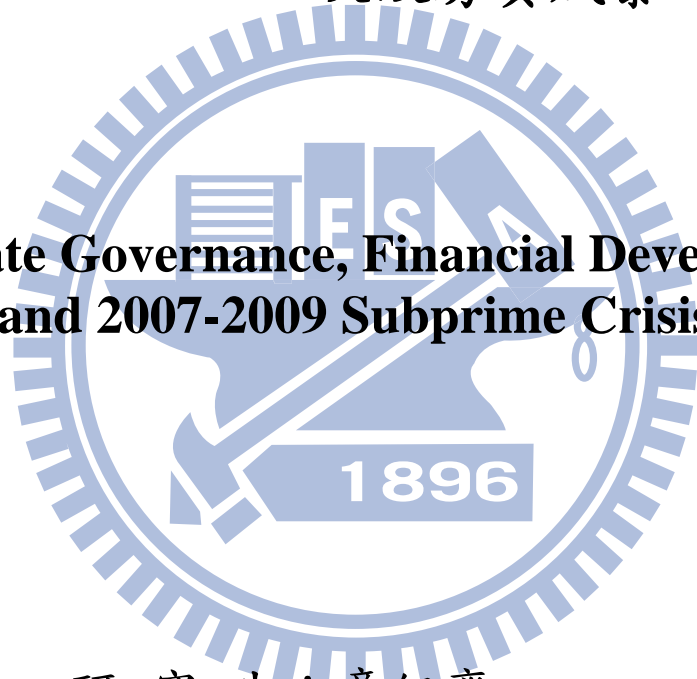# 國 立 交 通 大 學

財 務 金 融 研 究 所
碩 士 論 文

公司治理、金融發展程度與
2007-2009 次級房貸風暴

**Corporate Governance, Financial Development,
and 2007-2009 Subprime Crisis**

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指導教授：鍾惠民 博士
　　　　　李漢星 博士

中華民國九十八年六月

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摘要

　　2007-09 年的次級房貸風暴造成了自 1929 年以來最大規模的全球性衰退，本文發現次貸期間，金融發展程度高，特別是私人信用較高的國家，股市表現顯著較差；公司治理指標的效果則分歧。同時，次貸風暴對於經濟合作暨發展組織成員國(OECD)、東歐與社會主義法系的影響較深，並深入探究這段期間內，接受國際貨幣基金(IMF)援助計畫的國家，來佐證本文的研究發現。

關鍵字：次級房貸、公司治理、金融發展程度、國際貨幣基金
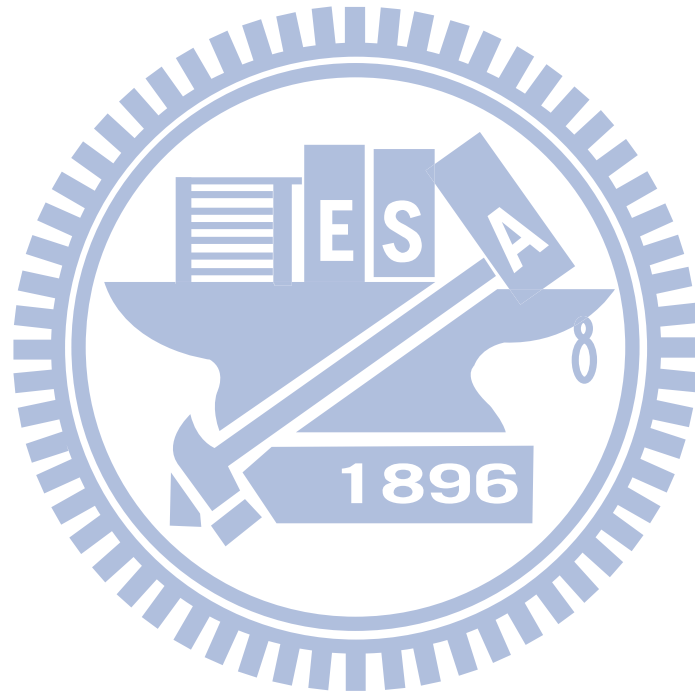
Abstract

The Subprime Crisis during 2007-09 caused an unprecedented recession since 1929 Great Depression. This paper shows that higher degree of indicator of financial development, private credit, brought out a weaker performance in stock market. However, corporate governance presents a divergent result. Meanwhile, OECD and Eastern European and Socialistic countries suffered seriously during this financial shock. Besides, this paper re-confirms this result by digging into IMF bailout countries.

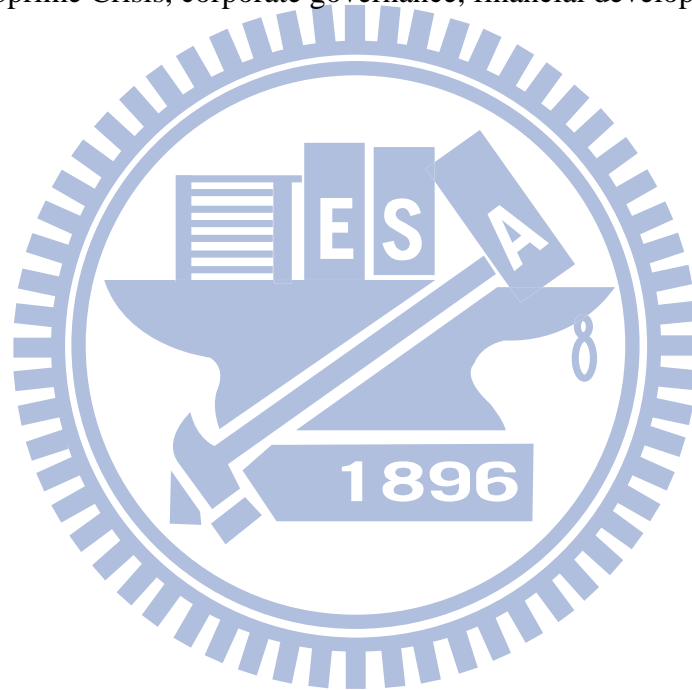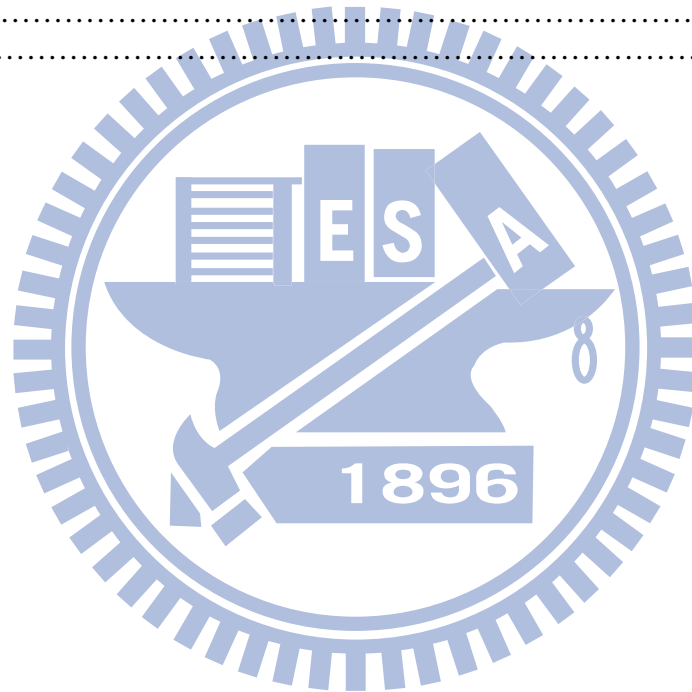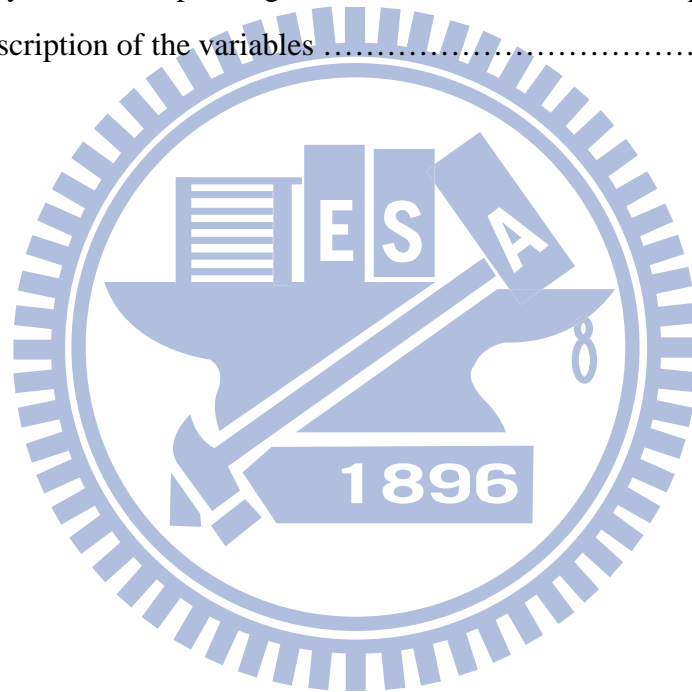Key words: Subprime Crisis, corporate governance, financial development, IMF

