005)	0.0023*** (0.0004)	0.0023*** (0.0004)
<i>infra</i>	0.1296*** (0.0371)	0.1963*** (0.0379)	0.4316*** (0.0299)	0.4192*** (0.0308)	0.1997*** (0.0455)	0.1993*** (0.0436)	0.6631*** (0.0513)	0.6055*** (0.0471)
<i>ser</i>	-0.0027* (0.0016)	-0.0024 (0.0018)	-0.0008 (0.0011)	0.0003 (0.0011)	0.0038** (0.0016)	0.0014 (0.0016)	0.0053*** (0.0012)	0.0045*** (0.0010)
<i>gov</i>	-0.0075*** (0.0022)	-0.0078*** (0.0019)	0.0056 (0.0051)	0.0059 (0.0055)	-0.0182*** (0.0038)	-0.0146*** (0.0037)	0.0035 (0.0045)	0.0055 (0.0039)
constant	51.5300** (22.3723)	92.9657*** (24.3383)	172.8382*** (13.6290)	165.2059*** (14.0123)	31.7673** (13.3937)	1.7450 (13.0677)	111.6346*** (8.5276)	100.706*** (8.0541)
No. of Obs.	198	198	431	429	546	538	856	856
Wald X2	164.32***	162.15***	501.64***	465.72***	375.41***	428.18***	1864.47***	2342.58***
R.sq	0.4198	0.3959	0.5236	0.4983	0.3915	0.4355	0.6365	0.7029

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

Table 8. Insurance market development (lip), institutions and growth – legal origin estimations

Variable	British Common Law		Civil Law		French civil law		German civil law	
<i>lip</i>	-0.1919*** (0.0324)	-0.0233 (0.0315)	-0.0433** (0.0199)	0.1264*** (0.0145)	-0.0583*** (0.0215)	0.1029*** (0.0156)	0.1090*** (0.0285)	0.1887*** (0.0199)
<i>cl</i>	0.9481*** (0.1422)		0.9001*** (0.0753)		0.7260*** (0.0929)		0.6319*** (0.1003)	
<i>lip x cl</i>	0.5126*** (0.0825)		0.4963*** (0.0313)		0.4123*** (0.0359)		0.4655*** (0.0512)	
<i>polity2</i>		0.0104 (0.0070)		0.0330*** (0.0049)		0.0097* (0.0058)		0.0662*** (0.0056)
<i>lip x polity2</i>		0.0257*** (0.0039)		0.0251*** (0.0017)		0.0169*** (0.0021)		0.0273*** (0.0025)
<i>trade</i>	0.0026*** (0.0009)	0.0012 (0.0011)	0.0015*** (0.0005)	0.0025*** (0.0005)	0.0024*** (0.0006)	0.0032*** (0.0006)	-0.0016** (0.0007)	-0.0006 (0.0006)
<i>infra</i>	0.4022*** (0.0351)	0.4045*** (0.0402)	0.4516*** (0.0250)	0.4225*** (0.0275)	0.4863*** (0.0271)	0.4722*** (0.0295)	0.4436*** (0.0703)	0.4388*** (0.0664)
<i>ser</i>	0.0282*** (0.0022)	0.0335*** (0.0023)	0.0160*** (0.0011)	0.0181*** (0.0010)	0.0167*** (0.0012)	0.0185*** (0.0011)	0.0291*** (0.0036)	0.0171*** (0.0037)
<i>gov</i>	0.0030 (0.0032)	0.0010 (0.0024)	-0.0039 (0.0038)	0.0007 (0.0039)	-0.0008 (0.0044)	0.0014 (0.0043)	0.0111 (0.0070)	-0.0193*** (0.0073)
constant	151.6838*** (11.6318)	149.7644*** (13.4514)	163.5929*** (7.1800)	153.5599*** (7.6345)	200.8108*** (9.2238)	196.2292*** (9.7415)	109.0959*** (11.9205)	85.8846*** (11.4617)
No. of Obs.	444	442	1587	1579	1172	1164	322	322
Wald X2	5031.50***	3576.50***	8403.19***	7635.27***	5603.18***	4765.08***	2659.42***	4099.92***
R.sq	0.9035	0.8752	0.8217	0.8177	0.7839	0.7853	0.8856	0.8839

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

Table 9. Insurance market development (nlip), institutions and growth – income group estimations

