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**Does the Creative Business Promotion Law Enhance
SMEs' Capital Investments? Evidence from a Panel
Dataset of Unlisted SMEs in Japan**

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Does the Creative Business Promotion Law Enhance SMEs' Capital Investments? Evidence from a Panel Dataset of Unlisted SMEs in Japan

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Abstract

This paper examines whether the Creative Business Promotion Law (CBPL) enacted in 1995 has helped to enhance the capital investment of small and medium enterprises (SMEs) in Japan. Using a panel dataset of unlisted manufacturing SMEs in Japan, we examine their investment behavior under a marginal q model, incorporating leverage and annually constructed CBPL-approved dummies. The estimation results showed that CBPL approval substantially increased SMEs' new investments. The positive effect of marginal q , and the negative effect of leverage were also shown, both of which were consistent with the hypothesis of the model.

JEL classification: E22, L50

Keywords: SME; Capital investment; Marginal q ; Creative Business Promotion Law

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1. Introduction

The Japanese economy fell into a lengthy period of stagnation at the beginning of the 1990s. The immediate triggers were the steep rise of the stock and land prices before 1990, and their subsequent drastic and long fall. They have imposed huge losses, both direct and indirect, upon many firms. Moreover, Japanese markets for established leading manufactured products, such as automobiles, motorcycles, electrical and other machinery, became relatively saturated, and the development of technologies in other Asian countries has greatly increased competition for the products in domestic and international markets. Therefore, it has been considered to be necessary 1) to improve and re-structure low productivity industries that remained intact (mainly domestic, including financial, industries) and, 2) by taking risks, to invest in other frontier technologies and business models in order to develop the next generation of industries.

However, the fall in stock and land prices affected not only listed companies, but also unlisted companies, mainly because their debt was usually secured over land and the value had drastically fallen. This damaged their spirit and ability to invest in new technologies and products. As a result, just when the struggle to improve productivity and to develop new technologies became critical for the whole economy, many firms suffered from serious shrinkage of their real asset values and excessive debt. Moreover, small and medium enterprises [SMEs] tended to suffer more seriously from business and financial conditions, than large enterprises.¹

In such dismal economic situations, the Temporary Law concerning Measures for the Promotion of Creative Business Activities of Small and Medium Enterprises (Creative Business Promotion Law [CBPL]), was enforced in April 1995, as temporary legislation for ten years. The objective of this law was to promote and support SMEs' new and innovative business activities. The enactment pioneered a series of new SME policies, which are represented by the enactment of the Law for Facilitating the Creation of New Business in 1998 (including the

¹ This point is clearly illustrated in *Tankan* ("Short-term Economic Survey of Enterprises in Japan") by the Bank of Japan. Further, since the "small enterprises" category in *Tankan* does not cover enterprises with fewer than 20 employees in wholesale, retail, and service industries and 50 in other (including manufacturing) industries, it is probably more serious for the situation of all SMEs including these excluded smaller enterprises.

implementation of the Japanese-style Small Business Innovation Research [SBIR] system), the Law Supporting Business Innovation of Small and Medium Enterprises in 1999, and the amendment of the Small and Medium Enterprise Basic Law in 1999 mentioned in the next section.

This paper examines the effects of the Creative Business Promotion Law. Since the law is a temporary law with a ten-year limit, an evaluation of the effect is also important to consider how the policy should be addressed after April 2005. There are already several papers on the performance of the CBPL. Motohashi (2001), using the panel micro-dataset of the *Manufacturing Census* mentioned in the next section, showed that CBPL-approved establishments in manufacturing industries tended to have a relatively high rate of growth of sales between 1996 and 1999. Eshima (2003), using the dataset along with the results of his own questionnaire survey and the database of Tokyo Shoko Research, Ltd., showed that CBPL-approved firms tended to have relatively high growth rates of both sales and employees between 1996 and 1999.

In contrast to these previous studies and to highlight another aspect, this paper focuses on whether CBPL approval has helped to enhance SMEs' capital investment. If approved firms tend to invest more, we can say that CBPL relaxes the SMEs' financial constraint or encourages the manager to increase investment in capital. This implies that the objective of the law is at least partly accomplished. Further, our analysis includes the period of the crisis in Japan's financial system from 1997 to 1998 (cf. Hoshi and Kashyap, 2001, Chapter 8). If approved firms tended to invest more in this critical period, we can further say that the CBPL supported the SMEs' investment behavior when the financial environment deteriorated severely.

We use the company and financial database provided by Tokyo Shoko Research, Ltd. [TSR], as did, in part, Eshima (2003).² TSR has one of the largest private databases recording SMEs' status in Japan, under conditions of limited and difficult availability of SME data. We construct a panel dataset from the TSR data in manufacturing industries for unlisted SMEs (only joint-stock companies) from 1994 to 1999, and the SME Agency's full list of CBPL-approved firms. It is one of the remarkable features of our paper that we use *all* the data on unlisted SMEs

² However, Eshima (2003) uses a limited and simple dataset for 198 firms and two periods (1996 and 1999) from the TSR database.

under such conditions collected by the TSR.

