Relationship between C.E.O Ownership and the Debt

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Abstract

There are many studies investigating the causal relationship between C.E.O ownership and the debt using time series data, but there are not many investigating causality using panel data. In this paper, we estimate the dynamic relationship between C.E.O ownership and the debt. Our empirical study recently bases on various estimation methods developed within dynamic panel framework for a sample of 70 U.S. firms over the period (2000-2009). We used Generalized Moment Method, causality tests and unit root applied to panel data. Results suggest a negative and significant relation between C.E.O ownership and the debt for all firms sample.

Keywords: C.E.O ownership, the debt, Dynamic Panel Data, Cointegration, Unit root test, FMOLS.

1. Introduction

Berger, Ofek and Yermack (1997) studied the effect of managerial entrenchment, managerial incentives and corporate governance on a firm's choice of financing in a single equation model. The authors included CEO tenure, CEO ownership of stock and options and various measures of board influence and monitoring as well as the standard financial control variables (e.g., growth opportunities, firm size, etc.). A large capital structure literature emphasizes the role of debt in reducing agency conflicts between managers and shareholders (i.e. Grossman and Hart (1982), Jensen (1986), Stulz (1990), Hart (1995), Hart and Moore (1995)). Some of these theories emphasize the role of *debt* structure, in addition to the level of debt, in mitigating agency problems. We investigate the effects of C.E.O ownership on corporate activity by focusing on the relation between CEO equity stakes and corporate bond yield spreads. If C.E.O ownership provides incentives to reduce executive shirking, decrease empire building, minimize the acceptance of value-reducing projects, or reduce managerial myopia, then we anticipate a negative relation between debt yield spreads and managerial equity ownership. Yet, arguments of greater risk seeking and C.E.O entrenchment, suggest a positive relation between corporate yield spreads and C.E.O ownership.

However, the inference that managerial ownership should lead to higher debt costs is not complete. Morck, Shleifer, Vishny (1988) and McConnell and Servaes (1990) suggest that executive equity-ownership reduces opportunistic behavior by managers and creates incentives to Causality between C.E.O ownership and the debt has been a topical issue for several decades invest greater effort in directing firm resources. The remainder of the paper is organized as follows. Section II describes the data and provides sample statistics. Section III examines the robustness of results, and Section IV concludes.

2. Data, Model and Econometrics Methodology

2.1. Data

Since corporate governance is a central explanatory variable in this study, we start with its description. We use the entrenchment index introduced by Gompers et al. (2003). This paper analyzes how managerial entrenchment influences the type of debt firms issue. Marchica (2005) analyzes the relationship between CEO ownership and the debt. More specifically, she investigates the possibility relationship between debt and ownership. Her theoretical development recognizes the possibility of a divergence of interests between shareholders and managers.

This paper uses the panel data set to investigate the relation between C.E.O ownership and the debt. The sample includes 70 largest publicly traded firms by the year 2000 assets that are headquarter in the United States and operated at anytime between 2000 and 2009. We use Worldscope database to identify listed firms in USA for the period 2000 to 2009.

2.2. Empirical model

Based on predictions of the finance theory and our earlier discussion, we consider the empirical model described as follows:

DIRIG it = β_0 + β_1*L1 it+ β_2*L2it + β_3*TAILL it+ β_4*AG it+ β_5Qit + β_6*S it+ e it (1)

Where:

DIRIG: The capital held by C.E.O
L1 : Total debt in book value
L2 : Total debt in market value
TAILL : Firm size
AG : Firm age
Q : Opportunities of growth
S : Structure of asset
e is the error term.

We use the regression model above to test the association between C.E.O ownership and the debt.

CEO ownership is the percentage of common shares held by the Chief Executive Officer of the firm.