Variable	Low Income		Lower Middle Income		Upper Middle Income		High Income	
	<i>nlip</i>	-0.3134** (0.1372)	0.0124 (0.0314)	0.2377*** (0.0807)	0.4228*** (0.0359)	0.0752 (0.1012)	0.1301** (0.0559)	-0.7392*** (0.0666)
<i>cl</i>	2.2594*** (0.5029)		0.0301 (0.1656)		0.2083 (0.1520)		-1.0160*** (0.1065)	
<i>nlip x cl</i>	1.2978** (0.5996)		0.6110** (0.2893)		0.4033 (0.3047)		2.0556*** (0.1220)	
<i>polity2</i>		-0.0076 (0.0066)		-0.178*** (0.0036)		0.0093** (0.0037)		-0.0450*** (0.0044)
<i>nlip x polity2</i>		0.0034 (0.0075)		-0.0180*** (0.0048)		0.0171** (0.0067)		0.0511*** (0.0084)
<i>trade</i>	0.0052*** (0.0011)	0.0057*** (0.0011)	-0.0014* (0.0008)	-0.0010 (0.0008)	0.0024*** (0.0005)	0.0023*** (0.0006)	0.0021*** (0.0003)	0.0019*** (0.0004)
<i>infra</i>	0.0717** (0.0332)	0.1182*** (0.0307)	0.3611*** (0.0288)	0.3555*** (0.0283)	0.2329*** (0.0445)	0.2148*** (0.0437)	0.6378*** (0.0467)	0.7650*** (0.0492)
<i>ser</i>	-0.0019 (0.0014)	-0.0019 (0.0015)	-0.0004 (0.0009)	0.0010 (0.0009)	0.0020 (0.0018)	0.0018 (0.0018)	0.0055*** (0.0012)	0.0079*** (0.0011)
<i>gov</i>	- (0.0023)	- (0.0022)	-0.0152*** (0.0052)	-0.0164*** (0.0050)	- (0.0050)	-0.0123** (0.0050)	0.0122*** (0.0044)	0.0065 (0.0042)
constant	12.6241 (19.1111)	29.2978 (18.3248)	127.4618*** (13.5375)	123.5578*** (13.0219)	31.3900** (13.2168)	22.6756* (13.2217)	89.7775*** (7.5379)	116.5406*** (8.6220)
No. of Obs.	220	220	463	461	579	573	898	898
Wald X2	180.94***	130.82***	622.11***	649.01***	332.18***	264.46***	1707.15***	1359.93***
R.sq	0.4085	0.3341	0.5731	0.5931	0.3619	0.3628	0.616	0.5981

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

Table 10. Insurance market development (nlip), institutions and growth – legal origin estimations

Variable	British Common Law		Civil Law		French civil law		German civil law	
	<i>nlip</i>	-0.1679** (0.0915)	0.2489*** (0.0658)	-0.1454*** (0.0551)	0.2508*** (0.0433)	-0.1716*** (0.0597)	0.2279*** (0.0433)	0.0625 (0.1288)
<i>cl</i>	0.4427** (0.2024)		0.4807*** (0.1127)		0.1952 (0.1240)		0.5115*** (0.1781)	
<i>nlip x cl</i>	1.2683*** (0.2288)		1.2845*** (0.1290)		1.1906*** (0.1581)		1.1595*** (0.2415)	
<i>polity2</i>		-0.0102** (0.0051)		0.0009 (0.0047)		-0.0159*** (0.0051)		0.0343*** (0.0076)
<i>nlip x polity2</i>		0.0490*** (0.0065)		0.0379*** (0.0056)		0.0180*** (0.0059)		0.0590*** (0.0105)
<i>trade</i>	0.0038*** (0.0010)	0.0006 (0.0011)	-0.0005 (0.0006)	0.0006 (0.0007)	0.0010* (0.0006)	0.0021*** (0.0007)	- (0.0009)	- (0.0008)
<i>infra</i>	0.3769*** (0.0310)	0.3856*** (0.0359)	0.4588*** (0.0253)	0.4762*** (0.0288)	0.5093*** (0.0275)	0.5241*** (0.0305)	0.5734*** (0.0840)	0.6603*** (0.1002)
<i>ser</i>	0.0223*** (0.0021)	0.0272*** (0.0022)	0.0164*** (0.0010)	0.0199*** (0.0011)	0.0164*** (0.0012)	0.0193*** (0.0011)	0.0188*** (0.0040)	0.0152*** (0.0046)
<i>gov</i>	0.0025 (0.0040)	-0.0038 (0.0034)	0.0012 (0.0040)	0.0074* (0.0041)	0.0025 (0.0046)	0.0035 (0.0044)	0.0082 (0.0101)	-0.0138 (0.0111)
constant	131.868*** (10.7667)	128.7051** (12.3231)	152.5225** (7.9029)	155.6065** (8.9903)	197.6667** (9.5789)	203.0683** (10.4265)	85.7956** (15.6321)	79.3316** (17.5377)
No. of Obs.	487	485	1673	1667	1240	1234	335	335
Wald X2	6007.30** *	3920.29***	8468.44***	6394.81***	5648.22***	4363.13***	2167.85** *	1895.07** *
R.sq	0.9066	0.8862	0.7985	0.7693	0.7654	0.7529	0.8286	0.7869

