CEO duality and firm performance

------Do macroeconomic factors matter?

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Abstract

This paper reviewed previous empirical evidence regarding the relationship between CEO duality and firm performance. It summarizes various moderators and concludes that whether board leadership structure enhances or lowers firm performance depends on the contingency factors. Further it examines the influence of macroeconomic factors to the relationship between CEO duality and firm performance, such as rule of law, developing stage of economy, financial reform and bank crisis. The results reveal that companies in developed economies or in a period with bank crisis exhibits positive relationship between CEO duality and firm performance. In countries with financial reforms going on, while it's easier for companies to get financial support from the banks, there is a negative relationship between CEO duality and firm performance. The paper identified various moderating macroeconomic factors to the relationship between CEO duality and firm performance and adds original contribution to literature.

Keywords: Corporate Governance, CEO Duality, Firm Performance, Meta-analysis

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Introduction

This paper reviewed previous empirical evidence regarding the relationship between CEO duality and firm performance. It summarizes various moderators and concludes that whether board leadership structure enhances or lowers firm performance depends on the contingency factors. Further it examines the influence of macroeconomic factors to the relationship between CEO duality and firm performance, such as rule of law, developing stage of economy, financial reform and bank crisis. The results reveal that companies in developed economies or in a period with bank crisis exhibits positive relationship between CEO duality and firm performance. In countries with financial reforms going on, while it's easier for companies to get financial support from the banks, there is a negative relationship between CEO duality and firm performance. The paper identified various moderating macroeconomic factors to the relationship between CEO duality and firm performance and adds original contribution to literature.

Theoretical framework

Jensen and Meckling (1976) investigated the nature of the agency costs and showed its relationship to the 'separation of ownership and control' issue. Agency theory believes that duality promotes CEO entrenchment by reducing board monitoring effectiveness. Agency theory indicates that CEO duality has negative implication to firm performance (Mallette and Fowler, 1992). Stewardship theorists assume that managers are good stewards of the company. They are trustworthy and work diligently to attain high levels of corporate profit and shareholders' returns (Donaldson and Davis, 1994). Stewardship theorists argue, that one person in both roles may improve firm performance as such a structure removes any internal and external ambiguity regarding responsibility for firm processes and outcomes (Finkelstein and D'Aveni, 1994). There

is evidence in support of stewardship theory (e.g. Donaldson and Davis, 1991) and agency theory (e.g. Worrell *et al*. 1997), along with a body of research that finds no impact of leadership structure on firm performance (e.g. Daily and Dalton, 1992, 1993; Rechner and Dalton, 1989). Finkelstein and D'Aveni (1994) proposed contingency model and suggests independent board structure is beneficial when the firm has been experiencing strong financial performance, and there is increased potential for entrenchment.

Literature Review

A movement to separate the positions of CEO and board chairperson has received considerable attention in recent years, especially from board reform critics (Committee on the Financial Aspects of Corporate Governance, 1992; Monks and Minow, 2004)

The academic community, too, has developed recommendations concerning the board leadership structure. This discussion has yielded considerably less consensus than that found among activist shareholder groups. Empirical evidence on CEO duality with firm performance showed mixed results (Dalton *et al*., 1998; Rhoades *et al.,* 2001; Kang and Zardkoohi, 2005).

Zahra and Pearce (1989) reviewed 22 empirical studies on the impact of boards of directors on firm performance. They identified various contingency factors such as company size, ownership concentration, external environment etc. An integrative model of board attributes and roles is presented. The review identified critical shortcomings of past studies and offered an agenda for future studies.

Kang and Zardkoohi (2005) summarized 30 empirical studies between 1978 and 2003 on the duality-performance relationship. They identified five antecedents of CEO duality in the extant literature: institutional, power, social exchange reciprocity, reward and solution. Rewards and solution explanations describe the appropriate conditions for adopting duality with the potential to increase future firm performance while the institutional, power and social exchange reciprocity explanations describe the inappropriate conditions for adopting duality. Failure to adequately account for the appropriate and inappropriate conditions may account for the equivocal relationship between duality and firm performance for previous studies.

Finegold *et al.* (2007) reviewed 105 studies published between 1989 and 2005 regarding corporate boards and company performance. They evaluate the extent to which empirical research on corporate boards and firm performance support recent US corporate governance reforms. Where board characteristics have been studied, they found limited guidance for policymakers on identifying governance practices that result in more effective firm performance.

