

Financial consumer protection and economic growth

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Abstract

Purpose – The purpose of this paper is to examine the link between financial consumer protection (FCP) and economic growth.

Design/methodology/approach – The authors use cross-country data on 114 countries surveyed in the World Bank Global Survey on FCP and Financial Literacy (2013) and endogenous treatment regressions for the estimation.

Findings – The results indicate that FCP enhances economic growth through fair treatment, responsible lending, enforcement and dispute resolution and recourse regulations. The authors find no evidence to suggest that disclosure and compliance monitoring regulations have an effect on economic growth.

Practical implications – This study provides rich insight into the important question faced by policy makers, as to which FCP regulatory mechanisms to put in place to enhance economic growth.

Originality/value – This study provides current, cross-country empirical evidence on the debate as to whether FCP enhances economic growth.

Keywords Economic growth, Regulations, Financial consumer protection

Paper type Research paper

1. Introduction

Financial consumer protection (FCP) has come to the forefront of international economic development strategy in recent times following the 2007–2008 global financial crisis given that weak protection of consumers of financial products has been identified as a contributory factor to the financial crisis in the USA (Ardic *et al.*, 2011). Accordingly, the G20 Finance Ministers and Central Bank Governors at their meeting in October 2011 endorsed the High-Level Principles on FCP. Indeed in 2012, the World Bank published its maiden Good Practices for FCP. These regulations engender fair treatment, disclosures, effective monitoring as well as the institution of enforcement and recourse resolution mechanisms aimed at protecting not only the investor financial consumer but also the non-investor retail financial consumer. Accordingly, they are expected to promote stability, efficiency, transparency, competition and access by reducing information asymmetries and power imbalances amongst providers and users of financial services.

Consequently, all over the world countries are establishing institutions, passing new legislation and overhauling existing ones to enhance the protection of consumers in the financial market place. In the USA, the Dodd–Frank Act was promulgated in 2010 followed by the establishment of a specialized agency, the Consumer Financial Protection Bureau (CFPB), with the sole responsibility of protecting financial consumers and ensuring fairness in the financial market. Likewise, in the UK, the Financial Conduct Authority was created in 2012 and charged with market conduct supervision and consumer protection. For the case of developing countries, Zambia amended its Banking and Financial Services Act incorporating provisions specific to the protection of financial consumers (World Bank, 2012, 2013).

While the importance of the existence of regulations and mechanisms for the protection of the financial consumer has been recognised, a thriving debate in the Law and Economics as well as Behavioural Economics literature concerns the importance of FCP for economic growth. Proponents and critics present conflicting models linking FCP to crucial drivers of economic growth, such as access, stability, competition and efficiency, leaving the link between FCP and economic growth unclear (see Benston, 1998; Davies, 1999; De serres *et al.*,



2006; Bar-Gill and Warren, 2008; Wright and Zywicki, 2009; Evans and Wright, 2010; Melecky and Rutledge, 2011; Rutledge, 2010; Wright and Helland, 2011; Campbell *et al.*, 2011; World Bank, 2012, 2013).

Proponents (Davies, 1999; Melecky and Rutledge, 2011; World Bank, 2013; Bar-Gill and Warren, 2008; Campbell *et al.*, 2011; Ardic *et al.*, 2011; Llewellyn, 1999) argue that FCP, through its disclosure requirements, fair treatment provisions and dispute resolution and recourse mechanisms, ensures that consumers are informed, protected from abuse and have avenues for redress, engendering trust and making them confident and more willing to participate in financial markets. Consequently, FCP fosters financial access, savings mobilisation, investment and economic growth (Campbell *et al.*, 2011). Llewellyn (1999), for instance, argues that FCP fosters access by avoiding Akerlof's Market for Lemons – a situation where consumers are unable to distinguish good from bad quality products. Akerlof's lemons could reduce demand for financial services or make risk-averse consumers exit the market altogether.

Further, FCP regulations such as responsible lending regulations curb the propensity of financial providers for irresponsible lending keeping their risks within manageable limits, thereby fostering financial stability, which is fundamental to economic growth (Melecky and Rutledge, 2011; Rutledge, 2010). Again, FCP enhances competition in the financial market, as informed consumers are willing to switch to suppliers with better deals (De serres *et al.*, 2006). Additionally, disclosure and fair treatment provisions foster efficiency, as providers' avenues for preying on customers via unfair practices such as deceptive advertising and product bundling and tying are reduced, forcing them to rethink their processes and produce more efficiently in order to make profits (Melecky and Rutledge, 2011; World Bank, 2012, 2013).

Contrary to this assertion, however, critics (Benston, 1998; Evans and Wright, 2010; Wright and Helland, 2011; Wright and Zywicki, 2009) argue that the cost of complying with FCP regulations depresses providers' profits and can drive them into insolvency causing financial instability. Furthermore, the cost of compliance may also be transferred to consumers, reducing financial access. Evans and Wright (2010) estimate that the Dodd-Frank Act will increase interest rates consumers pay by 160 basis points (or by 1.6 per cent) and reduce consumer borrowing by 2.1 per cent. Contrary to the competition model of FCP, Huck and Zhou (2011) argue that competition may lead to an increased array of products, which could confuse consumers and hence be detrimental to their welfare. Wright and Zywicki (2009) and Wright and Helland (2011) also argue that not only will FCP regulations reduce competition and constrain consumer choice but also reduce the variety of products offered and the availability of credit. Again, opposing the efficiency model, behavioural economists such as Thaler and Sunstein (2008) assert that disclosures may not result in expected withdrawal from unscrupulous suppliers and associated efficiency, due to consumers' behavioural biases and cognitive limitations.

Due to these conflicting arguments, the link between FCP and economic growth remains to be established. Most importantly, the effect on economic growth of protecting the non-investor retail financial consumer, an issue so far ignored in existing literature that seeks to examine the effect of legal institutions on economic growth, has not been examined (see La Porta *et al.*, 1997; Levine, 1999). While this literature lends support to the pivotal role of FCP in economic growth, it focuses extensively on investor protection in bankruptcy and on reorganisation with little regard for the non-investor, retail financial service consumer. This has therefore, questioned the effect of protecting the financial consumer in day-to-day consumption of retail financial services, outside bankruptcy and reorganisation, such as disclosures, fair treatment and responsible lending requirements in credit and deposit services, as well as the existence of compliance monitoring, enforcement and recourse mechanisms on financial and economic growth outcomes.