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

Table 11. Insurance market development (tip), institutions and growth – income group estimations

Variable	Low Income		Lower Middle Income		Upper Middle Income		High Income	
<i>tip</i>	-0.2737*	-0.0015	0.2007**	0.2293***	-0.0127	0.0012	-0.4002***	-0.0952
	(0.1557)	(0.0320)	(0.0952)	(0.0280)	(0.0634)	(0.0388)	(0.0521)	(0.0751)
<i>cl</i>	1.6699***		0.2910		0.2695*		-1.4368***	
	(0.4648)		(0.2222)		(0.1423)		(0.1221)	
<i>tip x cl</i>	1.0517		-0.1892		0.3463**		1.2194***	
	(0.6608)		(0.3847)		(0.1582)		(0.0751)	
<i>polity2</i>		-0.0101**		-0.0112***		0.0072*		-0.0607***
		(0.0048)		(0.0031)		(0.0039)		(0.0049)
<i>tip x polity2</i>		0.0174*		-0.0221***		0.0199***		0.0568***
		(0.0093)		(0.0042)		(0.0044)		(0.0079)
<i>trade</i>	0.0053***	0.0059***	-0.0006	0.0001	-0.0012**	-0.0011*	0.0024***	0.0022***
	(0.0011)	(0.0009)	(0.0009)	(0.0008)	(0.0005)	(0.0005)	(0.0004)	(0.0004)
<i>infra</i>	0.1080***	0.2115***	0.3992***	0.3850***	0.1909***	0.1779***	0.6634***	0.6885***
	(0.0345)	(0.0330)	(0.0310)	(0.0307)	(0.0460)	(0.0453)	(0.0480)	(0.0496)
<i>ser</i>	-0.0017	0.2115***	-0.0005	0.0011	0.0035*	0.0025	0.0046***	0.0059***
	(0.0014)	(0.0330)	(0.0011)	(0.0011)	(0.0017)	(0.0017)	(0.0013)	(0.0011)
<i>gov</i>	-0.0070***	-	0.0033	-0.0024	-0.0163***	-0.0141***	0.0043	0.0053
	(0.0025)	0.0076***	(0.0054)	(0.0053)	(0.0043)	(0.0043)	(0.0044)	(0.0038)
constant	42.4816**	104.736***	156.999***	147.4287**	25.3620*	13.5805	106.4089**	108.6976**
	(20.8045)	(21.8108)	(13.8511)	*(13.7800)	(13.6390)	(13.8008)	*(7.9712)	*(8.5340)
No. of Obs.	198	198	431	429	544	538	856	856
Wald X2	170.57***	155.30***	481.12***	598.86***	370.03***	322.10***	1996.84***	1854.41***
R.sq	0.4109	0.4048	0.502	0.5364	0.3512	0.3678	0.6478	0.6686

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

Table 12. Insurance market development (tip), institutions and growth – legal origin estimations