Neither of these reviews provided evidence of systematic relationship. Both concluded that the extant research produced mixed results. Readers would be more comfortable with conclusions drawn from a meta-analytic review as meta-analysis provides the ability to account for sampling error, reliability, and range restriction in the data from the studies on which the analysis relies. (Dalton *et al.,* 1998)

In a meta-analytic review of 31 empirical studies of board leadership structure and firm financial performance, Dalton *et al.* (1998) conclude that there is "little evidence of systematic

governance structure/financial performance relationships" (p.269). Rhoades *et al.* (2001) found support for a contingency perspective in a meta-analysis of 22 duality studies conducted between 1972–1996. The key finding of meta-analysis (Rhoades *et al.,* 2001) is that the decision context moderates the relationship between CEO duality and firm performance. Short *et al*. (2002) test the effects of sampling practices in the duality-performance relationship by conducting additional data analyses that address the issues of representativeness, sample size and types of samples. They found that from the Fortune 500 data there is a lack of association between CEO duality and performance. In contrast, data from the small, single business firms suggest a negative relationship between duality and performance. It appears that detection of the CEO duality-performance relation is shaped by sample characteristics.

Research implications

What other factors might moderate the costs and benefits associated with duality? Relevant research suggests that the international dimension may be an important element in the duality-performance relationship. In the USA, we saw that duality and performance were moderated by market characteristics. Under the conditions when the benefits of stewardship outweigh the costs of the agency model, there is a long-run positive return to having a combined CEO-chair. Ultimately, both agency and stewardship are models of organizational behaviour- dependent on characteristics such as styles, the likelihood of agency abuses may be greater or lower in one country than another, and the benefits of stewardship may also vary from one country to the other (Boyd *et al*., 1997).

Outside the company the external environment such as political, economic, societal, cultural norm and legal system will influence the decision of CEO either to choose an agent or a steward

relationship. Clear understanding of the characteristics of the manager and of the situation are essential to understanding manager-principal interest convergence. Davis *et al*. (1997) explored the psychological and situational mechanisms that motivate stewards to behave pro-organizationally. The psychological factors are motivation, identification and use of power. They propose that people who are motivated by higher order needs and intrinsic factors; have high identification with organization and are high in value commitment; who are more likely to use personal power as a basis for influencing others are more likely to become stewards in principal-steward relationship. For situational factors there are management philosophy, culture, and power distance. They propose that people who are in an involvement-oriented situation; in a collective culture or in a low power distance culture are more likely to develop principal-steward relationships. They admit there are conflicts among these factors. The above indicates that the macro and external environment will have an influence to the CEO about whether to choose agent or steward relationship.

Kwok (1998) is the first one to examine a wide range of moderating governance factors to the relations of CEO duality with firm performance. Boyd (1995) concludes that duality can have a positive effect on performance under certain industry conditions (i.e. resource scarcity or high complexity). In Elsayed (2007)'s study, he did empirical research on Egyptian listed firms. He found out that CEO duality has no impact on firm performance. But the impact of CEO duality on firm performance can vary across industries. In addition, when firms are categorised according to their financial performance, CEO duality attracts a positive and significant coefficient only when corporate performance is low.

In Zahra and Pearce (1989)'s study of boards of directors and corporate financial performance, from the legalistic approach model of the links between boards and company performance, the two board roles of service and control depends on two contingency factors: ownership concentration and firm size. From a resource dependence perspective, a board's performance of its role depends on three contingencies: external environment, company life cycle and the type of business. From agency theory perspective, two major contingencies determine a board's performance of its roles: concentration of ownership and the characteristics of the firm's external environment.

[Insert Table 1 here.]

The above table summarized previous studies which identified moderators regarding CEO duality with firm performance. Agency theory asserts that in companies with separation of ownership and control, there will be agency costs as managers might pursue their own interests. In state-owned enterprises the agency costs will be greater compared to private companies, so the implications of CEO duality to firm performance may be different. So ownership is one moderating factor. Researchers also indentified other moderators such as environment munificence and dynamism; firm performance measurement; firm size; industry; company type.

