
The effect on value added and income to equity and labor providers of the introduction of Anglo-Saxon type business regulations: Case of corporations listed in Korean Stock Exchange

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Abstract: We applied De Jong's (1995) theory across time using the corporations listed in Korea Exchange. Since the Korean economy rapidly embraced the Anglo-Saxon type of business regulations after the foreign exchange crisis around 1997, it provides unique opportunity to test De Jong's theory across time. The results generally confirm the crucial predictions of the theory that the Anglo-Saxon type of business regulations prompt managers to lower the level of value added, and that the income to labor providers decreases. When the time-varying external variables, such as globalization, dissemination of IT and business cycle in Korea, are controlled, however, we failed to verify the rise in income to equity providers.

Key words: Anglo-Saxon business regulations, Value-added, foreign exchange crisis.

Korean Social Science Journal, XXXVI No. 2(2009): 1~34.

www.kci.go.kr

I . Introduction

Recent researches suggest that laws and regulations play important role in determining the development of a country's financial markets and the listed firms' performance. As La Porta, et al. (1999) show, the ownership structure of large corporation takes, contrary to the belief of Berle and Means (1932), various forms across the countries even when these countries all follow capitalism. La Porta, et al. (2002) find evidence that US firms are valued systematically higher than western European firms, while these hosting countries all enjoy well functioning capitalism.

Many believe that these differences exist because each country chooses to play the capitalism differently. One country protects investors better than another country does. One region maximizes shareholder value while another region pursues the maximum output to be divided among different stakeholders. The choice is, of course, supported and implemented by the laws and regulations each country adopts. La Porta, et al. (2002) draw distinction between the civil law and common law. They argue that the countries adopting common law, like the US and UK, promote minority investor rights more rigorously, and report that these countries' listed companies demonstrate higher firm value than the ones in countries under civil law regime, like France and Germany where the investors are not as rigorously protected as in the US. The positive correlation between the investor protection and firm value seems to hold in other countries outside the western world as well. Classen et al. (2002) argue that the Asian countries where the minority shareholders are poorly protected suffered greatly from financial crisis around 1997. All these studies seem to suggest that the Anglo-Saxon type of market system and regulatory environment enhances the market valuation of business corporations.

In his ground breaking work, De Jong (1995) also points out the importance of regulatory features in determining the corporate performance, and divides European capitalism into three categories, i.e., Anglo-Saxon, Germanic and Latin type. He uses, however, net value added, as the measure of corporate performance. He empirically shows that the Anglo-Saxon type of corporation, even though it achieves a remarkably better profitability than continental firms, produces less total net value added than alternative types. Market value of a corporation represents the future income of equity providers, while the value added is the total income to not only equity providers but the other stakeholders, i.e., creditors, landlords, labor, etc. Given this definition of value added, De Jong's (1995) findings, together with those of La Porta, et al. (2002), allow us to assume that as the business legal environment changes to Anglo-Saxon type from other types, the corporation will also change its functional goal from maximizing the income for all stakeholders to maximizing the shareholder's income only. We don't, however, find every day a country that switches its business law to Anglo-Saxon type from other types, to provide us with the unique chance to test the effect on corporate performance of the legal system across time.

Fortunately, South Korean case allows us to have this rare chance. Following the recommendations of IMF after the Asian financial crisis around 1997, Korea rapidly and decisively introduced Anglo-Saxon type of business regulations. Within several years, various reforms brought about significant changes in the Korean economy that resulted in an increase in the firm value of chaebols (Chang et al., 2007). Comparing the performances of the Korean listed firms before and after the financial crisis, we would be able to test De Jong's (1995) theory across time.

In the next chapter, we report the regulatory changes experienced by Korean economy after the foreign exchange crisis around 1997. We discuss in detail the Anglo-Saxon type of regu-

lations introduced and the legal changes it brought about in Korean legal environment. In chapter 3, we do a literature review proposing several research questions. We report the empirical results in chapter 4, followed by the conclusion of our research in chapter 5.

II. Changes in Regulatory environment in Korea after Asian Financial Crisis

1. IMF Standby Agreement

As a system of law, Korean legal system finds its membership in the civil law family, as the adoption of modern legal system can be traced back to the first half of the 20th century, with importation of the Japanese legal system, Japan itself having imported its legal system mainly from Germany in the latter part of 19th century¹. U.S. influence after the liberation in 1945 has exposed Korea to the U.S. laws in varying degrees for the past fifty years.

However, the Asian Financial crisis that hit Korea hard in the latter part of the 20th century introduced an unprecedented rapid shift towards Anglo-American style regulations in the areas of corporate governance and financial market related laws. This was largely driven by a set of conditions that International Monetary Fund (“IMF”) has imposed on Korean government, in the form of letters of intent negotiated between Korean government and the IMF². Due to heavy U.S. influence on IMF and

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1. Japanese Civil Code was promulgated in 1896 (民法). The Code was largely based on the first draft of the German Civil Code, but French element had been mixed in.
 2. There were 10 separate memoranda between December 3, 1997 (“Korea Memorandum on Economic Program”) and January, 2001 (“IMF Standby

World Bank, the changes implemented according to the agreement meant in all practicality the further shift to the Anglo-American model.³ Lee and Lee (2008), and also Chang and Shin (2003) have pointed out that due to the Neo-Classical orientation of the IMF's institutional leanings, recommendations of the IMF and outcome of the reforms implemented were focused on introducing Anglo-Saxon, or market-oriented economic model.

According to the Memoranda between IMF and Korean government, the IMF pushed as conditions an austere fiscal policy in the short term and, more fundamentally, a sweeping financial sector reform, to precede the corporate sector and corporate governance reform. At the same time, liberalization of trade and capital was pursued as means of making Korea more accessible to foreigners. From December 1997 to 2001, ten Letters of Intent were submitted to IMF to lay out progress of various reforms, addressing a wide range of economic, financial and legal agenda, including monetary and fiscal policy, financial sector and corporate sector restructuring, trade and capital account liberalization, liberal market reform, and corporate governance reform. In other words, every important facet of economic and business environ-

Agreements and Letter of Intent") that set forth agreements with Korean government on restructuring of financial and industrial sectors, fiscal and monetary policies, corporate governance, shareholder rights, etc.