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1. Introduction

Over the past two years, global financial markets have been encountering an all-time financial crisis and economic entities faced an unprecedented overall recession since 1929 Great Depression. What should be the role of corporate governance and financial development in financial crisis? How do corporate governance and financial development affect stock and currency market in this subprime crisis?

Adrian Blundell-Wignall, Deputy Director of OECD Directorate for Financial and Enterprise Affairs, says that notable failure in the corporate governance of financial intermediaries is the key characteristic in this financial turmoil. He document that "Some banks stayed clear of these high risk products, and some managed to reduce their exposures significantly prior to the crisis, but others rushed headlong into major exposures, lured by fast profits and fees."

The morning of September 15, 2008, Lehman Brothers, the fourth-largest US investment bank, has filed for Chapter 11 bankruptcy protection. However, the CEO still made hundreds of millions of dollars before the investment bank went bust resigned. Though the financial institution, such as Lehman Brothers and AIG, suffered huge losses during the crisis and obtained considerable quantities aids from the government, the managers unexpectedly acquire hundreds of millions of salary and bonus. March 16, 2009 President Barack Obama blistered insurance giant AIG for "recklessness and greed". However, the minority shareholder, American taxpayers and even America government can take few steps to prevent the expropriation from the managers. The expropriation by managers undoubtedly affects the confidence of investors.

From the previous evidence, Lemmon et al. (2003) take East Asia Crisis as example. They show that the crisis negatively impact firms' investment opportunities, raising the incentives of controlling shareholders to expropriate minority investors. Johnson et al. (2000) document that how expropriation by managers increases when the expected rate of return on investment falls and provide evidence from stock and currency market. If investors aware that expropriation by insiders may increase during the crisis, it will lead to increased lower capital inflow and greater attempted capital outflow. These will react in the stock price and exchange rate for a country. Hence, this paper mainly examines that if better corporate governance, particular the protection for minority shareholders, lead to better stock and currency markets

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performance across countries.

On the other hand, this financial turbulence was originated from the United States of America then spread world-wild quickly, especially to British and the Europe countries. Several big financial institutions faced bankruptcy or received bail-out projects form the governments. Three of the five biggest investment banks in US were took over or went into bankruptcy. May 21, 2009, Bank United FSB was the thirty-fourth bank filed for Chapter 11 bankruptcy protection barely in 2009. Across the Atlantic, Northern Rock was the first bank being nationalized in British. Besides, The German government has launched a takeover bid for the bank Hypo Real Estate in 9 April, 2009. Meanwhile, several big financial institutions also received the bail-out projects from the Europe governments. However, these countries located in North-America and Europe seem to have better financial development. How does financial development play a role in this financial crisis? Therefore, this paper wants to present evidence that financial development has an important role on the stock market declines and depreciations during Subprime Crisis.

Furthermore, during this financial crisis, seven countries have received bailout from International Monetary Fund (IMF), which are Ukraine, Hungary, Iceland, Latvia, Pakistan, Belarus, and Serbia. These countries suffered a large amount of capital outflow. However, before the conjuncture, they usually experienced a rapid economic development and attracted a great deal of refugee capital. How could the economics situation turn down so quickly? Besides, except from Iceland and Pakistan, five of these countries are located in or near by Eastern Europe. Were Eastern Europe countries really suffering more severe in the crisis than other countries? I will try to figure out what are the macroeconomic features of these countries, meanwhile compare the corporate governance indicators and financial development measures with other countries without IMF bailout.

Over the past 20 years, corporate governance became a very popular issue. A great deal of work reported about the issue of corporate governance. La-Porta, Lopez-de-Silanes ,Shleifer and Vishny (1999b), hereafter referred to LLSV argue that the protection of shareholders and creditors by the legal system is central to understanding the patterns of corporate finance in different countries. Hence, to define "corporate governance" in this paper, I focus on the protection for minority shareholders and prevention form investor expropriation, particular emphasis on the effectiveness of legal mechanism. LLSV (1998) first provide evidence from 49

countries that poor shareholder right lead to weak stock market development, meanwhile, bring up anti-director index to measure the protection of minority shareholder. Recently, Djankov et al. (2008) present a new measure of legal protection of minority shareholder against expropriation by corporate insiders: the anti-self-dealing index by providing evidence from 72 countries that this index works well in predicting stock market outcome.

Also Ongena et al. (2003) state that due to better corporate governance, although Norwegian banking system experienced large and permanent downward revision in the equity value during the period 1988-1991, firms maintaining relationships with these banks faced only small and temporary changes in stock price. Hence, corporate governance can viewed as an important factor in financial turbulence. Better corporate governance leads to better financial market performance.

It is hard to find an indicator directly link to the ability of national financial system across countries. Beck et al. (2002) document two measures to proxy for the degree to which national systems provide liquidity, facilitate the acquisition of information and improve the function of financial market. One measure is private credit, which is financial intermediary credits to the private sector divided by gross domestic product (GDP). Private credit measures the amount of savings that is provided by debt-issuing financial intermediaries to private borrowers, excludes credit to the public sector and cross claims of one intermediary on another. Levine et al. (2000) show that private credit is strongly related to economic growth. The other measure is stock market development, which equals the total value of outstanding equity shares as a fraction of GDP and is averaged over the 1990-1995 period. This measures the size of stock market relative to the size of the economy.

2. Data

My basic sample is 72 countries with both anti-director index and anti-self-dealing index, which are list on Shleifer's website. This list includes thirty countries from OECD countries, eight from emerging East Asian, twelve from Latin America, six from emerging East Europe, and sixteen countries are attributed to others. However, the macroeconomic data in Zimbabwe is extremely different from the most of the countries. Therefore, I summarize statistics of totally 71 countries in Table 1.

Besides, during the subprime crisis, several countries suffered great losses in financial market and sink into recession. Hence, I also found 7 countries supported by

Table1
Summary Statistics

	K	Mean	Median	Std	Max	Min
Corporate Governance						
Anti-Director Index	71	3.36	3.50	1.13	5.00	1.00
Anti-Self-Dealing Index	71	0.44	0.42	0.24	1.00	0.08
Financial Development						
Private Credit	61	0.75	0.63	0.53	2.76	0.11
Stock Market Development	64	0.86	0.62	0.75	4.22	0.04
Macro Economic						
GDP	71	22503.49	11600.00	23889.48	117160.00	496.00
lnGDP	71	9.32	9.36	1.35	11.67	6.21
Reserve	71	89571.50	27051.00	244929.66	1756660.00	151.73
CPI	71	4.86	3.64	3.66	18.70	0.06
Efficiency of the Judiciary						
Public Enforcement	71	0.40	0.25	0.43	1.00	0.00
Origin of the rule						
Common-Law Legal Origin	71	0.28	0.00	0.45	1.00	0.00
French Legal Origin	71	0.38	0.00	0.49	1.00	0.00
Socialist Legal Origin	71	0.18	0.00	0.39	1.00	0.00
Scandinavian Legal Origin	71	0.07	0.00	0.26	1.00	0.00
German Legal Origin	71	0.08	0.00	0.28	1.00	0.00
Geographical Environment						
OECD	71	0.42	0.00	0.50	1.00	0.00
East Asia	71	0.11	0.00	0.32	1.00	0.00
Latin America	71	0.17	0.00	0.38	1.00	0.00
Eastern Europe	71	0.08	0.00	0.28	1.00	0.00
Others	71	0.21	0.00	0.41	1.00	0.00

* K means the numbers of the countries.