Variable	British Common Law		Civil Law		French civil law		German civil law	
<i>tip</i>	-0.2518***	-0.0376	-0.0367	0.2322***	-0.1016**	0.1949***	0.2024***	0.3580***
	(0.0596)	(0.0565)	(0.0440)	(0.0359)	(0.0479)	(0.0390)	(0.0714)	(0.0641)
<i>cl</i>	0.1908		-0.1341		-0.2182*		-0.3158**	
	(0.2418)		(0.4083)		(0.1186)		(0.1459)	
<i>tip x cl</i>	0.7619***		0.9213***		0.8120***		0.9579***	
	(0.1287)		(0.0638)		(0.0772)		(0.1061)	
<i>polity2</i>		-0.0315***		-0.0157***		-0.0226***		0.0038
		(0.0068)		(0.0047)		(0.0051)		(0.0074)
<i>tip x polity2</i>		0.0444***		0.0458***		0.0275***		0.0536***
		(0.0057)		(0.0042)		(0.0049)		(0.0052)
<i>trade</i>	0.0028***	0.0012	0.0012**	0.0017***	0.0022***	0.0027***	-0.0018**	-0.0008
	(0.0009)	(0.0011)	(0.0005)	(0.0005)	(0.0006)	(0.0007)	(0.0008)	(0.0007)
<i>infra</i>	0.4057***	0.3997***	0.4468***	0.4362***	0.4912***	0.4871**	0.3517***	0.4081***
	(0.0350)	(0.0393)	(0.0250)	(0.0272)	(0.0274)	(0.0295)	(0.0751)	(0.0843)
<i>ser</i>	0.0274***	0.0323***	0.0154***	0.0172***	0.0163***	0.0179**	0.0267***	0.0178***
	(0.0023)	(0.0023)	(0.0011)	(0.0011)	(0.0012)	(0.0012)	(0.0035)	(0.0041)
<i>gov</i>	0.0033	-0.0000	-0.0057	-0.0011	-0.0027	-0.0013	0.0226***	-0.0029
	(0.0032)	(0.0024)	(0.0039)	(0.0039)	(0.0045)	(0.0045)	(0.0078)	(0.0086)
constant	151.7963**	145.4958**	157.5302**	148.6883**	199.3244**	194.8223**	79.4939**	66.8777**
	*(11.7524)	*(13.3282)	*(7.6093)	*(8.1634)	*(9.8441)	*(10.4011)	*(11.9375)	*(12.2217)
No. of Obs.	444	442	1585	1579	1170	1164	322	322
Wald X2	4985.53**	3677.33***	8689.17***	7726.71***	5628.61***	4825.71***	3039.68**	4246.95**
	*						*	*
R.sq	0.9025	0.8784	0.8197	0.807	0.7819	0.7757	0.8774	0.857

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

Table 13. Banking sector development (bank), institutions and growth – Income group estimations

Variable	Low Income		Lower Middle Income		Upper Middle Income		High Income	
<i>bank</i>	-0.0339*** (0.0093)	0.0038 (0.0024)	-0.0011 (0.0018)	0.0079*** (0.0010)	-0.0065*** (0.0017)	-0.0031*** (0.0093)	0.0069*** (0.0014)	0.0030 (0.0021)
<i>cl</i>	-1.0134* (0.5482)		-1.4697*** (0.2808)		-0.3876* (0.2119)		-0.1331 (0.1446)	
<i>bank x cl</i>	0.1667*** (0.0372)		0.0364*** (0.0054)		0.0215*** (0.0042)		-0.0007 (0.0016)	
<i>polity2</i>		-0.0238*** (0.0059)		-0.0252*** (0.0048)		-0.0259*** (0.0077)		-0.0679*** (0.0103)
<i>bank x polity2</i>		0.0012*** (0.0003)		0.0005*** (0.0001)		0.0008*** (0.0001)		0.0004* (0.0002)
<i>trade</i>	0.0058*** (0.0009)	0.0065*** (0.0009)	0.0014 (0.0009)	0.0010 (0.0009)	-0.0027*** (0.0006)	-0.0032*** (0.0006)	0.0027*** (0.0004)	0.0021*** (0.0004)
<i>infra</i>	0.0445 (0.0280)	0.0875*** (0.0270)	0.3519*** (0.0296)	0.3471*** (0.0305)	0.3885*** (0.0432)	0.3902*** (0.0415)	0.6428*** (0.0513)	0.7301*** (0.0420)
<i>ser</i>	-0.0055*** (0.0018)	-0.0056*** (0.0019)	-0.0033*** (0.0012)	-0.0020 (0.0012)	-0.0055*** (0.0018)	-0.0064*** (0.0017)	0.0064*** (0.0011)	0.0085*** (0.0010)
<i>gov</i>	-0.0071*** (0.0016)	-0.0079*** (0.0017)	0.0059 (0.0053)	0.0064 (0.0053)	0.0020 (0.0040)	0.0052 (0.0040)	0.0093* (0.0048)	0.0011 (0.0037)
constant	12.4833 (14.5025)	21.2408 (15.0395)	143.2453*** (12.7343)	140.6293*** (12.8954)	55.8620*** (12.4514)	46.6230*** (12.0020)	116.3761*** (8.4168)	135.624*** (7.4257)
No. of Obs.	283	283	506	504	644	632	896	896
Wald X2	202.95***	178.78***	729.78***	664.42***	377.08***	418.14***	1616.97***	2550.00***
R.sq	0.4102	0.3245	0.4701	0.4719	0.3904	0.4325	0.6044	0.6901