3. Although IMF is on record an international organization that does not set out to spread Anglo-American legal system, the heavy influence of American (and British) influence in the organization drives its policy direction, notably by the "Washington Consensus," a term coined by American economist, John Williamson, to denote a set of specific economic policy tools to be applied to developing economies in crisis. The prescription has been widely viewed as a market fundamentalism and attracted criticism from writers such as Nobel Laureate Joseph Stiglitz, George Soros, and Dani Rodrik, Professor of International Political Economy at Harvard University

ment was subject to review and reform.

2. Specific Regulatory Changes in Korean laws

To implement the standby agreement with the IMF, several waves of substantial amendments in commercial laws occurred in 1998, 1999, and 2001, during the IMF regime in Korea. These reforms addressed both external and internal legal environment for corporate sector, to make the business environment friendlier to the market operation and to strengthen the shareholders rights. In the Anglo-American model of markets, shareholders' freedom of transactions, fair access of company information and rigorous protection of shareholders' property rights, are fundamental building blocks. This meant that for purposes of implementing Letters of Intent by Korean government, many hurdles or "safety devices" in the financial market under the regime of semi-planned economy had to be abolished. At the same time, internal governance, represented mainly by Anglo-American style board governance, was swiftly introduced. Under the IMF regime, regulators addressed corporate, market, regulatory/legal environment aspects in a single reform drive, from minority shareholder rights to Anglo-American style board mechanism based on shareholder theory, rather than on a competing and continental mainstay of stakeholder theory⁴. This enabled the rapid transformation of Korean legal and regulatory environment, palatable to new economic realities that are similar to Anglo-American market based economic structure.

4. Frequently, European board feature two tier board that include bank and employees and other parties to balance the interests of stakeholders, whereas Anglo-American board operate under shareholder value maximization as the all encompassing goal, espousing other stakeholders under residual value rationale.

(1) Financial sector reform after the Asian crisis: A series of reforms touched almost all aspects of corporate realities, starting with a sweeping financial sector reform. Financial sector reform was one of the key areas of agreements in the Letters of Intent with IMF in 1997. In accordance with the agreement, Korean government submitted a comprehensive plan of reform to IMF and announced in April of 1998 Reform and Restructuring policy plan for financial as well as corporate sector. Even before the announcement, the government retired 14 factoring companies, two securities companies and one investment trust and prepared 22 Trillion Won of bail-out funds. The government also laid ground-work by amending the Act on the Structural Improvement of the Financial Industry in 1997 to facilitate the restructuring efforts.⁵ Subsequent to the announcement of restructuring, financial sector reform proceeded in two waves, from 1998-2000 and from 2000-2004. The upshot of the reform and restructuring was that altogether 16 factoring companies, 13 banks out of 26 banks went out of business or taken over, 4 life insurance companies and 25 mutual trust and savings banks were liquidated.

The main tool of the reform was the BIS ratio of 8% that most of the banks were not meeting at the time. The non-compliance gave the government a wide discretion and the amended laws were applied in similar fashion as the P&A (Purchase and Assumption) mechanism of the U.S.⁶ The intended effect was to move away from the government directed or policy financing of

5. The law was originally enacted in 1991, but amended in 1997 to suit the need for the restructuring and reform needs, after the Asian Crisis

6. Rho (2006) asserts that the reform proceeded with the P&A “playbook” from the U.S. laws. Federal Deposit Insurance Corporation) uses the means based on contract transfer theory. Korean government used its version as governmental administrative actions. Later on numerous lawsuits challenging the government action ensued, mostly without success

the old and have the financial institutions function in the mold of the advanced banks in the west, mostly Anglo-American institutions. In the same vein, government actively encouraged the sale of financial institutions to the foreign banks and institutions. As the result, Newbridge Capital bought Jeil Bank, Lonestar acquired Korea-Foreign Exchange Bank, Citibank took over Hanmi Bank, and Standard Charter Bank acquired Jeil Bank from Newbridge Capital.⁷

These reforms were driven by Financial Supervisory Commission ("FSC") which was given authority to carry out the reform measures. For example, the Act on the Structural Improvement of the Financial Industry gives FSC to set administrative measures in the P&A actions.

The impact of the financial sector reform extends far beyond improvement of solvency, transparency and soundness of financial statements of Korean banks. The lending practice of Korean financial institutions fundamentally changed as the aftermath of the reform, from government sponsored policy lending of semi-planned economy era in 1960-80s to market oriented, and globalized financial operations. Corporations in Korea no longer was able to expect the government to play a protector of chaebol companies, under "too big to fail" rationale. High degree of participation of foreign shareholders virtually negated most of what was "Korean practice" in lending. What followed from this shift was that corporate performance and the credit worthiness have become a crucial factor for survival, especially when government would not listen to pleas to artificially stay afloat from financially troubled large companies. Several high-profile fallings of Korean chaebol groups, including Daewoo, Hanbo, and Reorganization of Hyundai reflect this new reality for the corporate sector.

7. Other banks also have high degree of foreign ownership. The biggest bank, Kukmin Bank, has the foreign ownership ratio close to 80%.

(2) Laws affecting shareholder and bankruptcy and M&A: For institutional investors, limits on their market activities were abolished in 1998 through amendments in Securities Investment and Trust laws. This change contemplated the anticipated role of large institutional investors that are critical in the markets in the U.S. and England⁸. Together with the abolishment of the limits, good faith fiduciary duty was imposed on exercise of voting rights, and disclosure requirements were strengthened for key shareholder approval items such as mergers and acquisition, and key management change.

For minority shareholders, much debated class action lawsuit was provided, paving way for minority shareholders to take collective actions against a company. In the early period of implementation, the law was applicable only to those companies with more than 2 trillion won in assets, but later the coverage was expanded to be applicable to all the listed companies.⁹. Additional legislations were introduced to strengthen shareholder rights in 1998, such as cumulative voting, mail-in voting, and recognition for shareholder initiated agenda. Also, voting block requirements were relaxed for shareholder right of demand for de-commissioning a director, auditor or receiver (1% to .5%), for initiating representative suit (1% down to .01%), for exercise of the right to inspect financial records (3% down to 1%), and for requirement for maintaining legal standing to sue on illegal activities (.5% down to .05%).