* Zimbabwe is excluded from this table.

* Reserve is divided by 10,000 in the regression.

* Description of variables can be found in appendix 2.

* Private Credit by Deposit Money Banks / GDP has 61 samples.

* Stock Market Capitalization / GDP has 64 samples.

IMF from the IMF website. Five of them are included in my data: Hungary, Iceland, Latvia, Pakistan and Ukraine. This would be discussed in the following section.

For stock markets, I use the main and most liquid stocks index of each country from Datastream database. However, 8 stock indexes are except from Datastream data base. Currency market data comes from the website－OANDA.com. 19 countries are

excluded from the currency samples: 13 countries in the euro zero do not have their own national currency. US dollar is viewed as the conversion currency. Panama, Ecuador, and El Salvador adopt the US dollar as its currency and Hong Kong's entire monetary base is backed with U.S. dollars at the linked exchange rate. Hence, these four economic entities are also excluded from the sample. Besides, the exchange rate in Zimbabwe depreciated more than 1 million percentages is also excluded.

Subprime crisis began since early 2007 with an increase in subprime mortgage defaults first noted in February 2007 (Brunnermeier 2008). HSBC fired head of its US mortgage lending business as losses reach $10.5billion in February 22, 2007. Subsequently, New Century Financial, the second-biggest subprime mortgage lender in the United Statesand, filed for Chapter 11 bankruptcy protection. Continuously, another grand mortgage institution, Countrywide Financial Corp., also announced an earnings drop. In 2006 Countrywide financed 20% of all mortgages in the United States, at a value of about 3.5% of United States GDP, a proportion greater than any other single mortgage lender. Hence, financial turbulences happened incessantly during the first half of 2007. However, the event really attracted global vision onto the subprime crisis was that Bear Stearns, a leading global investment bank, told investor two of their hedge funds confront bankruptcy in July 19 2007. Frank et al. (2008) also report that the most recent episode of turbulence started in July 2007. Hence, I choose July 19 2007 as the starting point, but still consider other starting dates in robustness test.

Until now, we can hardly define if the subprime crisis has passed away. However, fortunately, the recent economic data shows some signals that we are getting out of the recession. From the view of macroeconomic, consumer sentiment report released at 27 March 2009 documents that the consumer sentiment index rebound for continues three times. Furthermore, employment situation report released at May 8, 2009 shows that nonfarm payroll contraction is slowing, form -663,000 in March to -539,000 in April. Both results are obviously good signals in employment and consumer market. On the other hand, in the financial market, US Treasury unveils its plan to remove bad debts from banks in March 24 2009. It is expected to ease the liquidity problem in the credit market, and reduce the write-down losses of financial institution. Therefore, I choose this day as the ending point in this paper and also consider other dates in robustness test.

2.1 Measuring macroeconomic conditions

To control the differences of macroeconomic conditions across 72 countries, I choose total reserve and GDP per capita, which are also come from Datastream database. Total reserve is collected by IMF international financial statistics. GDP per capita is published by Economist Intelligence unit. Furthermore, Exchange rate is strongly affected by inflation rate. High inflation usually lead to depreciation for a country. Hence, I also use consumer price index (CPI) as control variable in currency market analysis.

2.2 Measuring legal origin and regions

To measure rule of law, I follow LLSV (1998) and LLSV (1999a) to use legal origin as dummy variable, since LLSV shows that legal regions are significantly related to the legal protections of investors. Beck et al. (2003) also document that cross-country differences in legal origin help explain differences in financial development. I also use public enforcement cited by Djankov et al. (2008) to measure efficiency of the legal system. This index was cited accompany by the anti-self-dealing index. It measures the fines and criminal sanctions apply to the controlling shareholders or managers who violate the regulations included in anti-self-dealing index.

3. Empirical result

3.1 The Stock market

The dependent variable (Table 2) is the stock performance in from 19 July, 2009 to 24 March, 2009. Neither anti-director index nor anti-self-dealing index is significant in the stock market regressions. However, anti-self dealing index conform to my hypothesis, which show countries with higher anti-self-dealing index perform better during the subprime crisis; whereas, anti-director index does not comply with my hypothesis. One possible reason is that the control variable, public enforcement, which present the effectiveness of the judicatory system across countries, directly link with anti-self dealing index. Hence, the effect of the anti-self dealing index is better.

The financial development variables are significant when I control origin of rule dummy. Private credit has a significant negative coefficient in the regression, which implies that countries with better financial development experience worse stock

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Table 2
Stock market, Corporate governance, and financial development
59 samples in the regression

Dependent variable: Stock return 20070719-20090324						
Anti-director Index			-0.0040	-0.0196	-0.0128	-0.0133
			[-0.1384]	[-0.7449]	[-0.4070]	[-0.4316]
Anti-self-dealing Index	0.0942	0.0889			0.1201	0.1145
	[0.6235]	[0.7492]			[0.7271]	[0.8574]
Private credit	-0.1280*	-0.0736	-0.1246*	-0.0620	-0.1242*	-0.0684
	[-1.7660]	[-1.1189]	[-1.6991]	[-0.8996]	[-1.6859]	[-1.0137]
Stock development	0.0709*	0.0311	0.0735*	0.0352	0.0703*	0.0303
	[1.7950]	[0.7512]	[1.8638]	[0.8407]	[1.7623]	[0.7257]
FR	0.0270		0.0413		0.0218	
	[0.2518]		[0.3945]		[0.2001]	
SC	-0.1350		-0.1248		-0.1308	
	[-1.0538]		[-0.9688]		[-1.0080]	
SO	-0.2533**		-0.2375**		-0.2539**	
	[-2.1229]		[-2.0186]		[-2.1096]	
UK	-0.0860		-0.0361		-0.0854	
	[-0.6479]		[-0.3141]		[-0.6379]	
OECD		-0.1742**		-0.1728**		-0.1766**
		[-2.3877]		[-2.2936]		[-2.3929]
Eastern Europe		-0.4088***		-0.3938***		-0.4025***
		[-4.1832]		[-3.8733]		[-4.0393]
East Asia		-0.1272		-0.0771		-0.1223
		[-1.3005]		[-0.7948]		[-1.2323]
Latin		0.0130		0.0657		0.0169
		[0.1487]		[0.7594]		[0.1907]
LnGDP	-0.0346		-0.0296		-0.0362	
	[-1.2171]		[-1.0825]		[-1.2510]	
Reserve	-0.0013	-0.0014	-0.0009	-0.0010	-0.0011	-0.0012
	[-0.6815]	[-0.8606]	[-0.4641]	[-0.5909]	[-0.5593]	[-0.6833]
Public Enforcement	0.0575	-0.0295	0.0575	0.0124	0.0602	-0.0235
	[0.8832]	[-0.5100]	[0.8773]	[0.2117]	[0.9126]	[-0.3919]
Stock Return 20051230-20070718	-0.1220**	-0.0984**	-0.1147**	-0.1016**	-0.1212**	-0.0994**
	[-2.543]	[-2.1687]	[-2.4221]	[-2.1719]	[-2.5026]	[-2.1697]
Constant	-0.0352	-0.2840***	-0.0608	-0.2128**	0.0099	-0.2561**
	[-0.1307]	[-3.6847]	[-0.2208]	[-2.1150]	[0.0336]	[-2.5322]

* Reserve is divided by 10,000

* The T-value is given in the parentheses

* * significant at 10% level, ** significant at 5% level, *** significant at 1% level.

market performance. Although it is not significant when I choose the geographical environment dummy, the coefficient is consistent with the hypothesis. Stock market development shows positive coefficient in the regression.

