Staffordshire University

Business School

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Ownership Concentration and Firm Performance in Transition Economies:

Evidence from Montenegro

APPENDICES

Zorica Kalezić

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CHAPTER 1

APPENDIX 1.1

Corporate Governance Systems

"*As it is impossible to write complete contracts between the different parties, a first best contract does not exist and leaves a gap which should be filled by corporate governance."*

(Braendle, 2011)

The corporate governance system refers to the systemic institutional design and framework which is aimed at diminishing suboptimal resource allocation and its costs arising from the agency problem between principals and shareholders. The corporate governance system analyses the institutional and legal framework imposed on firms in order to ensure confluence of otherwise competing interests of various contracting parties, or put differently it refers to "the structure of rights and responsibilities among the parties with a stake in the firm", Aoki (2001). There is a general consensus that a good corporate governance framework contributes to the long term health and prosperity of the firms and the company. According to Claessens (2001, p. 233), an efficient corporate governance framework yields gains to firms through "greater access to financing, lower cost of capital, better firm performance, and more favourable treatment of all stakeholders."

Furthermore, the investment process is much more complicated, development of capital markets is progressive, there is evident case of mobilization and internationalization of capital through FDI flows; and investment choices have become wider with increased companies' exposure to market risks. Consequently, investors seek better monitoring of the capital usage (managers' actions), thus highlighting the need for efficient corporate governance.

One could argue that the "perfect corporate governance system" would consist of a set of institutional and legal mechanisms that provide assurances to the market and its participants that: (i) managers have their interests aligned with shareholders, (ii) the corporate law framework protects minority shareholders, and (iii) an objective and independent balances the interests of managers and (other) shareholders. However, as the discussion of this chapter has shown, there is no corporate governance system that perfectly fulfills all three elements (McCahery and Renneboorg, 2002). Instead, different corporate governance systems exist across the world, each offering approaches and mechanisms to deal with the agency problem based on country-specific factors and conditions. Each of these corporate governance systems have their strengths and its weaknesses, respond to different types of conflicts and have different economic implications of their application.

Another difference among corporate governance systems around the world is the differences in the identity of the dominant owner, the control rights that the dominant owners possess and consequently, and the nature of the primary conflict. According to these criteria, corporate governance systems can be divided into: (i) insider systems, and (ii) outsider systems. This demarcation is based on whether the dominant owners are internal block holders (managers and employees) or external shareholders (Barker, 2006). Corporate governance systems are hence an indicator of the type of owner that has achieved and guaranteed monitoring and control over managers. The main characteristic of insider systems is concentrated ownership by insiders with the underlying fundamental conflict of interests between strong majority shareholders and weak minority shareholders. This corporate governance system is prevalent in Germany, much of continental Europe and Japan. On the other hand, the outsider corporate governance system is based on dispersed ownership structure with the major conflict being between the weak, dispersed and unorganized (or uninterested) shareholders and well-organized and strong managers. Table A1.1 summarizes some of the other differences between the two systems.

Table A1.1: Corporate governance systems- insider vs. outsider

Characteristics	Insiders	Outsiders
Ownership concentration	High	Low
Inter-corporate cross-holdings	Common	Uncommon
Capital markets	not very liquid	Liquid
Corporate laws	Strict	Liberal
Market for corporate control	Inactive	Active
Security laws	Liberal	Strict
Main financing method	equity financing	debt financing
Cost of exit from ownership	High	Low

Source: compiled by the author

Before providing a detailed explanation of the main characteristics of inside/outside types of corporate governance, it is useful to briefly discuss the main elements that affect the choice of a particular corporate governance system in a particular country. According to Aoki (1994), the choice of a corporate governance system is based on the operation of product, labour and capital markets in the country and the legal environment. Product market competition will force a company to adopt the most effective governance arrangements. In case a firm chooses a less system, it can expect poorer results and potential exit in the long run. Competition in the managerial labour market, too, is expected to impose some discipline managers as their long term position and income depends on their record in previous companies and their reputation. Capital markets impose corporate discipline through the system of takeovers. Capital markets represent one of the enforcing corporate governance mechanisms where companies which cannot satisfy their shareholder could face a hostile takeover. The role of competition, and the specific corporate governance mechanisms related to labour and capital markets have already been discussed in this Chapter.

Finally, an efficient regulatory and legal environment plays an important role in establishing an effective corporate governance system in all countries. Underdeveloped legal and regulatory institutions lead to and facilitate the exploitation of minority shareholders, or represent an obstacle to increase of external capital inflow to the firms (Zingales, 1995). Shleifer and Vishny (1997) stress the importance of regulatory and legal environments in building differences between the corporate governance systems around the world.

In following subsections we will discuss the differences between the ‘insider’ and ‘outsider’ corporate governance systems in terms of: (i) the importance of different parties in the corporate environment and their interactions; (ii) the basic regulatory framework; (iii) key agency problem the corporate governance mechanisms aim to resolve; (iv) the role and the identity of dominant or concentrate ownership and the share ownership patterns.

(i) Insider Corporate Governance System

The insider model of corporate governance is characterized by owners’ monitoring and controlling of managers from within, usually by having large ownership holdings (Barker, 2006). Insider corporate governance systems usually have highly concentrated ownership, strong monitoring of managers by dominant shareholders, and major conflict between strong majority shareholders and minority shareholders that are poorly protected. Here large owners assume the role of monitoring and controlling body, collaborating conjointly with managers and having “long term committed shareholders,” (Tan and Wang, 2006).

These systems can be observed in continental European countries as well as in Japan although with certain variations. While the main behavioural characteristics of the largest owners are similar across these countries, the identity of the dominant owners differs: in the case of Germany and Japan, dominant owners are usually banks and other financial institutions (investment trusts, pension funds, mutual funds, families (e.g. Sweden or Norway) or the state (France). Outsiders generally have large ownership stakes (usually more than 10-20%, which typically is enough to produce effective control). Table A1.1.1 shows the level of ownership concentration in selected countries, highlighting the big differences between countries with different corporate governance systems.

Table 1.1.1: Ownership concentration across countries in % - late 1990s (averages)

Country	**Average share ownership of the largest owner**
United States	15%
Netherlands	20%
United Kingdom	23.6%
Ireland	24.6%
Denmark	37.5%
Norway	38.6%
Sweden	46.9%
Switzerland	48.1%
Finland	48.8%
Belgium	51.5%
Austria	52.8%
Spain	55.8%
Italy	59.6%
Portugal	60.3%
Germany	64.4%
France	64.8%
Greece	75%%

Source: LLSV (1999): United States, Denmark, Netherlands, and Greece.
Faccio and Lang (2002): Other European countries.

The conventional view is that concentrated ownership (or more precisely, concentrated voting power) has the power to overcome the problems of inefficient management monitoring, which escalates in the corporate governance setting with dispersed ownership (Maher and Andersson, 1999). In the insider corporate governance system, concentrated owners with concentrated voting power obtain much more benefit from monitoring managers; the free riding problem is less evident because the benefits and costs of monitoring fall mostly on the largest shareholder. The consequence of concentrated shareholding (voting rights) is that majority shareholders have adequate power and interest to influence the decision-making process and to actively monitor managers (Shleifer and Vishny, 1986).

However, empirical studies such as Chen and Sinha (2011), Claessens et al. (2002), Shleifer and Vishny (1997), Al-Kuwari (2012) and Zeckhauser and Pound (1990) highlight the contrasting explanations for the influence of large shareholders. Namely, the positive effect of large block-holding which enhances the power to monitor the management is contrasted with the negative effect arising from large shareholders enjoying the private benefits of control at the expense of small shareholders.

The most acute conflict in insider system is the conflict between large shareholders and weak minority owners. In these systems, large shareholders can collude with the managers in order to extract profit from the firm. This problem can become more severe when small investors cannot ensure a return on investment due to limited voting power. Consequently, small investors avoid investing in firms with concentrated ownership, therefore jeopardizing the external financing of these firms (Shleifer and Vishny, 1997 and Barca, 1995). Moreover, in the case when a large shareholder in one company is a block holder in another company, he/she may pursue the goal to divert his resources from the first company to the second, which is not in line with the value-maximizing goal of the first firm (Barca, 1997). One of the consequences of rent extraction in insider systems is an underdeveloped secondary market and the lack of liquidity (Coffee, 1991).[1]

Another critique of concentrated ownership, is that even when the monitoring by large shareholder is *ex post* efficient, still, there is an *ex ante* expropriation threat that constrains managerial initiative and non-contractible investments, i.e., risk averse shareholders incentivize managers to choose risk-averse decisions (Burkart et al., 1997; DeMarzo and Uroševic, 2006; and Hilli et al., 2013).

The insider corporate governance system has many varieties as almost every country has supplemented it with its own specific features. Here we will briefly explain the insider system in Germany and Japan as two best examples of the insider system with the close involvement

[1]This assumption relies on the premise that a liquid stock market reduces the incentive of large shareholders to monitor managers because it allows shareholders to sell their shares more easily (Maug, 1998; Bhide, 1993; and Coffee, 1991). Although it is easy to claim that liquid stock markets allow selling of shares at a lesser cost in the case of dissatisfaction with managerial performance dissatisfaction, the oppositeside of the coin is that liquid markets provide cheaper and faster accumulation of share stakes by investors in the case when they want to strengthen their monitoring (Kyle and Vila, 1991). However, in countries with insider corporate governance systems,CGS countries current setting of the securities regulation and the level of stock market liquidity prevents large owners to from selling out their shares in order to punish managerial failure. Instead they are forced to hold on to their investments and use their voting power and internal pressures on managers in order to obtain better firm performance, (Becht and Roell, 1999; Becht, 1999; Bolton, 1998; etc). For a full discussion on whether liquid stock markets can improve corporate governance mechanisms by providing efficient price signaling and performance monitoring, see Diamond and Verrecchia (1981); Holmström and Tirole (1993); Cheung (2013). Similarly, for a full discussion of whether liquid stock markets ensure better value creation of the firm, or enhance shareholder intervention or whether it may have detrimental effects on the corporate governance mechanisms, see Faure-Grimaud and Gromb, (2004); Fang et al., (2009); Bhide (1993); Kyle and Vila; (1991); Kahn and Winton, (1998); Maug, (1998); Noe, (2002), etc.

of the banking sector in the firms' affairs (esp., Germany) and the high level of cross shareholding. Germany and Japan differ primarily in the level of ownership concentration, the identity of largest owners, the stock exchange sophistication level, and the legal protection of minority shareholders.

The German corporate governance system represents possibly the most analyzed insider system in the Continental Europe. In this country, corporate ownership is concentrated in the hands of a few block holders, usually banks or families with prevalence toward pyramidal ownership (Odenius, 2009, p. 5). These block holders are interested in corporation activities emphasizing their power via board representation. Investors (financial institutions mainly) in firms have the so-called "patient capital" which is oriented to strategic goals such as turnover, market penetration and market share rather than short-term profit or rise in stock prices.

The uniqueness of the German corporate governance system is reflected in its two-tiered board system, consisting of a management board (composed entirely of insiders, that is, executives of the corporation) and a supervisory board (composed of shareholder representatives and a smaller number of employee representatives). There are also legal voting right restrictions that may "limit a shareholder's vote to a certain percentage of the corporation's total share capital regardless of share ownership position."[2]In terms offinancing practice, German firms rely on debt financing over equity financing. Banks as the largest owners are interested in long-term investment strategy. Therefore, German stock market capitalization is low in relation to the size of the German economy. However, the current trend has foreign investors becoming more and more important while active shareholders have a proactive role in making their views known to management by taking action in general meetings.

Recently, the role of the supervisory board has come under vigorous critique in the empirical literature. Hopt and Leyens (2004, p. 8) argue that the sharp divisions between supervisory and management boards increases inefficiency due to inadequate codetermination. This problem escalates with increasing size (up to 21 members) of supervisory board and the failure of the German system to impose adequate qualification standards. Similarly, Tollet

[2] EWMI/PFS Program / Lectures on Corporate Governance - Three Models of Corporate Governance – December2005.doc

(2005) postulates that the absence of executives (present in a management board) in the Supervisory board limits the information flow, restraining debate on crucial issues and resulting in ineffective monitoring. Therefore, further development of external corporate governance mechanisms, especially the market for corporate control needs to be introduced as the present system "allows incumbent management to take defensive action to stave off involuntary takeover bids", (Odenius, 2008).

The Japanese corporate governance system is significantly influenced by the German civil law whose main elements were incorporated in the Japanese legal system after the Second World War. For example, Japan's first company law in the 1950s was established under the influence of German Commercial Code. As a consequence, the corporate governance system in Japan, recognized as J System (Aoki, 1990) became a variation of the German corporate governance system with adjustments like the specific treatment of employees as human capital and stock market and managerial responsibilities. The main properties of the J System are: (i) the board of directors is usually composed solely of insiders often created as a substructure of top management with the majority of shareholders coming from higher rank employees of the firm; (ii) the bank which is the largest shareholder is also the major supplier of financial funds. At the same time the bank takes a role of the principal monitor of the management (the bank does not have much involvement in the decision-making process except in cases where strategic decisions are made or when the firm gets into financial distressing- in which case the bank is obliged to rescue or restructure the firm); and (iii) cross shareholding among banks ensures cross shareholding among companies, leaving the firm with so-called "silent non-active shareholders". This strategy, based on the active involvement of employees, and the bank's "guardian angel" role enables the firm to make long-term decisions without fear of hostile takeovers. However, in the last 10 years, the J System of corporate governance has moved towards the outsider corporate governance system because of globalization and the increase of the Mergers and Acquisitions. In order to stay competitive on the global level Japanese companies have gradually shifted towards market-oriented type of financing, focusing on international capital markets and foreign investors.

In short, the insider corporate governance systems are characterized by concentrated ownership, concentrated voting power and strong power to monitor managers. The main conflict here is not between owners and managers, but between large shareholders and minority shareholders. Large shareholders can pursue their own interests, which may not be in line with the best interest of the firm (e.g. extraction of profit), and the implication of such behaviour is the difficulty of retaining smaller investors due to the lack of an efficient instrument that could reassure them of a return their on investment (mainly, a difference in the share price). Capital markets in this system is usually underdeveloped with low liquidity (low information content). On the other hand, "concentrated ownership not only increases the incentives for monitoring, with presumably positive benefits for firm performance, but also encourages more long-term relationships and commitment amongst stakeholders. This, in turn can impact firm performance in the long run" (Maher and Andersson, 1999, p. 119).

(ii) Outsider Corporate Governance System

The outsider corporate governance system refers to systems in which corporate governance functions are largely performed by external agencies, mainly institutional arrangements and legal requirements (Barker, 2006, p. 4). These systems are characteristic of Anglo-Saxon countries, especially the USA and the UK, where the corporate environments are characterized by publicly listed companies being prevalent over privately held companies. Ownership is usually dominated by portfolio-oriented institutional investors (Coffee, 2006) with typical ownership stakes of less than 3%. These owners perform their governance functions 'outside' the firm, heavily relying on external corporate governance mechanisms such as stock market analysts, external auditors or bond rating agencies, etc., to gather information on firm performance and to control the behaviour of managers. Simultaneously, external shareholders are in favor of "exit" rather than "voice" strategy, i.e., they signal their dissatisfaction with managers' actions by selling their shares rather than by voting (Hirschman, 1970). Additional distinctive aspects of the outsider systems are stronger emphasis on the protection of minority shareholders, high stock market activity and high information flow combined with very developed regulatory and legal framework which ensures information dissemination among all shareholders.

In the USA and the UK, capital markets have a very important role in disciplining managerial behaviour. In economies with developed capital markets where information about the quality of the firm (share price) is available to every shareholder (current or potential), managers are monitored through capital markets, i.e., through signals such as share price, turnover or share liquidity. Ownership concentration as a monitoring instrument seems, if not redundant, then of lesser importance if instruments like takeovers or managerial labour market are well developed. According to Anand et al. (2006), internal corporate governance mechanisms will be voluntarily implemented in those firms that need access to capital markets, i.e., they find that the "prime reason firms implement governance mechanisms is to appeal to prospective investors."

Another important feature of outsider corporate governance systems is the moderate influence of financial organizations. In contrast to insider systems, financial institutions usually play a moderate role in monitoring management in outside corporate governance systems. In these systems, equity and bonds represent the most common long-term source of financing as opposed to bank financing which is usually used as a short-term source of financial. Consequently, in these systems, debt/equity ratios are relatively low in comparison to insider corporate governance system. Understanding the outside governance systems is particularly important for our research because it is in the dispersed share ownership environment and the separation of ownership and control that the principal–agent problem emerges – together with its many implications such as a decrease in value maximization of the firm, i.e., a deterioration in firm performance.

In addition, the outsider corporate governance systems tends to have strong institutional and legal frameworks which, as Maher and Andersson (1999, p. 17) argue, "foster a more open and equitable distribution of information and place a stronger emphasis on the protection of shareholders rights," including those of minority shareholders.

On the other hand, Demsetz and Lehn (1985) argue, in the case of dispersed ownership, the shareholders spread the risk through diversified ownership. However, the "free riding" problem associated with monitoring (that the benefits of monitoring are shared among all shareholders while the monitoring cost is a burden to particular shareholders) increases.

Finally, it is important to highlight that because of the globalization of capital markets, internationalization of trade and FDI flows, corporate governance systems worldwide are moving closer to each other so it is more difficult to differentiate between insider and outsider corporate governance systems (Hansmann and Kraakman, 2004; Coffee, 1999; Berglof and von Thadden, 2000). For example, in the USA and the UK pension funds and institutional investors have become more active in the monitoring of management in firms in which they have substantial holding. Similarly, in many insider corporate governance systems, an increase in importance of financing through international capital market (FDI inflow) raises the demand for more transparency and minority shareholders protection.

CHAPTER 2

APPENDIX 2.1

Table A2.1 Impact of the largest ownership on firm performance: evidence from TEs

Author	Sample characteristics/ econometric approach	**Country**	Performance measure	Results/Conclusions regarding the impact of ownership identity on firm performance	Results/Conclusions regarding impact of ownership concentration on firm performance
Carlin, Reenen and Wolfe (1995)	Case studies/ 198 enterprises in Poland/ 29 Slovakia and the Czech Republic/Hungary 92 firms/ Russia 141 and Ukraine 18 firms.	Poland, Hungary, Russia, the Czech republic, Slovakia	Survey case study	Foreign ownership is connected with the rarest form of restructuring-a significant increase in investment. It appears that privatized firms perform better compared to state owned ones in terms of generating new investment and technology, even when foreign owners are not involved. However, there is a little evidence that privatized firms are more willing than state owned to restructure.	
Djankov and Hoekman (1997)	513 firms listed at the Prague stock exchange/ for the period 1992-1996	the Czech Republic	Total factor productivity	Foreign ownership does have positive impact on total factor productivity	
Konings (1997)		Hungary, Slovenia and Romania		After controlling for life cycle, size and product market effects, hediscovers that new private firms outperform privatized and state-owned firms. More precisely, at the country level, he finds that "traditional" firms (state-owned and privatized) perform worse than newly established firms in Hungary and Slovenia do. In Romania, state-owned enterprises performed worse than employee-	

				owned (privatized) and newly-established private firms.	
Claessens, Djankov, and Pohl (1997)	706 firms/ over the 1992-95 period/OLS, Random effect	the Czech Republic	Tobin's Q, gross (operating) profit over net fixed assets plus inventory	Large ownership by investment funds sponsored by banks and strategic investor improves firm performance. All other types of ownership may extract private benefits of control.	In the case of foreign ownership costs could arise as off-market transfer pricing between the subsidiary and its foreign owners allows the dilution of the claims of minority owners and lower profitability. Large owners in general have opportunities to expropriate value, as minority shareholders are not well protected given the weak institutional setting in the Czech Republic. However, there is no evidence for value-diversion by bank-sponsored investment funds; instead , the market, i.e., the minority shareholders, appears to value their ownership, possibly because of the monitoring and signaling roles of bank involvement
Smith, Cin and Vodopivec (1997)	22,735 observations/for the period 1989 to 1992 /OLS, 2SLS, Tobit	Slovenia	Net profit	This is one of the rare studies estimating an elasticity of firm performance with respect to ownership type. They do find that positive elasticity in foreign ownership, and to lesser extent employee ownership, isassociated with an increase in firm performance. Nonetheless, there is also evidence of diminishing marginal gains in productivity (firm performance) for	

				both forms of ownership.	
Jones, Klinedinst and Rock (1998)	for the period 1989-1992/Stochastic Production Frontier Models: ML Estimates	Bulgaria	Total revenue minus material cost	Firm performance is enhanced by private ownership, a larger market share,and compensation systems that provide for profit-sharing and incentive systems.	
Weiss and Nikitin (1998)	1499 companies unbalanced pane/ for the period 1993-1997/ OLS, Fixed effect	the Czech Republic	Changes in operating profit per unit of capital and per worker	The higher returns are achieved if companies in which foreigners has major ownership, due to primarily increase of their investment rates and not due to decrease of the number of workers. However, this is not the case if the largest owner is privatisation fund.	Ownership concentration has no effect on firm performance or investment. They do not find evidence of. tunneling and looting by large owners
Megginson and Netter (1998)	Although very careful in presenting conclusions on the aftermath of privatisation, they suggest to countries to reduce the size of their state sectors. Underlying assumption is that private ownership appears to be more effective after all.				
Frydman et al. (1997;1999)	mid-sized firms (full sample 500/subsample 200)for the period (1990-1994)/ Fixed effect	the Czech Republic, Hungary, Poland	revenue, employment, revenue/employee (annualized growth)	Private ownership significantly increases performance, regardless the country or industry differences. Foreign owners although contribute to better firm performance, their contribution is not stronger than that of domestic owners. Employee ownership heavily underperforms among insiders created during privatization period.	
Claessens and Djankov (1999)	706 firms /for the period 1992-1997/ OLS	the Czech Republic	Gross operating profit over fixed assets plus inventory, labor productivity	Foreign investors and non-bank funds are more strongly associated with better firm performance	More concentrated ownership is associated with higher profitability and labour productivity.

Grosfeld and Nivet (1999)	For the period 1988-1994	Poland		Privatization is important for the strategic dimension of firm restructuring. Privatized firms are inclined to invest more and have greater capacity to ensure higher output growth in comparison to state owned firms.	
Djankov (1999)	960 privatized manufacturing companies / for the period 1995-97	Georgia, Kazakstan, the Kyrgyz Republic, Moldova, Russia, and Ukraine	Sales per worker growth, minor renovations	High foreign ownership is significantly correlated with enterprise restructuring; Ownership by outside local investors or the state is not.	
Carlin et al. (2001)	3,305 firms over three year period (in the range 1992-1999) /Fixed effect, 2SLS	25 transition economies	the growth of real sales and of real sales per worker	State-owned firms show no significant difference in their sales or productivity as compared to privatised firms that used to be state owned.	no
Earle and Telgedy(2001)	2328 firms/ For the period 1992-1998/OLS	Romania	the log of sales over employment	Results show the superiority of the efficiency of foreign owners. The two types of owner that are considered inefficient (insiders and dispersed outsiders), also have a positive impact on the firms' performance, however, smaller than foreigners and domesticinstitutions.	Results provide evidence on the positive effect of block holders on the performance of firms. Dispersed outsiders are considered inefficient.
Harper (2002)	453 firms/ for the period 1992-1994	the Czech Republic	Change of ROA/ change in real sales/sale efficiency/net income efficiency	Investment (privatisation) funds do not promote restructuring, No strong confirmation that foreign owners outperform domestic ones.	Fail to find that ownership concentration is important factor in restructuring the firm and its performance.
Angelucci et al. (2002)	Bulgaria and Romania (1997-98) and Poland (1994 – 1998)/1500 firms in Bulgaria and 2047 firms in Romania and 17570 in	Bulgaria, Romania and Poland	total factor productivity	Domestic competitive pressure and increased import penetration are linked with higher firm performance in Poland, irrespective of theownership structure of firms. Domestic	

	Poland/OLS/Re/Fe			private firms and foreign owned firms outperform state owned firms. Foreign owned firms perform the best, followed by domestically ownedprivate firms especially in Bulgaria and Poland.	
Claessens and Djankov (2002)	6000 privatized and state-owned manufacturing enterprises /Fixed effect, cluster effects and Random effect	Seven Eastern European countries (Bulgaria, Romania, the Czech Republic, Poland, Slovakia, Slovenia, Hungary)	Annual labor productivity growth/ annual employment growth/annual sales growth	A time and investment strategy after privatisation does matter. Enterprises privatized for less than 2 years have labor productivity growth similar to that of state-owned enterprises, however enterprises privatized for 3 or more years significantly outperform state-owned enterprises.	
Jones and Mygind (2002)	2485 observations/for the period 1993-1997/ Fixed-Effects Estimates, 2SLS	Estonia	real sales	Private ownership is more efficient (by 15%-22%) than state ownership, majority ownership by foreigners, domestic outsiders, managers and employees are more efficient that the state.	
Cull, Matesova and Shirley (2002)	392 firms/for the period 1993-1996/OLS	the Czech Republic	Return on assets (ROA) and the output growth rate	Shares through vouchers may motivate the new (private) owners to stripassets from privatized firm. However, other firm types generallyimproved relative to Czech owned limited liabilities, the fund-controlled joint stock companies fell further behind.	Shares through vouchers may motivate the new (private) owners to strip assets from privatized firm.
Djankov and Murrell (2002)	Using Meta analysis, they synthesize the research on firm restructuring in transition trying to provide qualitative comparison of findings. Privatisation to funds is five times as productive as privatisation to insiders, while privatisation to foreigners or block holders is three times as productive as privatization to insiders. Funds appears to perform the best followed by foreigners, banks and block holders. Dispersed ownership does not outperforms the state one. Moreover, they find that state ownership within partially privatized companies may be effective as much as companies with defuse ownership structures including insiders (managers).				