Mergers and Acquisition related laws were also revised. Limits on owning large block shares and mandatory open market

8. Institutional investors such as CalPERS and Tiaa-CREF championed the corporate governance discussion from 1980s on, focusing on the elimination or minimization of agency problem, prevalent in the Anglo-American corporate reality where management and ownership are separated.

9. The legislation passed in 2003.

purchase of the stocks were abolished in 1997 and 1998, respectively. Also abolished were limits on foreigners acquisition of companies with more than 2 Trillion assets, foreign ownership of stocks, and repeated market acquisition (1998). Around the same period, a major hurdle in the market for corporate control applicable to chaebol groups was lifted when internal cross guaranties were prohibited for thirty largest conglomerates in April of 1998. This was seen as an early stage of strong policy regime against chaebols in Korea as KFTC (Korea Fair Trade Commission) subsequently took on administrative initiatives to weaken the control mechanisms of chaebol groups, by putting investment ceilings on the affiliated companies.

Bankruptcy laws were also revised in 1998 to shed excessive red tapes in reorganizing flailing companies. Under the revision, creditors were given more power to exercise more control in the bankruptcy process, with easier filing and rehabilitation processes. Since most of the creditors were banks, this meant that the government, through control of banks, had more control over those companies targeted for restructuring.

(3) Governance Mechanism related laws (board governance):

Along with the external corporate governance environment, internal governance mechanism, notably board governance and transparency enhancement measures, was introduced to Korea after the Asian financial crisis, also through the Letters of Intent negotiated with IMF. The reform began with the amendment of Securities and Exchange Act¹⁰. (1998) which mandated the listed companies to appoint external directors equal or more than 1/4 of all directors in number. This requirement was further strengthened in 1999, strongly recommending that conglomerate listed

10. Securities and Exchange Act has been now consolidated into Capital Market and Financial Investment Service Act as of February, 2009

companies appoint external directors equal or more than 1/2 (at least 3 directors) of all directors in number¹¹. A year later, the another amendment of the Act in January, 2000, promulgated the strengthened version of the requirement which mandated the listed companies to appoint external directors equal or more than 1/4 of all directors in number. Furthermore, large scale listed companies reporting more than 2 Trillion won in assets are now required to install Nominating Committee¹². and Audit committee, and to appoint external directors equal of more than 1/2 (at least 3 directors) of all directors in number. The amendment of the Act in March, 2001, further strengthened the requirement, requiring at this time registered companies to follow the same rule that were applicable to the large scale listed companies (venture companies with less than 100 Billion won asset are exempt), including the requirement to install Audit committee and Nomination committee. In addition, Nomination committee is required to nominate the director candidate recommended by minority shareholders and Audit committee chairperson is to be appointed among the external directors¹³. Later in 2003, the Securities and Exchange Act¹⁴. was again amended to require that equal or more than 1/2 of all directors in a board of directors be external directors and that at least one director in the Audit committee be a financial expert.

11. Corporate governance reform committee published Model Guideline for Corporate Governance in 1999

12. Under the Act, Nomination Committee is for external directors only.

13. When appointing a director for the Audit committee, any shareholder may not exercise more than 3% of voting rights

14. Now The Capital Market and Financial Investment Service Act (see footnote 12)

III. Literature review and research questions

As the preceding chapter states, the changes in business laws have had significant effects on Korean corporations in many aspects. Some examples are, among other things, their investor relation and corporate governance policies which are reshaped after Anglo-Saxon model. The financial institutions have modified their loan policies to keep up with Anglo-Saxon norms, which again has altered the corporate financing policy. These regulatory changes in Korea allow us to propose several assumptions.

1. The value added will decrease across the board

First, we can assume that after the crisis the value added standardized by the total assets decreased across Korean listed firms. According to De Jong's (1995) theory, the introduction of Anglo-Saxon type of business regulations to Korea must have forced Korean listed firms to lower the total output for a given size of assets to the level where the maximum income for equity provider is assured.

De Jong (1995) has already demonstrated this outcome using European panel data. Investigating 100 largest European corporations during the three-year period from 1991 to 1993, De Jong (1995) reports that the net added value per firm is 5.1, 3.7, and 2.9 billion ECU for German firms, Italian firms and British firms, respectively. He classifies the German economy as Germanic type social market capitalism and the British economy as Anglo-Saxon type free market capitalism¹⁵. He argues that

15. He distinguishes three main types of European capitalism, according to its corporate features. The first one is the Anglo-Saxon type of free market capitalism, in which the business corporations are financed by

this is because the Anglo-Saxon firms maximize the excess profits while the Germanic corporations try to achieve maximum output at theoretically zero profit. In his wording, “the ownership structure of Anglo-Saxon firm is a profit maximiser...the stakeholders influencing the decision making in a Continental type of firm are more numerous and more varied in their purposes. Consequently, compromise solutions are found, reflecting the pressures of employees, unions, banks, governments, municipalities, etc. and saving the appearances by keeping the size of the corporation or its market share at the cost of profitability.”

2. There will be income shift to shareholders from other stakeholders

Second, we can also assume that the regulatory changes brought about an income shift to equity shareholders from other stakeholders. De Jong (1995) again allows us to make this prediction. His empirical study shows the distribution of the total added value between labor and capital. Labor takes 88.6% of the

their public owners and run by managers who, normally having very little or no shareholdings, seek the maximization of shareholder interests. The separation between equity ownership and managerial control is therefore a major structural difference from the other types. Under this type fall the United States, United Kingdom. The second is the Germanic type of social market capitalism. Various groups concerned, so called stakeholders, have a stake in the control of the corporation. Thus, the corporation's final goal is not just the maximum share value, but is rather determined by the interaction among the stakeholders. The government plays not a small role in injecting some of the extra-market values, such as solidarity and social justice. De Jong puts Germany and France under this heading. Finally the third is the Latin type of capitalism, where ownership is strongly vested in family control. State enterprise and financial institutions are also important structures. Italy and Spain are among the members.

total added value while capital's share is just 4.7% in case of German firms. The British firms give 68.0% to labor and 20.6% to capital. This empirical result supports De Jong's (1995) theory about the division of value added between labor and capital. His theory predicts that Germanic type corporations will appropriate income more to labor and less to capital than Anglo-Saxon type corporations would.