Socialist Legal Origin dummy is significant in three specifications. This coefficient present that former socialistic countries suffered great loss in stock market during this financial crisis. The result is consistent when I use Geographical Environment dummy. Countries located in East Europe were once governed by socialism also has negative coefficient. Beside, OECD countries also show significant negative coefficient. This may consistent with hypothesis of financial development since measure of financial development present not significant when I use OECD dummy, and OECD countries usually has better financial development.

Macroeconomic measures are also has negative correlation with the stock market return during the subprime crisis, but not significant. Furthermore, stock performance shows mean reversion when I use previous stock market return as control variable.

3.2 Currency market

In currency market, Table 3 shows few significant variables. I will attribute this result to the global shock in entire financial market. Unlike Asia financial crisis in 1997 or other regional financial turbulence, investor can re-allocate their asset class and translate their investment from one country to another. This time, because of the world-wide recession and global financial shock, investors can hardly find invest opportunities in any country. Flight to safety will cause capital flow to US treasury or gold. Hence, we can find US dollar strengthen for a long period as well as gold price hit the record during the panic. That is the reason why I can find significant result from currency market.

Besides, as we know, the unwinding of carry trade caused Yen to appreciate 25.89% during the crisis. Several high-yield currencies depreciate in this period, Such as Australian Dollar and New Zealand dollar separately depreciate 26.90% and 36.85%. However, the anti-director index is obviously much higher in Australia and New Zealand (0.76 & 0.95) than that in Japan (0.5). This may be the reason that the result is not consistent with the hypothesis.

Another possible reason is that countries in the euro zone and United States are excluded in the regression. The currency markets in these countries are more active. Since the Subprime Crisis is a worldwide shock, most of the global capital flow takes

Table 3
Currency market, corporate governance, and financial development
45 samples in the regression

Dependent variable: Currency return 20070719-20090324						
Anti-director Index			-0.0436	-0.0470	-0.0481	-0.0485
			[-1.2707]	[-1.5151]	[-1.2438]	[-1.3855]
Anti-self-dealing Index	-0.0579	-0.0814			0.0561	0.0154
	[-0.3018]	[-0.5564]			[0.2656]	[0.0958]
Private credit	-0.1699	-0.1513	-0.1653	-0.1361	-0.1679	-0.1367
	[-1.6420]	[-1.7088]	[-1.6410]	[-1.5745]	[-1.6357]	[-1.5541]
Stock development	0.0306	0.0257	0.0342	0.0345	0.0345	0.0342
	[0.4774]	[0.4044]	[0.5443]	[0.5564]	[0.5408]	[0.5421]
FR	-0.0538		-0.1019		-0.1160	
	[-0.3403]		[-0.6635]		[-0.7048]	
SC	-0.1654		-0.1722		-0.1111	
	[-0.9514]		[-1.0186]		[-0.9722]	
SO	-0.0695		-0.1021		-0.1676	
	[-0.4247]		[-0.6388]		[-0.6709]	
UK	-0.0727		-0.0897		-0.1124	
	[-0.4374]		[-0.6290]		[-0.6691]	
OECD		-0.1344		-0.1301		-0.1295
		[-1.4300]		[-1.4274]		[-1.3956]
Eastern Europe		0.0252		0.0456		0.0460
		[0.2272]		[0.4196]		[0.4166]
East Asia		-0.0241		-0.0107		-0.0137
		[-0.1971]		[-0.0930]		[-0.1130]
Latin		-0.0732		-0.0742		-0.0745
		[-0.7530]		[-0.7854]		[-0.7771]
LnGDP	0.0089		0.0077		0.0044	
	[0.2094]		[0.1932]		[0.1057]	
CPI	-0.0191	-0.0273**	-0.0188	-0.0266**	-0.0180	-0.0265**
	[-1.5236]	[-2.4873]	[-1.5686]	[-2.5088]	[-1.4403]	[-2.4359]
Public Enforcement	0.0714	0.0387	0.0858	0.0632	0.0845	0.0627
	[0.8581]	[0.5433]	[1.0482]	[0.8874]	[1.0154]	[0.8650]
Currency Return 20051230-20070718	-0.1760	-0.2830	-0.0441	-0.1703	-0.0312	-0.1665
	[-0.3646]	[-0.5940]	[-0.0912]	[-0.3630]	[-0.0633]	[-0.3485]
Constant	0.0066	0.1343	0.1613	0.2292	0.1924	0.2276

* Reserve is divided by 10,000

* The T-value is given in the parentheses

* * significant at 10% level, ** significant at 5% level, *** significant at 1% level.

place in these economic entities. However, currency of the countries in the Euro zone is unified; whereas the corporate governance indicators and financial development measures are quite different. Furthermore, US dollar is the settlement currency. All the exchange rates are calculated by the ratio converting into US dollar. Hence, I eliminate these countries from my samples in regression. These may lead a major effect on the currency regression.

3.3 Degree of fluctuation

In Table 2, there is no significant relation between corporate governance and stock return. Corporate governance may not directly affect the performance in stock market, but influence the fluctuation of equity market. Hence, I use the standard deviation of daily return in stock market as dependent variable to check the effectiveness of corporate governance indicators. Beyond my expectations, anti-director index is positive significant in all regression. This shows that better minority shareholders protection lead to greater fluctuation. One possible reason is that countries with better corporate governance legal system may also be more transparent in information transmission. Hence, the responses in stock market are rapid whenever financial shocks happen.

Besides, I find that the fluctuation is more severe in OECD and European countries. This may consistent with the result in Table 2: these countries suffered seriously in the crisis. The previous fluctuation also shows significant positive effect, which means the features of the stock markets are coherent during the crisis. As for macroeconomic measures, GDP have positive effect on the fluctuation of stock market in two regressions. The reason may be similar to the OECD countries, since GDP per capita is usually higher in OECD countries. Total reserve is positively significant, but only in two regressions. Financial development shows no significant effect on the fluctuation of stock markets.

Table 4
Stock market, Corporate governance, and financial development
60 samples in the regression

Dependent variable: Standard deviation of stock daily return 20070719-20090324						
Anti-director Index			0.1293*	0.0987	0.1669**	0.1443*
			[1.9085]	[1.4634]	[2.2771]	[1.9466]
Anti-self-dealing Index	-0.1483	-0.1846			-0.4919	-0.4597
	[-0.4072]	[-0.6140]			[-1.2931]	[-1.4151]
Private credit	0.2788	0.3065	0.2472	0.2580	0.2337	0.2519
	[1.5198]	[1.8010]	[1.3892]	[1.5213]	[1.3200]	[1.5004]
Stock development	0.0725	0.1554	0.0619	0.1308	0.0794	0.1620
	[0.7325]	[1.4698]	[0.6541]	[1.2884]	[0.8364]	[1.5740]
FR	0.1544		0.1345		0.2211	
	[0.5838]		[0.5420]		[0.8660]	
SC	0.4058		0.3251		0.3500	
	[1.2881]		[1.0672]		[1.1547]	
SO	0.4189		0.3652		0.4294	
	[1.4350]		[1.3163]		[1.5337]	
UK	0.1551		-0.0386		0.1534	
	[0.4867]		[-0.1437]		[0.5020]	
OECD		0.4915***		0.5059***		0.5153***
		[2.6829]		[2.8058]		[2.8852]
Eastern Europe		0.7302***		0.6688***		0.6626***
		[2.9862]		[2.7549]		[2.7566]
East Asia		0.2368		0.0964		0.1859
		[0.9711]		[0.4146]		[0.7787]
Latin		0.2753		0.2364		0.2356
		[1.2776]		[1.1114]		[1.1187]
LnGDP	0.1451**		0.1399**		0.1667**	
	[2.0824]		[2.1628]		[2.4700]	
Reserve	0.0099**	0.0095**	0.0066	0.0073*	0.0074	0.0070*
	[2.1117]	[2.3326]	[1.4342]	[1.7433]	[1.6042]	[1.6897]
Public Enforcement	0.0503	0.1525	0.0071	0.0638	0.0095	0.0878
	[0.3209]	[1.0592]	[0.0463]	[0.4417]	[0.0625]	[0.6103]
Standard deviation 20051230-20070718	78.832***	81.555***	81.085***	85.534***	79.298***	82.875***
	[4.9450]	[5.1808]	[5.2879]	[5.5664]	[5.1861]	[5.4072]
Constant	-0.7194	0.3620	-1.0634	0.0116	-1.3209	0.0470
	[-1.0899]	[1.3537]	[-1.6087]	[0.0375]	[-1.9256]	[0.1533]