Notwithstanding this deficiency, studies that have focused on FCP regulation aimed at protecting the non-investor retail financial consumer such as rate ceiling, anti-predatory lending laws, restrictions on creditor collection practices and disclosure regulations have also focused on their effect on the supply and cost of credit rather than on economic growth (see Koch, 2015; Benmelech and Moskowitz, 2010; Gropp *et al.*, 1997; Agarwal *et al.*, 2015; Harvey and Nigro, 2004; Steinbuks and Elliehausen, 2014). Accordingly, they do not provide answers to questions as to the effect on economic growth of protecting the non-investor retail financial consumer. Koch (2015) for instance investigated the impact of the rate ceiling on bank credit growth. Benmelech and Moskowitz (2010) also examined the impact of rate ceiling on lending activity while Agarwal *et al.* (2015) examined the effectiveness of fee limits and disclosure on the volume of payments and cost of credit.

Furthermore, recent studies that have sought to examine the macroeconomic impact of financial sector regulations have focused on prudential or business conduct regulations ignoring FCP (see Djankov *et al.*, 2006; Bertus *et al.*, 2007; Hartarska and Nadolnyak, 2007; Mersland and Strøm, 2009; Cull *et al.*, 2011; Kilinc and Neyapti, 2012). Kilinc and Neyapti (2012), for instance, examine the link between bank regulation and supervision and economic performance. Cull *et al.* (2011) also examine the effect of prudential regulation and supervision on microfinance profitability and outreach. Consequently, the question is “what is the effect on economic growth of protecting the non-investor, retail financial consumer?” This has not been addressed in the literature and hence constitutes a gap, which this study seeks to fill. The objective of this paper is hence to examine the link between FCP specific to the protection of the non-investor retail financial consumer and economic growth.

Investigating this relationship has been enabled by the existence of a novel data set collected in the World Bank Global Survey on FCP and Financial Literacy, 2013. This data set focused on documenting FCP regulations in deposit and credit services and hence contains regulations specific to the protection of the non-investor retail financial consumer. We contribute to the literature first by providing current cross-country empirical evidence on whether consumer protection in retail financial services enhances economic growth using a unique data set – The World Bank Global Survey on FCP and Financial Literacy, 2013. As far as we know, no other study has used this data set. Second, by focusing on FCP regulations specific to the non-investor retail financial consumer, this study not only extends evidence in the law-finance-growth literature on the link between legal institutions and economic growth but also extends the theoretical models of investor protection and its effect on economic growth. Third, the study also provides rich insight into the important question faced by policy makers, as to which specific regulatory mechanisms to put in place to best enhance the protection of financial consumers.

The remainder of the paper is structured as follows: Section 2 discusses the literature on the financial access FCP and economic growth. Section 3 presents variables and methodology adopted for the study. We present and discuss our results in Section 4 and present conclusions in Section 5.

2. Literature review

2.1 Theoretical framework

The link between FCP and economic growth can be analysed within several theoretical and conceptual frameworks. Within the ambit of Old Institutional Economics theory, FCP, as an institution, determines the level of productivity in an economy by influencing the cost of transactions which affects the volume of exchange and hence extent of specialisation in an economy (Smith, 1776). Furthermore, as a legal institution, it provides individuals with a rational system of law, which allows them to order their transactions with some predictability (Weber, 1979). Similarly, in the context of New Institutional Economics theory as espoused by North (1990) and North and Thomas (1973), the existence of legal institutions, such as FCP

regulations, provides an incentive for individuals to undertake social productive activities such as investment, innovation and specialisation needed for economic growth. According to North (1990), by protecting property rights and enforcing contracts, the legal system lowers the transaction cost for exchange and facilitates the transfer of resources to those who can use them in the most productive fashion; hence, they are the underlying determinants of long run economic performance.

Within the endogenous growth models, FCP affects growth through its effect on output via technological efficiency and capital accumulation (Romer, 1990; Hall and Jones, 1999; Grossman and Helpman, 1991; Aghion and Howitt, 1992). Its fair treatment and disclosure regulations can be argued to provide a congenial atmosphere for the use of available technology by reducing the possibility of providers to make profits by obfuscating customers, forcing providers to be innovative and adopt more efficient production methods. The disclosure and fair treatment provisions further prevent the expropriation of investor funds thereby increasing the marginal product of capital, which promotes capital accumulation.

Again, the law and finance theory, which dwells on the role of legal institutions as a determinant of international differences in financial development (La Porta *et al.*, 1997, 1998, 2000), provides key insights on how FCP could affect economic growth. Under this theory, legal systems that enforce private property rights, support private contractual arrangements and protect the legal right of investors, make savers more willing to finance firms, making financial markets flourish to the enhancement of economic growth. Similarly, within the Agency theory (Jensen and Meckling, 1976), FCP promotes economic growth by constraining the tendency of managers as agents of owners to expropriate owners' funds thereby encouraging the release of more funds for investment.

Based on the information asymmetry theory, FCP promotes economic growth by removing information imbalance between providers and financial consumers. Disclosure regulations, for instance, ensure consumers are informed of options and prices. Accordingly, they are enabled to compare offers and feel confident to switch to providers who make them better offers. This engenders competition and forces providers to come up with better and cheaper products fostering innovation, which is essential for economic growth. The existence of disclosure regulations further promotes economic growth by limiting the adoption of practices such as pursuing supply driven innovation which creates complex financial products consumers cannot understand. When consumers do not understand financial products, the fear of making suboptimal choices makes them withdraw from using them.

In behavioural economics models, FCP helps stall inefficient market outcomes that may result from consumer cognitive limitations (Thaler and Sunstein, 2008; Campbell *et al.*, 2010). FCP regulations that limit excess indebtedness such as irresponsible lending provisions, for instance, mitigate the effect of present-biased preferences (Strotz, 1955) whereby individuals take decisions today that have a negative impact on their future welfare. In a similar vein, according to the neoclassical rational choice theory, the provision of information via disclosures, for instance, enables rational individuals to make decisions that optimise their welfare, fostering competition and innovation, which propel economic growth.