Concentrating on capital providers, La Porta, et al. (1998) examine legal rules covering protection of corporate shareholders and creditors, the origin of these rules, and the quality of their enforcement in 49 countries. The results show that common-law countries generally have the strongest, and French-civil-law countries generally have the weakest, legal protections for investors, with German- and Scandinavian-civil-law countries located in the middle. In the same line of research, La Porta, et al. (1999) claim that equity markets are both broader and more valuable in countries with good legal protection of minority shareholders. La Porta, et al. (2002) find again, using a sample of 539 large firms from 27 wealthy economies, evidence of higher valuation of firms in countries with better protection of minority shareholders.

As the previous chapter reports, ever since the Korean economy started embracing the Anglo-Saxon type business regulations, the minority shareholder rights have been reinforced. Furthermore, a more advanced disclosure system was put in place to increase companies' responsibility for their public announcements (Chang et al., 2005). We can safely say that the investors in Korea are better protected than before. Together with De Jong's (1995) theory, this change in investor rights in Korea makes it possible to assume that the labor's income per unit of assets should go down with the equity holder's income rising.

3. Chaebol companies will show more changes

Third, we can predict that chaebol companies should show more changes than non-chaebol companies. Chaebol companies have consistently been under more severe scrutiny from regulators and watch-dog groups than other firms since the crisis. As the previous chapter claims, the Korean Fair Trade Commission, armed with special regulations applicable mainly to chaebol companies, designates the chaebol companies each year and carries out close supervisory activities over them. This selective regulatory treatment of chaebol companies should make the latter function in a more market oriented environment and concede more power to their minority shareholders.

Furthermore, chaebols have pyramidal structure where affiliated companies are linked to each other through cross-participation (Ferris et al., 2003; Lemmon and Lins, 2003). This particular structure deteriorates transparency of management, and leaves the minority shareholder more vulnerable to large shareholder's tunneling activities (Johnson et al., 2000). This allows us to speculate that chaebol companies had suffered from poorer protection of minority investors before the crisis¹⁶. Ferris et al.(2003), using a sample of Korean firms between 1990 through 1995 find that firms that belong to the top 30 chaebols suffer a value loss relative to their non-chaebol counterparts. Thus, as the chaebol companies were put under more austere regulatory pressure after the crisis, their change in operating practice and corporate policies must have been greater than non-chaebol firms. Chang, Cho, Kang, and Shin (2007) examine the effect of busi-

16. La Porta, et al.(2002) find that concentration of ownership of shares in the largest public companies is negatively related to investor protections, consistent with the hypothesis that small, diversified shareholders are unlikely to be important in countries that fail to protect their rights.

ness group membership on firm value in each pre- and post-crisis Korea. Consistent with prior studies, results show that group affiliated chaebol firms suffer value discount relative to non-chaebol firms in the pre-crisis period. However, the chaebol firms experience an improvement in firm value relative to non-chaebol firms after the financial crisis. This result may have been induced, as our paper proposes, by the changes in business laws relative to corporate financing, investor rights, M&A, bankruptcy, and corporate governance.

We have another important reason to propose this third assumption. De Jong (1995) compares German firms against British firms at the same period of time. Thus he didn't have to be concerned about the interference of external variables whose value changes over time. However, we are comparing the corporations in the same country, but over two different periods of time. The research period extends from 1990 to 2007, with pre-crisis period running from 1990 to 1996 and post-crisis period from 2001 to 2007. When we compare these two sub-periods, we have to find a way to control the effects of time-varying external variables, such as the effects of globalization, dissemination of IT technology, business cycle, and opening of Korean financial market after the Korea's membership into OECD in 1996. These external variables could also cause the same consequences as the business regulatory changes may have induced, consistent with our research assumption.

To control these time-varying external variables, we assume that their effects are of the same magnitude both for chaebol and non-chaebol firms if they are in the same industry, of the same size, and in the same year. Then, we proceed to create a matching sample for chaebol companies by industry, size and year. Comparing the chaebol sample against the matching sample, we will be able to test not only the third assumption but also the first two assumptions without the interference of those time-vary-

ing external variables. Furthermore, this research design naturally let us to control the firm-specific characteristics such as industry and size.

This research design is not, however, without reservation significant qualification. Even when we fail to support the first two assumptions using matching sample, it doesn't necessarily mean that we can reject the first two assumptions. If the differential regulatory treatment for chaebol companies does not have enough distinguishing effect and the regulatory changes have indeed induced drop in value added with income shift to equity holder from other stakeholder, we still won't find any significant difference between chaebol sample and marching sample. This calls for caution in interpreting the empirical results.

IV. Empirical analysis

1. Data description and measurement of value added

Our research includes all firms that were listed in or delisted from the Korea Exchange¹⁷. during 1990~2007. We collected the accounting and general information of the sample firms from the database serviced by the KIS-value. We identified the listed chaebol companies from the annual reports of the Korean Fair Trade Commission. The pre-crisis period spans from 1990 to 1996 and the post-crisis period, from 2000 to 2007, while the interim period from 1997 to 1999 is excluded as a transitional period. The data contains 5,261 firm-year observations for the pre-period and 5,186 firm-year observations for the post-period.

To measure the value added (VA) for each firm, we follow the method proposed by the Bank of Korea, which defines the VA as

17. Formerly "Korean Stock Exchange" The name was formerly changed in February, 2009

sum of current profit, wages and salaries, rents and leases, net paid interests, depreciation and amortization, and taxes and amends. This method measures only the VA produced by the firms in the sample, while De Jong (1995) seems to have measured the total net VA that is incorporated in the total sales and expenditures of the sample firm and the expenditures of sample firm's suppliers.

This difference between our measure and De Jong's entails a modification in the way we conduct empirical research. In De Jong's measure, the amount of total net VA and its distribution between labor and capital are not too much affected by the sample firm's profitability. However, our measure of VA is very sensitive to the sample firm's profitability. When it comes down to measuring the income shift between equity and labor providers, the problem becomes much more pronounced. This is because the common equity holders are residual claimants. When a sample company is making losses, the equity holder's income is almost zero, making it appear as if the equity holder's incomes are taken away. The income to labor and capital providers in this case does not reflect regulatory impact anymore, but rather the operational performance.