* All coefficients are multiple by 100

* Reserve is divided by 10,000

* The T-value is given in the parentheses

* * significant at 10% level, ** significant at 5% level, *** significant at 1% level.

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Table 5
Features of IMF Bailout Countries and comparable countries

	Bailout date	Bailout amount	Region	GDP /POP	GDP/POP PPP	Anti-self-dealing index	Anti-director Index	Private Credit	Stock market development	Total debt	Net debt
Ukraine	2008/11/5	$16.4 B	Eastern Europe	3056.3	6980	0.08	3	N.A	0.32	48.7	36.308
Peru			Latin America	3740	7630	0.45	3.5	0.17	0.52	30.4	4.5
Thailand			East Asia	3700	7840	0.81	4	0.87	0.64	22.8	-12.8
Hungary	2008/11/6	$15.7 B	Eastern Europe	13900	19210	0.18	2	0.51	0.33	100	82.6
Latvia	2008/11/23	$2.35 B	Eastern Europe	11914.5	17487.2	0.32	4	0.63	0.13	135.4	115.4
Taiwan			East Asia	16980	34580	0.56	3	N.A	1.62	25.6	-45.9
Korea (Rep.)			East Asia	19790	24550	0.47	4.5	0.95	0.88	23.7	-3.3
Iceland	2008/11/19	$2.1 B	Northern Europe	64710	38200	0.26	4.5	2.76	1.98	N.A	N.A
Singapore			East Asia	35960	41750	1	5	0.92	2.20	15.9	-85.1
Pakistan	2008/11/24	$7.6 B	Asia	890	2480	0.41	4	0.26	0.36	26.1	15.3
Nigeria			Africa	896	1790	0.43	4	0.12	0.23	5.5	-30.7

* Bailout date and bailout amount are released on the official website of IMF: http://www.imf.org/external/index.htm

* GDP/POP: GDP divided by population in June, 2007. Source: Economist Intelligence unit

* GDP/POP PPP: GDP divided by population calculated at purchase power parity in June, 2007 Source: Economist Intelligence unit

* Total debt: Total foreign debt as percentage of GDP in June, 2007 Source: Economist Intelligence unit

* Net debt: Total foreign debt as percentage of GDP in June, 2007 Source: Economist Intelligence unit

3.4 IMF bailout countries

Table 5 shows features of IMF bailout countries and comparable countries. I present one or two comparable samples for each IMF bailout country by similar GDP per capita and GDP per capita at purchase power parity. Especially, I try to select the corresponding countries from emerging market in East Asia or Latin America.

Table 6
IMF bailout countries, corporate governance, and financial development
61 samples in the regression 1, 3 and 5 & 72 samples in the regression 2,4 and 6

Dependent variable: IMF dummy variable						
Anti-director Index			0.0214	0.0953	0.3528	0.6336*
			[0.0676]	[0.4395]	[0.8895]	[1.8506]
Anti-self-dealing Index	-2.7103	-3.1056*			-3.7619	-6.3162**
	[-1.2901]	[-1.7261]			[-1.3719]	[-2.0209]
Private credit	1.8287*		1.7496*		1.8301	
	[1.6836]		[1.8009]		[1.4563]	
Stock development	-1.1544		-1.1424		-1.3880	
	[-1.0365]		[-1.1408]		[-0.9738]	
LnGDP	-0.4964	-0.0546	-0.5116	-0.1075	-0.4745	-0.0642
	[-1.3727]	[-0.2888]	[-1.4960]	[-0.6233]	[-1.2145]	[-0.3051]
Public Enforcement	0.0628	0.1054	-0.3076	-0.2752	-0.1113	0.1508
	[0.0779]	[0.1723]	[-0.4134]	[-0.4780]	[-0.1282]	[0.2222]
Constant	3.3348	0.0451	2.6391	-0.7042	2.4804	-1.0269
	[1.0756]	[0.0250]	[0.8674]	[-0.4125]	[0.7259]	[-0.4938]

* Reserve is divided by 10,000

* The Z-value is given in the parentheses

* * significant at 10% level, ** significant at 5% level, *** significant at 1% level.

First, I can find that anti-self-dealing index is lower for IMF bailout countries. Particularly, Ukraine is at 0.08, Hungary is at 0.18, which are extremely lower than the comparable countries. However, the same tendency can't observe in anti-director index. The index seems a little lower for IMF bailout countries, but not apparently. Second, as for financial development measure, we can not conclude a clear deduction for both private credit and stock market development. However, Stock market development in Eastern Europe countries is lower than that in East Asia countries. Third, both total foreign debt ratio and net foreign debt ratio are obviously high for

IMF bailout countries. Total foreign debt ratio for Hungary and Latvia are even higher than 100 percent; whereas, the ratio for East Asia countries, Thailand, Taiwan, Korea, and Singapore are negative.

Besides, I use probit model to discuss the countries received bailout from IMF (Table6). I let the following countries' dummy variable equal to one, Hungary, Iceland, Latvia, Pakistan and Ukraine, and other countries equal to zero. The result is consistent with my observation in Table 5 and the stock market regression. Anti-director index presents positive correlation with the IMF bailout countries and has a significant coefficient in one of the four regressions. Anti-self-dealing index is consistent with my observation in Table 5 and the stock market regression. Anti-director index presents positive correlation with the IMF bailout countries and has a significant coefficient in one of the four regressions. Anti-self-dealing index is negative significant is two of the regressions, which presents that higher anti-self-dealing index will reduce the opportunity to become an IMF bail-out country. Private credit is also positive correlated to IMF dummy. Hence, I can re-confirm private credit is negative factor in this Subprime crisis.

4. Robustness checks

Since the effect of Subprime Crisis still spread throughout the global market. There is not a clear definition about the beginning and the ending point of crisis. Hence, beyond the date I use for the regression in section 3, I still check other period for robustness. One of starting point is February 22, 2007, when HSBC first fired head of its US mortgage lending business as losses reach $10.5billion. This may be the first time that subprime mortgage issue is released to the press. The other date I select for the beginning of Subprime Crisis is April 2, 2007, when New Century Financial Corporation, the second-biggest subprime mortgage lender in the United States, and its related entities filed voluntary petitions for relief under Chapter 11 of the United States Bankruptcy Code in the United States Bankruptcy Court, District of Delaware located in Wilmington, Delaware. For the ending point, besides March 24, 2009, I also use December 31, 2008. However, the results are similar to section 3. Table 7 shows the stock index and exchange rate for different periods across countries.