While preventing the expropriation of investor funds is key to capital accumulation and hence economic growth, protection of the non-investor retail financial consumer is also pivotal to economic growth. Retail financial consumers though non-investors, borrow, save, use payment services and take up insurance all of which have consequences for financial intermediation, capital accumulation, investment and hence economic growth. In particular, for capital formation to occur, financial systems must bring the supply of savings and demand for investible funds together. Furthermore, based on information asymmetry theory, protecting the non-investor retail financial consumers from taking up loans they cannot repay via disclosure regulations is likely to prevent financial instability, which is inimical to economic growth.

2.2 Empirical evidence on financial consumer protection and growth

The link between FCP and economic growth has been established since La Porta *et al.* (1997, 1998). In their seminal works which served as the genesis of the law and finance literature, they used indicators of FCP, namely investor protection, to establish the link between law, financial and economic development. In a battery of studies, LLSV (1997, 1998, 2000) show that countries with legal environments characterised by “good” investor protection laws have larger and broader capital markets and thus, firms in these countries have more access to external finance, which promotes economic growth.

Analogously, Levine (1999), using creditor rights, contract enforcement and information disclosure as measures of legal institution, found that countries whose legal system provide high support for creditor rights have better functioning financial intermediaries. Furthermore, countries with laws that enforce contracts tend to have better developed financial intermediaries and countries with corporations that publish more comprehensive and accurate financial statements have better developed financial markets. They attributed these findings to the fact that, where protection is high, investors are protected against expropriation by management making them more willing to surrender funds to corporations in exchange for securities, culminating into larger debt and equity markets. These studies however focus extensively on the creditor and shareholder rights in bankruptcy and on reorganisation and hence provide little evidence on the effect on economic growth of protecting the non-investor retail financial consumer.

Studies that focus on FCP in retail financial services are however few. As noted by Ardic *et al.* (2011, p. 3), “the literature on the broad topic of consumer protection is abundant, yet, there are only a handful of comprehensive studies on the topic of consumer protection in financial services”. Most of the existing research are conducted in collaboration with global agencies such as the World Bank, Consumer International or CGAP with a focus on increasing financial inclusion, financial education or consumer protection (Selvakumar and Sathyalakshmi, 2015). Accordingly, the existing studies tend to focus on documenting regulatory practices around the world, evaluating the effectiveness of existing consumer protection legislation or making policy recommendations aimed at enhancing consumer protection mechanisms.

Amongst these studies is that of Ardic *et al.* (2011) who surveyed and analysed financial consumer protection regulations of 142 economies in consultation with CGAP and the World Bank. Their findings indicate that consumer protection legislation is in place in the majority of countries, however, these do not necessarily address consumer protection issues specific to financial services. Moreover, enforcement power and monitoring ability of supervisors are limited. Brey *et al.* (2016) develop a consumer protection framework, against which the Southern African Development Community (SADC) member countries will be able to measure and compare the effectiveness of their consumer protection policies and regulations.

Similarly, Rutledge (2010) examines FCP and financial literacy regulation in bank and non-bank credit institutions of nine middle-income countries in Europe and Central Asia, with the aim of establishing a framework for reviewing FCP and financial literacy in emerging economies. The study suggests, *inter alia*, that financial consumers should be given accurate and simple information about a financial service or product before they buy as well as access to financial education and recourse mechanisms. Furthermore, financial institutions should be required to apply fair, non-coercive and reasonable practices when selling and advertising financial products and services to consumers, and personal data of financial consumers should be carefully protected. Supporting this view, Brix and McKee (2010) who examined FCP in low access environments suggest that disclosing loan terms to customers can help reduce borrowing costs. They advised that, plain language should be used in disclosures and complex computation methods should be avoided.

Dias and Mckee (2010) highlight the importance of financial education and capability in financial consumer protection. Based on insights from studying the regulatory and institutional set-up for FCP in four countries, Brazil, India, Kenya and Peru, as well as the experience of countries, such as the Philippines, South Africa, Russia, Colombia and Mexico, and recent consumer experience research, they noted that sometimes consumer protection problems are rooted in consumers' lack of understanding, knowledge and awareness, with regard to financial services and redress mechanisms. Hence, regulation and supervision *per se* are not sufficient to deal with all consumer protection problems. Regulation and supervision supplemented with capability and increased awareness can play an important role in reducing risks for consumers and increasing effectiveness of regulatory action.

Other studies evaluate the impact of existing financial consumer legislation. For instance, US GAO (2006) reviewed regulations on disclosure of rates and fees in the USA and concluded that disclosure forms were complicated and contained conflicting information. In Cordell and Lambie-Hanson (2016), the mortgage credit regulation, which sought to lengthen foreclosure timelines over the course of the mortgage crisis period, was examined. The authors were particularly interested in the impact of the judicial review process allowed under the regulation to give consumers enough time to recuperate after being delinquent on their mortgage, before lenders start the foreclosure process. The study found no supporting evidence that the objective of enabling borrowers to recuperate or receive mortgage modification was achieved. Additionally, the study examined the CFPB's rule, which prohibits foreclosure until after 120 days. While this rule was found to extend foreclosure timelines, it did not bring about offsetting benefits. In sum, their findings provided the evidence of negative consequences of some foreclosure rules, which required a review.

Elliehausen (2010) assesses the evidence on behavioural influences affecting consumers' credit decisions. The evidence reviewed suggests that consumers often do not consider all information available in the market nor deliberately evaluate each alternative. Consumers simplify, take shortcuts and use heuristics, which may not always be optimal but nevertheless may be an economical means for achieving desired goals. Accordingly, Barr *et al.* (2008), who examined disclosures to mortgage borrowers in the USA advice that due to behavioural tendencies, even well established and efficient disclosures may not be sufficient, hence regulations need to be behaviourally informed and not based solely on rational choice and competition assumption.

The literature review indicates that while literature on FCP is burgeoning, a lot remains to be done to establish the link between FCP and economic growth.

3. Methodology

3.1 Data

This study used cross-country data on 114 countries surveyed in the World Bank Global Survey on FCP and Financial Literacy, 2013. The survey sought to assess the state of FCP regulations in the countries surveyed. The list of countries used is presented in Table AI.