Therefore, if we are to minimize the effect on income to labor and capital providers of the operational performance, we may have to take out the firms making losses from the sample. We report both the empirical results using the full sample and the sample with positive current profit only.

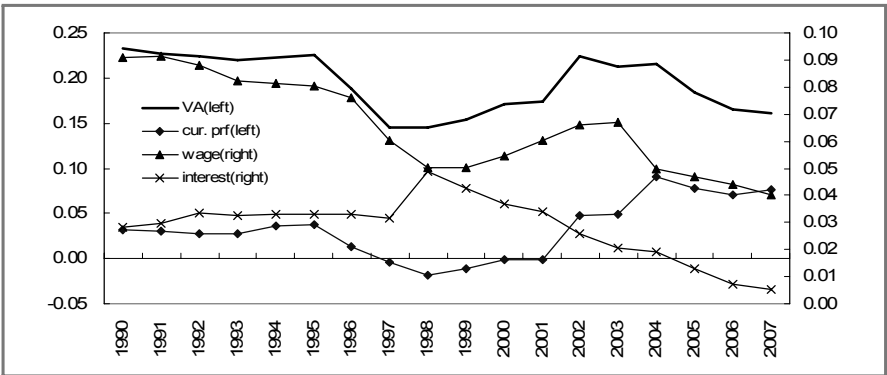
2. Trend of VA and its components across time, using aggregate data

First, we aggregate the total value added (VA) across the board for each year. Then, we divide the total aggregate VA by the total aggregate assets for each year to standardize the VA

across time. <Figure 1> shows the trend of standardized VA and its main components recorded by Korean firms listed in Korea Exchange. It seems clear that, the ratio of current profit over assets has increased while the ratio of wages (plus salaries) to assets has sharply decreased. The ratio of VA to assets also shows somewhat decreasing pattern.

Figure 1. Trend of VA and its main components (aggregate data)

We use all firms listed in the Korea Exchange. For each year we measure the total aggregate value added and its components across the board, and divide them by the total aggregate assets. The main components are current profit, wages and salaries, net paid interests.



If we compare pre- and post-period's yearly average, excluding the transitional period, we have a clearer picture. As the first column of Panel A in <Table 1> shows, the ratio of VA over assets decreased from 0.216 to 0.188, a difference of -0.028, the ratio dropping by almost 13%. The next six columns report the break-down of VA. The ratio of current profit to assets has increased by more than two folds from 0.028 to 0.060, while the wages and salaries ratio has sharply dropped from 0.083 to 0.052. The depreciation and amortization ratio and the interest ratio have also decreased. The third row of Panel A shows the difference between pre- and post-period for each component. The fourth

row is obtained by dividing each component's difference by the difference in VA. It means that, for example, the drop in rents ratio has contributed to the decrease in VA ratio by 13%. Hence, the two biggest contributors to the drop in VA are wages and depreciation, accounting for 109% and 63% of the drop, respectively. On the contrary, the most active defender is the current profit. Its increase alone is large enough to offset the drop in VA, accounting for -116% of the drop.

The results seem to support the assumptions that after the Anglo-Saxon type of business regulations are introduced in Korean economy, the Korean listed companies changed their business practice in such a way that VA decreased and equity provider's share increased.

We find even stronger evidence for an income shift from labor to capital when only the sample firms with positive profits are counted. The Panel B of <Table 1> reports the results. Compared to the pre-crisis period, the wages and salaries ratio

Table 1. VA and its components by period (aggregate data)

The yearly average of aggregate VA ratio and its components for pre-crisis period (1990-1996) and post-crisis period (2000-2006) are reported. The pre-crisis period contains 5,261 firm-year observations, the post-period 5,186 observations. Panel A uses all sample, while Panel B only the firm-year observations with positive current profit. The third row of each panel shows the difference between pre- and post-period for each item. The fourth row is obtained by dividing the each component's difference by the difference in VA.

Variable	VA	cur. Profit	wages	taxes	rents	depr.	interest
Panel A: all sample							
pre	0.216	0.028	0.083	0.012	0.014	0.047	0.032
post	0.188	0.060	0.052	0.019	0.011	0.029	0.017
difference	-0.028	0.032	-0.030	0.007	-0.004	-0.017	-0.016
contribution	100%	-116%	109%	-25%	13%	63%	56%
Panel B: sample with positive current profit only							
pre	0.225	0.037	0.084	0.013	0.013	0.048	0.030
post	0.205	0.085	0.052	0.021	0.010	0.028	0.009
difference	-0.020	0.049	-0.032	0.008	-0.004	-0.020	-0.021
contribution	100%	-241%	158%	-39%	19%	100%	103%

has dropped by -0.032 in the post-crisis period, accounting for 158% of the drop in VA. The current profit ratio, on the contrary, went up by 0.049, more than two folds the drop in VA.

3. Trend of VA and income to labor and capital providers, using panel data

Using panel data, we estimate the VA ratio and its components for each firm-year again. Then we obtain the average of VA and its components for each year. Unlike the aggregate data, the panel data presents a risk that a few extreme values might distort the overall result, especially when one estimates the equally weighted average. Thus, we eliminate the upper 1% and bottom 1% observations. <Table 2> presents the average of VA and its main components across panel data for each year. As one can notice from the table, the number of firms listed in Korea Exchange has been constantly decreasing since the Foreign Exchange Crisis.

Using these panel estimations, we compare the pre- and post-crisis average of VA ratio and run a t-test for the difference, as <Table 3> reports. Using all sample, the average VA ratio decreased by -0.114 from 0.264 down to 0.150, the difference being statistically significant at 1% level. The same result is found in panel B where only the firm-year observations with positive current profit are counted. The decrease in VA, or drop of -0.052 points, is significant at 1% level.

To investigate how the income to labor and capital providers has changed, we also look at the main components of VA and net profit across time, as shown in <Table 4>. In panel A using all sample, however, we have a disturbing result. The average current profit ratio decreased after the crisis from 0.034 to -0.016. This is because, as we mentioned earlier, the firms recording losses in the sample allow the operational performance interfere with the regulatory effect on the income to stakeholders.