Table 7

Stock return and currency return in each country

	Stock return						Currency return					
	20070222 -20081231	20070402 -20081231	20070719 -20081231	20070222 -20090324	20070402 -20090324	20070719 -20090324	20070222 -20081231	20070402 -20081231	20070719 -20081231	20070222 -20090324	20070402 -20090324	20070719 -20090324
Argentina	-51.02%	-48.66%	-52.80%	-48.98%	-46.52%	-50.84%	-11.23%	-11.42%	-11.10%	-17.90%	-18.10%	-17.77%
Australia	6.71%	5.68%	-3.51%	12.73%	11.64%	1.93%	-14.20%	-17.07%	-26.90%	-13.20%	-16.04%	-25.79%
Austria	-61.68%	-62.54%	-64.18%	-64.22%	-65.02%	-66.55%	6.78%	5.29%	2.10%	3.60%	2.06%	-1.24%
Belgium	-57.68%	-57.45%	-58.58%	-61.21%	-61.00%	-62.03%	6.78%	5.29%	2.10%	3.60%	2.06%	-1.24%
Bolivia	N.A	N.A	N.A	N.A	N.A	N.A	13.20%	12.71%	10.10%	14.03%	13.55%	10.96%
Brazil	-19.16%	-17.65%	-35.40%	-10.71%	-9.04%	-28.64%	-12.72%	-14.20%	-26.50%	-8.55%	-9.98%	-21.81%
Bulgaria	-72.84%	-71.89%	-75.92%	-78.95%	-78.22%	-81.34%	7.53%	5.65%	2.26%	4.16%	2.21%	-1.29%
Canada	-32.51%	-32.25%	-38.55%	-33.55%	-33.29%	-39.49%	-4.69%	-5.92%	-17.17%	-5.68%	-6.92%	-18.28%
Chile	-15.79%	-15.23%	-24.25%	-10.14%	-9.55%	-19.17%	-20.22%	-20.20%	-25.63%	-10.22%	-10.20%	-15.18%
China	-39.28%	-44.08%	-53.43%	-22.05%	-28.20%	-40.21%	11.67%	11.45%	9.52%	11.81%	11.59%	9.66%
Colombia	-29.05%	-28.32%	-32.74%	-24.56%	-23.79%	-28.49%	1.51%	-0.74%	-14.70%	-4.82%	-7.22%	-22.07%
Croatia	-56.27%	-59.00%	-64.09%	-64.10%	-66.34%	-70.52%	6.96%	5.85%	1.48%	1.93%	0.76%	-3.84%
Czech Rep.	-49.10%	-49.77%	-54.11%	-53.81%	-54.42%	-58.36%	12.29%	10.17%	8.10%	8.46%	6.25%	4.09%
Denmark	-48.20%	-46.81%	-51.69%	-52.04%	-50.75%	-55.28%	6.99%	5.39%	2.18%	3.63%	1.97%	-1.36%
Ecuador	-12.20%	-10.16%	-9.28%	-20.09%	-18.24%	-17.44%	0.69%	0.14%	0.00%	0.69%	0.14%	0.00%
Egypt	-33.71%	-32.44%	-42.51%	-38.72%	-37.55%	-46.86%	2.54%	5.52%	2.09%	1.61%	4.62%	1.15%
El Salvador	N.A	N.A	N.A	N.A	N.A	N.A	1.66%	1.10%	-0.63%	2.62%	2.07%	0.36%
Finland	-48.21%	-47.34%	-53.59%	-54.79%	-54.04%	-59.49%	6.78%	5.29%	2.10%	3.60%	2.06%	-1.24%
France	-43.62%	-43.00%	-46.95%	-49.64%	-49.09%	-52.61%	6.78%	5.29%	2.10%	3.60%	2.06%	-1.24%
German	-31.02%	-30.66%	-39.81%	-39.96%	-39.64%	-47.60%	6.78%	5.29%	2.10%	3.60%	2.06%	-1.24%

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Table 7 (continued)

Stock return and currency return in each country

	Stock return						Currency return					
	20070222 -20081231	20070402 -20081231	20070719 -20081231	20070222 -20090324	20070402 -20090324	20070719 -20090324	20070222 -20081231	20070402 -20081231	20070719 -20081231	20070222 -20090324	20070402 -20090324	20070719 -20090324
Ghana	N.A	N.A	N.A	N.A	N.A	N.A	-34.43%	-35.02%	-37.21%	-47.55%	-48.19%	-50.59%
Greece	-62.49%	-61.38%	-65.10%	-64.43%	-63.37%	-66.90%	6.78%	5.29%	2.10%	3.60%	2.06%	-1.24%
Hong Kong	-30.86%	-27.37%	-37.49%	-33.15%	-29.78%	-39.56%	0.81%	0.82%	0.90%	0.80%	0.82%	0.89%
Hungary	-49.22%	-48.03%	-59.17%	-55.70%	-54.66%	-64.38%	1.36%	-1.89%	-6.08%	-16.23%	-20.05%	-25.00%
Iceland	-91.37%	-91.44%	-92.86%	-94.25%	-94.30%	-95.24%	-84.51%	-83.99%	-106.42%	-70.56%	-70.08%	-90.82%
India	-31.20%	-22.54%	-37.96%	-32.45%	-23.96%	-39.09%	-12.50%	-14.98%	-23.03%	22.31%	22.53%	13.08%
Indonesia	-25.05%	-26.71%	-41.92%	-20.59%	-22.35%	-38.46%	-22.58%	-22.36%	-23.03%	-29.65%	-29.41%	-30.12%
Ireland	-76.41%	-74.91%	-74.44%	-78.47%	-77.10%	-76.67%	6.78%	5.29%	2.10%	3.60%	2.06%	-1.24%
Israel	-43.32%	-43.64%	-50.98%	-36.43%	-36.79%	-45.02%	9.58%	8.95%	11.50%	3.51%	2.84%	5.56%
Italy	-52.72%	-52.11%	-52.78%	-60.62%	-60.11%	-60.67%	6.78%	5.29%	2.10%	3.60%	2.06%	-1.24%
Jamaica	-24.88%	-17.37%	-13.79%	-36.57%	-30.23%	-27.20%	-18.52%	-13.48%	-15.11%	-39.26%	-33.33%	-35.25%
Japan	-51.08%	-47.97%	-51.10%	-53.13%	-50.15%	-53.15%	25.00%	23.32%	25.89%	19.98%	18.19%	20.93%
Jordan	-2.26%	2.51%	9.18%	-10.64%	-6.28%	-0.17%	-0.25%	-0.18%	-0.27%	0.11%	0.18%	0.10%
Kazahkstan	N.A	N.A	N.A	N.A	N.A	N.A	4.69%	3.57%	0.37%	-17.69%	-19.08%	-23.03%
Kenya	-38.91%	-31.69%	-31.39%	-54.65%	-49.29%	-49.06%	-20.77%	-17.50%	-24.50%	-20.55%	-17.29%	-24.28%
Korea (Rep.)	-23.27%	-22.96%	-41.97%	-16.63%	-16.29%	-36.96%	-33.19%	-29.37%	-37.99%	-46.22%	-42.02%	-51.49%
Latvia	-62.16%	-59.96%	-61.66%	-72.11%	-70.48%	-71.74%	6.38%	5.04%	0.16%	2.61%	1.22%	-3.85%
Lithuania	-72.53%	-71.40%	-72.82%	-75.12%	-74.10%	-75.38%	6.13%	4.52%	1.39%	2.87%	1.21%	-2.03%
Luxembourg	-55.92%	-57.04%	-59.15%	-59.48%	-60.51%	-62.44%	6.78%	5.29%	2.10%	3.60%	2.06%	-1.24%
Malaysia	-34.33%	-32.79%	-39.18%	-34.19%	-32.64%	-39.05%	0.20%	2.98%	-0.82%	-4.17%	-1.27%	-5.23%

Table 7 (continued)