Methodology

Given the large amount of heterogeneity across previous studies, this paper adopts a meta-analysis approach. Under this approach, we try to understand if there are any systematic relationships between the characteristics of each study and its results. In fact, there are several

dimensions in which a specific paper can be different from other studies, such as the country coverage, the type of dependent variable, the characteristics of the sample, and the estimation methods (Martins & Yang, 2007).

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We aim to examine various internal and external (macro) factors to the relationship between CEO duality and firm performance. The internal and external factors are: economic development of the country; performance measurement; industry, firm size, estimation method; rule of law, financial reform, bank crisis. We took the coefficients of CEO duality and other data out from the papers and do regression analysis: the coefficients of CEO duality being dependent variable and other moderating variables being the independent variables. Thus we will be able to examine whether a particular variable has a significant influence on the coefficient of CEO duality, we will be able to identify under which situations CEO duality has a significant impact on firm performance.

We searched papers examining CEO duality and firm performance on a quantitative basis. Most of them are journal papers and few are working papers hosted by well-known websites. The main company performance variables used are financial measurement/ market value/ stock market returns/ bankruptcy etc. Original search found 69 papers. We only include studies with company performance variables as financial profitability ratios and Tobin's Q. We exclude studies that examined bankruptcy, fraud, stock market returns etc. For some studies if they examine dependent variables as EPS, dividend per share, sales growth, asset turnover, cost efficiency, shareholders' right ratios etc, we exclude these output as well. We also exclude papers that examined log of financial ratios or Tobin's Q. Final results include 31 papers among which there are 194 estimates.

[Insert Table 2 here]

We have a data set which contains aggregate indicators of six dimensions of governance. The six governance indicators are measured in units ranging from about -2.5 to 2.5, with higher values corresponding to better governance outcomes. The governance indicators reflect the statistical compilation of responses on the quality of governance given by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries, as reported by a number of survey institutes, think tanks, non-governmental organizations, and international organizations. We chose to use three governance indicators which are: voice and accountability, regulatory quality and rule of law. We derive the figures of three governance indicators to match a particular year of data from a particular country. The governance indicators cover the year from 1996 to 2008. If the firm year observation is from 1990 to 1995, then the average governance scores from 1996 to 1998 will be used as a proxy. If the data is before 1990, as there is no right proxy to use, so the factors can not be examined. Most of the data in this study are in the 1990s and 2000s. So for most studies we will be able to examine the effect of governance factors to the relationship between CEO duality and firm performance in different institutional contexts.

We also have data that contains the financial reform index and bank crisis information of different countries. Financial reform index (FRI) captures 7 reform measures namely credit controls, interest rate controls, entry barriers/pro-competition measures, banking Supervision, privatization, international capital flows and security markets (Abiad *et al,* 2008). A well-

functioning financial system can help provide the necessary finance required in the local market, thus can influence the decision of managers on how to use the capitals. To control for these reforms that can have implications for capital use by managers, we use the financial reform index.

The timing of bank crisis is taken from (Laeven and Valencia 2008). Given the current global financial crisis, there is now serious concern about its impact on many open economies. Hence it is important to know whether there was any significant moderating effect on the effect of CEO duality on firm performance in the crisis. To investigate the influence of bank crisis on the effect, we create a dummy variable that takes value one if the survey year of the paper is in the period of bank crisis or one year after, otherwise zero.

Data analysis

Descriptive data

[Insert Table 3 here.]

From descriptive data we know that there are 194 estimates (regression models or T statistics comparisons). 94.73% firms are large firms and 92.7% are in common industries. Bivariate regression analysis show that neither firm size nor industry is related with beta. Because of lack of variation in the data, the moderating role of firm size and industry will not be further tested and will not include in following regression models. 62.89% samples use accounting ratio as dependent variables and 87.11% samples use various OLS regressions. 21.99%

samples occurred in the period with bank crisis. The average scores for law and financial reform are 0.71 and 15.99 respectively.

Data analysis

[Insert Table 4 here.]

In model 1,2 and 3 we use OLS regressions and dependent variable is beta which is the coefficient of CEO duality. In model 4 we employ probit analysis. Dependent variable is 1 for positive beta or 0 for negative beta. In model 1 we find that the effect of CEO duality on firm performance is higher in developed countries. Taken at a face value, the coefficient is 0.03, although only significant at 10%. Compared with the average effect of CEO duality being 0.002 in table 3, economic development of countries plays an important role.