Table 2. Average VA and its components across the board for each year (panel data)

The ratios of VA to assets and its main components to assets are estimated for each firm and year. The average across the panel for each year is reported. Extreme observations are removed from the sample.

	pre-period						
	1990	1991	1992	1993	1994	1995	1996
no.	722	733	739	744	757	780	786
VA	0.283	0.282	0.277	0.266	0.258	0.252	0.234
cur. Profit	0.045	0.042	0.032	0.033	0.035	0.033	0.023
wages	0.134	0.137	0.135	0.126	0.119	0.114	0.112
interests	0.028	0.031	0.035	0.034	0.033	0.034	0.034
	transitional period						
	1997	1998	1999		2000		
no.	807	800	806		796		
VA	0.189	0.160	0.190		0.182		
cur. Profit	-0.005	-0.041	0.000		-0.004		
wages	0.102	0.087	0.081		0.085		
interests	0.034	0.048	0.040		0.032		
	post-period						
	2001	2002	2003	2004	2005	2006	2007
no.	791	784	769	737	703	697	693
VA	0.165	0.165	0.143	0.107	0.158	0.154	0.157
cur. Profit	-0.023	-0.023	-0.049	-0.083	0.016	0.023	0.039
wages	0.088	0.098	0.099	0.089	0.077	0.073	0.066
interests	0.031	0.023	0.020	0.020	0.012	0.009	0.007

1% extreme obs. eliminated

On the other hand, the panel B using only the sample firms with positive current profits allows us to see the regulatory effect on the income to labor and equity providers without too much interference from the operational performance effect. The current profit ratio has increased by 0.027, while the wages and salaries decreased by -0.042, all statistically significant at 1%. To see more closely the share the equity holders took, we report the ratio of net profit over assets at the last column. It also increased by 0.029 without losing its statistical significance.

The share for credit provider has decreased, the ratio of net

Table 3. Comparison of average VA by period

The average ratios of VA over assets for pre- and post-period are reported. The results of t-test on the difference across two sub-periods are also presented at the last row of each panel. Panel A uses all sample, while panel B uses only the firm-year observations with positive current profit.

period	no.	mean	min.	max.
Panel A: all sample				
pre	5,267	0.264	-0.014	0.865
post	5,186	0.150	-3.451	0.737
difference		-0.114		
t-value		31.28 ***		
Panel B: sample with positive current profit only				
pre	4,613	0.276	-0.014	0.865
post	3,785	0.224	-0.026	0.737
difference		-0.114		
t-value		31.28 ***		

1% extreme obs. eliminated

t-value: mean difference between pre- and post-period

Table 4. Comparison of major components of VA and net profit by period

The ratios of each main component of VA over assets for pre- and post-period are reported. The results of t-test on the difference across time are also presented at the last row of each panel. Panel A uses all sample, while panel B uses only the firm-year observations with positive current profit. Panel B allows us to better capture the regulatory effect on the income to labor and equity providers without too much interference from the operational performance effect.

period	Cur. Profit		interest		wages		net profit	
	no.	mean	no.	mean	no.	mean	no.	mean
Panel A: all sample								
pre	5,266	0.034	5,261	0.033	5,255	0.125	5,264	0.020
post	5,185	-0.016	5,174	0.018	5,163	0.085	5,186	-0.020
difference		-0.050		-0.015		-0.040		-0.04
t-value		12.48 ***		24.49 ***		30.89 ***		9.93 ***
Panel B: sample with positive current profit only								
pre	4,619	0.046	4,607	0.031	4,577	0.126	4,619	0.031
post	3,776	0.073	3,779	0.009	3,749	0.084	3,807	-0.059
difference		0.027		-0.022		-0.042		0.029
t-value		-25.38 ***		46.47 ***		28.77 ***		-29.68 ***

1% extreme obs. eliminated

t-value: mean difference between pre- and post-period

paid interests to assets dropping from 0.031 to 0.009 in panel B. This may be caused by the opening of Korean financial market and the restructuring of banking sector following the foreign exchange crisis. Becoming a member country of OECD in 1996, Korean banks had to meet the BIS (bank for international settlement) capital adequacy ratio of 8%. They subsequently reduced risky loan portfolio. Thus, we don't directly relate the fall of interest ratio to the introduction of Anglo-Saxon type of regulation to Korean economy.

The results of the above panel analyses also support our assumption that since the regulatory changes after the foreign exchange crisis, the Korean listed firms lowered the level of VA per unit of assets, and an income shift from labor to capital took place. We can, therefore, say that the prediction of De Jong (1995) seems to be held even across time, if the time is divided by a regulatory switch to Anglo-Saxon type from other type. However, our two sub-periods can also be distinguished by some time-varying external variables such as globalization, IT dissemination, business cycle, and opening of Korean financial market. These time-varying external variables can weaken the importance of our empirical results. In the following section, we address this issue.

4. Comparison between chaebol companies and matching sample

In this section we compare the post-crisis changes in VA and its main components between chaebol companies and matching firms. Chaebol companies are identified from the lists published by the Korean Fair Trade Commission from 2002 to 2007. Each year the Korean Fair Trade Commission designates the large business groups which are to be bound by several special regulations that, among others, ban equity investment within the same business group. These special regulations on large business

groups are reinforced in part and newly introduced in part since the foreign exchange crisis, making the groups more exposed to Anglo-Saxon type of business regulatory environment than other Korean corporations.

Aside from the chaebol groups, the special regulations also applied to some non-chaebol groups such as government-run large corporations and privatized utility corporations, but they are not as exposed to market competition as chaebol companies, and the civil watch-dog organizations and minority shareholder activists do not supervise them as closely as chaebol companies. The intensive social scrutiny is another distinguishing feature reserved for designated chaebol group. For these reasons, we examine only the chaebol companies.