We develop one hypothesis in this paper; the hypothesis is to test whether the relation between CEO ownership and the debt is significant. This hypothesis is based on the views of Griffith (1999) and Griffith et al. (2002). In an influential paper, Berger, Ofek, and Yermack (1997) used managerial stock ownership as a proxy for managerial entrenchment. They show that entrenched managers (proxied by direct stock ownership, vested option holdings, CEO tenure, board composition, excess compensation, and the presence of a blockholder) use less debt in their capital structure, consistent with entrenchment models of leverage.

The next pair of governance variable (CEO ownership) measures the alignment of interests between the CEO and owners. Consistent with the preceding discussion, we expect the first order linear effect on leverage to be positive but the effect on debt to be determined by whether overinvestment or underinvestment is the most significant concern of owners (Marchica, 2005).

In this section we consider multiple explanations that may be driving the positive relationship between C.E.O ownership and the debt. We formulate one testable hypothesis based on these alternate explanations and provide some evidence on the contribution of these different channels.

Hypothesis H1 predicts that, the debt is positively associated with the C.E.O ownership.

2.3. Econometric Methodology

2.3.1. ***Unit root and cointegration studies***

The unit root tests became a current step for analysis of time series stationnarity. However, practical application of these tests on panel data is recent. The tests most frequently used are those of Levin and Lin (2002) (LL) and of Im, Pesaran and Shin (2003) (IPS)**.**We start by testing for the existence of unit roots in the data series. Many tests have been proposed to test for the null of no stationnarity in panels. Quah (1992, 1994) tests assume homogeneity across members and do not, therefore, allow for any heterogeneity across the panel. Levin and Lin (1993) tests extend Quah's (1992, 1994) work. They derived the asymptotic distribution for panel unit root tests that allow for member-specific effects and time trend The Augmented Dickey and Fuller (ADF) (1979, 1981) test is based on the following regression model:

$$\Delta y_{it} = \alpha_i + \Theta_i t + \beta y_{it-1} + \sum_{j=1}^{p} \gamma_j \Delta y_{it-j} + e_{it}$$

In this paragraph we seek to study non-stationary properties and coïntegration and to study stationnarity we try to use Levin Lin and IPS tests.

2.3.2 Fully Modified Ordinary Least Square (FMOLS)

In this study, we employ both the within-dimension and between-dimension panel FMOLS tests from Pedroni (1996, 2000). We also employ the weighted panel DOLS estimator from Kao and Chiang (1997) and the unweighted panel DOLS estimator from Mark and Sul (1999). However, both of these DOLS estimators are within-dimension estimators. Thus, for comparison with the between-dimension "group-mean" panel FMOLS estimator, we also introduce here an analogous between-dimension, group-mean panel DOLS estimator.
When order of integration is decides than for the long run elasiticities, utilize the FMOLS method.

FMOLS was originally designed first time by [Philips and Hansen, (1990); Pedroni, (1995, 2000); and, Philips and Moon, (1999)] to provide optimal estimates of Co-integration regressions (Bum and Jeon, 2005). This technique employs kernal estimators of the Nuisance parameters that affect the asymptotic distribution of the OLS estimator. In order to achieve asymptotic efficiency, this technique modifies least squares to account for serial correlation effects and test for the endogeneity in the regressors that result from the existence of a Co-integrating Relationships (Philip and Hansen, 1990) and (Hansen, (1995). Although this non-parametric approach is an elegant way to deal with nuisance parameters, it may be problematic especially in fairly very small samples. To apply the FMOLS for estimating long-run parameters, the condition that there exists a Cointegration relation between a set of I (1) variables is satisfied. There fore we have to confirm the presence of the unit root and test the Co-integrating relation.

3. Empirical Result[1]

3.1. Panel Unit root

The results of the panel unit root tests from LLC and IPS tests are reported in Table 1.1 and Table 1.2. In order to determine the presence of a unit root in individual corporate specific data a standard ADF test is employed. For a panel unit root Levin–Lin (1992) and IPS t-bar (1997) tests are conducted. Both the panel tests include a constant and a heterogeneous time trend in their specifications. The test results show that the unit root null could not be rejected and hence the series are generated by an I (1) process.