3.2 Variables

The dependant variable, economic growth, is measured as GDP growth rate (annual per cent) and growth in GDP per capita. Our main explanatory variable, FCP, is proxied by indicators of key areas of FCP identified by the World Bank Good Practices for FCP, namely, responsible lending, compliance monitoring, enforcement, fair treatment, disclosure and dispute resolution and recourse. For each area, we use the most commonly used regulation in the countries surveyed in 2013 as set out in Table AII. Disclosure regulations have three indicators for general, deposit and credits products, respectively. As conditional variables, we use the ratio of domestic credit to private sector as a percentage of GDP (as a proxy for financial development), gross fixed capital formation (GFCF) growth

(annual per cent) (to proxy for the level of investment) and secondary school enrolment (to proxy for human capital development). Domestic credit to the private sector is considered crucial for economic growth. Schumpeter (1912) posits that investment, financed mainly by domestic credit, is the origin of economic growth. Hence, we hypothesise a positive relation between domestic credit provided to the private sector and economic growth. Human capital is also seen as a crucial driver of economic growth. Several theories and empirical evidence link improvements in labour to innovation and increased output (Romer, 1990; Bodman and Le, 2013; Teixeira and Queirós, 2016). Consequently, we hypothesise a positive relationship between gross secondary school enrolment ratio and economic growth. Similarly, there is a direct relationship between investment and economic growth. Neoclassical and endogenous growth models demonstrate that, holding all others constant, the higher the investment ratio the higher the rate of growth (Mankiw *et al.*, 1992; Barro, 2003). Accordingly, we hypothesise a positive link between GFCF growth and economic growth. These variables and data source are presented in Table AIII.

3.3 Model specification

Following cross-country growth models, the link between FCP and economic growth can be deduced from a typical production function as follows:

$$Y_i = a_0 + a_1X_i + a_2Z_i + \varepsilon_i, \quad (1)$$

where Y_i denotes economic growth, X_i denotes typical variables in the production function such as investment (capital accumulation), labour (population) and other covariates that can affect growth and Z_i denotes FCP measured by a dummy variable so that the outcome is observable when $Z_i = 1$ and when $Z_i = 0$. If the treatment is randomly assigned, the model can be estimated using OLS. However, where the treatment is not randomly assigned (as in our case where countries choose to issue FCP or not and hence endogenously self-select into the treatment and non-treatment groups of having FCP or not), the dummy treatment Z_i will be correlated with the error term ε_i , i.e. $E(\varepsilon_i | Z_i) \neq 0$, giving rise to endogeneity as a result of self-selection and violating the exogeneity assumption underlying the use of OLS, namely, the error term has an expected value of 0 given any explanatory variable (Wooldridge, 2013). Consequently, as suggested by Clougherty *et al.* (2016) and Wooldridge (2013) we use endogenous treatment regressions.

Following the approach of Heckman (1978), we estimate an outcome (Equation (2)) and an equation for the endogenous treatment (Equation (3)), modelling the existence of FCP regulation as the outcome of an unobserved latent variable t_j^* which is a function of exogenous covariates, w_j and a random component u_j (Equation (4)), as done in the literature (see Ayyagari *et al.*, 2010) as follows:

$$Y_j = X_j\beta + \partial t_j + \varepsilon_j, \quad (2)$$

$$t_j = \begin{cases} 1 & \text{if } t_j^* > 0 \\ 0 & \text{otherwise} \end{cases}, \quad (3)$$

$$t_j^* = w_j\gamma + u_j. \quad (4)$$

In the outcome Equation (2), Y_j denotes economic growth; X_j denotes control variable; t_j is our binary treatment variable, FCP; ∂ and β are the coefficients of the binary treatment variable and controls, respectively. ∂ represents the effect of FCP on economic growth, known as the average treatment effect (ATE), given by the difference between economic

growth of countries with FCP regimes and those without as follows:

$$ATE = E(Y_{i1}|FCP_i = 1) - E(Y_{i0}|FCP_i = 0), \tag{5}$$

where Y_{i1} is economic growth of countries with FCP and Y_{i0} is the economic growth of countries without FCP.

In the treatment Equation (3) Y , is the coefficient of w_j which denotes the exogenous covariates used to model the treatment assignment, i.e. whether a country has FCP regulations or not. ε_j and u_j in Equations (2) and (4) are the error terms assumed to be bivariate normal and exogenous, with a mean zero and a covariance matrix:

$$\begin{bmatrix} \sigma^2 & \rho^\sigma \\ \rho^\sigma & 1 \end{bmatrix}.$$

The covariates X_j and w_j are also assumed to be unrelated to the error terms, i.e. exogenous.

To obtain the parameters β and ∂ , we estimate the outcome and treatment equations using Maddala's (1983) two-step approach. Accordingly, in the first stage, probit estimates of the treatment Equation (1) are obtained as follows:

$$Pr(Z_j = 1 | W_j) = \Phi w_j y, \tag{6}$$

$$Pr(Z_j = 0 | W_j) = 1 - \Phi w_j y. \tag{7}$$

From this, the hazard h_j , a measure of whether the outcome and treatment equations are correlated, is computed for each observation j as follows:

$$h_j = \begin{cases} \varphi(w_j y) / \Phi(w_j y) & t_j = 1 \\ -\varphi(w_j y) / (1 - \Phi(w_j y)) & t_j = 0 \end{cases}, \tag{8}$$

where φ is the standard normal density function and Φ is the cumulative standard normal density function.

The hazard h_j is then used to augment the outcome Equation (2) to correct for the selection bias problem and to obtain the parameters β and ∂ . The coefficient of the hazard indicates whether the selection and outcome equations are correlated and hence tests the null hypothesis – $H_0: \rho\epsilon\mu = 0$. Once the hazard λ is significant, we reject the null hypothesis, indicating that, the outcome and selection equations are correlated hence using the treatment effects model is appropriate.

To aid identification of the selection process, we include supervisory responsibility for financial education in the selection equation as an instrument (exclusion criterion) (Maddala, 1983). The validity of our instrument is established in that it is relevant, because it is correlated with the endogenous variable t_j but exogenous, because it is uncorrelated with the source of endogeneity of t_j Clougherty *et al.* (2016).