Kocenda and Svejnar (2003)	Larger firms (1199 firms and 2021 observations) for the period (1996-1999)/ Fixed effect	the Czech Republic	the rate of change of sales and revenue	They do find that foreign private ownership is the only type of owners that engages in the process of restructuring whilst increasing sales and profitability. On the other hand, private domestic owners are more defensive in their actions, restructuring the firm by increasing labour cost without increasing profit compared to state. Moreover, other types of owners achieve almost the same firm performance as the state.	Ownership concentration positively affects firm performance, not supporting assumption of beneficialrole of managerial initiative and autonomy in achieving better firm performance. Large owners do not loot firms, limited effect of extracting private benefits of control.
Gregoric and Vespro (2003)	31companies listed in Slovenian Stock Exchange/ for the time interval 2000-2001/OLS	Slovenia	Pre/post trade block premium in percent	No convincing evidence on the positive influence of the new blockholders on the firm performance, except for the acquisitions of blocks by the non-financial firms of the same industry.	No convincing evidence on the positive influence of the new blockholders on the firm performance. However, the relatively high premiums paid for share blocks (private benefits of control) raise skepticism on how well are the minority investors' protected in Slovenia.
Zalduendo (2003)	425 firm/for the period 1996-2000/ OLS	Macedonia	profit as a share of sales	Private ownership strengthens corporate performance	Low concentration of (mainly insider) owners affects negatively firms performance. However, although increase of ownership concentration is connected with better firm performance, still, the gain from additional ownership concentration declines.
Earle, Kuscera and	168 firms from Budapest Stock	Hungary	return on equity		Strong positive impact of the largest

Telegldy (2004)	Exchange / for the period 1996–2001/Fixed-effects		(ROE)/operating efficiency (OE)-ratio of real sales to the average number of employees		shareholder on firm performance However adding large owners diminishes impact on firm performance. There are two potential reasons: (i) difference in vision of two or more large owners may collide leading to suboptimal solutions – so called problems of "too many cooks" or (ii) the fact the marginal contributions to managerial monitoring of additional smaller block-holders are negligible, whilst costs of concentration are reflected in reducing trading liquidity and informational value of the share price.
Woodward and Kozarzewski (2004)	OLS / 84 large companies/ for the period 1993-1996	Poland	total revenue	The only significant positive relationship is found between concentrated ownership and revenue performance in employee owned companies	
Brown, Earle and Telegdy (2004)	The Hungarian data are from 1986 to 2002,/and the Romanian cover 1992 to 2002/The Russian data are from 1985 to 2002, and for Ukraine they are available for 1989 and each year from 1992 to 2002/ OLS, IV, and Olley-Pakes estimators/	Romania, Hungary, Russia and Ukraine	multi factor productivity (MFP)		Privatisation design matters. Privatization raises MFP about 28% in Romania, 22% in Hungary, and 3% in Ukraine, with some variation across specifications, while in Russia it lowers it about 4%. Although, reporting limitations of the

					study include incomplete longitudinal links, production function misspecification, and remaining simultaneity bias, results are robust across different specifications and report strong positive impact of concentrated foreign ownership on productivity.
Atanasov (2004)	180 firms corresponding to all individual bids of each of the 81 privatization funds in the second round of the Bulgarian mass privatization auction/	Bulgaria	OLS/2SLS regression of bid price regressed on bid size and controls		In post-privatisation setting majority owners extract more than 85% of firm value as result of private benefits of control, in the absence of legal constraints.
Damijan, Gregoric, and Prasnikar (2004)	150 large and medium-sized firms/ for the period 1998-2002/OLS , GMM estimator	Slovenia	ROE/ ROA/Cash Flow Over Fixed Assets	There is no significant effect of the identity of the largest owner on firm performance. However, there is evidence that firms controlled by domestic non-financial owners and insider owners, when aggregately holding dominant ownership blocks, perform better than firms controlled by State-controlled funds	While the concentration of the largest blockholder might have some positive effect on firm, additional blockholdings within a firm actually tends to reduce the firm value rather than contributes to monitoring.
Miller (2006)	for the period (1996-2003)/OLS	Bulgaria	ROA/sales per unit of labor cost	Inconclusive, i.e. firms with higher levels of ownership concentration, regardless of type of ownership (state, foreign, investment funds) perform better than firms with dispersed ownership	More concentrated ownership associated with dilution has had some positive benefits
Le Micela Pop and Le Maux (2006)	484 and 188 company-year observations for Croatia and Romania, respectively/the Bucharest, Varazdin, and Zagreb Stock Exchanges/for the time interval 2000-2003/OLS and	Croatia and Romania	ROA	In the case of Romania, state owned firms outperform firms which largest shareholder is another industrial company. In the case of Croatia, firms controlled by other industrial firms, a financial institution or an individual investor performs, on average, better than	the Romanian firmsperform better if the largest shareholder holds acomparatively large stake. On the other hand, Croatian firmsshowthe rise of agency conflicts if more power is given to a single shareholder. Moreover, firmresources are

	Fixed effect			state owned.	better managed if additional large shareholders comparable in size are present.Results depict difference in legal settings of minority shareholders protection.
Salis (2006)	6,020 manufacturingFirms/ for the time interval 1994-1999/difference–in-difference (DID) estimator,	Slovenia	Total factor productivity (TFP), output and employment	Foreign firms transfer their technologies of affiliates acquired in Slovenia, increasing TFP.	
Lskavyan and Spatareanu (2006)	using a cross section data of publicly traded firms for the period 1995-1998, applying GMM/	the UK., the Czech Republic and Poland		They analyze the relationship between ownership concentration and performance, accounting for the potential hostile takeover threats affecting this relationship. In both cases, they find that ownership concentration does not have significant impact on firm performance, although takeover threats are stronger in the UK compared to the Czech Republic and Poland. This result is surprising and in opposition to the general assumption regarding the role of post-privatisation ownership concentration as an implicit tool for overcoming institutional deficiencies through better monitoring of managers.	
Brezigar, Gregoric and Zajc (2007)	900 firms/ for the time interval 1998-2004/Fixed effect	Slovenia	Profit margin/net income/ revenue		Post-privatisation ownership structures in Slovenia are considered as result of control contest, between insiders and outsiders and, equally important, among different group of outsiders. In non-listed firms increase of the ownership concentration positively

					affects firm performance, irrespective of their identity In the case of listed companies, two largest homogeneous large owners negatively affects firm performance
Grosfeld and Hashi (2007)	The Czech Republic 652 companies for 1996-1999/ 512 companies in Poland for 1995-2000/ probit	Poland, the Czech Republic	profit before taxes, the growth of sales	Dominant foreign shareholder influences the probability of an increase in its equity holdings.	A significant increase in ownership concentration measured by the share of the largest owner; private benefits of control are large in both countries; in the Czech Republic the increase in ownership concentration seems to be less likely in poorly performing firms while in Poland the quality of past performance does not affect investors' willingness to increase their holdings. Interestingly, although the legal and regulatory environment was initially much poorer in the Czech Republic than in Poland, the trend of concentration hasbeen similar.
Moden, Norback and Persson (2007)	For the period 1995-2000/ 3387 observations/ OLS/2SLS/Fixed effect	Poland	average labour productivity	Foreign owned firms have higher productivity compared to domestic private owned ones, due to positive spill-over (firm specific knowledge) on domestic firms.	
Hanousek, Kocenda and Svejnar (2007)	1,371-1,540 firms after privatization / use panel data on a complete population,	the Czech Republic	the annual change in the return on assets (ROA)/ the rate of change in	The effects of privatization and different types of ownership on firm performance are very limited and that many types of private owners do not bring about performance that is	Early findings of positive effects of immediate post-privatization ownership structures on corporate

	Medium/ large firms that went through MVP/ for the period (1996-1999)/ Logit, OLS First-differences Estimates		sales revenue	different from that of firms with state ownership. However, the concentrated foreign owners (mainly industrial companies) generate superior performance compared to all other types of owners in terms of growth of sales and profitability (in some specifications).	performance were premature. However, findings are consistent with the agency theory prediction that concentrated ownership resultsin superior corporate performance and efficient monitoring of managers.
Suljakanovic (2007)	100 companies in 2005/ OLS	Bosnia and Herzegovina	return on assets (ROA	Positive non-significant correlation between shareholding concentration and firm performance	there is possibility that a dominant shareholder expropriates smaller investors due to the fact that the governance structure of joint-stock companies in BH is particularly cumbersome, as it involves three tiers of managing boards with unclear responsibilities and definition of purpose
Commander and Svejnar (2007)	5897 firms/ for the period 2002-2005/OLS, Fixed effect, 2SLS	26 Transition Economies	Level of sales	Although primarily focused at the impact that the business environment has on firm performance, simultaneously they find that foreign ownership has a positive impact on firm performance.	x
Estrin et al. (2009)	privatization to foreign owners sre more efficient compared to state owned firms, Concentrated (especially foreign) private ownership has a stronger positive effect than dispersed ownership in CEE and CIS, private ownership has a positive effect on labor productivity and firm performance.				
Gregoric and Vespro (2009)	31 company listed in Slovenian Stock Exchange/ for the time interval 2000-2001	Slovenia	Pre/post trade block premium in percent	Privatisation (investment) funds perform poor in the post-privatisation period .	Investors are willing to pay substantial premiums given that it provides them possibility to extract firm value.
Balsmeier and Czarnitzki (2010)	BEEPS data for the period from 2002 to 2009/OLS	28 central and eastern European	employment growth		Inverted u-shaped relationship between ownership concentration and firm performance in TEs with

		countries			weakinstitutional environments. With rising ownership concentration in poor institutional setting arisesa ‘private benefits of control’ problem. Larger shareholders apparently let value enhancing growth opportunities forgo to avoid contests of control and save private benefits of being the sole controlling firm owner
Hagemejer and Tyrowicz (2011)	all medium and largeenterprises over the period 1995–2007 /more than 40000 firms/Propensity score matching	Poland	Return on asset (ROA)/Technical efficiency/ Profits/employment /Export/revenue	Foreign ownership over-performs domestic and stateowned firms. Nonetheless, higher firm performance of firms privatized by foreigners is partially due to the selectioneffect as well.	x
Gregoric, Brezigar, Masten and Zajc (2011)	536 Unlisted companies/ unbalanced panel /over a six-year period (1999–2004)/ GMM dynamic panel estimator	Slovenia	Return on asset (ROA)	Present the persistence of the initial privatization owners/ the access to rents in the firms they own, the initial privatization owners t have the incentive to block the entrance of new private owners/ that positive effects have generally been associated with employee ownership in Slovenia.	Ownership concentrates less in larger, riskier and better performing firms. Path dependence in ownership concentration results from the rent-seeking behaviour of the incumbent owners, producing presumably inefficient ownership and governance.
Pervan, Pevan and Todoric (2012)	1,430 observations / for the period 2003-2010/ dynamic panel analysis	Croatia	Return on asset (ROA)	Foreign controlled listed firms perform better than domestically controlled firms which outperform the state one (although no evidence of significant discrepancy between domestic and state ownership)	Ownership concentration is negatively related with performance, i.e. listed firms with dispersed ownership perform better than firms with concentrated ownership. Confirmed entrenchment hypothesis by which the management of internally controlled firms can expropriate corporate funds on the cost of small

					stockholders. They relate this kind of finding to relatively low level of investors' protection in Croatia,
Dzanic (2012)	237 companies/ for the period 2003-2019/ The fixed effects, 2SLS	Croatia	Tobin's Q, Return on asset, Return on equity	Results support a positive effect of the family-type second block holder on firm performance. Results do not support presence as positive effect of foreign ownership on the firm's performance.	
Tatahi (2012)	using data of two years- 1998 and 2000/Factor Analysis Method	Bulgaria	the turnover divided by the number of employees, turnover, profit, total assets, the number of employees, ownership, productivity and profitability		do not find that ownership is a key performance factor, i.e. ownership is a unique characteristic independent size or performance

CHAPTER 3

APPENDIX 3.1

```
Multivariate MRA FAT-PET model-Cluster robust estimates and default standard errors estimates-
Full modelegress  own_concentration_t   SEE    Se_investment  se_amenity5 se_control6
Se_industry  Se_cap_expend Se_adv_expend Se_OLS se_parametric_approach16
se_miparametric_approach17 Se_GLS  Se_2SLS Se_3SLS Se_Fixed_effect Se_Random
Se_cross_sectional   Se_Robust Se_anglosaxon Se_insiders Se_endogeneity  Se_TobinsQ se_o2
se_o2squared56  [pweight = weight], vce(cluster study_indentification)


Linear regression                                      Number of obs =     946
                                                       F( 20,    61) =       .
                                                       Prob > F      =       .
                                                       R-squared     =  0.1984
                                                       Root MSE      =   1.998

                 (Std. Err. adjusted for 62 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
own_concen~t |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0367463    .014148     2.60   0.012     .0084556    .0650371
Se_investm~t |   .0180318    .010384     1.74   0.088    -.0027322    .0387958
 se_amenity5 |   .0627846   .0289127     2.17   0.034     .0049701     .120599
 se_control6 |  -.0754351   .0177676    -4.25   0.000    -.1109637   -.0399066
 Se_industry |  -.0310165   .0075562    -4.10   0.000     -.046126   -.0159071
Se_cap_exp~d |  -.0389141   .0066775    -5.83   0.000    -.0522666   -.0255616
Se_adv_exp~d |   .0128863   .0074155     1.74   0.087    -.0019419    .0277145
      Se_OLS |  -.0236047   .0099549    -2.37   0.021    -.0435107   -.0036987
se_parame~16 |   .0225067   .0143763     1.57   0.123    -.0062405    .0512539
se_mipara~17 |   .0121655   .0163325     0.74   0.459    -.0204934    .0448243
      Se_GLS |  -.0243631   .0113264    -2.15   0.035    -.0470117   -.0017146
     Se_2SLS |   -.008605   .0087185    -0.99   0.328    -.0260388    .0088288
     Se_3SLS |  -.0221676   .0149604    -1.48   0.144    -.0520826    .0077475
Se_Fixed_e~t |  -.0111607   .0102149    -1.09   0.279    -.0315867    .0092652
   Se_Random |   .0277452   .0165902     1.67   0.100     -.005429    .0609194
Se_cross_s~l |  -.0241839   .0116702    -2.07   0.042    -.0475198    -.000848
   Se_Robust |  -.0140127   .0084748    -1.65   0.103    -.0309592    .0029338
Se_anglosa~n |  -.0101968   .0081615    -1.25   0.216    -.0265167    .0061231
 Se_insiders |   .0235603   .0083353     2.83   0.006     .0068929    .0402277
Se_endogen~y |   -.002839   .0086351    -0.33   0.743    -.0201059    .0144279
  Se_TobinsQ |  -.0061446    .005883    -1.04   0.300    -.0179084    .0056191
       se_o2 |   .0173964    .008156     2.13   0.037     .0010876    .0337052
```

```
se_o2squa~56 |  -.0368614   .0117464    -3.14   0.003    -.0603498   -.0133731
       _cons |   .6884971   .2766555     2.49   0.016     .1352903    1.241704
------------------------------------------------------------------------------


. estat ovtest

Ramsey RESET test using powers of the fitted values of own_concentration_t
       Ho:  model has no omitted variables
                 F(3, 919) =      6.18
                  Prob > F =      0.0004


regress  own_concentration_t   SEE    Se_investment  se_amenity5 se_control6 Se_industry
Se_cap_expend Se_adv_expend Se_OLS se_parametric_approach16 se_miparametric_approach17 Se_GLS
Se_2SLS Se_3SLS Se_Fixed_effect Se_Random Se_cross_sectional   Se_Robust Se_anglosaxon
Se_insiders Se_endogeneity  Se_TobinsQ se_o2 se_o2squared56 [pweight = weight]


Linear regression                                      Number of obs =     946
                                                       F( 23,   922) =    6.43
                                                       Prob > F      =  0.0000
                                                       R-squared     =  0.1984
                                                       Root MSE      =   1.998

------------------------------------------------------------------------------
             |               Robust
own_concen~t |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0367463   .0174911     2.10   0.036     .0024193    .0710734
Se_investm~t |   .0180318   .0096799     1.86   0.063    -.0009654     .037029
 se_amenity5 |   .0627846   .0201545     3.12   0.002     .0232306    .1023385
 se_control6 |  -.0754351   .0174213    -4.33   0.000    -.1096251   -.0412451
 Se_industry |  -.0310165   .0071163    -4.36   0.000    -.0449825   -.0170505
Se_cap_exp~d |  -.0389141   .0071352    -5.45   0.000    -.0529171    -.024911
Se_adv_exp~d |   .0128863   .0076169     1.69   0.091    -.0020621    .0278348
      Se_OLS |  -.0236047   .0152287    -1.55   0.121    -.0534917    .0062822
se_parame~16 |   .0225067   .0204506     1.10   0.271    -.0176283    .0626417
se_mipara~17 |   .0121655   .0180009     0.68   0.499    -.0231619    .0474929
      Se_GLS |  -.0243631   .0206134    -1.18   0.238    -.0648179    .0160916
     Se_2SLS |   -.008605   .0107611    -0.80   0.424    -.0297241    .0125141
     Se_3SLS |  -.0221676   .0356464    -0.62   0.534    -.0921251      .04779
Se_Fixed_e~t |  -.0111607   .0094033    -1.19   0.236    -.0296151    .0072937
```

```
   Se_Random |   .0277452   .0288342     0.96   0.336    -.028843    .0843334
Se_cross_s~l |  -.0241839   .0096091    -2.52   0.012   -.0430422   -.0053256
   Se_Robust |  -.0140127   .0083797    -1.67   0.095   -.0304582    .0024328
Se_anglosa~n |  -.0101968   .0071414    -1.43   0.154   -.0242122    .0038186
 Se_insiders |   .0235603   .0060852     3.87   0.000    .0116179    .0355027
Se_endogen~y |   -.002839   .0126984    -0.22   0.823   -.0277601    .0220821
  Se_TobinsQ |  -.0061446    .005117    -1.20   0.230   -.0161869    .0038976
       se_o2 |   .0173964   .0056772     3.06   0.002    .0062546    .0285382
se_o2squa~56 |  -.0368614    .007661    -4.81   0.000   -.0518965   -.0218264
       _cons |   .6884971   .1890894     3.64   0.000    .3174015    1.059593
------------------------------------------------------------------------------
```

. Bivariate MRA FAT-PET model–Cluster robust estimates and default standard errors estimates

```
. regress  own_concentration_t   SEE     [pweight = weight], vce(cluster
study_indentification)


Linear regression                                      Number of obs =     946
                                                       F(  1,    61) =    0.37
                                                       Prob > F      =  0.5479
                                                       R-squared     =  0.0016
                                                       Root MSE      =  2.2037


                 (Std. Err. adjusted for 62 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
own_concen~t |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |    .003395   .0056182     0.60   0.548   -.0078393    .0146293
       _cons |   .4484912   .2112939     2.12   0.038     .025983    .8709994
------------------------------------------------------------------------------


. estat ovtest


Ramsey RESET test using powers of the fitted values of own_concentration_t
       Ho:  model has no omitted variables
                 F(3, 941) =      2.23
                  Prob > F =      0.0830
```

```
. regress  own_concentration_t   SEE     [pweight = weight]

Linear regression                                      Number of obs =     946
                                                       F(  1,   944) =    0.65
                                                       Prob > F      =  0.4210
                                                       R-squared     =  0.0016
                                                       Root MSE      =  2.2037

------------------------------------------------------------------------------
             |               Robust
own_concen~t |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |    .003395   .0042168     0.81   0.421    -.0048804    .0116703
       _cons |   .4484912   .1399798     3.20   0.001     .1737836    .7231988
------------------------------------------------------------------------------
```

Multivariate Pure Linear Sample Cluster robust estimates and default standard errors estimates

```
. regress   pure_linear  SEE    se_size2 Se_investment Se_leverage se_amenity5 se_control6
Se_industry Se_firm__specific_risk Se_market_specific_risk Se_R_D  Se_cap_expend Se_adv_expend
Se_OLS se_parametric_approach16 se_miparametric_approach17  se_wls Se_2SLS Se_3SLS
Se_Fixed_effect Se_Random Se_cross_sectional  Se_Robust Se_anglosaxon Se_insiders  se_o2
se_oclow60 se_ocmedium61  Se_TobinsQ  [pweight = weight], vce(cluster study_indentification)

Linear regression                                      Number of obs =     582
                                                       F( 25,    53) =       .
                                                       Prob > F      =       .
                                                       R-squared     =  0.2299
                                                       Root MSE      =  1.8982

                 (Std. Err. adjusted for 54 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0240072   .0213189     1.13   0.265    -.0187531    .0667675
    se_size2 |  -.0051092   .0180717    -0.28   0.778    -.0413564     .031138
Se_investm~t |   .0299554   .0221967     1.35   0.183    -.0145656    .0744764
 Se_leverage |   .0062012   .0196394     0.32   0.753    -.0331905    .0455929
 se_amenity5 |   .0625639   .0392307     1.59   0.117    -.0161229    .1412506
 se_control6 |  -.0608974   .0274575    -2.22   0.031    -.1159701   -.0058247
 Se_industry |  -.0473826   .0175035    -2.71   0.009    -.0824903    -.012275
```

```
Se_firm__s~k |   -.001292   .0115632    -0.11   0.911     -.024485    .0219009
Se_market_~k |  -.0274238   .0215315    -1.27   0.208    -.0706104    .0157629
      Se_R_D |   .0082058   .0170729     0.48   0.633    -.0260381    .0424498
Se_cap_exp~d |  -.0591977   .0114122    -5.19   0.000    -.0820877   -.0363077
Se_adv_exp~d |  -.0164537   .0167949    -0.98   0.332    -.0501401    .0172326
      Se_OLS |  -.0016728   .0107808    -0.16   0.877    -.0232963    .0199507
se_parame~16 |   .0489951   .0266024     1.84   0.071    -.0043625    .1023528
se_mipara~17 |    .044842   .0286249     1.57   0.123    -.0125722    .1022562
      se_wls |   .1411956   .0325501     4.34   0.000     .0759084    .2064827
     Se_2SLS |  -.0022429   .0127547    -0.18   0.861    -.0278255    .0233397
     Se_3SLS |  -.0051838   .0227933    -0.23   0.821    -.0509013    .0405337
Se_Fixed_e~t |  -.0096034   .0220377    -0.44   0.665    -.0538055    .0345986
   Se_Random |   .0696719   .0252349     2.76   0.008     .0190571    .1202867
Se_cross_s~l |  -.0288311   .0162474    -1.77   0.082    -.0614193     .003757
   Se_Robust |  -.0079756   .0144687    -0.55   0.584    -.0369961    .0210449
Se_anglosa~n |  -.0076693   .0124325    -0.62   0.540    -.0326057    .0172671
 Se_insiders |   .0376043   .0159324     2.36   0.022     .0056478    .0695607
       se_o2 |     .00786   .0253166     0.31   0.757    -.0429186    .0586386
  se_oclow60 |   .0317187   .0215749     1.47   0.147     -.011555    .0749925
se_ocmedi~61 |  -.0355084   .0306174    -1.16   0.251    -.0969191    .0259023
  Se_TobinsQ |  -.0105911   .0094681    -1.12   0.268    -.0295816    .0083994
       _cons |   .9291228   .3738082     2.49   0.016     .1793586    1.678887
------------------------------------------------------------------------------
Ramsey RESET test using powers of the fitted values of pure_linear
       Ho:  model has no omitted variables
                 F(3, 550) =      2.38
         Prob > F =      0.0691
```

```
regress pure_linear SEE  se_size2 Se_investment Se_leverage se_amenity se_control6 Se_industry
Se_firm__specific_risk Se_market_specific_risk Se_R_DSe_cap_expend Se_adv_expend Se_OLS
se_parametric_approach16 se_miparametric_approach17  se_wls Se_2SLS Se_3SLS Se_Fixed_effect
Se_Random Se_cross_sectional  Se_Robust Se_anglosaxon Se_insiders  se_o2  se_oclow60
se_ocmedium61  Se_TobinsQ  [pweight = weight]

Linear regression                                      Number of obs =     582
```

F(28,   553) =   9.23

```
                                                       Prob > F      =  0.0000
                                                       R-squared     =  0.2299
                                                       Root MSE      =  1.8982

------------------------------------------------------------------------------
             |               Robust
```

pure_linear	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
SEE	.0240072	.0221722	1.08	0.279	-.0195449	.0675592
se_size2	-.0051092	.0122072	-0.42	0.676	-.0290874	.0188689
Se_investm~t	.0299554	.0177595	1.69	0.092	-.0049289	.0648396
Se_leverage	.0062012	.0114372	0.54	0.588	-.0162645	.0286669
se_amenity5	.0625639	.0268895	2.33	0.020	.0097459	.1153818
se_control6	-.0608974	.0221825	-2.75	0.006	-.1044698	-.0173251
Se_industry	-.0473826	.0142491	-3.33	0.001	-.0753717	-.0193936
Se_firm__s~k	-.001292	.0078592	-0.16	0.869	-.0167296	.0141455
Se_market_~k	-.0274238	.0282099	-0.97	0.331	-.0828355	.027988
Se_R_D	.0082058	.0132786	0.62	0.537	-.0178769	.0342886
Se_cap_exp~d	-.0591977	.0119549	-4.95	0.000	-.0826804	-.035715
Se_adv_exp~d	-.0164537	.0134767	-1.22	0.223	-.0429255	.0100181
Se_OLS	-.0016728	.0149855	-0.11	0.911	-.0311083	.0277627
se_parame~16	.0489951	.020218	2.42	0.016	.0092816	.0887086
se_mipara~17	.044842	.0209222	2.14	0.033	.0037452	.0859388
se_wls	.1411956	.0362632	3.89	0.000	.0699651	.2124261
Se_2SLS	-.0022429	.0170583	-0.13	0.895	-.0357498	.0312641
Se_3SLS	-.0051838	.0199826	-0.26	0.795	-.044435	.0340673
Se_Fixed_e~t	-.0096034	.0205022	-0.47	0.640	-.0498751	.0306683
Se_Random	.0696719	.0275333	2.53	0.012	.0155893	.1237546
Se_cross_s~l	-.0288311	.0102771	-2.81	0.005	-.049018	-.0086442
Se_Robust	-.0079756	.0116397	-0.69	0.494	-.0308391	.0148879
Se_anglosa~n	-.0076693	.009351	-0.82	0.412	-.0260371	.0106984
Se_insiders	.0376043	.0088543	4.25	0.000	.0202122	.0549964
se_o2	.00786	.0123331	0.64	0.524	-.0163654	.0320854
se_oclow60	.0317187	.0288894	1.10	0.273	-.0250276	.0884651
se_ocmedi~61	-.0355084	.0161317	-2.20	0.028	-.0671952	-.0038215
Se_TobinsQ	-.0105911	.0076237	-1.39	0.165	-.025566	.0043838
_cons	.9291228	.2253584	4.12	0.000	.4864597	1.371786

Bivariate Pure Linear Sample Cluster robust estimates and default standard errors estimates

regress pure_linear SEE [pweight = weight], vce(cluster study_indentification)

(sum of wgt is 4.3247e+01)

```
Linear regression                                      Number of obs =     582
                                                       F(  1,    53) =    0.18
                                                       Prob > F      =  0.6760
                                                       R-squared     =  0.0015
                                                       Root MSE      =  2.1106

                 (Std. Err. adjusted for 54 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0034427   .0081916     0.42   0.676    -.0129876     .019873
       _cons |   .5471857   .2836396     1.93   0.059    -.0217233    1.116095
------------------------------------------------------------------------------

. estat ovtest

Ramsey RESET test using powers of the fitted values of pure_linear
       Ho:  model has no omitted variables
                 F(3, 577) =      3.26
                  Prob > F =      0.0213
. regress   pure_linear  SEE     [pweight = weight)
too many ')' or ']'
r(132);

. regress   pure_linear  SEE     [pweight = weight]
(sum of wgt is   4.3247e+01)

Linear regression                                      Number of obs =     582
                                                       F(  1,   580) =    0.54
                                                       Prob > F      =  0.4630
                                                       R-squared     =  0.0015
                                                       Root MSE      =  2.1106

------------------------------------------------------------------------------
             |               Robust
```

pure_linear	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
SEE	.0034427	.0046882	0.73	0.463	-.0057652	.0126506
_cons	.5471857	.1522853	3.59	0.000	.2480879	.8462835