Table 1.1: Results of panel unit root test (LLC test)

Statistique	DIRIG	L1	L2	Taill	AG	Q	S
Levin-Lin ADF-stat	3,390	-1,603	-2,608	2,130	3,609	-4,721	0,255

Table 1.2: Results of panel unit root test (IPS test)

Statistique	DIRIG	L1	L2	Taill	AG	Q	S
IPS ADF-stat	6,064	-1,173	-5,331	-14,365	1,568	4,653	-10,168

In this section we analyze time series properties of the data during the period 2000-2009.The ADF tests result (Table1.1) shows that the existence of unit root all the six variables that are included in the model. However, the first differences of these variables are stationary under the test. Hence, we conclude that these six variables are integrated of order 1 or I (1).

3.2. Panel Cointegration

The results of the panel cointegration tests from the seven statistics are reported in Table 2. These results suggest rejection of the null of no cointegration for most tests. From results of Pedroni cointegration tests we can notice that the whole of statistics are lower than breaking value of normal law for a threshold of 5% (-1,64). So the whole of these tests requires the existence of a cointegration relation. With an aim of carrying out cointegration tests on panel data and to obtain an estimation of cointegration vectors it is necessary to apply an effective method of estimation, it can therefore be concluded that there is evidence of cointegration, which means that long-run relationship between C.E.O ownership and the debt.

[1] All estimation was done using EVIEWS 5.1 and RATS 5.0.

Table 2: Results of cointegration test

Statistique	Panel v-stat	Panel rho-stat	Panel PP-Stat	Panel ADF-stat	Rho-stat Group[1]	PP-stat Group[1]	Stat-ADF Group[1]
DIRIG, L1, L2, TAILL, AG, Q,S	**-2,158**	**9,885**	**-8,427**	**-0,535**	**14,712**	**-6,742**	**0,302**

[1] it acts of the tests based on dimension BETWEEN

3.3. FMOLS estimation

Since cointegration was found in this panel group, the long-run relationship is estimated using FMOLS. The panel estimators without common time dummies are used. The parameter estimates can be interpreted as long-run elasticities. All the same, Pedroni (1996) affirms that estimators OLS his super-convergent, whereas their asymptotic distributions is skewed and depends on the parameters effects. According to Pedroni, these problems can be marked in heterogeneity presence. For our model estimated cointegrant vectors by FMOLS method is given by (t-student between brackets). The results are shown below:

$$\beta' = \begin{pmatrix} 1 & 350.58 & -1.72 & 1.589 & 65.45 & 0.03 & 6.059 \\ - & (-10.13) & (24.87) & (50.66) & (147.93) & (-1.67) & (-14.48 \end{pmatrix}$$

4. Conclusion

The goal of this paper is to estimate the association between C.E.O ownership and the debt in USA for the period 2000 – 2009. In this paper causality is explored through the following steps. First, the panel unit root tests proposed by LLC (2002) and IPS (2003) are employed. Second, a cointegration test developed by Pedroni (1999) for a panel of firms, which provides for more powerful tests in the sense that it increases the degree of freedom compared to the cross-section approach and also allows different individual effects cross-sectional interdependency, is adopted. Third, the long-run relationship is estimated using the FMOLS technique for heterogeneous cointegrated panels (Pedroni, 2000). Finally, once the panel cointegration is implemented, a panel error correction model to examine for causality between C.E.O ownership and the debt is established. We document a positive relation between CEO ownership and debt yield spreads. Our tests indicate that debt costs decrease by about 5.15 basis points for each additional one percent of the firm's equity held by the CEO. As such, firms where the CEO owns five percent of the firm, enjoy about a 15.55 basis point lower cost of debt (relative to firms with negligible CEOs equity holdings).The results are robust to alternative specifications and measures of the key variables, and are statistically and economically significant.

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