In model 2 rule of law and bank crisis are positive while financial reform is negative. It indicates that in countries with strict rule of law, it will impose restrictions to management behaviour, thus CEO duality has positive implication to firm performance. In situations with bank crisis, when finance is tight, companies with combined leadership structure will have positive implications to firm performance. On the contrary in countries with financial reforms, while more abundant financial resources are available, CEO duality is negatively related with firm performance.

Tan and Chng (2001) studied Singapore listed companies and found out that CEO duality is positively related with Tobin's Q in 1997, not in 1995 and 1996. In 1997 when Asian Economic Crisis started CEO duality leadership structure benefited from the inherent strong leadership in turbulent environment. Various theories on the role of debt provide us with a complementary corporate governance mechanism that monitors the management. Jensen and Meckling (1976) and Shleifer and Vishny (1989) argue that a high leverage keeps agency costs in check by decreasing the firm's free cash flows available for the managers' own consumption. So the findings of this paper are consistent with previous studies.

In model 3 develop is added to the macro variables used in model 2, develop, financial reform and bank crisis are still significant while law is no longer significant. In model 4 we use probit model with dependent variable being 1 for positive betas and 0 for negative betas. This model shows us that companies in developed economies or in period of bank crisis are more likely to have positive betas ,i.e., CEO duality have positive implication to firm performance; while financial reform have negative implications. The coefficients in four models are basically consistent with each other except rule of law. As mentioned earlier on we only have data of governance indicators which include the data of rule of law from 1996 to 2008. If the papers used data before 1990, the moderating governance factors can not be examined. So we have less observations in regression models.

[Insert Table 5 here.]

We complement our meta analysis by extending our specification with a control for the standard error of the estimate. In fact, bigger point estimates may be less significant than smaller estimates, so that our previous results may be misleading in terms of the effects of different study characteristics and macroeconomic factors included in our analysis. By controlling for the standard error, we address this possibility. Once we do this (see Table 5), we find the results are still consistent across different models. Bt controlling standard error of the estimates under analysis, it provides strong evidence that macroeconomic factors did play an important role to moderate the relationship between CEO duality and firm performance. Thus this paper adds original contribution to corporate governance literature.

Conclusion

Fligstein and Freeland (1995) observe that a universal structure or 'a single form of governance' grounded on efficiency considerations is not found throughout the world. "There is also little evidence that relations between firms are converging toward markets, hierarchies, network, or strategic alliances as the dominant form of governance". Based on comparative literature studies, they suggest that corporate governance structures can best be explained mainly by political factors (the role of state and rules of business), institutional factors (the social organization of national elites), and evolutionary factors (the timing of entry into industrialization and the institutionalization of that process).

For research on CEO duality the integrative approach of Kwok (1998) advocates that CEO duality is one internal control mechanisms and will be in balance with other control mechanisms ultimately. The contingency approach of Boyd (1995) advocates that CEO duality on form

performance is contingent upon certain environmental factors. The above told us that we can't ignore the internal and external factors in our research. Given that agency theory and stewardship theory offer seemingly contradictory perspectives on board preferences, a study that could help integrate these theories seems warranted.

We conduct a meta-analysis of more than 30 papers and about 200 estimates of the relationship between CEO duality and firm performance. Meta-analysis techniques are useful in this context as many studies available tend to have different characteristics, making it difficult to discern clear patterns in their findings. This paper examines the influence of macroeconomic factors to the relationship between CEO duality and firm performance, such as rule of law, developing stage of economy, financial reform and bank crisis. The results reveal that companies in developed economies or in a period with bank crisis exhibits positive relationship between CEO duality and firm performance. In countries with financial reforms going on, while it's easier for companies to get financial support from the banks, there is a negative relationship between CEO duality and firm performance. The paper adds original contribution to literature and provides directions for new research in corporate governance.