Multivariate Pure Linear Sample Cluster robust estimates and default standard errors estimates-Insiders

```
regress pure_linear  SEE   se_size2  Se_leverage se_amenity5 se_control6
Se_firm__specific_risk Se_market_specific_risk Se_R_D Se_cap_expend Se_adv_expend Se_OLS
se_parametric_approach16  Se_3SLS Se_Random Se_cross_sectional  Se_Robust Se_anglosaxon
Se_endogeneity se_o2  se_oclow60 se_ocmedium61  Se_TobinsQ  if insiders==1 [pweight =weight],
vce(cluster study_indentification)
```

```
ar regression                                      Number of obs =     301
                                                       F( 20,    30) =       .
                                                       Prob > F      =       .
                                                       R-squared     =  0.2815
                                                       Root MSE      =  2.1054

                 (Std. Err. adjusted for 31 clusters in study_indentification)
```

pure_linear	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
SEE	.1419473	.0723201	1.96	0.059	-.0057501	.2896448
se_size2	-.1070949	.0277222	-3.86	0.001	-.1637112	-.0504785
Se_leverage	.0614194	.0156665	3.92	0.000	.0294242	.0934146
se_amenity5	-.109855	.040401	-2.72	0.011	-.1923649	-.0273452
se_control6	-.0586119	.0231937	-2.53	0.017	-.1059798	-.011244
Se_firm__s~k	.0726617	.0223936	3.24	0.003	.0269278	.1183956
Se_market_~k	-.1725844	.0296223	-5.83	0.000	-.2330813	-.1120876
Se_R_D	.0406591	.0189378	2.15	0.040	.0019829	.0793352
Se_cap_exp~d	-.0133755	.0165155	-0.81	0.424	-.0471047	.0203536
Se_adv_exp~d	-.0263908	.0200167	-1.32	0.197	-.0672704	.0144888
Se_OLS	.026731	.0294725	0.91	0.372	-.0334599	.0869219
se_parame~16	.1474797	.0378098	3.90	0.001	.0702617	.2246976
Se_3SLS	-.0566616	.0306611	-1.85	0.074	-.11928	.0059568
Se_Random	.1438534	.0337638	4.26	0.000	.0748985	.2128083

```
Se_cross_s~l |   .0447716   .0243398     1.84   0.076     -.004937    .0944802
   Se_Robust |  -.0613521   .0174062    -3.52   0.001    -.0969002   -.0258039
Se_anglosa~n |  -.0698803   .0191636    -3.65   0.001    -.1090177    -.030743
Se_endogen~y |   .0254364    .035132     0.72   0.475    -.0463126    .0971855
       se_o2 |  -.0369441   .0457285    -0.81   0.426    -.1303343     .056446
  se_oclow60 |   .0351469   .0240228     1.46   0.154    -.0139142    .0842079
se_ocmedi~61 |  -.0339624   .0331428    -1.02   0.314    -.1016491    .0337243
  Se_TobinsQ |   .0069499     .00801     0.87   0.392    -.0094087    .0233085
       _cons |   .6137644   .4260751     1.44   0.160    -.2563971    1.483926
------------------------------------------------------------------------------


. estat ovtest


Ramsey RESET test using powers of the fitted values of pure_linear

       Ho:  model has no omitted variables

F(3, 275) =     13.32

                  Prob > F =      0.0000



. regress   pure_linear  SEE    se_size2  Se_leverage se_amenity5 se_control6
Se_firm__specific_risk Se_market_specific_risk Se_R_D Se_cap_expend Se_adv_expend Se_OLS
se_parametric_approach16   Se_3SLS Se_Random Se_cross_sectional  Se_Robust Se_anglosaxon
Se_endogeneity se_o2  se_oclow60 se_ocmedium61  Se_TobinsQ  if insiders==1 [pweight =weight]


Linear regression                                      Number of obs =     301
                                                       F( 20,   278) =       .
                                                       Prob > F      =       .
                                                       R-squared     =  0.2815
                                                       Root MSE      =  2.1054

------------------------------------------------------------------------------
             |               Robust
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .1419473   .0635581     2.23   0.026     .0168311    .2670636
    se_size2 |  -.1070949   .0207671    -5.16   0.000    -.1479756   -.0662141
 Se_leverage |   .0614194   .0175486     3.50   0.001     .0268743    .0959645
 se_amenity5 |   -.109855   .0352497    -3.12   0.002    -.1792452   -.0404648
 se_control6 |  -.0586119   .0361199    -1.62   0.106    -.1297151    .0124913
Se_firm__s~k |   .0726617    .021832     3.33   0.001     .0296847    .1156387
```

```
Se_market_~k |  -.1725844   .0361337    -4.78   0.000    -.2437148   -.1014541
      Se_R_D |   .0406591   .0176659     2.30   0.022     .0058832    .0754349
Se_cap_exp~d |  -.0133755   .0139378    -0.96   0.338    -.0408125    .0140615
Se_adv_exp~d |  -.0263908   .0145005    -1.82   0.070    -.0549355    .0021539
      Se_OLS |    .026731   .0236814     1.13   0.260    -.0198866    .0733486
se_parame~16 |   .1474797   .0250764     5.88   0.000     .0981159    .1968434
     Se_3SLS |  -.0566616   .0252571    -2.24   0.026    -.1063811    -.006942
   Se_Random |   .1438534   .0358418     4.01   0.000     .0732976    .2144092
Se_cross_s~l |   .0447716   .0148867     3.01   0.003     .0154666    .0740766
   Se_Robust |  -.0613521   .0109059    -5.63   0.000    -.0828207   -.0398835
Se_anglosa~n |  -.0698803    .018187    -3.84   0.000    -.1056822   -.0340785
Se_endogen~y |   .0254364   .0296217     0.86   0.391    -.0328749    .0837477
       se_o2 |  -.0369441   .0468828    -0.79   0.431    -.1292346    .0553463
  se_oclow60 |   .0351469   .0309439     1.14   0.257    -.0257672     .096061
se_ocmedi~61 |  -.0339624   .0171577    -1.98   0.049     -.067738   -.0001868
  Se_TobinsQ |   .0069499   .0041051     1.69   0.092     -.001131    .0150309
       _cons |   .6137644   .3376696     1.82   0.070    -.0509497    1.278479
------------------------------------------------------------------------------
```

Bivariate Pure Linear Sample Cluster robust estimates and default standard errors estimates-Insiders

```
regress   pure_linear  SEE    se_size2    if insiders==1 [pweight =weight]

regress   pure_linear  SEE    if insiders==1 [pweight =weight]


Linear regression                                      Number of obs =     301
                                                       F(  1,   299) =    0.84
                                                       Prob > F      =  0.3606
                                                       R-squared     =  0.0023
                                                       Root MSE      =  2.3922

------------------------------------------------------------------------------
             |               Robust
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0048388   .0052843     0.92   0.361    -.0055603    .0152379
```

```
      _cons |   1.072687   .2229893     4.81   0.000       .63386    1.511515
------------------------------------------------------------------------------ (sum of wgt is
1.7475e+01)


Linear regression                                      Number of obs =     301
                                                       F(  1,    30) =    0.17
                                                       Prob > F      =  0.6810
                                                       R-squared     =  0.0023
                                                       Root MSE      =  2.3922

                 (Std. Err. adjusted for 31 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0048388   .0116561     0.42   0.681    -.0189661    .0286437
       _cons |   1.072687   .3787981     2.83   0.008     .2990785    1.846296
------------------------------------------------------------------------------
```

MultvaritePure Linear Sample Cluster robust estimates and default standard errors estimates-Outsiders

```
regress   pure_linear  SEE     Se_investment Se_leverage se_amenity5 se_control6  Se_industry
Se_R_D Se_cap_expend  Se_OLS  se_parametric_approach16 se_meparametric_approach17 se_wls
Se_Random Se_cross_sectional Se_Robust Se_anglosaxon Se_endogeneity Se_TobinsQ se_ocmedium61
if insiders==0 [pweight =weight], vce(cluster study_indentification)


Linear regression                                      Number of obs =     281
                                                       F( 16,    43) =       .
                                                       Prob > F      =       .
                                                       R-squared     =  0.3870
                                                       Root MSE      =  1.4626

                 (Std. Err. adjusted for 44 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
```

```
-------------+----------------------------------------------------------------
         SEE |  -.0991296   .0339971    -2.92   0.006    -.1676913   -.0305679
Se_investm~t |   .0231855    .020873     1.11   0.273    -.0189089      .06528
 Se_leverage |    .032611    .011729     2.78   0.008     .0089572    .0562647
 se_amenity5 |   .0677255   .0580256     1.17   0.250    -.0492943    .1847453
 se_control6 |  -.0481659   .0483389    -1.00   0.325    -.1456506    .0493188
 Se_industry |  -.0521232   .0208518    -2.50   0.016    -.0941749   -.0100715
      Se_R_D |   .0187719   .0147213     1.28   0.209    -.0109163    .0484602
Se_cap_exp~d |  -.0454512     .01041    -4.37   0.000    -.0664449   -.0244574
      Se_OLS |   .0524968   .0172089     3.05   0.004     .0177917    .0872018
se_parame~16 |   .0961494   .0233945     4.11   0.000       .04897    .1433288
se_mipara~17 |   .0986292   .0235515     4.19   0.000     .0511331    .1461254
      se_wls |   .2523185   .0207858    12.14   0.000        .2104     .294237
   Se_Random |   .1585164   .0249951     6.34   0.000      .108109    .2089238
Se_cross_s~l |  -.0153725   .0196591    -0.78   0.439    -.0550187    .0242738
   Se_Robust |   .0388272   .0189324     2.05   0.046     .0006464     .077008
Se_anglosa~n |  -.0197407   .0129636    -1.52   0.135    -.0458842    .0064029
Se_endogen~y |   .0528161   .0147859     3.57   0.001     .0229974    .0826347
  Se_TobinsQ |  -.0133674   .0125676    -1.06   0.293    -.0387124    .0119775
se_ocmedi~61 |   .0631335   .0106665     5.92   0.000     .0416224    .0846447
       _cons |   1.232685    .399759     3.08   0.004     .4264938    2.038876
------------------------------------------------------------------------------

. estat ovtest

Ramsey RESET test using powers of the fitted values of pure_linear
       Ho:  model has no omitted variables
                 F(3, 258) =      2.68
                  Prob > F =      0.0476
```

```
regress  pure_linear  SEE    Se_investment Se_leverage se_amenity5 se_control6  Se_industry
Se_R_D Se_cap_expend  Se_OLS  se_parametric_approach16 se_mi
> parametric_approach17 se_wls Se_Random Se_cross_sectional Se_Robust Se_anglosaxon
Se_endogeneity Se_TobinsQ se_ocmedium61  if insiders==0 [pweight =weight
> ]
Linear regression                                      Number of obs =     281
                                                       F( 19,   261) =   21.11
                                                       Prob > F      =  0.0000
                                                       R-squared     =  0.3870
                                                       Root MSE      =  1.4626
```

```
------------------------------------------------------------------------------
             |               Robust
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |  -.0991296   .0276851    -3.58   0.000    -.1536441   -.0446151
Se_investm~t |   .0231855   .0209625     1.11   0.270    -.0180917    .0644628
 Se_leverage |    .032611   .0118294     2.76   0.006     .0093178    .0559041
 se_amenity5 |   .0677255   .0342987     1.97   0.049     .0001881    .1352629
 se_control6 |  -.0481659    .029743    -1.62   0.107    -.1067327    .0104009
 Se_industry |  -.0521232   .0203992    -2.56   0.011    -.0922912   -.0119552
      Se_R_D |   .0187719   .0124223     1.51   0.132    -.0056888    .0432327
Se_cap_exp~d |  -.0454512   .0081174    -5.60   0.000     -.061435   -.0294673
      Se_OLS |   .0524968   .0208688     2.52   0.012     .0114041    .0935895
se_parame~16 |   .0961494   .0260093     3.70   0.000     .0449345    .1473642
se_mipara~17 |   .0986292   .0266632     3.70   0.000     .0461268    .1511317
      se_wls |   .2523185   .0365329     6.91   0.000     .1803818    .3242552
   Se_Random |   .1585164   .0333515     4.75   0.000      .092844    .2241887
Se_cross_s~l |  -.0153725   .0129098    -1.19   0.235     -.040793    .0100481
   Se_Robust |   .0388272   .0148093     2.62   0.009     .0096662    .0679882
Se_anglosa~n |  -.0197407   .0116872    -1.69   0.092    -.0427538    .0032725
Se_endogen~y |   .0528161   .0204267     2.59   0.010      .012594    .0930382
  Se_TobinsQ |  -.0133674   .0103612    -1.29   0.198    -.0337696    .0070347
se_ocmedi~61 |   .0631335   .0115274     5.48   0.000     .0404349    .0858321
       _cons |   1.232685   .2665357     4.62   0.000     .7078507    1.757519
------------------------------------------------------------------------------
------------------------------------------------------------------------------
Binary outsiders pure linear
```

BivaritePure Linear Sample Cluster robust estimates and default standard errors estimates-Outsiders

```
regress   pure_linear  SEE      if insiders==0 [pweight =weight], vce(cluster
study_indentification)
(sum of wgt is   2.5772e+01)

Linear regression                                      Number of obs =     281
                                                       F(  1,    43) =    0.16
                                                       Prob > F      =  0.6914
                                                       R-squared     =  0.0016
                                                       Root MSE      =  1.8054

                 (Std. Err. adjusted for 44 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0030492   .0076291     0.40   0.691    -.0123363    .0184347
       _cons |   .1771793   .2979659     0.59   0.555    -.4237262    .7780849
------------------------------------------------------------------------------

. estat ovtest

Ramsey RESET test using powers of the fitted values of pure_linear
       Ho:  model has no omitted variables
                 F(3, 276) =      2.49
                  Prob > F =      0.0604

. regress   pure_linear  SEE    if insiders==0 [pweight =weight]
(sum of wgt is   2.5772e+01)

Linear regression                                      Number of obs =     281
                                                       F(  1,   279) =    0.24
                                                       Prob > F      =  0.6225
                                                       R-squared     =  0.0016
                                                       Root MSE      =  1.8054

------------------------------------------------------------------------------
             |               Robust
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0030492   .0061861     0.49   0.622    -.0091281    .0152266
```

```
       _cons |   .1771793   .1801936     0.98   0.326    -.1775323    .5318909
------------------------------------------------------------------------------
```

Multivariate Quadratic Sample Cluster robust estimates and default standard errors estimates-full

```
. regress   Quadratic SEE    se_size2   Se_investment Se_leverage se_amenity5 se_control6
Se_industry Se_firm__specific_risk Se_R_D Se_cap_expend Se_adv_e
> xpend  se_parametric_approach16  Se_GLS se_wls Se_2SLS Se_3SLS  Se_cross_sectional Se_Pooled
Se_Robust Se_anglosaxon Se_insiders Se_endogeneity  Se_Tobins
> Q  [pweight = weight], vce(cluster study_indentification)
(

Linear regression                                      Number of obs =     152
                                                       F( 17,    26) =       .
                                                       Prob > F      =       .
                                                       R-squared     =  0.4867
                                                       Root MSE      =  1.4978

                 (Std. Err. adjusted for 27 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0465257    .060106     0.77   0.446    -.0770239    .1700753
    se_size2 |   .0417652   .0167703     2.49   0.019     .0072933    .0762372
Se_investm~t |  -.0092517   .0304846    -0.30   0.764    -.0719136    .0534102
 Se_leverage |  -.0319513   .0361719    -0.88   0.385    -.1063037    .0424012
 se_amenity5 |   .2410367   .0570575     4.22   0.000     .1237532    .3583202
 se_control6 |  -.1471248    .040319    -3.65   0.001    -.2300018   -.0642479
 Se_industry |  -.0035096   .0261503    -0.13   0.894    -.0572623    .0502431
Se_firm__s~k |   -.033601   .0271369    -1.24   0.227    -.0893817    .0221797
      Se_R_D |  -.0374031     .04028    -0.93   0.362    -.1201999    .0453937
Se_cap_exp~d |  -.0165719   .0218456    -0.76   0.455    -.0614762    .0283324
Se_adv_exp~d |   .0400308   .0312915     1.28   0.212    -.0242897    .1043513
se_parame~16 |  -.0289524   .0294071    -0.98   0.334    -.0893996    .0314949
      Se_GLS |  -.0514777   .0350122    -1.47   0.153    -.1234463    .0204908
      se_wls |  -.2143439   .0458583    -4.67   0.000     -.308607   -.1200808
     Se_2SLS |   .0127148   .0191939     0.66   0.514    -.0267389    .0521685
     Se_3SLS |   -.118535   .0588532    -2.01   0.054    -.2395094    .0024394
Se_cross_s~l |   .1350507   .0635541     2.12   0.043     .0044134    .2656879
   Se_Pooled |   .0491769   .0242744     2.03   0.053    -.0007198    .0990736
   Se_Robust |  -.0551774    .035899    -1.54   0.136    -.1289689    .0186141
Se_anglosa~n |  -.0214702    .030824    -0.70   0.492    -.0848298    .0418893
 Se_insiders |   .0061821   .0226852     0.27   0.787    -.0404481    .0528123
Se_endogen~y |   -.023347    .018474    -1.26   0.218    -.0613209    .0146269
  Se_TobinsQ |   .0131798   .0054793     2.41   0.024      .001917    .0244427
       _cons |  -2.257901   1.058765    -2.13   0.043    -4.434223   -.0815787
------------------------------------------------------------------------------

.Ramsey RESET test using powers of the fitted values of Quadratic
       Ho:  model has no omitted variables
                 F(3, 125) =      1.41
                  Prob > F =      0.2428

.

. regress   Quadratic SEE    se_size2   Se_investment Se_leverage se_amenity5 se_control6
Se_industry Se_firm__specific_risk Se_R_D Se_cap_expend Se_adv_e
> xpend  se_parametric_approach16  Se_GLS se_wls Se_2SLS Se_3SLS  Se_cross_sectional Se_Pooled
Se_Robust Se_anglosaxon Se_insiders Se_endogeneity  Se_Tobins
> Q  [pweight = weight]
(sum of wgt is   7.7282e+00)

Linear regression                                      Number of obs =     152


                                                       F( 23,   128) =    7.38
                                                       Prob > F      =  0.0000
```

```
                                                       R-squared     =  0.4867
                                                       Root MSE      =  1.4978

------------------------------------------------------------------------------
             |               Robust
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0465257   .0395561     1.18   0.242    -.0317429    .1247943
    se_size2 |   .0417652    .024195     1.73   0.087    -.0061086    .0896391
Se_investm~t |  -.0092517   .0238817    -0.39   0.699    -.0565057    .0380023
 Se_leverage |  -.0319513   .0303956    -1.05   0.295    -.0920942    .0281917
 se_amenity5 |   .2410367   .0817796     2.95   0.004     .0792218    .4028516
 se_control6 |  -.1471248   .0392923    -3.74   0.000    -.2248714   -.0693782
 Se_industry |  -.0035096   .0173044    -0.20   0.840    -.0377492      .03073
Se_firm__s~k |   -.033601   .0251202    -1.34   0.183    -.0833057    .0161037
      Se_R_D |  -.0374031   .0300775    -1.24   0.216    -.0969166    .0221104
Se_cap_exp~d |  -.0165719   .0181262    -0.91   0.362    -.0524377    .0192939
Se_adv_exp~d |   .0400308   .0262792     1.52   0.130    -.0119671    .0920287
se_parame~16 |  -.0289524   .0307913    -0.94   0.349    -.0898783    .0319735
      Se_GLS |  -.0514777   .0352526    -1.46   0.147     -.121231    .0182755
      se_wls |  -.2143439   .0460763    -4.65   0.000    -.3055137   -.1231742
     Se_2SLS |   .0127148   .0165802     0.77   0.445     -.020092    .0455216
     Se_3SLS |   -.118535   .0441762    -2.68   0.008    -.2059451   -.0311249
Se_cross_s~l |   .1350507   .0471207     2.87   0.005     .0418143     .228287
   Se_Pooled |   .0491769   .0190474     2.58   0.011     .0114883    .0868655
   Se_Robust |  -.0551774   .0255525    -2.16   0.033    -.1057375   -.0046173
Se_anglosa~n |  -.0214702    .023485    -0.91   0.362    -.0679393    .0249988
Se_insiders  |   .0061821   .0165724     0.37   0.710    -.0266092    .0389733
Se_endogen~y |   -.023347   .0148291    -1.57   0.118    -.0526889     .005995
 Se_TobinsQ  |   .0131798   .0096068     1.37   0.172    -.0058289    .0321886
       _cons |  -2.257901   .7719557    -2.92   0.004    -3.785347   -.7304545
------------------------------------------------------------------------------
```

Bivariate Quadratic Sample Cluster robust estimates and default standard errors estimates-full

```
regress   Quadratic SEE      [pweight = weight], vce(cluster study_indentification)

Linear regression                                      Number of obs =     152
                                                       F(  1,    26) =    2.46
                                                       Prob > F      =  0.1287
                                                       R-squared     =  0.0207
                                                       Root MSE      =  1.9113

                 (Std. Err. adjusted for 27 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |  -.0091023   .0058014    -1.57   0.129    -.0210272    .0028227
       _cons |   -.728032   .4429476    -1.64   0.112    -1.638524    .1824598
------------------------------------------------------------------------------
```

```
. estat ovtest

Ramsey RESET test using powers of the fitted values of Quadratic
       Ho:  model has no omitted variables
                 F(3, 147) =      0.66
                  Prob > F =      0.5762

. regress   Quadratic SEE      [pweight = weight]
(sum of wgt is   7.7282e+00)

Linear regression                                      Number of obs =     152
                                                       F(  1,   150) =    3.79
                                                       Prob > F      =  0.0534
                                                       R-squared     =  0.0207
                                                       Root MSE      =  1.9113
```

Multivariate Quadratic Sample Cluster robust estimates and default standard errors estimates-insiders

```
Se_2SLS      Se_R_D Se_cap_expend  Se_OLS     Se_cross_sectional
>  Se_anglosaxon  Se_TobinsQ if insiders==1  [pweight = weight], vce(cluster
study_indentification)

Linear regression                                      Number of obs =     118
                                                       F( 11,    20) =       .
                                                       Prob > F      =       .
                                                       R-squared     =  0.4256
                                                       Root MSE      =  1.5112

                 (Std. Err. adjusted for 21 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0772519   .0448262     1.72   0.100     -.016254    .1707578
    se_size2 |   .0298123   .0213994     1.39   0.179     -.014826    .0744506
Se_investm~t |   .0398713   .0154413     2.58   0.018     .0076612    .0720814
 Se_leverage |  -.0447027   .0231689    -1.93   0.068    -.0930321    .0036268
 se_amenity5 |   .2287297    .050788     4.50   0.000     .1227878    .3346716
      Se_GLS |  -.0342411   .0256924    -1.33   0.198    -.0878346    .0193524
     Se_2SLS |   .0257797   .0223174     1.16   0.262    -.0207736    .0723331
      Se_R_D |  -.0125619   .0166037    -0.76   0.458    -.0471965    .0220727
Se_cap_exp~d |  -.0156866   .0169618    -0.92   0.366    -.0510683     .019695
      Se_OLS |   .0341175   .0229406     1.49   0.153    -.0137358    .0819708
Se_cross_s~l |   .0814046   .0585094     1.39   0.179    -.0406438    .2034529
Se_anglosa~n |  -.0833973   .0329377    -2.53   0.020    -.1521043   -.0146904
  Se_TobinsQ |    .021843   .0093379     2.34   0.030     .0023644    .0413216
       _cons |  -3.225016   .8189991    -3.94   0.001    -4.933418   -1.516614
------------------------------------------------------------------------------

. estat ovtest

Ramsey RESET test using powers of the fitted values of Quadratic
```

```
      Ho:  model has no omitted variables
                F(3, 101) =      2.97
                 Prob > F =      0.0355

. regress    Quadratic  SEE    se_size2 Se_investment Se_leverage se_amenity5    Se_GLS
Se_2SLS      Se_R_D Se_cap_expend  Se_OLS     Se_cross_sectional
>  Se_anglosaxon  Se_TobinsQ if insiders==1  [pweight = weight]
(sum of wgt is   5.7476e+00)

Linear regression                                      Number of obs =     118
                                                       F( 13,   104) =    3.13
                                                       Prob > F      =  0.0006
                                                       R-squared     =  0.4256
                                                       Root MSE      =  1.5112

------------------------------------------------------------------------------
             |               Robust
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0772519   .0369198     2.09   0.039     .0040385    .1504653
    se_size2 |   .0298123   .0251977     1.18   0.239    -.0201557    .0797803
Se_investm~t |   .0398713   .0130902     3.05   0.003      .013913    .0658296
 Se_leverage |  -.0447027   .0209546    -2.13   0.035    -.0862563   -.003149
 se_amenity5 |   .2287297   .0677362     3.38   0.001     .0944063    .3630531
      Se_GLS |  -.0342411   .0288595    -1.19   0.238    -.0914706    .0229884
     Se_2SLS |   .0257797   .0202091     1.28   0.205    -.0142956    .0658551
      Se_R_D |  -.0125619    .016419    -0.77   0.446    -.0451215    .0199976
Se_cap_exp~d |  -.0156866   .0164602    -0.95   0.343    -.0483277    .0169545
      Se_OLS |   .0341175   .0189936     1.80   0.075    -.0035474    .0717824
Se_cross_s~l |   .0814046   .0452379     1.80   0.075    -.0083039     .171113
Se_anglosa~n |  -.0833973   .0212665    -3.92   0.000    -.1255695   -.0412252
  Se_TobinsQ |    .021843   .0093258     2.34   0.021     .0033497    .0403364
       _cons |  -3.225016   .6958686    -4.63   0.000     -4.60495   -1.845082
------------------------------------------------------------------------------
```

Bivariate Quadratic Sample Cluster robust estimates and default standard errors estimates

```
regress   Quadratic SEE      [pweight = weight], vce(cluster study_indentification)


Linear regression                                      Number of obs =     152

                                                       F(  1,    26) =    2.46

                                                       Prob > F      =  0.1287

                                                       R-squared     =  0.0207

                                                       Root MSE      =  1.9113


                 (Std. Err. adjusted for 27 clusters in study_indentification)

------------------------------------------------------------------------------

             |               Robust

   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

         SEE |  -.0091023   .0058014    -1.57   0.129    -.0210272    .0028227

       _cons |   -.728032   .4429476    -1.64   0.112    -1.638524    .1824598
```

```
------------------------------------------------------------------------------

. estat ovtest

Ramsey RESET test using powers of the fitted values of Quadratic
       Ho:  model has no omitted variables
                 F(3, 147) =      0.66
                  Prob > F =      0.5762

. regress   Quadratic SEE      [pweight = weight]

Linear regression                                      Number of obs =     152
                                                       F(  1,   150) =    3.79
                                                       Prob > F      =  0.0534
                                                       R-squared     =  0.0207
                                                       Root MSE      =  1.9113

------------------------------------------------------------------------------
             |               Robust
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |  -.0091023   .0046741    -1.95   0.053    -.0183379    .0001333
       _cons |   -.728032   .3262524    -2.23   0.027    -1.372676   -.0833883
------------------------------------------------------------------------------
```

Bivariate Quadratic Sample Cluster robust estimates and default standard errors estimates-insiders

```
. regress    Quadratic  SEE     if insiders==1  [pweight = weight], vce(cluster
study_indentification)

Linear regression                                      Number of obs =     118
                                                       F(  1,    20) =    0.14
                                                       Prob > F      =  0.7086
                                                       R-squared     =  0.0017
                                                       Root MSE      =  1.8864
```

```
                 (Std. Err. adjusted for 21 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |  -.0022766   .0060058    -0.38   0.709    -.0148044    .0102512
       _cons |  -1.261254    .467134    -2.70   0.014    -2.235678   -.2868295
------------------------------------------------------------------------------

. estat ovtest


Ramsey RESET test using powers of the fitted values of Quadratic
       Ho:  model has no omitted variables
                 F(3, 113) =      2.93
                  Prob > F =      0.0365

regress    Quadratic  SEE     if insiders==1  [pweight = weight]

Linear regression                                      Number of obs =     118
                                                       F(  1,   116) =    0.25
                                                       Prob > F      =  0.6196
                                                       R-squared     =  0.0017
                                                       Root MSE      =  1.8864

------------------------------------------------------------------------------
             |               Robust
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |  -.0022766   .0045741    -0.50   0.620    -.0113362     .006783
       _cons |  -1.261254   .3316033    -3.80   0.000    -1.918036   -.6044718
------------------------------------------------------------------------------
```