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

Table 14. Banking sector development (bank), institutions (cl) and growth – legal origin estimations

Variable	British Common Law		Civil Law		French civil law		German civil law	
<i>bank</i>	-0.0007 (0.0017)	0.0006 (0.0018)	0.0061*** (0.0012)	0.0049*** (0.0009)	0.0070*** (0.0016)	0.0091*** (0.0016)	0.0050*** (0.0015)	0.0081*** (0.0013)
<i>cl</i>	0.7907*** (0.2438)		0.7246*** (0.1211)		0.3107** (0.1496)		0.4167*** (0.1626)	
<i>bank x cl</i>	0.0048** (0.0021)		0.0048*** (0.0015)		0.0053*** (0.0020)		0.0098*** (0.0019)	
<i>polity2</i>		-0.0416*** (0.0065)		-0.0360*** (0.0060)		-0.0329*** (0.0067)		-0.0060 (0.0096)
<i>bank x polity2</i>		0.0007*** (0.0002)		0.0009*** (0.0001)		0.0005*** (0.0002)		0.0007*** (0.0001)
<i>trade</i>	0.0038*** (0.0007)	0.0010 (0.0009)	0.0001 (0.0006)	0.0011* (0.0006)	0.0009 (0.0007)	0.0012 (0.0008)	-0.0032*** (0.0008)	-0.0005 (0.0008)
<i>infra</i>	0.4107*** (0.0327)	0.4478*** (0.0344)	0.4327*** (0.0211)	0.4738*** (0.0234)	0.4490*** (0.0234)	0.4860*** (0.0256)	0.5554*** (0.0589)	0.5986*** (0.0627)
<i>ser</i>	0.0240*** (0.0019)	0.0286*** (0.0019)	0.0144*** (0.0010)	0.0172*** (0.0010)	0.0150*** (0.0011)	0.0165*** (0.0011)	0.0158*** (0.0035)	0.1052*** (0.0627)
<i>gov</i>	0.0066** (0.0031)	0.0087*** (0.0031)	-0.0014 (0.0030)	0.0024 (0.0031)	-0.0066** (0.0033)	-0.0082** (0.0034)	0.0768*** (0.0090)	0.0708*** (0.0097)
constant	171.4409*** (12.4878)	192.1363*** (11.8785)	159.6751*** (6.8103)	170.2312*** (7.2239)	186.368*** (8.5212)	197.1006*** (8.8533)	96.4874*** (11.6896)	89.5751*** (13.1288)
No. of Obs.	525	523	1804	1792	1358	1346	355	355
Wald X2	7562.71***	5956.93***	11086.96***	9227.93***	7342.58***	6767.45***	2922.51***	2184.29***
R.sq	0.8995	0.8874	0.8148	0.8046	0.777	0.7757	0.8866	0.8651

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

Table 15. Stock market development (mkt), institutions and growth – Income group estimations