Table 1: Moderators regarding CEO duality with firm performance

Author	Moderator	Findings
	Environment munificence and dynamism	
Boyd (1995)	Environment munificence and dynamism	The author proposed a contingency model. Duality is advantageous under conditions of resource scarcity or high complexity.
Peng *et al*. (2007)	Environment munificence and dynamism	CEO duality has a positive impact on performance, especially for firms confronting problems with resource scarcity and environmental dynamism.
Faleye (2007)	Firm complexity, CEO reputation	No significant relations of CEO duality with firm performance. CEO duality is associated with improved performance in complex firms and those with higher reputation CEOs.
Tan and Chng (2001)	Turbulent environment: Asia financial crisis	CEO duality is positively related to firm value in 1997 during the Asian economic crisis, not in 1995 and 1996.
	Firm performance measurement/ Firm size	
Chen et al (2005)	Firm performance measurement/ Firm size	CEO duality is negatively related with Q, not related with ROA and ROE. CEO duality is negatively related with Q in big firms; non-related with Q in small firms.
Haniffa and Hudaib (2006	Firm performance measurement	CEO duality is negatively related with accounting performance, not related with Q.
Palmon and Wald (2002)	Firm size	A change from CEO duality to separate leadership structure induces negative abnormal returns for small firms, but positive abnormal returns for large firms.
	Ownership	
Lam & Lee (2008)	Family control factor	CEO duality is good for non-family firms, while non-duality is good for family-controlled firms.
Mak & Kusnadi (2005)	Controlling blockholder ownership/ controlling family ownership	CEO duality is not related to firm performance. Controlling blockholder r/family ownership didn't moderate the relationship.

Braun and Sharma (2007)	High/low family ownership	CEO duality does not influence firm performance in FCPFs. When family ownership is low, the separation of CEO and board chair roles is beneficial in terms of shareholder returns.
Song et al (2006)	State ownership	Non-duality firms outperform duality firms when state ownership is low; duality firms outperform non-duality firms when state ownership is high.
	Industry/ Company type	
Elsayed (2007)	High/Low firm performance Industry	CEO duality has no impact on corporate performance. The impact of CEO duality on corporate performance varies across industries. CEO duality attracts a positive coefficient when corporate performance is low.
Mishra & Nielsen (2000)	non-financial firms and banks	Reported significant positive relationship to non-financial firms and negative relationship to banks.
Belkhir (2009)	Bank and savings-and-loan holding companies	CEO duality with firm performance is nonrelated for banking holding companies, positively related for savings-and-loan holding companies.
	Internal governance factor	
Kwok (1998)	Board size, CEO/director ownership, institutional ownership, debt ratio, proportion of non-fixed assets, high-tech factor	CEO duality is not related with firm performance. Internal governance factors didn't moderate the relationship.

Table 2: Variable name and coding criteria

Variable Name	Variable name in regressions	Coding criteria	
Board leadership structure	ceodua	CEO duality:1	Separate leadership structure: 0
Country code	develop	Developed countries: 1	Developing and transitional countries: 0
Industry code	indus	Common industries may or may not include finance industry: 1	Bank and finance industry or real estate industry: 0
Dependent variable	accounting	Accounting profitability ratios: 1	Tobin's Q: 0
Firm size	firmsize	Listed/large firms: 1	Non-listed/small firms: 0
Estimation method	ols	OLS: 1	Non-OLS:0
Sample size	observation		
Bank crisis	bankcrisis	With bank crisis:1	No bank crisis:0
Financial reform	finreform		
Rule of law	law	-2.5 to 2.5	

Note: If it's a developed country, the coding is 1; otherwise 0. Firmsize:1 or large or listed firms and 0 otherwise. Indus: 1 for common industries and 0 or financial services or real estate industries. Accounting: For dependent variable, if it's accounting profitability ratios such as ROCE, ROE, ROA, ROS etc, it's 1. If it's Tobin's Q or market to book ratio. It's 0. If the estimation methods are OLS, pooled OLS, 2SLS, 3SLS, or panel data regressions, the coding is 1; otherwise it's 0. Sample size is the firm-year observation used in each paper. Bankcrisis: if there is bank crisis during data period, it's 1; otherwise 0. Law refers to rules of law. finreform indicates financial reform index.