Multivariate Part linear Sample Cluster robust estimates and default standard errors estimates

```
Se_adv_expend Se_OLS  se_parametric_approach16   se_wls Se_3SLS Se
> _Fixed_effect  Se_cross_sectional Se_Pooled Se_Robust Se_anglosaxon Se_insiders  Se_TobinsQ
[pweight = weight], vce(cluster study_indentification)

Linear regression                                      Number of obs =     150
                                                       F( 13,    26) =       .
```

```
                                                       Prob > F      =      .
                                                       R-squared     =  0.5321
                                                       Root MSE      =  1.7418

                 (Std. Err. adjusted for 27 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |    .074032   .0379576     1.95   0.062    -.0039911     .152055
    se_size2 |  -.0289609    .020273    -1.43   0.165    -.0706326    .0127108
 Se_leverage |   .0353617   .0166125     2.13   0.043     .0012142    .0695092
 se_amenity5 |  -.0889561   .0325143    -2.74   0.011    -.1557902   -.0221219
 se_control6 |   .0203466   .0317898     0.64   0.528    -.0449982    .0856915
 Se_industry |   .0082083    .013159     0.62   0.538    -.0188404     .035257
Se_adv_exp~d |  -.0270329   .0165123    -1.64   0.114    -.0609744    .0069086
      Se_OLS |  -.0538859   .0121549    -4.43   0.000    -.0788706   -.0289011
se_parame~16 |    .011854   .0162859     0.73   0.473    -.0216222    .0453303
      se_wls |   .1081239   .0430541     2.51   0.019     .0196249    .1966228
     Se_3SLS |   .0960503   .0403943     2.38   0.025     .0130187    .1790819
Se_Fixed_e~t |  -.0176668   .0125104    -1.41   0.170    -.0433823    .0080487
Se_cross_s~l |  -.1133179   .0357495    -3.17   0.004     -.186802   -.0398337
   Se_Pooled |   -.055863   .0146384    -3.82   0.001    -.0859527   -.0257732
   Se_Robust |   .0203718    .020365     1.00   0.326     -.021489    .0622327
Se_anglosa~n |  -.0237132   .0183832    -1.29   0.208    -.0615005     .014074
 Se_insiders |    .028169   .0223358     1.26   0.218    -.0177429    .0740808
  Se_TobinsQ |   .0094894   .0091396     1.04   0.309    -.0092973     .028276
       _cons |   .9789362   .5640134     1.74   0.094    -.1804099    2.138282
------------------------------------------------------------------------------

. estat ovtest

Ramsey RESET test using powers of the fitted values of part_linear
       Ho:  model has no omitted variables
                  F(3, 128) =      6.03
                  Prob > F =      0.0007


. regress  part_linear SEE   se_size2  Se_leverage se_amenity5   se_control6 Se_industry
Se_adv_expend Se_OLS  se_parametric_approach16   se_wls Se_3SLS Se
> _Fixed_effect  Se_cross_sectional Se_Pooled Se_Robust Se_anglosaxon Se_insiders  Se_TobinsQ
[pweight = weight]

Linear regression                                      Number of obs =     150
                                                       F( 18,   131) =   13.40
                                                       Prob > F      =  0.0000
                                                       R-squared     =  0.5321
                                                       Root MSE      =  1.7418

------------------------------------------------------------------------------
             |               Robust
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |    .074032   .0431947     1.71   0.089    -.0114175    .1594815
    se_size2 |  -.0289609   .0232279    -1.25   0.215    -.0749112    .0169894
 Se_leverage |   .0353617   .0194686     1.82   0.072    -.0031519    .0738753
 se_amenity5 |  -.0889561   .0942907    -0.94   0.347    -.2754855    .0975733
 se_control6 |   .0203466   .0777348     0.26   0.794    -.1334313    .1741245
 Se_industry |   .0082083   .0140523     0.58   0.560    -.0195905    .0360072
Se_adv_exp~d |  -.0270329   .0205953    -1.31   0.192    -.0677754    .0137095
      Se_OLS |  -.0538859   .0219459    -2.46   0.015    -.0973001   -.0104716
se_parame~16 |    .011854   .0265819     0.45   0.656    -.0407313    .0644393
      se_wls |   .1081239   .0445493     2.43   0.017     .0199946    .1962531
     Se_3SLS |   .0960503   .0369731     2.60   0.010     .0229086     .169192
Se_Fixed_e~t |  -.0176668    .019186    -0.92   0.359    -.0556213    .0202876
Se_cross_s~l |  -.1133179   .0300173    -3.78   0.000    -.1726993   -.0539365
   Se_Pooled |   -.055863   .0177113    -3.15   0.002    -.0909002   -.0208257
   Se_Robust |   .0203718   .0238759     0.85   0.395    -.0268603     .067604
Se_anglosa~n |  -.0237132    .015346    -1.55   0.125    -.0540713    .0066448
 Se_insiders |    .028169    .016757     1.68   0.095    -.0049804    .0613184
  Se_TobinsQ |   .0094894   .0219312     0.43   0.666    -.0338958    .0528745
       _cons |   .9789362    .451883     2.17   0.032     .0850038    1.872869
------------------------------------------------------------------------------

.
```

Bivariate Part linear Sample Cluster robust estimates and default standard errors estimates

```
regress  part_linear SEE      [pweight = weight], vce(cluster study_indentification)

Linear regression                                      Number of obs =     150
                                                       F(  1,    26) =    3.64
                                                       Prob > F      =  0.0676
                                                       R-squared     =  0.0553
                                                       Root MSE      =  2.3286

                 (Std. Err. adjusted for 27 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0204436   .0107207     1.91   0.068    -.0015931    .0424803
       _cons |   .7079063   .5236982     1.35   0.188    -.3685707    1.784383
------------------------------------------------------------------------------

. estat ovtest

Ramsey RESET test using powers of the fitted values of part_linear
       Ho:  model has no omitted variables
                F(3, 145) =      1.49
         Prob > F =      0.2194

. regress  part_linear SEE      [pweight = weight]
Linear regression                                      Number of obs =     150
                                                       F(  1,   148) =    1.93
                                                       Prob > F      =  0.1665
                                                       R-squared     =  0.0553
```

```
                                                       Root MSE      =  2.3286

------------------------------------------------------------------------------

             |               Robust

 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

         SEE |   .0204436   .0147022     1.39   0.166    -.0086098     .049497

       _cons |   .7079063   .4740332     1.49   0.137    -.2288414    1.644654

------------------------------------------------------------------------------
```

Multivariate Part linear Sample Cluster robust estimates and default standard errors estimates-insiders

```
regress   part_linear  SEE   se_size2 Se_investment se_amenity5  Se_R_D  Se_OLS  Se_GLS
Se_3SLS    Se_cross_sectional Se_Robust Se_anglosaxon   Se_Fixed_
> effect   Se_endogeneity  Se_TobinsQ if insiders==1  [pweight = weight], vce(cluster
study_indentification)

Linear regression                                      Number of obs =     119
                                                       F( 12,    20) =       .
                                                       Prob > F      =       .
                                                       R-squared     =  0.3226
                                                       Root MSE      =  2.1831

                 (Std. Err. adjusted for 21 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0966099   .0510848     1.89   0.073    -.0099511     .203171
    se_size2 |  -.0369221   .0209128    -1.77   0.093    -.0805455    .0067014
Se_investm~t |   -.016685   .0224291    -0.74   0.466    -.0634712    .0301012
 se_amenity5 |  -.1235171    .047276    -2.61   0.017    -.2221332    -.024901
      Se_R_D |   .0095329   .0245931     0.39   0.702    -.0417673    .0608332
      Se_OLS |   -.065353   .0361511    -1.81   0.086    -.1407629    .0100569
      Se_GLS |  -.0755958   .0420167    -1.80   0.087    -.1632412    .0120495
     Se_3SLS |   .1025669   .0544105     1.89   0.074    -.0109315    .2160652
Se_cross_s~l |  -.0909303   .0600035    -1.52   0.145    -.2160954    .0342349
   Se_Robust |   .0033213   .0297213     0.11   0.912    -.0586763    .0653188
Se_anglosa~n |  -.0102366   .0268211    -0.38   0.707    -.0661845    .0457113
Se_Fixed_e~t |  -.0380656   .0176449    -2.16   0.043    -.0748722    -.001259
Se_endogen~y |  -.0324393   .0293716    -1.10   0.283    -.0937074    .0288287
  Se_TobinsQ |  -.0134117   .0159057    -0.84   0.409    -.0465905    .0197671
       _cons |   1.721831   .8069934     2.13   0.045     .0384719     3.40519
------------------------------------------------------------------------------

. estat ovtest

Ramsey RESET test using powers of the fitted values of part_linear
       Ho:  model has no omitted variables
                 F(3, 101) =      3.12
                  Prob > F =      0.0295

.

. regress   part_linear  SEE   se_size2 Se_investment se_amenity5  Se_R_D  Se_OLS  Se_GLS
Se_3SLS    Se_cross_sectional Se_Robust Se_anglosaxon   Se_Fixed_
> effect   Se_endogeneity  Se_TobinsQ if insiders==1  [pweight = weight]
(sum of wgt is   5.6786e+00)

Linear regression                                      Number of obs =     119
                                                       F( 14,   104) =    4.32
```

```
                                                       Prob > F      =  0.0000
                                                       R-squared     =  0.3226
                                                       Root MSE      =  2.1831

------------------------------------------------------------------------------
             |               Robust
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0966099   .0557992     1.73   0.086     -.014042    .2072618
    se_size2 |  -.0369221   .0246551    -1.50   0.137     -.085814    .0119699
Se_investm~t |   -.016685   .0192051    -0.87   0.387    -.0547695    .0213995
 se_amenity5 |  -.1235171   .0620673    -1.99   0.049     -.246599   -.0004352
      Se_R_D |   .0095329   .0253001     0.38   0.707    -.0406381     .059704
      Se_OLS |   -.065353   .0344393    -1.90   0.061    -.1336474    .0029413
      Se_GLS |  -.0755958    .047246    -1.60   0.113    -.1692864    .0180947
     Se_3SLS |   .1025669   .0393933     2.60   0.011     .0244486    .1806852
Se_cross_s~l |  -.0909303   .0506477    -1.80   0.076    -.1913666    .0095061
   Se_Robust |   .0033213   .0305722     0.11   0.914    -.0573045     .063947
Se_anglosa~n |  -.0102366   .0237606    -0.43   0.667    -.0573548    .0368816
Se_Fixed_e~t |  -.0380656   .0199157    -1.91   0.059    -.0775592     .001428
Se_endogen~y |  -.0324393   .0273315    -1.19   0.238    -.0866388    .0217602
  Se_TobinsQ |  -.0134117     .02049    -0.65   0.514    -.0540441    .0272207
       _cons |   1.721831   .7003906     2.46   0.016     .3329298    3.110732
------------------------------------------------------------------------------
```

.

Bivariate Part linear Sample Cluster robust estimates and default standard errors estimates-insiders

```
regress   part_linear  SEE   if insiders==1  [pweight = weight], vce(cluster
study_indentification)

Linear regression                                      Number of obs =     119

                                                       F(  1,    20) =    1.52

                                                       Prob > F      =  0.2319

                                                       R-squared     =  0.0293

                                                       Root MSE      =  2.4639


                 (Std. Err. adjusted for 21 clusters in study_indentification)

------------------------------------------------------------------------------

             |               Robust

 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

         SEE |   .0136765   .0110928     1.23   0.232    -.0094627    .0368157

       _cons |   1.283639   .5848677     2.19   0.040     .0636269    2.503652

------------------------------------------------------------------------------


. estat ovtest
```

```
Ramsey RESET test using powers of the fitted values of part_linear

       Ho:  model has no omitted variables

                 F(3, 114) =      1.51

                  Prob > F =      0.2158


. regress   part_linear  insiders==1  [pweight = weight]

== invalid name

r(198);


. regress   part_linear  insiders==1  [pweight = weight]

== invalid name

r(198);


. regress   part_linear  if insiders==1  [pweight = weight]

(sum of wgt is   5.6786e+00)


Linear regression                                      Number of obs =     119

                                                       F(  0,   118) =    0.00

                                                       Prob > F      =       .

                                                       R-squared     =  0.0000

                                                       Root MSE      =  2.4902


------------------------------------------------------------------------------

             |               Robust

 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

       _cons |   1.759361   .3483745     5.05   0.000     1.069485    2.449238

------------------------------------------------------------------------------
```

APPENDIX 3.2

Specification pure linear full sample-Pure linear with interaction dummies

```
regress    own_concentration_t SEE   Pure_Linear_indicator PureLinear_SEE se_size2
Se_investment Se_leverage se_amenity5 se_control6 Se_industry Se_firm__specific_risk
Se_market_specific_risk Se_R_D Se_cap_expend Se_adv_expend Se_OLS se_parametric_approach16
Se_GLS se_wls Se_2SLS Se_3SLS Se_Fixed_effect Se_Random Se_cross_sectional Se_Pooled Se_Robust
Se_Anglosaxon   PureLinear_endogeneity PureLinear_anglosax Se_insiders Se_endogeneity
Se_TobinsQ [pweight = weight], vce(cluster study_indentification)

near regression                                        Number of obs =     946

                                                         F( 28,    61) =       .

                                                         Prob > F      =       .

                                                         R-squared     =  0.1279

                                                         Root MSE      =   2.093

------------------------------------------------------------------------------

             |               Robust

own_concen~t |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

         SEE |   .0134364   .0245208     0.55   0.586     -.035596    .0624688

Pure_Linea~r |   .6090608   .3138739     1.94   0.057    -.0185688     1.23669

PureLinear~E |   .0027826   .0157147     0.18   0.860    -.0286409     .034206

    se_size2 |  -.0044538   .0138551    -0.32   0.749    -.0321587    .0232511

Se_investm~t |   .0204937    .011052     1.85   0.069    -.0016061    .0425934

 Se_leverage |   .0039487   .0140026     0.28   0.779    -.0240511    .0319486

 se_amenity5 |   .0442207    .036409     1.21   0.229    -.0285837    .1170251

 se_control6 |  -.0678741   .0248282    -2.73   0.008     -.117521   -.0182271

 Se_industry |  -.0352146   .0097325    -3.62   0.001    -.0546759   -.0157533

Se_firm__s~k |   .0024476   .0089008     0.27   0.784    -.0153505    .0202458

Se_market_~k |  -.0216918   .0243032    -0.89   0.376    -.0702891    .0269054

      Se_R_D |  -.0050824    .009399    -0.54   0.591    -.0238768     .013712

Se_cap_exp~d |  -.0392598   .0089399    -4.39   0.000    -.0571363   -.0213833

Se_adv_exp~d |   .0068548   .0111078     0.62   0.539    -.0153566    .0290661

      Se_OLS |  -.0181833   .0151621    -1.20   0.235    -.0485017    .0121352

se_parame~app |   .0266585   .0173091     1.54   0.129    -.0079533    .0612702
```

```
     Se_GLS |  -.0150131    .013991    -1.07   0.287    -.0429898    .0129636
     se_wls |   .0325114   .0250889     1.30   0.200     -.017657    .0826798
    Se_2SLS |  -.0047355   .0095641    -0.50   0.622    -.0238601    .0143891
    Se_3SLS |    -.01263   .0132125    -0.96   0.343    -.0390502    .0137901
Se_Fixed_e~t |  -.0056665   .0115522    -0.49   0.626    -.0287665    .0174334
  Se_Random |   .0170553   .0189817     0.90   0.372     -.020901    .0550116
Se_cross_s~l |  -.0109436   .0171341    -0.64   0.525    -.0452052    .0233181
  Se_Pooled |   .0207699   .0159633     1.30   0.198    -.0111507    .0526906
  Se_Robust |  -.0088478    .008382    -1.06   0.295    -.0256086    .0079131
Se_anglosa~n |  -.0194189   .0096064    -2.02   0.048    -.0386281   -.0002098
PureLinear~y |   -.014559    .008772    -1.66   0.102    -.0320996    .0029816
PureLinear~x |    .020291   .0107503     1.89   0.064    -.0012055    .0417875
Se_insiders |    .025293   .0118308     2.14   0.037     .0016359      .04895
Se_endogen~y |   .0018425   .0115887     0.16   0.874    -.0213305    .0250156
 Se_TobinsQ |  -.0039311   .0061401    -0.64   0.524     -.016209    .0083469
      _cons |   .3768306   .2589217     1.46   0.151    -.1409154    .8945766
------------------------------------------------------------------------------
Ramsey RESET test using powers of the fitted values of own_concentration_t
       Ho:  model has no omitted variables
                 F(3, 911) =      7.36
                  Prob > F =      0.0001
Mean VIF |     14.22
```

Specification Part linear full sample-part linear with interaction dummies

```
regress  own_concentration_t SEE  PartLinear_SEE Part_Linear_indicator se_size2 Se_investment
Se_leverage se_amenity5 se_control6 Se_industry Se_firm_specific_risk Se_market_specific_risk
Se_R_D Se_cap_expend Se_adv_expend Se_OLS se_parametric_approach16 Se_GLS se_wls Se_2SLS
Se_3SLS Se_Fixed_effect Se_Random Se_cross_sectional Se_Pooled Se_Robust Se_anglosaxon
PartLinear_endogeneity36  PartLinear_anglosax Se_insiders Se_endogeneity Se_TobinsQ [pweight =
weight], vce(cluster study_indentification)


near regression                                        Number of obs =     946
                                                         F( 28,    61) =       .
                                                         Prob > F      =       .
                                                         R-squared     =  0.1422
                                                         Root MSE      =  2.0759
own_concen~t |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
```

SEE	.0211964	.0250669	0.85	0.401	-.0289279	.0713208
PartLinear~E	-.0251181	.0385557	-0.65	0.517	-.1022149	.0519787
Part_Linea~r	.6479063	.797994	0.81	0.420	-.9477814	2.243594
se_size2	-.0048683	.0144783	-0.34	0.738	-.0338194	.0240829
Se_investm~t	.0080947	.0131601	0.62	0.541	-.0182206	.03441
Se_leverage	.0141204	.01326	1.06	0.291	-.0123945	.0406354
se_amenity5	.0449516	.0382391	1.18	0.244	-.0315121	.1214153
se_control6	-.0621642	.0250732	-2.48	0.016	-.1123012	-.0120271
Se_industry	-.0285703	.0100756	-2.84	0.006	-.0487177	-.0084229
Se_firm__s~k	.0083295	.0113826	0.73	0.467	-.0144315	.0310905
Se_market_~k	-.0142066	.0253935	-0.56	0.578	-.0649841	.0365709
Se_R_D	-.0133039	.0107203	-1.24	0.219	-.0347404	.0081326
Se_cap_exp~d	-.0288008	.0106047	-2.72	0.009	-.0500062	-.0075954
Se_adv_exp~d	.0012647	.0124108	0.10	0.919	-.0235523	.0260817
Se_OLS	-.0140088	.0156559	-0.89	0.374	-.0453148	.0172972
se_parame~16	.0125268	.0179974	0.70	0.489	-.0234613	.0485148
Se_GLS	-.0052145	.0158137	-0.33	0.743	-.036836	.026407
se_wls	.0050498	.0263429	0.19	0.849	-.047626	.0577257
Se_2SLS	-.0005289	.0116825	-0.05	0.964	-.0238895	.0228316
Se_3SLS	-.0421196	.0254053	-1.66	0.102	-.0929205	.0086814
Se_Fixed_e~t	-.0057233	.0121847	-0.47	0.640	-.0300881	.0186415
Se_Random	.0081709	.019414	0.42	0.675	-.0306498	.0469915
Se_cross_s~l	-.0156374	.0128566	-1.22	0.229	-.0413458	.010071
Se_Pooled	.0109251	.0121686	0.90	0.373	-.0134074	.0352577
Se_Robust	-.016011	.0097962	-1.63	0.107	-.0355996	.0035777
Se_anglosa~n	-.0086277	.0108703	-0.79	0.430	-.0303643	.0131088
PartLinea~36	.0428766	.018455	2.32	0.024	.0059736	.0797795
PartLinear~x	.0183465	.0272367	0.67	0.503	-.0361166	.0728096
Se_insiders	.0160702	.0114217	1.41	0.165	-.0067689	.0389092
Se_endogen~y	-.0089342	.0141279	-0.63	0.530	-.0371847	.0193163
Se_TobinsQ	-.0009219	.0063664	-0.14	0.885	-.0136523	.0118085
_cons	.7575142	.333091	2.27	0.026	.0914575	1.423571

```
------------------------------------------------------------------------------

Ramsey RESET test using powers of the fitted values of own_concentration_t

       Ho:  model has no omitted variables

                 F(3, 911) =      3.80

                  Prob > F =      0.0100
```

Specification part linear full sample-part linear with interaction dummies, insiders

```
regress  own_concentration_t  SEE   Part_Linear_indicator PartLinear_SEE se_size2
Se_investment Se_leverage  se_control6  Se_market_specific_risk  Se_cap_expend Se_adv_expend
se_parametric_approach16 Se_2SLS  Se_Random Se_cross_sectional Se_Robust Se_anglosaxon
PartLinear_endogeneity36 PartLinear_anglosax  Se_endogeneity Se_TobinsQ if insiders==1
[pweight = weight], vce(cluster study_indentification)
```

```
near regression                                    Number of obs =     587
                                                     F( 18,    40) =       .
                                                     Prob > F      =       .
                                                     R-squared     =  0.1915
                                                     Root MSE      =  2.2939
------------------------------------------------------------------------------
own_concen~t |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0903924   .0267769     3.38   0.002     .0362743    .1445105
Part_Linea~r |   1.046842   .8383203     1.25   0.219    -.6474661    2.741151
PartLinear~E |  -.0483023   .0509173    -0.95   0.348      -.15121    .0546055
    se_size2 |  -.0362925   .0144046    -2.52   0.016    -.0654052   -.0071797
Se_investm~t |  -.0109005    .006941    -1.57   0.124    -.0249288    .0031277
 Se_leverage |     .01789   .0102454     1.75   0.088    -.0028167    .0385967
 se_control6 |  -.0763729   .0279693    -2.73   0.009     -.132901   -.0198448
Se_market_~k |  -.0889733   .0214257    -4.15   0.000    -.1322762   -.0456703
Se_cap_exp~d |   .0037428   .0085365     0.44   0.663    -.0135102    .0209957
Se_adv_exp~d |  -.0040056     .01104    -0.36   0.719    -.0263183    .0183071
se_parame~16 |   .0219027   .0093858     2.33   0.025     .0029333    .0408721
     Se_2SLS |   .0138028   .0101293     1.36   0.181    -.0066694     .034275
   Se_Random |   .1073923   .0172586     6.22   0.000     .0725114    .1422732
Se_cross_s~l |   .0278211   .0195243     1.42   0.162    -.0116389    .0672811
   Se_Robust |   -.024361   .0063611    -3.83   0.000    -.0372172   -.0115049
Se_anglosa~n |  -.0506236   .0182106    -2.78   0.008    -.0874287   -.0138186
PartLinea~36 |   .0363104   .0201745     1.80   0.079    -.0044637    .0770845
PartLinear~x |   .0485805   .0401446     1.21   0.233    -.0325548    .1297157
Se_endogen~y |  -.0060141   .0116602    -0.52   0.609    -.0295802    .0175521
  Se_TobinsQ |   .0020405   .0039825     0.51   0.611    -.0060085    .0100895
       _cons |   .0287118   .4034818     0.07   0.944    -.7867553    .8441789
```

```
------------------------------------------------------------------------------

Ramsey RESET test using powers of the fitted values of own_concentration_t

       Ho:  model has no omitted variables

                 F(3, 563) =      5.20

                  Prob > F =      0.0015
```

Specification Quadratic full sample-part linear with interaction dummies

```
regress own_concentration_t  SEE  Quadratic_SEE Quadratic_indicator se_size2 Se_investment
se_control6  Se_cap_expend Se_adv_expend  Se_OLS se_parametric_approach16 Se_GLS Se_3SLS
Se_Pooled Se_Random  insiders Se_cross_sectional Se_Robust Se_anglosaxon Quadratic_anglosax
Quadratic_endogeneity Se_endogeneity Se_TobinsQ [pweight = weight],
vce(clusterstudy_indentification)


Linear regression                                      Number of obs =     946

                                                       F( 20,    61) =       .

                                                       Prob > F      =       .

                                                       R-squared     =  0.1970

                                                       Root MSE      =  1.9986

own_concen~t |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

         SEE |   .0194255   .0268373     0.72   0.472     -.034239      .07309

Quadratic_~E |   .0397428   .0432356     0.92   0.362    -.0467122    .1261978

Quadratic_~r |  -2.235628   .8753445    -2.55   0.013    -3.985987    -.485268

    se_size2 |  -.0061412   .0101476    -0.61   0.547    -.0264326    .0141503

Se_investm~t |  -.0217276   .0078098    -2.78   0.007    -.0373443    -.006111

 se_control6 |  -.0296289   .0146348    -2.02   0.047     -.058893   -.0003648

Se_cap_exp~d |  -.0282734   .0067595    -4.18   0.000    -.0417899   -.0147569

Se_adv_exp~d |   .0171119   .0076435     2.24   0.029     .0018277    .0323961

      Se_OLS |  -.0216725   .0103632    -2.09   0.041    -.0423951     -.00095

se_parame~16 |   .0227842   .0139499     1.63   0.108    -.0051103    .0506787

      Se_GLS |  -.0362116   .0178038    -2.03   0.046    -.0718126   -.0006107

     Se_3SLS |    .006602    .014656     0.45   0.654    -.0227045    .0359085

   Se_Pooled |   .0159722   .0158751     1.01   0.318    -.0157719    .0477164

   Se_Random |  -.0112764   .0136653    -0.83   0.412    -.0386018     .016049

    insiders |   .6735584    .253695     2.65   0.010     .1662638    1.180853

Se_cross_s~l |  -.0131159   .0170438    -0.77   0.445    -.0471971    .0209652

   Se_Robust |  -.0013553   .0079204    -0.17   0.865    -.0171932    .0144825
```

```
Se_anglosa~n |  -.0001784   .0078502    -0.02   0.982    -.0158759    .0155191
Quadratic_~x |   -.038788   .0332401    -1.17   0.248    -.1052557    .0276796
Quadratic_~y |  -.0234942   .0187753    -1.25   0.216    -.0610377    .0140493
Se_endogen~y |   -.005292   .0100032    -0.53   0.599    -.0252948    .0147107
  Se_TobinsQ |  -.0055895    .005539    -1.01   0.317    -.0166655    .0054865
       _cons |   .6593738   .3369339     1.96   0.055    -.0143671    1.333115
------------------------------------------------------------------------------
Ramsey RESET test using powers of the fitted values of own_concentration_t
       Ho:  model has no omitted variables
                 F(3, 920) =     13.20
                  Prob > F =      0.0000
```

.