Variable	Low Income		Lower Middle Income		Upper Middle Income		High Income	
<i>mkt</i>	1.3551*** (0.1157)	0.1372*** (0.0249)	-0.2008** (0.0927)	0.0260 (0.0244)	0.0339 (0.0322)	-0.0070 (0.0218)	0.2580*** (0.0473)	0.2255*** (0.0401)
<i>cl</i>	12.7286*** (1.0076)		-4.1679*** (0.8096)		0.3685* (0.2049)		0.2748 (0.2086)	
<i>mkt x cl</i>	-5.2076*** (0.4522)		0.9139*** (0.2956)		0.1530** (0.0778)		0.0144 (0.0544)	
<i>polity2</i>		0.0482*** (0.0090)		-0.0261* (0.0136)		-0.0227** (0.0104)		-0.0212 (0.0158)
<i>mkt x polity2</i>		-0.0231*** (0.0041)		0.0002 (0.0040)		0.0150*** (0.0032)		-0.0004 (0.0039)
<i>trade</i>	-0.0012 (0.0012)	0.0022 (0.0016)	0.0042*** (0.0009)	0.0022*** (0.0008)	-0.0032*** (0.0005)	-0.0023*** (0.0005)	0.0013*** (0.0003)	0.0016*** (0.0004)
<i>infra</i>	-0.0013 (0.0258)	0.0596 (0.0506)	0.3997*** (0.0419)	0.3561*** (0.0465)	0.4530*** (0.0471)	0.4382*** (0.0497)	0.4349*** (0.0572)	0.5776*** (0.0546)
<i>ser</i>	0.0077*** (0.0008)	0.0026* (0.0014)	-0.0020 (0.0419)	0.0014 (0.0015)	-0.0028 (0.0018)	-0.0024 (0.0018)	0.0046*** (0.0010)	0.0080*** (0.0010)
<i>gov</i>	0.0006** (0.0003)	0.0002 (0.0004)	0.0037 (0.0069)	0.0001 (0.0067)	0.0034 (0.0047)	0.0056 (0.0045)	0.0148*** (0.0046)	0.0073* (0.0043)
constant	-13.5155 (15.8570)	-7.2336 (29.6763)	138.5252*** (19.1260)	120.8767*** (21.7767)	99.9824*** (14.1790)	90.3366*** (14.6668)	76.44*** (8.4381)	96.1508*** (8.7437)
No. of Obs.	25	25	272	272	474	465	863	863
Wald X2	14774.72***	810.92***	379.70***	530.40***	413.96***	454.48***	1718.66***	1709.66***
R.sq	0.9831	0.9711	0.5824	0.5904	0.4825	0.5077	0.6161	0.6197

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

Table 16. Stock market development (mkt), institutions and growth – Legal origin estimations

Variable	British Common Law		Civil Law		French civil law		German civil law	
<i>mkt</i>	-0.1025* (0.0548)	-0.0320 (0.0366)	0.1057*** (0.0348)	0.1604*** (0.0359)	0.0747* (0.0410)	0.1576*** (0.0361)	0.1264** (0.0550)	-0.0036 (0.0621)
<i>cl</i>			-0.3177 (0.4439)	0.3767** (0.1553)	0.0491 (0.1718)		0.5114 (0.3553)	
<i>mkt x cl</i>	0.4660*** (0.1024)		0.2097*** (0.0486)		0.2114*** (0.0565)		0.2558*** (0.0963)	
<i>polity2</i>		-0.0511*** (0.0174)		-0.0280** (0.0122)		-0.0138 (0.0133)		-0.0789*** (0.0223)
<i>mkt x polity2</i>		0.0142*** (0.0048)		0.0091** (0.0042)		-0.0007 (0.0044)		0.0392*** (0.0052)
<i>trade</i>	0.0052*** (0.0007)	0.0021** (0.0010)	-0.0007 (0.0005)	0.0013*** (0.0005)	0.0009 (0.0006)	0.0026*** (0.0006)	-0.0053*** (0.0011)	-0.0025*** (0.0052)
<i>infra</i>	0.3552*** (0.0381)	0.4226*** (0.0484)	0.6447*** (0.0349)	0.7771*** (0.0431)	0.6901*** (0.0409)	0.8272*** (0.0503)	0.4011*** (0.0882)	0.4837*** (0.0982)
<i>ser</i>	0.0242*** (0.0022)	0.0351*** (0.0024)	0.0067*** (0.0014)	0.0134*** (0.0014)	0.0085*** (0.0016)	0.0147*** (0.0016)	0.0315*** (0.0051)	0.0363*** (0.0058)
<i>gov</i>	0.0104* (0.0055)	0.0102** (0.0048)	0.0227*** (0.0056)	0.0213*** (0.0059)	0.0183** (0.0073)	0.0080 (0.0076)	0.0362*** (0.0101)	0.0103 (0.0112)
constant	134.9657*** (11.5042)	159.5124*** (14.1275)	166.7845*** (8.3117)	202.1083*** (10.1207)	197.3576*** (10.7336)	243.8674*** (13.2706)	115.8498*** (14.6647)	112.9192*** (15.7801)
No. of Obs.	431	431	1203	1194	797	788	313	313
Wald X2	4778.57***	2775.29***	4340.82***	2817.06***	2678.25***	1637.07***	1697.96***	2482.47***
R.sq	0.8903	0.8449	0.7555	0.714	0.7016	0.6826	0.8379	0.8107