Table 3: Summary statistics

Variable	Obs	Mean	Std. Dev.
beta	194	0.002	0.115
develop	191	0.542	0.485
firmsize	190	0.947	0.224
indus	192	0.927	0.261
accounting	194	0.629	0.484
ols	194	0.871	0.340
bankcrisis	191	0.220	0.415
law	166	0.706	0.905
finreform	193	15.990	5.171

Note: Beta is the coefficient of CEO duality. If it's a developed country, the coding is 1; otherwise 0. Firmsize: 1 or large or listed firms and 0 otherwise. Indus: 1 for common industries and 0 for financial services or real estate industries. Accounting: For dependent variable, if it's accounting profitability ratios such as ROCE, ROE, ROA, ROS etc, it's 1. If it's Tobin's Q or market to book ratio. It's 0. If the estimation methods are OLS, pooled OLS, 2SLS, 3SLS, or panel data regressions, the coding is 1; otherwise it's 0. Bankcrisis: if there is bank crisis during data period, it's 1; otherwise 0. Law refers to rules of law. finreform indicates financial reform index.

Table 4: Meta Analysis Regression

	OLS	OLS	OLS	Probit
	Model1	Model2	Model3	Model4
observation	-0.000*	-0.004***	-0.004***	-0.016***
	[0.000]	[0.001]	[0.001]	[0.005]
accounting	0.015		0.015	0.047
	[0.021]		[0.018]	[0.09]
develop	0.030*		0.093**	0.658***
	[0.017]		[0.043]	[0.235]
ols	0.012		-0.015	-0.084
	[0.024]		[0.032]	[0.175]
law		0.031***	-0.004	-0.007
		[0.009]	[0.016]	[0.111]
finreform		-0.005***	-0.007***	-0.058***
		[0.002]	[0.002]	[0.015]
bankcrisis		0.044**	0.059***	0.405***
		[0.021]	[0.021]	[0.109]
R-squared	0.022	0.149	0.182	
No. observations	191	165	163	151

* p<0.10, ** p<0.05, *** p<0.01

Note: In model 1,2 and 3 dependent variable is beta which is the coefficient of CEO duality. In model 4 dependent variable is 1 for positive beta or 0 for negative beta. Observation is sample size employed in each regression model in original paper. Accounting: 1 for dependent variable being accounting profitability ratios such as ROCE, ROE, ROA, ROS etc and 0 for Tobin's Q. Develop: 1 for developed country and 0 otherwise. OLS: 1 for estimation methods being OLS, pooled OLS, 2SLS, 3SLS, or panel data regressions, and 0 otherwise. Bankcrisis: if there is a bank crisis during data period, it's 1; otherwise 0. Law refers to rules of law. finreform indicates financial reform index. Standard errors are reported in brackets.

Table 5: Meta Analysis Regression (including standard errors)

	OLS	OLS	OLS	Probit
	Model1	Model2	Model3	Model4
se	-0.008	-0.004	0.002	0.144
	[0.015]	[0.012]	[0.013]	[0.144]
observation	-0.000*	-0.004***	-0.004***	-0.016***
	[0.000]	[0.001]	[0.001]	[0.005]
accounting	0.016		0.015	0.051
	[0.021]		[0.019]	[0.09]
develop	0.03*		0.094**	0.662***
	[0.018]		[0.044]	[0.236]
ols	0.011		-0.015	-0.057
	[0.023]		[0.033]	[0.179]
law		0.030***	-0.004	-0.004
		[0.009]	[0.016]	[0.111]
finreform		-0.005***	-0.007***	-0.059***
		[0.002]	[0.002]	[0.015]
bankcrisis		0.044**	0.059***	0.412***
		[0.021]	[0.022]	[0.108]
R-squared	0.022	0.149	0.183	
No. observations	191	165	163	151

* p<0.10, ** p<0.05, *** p<0.01

Note: In model 1,2 and 3 dependent variable is beta which is the coefficient of CEO duality. In model 4 dependent variable is 1 for positive beta or 0 for negative beta. Se is standard error. Observation is sample size employed in each regression model in original paper. Accounting: 1 for dependent variable being accounting profitability ratios such as ROCE, ROE, ROA, ROS etc and 0 for Tobin's Q. Develop: 1 for developed country and 0 otherwise. OLS: 1 for estimation methods being OLS, pooled OLS, 2SLS, 3SLS, or panel data regressions, and 0 otherwise. Bankcrisis: if there is a bank crisis during data period, it's 1; otherwise 0. Law refers to rules of law. finreform indicates financial reform index. Standard errors are reported in brackets.

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