APPENDIX 3.3

Interaction Lincom

Pure linear outsiders

```
regress   pure_linear  SEEbSe_investment Se_leverage se_amenity5 se_control6
Se_industry Se_R_D Se_cap_expend  Se_OLS  se_parametric_approach16
se_Siparametric_approach17 se_wls Se_Random Se_cross_sectional Se_Robust
Se_anglosaxon Se_endogeneity Se_TobinsQ se_ocmedium61  if insiders==0 [pweight
=weight], vce(cluster study_indentification)

Linear regression                                      Number of obs =     281
                                                       F( 16,    43) =       .
                                                       Prob > F      =       .
                                                       R-squared     =  0.3870
                                                       Root MSE      =  1.4626

                 (Std. Err. adjusted for 44 clusters in study_indentification)
------------------------------------------------------------------------------
```

```
             |               Robust
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |  -.0991296   .0339971    -2.92   0.006    -.1676913   -.0305679
Se_investm~t |   .0231855    .020873     1.11   0.273    -.0189089      .06528
 Se_leverage |    .032611    .011729     2.78   0.008     .0089572    .0562647
 se_amenity5 |   .0677255   .0580256     1.17   0.250    -.0492943    .1847453
 se_control6 |  -.0481659   .0483389    -1.00   0.325    -.1456506    .0493188
 Se_industry |  -.0521232   .0208518    -2.50   0.016    -.0941749   -.0100715
      Se_R_D |   .0187719   .0147213     1.28   0.209    -.0109163    .0484602
Se_cap_exp~d |  -.0454512     .01041    -4.37   0.000    -.0664449   -.0244574
      Se_OLS |   .0524968   .0172089     3.05   0.004     .0177917    .0872018
se_parame~16 |   .0961494   .0233945     4.11   0.000       .04897    .1433288
se_mipara~17 |   .0986292   .0235515     4.19   0.000     .0511331    .1461254
      se_wls |   .2523185   .0207858    12.14   0.000        .2104     .294237
   Se_Random |   .1585164   .0249951     6.34   0.000      .108109    .2089238
Se_cross_s~l |  -.0153725   .0196591    -0.78   0.439    -.0550187    .0242738
   Se_Robust |   .0388272   .0189324     2.05   0.046     .0006464     .077008
Se_anglosa~n |  -.0197407   .0129636    -1.52   0.135    -.0458842    .0064029
Se_endogen~y |   .0528161   .0147859     3.57   0.001     .0229974    .0826347
  Se_TobinsQ |  -.0133674   .0125676    -1.06   0.293    -.0387124    .0119775
se_ocmedi~61 |   .0631335   .0106665     5.92   0.000     .0416224    .0846447
       _cons |   1.232685    .399759     3.08   0.004     .4264938    2.038876
------------------------------------------------------------------------------
```

```
. lincom  SEE+ Se_leverage

 ( 1)  SEE + Se_leverage = 0

------------------------------------------------------------------------------
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |  -.0665186   .0359219    -1.85   0.071    -.1389621    .0059248
------------------------------------------------------------------------------
```

```
. lincom  SEE+  Se_industry

 ( 1)  SEE + Se_industry = 0

------------------------------------------------------------------------------
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
```

```
-------------+----------------------------------------------------------------
         (1) |  -.1512528   .0292129    -5.18   0.000    -.2101662   -.0923394
------------------------------------------------------------------------------

. lincom  SEE+  Se_cap_expend

 ( 1)  SEE + Se_cap_expend = 0

------------------------------------------------------------------------------
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |  -.1445807   .0344612    -4.20   0.000    -.2140783   -.0750832
------------------------------------------------------------------------------

. lincom  SEE+    se_parametric_approach16

 ( 1)  SEE + se_parametric_approach16 = 0

------------------------------------------------------------------------------
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |  -.0029802    .038383    -0.08   0.938    -.0803869    .0744265
------------------------------------------------------------------------------

. lincom  SEE+     se_miparametric_approach17

 ( 1)  SEE + se_miparametric_approach17 = 0

------------------------------------------------------------------------------
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |  -.0005003   .0403049    -0.01   0.990    -.0817829    .0807822
------------------------------------------------------------------------------

. lincom  SEE+   se_wls

 ( 1)  SEE + se_wls = 0

------------------------------------------------------------------------------
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
```

```
         (1) |   .1531889   .0335297     4.57   0.000     .0855697    .2208081
------------------------------------------------------------------------------

. lincom  SEE+    Se_Random

 ( 1)  SEE + Se_Random = 0

------------------------------------------------------------------------------
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0593868   .0264341     2.25   0.030     .0060774    .1126961
------------------------------------------------------------------------------

. lincom  SEE+    Se_Random

 ( 1)  SEE + Se_Random = 0

------------------------------------------------------------------------------
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0593868   .0264341     2.25   0.030     .0060774    .1126961
------------------------------------------------------------------------------

. lincom  SEE+   Se_anglosaxon

 ( 1)  SEE + Se_anglosaxon = 0

------------------------------------------------------------------------------
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |  -.1188703   .0393535    -3.02   0.004    -.1982342   -.0395063
------------------------------------------------------------------------------

. lincom  SEE+   Se_cross_sectional

 ( 1)  SEE + Se_cross_sectional = 0

------------------------------------------------------------------------------
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |  -.1145021   .0393063    -2.91   0.006    -.1937707   -.0352334
```

```
------------------------------------------------------------------------------

. lincom  SEE+    Se_endogeneity

 ( 1)  SEE + Se_endogeneity = 0

------------------------------------------------------------------------------
 pure_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |  -.0463135   .0256638    -1.80   0.078    -.0980694    .0054424
```

Quadratic insiders multivariate

```
regress    Quadratic  SEE   Se_leverage se_size2 Se_investment   se_amenity5 Se_GLS Se_2SLS
Se_R_D Se_cap_expend  Se_OLS      Se_cross_sectional  Se_anglosaxon  Se_TobinsQ if insiders==1
[pweight = weight], vce(cluster study_indentification)

Quadratic insiders

Linear regression                                      Number of obs =     118
                                                       F( 11,    20) =       .
                                                       Prob > F      =       .
                                                       R-squared     =  0.4256
                                                       Root MSE      =  1.5112

                 (Std. Err. adjusted for 21 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0772519   .0448262     1.72   0.100     -.016254    .1707578
 Se_leverage |  -.0447027   .0231689    -1.93   0.068    -.0930321    .0036268
    se_size2 |   .0298123   .0213994     1.39   0.179     -.014826    .0744506
Se_investm~t |   .0398713   .0154413     2.58   0.018     .0076612    .0720814
 se_amenity5 |   .2287297    .050788     4.50   0.000     .1227878    .3346716
      Se_GLS |  -.0342411   .0256924    -1.33   0.198    -.0878346    .0193524
     Se_2SLS |   .0257797   .0223174     1.16   0.262    -.0207736    .0723331
       Se_R_D |  -.0125619   .0166037    -0.76   0.458    -.0471965    .0220727
```

```
Se_cap_exp~d |  -.0156866   .0169618    -0.92   0.366    -.0510683     .019695
      Se_OLS |   .0341175   .0229406     1.49   0.153    -.0137358    .0819708
Se_cross_s~l |   .0814046   .0585094     1.39   0.179    -.0406438    .2034529
Se_anglosa~n |  -.0833973   .0329377    -2.53   0.020    -.1521043   -.0146904
  Se_TobinsQ |    .021843   .0093379     2.34   0.030     .0023644    .0413216
       _cons |  -3.225016   .8189991    -3.94   0.001    -4.933418   -1.516614
------------------------------------------------------------------------------
. lincom  SEE+   Se_investment

 ( 1)  SEE + Se_investment = 0

------------------------------------------------------------------------------
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .1171232   .0514707     2.28   0.034     .0097572    .2244892
------------------------------------------------------------------------------


. lincom  SEE+    se_size2

 ( 1)  SEE + se_size2 = 0

------------------------------------------------------------------------------
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .1070642    .034144     3.14   0.005      .035841    .1782873
------------------------------------------------------------------------------


. lincom  SEE+ se_amenity5

 ( 1)  SEE + se_amenity5 = 0

------------------------------------------------------------------------------
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .3059816   .0682371     4.48   0.000     .1636415    .4483216
------------------------------------------------------------------------------


. lincom  SEE+  Se_GLS

 ( 1)  SEE + Se_GLS = 0
```

```
------------------------------------------------------------------------------
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0430108   .0392861     1.09   0.287    -.0389387    .1249602
------------------------------------------------------------------------------

. lincom  SEE+   Se_OLS

 ( 1)  SEE + Se_OLS = 0

------------------------------------------------------------------------------
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .1113694    .040742     2.73   0.013     .0263831    .1963557
------------------------------------------------------------------------------

. lincom  SEE+    Se_2SLS

 ( 1)  SEE + Se_2SLS = 0

------------------------------------------------------------------------------
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .1030316   .0392601     2.62   0.016     .0211364    .1849268
------------------------------------------------------------------------------

. lincom  SEE+   Se_TobinsQ

 ( 1)  SEE + Se_TobinsQ = 0

------------------------------------------------------------------------------
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0990949    .046736     2.12   0.047     .0016053    .1965845
------------------------------------------------------------------------------

. lincom  SEE+    se_size2+ Se_investment+ Se_OLS+ Se_GLS+ Se_2SLS+ se_amenity5+ Se_TobinsQ

 ( 1)  SEE + se_size2 + Se_investment + se_amenity5 + Se_GLS + Se_2SLS + Se_OLS + Se_TobinsQ =
0

------------------------------------------------------------------------------
```

```
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .4231643   .0955912     4.43   0.000     .2237647     .622564
------------------------------------------------------------------------------

. lincom  SEE+    se_size2+ Se_investment+ Se_OLS+ Se_GLS+ Se_2SLS+ se_amenity5+ Se_TobinsQ+
Se_leverage


. lincom  SEE+     Se_leverage

 ( 1)  SEE + Se_leverage = 0

------------------------------------------------------------------------------
   Quadratic |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0325492    .062578     0.52   0.609    -.0979863    .1630847
```

Partlinear insiders

```
. regress   part_linear  SEE   se_size2 Se_investment se_amenity5  Se_R_D  Se_OLS  Se_GLS
Se_3SLS    Se_cross_sectional Se_Robust Se_anglosaxon   Se_Fixed_effect   Se_endogeneity
Se_TobinsQ if insiders==1  [pweight = weight], vce(cluster study_indentification)

Linear regression                                      Number of obs =     119
                                                       F( 12,    20) =       .
                                                       Prob > F      =       .
                                                       R-squared     =  0.3226
                                                       Root MSE      =  2.1831

                 (Std. Err. adjusted for 21 clusters in study_indentification)
------------------------------------------------------------------------------
             |               Robust
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         SEE |   .0966099   .0510848     1.89   0.073    -.0099511     .203171
    se_size2 |  -.0369221   .0209128    -1.77   0.093    -.0805455    .0067014
Se_investm~t |   -.016685   .0224291    -0.74   0.466    -.0634712    .0301012
 se_amenity5 |  -.1235171    .047276    -2.61   0.017    -.2221332    -.024901
      Se_R_D |   .0095329   .0245931     0.39   0.702    -.0417673    .0608332
      Se_OLS |   -.065353   .0361511    -1.81   0.086    -.1407629    .0100569
```

```
      Se_GLS |  -.0755958   .0420167    -1.80   0.087    -.1632412    .0120495
     Se_3SLS |   .1025669   .0544105     1.89   0.074    -.0109315    .2160652
Se_cross_s~l |  -.0909303   .0600035    -1.52   0.145    -.2160954    .0342349
   Se_Robust |   .0033213   .0297213     0.11   0.912    -.0586763    .0653188
Se_anglosa~n |  -.0102366   .0268211    -0.38   0.707    -.0661845    .0457113
Se_Fixed_e~t |  -.0380656   .0176449    -2.16   0.043    -.0748722   -.001259
Se_endogen~y |  -.0324393   .0293716    -1.10   0.283    -.0937074    .0288287
  Se_TobinsQ |  -.0134117   .0159057    -0.84   0.409    -.0465905    .0197671
       _cons |   1.721831   .8069934     2.13   0.045     .0384719    3.40519
------------------------------------------------------------------------------

. lincom  SEE+    se_size2

 ( 1)  SEE + se_size2 = 0

------------------------------------------------------------------------------
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0596879   .0434212     1.37   0.184    -.0308871    .1502628
------------------------------------------------------------------------------

. lincom  SEE+    se_amenity5

 ( 1)  SEE + se_amenity5 = 0

------------------------------------------------------------------------------
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |  -.0269072   .0763161    -0.35   0.728    -.1860997    .1322854
------------------------------------------------------------------------------

. lincom  SEE+    Se_investment

 ( 1)  SEE + Se_investment = 0

------------------------------------------------------------------------------
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0799249   .0630121     1.27   0.219    -.0515161    .2113659
------------------------------------------------------------------------------
```

```
. lincom  SEE+     Se_R_D

 ( 1)  SEE + Se_R_D = 0

------------------------------------------------------------------------------
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .1061428   .0639377     1.66   0.112    -.0272288    .2395145
------------------------------------------------------------------------------

. lincom  SEE+   Se_3SLS

 ( 1)  SEE + Se_3SLS = 0

------------------------------------------------------------------------------
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .1991768   .0844321     2.36   0.029     .0230545    .3752991
------------------------------------------------------------------------------

. lincom  SEE+   Se_OLS

 ( 1)  SEE + Se_OLS = 0
------------------------------------------------------------------------------
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0312569   .0467168     0.67   0.511    -.0661926    .1287064
------------------------------------------------------------------------------

. lincom  SEE+    Se_GLS
 ( 1)  SEE + Se_GLS = 0
------------------------------------------------------------------------------
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0210141   .0514773     0.41   0.687    -.0863657    .1283939
------------------------------------------------------------------------------

. lincom  SEE+   Se_3SLS
 ( 1)  SEE + Se_3SLS = 0

------------------------------------------------------------------------------
```

```
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .1991768   .0844321     2.36   0.029     .0230545    .3752991
------------------------------------------------------------------------------

. lincom  SEE+    Se_Robust
 ( 1)  SEE + Se_Robust = 0
------------------------------------------------------------------------------
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0999312   .0486213     2.06   0.053     -.001491    .2013534
------------------------------------------------------------------------------

. lincom  SEE+   Se_anglosaxon
 ( 1)  SEE + Se_anglosaxon = 0
------------------------------------------------------------------------------
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0863733    .044099     1.96   0.064    -.0056156    .1783623
------------------------------------------------------------------------------

. lincom  SEE+  Se_cross_sectional
 ( 1)  SEE + Se_cross_sectional = 0
------------------------------------------------------------------------------
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0056797   .0867559     0.07   0.948      -.17529    .1866493
------------------------------------------------------------------------------

. lincom  SEE+    Se_Fixed_effect
 ( 1)  SEE + Se_Fixed_effect = 0
------------------------------------------------------------------------------
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0585443   .0568507     1.03   0.315    -.0600441    .1771328
------------------------------------------------------------------------------

.
```

```
 lincom  SEE+   Se_TobinsQ
 ( 1)  SEE + Se_TobinsQ = 0
------------------------------------------------------------------------------
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0831982   .0487065     1.71   0.103    -.0184018    .1847982
------------------------------------------------------------------------------

. lincom  SEE+   Se_endogeneity
 ( 1)  SEE + Se_endogeneity = 0
------------------------------------------------------------------------------
 part_linear |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         (1) |   .0641706   .0369265     1.74   0.098    -.0128567    .1411979
```

CHAPTER 4

APPENDIX 4.1.

Table A4.1 Average productivity growth vs. real wage growth in Montenegro (2001-2010)

	GDP current prices in Euros	GDP real growth rate	Real gross wages in Eur	Index Real gross wages growth	Real net wages in Eur (average)	Index Real gross wages growth (average)	Productivity growth rate%	Annual cahange in productivity rate %
2001	1295.1		144		89			
2002	1360.1	1.9	216	122.9	128	118.9	9.4	23.4
2003	1510.1	2.5	254	101.2	163	109.4	9.8	3.7
2004	1669.8	4.4	295	109.2	190	109.4	11.0	12.5
2005	1815.0	4.2	320	105.5	208	106.8	12.0	9.7
2006	2148.9	8.6	420	128.6	274	128.5	13.1	8.4
2007	2680.5	10.7	477	110.2	324	115.0	15.2	16.4
2008	3085.6	6.9	561	112.9	383	113.4	17.2	13.4
2009	2981.0	-5.7	622	102.1	448	107.6	16.7	-3.1
2010	3025.0	2.5	711	110.6	477	102.9	18.6	11.5
Ø rate d 2005-2010		4.3		11.6		12.4		9.4

Source: MONSTAT, internal calculations of CBCG

Table A4.2 Average wages in chosen countries in the South-Eastern Europe, 2005- 2012

Country	Currency	2005	2006	2007	2008	2009	2010	2011	2012
Serbia	RSD	22.079	28.267	34.471	38.626	36.789	39.580	35.777	39.322
	EUR	**435.95**	**435.95**	**435.95**	**435.95**	**383.66**	**375.17**	**345.35**	**383.77**
	Index		128.0	121.9	112.1	95.2	107.6	106.8	115.1
Croatia	HRK	4473	4735	4958	5410	5362	5450	5480	5396
	EUR	**606.5**	**644.6**	**676.8**	**738.6**	**733.9**	**738.0**	**742.3**	**733.7**
	Index		105.9	104.7	109.1	99.1	101.7	102.3	102.9
Bosnia and Herzegovina	KM	561	613	681	798	802	818	818	821
	EUR	**286.8**	**313.4**	**348.2**	**408.0**	**410.1**	**418.2**	**418.2**	**419.8**
	Index		109.3	111.1	117.2	100.5	102.0	102.5	102.9
Bulgaria	LEV	347	392	480	566	625	691	689	
	EUR	**177.4**	**200.4**	**245.4**	**289.4**	**319.6**	**353.3**	**352.3**	
	Index		113.0	122.4	117.9	110.4	110.6	108.3	
Romania	RON	848	1099	1266	1489	1477	1496	1493	1458
	EUR	**230.6**	**325.0**	**350.7**	**373.6**	**349.3**	**349.1**	**362.9**	**353.8**
	Index		129.6	115.2	117.6	99.2	101.3	98.9	102.1
Montenegro	EUR	**253.65**	**307**	**376**	**443**	**470**	**515**	**484**	**479**
	Index		121.0	122.5	117.8	106.1	109.6	104.09	98.36

Source: Central bank of Montenegro calculations, 2012

APPENDIX 4.2

Model Specification 1

SPECIFICATION 1

```
xtabond2  roe L.roe lnoctop5 leverage  size  solvency  utility finance  dummy_2008
dummy_2007    dummy_2006   dummy_2005  mvp   individual __state privatization_fund
other_company _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i  ,
gmm(L.roe , laglimits(1 2)) gmm(lnoctop5 , laglimits(2 .)) iv(leverage    size solvency
utility finance  dummy_2008   dummy_2007  dummy_2006   dummy_2005  mvp  individual state
privatization_fund other_company  _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i
_14_i _15_i ) two  robust

Dynamic panel-data estimation, two-step system GMM

------------------------------------------------------------------------------

Group variable: code_number                     Number of obs      =       755

Time variable : year                            Number of groups   =       204

Number of instruments = 42                      Obs per group: min =         1

Wald chi2(26) =    402.24                                      avg =      3.70

Prob > chi2   =     0.000                                      max =         4

------------------------------------------------------------------------------

             |              Corrected

         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

         roe |

         L1. |   .0026074   .0009518     2.74   0.006     .0007419    .0044728

             |

    lnoctop5 |   .1067786   .0512447     2.08   0.037     .0063408    .2072164

    leverage |  -.0502599   .0525704    -0.96   0.339     -.153296    .0527762

        size |    .030508   .0415118     0.73   0.462    -.0508536    .1118696

    solvency |   .0029497   .0007954     3.71   0.000     .0013907    .0045087

     utility |   -6.85274   5.345843    -1.28   0.200     -17.3304    3.624919

     finance |  -.1157955   .2249788    -0.51   0.607    -.5567458    .3251548

  dummy_2008 |   -.104628   .0505337    -2.07   0.038    -.2036722   -.0055837
```

```
  dummy_2007 |  -.0219626   .0299969    -0.73   0.464    -.0807554    .0368302
  dummy_2006 |   .0140745   .0466918     0.30   0.763    -.0774396    .1055887
         mvp |   .0508146   .1314966     0.39   0.699     -.206914    .3085431
  individual |   .0081395   .1372111     0.06   0.953    -.2607894    .2770683
     __state |   .4580904   .1765579     2.59   0.009     .1120433    .8041374
privatizat~d |   .1108355   .0881668     1.26   0.209    -.0619682    .2836393
other_comp~y |   .0850997   .0842317     1.01   0.312    -.0799914    .2501908
        _1_i |   .1276351   .2289172     0.56   0.577    -.3210343    .5763045
        _2_i |  -.0393553   .0967532    -0.41   0.684    -.2289881    .1502774
        _3_i |  -.0631798   .2168199    -0.29   0.771    -.4881391    .3617795
        _4_i |  -.2412476   .1021018    -2.36   0.018    -.4413636   -.0411317
        _6_i |   .2548539   .3102451     0.82   0.411    -.3532153    .8629232
        _7_i |  -.0294506   .0970043    -0.30   0.761    -.2195754    .1606743
        _8_i |   -.216005   .1164787    -1.85   0.064     -.444299     .012289
        _9_i |  -.0615123   .0925514    -0.66   0.506    -.2429096    .1198851
       _11_i |   .1046117   .6956231     0.15   0.880    -1.258785    1.468008
       _13_i |   9.318721   5.458726     1.71   0.088    -1.380185    20.01763
       _14_i |  -1.100292   2.122692    -0.52   0.604    -5.260692    3.060107
       _cons |  -.6450107   .6519565    -0.99   0.322    -1.922822    .6328006
------------------------------------------------------------------------------
------------------------------------------------------------------------------
Arellano-Bond test for AR(1) in first differences: z =  -1.14  Pr > z =  0.256
Arellano-Bond test for AR(2) in first differences: z =   1.47  Pr > z =  0.142
------------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(15)   =  97.73  Prob > chi2 =  0.000
  (Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(15)   =  14.15  Prob > chi2 =  0.514
  (Robust, but can be weakened by many instruments.)

Difference-in-Hansen tests of exogeneity of instrument subsets:
  GMM instruments for levels
    Hansen test excluding group:     chi2(9)    =   6.39  Prob > chi2 =  0.700
    Difference (null H = exogenous): chi2(6)    =   7.76  Prob > chi2 =  0.256
  gmm(L.roe, lag(1 2))
```

```
    Hansen test excluding group:     chi2(7)    =   7.56  Prob > chi2 =  0.373

    Difference (null H = exogenous): chi2(8)    =   6.59  Prob > chi2 =  0.581

  gmm(lnoctop5, lag(2 .))

    Hansen test excluding group:     chi2(6)    =   1.81  Prob > chi2 =  0.937

    Difference (null H = exogenous): chi2(9)    =  12.35  Prob > chi2 =  0.194
```

SPECIFICATION 2

```
xtabond2  roe L.roe lnoctop5 leverage  rd_sale_turnover   size  solvency liquidity
fixsale_turnover utility finance  dummy_2008   dummy_2007     dummy_2006   dummy_2005  mvp
domestic_own foreign_own _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i
, gmm(L.roe , laglimits(1 2)) gmm(lnoctop5 , laglimits(2 .)) iv(leverage  rd_sale_turnover
size solvency  liquidity  fixsale_turnover  utility finance  dummy_2008   dummy_2007
dummy_2006   dummy_2005  mvp    domestic_own foreign_own _1_i _2_i _3_i _4_i _6_i _7_i _8_i
_9_i _11_i _12_i _13_i _14_i _15_i ) two  robust

Dynamic panel-data estimation, two-step system GMM

------------------------------------------------------------------------------

Group variable: code_number                     Number of obs      =       755

Time variable : year                            Number of groups   =       204

Number of instruments = 43                      Obs per group: min =         1

Wald chi2(27) =    736.17                                      avg =      3.70

Prob > chi2   =     0.000                                      max =         4

------------------------------------------------------------------------------

             |              Corrected

         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

         roe |

         L1. |   .0025654   .0008991     2.85   0.004     .0008031    .0043276

             |

    lnoctop5 |   .1031133   .0512484     2.01   0.044     .0026682    .2035584

    leverage |  -.0173544   .0371392    -0.47   0.640     -.090146    .0554372

rd_sale_tu~r |   .0001459     .00007     2.08   0.037     8.65e-06    .0002832

        size |    .049872   .0495794     1.01   0.314    -.0473019    .1470459

    solvency |   .0025804   .0005384     4.79   0.000     .0015251    .0036357

   liquidity |   .0007314   .0017481     0.42   0.676    -.0026947    .0041576

fixsale_tu~r |   1.35e-06   6.95e-07     1.94   0.053    -1.48e-08    2.71e-06

     utility |  -8.120154   5.706725    -1.42   0.155    -19.30513    3.064823

     finance |  -.2054328   .2352735    -0.87   0.383    -.6665604    .2556949
```

```
  dummy_2008 |   -.144279   .0570092    -2.53   0.011    -.2560149   -.0325431

  dummy_2007 |  -.0509885   .0356269    -1.43   0.152     -.120816     .018839

  dummy_2006 |  -.0151021   .0534386    -0.28   0.777    -.1198398    .0896356

         mvp |   .0285573   .0705301     0.40   0.686    -.1096792    .1667939

domestic_own |  -.4272393   .2020955    -2.11   0.035    -.8233391   -.0311394

 foreign_own |  -.5894649   .2313033    -2.55   0.011    -1.042811   -.1361188

        _1_i |   .2197635   .2215985     0.99   0.321    -.2145616    .6540886

        _2_i |  -9.609723   6.745604    -1.42   0.154    -22.83086    3.611418

        _3_i |  -.0246994    .214362    -0.12   0.908    -.4448413    .3954424

        _4_i |   -.281922   .1054151    -2.67   0.007    -.4885318   -.0753122

        _6_i |   .2159015   .2468624     0.87   0.382    -.2679399    .6997429

        _7_i |  -.0575652   .1019715    -0.56   0.572    -.2574257    .1422953

        _8_i |  -.2596947     .12433    -2.09   0.037     -.503377   -.0160123

        _9_i |  -.1143637   .1166562    -0.98   0.327    -.3430056    .1142782

       _11_i |  -.2190953   .5778125    -0.38   0.705    -1.351587    .9133963

       _13_i |   21.98493    12.6141     1.74   0.081    -2.738261    46.70812

       _14_i |  -.2335824   .1154519    -2.02   0.043     -.459864   -.0073008

       _cons |  -.3778474   .6202506    -0.61   0.542    -1.593516    .8378214

------------------------------------------------------------------------------


------------------------------------------------------------------------------

Arellano-Bond test for AR(1) in first differences: z =  -1.12  Pr > z =  0.262

Arellano-Bond test for AR(2) in first differences: z =   1.44  Pr > z =  0.151

------------------------------------------------------------------------------

Sargan test of overid. restrictions: chi2(15)   =  97.06  Prob > chi2 =  0.000

  (Not robust, but not weakened by many instruments.)

Hansen test of overid. restrictions: chi2(15)   =  10.07  Prob > chi2 =  0.815

  (Robust, but can be weakened by many instruments.)


Difference-in-Hansen tests of exogeneity of instrument subsets:

  GMM instruments for levels

    Hansen test excluding group:     chi2(9)    =   5.87  Prob > chi2 =  0.752

    Difference (null H = exogenous): chi2(6)    =   4.20  Prob > chi2 =  0.650

  gmm(L.roe, lag(1 2))
```

```
    Hansen test excluding group:     chi2(7)    =   7.33  Prob > chi2 =  0.395
    Difference (null H = exogenous): chi2(8)    =   2.74  Prob > chi2 =  0.950
  gmm(lnoctop5, lag(2 .))
    Hansen test excluding group:     chi2(6)    =   1.92  Prob > chi2 =  0.927
    Difference (null H = exogenous): chi2(9)    =   8.15  Prob > chi2 =  0.519
```