To select the matching firms we use a procedure similar to that proposed by Barber and Lyon (1996), where each chaebol company is matched with a non-chaebol firm in the same industry with similar size and in the same year. The matching firm for each chaebol, for the purpose of observation, was selected from the same 2-digit KSIC (Korean Standard Industry Code) as published by Korea National Statistical Office, selecting the firm that has the closest level of total assets in the same year. For air transport industry (KSIC: 62), only the chaebol companies are listed in the Korea Exchange with no non-chaebol firms available in the Korea Exchange for both the pre- and post-period. For travel and warehouse industry (KSIC: 63), we have no matching firms during the pre-crisis period. We, thus, exclude those two industries from the sample, and finally have 31 industries that have chaebol companies and matching firms both in pre- and post-period. <Table 5> reports the details of matching results.

Since chaebol firms are often the biggest in the industry for each year, matching firms tend to be smaller than its corresponding chaebol firms. In cases where more than two chaebol firms take the top positions in the same industry, we select only one

Table 5. Chaebol and matching sample by year, industry and size

Number of chaebol firms and matching non-chaebol firms are reported by industry and period. Each chaebol company is matched with a non-chaebol firm in the same industry with similar size and in the same year. We use 2-digit KSIC (Korean Standard Industry Code) as published by Korea National Statistical Office. In cases where more than two chaebol firms take the top positions in the same industry, we select only one matching firm that has the size closest to the smallest among those top chaebol firms.

industry	period	match	chae -bol	industry	period	match	chae -bol
Fishing	pre post	7 7	7 7	Manuf. of motor vehicles, trailers	pre post	11 7	21 21
Manuf. of food prod.	pre post	45 34	84 92	Manuf. of other trasport equip.	pre post	7 7	28 36
Manuf. of textiles, expt. apparel	pre post	7 7	7 7	Manuf. of furniture	pre post	7 5	7 7
Manuf. of apprael & fur	pre post	14 14	14 14	Electricity, gas, & water supply	pre post	18 8	28 26
Manuf. of luggage and footware	pre post	7 7	7 7	Construction	pre post	67 56	94 105
Manuf. of wood prod., expt. furniture,	pre post	2 7	5 7	Sale of motor vehicles & parts	pre post	7 7	7 7
Manuf. of pulp, paper & paperboard.	pre post	7 7	4 7	Wholesale trade & commission trade	pre post	31 25	63 63
Manuf. of chemicals & chemical Prod.	pre post	90 64	126 162	Retail trede, expt. motor vehicles	pre post	17 15	58 69
Manuf. of synthetic rubber & plastics.	pre post	14 13	14 19	Land transport, transport via pipeline	pre post	7 7	14 14
Manuf. of non-metallic mineral prod.	pre post	26 23	35 35	Water transport	pre post	7 11	21 21
Manuf. of basic metal prod.	pre post	31 24	73 77	Telecommunication	pre post	3 8	15 28
Manuf. of fabricated metal prod.	pre post	11 14	21 21	computer programming & consultance	pre post	5 13	7 14
Manuf. of other machinery and equip.	pre post	21 28	21 32	Professional, scientific activities	pre post	43 48	75 103
Manuf. of electrical equip.	pre post	16 18	35 35	Business support service	pre post	7 7	14 21
Manuf. of electronic compon. & prod.	pre post	52 27	63 76	Motion picture & broadcasting	pre post	7 11	7 14
Manuf. of medical, precision inst.	pre post	7 7	7 7				

matching firm that has the size closest to the smallest among those top chaebol firms, and do not select smaller non-chaebol firms. Thus we have a smaller number of matching firms than chaebol firms, as <Table 5> shows, resulting in a significant difference in the number of companies between chaebol and matching sample: for example, manufacturing of chemicals, manufacturing of other transport equipment, and professional, scientific activities, where the more than top 5 companies are all chaebol firms accordingly show large discrepancies in the number of match-ups.

<Table 6> reports the total assets and current profit of chaebol and matching sample. Since we are dealing with panel data, we also eliminate from the sample the observations with extreme values in the upper 1% and bottom 1%.

For pre-period, total of 629 and 1026 firm-year observations are available for matching and chaebol sample, respectively, while for post-period, the numbers decrease to 523 and 913 (panel A). In both periods, chaebol companies show the average size of assets greater than matching firms. This holds true when only the firms with positive current profit within the sample are considered (panel B). Current profit shows the same characteristics as assets. For we do not want the operational performance to interfere with the regulatory impact on the value added, we use only the chaebol and matching firm-year observations with positive current profit. First, we make a two-by-two matrix, two class variables being period and chaebol affiliation. We test whether the changes in VA in chaebol companies and its components over period is statistically different from those of non-chaebol firms. This can be tested by interaction effect measured in ANOVA. We employ GLM method since chaebol and matching samples have unequal lengths.

Table 6. Chaebol and matching samples' assets and current profit

Assets and current profit of chaebol companies and matching firms are reported by period. Panel A uses all chaebol and matching sample, panel B uses only the companies within the sample, that posted positive current profit.

Unit: billion won

period	sample	variable	no.	mean	median	max	min
Panel A: all sample							
pre-period	matching	assets	629	427	178	6,842	10
		current profit	632	6	3	161	-114
	chaebol	assets	1026	801	348	14,156	9
		current profit	1016	18	8	587	-228
post-period	matching	assets	557	423	257	11,593	23
		current profit	561	14	10	574	-763
	chaebol	assets	1209	2,222	942	26,363	19
		current profit	1197	130	35	2,500	-919
Panel B: sample with positive current profit only							
pre-period	matching	assets	523	420	173	6,842	10
		current profit	530	9	4	161	0
	chaebol	assets	913	819	356	14,156	9
		current profit	906	22	9	587	0
post-period	matching	assets	424	427	267	11,593	23
		current profit	430	30	16	574	0
	chaebol	assets	1035	2,346	987	26,363	23
		current profit	1030	161	51	2,500	0

1% extreme obs. eliminated

<Table 7> reports the results. The first column shows each variable's average recorded in pre-period for matching sample and chaebol sample. The second column reports the same for post-period. The average VA ratio of the matching sample for pre-period is 0.247, while the value is down to 0.216 for post-period. On the other hand, the chaebol sample's average VA ratio decreased by more, from 0.260 to 0.211. The difference in the value of each variable between the pre- and post-period and its statistical significance are reported in the third and fourth

column. It suggests that the -0.311 points drop in VA ratio of matching sample and -0.049 points drop in chaebol sample are all statistically significant at 1% level. Also, as the last column indicates, these two drops are significantly different at 5% level.