Stock return and currency return in each country

	Stock return						Currency return					
	20070222 -20081231	20070402 -20081231	20070719 -20081231	20070222 -20090324	20070402 -20090324	20070719 -20090324	20070222 -20081231	20070402 -20081231	20070719 -20081231	20070222 -20090324	20070402 -20090324	20070719 -20090324
Mexico	-21.96%	-23.28%	-30.39%	-29.41%	-30.61%	-37.04%	-25.34%	-24.54%	-28.04%	-29.32%	-28.49%	-32.10%
Morocco	3.80%	-4.47%	-3.06%	-1.41%	-9.26%	-7.92%	5.80%	7.45%	1.91%	3.05%	4.76%	-0.94%
Netherlands	-51.18%	-51.66%	-55.83%	-55.50%	-55.93%	-59.73%	6.78%	5.29%	2.10%	3.60%	2.06%	-1.24%
New Zealand	-40.02%	-39.96%	-41.67%	-42.94%	-42.88%	-44.50%	-21.53%	-23.37%	-36.85%	-24.37%	-26.25%	-40.05%
Nigeria	-23.09%	-27.63%	-38.77%	-51.05%	-53.93%	-61.03%	-5.58%	-6.42%	-8.97%	-11.89%	-12.78%	-15.49%
Norway	-51.67%	-51.88%	-56.90%	-50.18%	-50.39%	-55.57%	-15.11%	-15.92%	-23.20%	-3.24%	-3.97%	-10.50%
Pakistan	-49.19%	-47.99%	-55.55%	-42.68%	-41.32%	-49.85%	-30.14%	-30.18%	-31.40%	-31.87%	-31.91%	-33.14%
Panama	N.A	N.A	N.A	N.A	N.A	N.A	2.35%	2.79%	0.72%	1.28%	1.73%	-0.36%
Peru	-53.81%	-59.77%	-70.16%	-45.29%	-52.35%	-64.66%	3.56%	3.95%	1.20%	3.58%	3.97%	1.22%
Philippines	-44.35%	-42.01%	-49.42%	-43.02%	-40.62%	-48.21%	1.02%	1.17%	-5.04%	-0.05%	0.11%	-6.18%
Poland	-51.06%	-52.08%	-58.69%	-56.07%	-56.98%	-62.92%	0.55%	-1.66%	-7.96%	-13.07%	-15.58%	-22.74%
Portugal	-45.46%	-43.88%	-52.98%	-44.73%	-43.13%	-52.34%	6.78%	5.29%	2.10%	3.60%	2.06%	-1.24%
Romania	-67.21%	-65.91%	-72.25%	-73.21%	-72.15%	-77.33%	-10.98%	-13.35%	-25.97%	-22.61%	-25.23%	-39.17%
Russia	-67.33%	-67.22%	-69.49%	-62.69%	-62.57%	-65.16%	-12.44%	-13.42%	-15.86%	-27.39%	-28.50%	-31.26%
Singapore	-44.97%	-44.28%	-49.83%	-45.42%	-44.73%	-50.23%	5.96%	4.90%	4.96%	1.48%	0.38%	0.43%
Slovak Rep.	-12.71%	-14.11%	-13.98%	-29.13%	-30.27%	-30.17%	6.78%	5.29%	2.10%	3.60%	2.06%	-1.24%
South Africa	-19.43%	-21.55%	-27.39%	-20.94%	-23.02%	-28.74%	-32.80%	-29.57%	-35.77%	-33.95%	-30.69%	-36.94%
Spain	-37.83%	-37.57%	-39.53%	-45.99%	-45.76%	-47.46%	6.78%	5.29%	2.10%	3.60%	2.06%	-1.24%
Sri Lanka	-49.73%	-46.12%	-36.47%	-45.63%	-41.74%	-31.29%	-4.63%	-1.52%	-1.83%	-4.86%	-1.74%	-2.05%
Sweden	-48.20%	-48.93%	-51.88%	-49.20%	-49.92%	-52.81%	-9.80%	-11.17%	-16.66%	-13.97%	-15.39%	-21.09%

Table 7 (continued)

Stock return and currency return in each country

	Stock return						Currency return					
	20070222 -20081231	20070402 -20081231	20070719 -20081231	20070222 -20090324	20070402 -20090324	20070719 -20090324	20070222 -20081231	20070402 -20081231	20070719 -20081231	20070222 -20090324	20070402 -20090324	20070719 -20090324
Switzerland	-40.18%	-38.21%	-39.77%	-46.78%	-45.03%	-46.42%	14.66%	13.15%	12.01%	9.07%	7.47%	6.26%
Taiwan	-41.21%	-41.77%	-51.54%	-32.87%	-33.52%	-44.66%	0.76%	0.85%	0.14%	-2.33%	-2.23%	-2.96%
Thailand	-35.13%	-33.79%	-46.89%	-36.83%	-35.53%	-48.29%	-3.94%	-8.65%	-15.83%	-4.74%	-9.49%	-16.72%
Tunisia	8.82%	11.32%	16.73%	15.97%	18.62%	24.39%	-0.57%	-1.45%	-2.99%	-4.88%	-5.79%	-7.39%
Turkey	-38.71%	-38.30%	-49.62%	-42.96%	-42.58%	-53.11%	-9.44%	-8.82%	-18.88%	-19.98%	-19.31%	-30.34%
Uganda	N.A	N.A	N.A	N.A	N.A	N.A	-11.96%	-10.39%	-17.30%	-18.22%	-16.56%	-23.87%
Ukraine	-58.42%	-62.75%	-71.54%	-70.77%	-73.81%	-79.99%	-51.51%	-51.63%	-55.38%	-54.97%	-55.10%	-58.94%
United Kingdom	-30.51%	-29.79%	-33.22%	-38.70%	-38.07%	-41.09%	-35.01%	-35.94%	-41.69%	-34.53%	-35.45%	-41.17%
United States	-30.82%	-29.12%	-37.31%	-39.62%	-38.14%	-45.29%	N.A	N.A	N.A	N.A	N.A	N.A
Uruguay	N.A	N.A	N.A	N.A	N.A	N.A	1.78%	0.64%	-2.82%	5.18%	4.07%	0.73%
Venezuela	-28.29%	-27.88%	-15.64%	-13.79%	-13.30%	1.42%	-0.25%	-0.26%	-0.26%	-0.13%	-0.14%	-0.14%
Zimbabwe	N.A	N.A	N.A	N.A	N.A	N.A	-1250097%	-1257179%	-1270290%	-14450817%	-14532676%	-14684225%

* Euro zone countries are Austria, Belgium, Finland, France, German, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Slovak Rep.,
and Spain.

Table 8
Currency market, corporate governance, and financial development
58 samples in the regression

Dependent variable: Currency return 20070719-20090324						
Anti-director Index			-0.0404	-0.0498*	-0.0332	-0.0150
			[-1.4618]	[-1.9009]	[-0.1988]	[-0.1061]
Anti-self-dealing Index	-0.1206	-0.1197			-0.0377	-0.0484
	[-0.7944]	[-0.9336]			[-1.2223]	[-1.6268]
Private credit	-0.1279	-0.0783	-0.1173	-0.0672	-0.1184	-0.0668
	[-1.7335]	[-1.0823]	[-1.6108]	[-0.9526]	[-1.6048]	[-0.9346]
Stock development	-0.0045	-0.0263	-0.0019	-0.0172	-0.0012	-0.0168
	[-0.0925]	[-0.4884]	[-0.0389]	[-0.3285]	[-0.0241]	[-0.3165]
	0.0047		-0.0355		-0.0305	
	[0.0483]		[-0.3664]		[-0.3020]	
SC	-0.2020		-0.2078*		-0.2067*	
	[-1.6742]		[-1.7504]		[-1.7210]	
SO	-0.0689		-0.0947		-0.0904	
	[-0.5912]		[-0.8307]		[-0.7716]	
UK	-0.0277		-0.0630		-0.0503	
	[-0.2240]		[-0.5978]		[-0.4043]	
OECD		-0.0942		-0.0903		-0.0909
		[-1.0966]		[-1.0828]		[-1.0761]
Eastern Europe		-0.0039		0.0183		0.0180
		[-0.0371]		[0.1788]		[0.1739]
East Asia		-0.0167		-0.0105		-0.0075
		[-0.1440]		[-0.0958]		[-0.0659]
Latin		-0.0703		-0.0714		-0.0710
		[-0.7625]		[-0.7964]		[-0.7833]
LnGDP	0.0366		0.0321		0.0333	
	[1.1542]		[1.0414]		[1.0495]	
CPI	-0.0195*	-0.0294***	-0.0181*	-0.0280***	-0.0185*	-0.0281***
	[-1.8561]	[-2.8782]	[-1.7914]	[-2.8700]	[-1.7701]	[-2.8337]
Public Enforcement	0.0873	0.0271	0.1050	0.0555	0.1049	0.0560
	[1.3567]	[0.4442]	[1.6186]	[0.8984]	[1.5992]	[0.8947]
Return 20051230-20070718	-0.2814	-0.4235	-0.1574	-0.2895	-0.1615	-0.2930
	[-0.7000]	[-0.9752]	[-0.3868]	[-0.6756]	[-0.3922]	[-0.6746]
Constant	-0.2363	0.1793	-0.0989	0.2631**	-0.1084	0.2644**
	[-0.7529]	[1.5637]	[-0.3068]	[2.1509]	[-0.3291]	[2.1281]