SPECIFICATION 3

```
xtabond2  roe L.roe lnoctop5 leverage  rd_sale_turnover   size  solvency liquidity   utility
finance  dummy_2008   dummy_2007    dummy_2006   dummy_2005  mvp  domestic50   __state_50
foreign_50   _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i  ,
gmm(L.roe , laglimits(1 2)) gmm(lnoctop5 , laglimits(2 .)) iv(leverage  rd_sale_turnover
size solvency  liquidity  fixsale_turnover media utility finance  dummy_2008  dummy_2007
dummy_2006   dummy_2005  mvp   domestic50 __state_50 foreign_50    _1_i _2_i _3_i _4_i _6_i
_7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i ) two  robust
```

```
Dynamic panel-data estimation, two-step system GMM
------------------------------------------------------------------------------
Group variable: code_number                     Number of obs      =       755
Time variable : year                            Number of groups   =       204
Number of instruments = 45                      Obs per group: min =         1
Wald chi2(27) =    527.51                                      avg =      3.70
Prob > chi2   =     0.000                                      max =         4
------------------------------------------------------------------------------
             |              Corrected
         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         roe |
         L1. |   .0025694   .0009746     2.64   0.008     .0006593    .0044795
             |
    lnoctop5 |   .0998303   .0588476     1.70   0.090    -.0155088    .2151694
    leverage |  -.0016042   .0362423    -0.04   0.965    -.0726378    .0694293
rd_sale_tu~r |   .0001649   .0000717     2.30   0.022     .0000243    .0003054
        size |    .051831    .046422     1.12   0.264    -.0391546    .1428165
    solvency |    .002779   .0007408     3.75   0.000      .001327     .004231
   liquidity |   .0008175   .0017181     0.48   0.634    -.0025499    .0041849
```

utility	-7.96262	4.969332	-1.60	0.109	-17.70233	1.77709
finance	-.3646402	.2781857	-1.31	0.190	-.9098742	.1805938
dummy_2008	-.1597315	.05863	-2.72	0.006	-.2746442	-.0448188
dummy_2007	-.0684774	.038314	-1.79	0.074	-.1435715	.0066168
dummy_2006	-.0218397	.0524074	-0.42	0.677	-.1245564	.080877
mvp	.0104003	.0735518	0.14	0.888	-.1337586	.1545593
domestic50	-.3102215	.102707	-3.02	0.003	-.5115236	-.1089194
__state_50	.2431656	.1656558	1.47	0.142	-.0815138	.5678449
foreign_50	-.3740437	.1348251	-2.77	0.006	-.638296	-.1097915
_1_i	.1218881	.2471195	0.49	0.622	-.3624572	.6062335
_2_i	-12.367	6.726426	-1.84	0.066	-25.55055	.8165547
_3_i	-.0489013	.2172838	-0.23	0.822	-.4747697	.376967
_4_i	-.2857302	.118089	-2.42	0.016	-.5171803	-.05428
_6_i	-.0334282	.2718173	-0.12	0.902	-.5661803	.4993239
_7_i	-.042052	.1141744	-0.37	0.713	-.2658297	.1817258
_8_i	-.2120346	.134557	-1.58	0.115	-.4757616	.0516923
_9_i	-.1214524	.1318079	-0.92	0.357	-.3797912	.1368864
_11_i	-.0662914	.5759454	-0.12	0.908	-1.195124	1.062541
_13_i	26.02633	12.70585	2.05	0.041	1.123319	50.92933
_14_i	-.2407307	.1360298	-1.77	0.077	-.5073442	.0258828
_cons	-.6180839	.6639431	-0.93	0.352	-1.919388	.6832207

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
Arellano-Bond test for AR(1) in first differences: z =  -1.12  Pr > z =  0.261
Arellano-Bond test for AR(2) in first differences: z =   1.48  Pr > z =  0.140
------------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(17)   =  98.22  Prob > chi2 =  0.000
  (Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(17)   =  11.59  Prob > chi2 =  0.824
  (Robust, but can be weakened by many instruments.)

Difference-in-Hansen tests of exogeneity of instrument subsets:
  GMM instruments for levels
    Hansen test excluding group:     chi2(11)   =   8.03  Prob > chi2 =  0.710
```

```
  Difference (null H = exogenous): chi2(6)    =   3.55  Prob > chi2 =  0.737
gmm(L.roe, lag(1 2))
  Hansen test excluding group:     chi2(9)    =   6.01  Prob > chi2 =  0.739
  Difference (null H = exogenous): chi2(8)    =   5.58  Prob > chi2 =  0.694
gmm(lnoctop5, lag(2 .))
  Hansen test excluding group:     chi2(8)    =   3.61  Prob > chi2 =  0.890
  Difference (null H = exogenous): chi2(9)    =   7.98  Prob > chi2 =  0.536
```

APPENDIX 4.3

Specification 1 with different ROE ranges

```
xtabond2 roe L.roe lnoctop5 solvency fixsale_turnover dummy_2008 dummy_2007
dummy_2006 dummy_2005 mvp individual privatization_fund other_company domestic_own
__state _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i ,
gmm(L.roe,laglimits(12)) gmm(lnoctop5,laglimits(2 2)) iv(solvency fixsale_turnover
dummy_2008 dummy_2007dummy_2006 dummy_2005 mvp individual privatization_fund
other_company domestic_own __state _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i
_12_i _13_i _14_i _15_i ) two robust, if roe<=5&roe>=-5

------------------------------------------------------------------------------

Group variable: code_number                     Number of obs      =       748

Time variable : year                            Number of groups   =       204

Number of instruments = 38                      Obs per group: min =         1

Wald chi2(25) =   3598.42                                      avg =      3.67

Prob > chi2   =     0.000                                      max =         4

------------------------------------------------------------------------------

             |              Corrected

         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

         roe |

         L1. |    .002351   .0003719     6.32   0.000     .0016221    .0030799

             |

    lnoctop5 |   .1066716   .0292221     3.65   0.000     .0493973    .1639459

    solvency |   .0040271   .0004843     8.31   0.000     .0030778    .0049764

fixsale_tu~r |   2.12e-06   1.49e-06     1.42   0.155    -8.03e-07    5.04e-06

  dummy_2008 |  -.0817191   .0420351    -1.94   0.052    -.1641063    .0006682

  dummy_2007 |  -.0048617   .0279671    -0.17   0.862    -.0596763    .0499529

  dummy_2006 |   .0093222   .0361386     0.26   0.796    -.0615082    .0801526

         mvp |   .0805705    .065507     1.23   0.219    -.0478209    .2089618
```

```
  individual |   -.351436   .8963013    -0.39   0.695    -2.108154    1.405282
privatizat~d |  -.2698765   .6678298    -0.40   0.686    -1.578799    1.039046
other_comp~y |  -.3114482   .7308652    -0.43   0.670    -1.743918    1.121021
domestic_own |   .0331854   .1326607     0.25   0.802    -.2268248    .2931956
     __state |  -.1677714   .7645186    -0.22   0.826      -1.6662    1.330658
        _1_i |   .7179921   1.672292     0.43   0.668    -2.559639    3.995623
        _2_i |   .7375701    1.62861     0.45   0.651    -2.454447    3.929587
        _3_i |   .8680001   1.702866     0.51   0.610    -2.469556    4.205556
        _4_i |   .6327418    1.60409     0.39   0.693    -2.511217    3.776701
        _6_i |   .9524969   1.687202     0.56   0.572    -2.354358    4.259352
        _7_i |   .7417719   1.659711     0.45   0.655    -2.511201    3.994745
        _8_i |   .6203187   1.549913     0.40   0.689    -2.417454    3.658091
        _9_i |    .845342   1.630424     0.52   0.604     -2.35023    4.040913
       _11_i |   .7394564   1.626833     0.45   0.649    -2.449078    3.927991
       _13_i |   6.317254   12.41712     0.51   0.611    -18.01985    30.65436
       _14_i |   .7027867   1.619352     0.43   0.664    -2.471084    3.876658
       _15_i |   .8606303   1.644481     0.52   0.601    -2.362494    4.083755
       _cons |  -.6918974   .8016135    -0.86   0.388    -2.263031    .8792362
------------------------------------------------------------------------------
------------------------------------------------------------------------------
Arellano-Bond test for AR(1) in first differences: z =  -1.89  Pr > z =0.058
Arellano-Bond test for AR(2) in first differences: z =   0.97  Pr > z =  0.332
------------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(12)   =  36.59  Prob > chi2 =  0.000
(Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(12)   =  10.87  Prob > chi2 =  0.540
(Robust, but can be weakened by many instruments.)
Difference-in-Hansen tests of exogeneity of instrument subsets:
GMM instruments for levels
Hansen test excluding group:     chi2(6)    =   4.62  Prob > chi2 =  0.593
Difference (null H = exogenous): chi2(6)    =   6.25  Prob > chi2 =  0.396
gmm(L.roe, lag(1 2))
```

```
Hansen test excluding group:     chi2(4)    =   3.44  Prob > chi2 =  0.486

Difference (null H = exogenous): chi2(8)    =   7.43  Prob > chi2 =  0.491

gmm(lnoctop5, lag(2 2))

Hansen test excluding group:     chi2(6)    =   6.28  Prob > chi2 =  0.393

Difference (null H = exogenous): chi2(6)    =   4.60  Prob > chi2 =  0.597
```

Specification 2 with different ROE ranges

```
xtabond2  roe L.roe lnoctop5 size  solvency fixsale_turnover dummy_2008 dummy_2007
dummy_2006   dummy_2005  mvp  domestic_own __state _1_i _2_i _3_i _4_ i _6_i _7_i
_8_i _9_i _11_i _12_i _13_i _14_i _15_i  , gmm(L.roe , laglimits(1 2)) gmm(lnoctop5
, laglimits(2 .)) iv(    size solvency  fixsale_turnover dummy_2008 dummy_2007
dummy_200 dummy_2005  mvp  domestic_own  __state _1_i _2_i _3_i _4_i _6_i _7_i _8_i
_9_i _11_i _12_i _13_i _14_i _15_i ) two  robust, if roe<=5&roe>=-5

------------------------------------------------------------------------------

Group variable: code_number                     Number of obs      =       748

Time variable : year                            Number of groups   =       204

Number of instruments = 39                      Obs per group: min =         1

Wald chi2(23) =   2477.00                                      avg =      3.67

Prob > chi2   =     0.000                                      max =         4

------------------------------------------------------------------------------

             |              Corrected

         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

         roe |

         L1. |   .0024445   .0001744    14.01   0.000     .0021026    .0027864

             |

    lnoctop5 |   .1198014   .0291047     4.12   0.000     .0627573    .1768456

        size |    .005875   .0302154     0.19   0.846    -.0533461    .0650961

    solvency |   .0039832    .000467     8.53   0.000     .0030679    .0048986

fixsale_tu~r |   1.64e-06   5.53e-07     2.97   0.003     5.59e-07    2.73e-06

  dummy_2008 |  -.0835477   .0419484    -1.99   0.046    -.1657649   -.0013304

  dummy_2007 |  -.0201958   .0299511    -0.67   0.500    -.0788988    .0385072

  dummy_2006 |   .0081967   .0268065     0.31   0.760    -.0443431    .0607364
```

```
         mvp |   .0310326   .0557946     0.56   0.578    -.0783228     .140388
domestic_own |   .1453985   .0962227     1.51   0.131    -.0431945    .3339916
     __state |   .1979908   .0941525     2.10   0.035     .0134552    .3825264
        _1_i |  -.0075452   .6771762    -0.01   0.991    -1.334786    1.319696
        _2_i |  -.0591971   .6344278    -0.09   0.926    -1.302653    1.184259
        _3_i |   .1060542   .5946912     0.18   0.858    -1.059519    1.271628
        _4_i |   -.125828   .5808611    -0.22   0.829    -1.264295    1.012639
        _6_i |   .1487866   .5885289     0.25   0.800    -1.004709    1.302282
        _7_i |   -.024822   .6176908    -0.04   0.968    -1.235474     1.18583
        _8_i |  -.0875803    .559317    -0.16   0.876    -1.183822    1.008661
        _9_i |   .0798395   .5860036     0.14   0.892    -1.068707    1.228386
       _11_i |  -.0899159   .6533066    -0.14   0.891    -1.370373    1.190542
       _13_i |  -.0256209   4.808002    -0.01   0.996    -9.449132     9.39789
       _14_i |  -.0397958   .5664224    -0.07   0.944    -1.149963    1.070372
       _15_i |   .1033173    .588674     0.18   0.861    -1.050462    1.257097
       _cons |  -.4197396   1.009711    -0.42   0.678    -2.398737    1.559258
------------------------------------------------------------------------------
Arellano-Bond test for AR(1) in first differences: z =  -1.84  Pr > z =  0.065
Arellano-Bond test for AR(2) in first differences: z =   1.00  Pr > z =  0.319
------------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(15)   =  42.06  Prob > chi2 =  0.000
  (Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(15)   =  15.37  Prob > chi2 =  0.425
(Robust, but can be weakened by many instruments.)
Difference-in-Hansen tests of exogeneity of instrument subsets:
GMM instruments for levels
Hansen test excluding group:     chi2(9)    =   6.71  Prob > chi2 =  0.667
Difference (null H = exogenous): chi2(6)    =   8.66  Prob > chi2 =  0.194
gmm(L.roe, lag(1 2))
Hansen test excluding group:     chi2(7)    =   6.43  Prob > chi2 =  0.491
Difference (null H = exogenous): chi2(8)    =   8.94  Prob > chi2 =  0.347
gmm(lnoctop5, lag(2 .))
```

```
Hansen test excluding group:     chi2(6)     =   5.84  Prob > chi2 =  0.441

Difference (null H = exogenous): chi2(9)     =   9.53  Prob > chi2 =  0.390
```

```
er dummy_2008 dummy_2007 dummy_2006   dummy_2005  mvp  domestic50 foreign_50 _1_i
_2_i  3_i  _4_i  _6_i  _7_i  _8_i  _9_i  _11_i  _12_i  _13_i  _14_i  _15_i  gmm(L.roe ,
laglimits(1 2)) gmm(lnoctop5 , laglimits(2 .) collapse) iv(    liquidity solvency
fixsale_turnover dummy_2008   dummy_2007  dummy_2006   dummy_2005  mvp   domestic50
foreign_50 _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i )
two  robust, if roe<=5&roe>=-5

------------------------------------------------------------------------------

Group variable: code_number                     Number of obs      =       748

Time variable : year                            Number of groups   =       204

Number of instruments = 34                      Obs per group: min =         1

Wald chi2(23) =    182.75                                      avg =      3.62

Prob > chi2   =     0.000                                      max =         4

------------------------------------------------------------------------------

             |              Corrected

         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

         roe |

         L1. |   .0020895   .0007474     2.80   0.005     .0006246    .0035544

             |

    lnoctop5 |   .0986582    .055204     1.79   0.074    -.0095396    .2068561

   liquidity |  -6.60e-06   .0008412    -0.01   0.994    -.0016553    .0016421

    solvency |   .0039104   .0003663    10.67   0.000     .0031924    .0046283

fixsale_tu~r |   7.73e-07   3.53e-07     2.19   0.029     8.07e-08    1.47e-06

  dummy_2008 |  -.0199971   .0529105    -0.38   0.705    -.1236996    .0837055

  dummy_2007 |   .0283042   .0540172     0.52   0.600    -.0775676     .134176

  dummy_2006 |   .0031507   .0263685     0.12   0.905    -.0485305    .0548319

         mvp |   .0376071   .0750218     0.50   0.616    -.1094329     .184647

  domestic50 |  -.0834678   .1837181    -0.45   0.650    -.4435487    .2766131

  foreign_50 |  -.2108926   .1264227    -1.67   0.095    -.4586765    .0368912

        _1_i |   .0628328    .981739     0.06   0.949     -1.86134    1.987006
```

```
        _2_i |   .0575676   .9736538     0.06   0.953    -1.850759    1.965894
        _3_i |   .1871743   .9426163     0.20   0.843     -1.66032    2.034668
        _4_i |   .0057612   .9060383     0.01   0.995    -1.770041    1.781564
        _6_i |   .2696604   .8877571     0.30   0.761    -1.470312    2.009632
        _7_i |   .1157955   .9526069     0.12   0.903     -1.75128    1.982871
        _8_i |   .0089783   .9418789     0.01   0.992     -1.83707    1.855027
        _9_i |   .1376926   .9162506     0.15   0.881    -1.658126    1.933511
       _11_i |   .0610212   .9417177     0.06   0.948    -1.784712    1.906754
       _13_i |   1.108367   8.416647     0.13   0.895    -15.38796    17.60469
       _14_i |   .0428778   .8686096     0.05   0.961    -1.659566    1.745321
       _15_i |   .1984785   .9233414     0.21   0.830    -1.611237    2.008194
       _cons |  -.2321976   .8929834    -0.26   0.795    -1.982413    1.518018
------------------------------------------------------------------------------
Arellano-Bond test for AR(1) in first differences: z =  -2.07  Pr >z =  0.038
Arellano-Bond test for AR(2) in first differences: z =   0.89  Pr > z =  0.375
------------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(10)   =  26.55  Prob > chi2 =  0.003
  (Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(10)   =  12.40  Prob > chi2 =  0.259
  (Robust, but can be weakened by many instruments.)
Difference-in-Hansen tests of exogeneity of instrument subsets:
  GMM instruments for levels
    Hansen test excluding group:     chi2(6)    =   3.22  Prob > chi2 =  0.781
    Difference (null H = exogenous): chi2(4)    =   9.18  Prob > chi2 =  0.057
  gmm(L.roe, lag(1 2))
    Hansen test excluding group:     chi2(2)    =   0.03  Prob > chi2 =  0.987
    Difference (null H = exogenous): chi2(8)    =  12.38  Prob > chi2 =  0.135
  gmm(lnoctop5, collapse lag(2 .))
    Hansen test excluding group:     chi2(6)    =   3.45  Prob > chi2 =  0.750
    Difference (null H = exogenous): chi2(4)    =   8.95  Prob > chi2 =  0.062
```

APPENDIX 4.4.

Specification 1 using solvency, liquidity and size as potentially endogenous variables

xtabond2 roe L.roe lnoctop5 leverage rd_sale_turnover size solvency liquidity fixsale_turnover utility finance dummy_2008 dummy_2007 dummy_20 06 dummy_2005 mvp privatization_fund other_company individual __state _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i , gmm(L.roe , laglimits(1 2)) gmm(lnoctop5 liquidity solvency size, laglimits(1 2)) iv(leverage rd_sale_turnover fixsale_turnover utility finance dummy_2008 dummy_2007 dummy_2006 dummy_2005 mvp privatization_fund other_company individual __state _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11 _i _12_i _13_i _14_i _15_i) two robust

```
------------------------------------------------------------------------------
Group variable: code_number                     Number of obs      =       755
Time variable : year                            Number of groups   =       204
Number of instruments = 73                      Obs per group: min =         1
Wald chi2(29) =   8254.73                                      avg =      3.70
Prob > chi2   =     0.000                                      max =         4
------------------------------------------------------------------------------
                                 |            Corrected
         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
roe |
         L1. |  -.0010378   .0009839    -1.05   0.292    -.0029662    .0008905
    lnoctop5 |   .0177547    .034779     0.51   0.610    -.0504109    .0859204
    leverage |    .081495   .0941459     0.87   0.387    -.1030276    .2660177
rd_sale_tu~r |   .0001822   .0001187     1.54   0.125    -.0000504    .0004149
        size |   .2764422   .1899637     1.46   0.146    -.0958798    .6487641
    solvency |   .0034795   .0002329    14.94   0.000     .0030231    .0039359
   liquidity |  -.0033746   .0028855    -1.17   0.242    -.0090301     .002281
fixsale_tu~r |  -4.58e-07   1.50e-06    -0.31   0.760    -3.40e-06    2.48e-06
     utility |  -3.498664     3.1147    -1.12   0.261    -9.603364    2.606035
     finance |  -1.396356   1.027938    -1.36   0.174    -3.411077    .6183652
  dummy_2008 |  -.1156666   .0830143    -1.39   0.164    -.2783717    .0470384
```

```
      dummy_2007 |  -.0471887   .0520762    -0.91   0.365    -.1492562    .0548789
      dummy_2006 |  -.0109375   .0478663    -0.23   0.819    -.1047537    .0828788
             mvp |  -.1054838   .0808484    -1.30   0.192    -.2639438    .0529762
    privatizat~d |  -.2101438   .3013016    -0.70   0.486     -.800684    .3803965
    other_comp~y |  -.1279226   .2910303    -0.44   0.660    -.6983315    .4424864
      individual |   .0346733   .3046543     0.11   0.909    -.5624382    .6317849
         __state |  -.1513261   .3181336    -0.48   0.634    -.7748564    .4722043
            _1_i |   .3251326   .3151381     1.03   0.302    -.2925268     .942792
            _2_i |   .3622105   .3609196     1.00   0.316    -.3451789      1.0696
            _3_i |  -.3194971   .2907951    -1.10   0.272    -.8894451    .2504509
            _4_i |   .0167991   .1606122     0.10   0.917    -.2979951    .3315933
            _6_i |   .1430962   .3647447     0.39   0.695    -.5717902    .8579827
            _7_i |   .2339535   .2287924     1.02   0.307    -.2144713    .6823783
            _8_i |  -.0591883   .1557407    -0.38   0.704    -.3644344    .2460578
            _9_i |   .0212927   .1961583     0.11   0.914    -.3631705    .4057559
           _11_i |   .5776082    .617592     0.94   0.350    -.6328499    1.788066
           _13_i |   5.832462   4.093862     1.42   0.154    -2.191359    13.85628
           _14_i |   .1366184   .3161914     0.43   0.666    -.4831054    .7563422
           _cons |   -4.09422   2.971276    -1.38   0.168    -9.917813    1.729373
------------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(43)   = 247.10  Prob > chi2 =  0.000
  (Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(43)   =  28.90  Prob > chi2 =  0.951
  (Robust, but can be weakened by many instruments.)
Difference-in-Hansen tests of exogeneity of instrument subsets:
  GMM instruments for levels
    Hansen test excluding group:     chi2(24)   =  23.00  Prob > chi2 =  0.520
    Difference (null H = exogenous): chi2(19)   =   5.90  Prob > chi2 =  0.998
  gmm(L.roe, lag(1 2))
    Hansen test excluding group:     chi2(35)   =  29.27  Prob > chi2 =  0.741
    Difference (null H = exogenous): chi2(8)    =  -0.37  Prob > chi2 =  1.000
  gmm(lnoctop5 liquidity solvency size, lag(1 2))
    Hansen test excluding group:     chi2(3)    =   1.42  Prob > chi2 =  0.702
    Difference (null H = exogenous): chi2(40)   =  27.48  Prob > chi2 =  0.934
  iv(leverage rd_sale_turnover fixsale_turnover utility finance dummy_2008 dummy_2007
dummy_2006 dummy_2005 mvp privatization_fund other_company individual
```

```
> __state _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i)

    Hansen test excluding group:     chi2(19)    =  16.20  Prob > chi2 =  0.644

    Difference (null H = exogenous): chi2(24)    =  12.69  Prob > chi2 =  0.971
```

Specification 1 using size as potentially endogenous variable

```
xtabond2  roe L.roe lnoctop5 leverage  rd_sale_turnover   size  solvency liquidity
fixsale_turnover utility finance  dummy_2008   dummy_2007    dummy_2006   dummy_2005 mvp
privatization_fund other_company  individual __state _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i
_11_i _12_i _13_i _14_i _15_i  , gmm(L.roe , laglimits(1 2)) gmm(lnoctop5 size, laglimits(1
2)) iv(leverage  rd_sale_turnover   solvency  liquidity   fixsale_turnover  utility finance
dummy_2008   dummy_2007    dummy_2006   dummy_2005  mvp  privatization_fund other_company
individual __state _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i ) two
robust

------------------------------------------------------------------------------

Group variable: code_number                     Number of obs      =       755

Time variable : year                            Number of groups   =       204

Number of instruments = 55                      Obs per group: min =         1

Wald chi2(29) =   1722.87                                      avg =      3.70

Prob > chi2   =     0.000                                      max =         4

------------------------------------------------------------------------------

                                 |             Corrected

         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

                                      roe |

         L1. |  -.0001665   .0009957    -0.17   0.867     -.002118    .0017849

    lnoctop5 |    .017279   .0394989     0.44   0.662    -.0601374    .0946955

    leverage |   .0349042   .0821415     0.42   0.671    -.1260902    .1958987

rd_sale_tu~r |   .0001857   .0001313     1.41   0.157    -.0000716     .000443

        size |   .2122463   .1966947     1.08   0.281    -.1732683    .5977609

    solvency |   .0035099    .001497     2.34   0.019     .0005759    .0064439

   liquidity |   5.37e-06   .0016018     0.00   0.997    -.0031341    .0031448

fixsale_tu~r |  -1.17e-07   1.59e-06    -0.07   0.941    -3.23e-06    2.99e-06

     utility |  -7.610553   5.628824    -1.35   0.176    -18.64285     3.42174

     finance |  -.6075386   .6628364    -0.92   0.359    -1.906674    .6915969

  dummy_2008 |   -.080314   .0883061    -0.91   0.363    -.2533908    .0927628

  dummy_2007 |  -.0197277   .0443223    -0.45   0.656    -.1065977    .0671424

  dummy_2006 |  -.0161613   .0464199    -0.35   0.728    -.1071427    .0748201

         mvp |  -.1683742   .1308998    -1.29   0.198    -.4249331    .0881847

privatizat~d |   .0910653   .0940151     0.97   0.333     -.093201    .2753316
```