As explained by Clougherty *et al.* (2016), supposing in Equation (4), w_j which denotes the covariates used to model t_j^* , consist of w_{j1} , w_{j2} , w_{j3} , all independently normally distributed with known mean and variance, and w_{j1} denotes 'supervisory responsibility for financial education':

$$t_j^* = \gamma_1 w_{j1} + \gamma_2 w_{j2} + \gamma_3 w_{j3} + u_j.$$

Assuming that w_{j2} and w_{j3} are also covariates of Y_j , but w_{j3} is unobservable in Equation (2) as follows:

$$Y_j = \beta_0 + \beta_1 x_{j1} + \beta_2 w_{j2} + \beta_4 t_j + \varepsilon_j,$$

then w_{j3} will be correlated to t_j , our binary treatment variable in Equation (2). However, since w_{j3} is unobservable in Equation (2), it will be subsumed in the error term ε_j of Equation (2). Consequently, t_j will be correlated with the error term and $E(\varepsilon_j t_j) \neq 0$, making t_j endogenous. This indicates that w_{j3} is the source of endogeneity of t_j . The other covariate used to model t_j^* (i.e. w_{j1}) can serve as a valid instrument of t_j because it will also be correlated with t_j making it relevant but unlike w_{j2} it will be exogenous, i.e. uncorrelated with w_{j3} , the source of the endogeneity of t_j , i.e. $E(\varepsilon_j w_{j1}) = 0$.

3.4 Choice of instrument (exclusion criterion)

In searching for an instrument for FCP as an exclusion criterion for the selection process, we examined the legal institutions and economics growth literature. Studies that examine the impact of institutions on economic growth have used various instruments for legal institutions, including the latitude and share of the population that speak a western language (see Hall and Jones, 1999), log of settler mortality rate (see Acemoglu *et al.*, 2001), legal tradition or origin (Berggren and Jordahl, 2006; Faria and Montesinos, 2009), identity of coloniser and settlement conditions, proxied by indigenous population density (Bennett *et al.*, 2017). We use supervisory responsibility for financial education as our instrument for FCP. The intuition is that financial literacy enhances consumer protection in that, all other things being equal, financially literate consumers will be more informed and capable of evaluating product offers and hence are less susceptible to unfair treatment and obfuscation as they are equipped to make informed judgement about their finances (World Bank, 2014a). Evidence from the US mortgage market suggests that well-educated consumers are less likely to make mistakes (see Van Order *et al.*, 2007). The World Bank Global Financial Development Report (2014) also indicates that there is a higher tendency for financial institutions to target risky and costly products at financial consumers who are less well educated and hence more prone to making mistakes in choosing financial products. Hence, in an environment where there is a deliberate policy for financial education, we expect that FCP will be enhanced, which will in turn enhance economic growth.

4. Discussion of results

Descriptive statistics and a correlation matrix are presented in Tables I and II. Table I shows that the average percentage of annual GDP growth in 2013 for countries in our sample is 4 per cent. The growth of GDP per capita was a bit lower, at 2 per cent. Growth in fixed capital formation was also 3.62 per cent. On the average domestic credit to private sector as a percentage of GDP was 21.62 per cent and the gross percentage of secondary school enrolment was 90.83. Table I further shows the most commonly used enforcement, fair treatment, responsible lending, disclosure, compliance monitoring, dispute resolution and recourse regulations in the countries surveyed in 2013. The most common fair treatment regulation is the issue warnings – 68 per cent of the countries surveyed have this regulation. The correlation matrix presented in Table II shows that GDP per capita growth and annual GDP growth is positively correlated with domestic credit to private sector/GDP (DC) and the ratio of GFCF/GDP, but negatively correlated with secondary school enrolment. Correlations between GDP per capita growth and annual GDP growth and our indicators of FCP are however mixed. Overall, the correlations indicate no likelihood of multicollinearity.

Endogenous treatment regression results on the effect of FCP on economic growth are presented in Tables III and IV. In Table III economic growth is measured as the annual GDP growth rate, and in Table IV economic growth is measured as growth in GDP per capita. The results indicate that the effect of FCP on economic growth is mixed. While we find enforcement, fair treatment, responsible lending and dispute resolution regulations to be positively associated with economic growth, we find no evidence to suggest that disclosure

Variable	Obs.	% of countries using	Mean	SD	Min.	Max.
<i>Dependent variable</i>						
GDP growth (annual %) (GDPA)	111		3.56	2.96	-3.24	14.04
GDP per capita growth (GDPC)	111		2.26	2.68	-4.36	12.51
<i>Explanatory variables</i>						
Compliance monitoring regulations						
On-site inspection (ONI)	113	69	0.70	0.46	0	1
Enforcement regulations						
Issue warnings (IW)	113	68	0.68	0.47	0	1
Responsible lending regulations						
Specify elements (RL)	113	79	0.71	0.46	0	1
Fair treatment regulations						
Unauthorised data use (UD)	113	80	0.81	0.40	0	1
Dispute resolution regulations						
Establish complaint procedures (PP)	113	73	0.74	0.44	0	1
Disclosure regulations						
Use plain language (PL)	113	65	0.66	0.48	0	1
Disclose fees and penalties (FP)	113	74	0.74	0.44	0	1
Compute with standard formula (CM)	113	77	0.78	0.42	0	1
<i>Conditioning variables</i>						
Gross fixed capital formation (GFCF)	108		3.62	9.78	-24.54	54.52
Domestic credit to private sector/GDP (DC)	108		21.62	11.00	-21.82	51.07
Secondary school enrolment (SCH)	87		90.83	26.39	16.67	160.9

Notes: GDPA, GDP growth (annual %); GDPC, GDP per capita growth ONI, on-site inspection; IW, warnings issued; RL, specify responsible lending elements; UD, unauthorised use of client data; CP, establish complaint procedure and processes; PL, use plain language; FP, disclose fees and penalties; CM, compute APR using standard formula; DC, domestic credit to private sector/GDP; GFCF, gross fixed capital formation; SCH, secondary school enrolment

Table I.
Summary statistics

and compliance monitoring regulations have any impact on economic growth. As shown in Model (1) of Table III, the estimated treatment effect of having fair treatment regulations that prohibit unauthorised use of client data is 7.5. This result indicates that, on the average, countries with these regulations grew approximately 8 per cent higher than those without the regulations.

The results also show that our instrument was positive and significant in the first stage probit regression with a coefficient of 0.240. The hazard λ is also significant indicating that the selection and outcome equations are not independent, hence there is selection bias. The use of treatment effects regressions is thus appropriate and avoids biased results. The Wald χ^2 tests the goodness of fit of the model. Once it is significant, the covariates used in the model have an effect not equal to zero. The negative sign of the ρ , which measures the correlation between the errors of the selection and outcome equation, indicates that the unobservables that depress fair treatment regulations do not occur with unobservables that enhance economic growth. This is consistent with our finding that the existence of fair treatment regulations is positively associated with economic growth.