*, **, *** Significance at 10%, 5%, 1% respectively. Robust standard errors are in parenthesis. All variables are as defined.

6.0 Conclusions and policy implications

Extant literature that have looked at finance-growth nexus from the perspectives of finance measures and biased empirical settings. No wonder multiple relationships between finance and growth have been documented. In this study, we revisit the finance growth nexus using global data and a wide range of financial development and institutional measures. We provide evidence of the finance –growth nexus around the entire globe having segregated our data into regional blocs, income levels and legal origin. Our findings suggest that the relationship between finance and growth is equivocal. We find institutional quality to moderate the finance-growth relationship. When interacted with institutional quality, finance is seen to largely exert positive effect on economic growth. This implies that policies seeking to translate the gains within the financial market to economic growth should first ensure that effective institutional systems are put in place. However, this must be done with caution especially in areas where financial development already has positive impact on growth. This is because we found that, in cases where finance impacts positively on growth (particularly in lower middle-income countries and high-income countries), the interaction between finance and institutions has negative effect on growth. In such areas, further tightening of the institutional environment may hurt economic growth. The major implication is that countries should take into consideration their own realities of institutional framework when they fashion policies to benefit from finance in terms of achieving better growth outcomes. While ensuring that institutional structures are made to work in such a way that growth in finance will lead to real sector growth, policy makers should also keep an eye on infrastructure, international trade, education and government expenditure, all of which are found to positively influence growth.

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Availability of data and materials

The data for this paper are available upon request.

Competing interest

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Authors' contributions

Richard Adjei Dwumfour contributed to the writing of the manuscript and data analysis. Mathew Ntow-Gyamfi participated in the revision of the manuscript. All authors read and approved the final manuscript.

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APPENDIX A

British	French			German	Nordic
Australia	Albania	Kazakhstan	Turkey	Austria	Denmark
Bahrain	Algeria	Kuwait	Ukraine	Belarus	Finland
Bangladesh	Argentina	Laos	Uruguay	Bulgaria	Norway
Botswana	Azerbaijan	Lebanon	Venezuela	China	Sweden
Canada	Belgium	Libya	Vietnam	Croatia	
Cyprus	Benin	Lithuania	Yemen	Czech Republic	
Fiji	Bolivia	Luxembourg		Estonia	
Ghana	Brazil	Macedonia		Georgia	
Guyana	Burkina Faso	Madagascar		Germany	
India	Burundi	Mali		Hungary	
Ireland	Cameroon	Mauritania		Japan	
Israel	Cape Verde	Mauritius		Latvia	
Jamaica	Central African	Mexico		Mongolia	
Kenya	Chad	Moldova		Poland	
Malawi	Chile	Morocco		Slovak Republic	
Malaysia	Colombia	Mozambique		Slovenia	
Namibia	Congo, Dem. Rep.	Netherlands		Switzerland	
Nepal	Congo, Rep.	Nicaragua			
New Zealand	Costa Rica	Niger			
Nigeria	Dominican Republ	Oman			
Pakistan	Ecuador	Panama			
Papua New Guinea	Egypt	Paraguay			
Saudi Arabia	El Salvador	Peru			
Sierra Leone	Eritrea	Philippines			
Singapore	Ethiopia	Portugal			
South Africa	France	Qatar			
Sri Lanka	Gabon	Romania			
Sudan	Greece	Russia			
Swaziland	Guatemala	Rwanda			
Tanzania	Guinea	Senegal			
Thailand	Haiti	Serbia			
Trinidad and Tob.	Honduras	Spain			
UAE	Indonesia	Suriname			
Uganda	Iran	Syria			
United Kingdom	Italy	Tajikistan			
United States	Ivory Coast	Togo			
Zambia	Jordan	Tunisia			

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