```
other_comp~y |    .108372   .1425732     0.76   0.447    -.1710665    .3878104
  individual |   .3007765    .251808     1.19   0.232     -.192758     .794311
     __state |   .2441023   .2103975     1.16   0.246    -.1682692    .6564738
        _1_i |   1.416747   1.317631     1.08   0.282    -1.165762    3.999256
        _2_i |   .2757442   .2910568     0.95   0.343    -.2947166     .846205
        _3_i |    -.30784   .3173882    -0.97   0.332    -.9299094    .3142294
        _4_i |  -.0461271   .1252133    -0.37   0.713    -.2915406    .1992865
        _6_i |    .103097   .3500852     0.29   0.768    -.5830573    .7892513
        _7_i |   .1764726   .1567383     1.13   0.260    -.1307289    .4836741
        _8_i |  -.0541382   .1376736    -0.39   0.694    -.3239735    .2156971
        _9_i |    .030765   .1302248     0.24   0.813    -.2244708    .2860009
       _11_i |   .3978126    .565916     0.70   0.482    -.7113623    1.506988
       _13_i |   .4577662   6.522236     0.07   0.944    -12.32558    13.24111
       _14_i |  -.0118131   .2682526    -0.04   0.965    -.5375784    .5139523
       _cons |  -3.343179   3.115225    -1.07   0.283    -9.448909     2.76255
------------------------------------------------------------------------------
------------------------------------------------------------------------------
Arellano-Bond test for AR(1) in first differences: z =  -1.12  Pr > z =  0.265
Arellano-Bond test for AR(2) in first differences: z =   0.94  Pr > z =  0.347
------------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(25)   = 144.69  Prob > chi2 =  0.000
  (Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(25)   =  25.71  Prob > chi2 =  0.423
  (Robust, but can be weakened by many instruments.)
Difference-in-Hansen tests of exogeneity of instrument subsets:
  GMM instruments for levels
    Hansen test excluding group:     chi2(14)   =  10.63  Prob > chi2 =  0.715
    Difference (null H = exogenous): chi2(11)   =  15.08  Prob > chi2 =  0.179
  gmm(L.roe, lag(1 2))
    Hansen test excluding group:     chi2(17)   =  13.42  Prob > chi2 =  0.708
    Difference (null H = exogenous): chi2(8)    =  12.29  Prob > chi2 =  0.139
  gmm(lnoctop5 size, lag(1 2))
    Hansen test excluding group:     chi2(5)    =   0.14  Prob > chi2 =  1.000
    Difference (null H = exogenous): chi2(20)   =  25.57  Prob > chi2 =  0.180
```

Specification 2 using solvency, liquidity and size as potentially endogenous variables

```
xtabond2 roe L.roe lnoctop5 leverage rd_sale_turnover size solvency liquidity fixsale_turnover utility finance dummy_2008 dummy_2007 dummy_2006 dummy_2005 mvp domestic_own foreign_own _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i , gmm(L.roe , laglimits(1 2)) gmm(lnoctop5 solvency liquidity, laglimits(2 2)) iv(leverage rd_sale_turnover size fixsale_turnover utility finance dummy_2008 dummy_2007 dummy_2006 dummy_2005 mvp domestic_own foreign_own _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i ) two robust
```

```
------------------------------------------------------------------------------
Group variable: code_number                     Number of obs      =       755
Time variable : year                            Number of groups   =       204
Number of instruments = 50                      Obs per group: min =         1
Wald chi2(27) =   5935.44                                      avg =      3.70
Prob > chi2   =     0.000                                      max =         4
------------------------------------------------------------------------------
             |              Corrected
         Roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 Roe L1. |   .0004649    .001106     0.42   0.674    -.0017028    .0026325
    lnoctop5 |   .0708407   .1571419     0.45   0.652    -.2371517    .3788331
    leverage |  -.0832373   .0524951    -1.59   0.113    -.1861257    .0196512
rd_sale_tu~r |   .0001682   .0001436     1.17   0.241    -.0001132    .0004496
        size |   .0300554   .0410811     0.73   0.464    -.0504622    .1105729
    solvency |   .0030972   .0001079    28.69   0.000     .0028856    .0033087
   liquidity |  -.0474619   .1142053    -0.42   0.678    -.2713003    .1763764
fixsale_tu~r |   5.82e-07   9.00e-07     0.65   0.518    -1.18e-06    2.35e-06
     utility |   -5.04274   3.290344    -1.53   0.125     -11.4917    1.406217
     finance |  -.0515478   .2418615    -0.21   0.831    -.5255876    .4224919
  dummy_2008 |  -.0013881   .0724366    -0.02   0.985    -.1433613     .140585
  dummy_2007 |  -.0028733   .0454279    -0.06   0.950    -.0919104    .0861638
  dummy_2006 |    .043322   .0645103     0.67   0.502    -.0831158    .1697599
         mvp |   .0408535     .18706     0.22   0.827    -.3257774    .4074844
domestic_own |  -.1555689   .2006661    -0.78   0.438    -.5488671    .2377294
 foreign_own |  -.3044223   .3342007    -0.91   0.362    -.9594437    .3505991
        _1_i |   .0118503   .1686224     0.07   0.944    -.3186436    .3423441
        _2_i |  -.3356002   8.038566    -0.04   0.967     -16.0909     15.4197
        _3_i |  -.0312767   .2030453    -0.15   0.878    -.4292382    .3666848
        _4_i |  -.1562964   .2862167    -0.55   0.585    -.7172707     .404678
```

```
        _6_i |   .1464874    .425602     0.34   0.731    -.6876771    .9806519
        _7_i |  -.0183706   .1991767    -0.09   0.927    -.4087497    .3720085
        _8_i |  -.2247428   .3088644    -0.73   0.467    -.8301059    .3806202
        _9_i |   -.024433    .115585    -0.21   0.833    -.2509754    .2021095
       _11_i |   1.388954   1.746452     0.80   0.426    -2.034028    4.811937
       _13_i |   5.373636   12.75962     0.42   0.674    -19.63475    30.38203
       _14_i |  -.1139007    .221567    -0.51   0.607    -.5481641    .3203627
       _cons |    -.33323    .677751    -0.49   0.623    -1.661598    .9951375
------------------------------------------------------------------------------------------------

Arellano-Bond test for AR(1) in first differences: z =  -1.11  Pr > z      =      0.266
Arellano-Bond test for AR(2) in first differences: z =   0.96  Pr > z      =      0.336
Sargan test of overid. restrictions: chi2(22)   = 199.81  Prob > chi2      =      0.000
(Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(22)   =  24.22  Prob > chi2      =      0.336
(Robust, but can be weakened by many instruments.)

Difference-in-Hansen tests of exogeneity of instrument subsets:
GMM instruments for levels
Hansen test excluding group:     chi2(9)    =   6.61  Prob > chi2  =      0.678
Difference (null H = exogenous): chi2(13)   =  17.61  Prob > chi2  =      0.173
gmm(L.roe, lag(1 2))
Hansen test excluding group:     chi2(16)   =  16.95  Prob > chi2  =      0.389
Difference (null H = exogenous): chi2(6)    =   7.27  Prob > chi2  =      0.297
gmm(lnoctop5 solvency liquidity, lag(2 2))
Hansen test excluding group:     chi2(2)    =   0.00  Prob > chi2  =      1.000
Difference (null H = exogenous): chi2(20)   =  24.22  Prob > chi2  =      0.233
```

Specification 2 using solvency, liquidity and size as potentially endogenous variables

```
xtabond2  roe L.roe lnoctop5 leverage  rd_sale_turnover   size  solvency liquidity
fixsale_turnover utility finance  dummy_2008   dummy_2007    dummy_2006   dummy_2005  mvp
domestic_own foreign_own _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i
, gmm(L.roe , laglimits(1 2)) gmm(lnoctop5 solvency  liquidity, laglimits(1 2)) iv(leverage
rd_sale_turnover   size   fixsale_turnover  utility finance  dummy_2008   dummy_2007
dummy_2006   dummy_2005  mvp    domestic_own foreign_own _1_i _2_i _3_i _4_i _6_i _7_i _8_i
_9_i _11_i _12_i _13_i _14_i _15_i ) two  robust
```

```
------------------------------------------------------------------------------
Group variable: code_number                     Number of obs      =       755
Time variable : year                            Number of groups   =       204
Number of instruments = 62                      Obs per group: min =         1
Wald chi2(27) =   2358.56                                      avg =      3.70
Prob > chi2   =     0.000                                      max =         4
------------------------------------------------------------------------------
             |             Corrected
         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         roe |
         L1. |   .0008983   .0009775     0.92   0.358    -.0010175    .0028142
             |
    lnoctop5 |    .009868   .0503181     0.20   0.845    -.0887537    .1084897
    leverage |   -.048518    .077215    -0.63   0.530    -.1998565    .1028206
rd_sale_tu~r |     .00013    .000116     1.12   0.262    -.0000973    .0003573
        size |   .0273217   .0412925     0.66   0.508    -.0536101    .1082536
    solvency |   .0033114   .0001396    23.72   0.000     .0030377     .003585
   liquidity |  -.0032889    .004194    -0.78   0.433     -.011509    .0049312
fixsale_tu~r |   6.19e-07   5.99e-07     1.03   0.301    -5.55e-07    1.79e-06
     utility |  -3.176135   3.121677    -1.02   0.309    -9.294511     2.94224
     finance |  -.0466738   .3272003    -0.14   0.887    -.6879747     .594627
  dummy_2008 |  -.0139453   .0539839    -0.26   0.796    -.1197518    .0918611
  dummy_2007 |   .0121789   .0418569     0.29   0.771     -.069859    .0942169
  dummy_2006 |  -.0069256   .0544759    -0.13   0.899    -.1136964    .0998453
         mvp |  -.0578318    .150071    -0.39   0.700    -.3519656     .236302
domestic_own |  -.0609395   .2960043    -0.21   0.837    -.6410972    .5192182
 foreign_own |  -.1343414    .242237    -0.55   0.579    -.6091172    .3404345
        _1_i |   .1030849   .2091412     0.49   0.622    -.3068242    .5129941
        _2_i |  -1.413005   4.080734    -0.35   0.729    -9.411097    6.585088
        _3_i |  -.0560304   .1324542    -0.42   0.672    -.3156358     .203575
        _4_i |  -.1375791   .0973883    -1.41   0.158    -.3284567    .0532985
        _6_i |   .3348845   .6649038     0.50   0.615     -.968303    1.638072
        _7_i |   .0110326     .08146     0.14   0.892     -.148626    .1706912
        _8_i |  -.1311099   .1178992    -1.11   0.266    -.3621881    .0999682
```

```
        _9_i |  -.0030698    .097122    -0.03   0.975    -.1934255    .1872859
       _11_i |    .546354   .7675837     0.71   0.477    -.9580824     2.05079
       _13_i |   5.227828   6.674523     0.78   0.433    -7.853997    18.30965
       _14_i |  -.0389736    .130861    -0.30   0.766    -.2954565    .2175092
        cons |  -.2944821   .7341014    -0.40   0.688    -1.733294     1.14433
------------------------------------------------------------------------------
Arellano-Bond test for AR(1) in first differences: z =  -1.15  Pr > z =  0.249
Arellano-Bond test for AR(2) in first differences: z =   1.15  Pr > z =  0.248
------------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(34)   = 239.71  Prob > chi2 =  0.000
  (Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(34)   =  49.28  Prob > chi2 =  0.044
  (Robust, but can be weakened by many instruments.)
Difference-in-Hansen tests of exogeneity of instrument subsets:
  GMM instruments for levels
    Hansen test excluding group:     chi2(19)   =  19.24  Prob > chi2 =  0.441
    Difference (null H = exogenous): chi2(15)   =  30.04  Prob > chi2 =  0.012
  gmm(L.roe, lag(1 2))
    Hansen test excluding group:     chi2(26)   =  25.01  Prob > chi2 =  0.518
    Difference (null H = exogenous): chi2(8)    =  24.27  Prob > chi2 =  0.002
  gmm(lnoctop5 solvency liquidity, lag(1 2))
    Hansen test excluding group:     chi2(4)    =   1.73  Prob > chi2 =  0.786
    Difference (null H = exogenous): chi2(30)   =  47.56  Prob > chi2 =  0.022
    Hansen test excluding group:     chi2(11)   =  15.60  Prob > chi2 =  0.157
    Difference (null H = exogenous): chi2(23)   =  33.68  Prob > chi2 =  0.070
```

Specification 2 using solvency, liquidity and size as potentially endogenous variables

```
xtabond2  roe L.roe lnoctop5 leverage  rd_sale_turnover   size  solvency liquidity
fixsale_turnover utility finance  dummy_2008   dummy_2007   dummy_2006   dummy_2005 mvp
domestic_own foreign_own _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i
, gmm(L.roe , laglimits(1 2)) gmm(lnoctop5 solvency  liquidity  size, laglimits(1 2))
iv(leverage  rd_sale_turnover  fixsale_turnover  utility finance  dummy_2008   dummy_2007
dummy_2006   dummy_2005  mvp    domestic_own foreign_own _1_i _2_i _3_i _4_i _6_i _7_i _8_i
_9_i _11_i _12_i _13_i _14_i _15_i ) two  robustv
------------------------------------------------------------------------------
Group variable: code_number                     Number of obs      =       755
```

```
Time variable : year                             Number of groups   =       204
Number of instruments = 71                       Obs per group: min =         1
Wald chi2(27) =   7878.38                                       avg =      3.70
Prob > chi2   =     0.000                                       max =         4
------------------------------------------------------------------------------
             |              Corrected
         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         roe |
         L1. |  -.0007602   .0008702    -0.87   0.382    -.0024658    .0009455
             |
    lnoctop5 |   .0133697   .0359103     0.37   0.710    -.0570133    .0837526
    leverage |   .0605465   .0842079     0.72   0.472     -.104498     .225591
rd_sale_tu~r |   .0001403   .0001067     1.31   0.189    -.0000689    .0003495
        size |   .2321044   .1692486     1.37   0.170    -.0996167    .5638255
    solvency |   .0033424   .0001674    19.97   0.000     .0030144    .0036704
   liquidity |  -.0033935    .003538    -0.96   0.337    -.0103278    .0035408
fixsale_tu~r |   6.99e-07   6.96e-07     1.00   0.315    -6.65e-07    2.06e-06
     utility |  -3.592018   3.256616    -1.10   0.270    -9.974868    2.790833
     finance |  -.6506875   .5779925    -1.13   0.260    -1.783532    .4821569
  dummy_2008 |  -.0801704    .066417    -1.21   0.227    -.2103452    .0500044
  dummy_2007 |  -.0285026   .0437078    -0.65   0.514    -.1141684    .0571631
  dummy_2006 |  -.0120279   .0612468    -0.20   0.844    -.1320694    .1080136
         mvp |  -.1297997     .08428    -1.54   0.124    -.2949855    .0353861
domestic_own |   .1374112   .1927874     0.71   0.476    -.2404452    .5152676
 foreign_own |  -.2744148   .2315641    -1.19   0.236    -.7282721    .1794425
        _1_i |   .2838043   .3370927     0.84   0.400    -.3768853    .9444939
        _2_i |   .1363634   .2878575     0.47   0.636    -.4278269    .7005537
        _3_i |  -.3678823   .3197121    -1.15   0.250    -.9945065     .258742
        _4_i |  -.1108767   .1865411    -0.59   0.552    -.4764904    .2547371
        _6_i |   .2293802   .4155933     0.55   0.581    -.5851677    1.043928
        _7_i |   .1488151    .247678     0.60   0.548    -.3366249    .6342551
        _8_i |  -.1817793   .2118597    -0.86   0.391    -.5970166    .2334581
        _9_i |  -.0392625   .2344722    -0.17   0.867    -.4988196    .4202946
       _11_i |   .4369546   .5479559     0.80   0.425    -.6370192    1.510928
       _13_i |   2.081456   2.926661     0.71   0.477    -3.654695    7.817608
```

```
      _14_i |   .0408339   .3458815     0.12   0.906    -.6370815    .7187492
      _cons |  -3.506774   2.674736    -1.31   0.190    -8.749161    1.735613
```

```
------------------------------------------------------------------------------
Arellano-Bond test for AR(1) in first differences: z =  -1.11  Pr > z =  0.265
Arellano-Bond test for AR(2) in first differences: z =   0.81  Pr > z =  0.416
------------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(43)   = 252.38  Prob > chi2 =  0.000
  (Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(43)   =  31.43  Prob > chi2 =  0.905
  (Robust, but can be weakened by many instruments.)
Difference-in-Hansen tests of exogeneity of instrument subsets:
  GMM instruments for levels
    Hansen test excluding group:     chi2(24)   =  20.64  Prob > chi2 =  0.660
    Difference (null H = exogenous): chi2(19)   =  10.79  Prob > chi2 =  0.931
  gmm(L.roe, lag(1 2))
    Hansen test excluding group:     chi2(35)   =  23.93  Prob > chi2 =  0.921
    Difference (null H = exogenous): chi2(8)    =   7.50  Prob > chi2 =  0.484
  gmm(lnoctop5 solvency liquidity size, lag(1 2))
    Hansen test excluding group:     chi2(3)    =   0.38  Prob > chi2 =  0.944
    Difference (null H = exogenous): chi2(40)   =  31.05  Prob > chi2 =  0.844
    Hansen test excluding group:     chi2(21)   =  19.48  Prob > chi2 =  0.555
    Difference (null H = exogenous): chi2(22)   =  11.95  Prob > chi2 =  0.958
```

Specification 2 using size as potentially endogenous variable

```
xtabond2  roe L.roe lnoctop5 leverage  rd_sale_turnover   size  solvency liquidity
fixsale_turnover utility finance  dummy_2008   dummy_2007     dummy_2006   dummy_2005 mvp
domestic_own foreign_own _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i
, gmm(L.roe , laglimits(1 2)) gmm(lnoctop5  size, laglimits(2 2)) iv(leverage
rd_sale_turnover    fixsale_turnover  utility finance   solvency  liquidity dummy_2008
dummy_2007     dummy_2006   dummy_2005  mvp   domestic_own foreign_own _1_i _2_i _3_i _4_i
_6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i ) two  robust
```

```
------------------------------------------------------------------------------
Group variable: code_number                     Number of obs      =       755
Time variable : year                            Number of groups   =       204
Number of instruments = 45                      Obs per group: min =         1
```

Wald chi2(27) = 664.20 avg = 3.70

Prob > chi2 = 0.000 max = 4

roe	Coef.	Corrected Std. Err.	z	P>|z|	[95% Conf.	Interval]
roe						
L1.	.0001244	.0010077	0.12	0.902	-.0018508	.0020995
lnoctop5	-.0430047	.0716526	-0.60	0.548	-.1834411	.0974317
leverage	-.0540119	.1415281	-0.38	0.703	-.3314018	.223378
rd_sale_tu~r	.0001736	.0001065	1.63	0.103	-.0000352	.0003824
size	.1151779	.2830376	0.41	0.684	-.4395657	.6699214
solvency	.0024745	.0020303	1.22	0.223	-.0015047	.0064537
liquidity	-.0005246	.0023689	-0.22	0.825	-.0051676	.0041183
fixsale_tu~r	2.38e-07	1.16e-06	0.20	0.838	-2.04e-06	2.51e-06
utility	-18.36323	10.47194	-1.75	0.080	-38.88786	2.161395
finance	-.2083776	1.111914	-0.19	0.851	-2.38769	1.970935
dummy_2008	.0289931	.176489	0.16	0.870	-.316919	.3749051
dummy_2007	.0459	.0780518	0.59	0.556	-.1070788	.1988787
dummy_2006	.0014915	.1343437	0.01	0.991	-.2618173	.2648003
mvp	-.3125269	.3486548	-0.90	0.370	-.9958777	.3708239
domestic_own	-.4223979	.3887172	-1.09	0.277	-1.18427	.3394738
foreign_own	-.580793	.4627559	-1.26	0.209	-1.487778	.326192
_1_i	3.110577	3.782036	0.82	0.411	-4.302077	10.52323
_2_i	.1009331	.1716014	0.59	0.556	-.2353995	.4372658
_3_i	-.2060278	.590054	-0.35	0.727	-1.362512	.9504568
_4_i	-.0869052	.1864977	-0.47	0.641	-.4524339	.2786236
_6_i	.2947947	.6598011	0.45	0.655	-.9983916	1.587981
_7_i	.1805211	.150204	1.20	0.229	-.1138733	.4749155
_8_i	-.0561708	.2372205	-0.24	0.813	-.5211143	.4087728
_9_i	-.0747365	.1712445	-0.44	0.663	-.4103696	.2608965
_11_i	.5623011	.68541	0.82	0.412	-.7810777	1.90568
_13_i	4.181298	9.716731	0.43	0.667	-14.86314	23.22574
_14_i	-.0319127	.1858665	-0.17	0.864	-.3962044	.332379
_cons	-1.165851	4.259662	-0.27	0.784	-9.514636	7.182934

Arellano-Bond test for AR(1) in first differences: z = -1.14 Pr > z = 0.256

```
Arellano-Bond test for AR(2) in first differences: z =   0.68  Pr > z =  0.499
------------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(17)   = 144.35  Prob > chi2 =  0.000
  (Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(17)   =  21.29  Prob > chi2 =  0.214
  (Robust, but can be weakened by many instruments.)
Difference-in-Hansen tests of exogeneity of instrument subsets:
  GMM instruments for levels
    Hansen test excluding group:     chi2(7)    =   4.98  Prob > chi2 =  0.663
    Difference (null H = exogenous): chi2(10)   =  16.31  Prob > chi2 =  0.091
  gmm(L.roe, lag(1 2))
    Hansen test excluding group:     chi2(10)   =   7.23  Prob > chi2 =  0.703
    Difference (null H = exogenous): chi2(7)    =  14.06  Prob > chi2 =  0.050
  gmm(lnoctop5 size, lag(2 2))
    Hansen test excluding group:     chi2(4)    =   0.37  Prob > chi2 =  0.985
    Difference (null H = exogenous): chi2(13)   =  20.92  Prob > chi2 =  0.075
```

Specification 3 using solvency, liquidity and size as potentially endogenous variables

```
xtabond2  roe L.roe lnoctop5 leverage  rd_sale_turnover   size  solvency liquidity
fixsale_turnover utility finance  dummy_2008   dummy_2007     dummy_2006   dummy_2005 mvp
domestic50 foreign_50 _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i  ,
gmm(L.roe , laglimits(1 2)) gmm(lnoctop5  solvency  liquidity size, laglimits(2 2))
iv(leverage  rd_sale_turnover fixsale_turnover  utility finance    dummy_2008   dummy_2007
dummy_2006   dummy_2005  mvp  domestic50 foreign_50 _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i
_11_i _12_i _13_i _14_i _15_i ) two  robust
------------------------------------------------------------------------------
Group variable: code_number                     Number of obs      =       755
Time variable : year                            Number of groups   =       204
Number of instruments = 55                      Obs per group: min =         1
Wald chi2(27) =    826.25                                      avg =      3.70
Prob > chi2   =     0.000                                      max =         4
------------------------------------------------------------------------------
             |              Corrected
         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         roe |
         L1. |  -.0022218   .0017669    -1.26   0.209    -.0056849    .0012413
    lnoctop5 |   .0332294   .1040554     0.32   0.749    -.1707155    .2371743
```

leverage	.0289511	.1119924	0.26	0.796	-.19055	.2484522
rd_sale_tu~r	.000189	.0001504	1.26	0.209	-.0001058	.0004838
size	.2589409	.2963953	0.87	0.382	-.3219833	.8398652
solvency	.0030873	.0001784	17.31	0.000	.0027376	.0034369
liquidity	-.0604856	.0656436	-0.92	0.357	-.1891447	.0681736
fixsale_tu~r	-7.59e-07	1.62e-06	-0.47	0.639	-3.92e-06	2.41e-06
utility	-6.103463	6.224943	-0.98	0.327	-18.30413	6.097202
finance	-.780218	1.124369	-0.69	0.488	-2.98394	1.423504
dummy_2008	-.0591429	.1423611	-0.42	0.678	-.3381655	.2198796
dummy_2007	-.015772	.0896915	-0.18	0.860	-.1915641	.1600201
dummy_2006	.0045036	.0707575	0.06	0.949	-.1341786	.1431857
mvp	-.1104551	.0969003	-1.14	0.254	-.3003762	.079466
domestic50	.0515888	.1139634	0.45	0.651	-.1717753	.274953
foreign_50	-.4598137	.4427516	-1.04	0.299	-1.327591	.4079634
_1_i	.2634711	.4188886	0.63	0.529	-.5575355	1.084478
_2_i	-1.322194	4.32147	-0.31	0.760	-9.792119	7.14773
_3_i	-.4667558	.4976837	-0.94	0.348	-1.442198	.5086864
_4_i	-.1140428	.2768736	-0.41	0.680	-.656705	.4286194
_6_i	.2592684	.5130095	0.51	0.613	-.7462117	1.264749
_7_i	.1663229	.3533687	0.47	0.638	-.526267	.8589129
_8_i	-.2157379	.3129206	-0.69	0.491	-.8290511	.3975752
_9_i	-.03151	.2939055	-0.11	0.915	-.6075542	.5445342
_11_i	1.683541	1.608936	1.05	0.295	-1.469916	4.836997
_13_i	7.207634	9.181168	0.79	0.432	-10.78713	25.20239
_14_i	.035167	.3628748	0.10	0.923	-.6760545	.7463885
_cons	-3.839292	4.493595	-0.85	0.393	-12.64658	4.967992

```
------------------------------------------------------------------------------
Arellano-Bond test for AR(1) in first differences: z =  -1.10  Pr > z =  0.271
Arellano-Bond test for AR(2) in first differences: z =   0.45  Pr > z =  0.654
------------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(27)   = 177.22  Prob > chi2 =  0.000
  (Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(27)   =  30.05  Prob > chi2 =  0.312
  (Robust, but can be weakened by many instruments.)

Difference-in-Hansen tests of exogeneity of instrument subsets:
```

```
  GMM instruments for levels

    Hansen test excluding group:     chi2(11)    =  14.62  Prob > chi2 =  0.200

    Difference (null H = exogenous): chi2(16)    =  15.43  Prob > chi2 =  0.494

  gmm(L.roe, lag(1 2))

    Hansen test excluding group:     chi2(22)    =  23.33  Prob > chi2 =  0.383

    Difference (null H = exogenous): chi2(5)     =   6.72  Prob > chi2 =  0.242

  gmm(lnoctop5 solvency liquidity size, lag(2 2))

    Hansen test excluding group:     chi2(0)     =   0.00  Prob > chi2 =      .