These results are not surprising given that a breach of these regulations tends to affect consumer confidence and the stability of the financial system as a whole, as shown in the 2007–2008 financial crisis (Ardic *et al.*, 2011). One of the key determining factors identified as contributing to the crisis, especially in the mortgage market, was unfair treatment by financial providers. Unfair treatment by providers stalls competition and has far reaching consequences for trust and stability in the financial system and economic growth. Restricting unauthorised use of client data instills trust and ensures stability in the financial

Table II.
Correlation matrix

	GDPA	GDPC	SCH	GFCF	DC	PP	ONI	IW	RL	UD	CM	PL	FP
GDPA	1												
GDPC	0.8773*	1											
SCH	-0.4818*	-0.1999	1										
GFCF	0.4018*	0.2482*	-0.4330*	1									
DC	0.0606	0.0573	0.2094	0.0836	1								
PP	-0.11665	-0.0103	0.4989*	-0.2142*	0.2987*	1							
ONI	-0.11592	-0.0902	0.2330*	-0.0214	0.1003	0.3047*	1						
IW	0.0528	0.0684	-0.0856	0.1342	0.0491	0.1362	0.3263*	1					
RL	-0.11608	-0.0599	0.2758*	-0.1687	0.1591	0.4953*	0.2576*	-0.0414	1				
UD	-0.2874*	-0.1606	0.4731*	-0.2672*	0.2479*	0.5648*	0.2135*	-0.0317	0.3723*	1			
CM	-0.1707	-0.0261	0.2949*	-0.146	0.1528	0.3407*	0.1805	0.0063	0.3170*	0.3176*	1		
PL	-0.0644	0.0114	0.2842*	0.0612	0.2460*	0.3476*	0.1836	0.2026*	0.2038*	0.4245*	0.2716*	1	
FP	-0.3000*	-0.162	0.3325*	-0.1429	0.1748	0.3193*	0.2839*	0.2395*	0.2312*	0.3172*	0.2251*	0.0413	1

Notes: GDPA, GDP growth (annual %); GDPA, GDP per capita growth; SCH, secondary school enrolment (gross %); GFCF, gross fixed capital formation; DC, domestic credit to private sector/GDP; PP, procedure and processes; ONI, on-site inspection; IW, warnings issued; RL, specify responsible lending elements; UD, unauthorised use of client data; CM, computation method; PL, use plain language; FP, disclose fees and penalties. *Significant at 5 per cent level

Variable	Dependant variable: GDP growth (annual %)							
	GDP (1)	GDP (2)	GDP (3)	GDP (4)	GDP (5)	GDP (6a)	GDP (6b)	GDP (6c)
Constant	-1.366 (2.945)	-0.848 (2.196)	-0.939 (2.118)	-1.612 (2.650)	0.566 (1.624)	2.201 (3.153)	-0.437 (2.222)	0.994 (2.560)
GFCF	0.0993* (0.0589)	0.0819* (0.0426)	0.122*** (0.0448)	0.139** (0.0551)	0.118*** (0.0360)	0.0056 (0.110)	0.148** (0.0594)	0.123 (0.0859)
SCH	-0.0285 (0.0294)	0.0038 (0.0168)	-0.0190 (0.0178)	-0.0448 (0.0296)	-0.0230 (0.0160)	-0.0521 (0.0526)	-0.0242 (0.0222)	-0.0409 (0.0917)
DC	0.0159 (0.0465)	0.0155 (0.0331)	0.0217 (0.0335)	0.0319 (0.0388)	0.0021 (0.0292)	-0.0193 (0.0713)	0.0371 (0.0368)	0.0103 (0.0657)
EA2	3.844*** (1.372)	3.494*** (1.094)	3.681*** (1.053)	3.765*** (1.293)	3.949*** (1.042)	3.796*** (1.706)	3.348*** (1.062)	2.997*** (1.303)
EA3	2.843*** (1.030)	2.746*** (0.799)	2.825*** (0.811)	2.646*** (1.066)	2.737*** (0.770)	3.036*** (1.228)	2.666*** (0.743)	2.640*** (0.950)
EA4	1.556* (0.0993)*	1.469** (0.589)	1.539** (0.640)	1.295 (0.813)	1.439** (0.594)	1.750* (0.950)	1.422** (0.596)	1.580** (0.720)
ONI	7.008 (5.120)							
IW		3.712* (2.234)						
RL			4.612** (2.350)					
UD				7.524* (3.952)				
PP					3.631** (1.545)			
PL						8.610 (7.886)		
FP							5.660 (4.000)	
CM								6.767 (17.42)
ρ	-1.0000	-0.8858	-1.0000	-1.0000	-0.8589	-1.0000	-1.0000	-1.0000
Σ	3.8488	2.7133	2.8108	3.258	2.2572	4.6647	3.0772	3.8013
Hazard λ .	-4.545	-2.403*	-3.004**	-4.473**	-1.939**	-5.558	-3.086	-4.178
Wald χ^2	28.07***	48.00***	47.14***	44.44***	44.50***	25.51***	43.77***	31.22***
Instrument	0.136	0.200**	0.240***	0.0789	0.371***	0.0929	0.124	-0.0042
Observation	84	84	84	84	84	84	84	84

Notes: GDP, GDP growth (annual %); ONI, on-site inspection; IW, warnings issued; RE, specify responsible lending elements; UD, unauthorised use of client data; PP, procedure and processes; PL, use plain language; FP, disclose fees and penalties; CM, compute APR using standard formula; SCH, school enrolment; DC, domestic credit to private sector/GDP; GFC, gross fixed capital formation (% growth). Robust standard errors in parentheses; the Wald χ^2 tests the goodness of fit of the model - p less than 0.0001. Once it is significant, the covariates used in the model have an effect that is not equal to zero. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table III.
Endogenous treatment
regression results-
FCP regulations and
economic growth

Table IV.
Endogenous treatment
regression results-
FCP regulations and
economic growth