* Reserve is divided by 10,000

* The T-value is given in the parentheses

* * significant at 10% level, ** significant at 5% level, *** significant at 1% level.

Furthermore, in Table 3, currency market does not present a clear result in the regression. This may be due to the missing data of the countries in euro zone. 13 countries in the euro zone are excluded form the regression. Hence, I add the countries in euro zone with the return of euro dollar into the regression again. Table 8 shows the regression. The result is similar to Table 3.

5. Conclusion

This paper shows that performance in stock markets during the 2007-09 Subprime Crisis is affected by the financial development measure, private credit. There are two explanations for this result. First, subprime crisis is originated from the capital bubble. Private credit measure the amount of savings that is provided by debt-issuing financial intermediaries to private borrowers. Countries with greater amount of private credit may lead to capital bubble in the subprime crisis. Therefore, these countries suffered seriously in stock markets. Second, Subprime Crisis was spread and expanded by the financial derivatives. The financial innovation is more advanced in the countries with better financial development. That is why better private credit lead to worse performance in stock markets.

Besides, I find that Subprime Crisis is more severe in OECD, Eastern European, and Socialistic countries. The stock markets decline and fluctuation are much more dramatic in these countries. OECD countries usually have better financial development. This is consistent with the previous summary. Most Socialistic countries are located in Eastern Europe, which shows the emerging Eastern European markets suffered critically during the 2007-09 Subprime Crisis. I will attribute the result into three explanations. First, the financial system and related regulation in socialistic countries may not be complete. They can not deal with the unprecedented global financial shock. Second, a great of capital inflow into Socialistic countries came from Western Europe in recent years. When Western European financial system plagued with the financial crisis, Eastern European financial system achieved a large amount of losses at the same time. Third, after emerging East Asia countries and emerging Latin America countries underwent the 1997 financial crisis, they have improve the strength of financial system and financial legal, as well as the macroeconomic situation, such as total reserve and foreign debt. The evidence can be found in section 3.4 with the comparisons between IMF bailout countries and other emerging economic entities.

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Furthermore, I dig into the IMF bailout countries and re-confirm my suggestion that financial development is a negative factor and anti-self dealing is a positive factor in this financial crisis. Most of IMF bailout countries are also located or near by Eastern Europe, which also supports my deduction.

Finally, corporate governance, particularly the minority shareholder protection in legal system, seems not to play an important role during the crisis. The regulation may not be complete enough for the rapid financial innovation nowadays. The legal system is also a hot issue in this financial crisis. On the other hand, legal system in corporate governance may cause moral hazard, especially in those developed countries. Even the regulations are established to protect shareholder's right, we still need good supervisory system and executive institution to match up in order to prevent expropriation from the managers and blockholders.

Description of the variables

Name in Excel	*Longer Name*	*Description*

1.Dependent variable:

return 20070719-20090324

Stock return 20070719-20090324. Source: Datastream
Currency return 20070719-20090324. Source: website－OANDA.com.

Standard deviation
20051230 - 20070718

Standard deviation of Stock 20051230 – 20070718 Source: Datastream

IMF dummy

Hungary, Iceland, Latvia, Pakistan and Ukraine equals to 1, others equal to 0
Source: IMF official website－http://www.imf.org/external/index.htm

2.Independent variable:

Anti-director Index	Anti-director Index	This index of Anti-director rights is formed by adding one when: (1) the country allows shareholders to mail their proxy vote; (2) shareholders are not required to deposit their shares prior to the General Shareholders= Meeting; (3) cumulative voting or proportional representation of minorities on the board of directors is allowed; (4) an oppressed minorities mechanism is in place; (5) the minimum percentage of share capital that entitles a shareholder to call for an Extraordinary Shareholders= Meeting is less than or equal to ten percent (the sample median); or (6) when shareholders have preemptive rights that can only be waved by a shareholders meeting. The range for the index is from zero to six. Source: La Porta et al. (1998).

Name in Excel	Longer Name	Description
Anti-self-dealing Index	Anti-self-dealing Index	The average of below component : (1) approval by disinterested shareholders; (2) disclosures by buyer; (3) disclosures by Mr. James; (4) independent review; (5) each of the elements in the index of disclosure in periodic filings; (6) standing to sue; (7) rescission; ease of holding Mr. James liable; (8) ease of holding the approving body liable; and (9) access to evidence. Range from zero to one. Mr. James is Buyer's controlling shareholder and a member of Buyer's board of directors in M&A case. Source: La Porta et al. (2008).
Private credit	Private Credit by Deposit Money Banks / GDP	Private Credit by Deposit Money Banks / GDP in 2006. Source: Beck et al. (2000).
Stock development	Stock Market Capitalization / GDP	Stock Market Capitalization / GDP in 2006. Source: Beck et al. (2000).
LnGDP	Logarithmic of per capita Gross Domestic Product	Logarithmic of per capita Gross Domestic Product (in US dollars) in June 2008. Source: Economist Intelligence unit.
Reserve	Foreign Exchange Reserves	Total Reserve in June 2008. Source: IMF international financial statistics and Economist Intelligence unit.
Public Enforcement	Index of public enforcement	Index of public enforcement if all disclosure and approval requirements have been met. Ranges from 0 to 1. One quarter point when each of the following sanctions is available: (1) fines for the approving body; (2) jail sentences for the approving body; (3) fines for Mr. James; and (4) jail sentence for Mr. James. Source: Djankov et al. (2008).

Description of the variables

Name in Excel	*Longer Name*	*Description*
FR	French Legal Origin	Source: La Porta et al. (1998).
SC	Scandinavian Legal Origin	Source: La Porta et al. (1998).
SO	Socialist Legal Origin	Source: La Porta et al. (1999a).
UK	Common-Law Legal Origin	Source: La Porta et al. (1998).
GE	German Legal Origin	Source: La Porta et al. (1998).
OECD	Member countries of organisation for Economic Co-operation and Development	Source: Official website of Member countries of organisation for Economic Co-operation and Development. http://www.oecd.org/home/0,2987,en_2649_201185_1_1_1_1_1,00.html
Eastern Europe	Emerging Eastern Europe Countries	Bulgaria, Croatia, Latvia, Lithuania, Romania, Ukraine
East Asia	Emerging East Asia Countries	China, Hong Kong, Indonesia, Malaysia, Philippines, Singapore, Taiwan, Thailand
Latin	Emerging Latin America Countries	Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, El Salvador, Jamaica, Panama, Peru, Uruguay, Venezuela
Return 20051230 - 20070718		Stock return 20051230 - 20070718. Source: Datastream Currency return 20061231 - 20090324. Source: website－OANDA.com.
Standard deviation 20051230 - 20070718		Standard deviation of Stock 20051230 – 20070718 Source: Datastream

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