We can, thus, say that the more rigid application of the Anglo-Saxon type of business regulations to chaebol companies has induced differential responses from chaebol companies: VA ratio has decreased more in chaebol companies than in non-chaebol firms. Furthermore, this result suggests that, even after controlling for the time-varying variables such as globalization, IT dissemination and business cycle, the impact of Anglo-Saxon type of business regulations are still indicated in the performance of chaebol companies.

The analysis of current profit ratio and wages and salaries ratio shows similar results, as evident in <Table 4>. For both the chaebol and matching samples, after the crisis, the current profit ratio increased, by 0.035 and 0.035, respectively, and wages and salaries ratio went down, by -0.045 and -0.027, respectively. And the differences are all significantly different from zero.

The magnitude of the increase in current profit ratio for the chaebol sample is, however, not significantly different from that for the matching sample, F-value being 1.29. It means that the same degree of additional income per unit of asset is added to the equity shareholders for both chaebol and matching companies. On the other hand, the wages and salaries ratio decreased more in chaebol companies than in matching firms, F-value being 9.00. We can, thus, conclude that, after the time-varying external variables are controlled, our assumption on the income shift from labor to capital is half supported. The impact of regulatory changes in Korean economy is significantly felt by the decrease in wages ratio, while the income to equity holders per unit of assets has not been strongly supported by evidence.

Table 7. Chaebol and matching comparison

We compare the changes in VA and its main components over period between chaebol companies and matching firms. The first two columns report each variable's average recorded in pre- and post-period for the matching and chaebol sample each. The third and fourth column report the difference in the value of each variable between the pre- and post-period and the results of t-test on the difference over period, respectively. The last column shows the F-value testing the interaction effect between period and chaebol affiliation.

	pre-period	post-period	difference	t-value	F-value
variable: VA/assets					
matching	0.247	0.216	-0.31	-4.94 ***	4.59 **
chaebol	0.260	0.211	-0.049	-10.2 ***	
variable: current profit / assets					
matching	0.037	0.072	0.035	11.6 ***	12.9
chaebol	0.041	0.077	0.035	16.21 ***	
variable: wages and salary / assets					
matching	0.108	0.081	-0.027	-6.99 ***	9.00 ***
chaebol	0.112	0.067	-0.045	-15.9 ***	
variable: depreciation and amortization / assets					
matching	0.035	0.024	-0.011	-6.69 ***	3.65 *
chaebol	0.039	0.025	-0.014	-10.6 ***	
variable: net interests paid / assets					
matching	0.035	0.007	-0.028	-19.4 ***	29.09 ***
chaebol	0.030	0.010	-0.020	-22.1 ***	
variable: net profit / assets					
matching	0.024	0.058	0.034	8.6 ***	0.10
chaebol	0.027	0.060	0.033	17.05 ***	

*, **, ***: significant 10%, 5%, 1%, respectively

1% extreme obs. eliminated

t-value: difference between pre- and post-period

F-value: interaction effect measured by GLM

At the same time, the above results allow us to speculate that the introduction of Anglo-Saxon type of business regulations to Korean economy has brought decline in value added and wages without significantly positive increase of profitability measured in current profit over assets. This finding contradicts the empirical

results reported by Chang et al. (2007). They report that the various reforms undertaken by Korean economy after the crisis resulted in an increase in the firm value of chaebols. Therefore, we may say that the increase in chaebol companies' market value brought about by Anglo-Saxon type regulations is not so much supported by better accounting performance as it is by the enhanced management transparency and future prospect of value-increasing M&A.

V. Conclusion

In this paper, we applied De Jong's (1995) theory across time using the corporations listed in Korea Exchange from 1990 to 2007. Since the Korean economy rapidly embraced the Anglo-Saxon type of business regulations after the foreign exchange crisis around 1997, it provides a unique opportunity to test De Jong's (1995) theory across time. In general, our empirical findings support the main predictions of the theory that the Anglo-Saxon type of business regulations work in such a way that the corporations will decrease the total value added to the extent that profits are maximized, and that the income to labor providers decreases. When the time-varying external variables, such as globalization, dissemination of IT and business cycle in Korea, are controlled, however, we failed to verify the rise in income per unit of assets to equity providers.

What's the final goal of corporations? It depends on the society the company belongs to, and the society's will as expressed in the legal system it chooses. As Korean economy chose to introduce Anglo-Saxon type of business regulations, the outcome was predictably clear. Wages and salaries per unit of assets fell, profits stayed, thus the total value added fell¹⁸. One way to ra-

18. From the Table 7, the chaebol companies, being subjected to more rigid

tionalize this outcome would be to look to the more efficient allocation of resources found in Anglo-Saxon type of economies. Each company reduces its size to maximize profit, and the extra resources fallen off the company find their way to another new company. In Korea, however, this active economic creation could not be found in Korea Exchange. As the <Table 2> shows, the number of listed firms continues to fall after the crisis. Instead, Korea observed an explosive development of Kosdaq, an equivalent of American NASDAQ, since 1999. Thanks to the government's drive for start-ups in high-tech industries and maybe the Anglo-Saxon type of new regulatory environment, 2,917 new officially certified high-tech start-ups launched, and 471 new high-tech start-ups went public in Kosdaq during 1999 to 2003 period¹⁹.

Did the Anglo-Saxon regulations really prompt this explosion in Kosdaq which opened in 1996? Is the wealth created in Kosdaq since 1999 big enough to justify the sluggish development in Korea Exchange? To answer these questions, we may also need to consider the value added created by the private companies which cropped up in droves after the crisis. These questions require macro-economic approach and go beyond the scope of this paper which focuses more on micro level research. We leave these questions to the future research efforts.

compliance to the Anglo-Saxon regulations, produced less value added per unit of assets (0.211) than the matching firms did (0.216). They also recorded greater drop in VA ratio (-0.049) than the matching firms (-0.031) across period. The chaebol companies, however, allotted to equity holders more income per unit of assets (0.077) than the matching firms did (0.072), and distributed to labor less income per unit of assets (0.067) than the matching firms did (0.081). Furthermore, the drop in wages ratio is far greater in chaebol (-0.045) than in matching firms (-0.027).

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