Variables	Dependant variable: GDP per capita growth						
	GDP (1)	GDP (2)	GDP (3)	GDP (4)	GDP (5)	GDP (6)	GDP (6c)
Constant	-5.504 (3.532)	-4.779** (2.359)	-5.094** (2.453)	-6.243* (3.353)	-3.278* (1.777)	-1.082 (3.623)	-2.673 (3.012)
GFCF	0.0534 (0.0706)	0.0318 (0.0467)	0.0825 (0.0518)	0.108 (0.0698)	0.0804* (0.0411)	-0.0575 (0.126)	0.0836 (0.101)
SCH	-0.0055 (0.0352)	0.0356** (0.0181)	0.0071 (0.0206)	-0.0301 (0.0375)	-0.0010 (0.0179)	-0.0306 (0.0605)	-0.0203 (0.108)
DC	-0.0053 (0.0557)	-0.0048 (0.0363)	0.0019 (0.0388)	0.0158 (0.0491)	-0.0276 (0.0332)	-0.0454 (0.0819)	-0.0121 (0.0773)
EA2	4.292*** (1.646)	3.855*** (1.135)	4.192*** (1.219)	4.344*** (1.636)	4.649*** (1.085)	4.206** (1.960)	3.349** (1.532)
EA3	3.164** (1.235)	3.066*** (0.827)	3.173*** (0.939)	2.957** (1.348)	3.115*** (0.819)	3.397** (1.411)	3.012*** (1.117)
EA4	1.694* (0.978)	1.629*** (0.606)	1.691** (0.741)	1.361 (1.028)	1.544** (0.642)	1.940* (1.091)	1.750** (0.847)
ONI	8.967 (6.139)						
IW		4.544* (2.450)					
RL			5.994** (2.721)				
UD				10.47** (4.999)			
PP					5.326*** (1.737)		
PL						10.15 (9.062)	
FP							7.124 (4.841)
CM							8.714 (20.50)
ρ	-1.0000	-0.8402	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000
Σ	4.6151	8.9383	3.2544	4.122	2.5821	5.3605	4.4721
Hazard λ	-5.702	-2.821*	-3.829**	-6.219**	-2.922***	-6.521	-5.130
Wald χ^2	14.78	27.77***	24.50***	26.21***	44.48***	16.93*	18.08*
Instrument	0.136	0.200**	0.240***	0.0789	0.371***	0.0929	-0.0042
Observations	84	84	84	84	84	84	84

Notes: GDP, GDP per capita growth; ONI, on-site inspection; IW, warnings issued; RE, specify responsible lending elements; UD, unauthorised use of client data; PP, procedure and processes for redress; PL, use plain language; FP, disclose fees and penalties; CM, compute APR using standard formula; SCH, secondary school enrolment (gross %); DC, domestic credit to private sector/GDP; GFCF, gross fixed capital formation (% growth). Robust standard errors are in parentheses. The Wald χ^2 tests the goodness of fit of the model - p less than 0.0001. Once it is significant the covariates used in the model have an effect that is not equal to zero. * $p < 0$; ** $p < 0.05$; *** $p < 0.01$

system (World Bank, 2012, 2013). These results are also supported by the market failure arguments for regulating financial markets which indicate that the existence of fair treatment regulations limits the ability of providers to capitalise on lapses created by market imperfections such as information asymmetry to make profits. The existence of these regulations forces providers to innovate and produce more efficiently to survive with positive consequences for economic growth (Campbell *et al.*, 2011).

Model (2) suggests that countries that issue warnings to enforce FCP have approximately 4 per cent higher economic growth than those that do not. This result is understandable given that enforcement enhances the effectiveness of FCP regulations with the attendant benefits of improving access, stability, innovation and efficiency. Similar to Model (1), the results indicate the existence of self-selection bias. Accordingly, we can rely on our treatment effects results.

Similarly, in Model (3) countries with regulations that define the elements of responsible lending practices have approximately 5 per cent higher economic growth than those without. This outcome can be attributed to the effect of these regulations on asset quality and stability of the financial system as a whole. Irresponsible lending results in huge non-performing loans which threaten bank solvency and confidence in the financial system, as seen in the 2008 US financial crisis, which affects financial intermediation and hence economic growth. In an environment where regulations specify elements of responsible lending, such as the establishment of explicit policies on over-indebtedness and defined borrowing limits (such as specifying loan to income ratios), there is reduced likelihood of irresponsible lending and its attendant negative consequences on the stability of the financial system and hence economic growth.

Again, in Model (4) countries having regulations that require financial institutions to establish procedures and processes for resolving customer complaints experience approximately 4 per cent higher economic growth than those without. This positive linkage between dispute resolution mechanisms and economic growth is attributed to the role of these mechanisms in savings mobilisation and investment. It is argued that making consumers aware of avenues for redress and ensuring timely redress of consumer complaints add to customer confidence and trust in the financial system and make consumers more willing to enter financial markets, which makes it easier to mobilise savings for the investment required for economic growth (World Bank, 2014a).

In Model (5), however, we find no sufficient evidence to suggest that countries that have on-site inspection regulations as a compliance monitoring tool have higher growth in annual GDP than those without. Our hazard λ is however insignificant, signifying the absence of self-selection bias. Accordingly, we run OLS regressions since that will produce results that are more efficient in the absence of self-selection bias. Our OLS results however, confirmed the insignificant relationship between compliance monitoring regulations and economic growth.

These results are consistent with recent reports (see CGAP, 2010; World Bank, 2012, 2013) which suggest that, in several economies, these on-site inspections to establish compliance with FCP regulations is subsumed under the umbrella of the customary inspection of financial institutions with supervisors only required to document violations or to act only on violations that also threaten financial stability. Intuitively, under such circumstances these regulations can hardly achieve the expected gains in terms of promoting competition, stability and innovation. It is thus not surprising that the existence of these regulations appear irrelevant for economic growth.

In Models (6a), (6b) and (6c) we find no evidence to suggest that countries with disclosure regulations experience higher economic growth than those without. However, given the absence of selection bias as indicated by the insignificant hazard λ , we re-estimate the regression using OLS. The OLS results however reach the same conclusion. These results are contrary to market failure arguments which suggest that financial consumers need information to make optimal choices. The use of plain language and disclosure of fees and

penalties for instance ensures that consumers understand the terms, rights and obligations underpinning financial contracts and enables them to make optimal decisions that enhance their welfare.