    Difference (null H = exogenous): chi2(27)    =  30.05  Prob > chi2 =  0.312

  iv(leverage rd_sale_turnover fixsale_turnover utility finance dummy_2008 dummy_2007
dummy_2006 dummy_2005 mvp domestic50 foreign_50 _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i
_12_i _13_i _14_i _15_i)

    Hansen test excluding group:     chi2(5)     =   6.54  Prob > chi2 =  0.257

    Difference (null H = exogenous): chi2(22)    =  23.51  Prob > chi2 =  0.373
```

Specification 3 using solvency as potentially endogenous variable

```
xtabond2  roe L.roe lnoctop5 leverage  rd_sale_turnover   size  solvency liquidity
fixsale_turnover utility finance  dummy_2008   dummy_2007     dummy_2006   dummy_2005 mvp
domestic50 foreign_50 _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i  ,
gmm(L.roe , laglimits(1 2)) gmm(lnoctop5  solvency, laglimits(2 2)) iv(leverage
rd_sale_turnover   fixsale_turnover  utility finance   liquidity size  dummy_2008   dummy_2007
dummy_2006   dummy_2005  mvp  domestic50 foreign_50 _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i
_11_i _12_i _13_i _14_i _15_i ) two  robust

------------------------------------------------------------------------------

Group variable: code_number                     Number of obs      =       755

Time variable : year                            Number of groups   =       204

Number of instruments = 45                      Obs per group: min =         1

Wald chi2(27) =  14526.72                                      avg =      3.70

Prob > chi2   =     0.000                                      max =         4

------------------------------------------------------------------------------

             |              Corrected

         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

         roe |

         L1. |   .0026933    .001888     1.43   0.154    -.0010072    .0063937

             |

    lnoctop5 |   .1487216   .1243703     1.20   0.232    -.0950398     .392483

    leverage |  -.0201705   .0641586    -0.31   0.753     -.145919     .105578

rd_sale_tu~r |    .000172   .0000763     2.25   0.024     .0000224    .0003216

        size |   .0517512   .0401927     1.29   0.198     -.027025    .1305274

    solvency |   .0030512   .0001085    28.11   0.000     .0028385     .003264
```

liquidity	-.0021091	.003455	-0.61	0.542	-.0088807	.0046625
fixsale_tu~r	3.76e-07	8.18e-07	0.46	0.646	-1.23e-06	1.98e-06
utility	-6.973567	4.148906	-1.68	0.093	-15.10527	1.158139
finance	-.430462	.4178135	-1.03	0.303	-1.249361	.3884375
dummy_2008	-.1243956	.0920418	-1.35	0.177	-.3047943	.0560031
dummy_2007	-.0340277	.0498435	-0.68	0.495	-.131719	.0636637
dummy_2006	.0025923	.0808859	0.03	0.974	-.1559411	.1611258
mvp	.0687253	.075901	0.91	0.365	-.0800379	.2174885
domestic50	-.2633364	.1836715	-1.43	0.152	-.623326	.0966531
foreign_50	-.4347849	.2006273	-2.17	0.030	-.8280072	-.0415626
_1_i	.0195647	.2054242	0.10	0.924	-.3830593	.4221886
_2_i	-2.839082	9.233794	-0.31	0.758	-20.93699	15.25882
_3_i	-.0558781	.230632	-0.24	0.809	-.5079086	.3961523
_4_i	-.2905074	.2126507	-1.37	0.172	-.7072952	.1262803
_6_i	.1020409	.4042993	0.25	0.801	-.6903711	.8944529
_7_i	-.0996867	.1476416	-0.68	0.500	-.389059	.1896856
_8_i	-.3312543	.2100225	-1.58	0.115	-.7428907	.0803822
_9_i	-.1130243	.1598632	-0.71	0.480	-.4263505	.2003019
_11_i	.3203499	.7115861	0.45	0.653	-1.074333	1.715033
_13_i	10.8404	15.80685	0.69	0.493	-20.14046	41.82126
_14_i	-.2971565	.188362	-1.58	0.115	-.6663393	.0720263
_cons	-.6946611	.6053907	-1.15	0.251	-1.881205	.4918829

```
------------------------------------------------------------------------------
Arellano-Bond test for AR(1) in first differences: z =  -1.12  Pr > z =  0.261
Arellano-Bond test for AR(2) in first differences: z =   1.64  Pr > z =  0.102
------------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(17)   = 144.38  Prob > chi2 =  0.000
  (Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(17)   =  21.35  Prob > chi2 =  0.211
  (Robust, but can be weakened by many instruments.)
Difference-in-Hansen tests of exogeneity of instrument subsets:
  GMM instruments for levels
    Hansen test excluding group:     chi2(7)    =   5.39  Prob > chi2 =  0.612
    Difference (null H = exogenous): chi2(10)   =  15.96  Prob > chi2 =  0.101
  gmm(L.roe, lag(1 2))
    Hansen test excluding group:     chi2(10)   =   8.26  Prob > chi2 =  0.604
    Difference (null H = exogenous): chi2(7)    =  13.09  Prob > chi2 =  0.070
```

```
  gmm(lnoctop5 solvency, lag(2 2))
    Hansen test excluding group:     chi2(4)    =   1.90  Prob > chi2 =  0.754
    Difference (null H = exogenous): chi2(13)   =  19.45  Prob > chi2 =  0.11
```

Specification 3 using liquidity as potentially endogenous variable

```
------------------------------------------------------------------------------
Group variable: code_number                     Number of obs      =       755
Time variable : year                            Number of groups   =       204
Number of instruments = 53                      Obs per group: min =         1
Wald chi2(27) =    102.50                                      avg =      3.70
Prob > chi2   =     0.000                                      max =         4
------------------------------------------------------------------------------
             |              Corrected
         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         roe |
         L1. |   .0006327   .0010339     0.61   0.541    -.0013937    .0026592
    lnoctop5 |   .0042137   .0364388     0.12   0.908     -.067205    .0756324
    leverage |  -.0644219   .0703277    -0.92   0.360    -.2022617    .0734179
rd_sale_tu~r |    .000135   .0000837     1.61   0.107     -.000029    .0002991
        size |   .0259639   .0348549     0.74   0.456    -.0423505    .0942783
    solvency |   .0035508   .0008636     4.11   0.000     .0018582    .0052435
   liquidity |  -.0045389   .0056597    -0.80   0.423    -.0156317    .0065539
fixsale_tu~r |   4.68e-07   7.35e-07     0.64   0.524    -9.73e-07    1.91e-06
     utility |  -3.609842   3.365052    -1.07   0.283    -10.20522    2.985538
     finance |  -.0005921   .2324889    -0.00   0.998    -.4562619    .4550777
  dummy_2008 |  -.0021533    .048298    -0.04   0.964    -.0968157     .092509
  dummy_2007 |   .0336067   .0374045     0.90   0.369    -.0397049    .1069182
  dummy_2006 |    .022891   .0659535     0.35   0.729    -.1063754    .1521574
         mvp |  -.0440223   .0779016    -0.57   0.572    -.1967066    .1086621
  domestic50 |  -.0134075   .0982788    -0.14   0.891    -.2060303    .1792153
  foreign_50 |  -.1227826   .1012043    -1.21   0.225    -.3211395    .0755743
```

_1_i	.0034853	.1268018	0.03	0.978	-.2450416	.2520122
_2_i	3.251922	5.8287	0.56	0.577	-8.172121	14.67597
_3_i	.0009036	.1395072	0.01	0.995	-.2725256	.2743328
_4_i	-.1283905	.1387862	-0.93	0.355	-.4004065	.1436254
_6_i	.5056567	.3872187	1.31	0.192	-.2532781	1.264591
_7_i	.01777	.0634061	0.28	0.779	-.1065038	.1420438
_8_i	-.0935263	.0861395	-1.09	0.278	-.2623567	.0753041
_9_i	-.0213055	.1437444	-0.15	0.882	-.3030394	.2604285
_11_i	.7946313	1.27491	0.62	0.533	-1.704146	3.293409
_13_i	-1.244609	8.13999	-0.15	0.878	-17.1987	14.70948
_14_i	-.031261	.0777749	-0.40	0.688	-.1836969	.1211749
_cons	-.3326151	.5062201	-0.66	0.511	-1.324788	.659558

APPENDIX 4.5

Specification 1 –Fixed effect

```
xtreg  roe l.roe  mvp  size top5_oc leverage liquidity solvency rd_sale_turnover
fixsale_turnover media utility finance individual __state privatization_fund other_company
foreign_own dummy_2008 dummy_2007 dummy_2006 dummy_2005 _1_i _2_i _3_i _4_i _6_i _7_i _9_i
_9_i _11_i _13_i,fe
```

```
Fixed-effects (within) regression               Number of obs      =       729
Group variable: code_number                     Number of groups   =       204
R-sq:  within  = 0.0894                         Obs per group: min =         1
       between = 0.0083                                        avg =       3.6
       overall = 0.0016                                        max =         4
                                                F(20,505)          =      2.48
corr(u_i, Xb)  = -0.5765                        Prob > F           =    0.0004
------------------------------------------------------------------------------
         roe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
roe |
         L1. |  -.0057807   .0020071    -2.88   0.004    -.0097239   -.0018375
                                              |
         mvp |   .8480351   .4485977     1.89   0.059    -.0333125    1.729383
        size |  -.1307819    .095724    -1.37   0.172    -.3188483    .0572845
     top5_oc |   .0008673   .0060407     0.14   0.886    -.0110007    .0127353
    leverage |  -.0311539   .0835955    -0.37   0.710    -.1953917    .1330839
   liquidity |   .0219411   .0100948     2.17   0.030     .0021082     .041774
    solvency |   .0030072   .0005707     5.27   0.000     .0018859    .0041284
rd_sale_tu~r |  -.0001437   .0025999    -0.06   0.956    -.0052516    .0049642
fixsale_tu~r |   1.06e-06   6.88e-06     0.15   0.878    -.0000125    .0000146
  individual |  -.1425532   .3547834    -0.40   0.688    -.8395864      .55448
     __state |    .103213   .3501822     0.29   0.768    -.5847804    .7912064
privatizat~d |  -.1205788   .3836291    -0.31   0.753    -.8742844    .6331268
```

```
other_comp~y |   .0248102   .3130864     0.08   0.937    -.5903021    .6399225
 foreign_own |  -.1128894   .2296107    -0.49   0.623    -.5639991    .3382204
  dummy_2008 |   .0747351   .1426951     0.52   0.601     -.205614    .3550842
  dummy_2007 |   .1527615   .1361212     1.12   0.262    -.1146721    .4201952
  dummy_2006 |   .0425806   .1255056     0.34   0.735    -.2039968    .2891581
  dummy_2005 |     .05067   .1202246     0.42   0.674    -.1855319    .2868719
        _7_i |  -.1003391   .8289083    -0.12   0.904    -1.728873    1.528194
        _9_i |   .1189153   .9858733     0.12   0.904    -1.818003    2.055834
       _cons |   1.610107   1.596893     1.01   0.314    -1.527265    4.747479
-------------+----------------------------------------------------------------
sigma_u |   .9145373
  sigma_e |  .94052874
      rho |  .48599169   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(203, 505) =     1.74           Prob > F = 0.0000
```

Specification 1 –OLS

regress roe l.roe mvp size top5_oc leverage liquidity solvency rd_sale_turnover fixsale_turnover media utility finance individual __state privatization_fund other_company foreign_own dummy_2008 dummy_2007 dummy_2006 dummy_2005 _1_i _2_i _3_i _4_i _6_i _7_i _9_i _9_i _11_i _13_i

```
      Source |       SS       df       MS              Number of obs =     755
-------------+------------------------------           F( 30,   724) =    2.93
       Model |  92.5388059    30  3.08462686           Prob > F      =  0.0000
    Residual |  762.129618   724  1.05266522           R-squared     =  0.1083
-------------+------------------------------           Adj R-squared =  0.0713
       Total |  854.668424   754   1.1335125           Root MSE      =   1.026
------------------------------------------------------------------------------
         roe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         roe |
   L1.  |    .0017746   .0017879     0.99   0.321    -.0017354    .0052847
             |
         mvp |  -.1944102   .0867081    -2.24   0.025    -.3646395   -.0241809
        size |  -.0249857   .0231197    -1.08   0.280    -.0703754    .0204041
     top5_oc |   .0026561   .0024061     1.10   0.270    -.0020676    .0073797
    leverage |  -.0198777   .0475583    -0.42   0.676    -.1132464     .073491
```

liquidity	.0057403	.0065192	0.88	0.379	-.0070584	.018539
solvency	.0030374	.0005073	5.99	0.000	.0020415	.0040333
rd_sale_tu~r	.000026	.0003593	0.07	0.942	-.0006795	.0007314
fixsale_tu~r	2.08e-06	6.10e-06	0.34	0.733	-9.89e-06	.0000141
media	-.0095776	.528023	-0.02	0.986	-1.046217	1.027061
utility	.0077018	.5428036	0.01	0.989	-1.057955	1.073359
finance	.164176	.2688559	0.61	0.542	-.3636543	.6920062
individual	.0194061	.2665206	0.07	0.942	-.5038394	.5426517
__state	.0743689	.2739288	0.27	0.786	-.4634208	.6121586
privatizat~d	.1279882	.2917029	0.44	0.661	-.4446963	.7006727
other_comp~y	.075039	.2521768	0.30	0.766	-.4200462	.5701241
foreign_own	-.0494336	.134007	-0.37	0.712	-.3125224	.2136551
dummy_2008	-.0135723	.1275686	-0.11	0.915	-.2640207	.2368762
dummy_2007	.1068945	.1236559	0.86	0.388	-.1358725	.3496615
dummy_2006	.0171863	.123069	0.14	0.889	-.2244284	.258801
dummy_2005	.0049574	.1213988	0.04	0.967	-.2333782	.2432931
_1_i	.2001309	.2653051	0.75	0.451	-.3207283	.7209902
_2_i	-.1184782	.4353527	-0.27	0.786	-.9731827	.7362263
_3_i	.255999	.2284844	1.12	0.263	-.1925722	.7045701
_4_i	-.1260358	.1221566	-1.03	0.303	-.3658592	.1137876
_6_i	.5043516	.1924589	2.62	0.009	.1265075	.8821958
_7_i	.0356776	.120406	0.30	0.767	-.200709	.2720643
_9_i	-.0145633	.1589556	-0.09	0.927	-.3266322	.2975057
_9_i	(omitted)					
_11_i	.8491009	.2314457	3.67	0.000	.3947161	1.303486
_13_i	.3462153	.5274304	0.66	0.512	-.6892603	1.381691
_cons	.1713074	.496861	0.34	0.730	-.804153	1.146768

Specification 2 –Fixed effect

```
Fixed-effects (within) regression               Number of obs      =       755
Group variable: code_number                     Number of groups   =       204
R-sq:  within  = 0.0660                         Obs per group: min =         1
       between = 0.0136                                        avg =       3.7
       overall = 0.0005                                        max =         4
```

```
                                                F(21,530)         =      1.78
corr(u_i, Xb)  = -0.5187                        Prob > F          =    0.0175

------------------------------------------------------------------------------
         roe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         roe |
         L1. |  -.0034047   .0019289    -1.77   0.078     -.007194    .0003846
             |
         mvp |   .7779666   .4333644     1.80   0.073     -.073356    1.629289
        size |  -.0383625   .0836345    -0.46   0.647    -.2026582    .1259333
     top5_oc |   .0004121   .0058859     0.07   0.944    -.0111505    .0119747
    leverage |   -.030571   .0742292    -0.41   0.681    -.1763905    .1152486
   liquidity |   .0097328   .0072803     1.34   0.182     -.004569    .0240347
    solvency |   .0027937    .000558     5.01   0.000     .0016974    .0038899
rd_sale_tu~r |   .0000159   .0005561     0.03   0.977    -.0010766    .0011084
fixsale_tu~r |   1.28e-06   6.84e-06     0.19   0.851    -.0000121    .0000147
  individual |  -.0804512   .3418947    -0.24   0.814    -.7520863    .5911838
     __state |   .1308716   .3399015     0.39   0.700    -.5368478     .798591
privatizat~d |  -.0663695   .3718726    -0.18   0.858    -.7968946    .6641555
other_comp~y |   .0389592   .3046749     0.13   0.898    -.5595594    .6374778
 foreign_own |  -.1009963   .2275832    -0.44   0.657    -.5480721    .3460796
  dummy_2008 |   .0113034   .1397788     0.08   0.936     -.263285    .2858918
  dummy_2007 |    .136746   .1330775     1.03   0.305    -.1246781    .3981702
  dummy_2006 |    .009781   .1245294     0.08   0.937    -.2348508    .2544129
  dummy_2005 |   .0331849   .1188151     0.28   0.780    -.2002213    .2665912
        _4_i |   .0750741    1.38159     0.05   0.957    -2.638991    2.789139
        _7_i |  -.0344469   .8296693    -0.04   0.967    -1.664291    1.595397
        _9_i |   .1451403   .9866284     0.15   0.883    -1.793042    2.083323
       _cons |   .2459018   1.483927     0.17   0.868    -2.669198    3.161002
-------------+----------------------------------------------------------------
                                     sigma_u |  .81707831
                                     sigma_e |  .94196142
                     rho |  .42936099   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(203, 530) =     1.62            Prob > F = 0.0000
```

Specification 2 –OLS

```
Regress  roe l.roe  mvp  size top5_oc leverage liquidity solvency rd_sale_turnover
fixsale_turnover media utility finance individual __state privatization_fund other_company
foreign_own dummy_2008 dummy_2007 dummy_2006 dummy_2005 _1_i _2_i _3_i _4_i _6_i _7_i _9_i
_9_i _11_i _13_i
```

```
   Source |       SS       df       MS              Number of obs =     755
-------------+------------------------------           F( 30,   724) =    2.93
       Model |  92.5388059    30  3.08462686           Prob > F      =  0.0000
    Residual |  762.129618   724  1.05266522           R-squared     =  0.1083
-------------+------------------------------           Adj R-squared =  0.0713
       Total |  854.668424   754   1.1335125           Root MSE      =   1.026

------------------------------------------------------------------------------
         roe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         roe |
         L1. |   .0017746   .0017879     0.99   0.321    -.0017354    .0052847
             |
         mvp |  -.1944102   .0867081    -2.24   0.025    -.3646395   -.0241809
        size |  -.0249857   .0231197    -1.08   0.280    -.0703754    .0204041
     top5_oc |   .0026561   .0024061     1.10   0.270    -.0020676    .0073797
    leverage |  -.0198777   .0475583    -0.42   0.676    -.1132464     .073491
   liquidity |   .0057403   .0065192     0.88   0.379    -.0070584     .018539
    solvency |   .0030374   .0005073     5.99   0.000     .0020415    .0040333
rd_sale_tu~r |    .000026   .0003593     0.07   0.942    -.0006795    .0007314
fixsale_tu~r |   2.08e-06   6.10e-06     0.34   0.733    -9.89e-06    .0000141
       media |  -.0095776    .528023    -0.02   0.986    -1.046217    1.027061
     utility |   .0077018   .5428036     0.01   0.989    -1.057955    1.073359
     finance |    .164176   .2688559     0.61   0.542    -.3636543    .6920062
  individual |   .0194061   .2665206     0.07   0.942    -.5038394    .5426517
     __state |   .0743689   .2739288     0.27   0.786    -.4634208    .6121586
privatizat~d |   .1279882   .2917029     0.44   0.661    -.4446963    .7006727
other_comp~y |    .075039   .2521768     0.30   0.766    -.4200462    .5701241
 foreign_own |  -.0494336    .134007    -0.37   0.712    -.3125224    .2136551
  dummy_2008 |  -.0135723   .1275686    -0.11   0.915    -.2640207    .2368762
  dummy_2007 |   .1068945   .1236559     0.86   0.388    -.1358725    .3496615
```

dummy_2006	.0171863	.123069	0.14	0.889	-.2244284	.258801
dummy_2005	.0049574	.1213988	0.04	0.967	-.2333782	.2432931
_1_i	.2001309	.2653051	0.75	0.451	-.3207283	.7209902
_2_i	-.1184782	.4353527	-0.27	0.786	-.9731827	.7362263
_3_i	.255999	.2284844	1.12	0.263	-.1925722	.7045701
_4_i	-.1260358	.1221566	-1.03	0.303	-.3658592	.1137876
_6_i	.5043516	.1924589	2.62	0.009	.1265075	.8821958
_7_i	.0356776	.120406	0.30	0.767	-.200709	.2720643
_9_i	-.0145633	.1589556	-0.09	0.927	-.3266322	.2975057
_9_i	(omitted)					
_11_i	.8491009	.2314457	3.67	0.000	.3947161	1.303486
_13_i	.3462153	.5274304	0.66	0.512	-.6892603	1.381691
_cons	.1713074	.496861	0.34	0.730	-.804153	1.146768

SPECIFICATION 3 FE

. xtreg roe L.roe lnoctop5 leverage rd_sale_turnover size solvency liquidity utility finance dummy_2008 dummy_2007 dummy_2006 dummy_2005 mvp domestic50 __state_50 foreign_50 _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i _12_i _13_i _14_i _15_i, fe

```
Fixed-effects (within) regression               Number of obs      =       755
Group variable: code_number                     Number of groups   =       204

R-sq:  within  = 0.0735                         Obs per group: min =         1
       between = 0.0066                                        avg =       3.7
       overall = 0.0002                                        max =         4

                                                F(18,533)          =      2.35
corr(u_i, Xb)  = -0.6229                        Prob > F           =    0.0014
```

roe	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
roe						
L1.	-.0034075	.0018566	-1.84	0.067	-.0070547	.0002397
lnoctop5	-.0104638	.0460657	-0.23	0.820	-.1009563	.0800288
leverage	-.0448231	.0699553	-0.64	0.522	-.182245	.0925987

```
rd_sale_tu~r |  -.0000606   .0005465    -0.11   0.912    -.0011341    .0010129
        size |  -.0692664   .0812403    -0.85   0.394    -.2288568    .0903241
    solvency |   .0028356   .0005401     5.25   0.000     .0017747    .0038965
   liquidity |   .0014962   .0048982     0.31   0.760    -.0081259    .0111183
     utility |  (omitted)
     finance |  (omitted)
  dummy_2008 |   .0555358   .1094842     0.51   0.612    -.1595375    .2706092
  dummy_2007 |   .1445996   .1023606     1.41   0.158      -.05648    .3456792
  dummy_2006 |   .0135865    .097593     0.14   0.889    -.1781276    .2053006
  dummy_2005 |  (omitted)
         mvp |   1.117452   .4742094     2.36   0.019      .185903       2.049
  domestic50 |  -.0768706   .1559302    -0.49   0.622    -.3831838    .2294426
  __state_50 |    .114237   .2319772     0.49   0.623    -.3414647    .5699388
  foreign_50 |  -.1709819   .2358512    -0.72   0.469    -.6342937      .29233
        _1_i |  (omitted)
        _2_i |  (omitted)
        _3_i |  (omitted)
        _4_i |  (omitted)
        _6_i |  (omitted)
        _7_i |  -.3180637   .8830358    -0.36   0.719    -2.052721    1.416594
        _8_i |  -.3278131   .8893519    -0.37   0.713    -2.074878    1.419252
        _9_i |  -.2659451   1.370868    -0.19   0.846    -2.958911    2.427021
       _11_i |  (omitted)
       _12_i |  (omitted)
       _13_i |  (omitted)
       _14_i |  (omitted)
       _15_i |  -.5208116   1.885302    -0.28   0.782    -4.224345    3.182722
       _cons |   .8230133   1.362393     0.60   0.546    -1.853304    3.499331
-------------+----------------------------------------------------------------
     sigma_u |  .95277942
     sigma_e |  .91513951
         rho |  .52014254   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(203, 533) =     1.94            Prob > F = 0.0000
```

SPECIFICATION 3 OLS

```
. regress  roe L.roe lnoctop5 leverage  rd_sale_turnover   size  solvency liquidity   utility
finance  dummy_2008   dummy_2007    dummy_2006   dummy_2005

> mvp  domestic50    __state_50 foreign_50   _1_i _2_i _3_i _4_i _6_i _7_i _8_i _9_i _11_i
_12_i _13_i _14_i _15_i

note: utility omitted because of collinearity

note: dummy_2008 omitted because of collinearity

note: _12_i omitted because of collinearity


      Source |       SS       df       MS              Number of obs =     755

-------------+------------------------------           F( 27,   727) =    3.70

       Model |  106.706163    27  3.9520801            Prob > F      =  0.0000

    Residual |   776.00818   727  1.06741153           R-squared     =  0.1209

-------------+------------------------------           Adj R-squared =  0.0882

       Total |  882.714342   754  1.17070868           Root MSE      =  1.0332


------------------------------------------------------------------------------

         roe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]

-------------+----------------------------------------------------------------

         roe |

         L1. |   .0011554   .0018113     0.64   0.524    -.0024006    .0047114

             |

    lnoctop5 |   .0297568   .0201793     1.47   0.141    -.0098599    .0693735

    leverage |  -.0527304   .0399088    -1.32   0.187    -.1310807    .0256199

rd_sale_tu~r |   .0001794   .0003633     0.49   0.622    -.0005338    .0008926

        size |   .0063773    .022086     0.29   0.773    -.0369827    .0497372

    solvency |    .003252   .0005148     6.32   0.000     .0022414    .0042626

   liquidity |  -.0043664   .0048889    -0.89   0.372    -.0139645    .0052316

     utility |  (omitted)

     finance |   .0692212   .5679468     0.12   0.903    -1.045791    1.184233

  dummy_2008 |  (omitted)

  dummy_2007 |   .0824425   .1060456     0.78   0.437    -.1257496    .2906346

  dummy_2006 |  -.0035257   .1068998    -0.03   0.974    -.2133948    .2063433

  dummy_2005 |  -.0074071   .1098544    -0.07   0.946    -.2230769    .2082626

         mvp |  -.1608723    .085254    -1.89   0.060    -.3282457    .0065011

  domestic50 |   .0090565   .0925862     0.10   0.922    -.1727116    .1908247
```

```
  __state_50 |  -.1468098     .15716    -0.93   0.351    -.4553514    .1617318
  foreign_50 |  -.2465112   .1489363    -1.66   0.098    -.5389078    .0458853
        _1_i |   .1400096   .6029914     0.23   0.816    -1.043803    1.323822
        _2_i |  -.0832316   .6957701    -0.12   0.905     -1.44919    1.282727
        _3_i |   .2110371   .5791595     0.36   0.716    -.9259876    1.348062
        _4_i |  -.1583347   .5507729    -0.29   0.774     -1.23963    .9229605
        _6_i |   .5885221   .5708529     1.03   0.303    -.5321949    1.709239
        _7_i |   .0434365   .5551654     0.08   0.938    -1.046482    1.133355
        _8_i |  -.0444892   .5527232    -0.08   0.936    -1.129613    1.040635
        _9_i |   .0054669   .5525611     0.01   0.992    -1.079339    1.090273
       _11_i |   .9016199   .5892021     1.53   0.126    -.2551208    2.058361
       _12_i |  (omitted)
       _13_i |    .237966   .7576119     0.31   0.754    -1.249402    1.725334
       _14_i |   .0438976   .6226429     0.07   0.944    -1.178495     1.26629
       _15_i |   .0714515   .6025259     0.12   0.906    -1.111447     1.25435
       _cons |  -.0722378   .7035463    -0.10   0.918    -1.453463    1.308987
------------------------------------------------------------------------------
```

-

APPENDIX 4.6

Figure A4.8 Histogram of the dependent variable ROE [-2, 2]

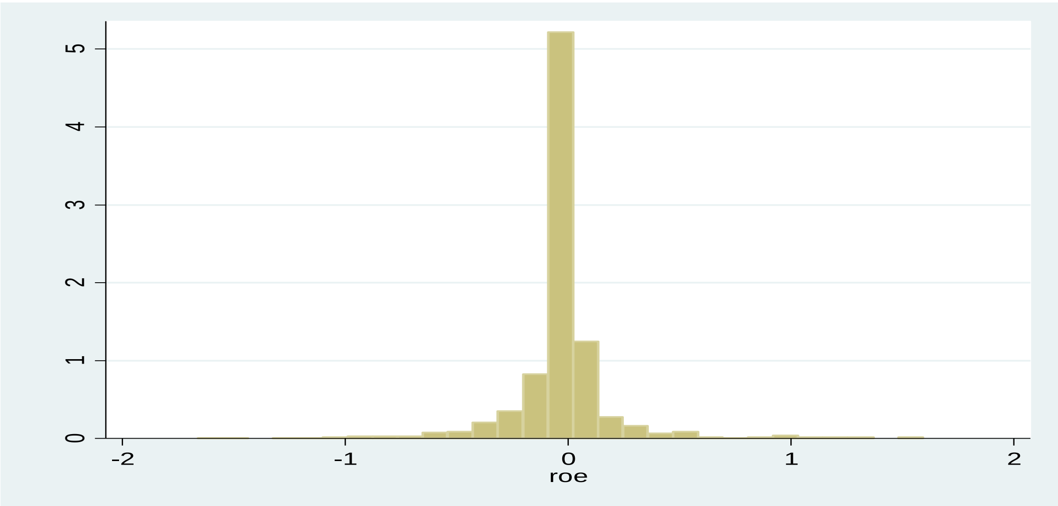

Figure A4.9 Histogram of the dependent variable ROE [-5, 5]