The results are however in line with behavioural law and economics theory and empirical evidence, which suggest that consumers hardly understand interest rates or their computation so that disclosures on fees and penalties and computation method are irrelevant to them. Bar-Gill and Warren (2008) and Thaler and Sunstein (2008) for instance argue that, due to cognitive bias, disclosures are not helpful for financial consumers. Furthermore, Elliehausen (2010) and Porteous (2009) suggest that most financial consumers do not bother to read these disclosures. Even where relevant information is disclosed, they tend to use heuristics in making complex financial decisions.

Hence overall, our findings suggest that having enforcement, fair treatment, responsible lending and dispute resolution regulations are associated with higher annual percentage growth in GDP. We, however, find no evidence to suggest that disclosure and compliance monitoring regulations are associated with economic growth. These results are robust for different measure of economic growth as shown in Table IV, where economic growth is measured as growth in GDP per capita. Our findings should be interpreted with care. It is important to note that, due to the cross-sectional nature of our data, we are only able to establish associations rather than causality.

We find that gross fixed capital formation is significantly positively related to economic growth where economic growth is measured as annual percentage growth in GDP (see Table III). Gross fixed capital formation maintains its positive effect on economic growth measured as growth in GDP per capita but is significant only where complaint procedures are included as an explanatory variable in our regression (see Column 5 of Table IV). Financial development is positively related to annual percentage growth in GDP (see Table III) but has a mixed effect on growth in GDP per capita (Table IV). Human capital development has a significantly positive effect in our model only where economic growth is measured as growth in GDP per capita and the issue of warnings (see Column 2 of Table IV) is included as an explanatory variable in our regression.

5. Conclusions

This study examined the link between FCP and economic growth. Our indicators of FCP are based on key areas identified by the World Bank Good Practices for Financial Consumer Protection (2012) and the G20 High-Level Principles on FCP (2011), namely, fair treatment, responsible lending, compliance monitoring, enforcement, dispute resolution and recourse and disclosure. We use the GDP per capita growth and annual percentage growth in GDP as measures of economic growth, controlling for human capital development, financial development and investment. Taking into account the possibility of self-selection bias in our sample, we adopted endogenous treatment regressions with supervisory responsibility for financial education as an instrument for identification of the selection process. We find that having enforcement, fair treatment, responsible lending and dispute resolution regulations is respectively associated with approximately 5, 6, 10 and 5 per cent higher growth in GDP per capita. However, we find no evidence to suggest that disclosure and compliance monitoring regulations are associated with economic growth.

These findings have important policy implications. In the first place they highlight the importance of protecting the non-investor retail financial consumer to economic growth and hence provide an impetus for countries to continue their stride towards establishing effective consumer protection regimes to enhance economic growth. Second, it provides guidance in any incremental effort in establishing FCP regimes for enhanced economic growth. Our findings suggest that policies to foster fair treatment, responsible lending and the provision of dispute resolution and recourse avenues could be instituted to leverage economic growth.

Third, our findings highlight that the existence of compliance monitoring regulations *per se* may not have any impact on economic growth. While we did not investigate why these regulations had no impact, the extant literature suggests that to be effective compliance monitoring regulations need to be backed up with adequate resources and authority. Accordingly, we recommend that besides instituting FCP regimes, policy makers need to ensure they provide adequate resources and empower supervisory authorities.

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Albania	Dominican Republic	Lebanon	Russian Federation
Algeria	Ecuador	Lithuania	Saudi Arabia
Argentina	El Salvador	Luxembourg	Senegal
Armenia	Estonia	Macedonia, FYR	Serbia
Australia	Finland	Madagascar	Slovak Republic
Austria	France	Malawi	Slovenia
Azerbaijan	The Gambia	Malaysia	South Africa
Bangladesh	Georgia	Mali	Spain
Belarus	Germany	Mauritius	Sri Lanka
Belgium	Greece	Mexico	Sudan
Benin	Guatemala	Moldova	Swaziland
Bolivia	Guinea-Bissau	Mongolia	Switzerland
Bosnia and Herzegovina	Guyana	Morocco	Taiwan, China
Botswana	Honduras	Namibia	Tajikistan
Brazil	Hong Kong SAR, China	Nepal	Tanzania
Bulgaria	Hungary	The Netherlands	Thailand
Burkina Faso	Iceland	Nicaragua	Togo
Burundi	Indonesia	Niger	Turkey
Cabo Verde	Iran, Islamic Rep.	Nigeria	Uganda
Canada	Ireland	Norway	Ukraine
Chile	Israel	Oman	United Arab Emirates
China	Italy	Pakistan	UK
Colombia	Jamaica	Panama	USA
Congo, Dem. Rep.	Japan	Paraguay	Uruguay
Costa Rica	Kazakhstan	Peru	Venezuela, RB
Côte d'Ivoire	Kenya	Philippines	Zambia
Croatia	Korea, Rep.	Poland	
Czech Republic	Kyrgyz Republic	Portugal	
Denmark	Latvia	Romania	

Table AI.
List of countries used
in the study

Appendix 2

Table AII.
Indicators of financial
consumer protection
and data source

Description of indicators	Data source
CMI Compliance monitoring indicators on-site inspection	World bank survey on financial consumer protection and financial literacy (2013)
EI Enforcement indicators warnings issued	
DRI Dispute resolution and recourse indicators Law requires FIs to implement procedures and processes for resolving customer complaints	
IFT Indicators of fair treatment Law restricts unauthorised use of client data or breach of client confidentiality	
DI Disclosure indicators General disclosures at account opening (1) Plain language Deposit disclosures at account opening (1) Fees and penalties Credit disclosures at account opening (1) APR using standard formula	
RLI Responsible lending indicators Law defines elements of responsible lending practices	

Appendix 3

Table AIII.
Dependent and
explanatory variables
and data source

Variable	Description	Source of data
<i>Dependent variable</i>		
Economic growth	GDP growth rate (annual %) Growth in GDP per capita	WDI
<i>Explanatory variables</i>		
FCP	Financial consumer protection	Global Survey on Financial Consumer Protection and Financial Literacy 2013
<i>Conditioning variables</i>		
Investment		
GFCF	Gross fixed capital formation growth /GDP	WDI
Financial development		
DC	Domestic credit/GDP	WDI
Human capital development		
SCH	Secondary school enrolment (gross%)	WDI

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