We examine SMEs' investment behavior applying a marginal q model. We also incorporate leverage (debt–asset ratio) following recent developments in information economics and empirical investment studies. Further, we use annually constructed dummy variables to capture CBPL approval in order to examine the effects of approval. There are almost no studies of the investment behavior of unlisted companies in Japan, despite numerous studies of listed companies. Hence, our study also contributes to the area of investment studies.

This paper is organized as follows. In the next section, we provide a brief explanation of SBPL. In Section 3, we discuss the issues of SME data measurement for Japan, and describe the micro panel dataset used in this paper. In Section 4, we provide the model to be estimated and the definitions of variables used in the estimates, and present the estimation results. Section 5 concludes.

2. Creative Business Promotion Law

The SME Basic Law, which defines the underlying outline of SME policy in Japan, was fundamentally amended in December 1999 for the first time since it was enacted in 1963. In the amendment, the policy concept changed from being designed to “rectify the gap between large enterprises and SMEs in terms of productivity” to “develop and grow a wide range of independent SMEs for greater economic vitality”. Moreover, “promoting creative business activity” (Article 5 and 14) became a core objective of SME policy. Therefore, the enactment of CBPL in 1995 was a forerunner to the amendment of the Basic Law, and it established a scheme to support SMEs' creative business activities in advance.

The support scheme of CBPL is as follows. First, SMEs that intend to conduct “creative business activities” (which are officially defined as “business activities that make use of remarkably novel technology or original business management methods, in those business activities subject to business innovation and start-ups”), submit their plan (“business plan for research and development, etc.”) to the prefectural governor. If the prefectural governor approves the plan, the firm qualifies itself to apply for various support measures as long as the

business is conducted in accordance with the approved plan.³ The support measures include subsidies (mainly “Subsidy for R&D expense for local revitalization creation technology”), debt guarantees by (government-owned) Credit Guarantee Corporations, low-interest loans from public financial institutions such as the Japan Finance Corporation for Small Business, National Life Finance Corporation and Shoko Chukin Bank, financial support such as capital investments and loans by the Public Venture Foundations, and several tax benefits.

The official (i.e., sponsored research from the SME Agency) questionnaire survey of July 2002 (Kansai Research Institute, 2003) showed that the most important reason for CBPL-approved firms was to gain the “subsidy” (48%), “debt guarantee by Credit Guarantee Corporations” (15%), “loan from government financial institution” (10%), and “financial support from the Public Venture Foundations” (5%). Somewhat surprisingly, there were 20% firms that answered the most reason was the “enhancing reputation for technological competitiveness by winning public approval”. This means that public direct financial support is no more than a side issue for 1/5 of approved firms. On the other hand, the official aggregated statistics of each support institutions indicates that subsidy (about 30% of the total number of approved firms) and debt guarantee (about 40%) are main support measures in actual while others are only several percent at most. This suggests that there are non-negligible numbers of approved firms which obtain no support.

It should be noted that all measures, excluding tax benefits, are provided only after specific application that can be made after the CBPL approval. Meanwhile, the scheme potentially covers broad business activities without specifying any particular type of industries, and hence provides many SMEs with the possibility of policy support.⁴ The number of CBPL approvals has been about 1000–1500 per year, and the cumulative total reaches 10056 at the end

³ CBPL has another support scheme, by which the firm that fulfills several conditions (named the “Specified SME”) is provided limited support, through measures such as tax-reductions, without approval of a business plan. However, the main part of the law is to support firms on the basis of approval of a business plan, and thus we focus on the approval-based support scheme in this paper.

⁴ Some critics argue that the complexity and uncertainty caused by the multistage and widely distributed procedures, and the potential ambiguity of the definition of the business activity to be supported (Kansai Research Institute, 2003).

of June 2003, about eight years since its enforcement.⁵

3. Data for Japanese SMEs

To research the effect of CBPL, by definition, we have to obtain SME data. The financial and other data are relatively easy to obtain for large enterprises or listed companies. However, the data for unlisted SMEs are very hard to obtain since they are not generally published. Further, if we intend to obtain a panel dataset of unlisted SMEs across years, the situation becomes more severe.

Our first alternative was to use government censuses and surveys. However, the acquisition and use of government micro data is very difficult as they are provided to researchers only in very limited cases. Further, even if we could obtain it, such data would be insufficient for research on SMEs.

The *Establishment and Enterprise Census* of the Ministry of Public Management, Home Affairs, Posts and Telecommunications, the largest census for establishments and enterprises in Japan, is conducted only every three to five years. Moreover, the financial variables surveyed in this census are only a few, so the possible analysis based on this micro data is very limited. The *Census of Manufacturers* of the Ministry of Economy, Trade and Industry may seem to be more appropriate if we intend to examine only manufacturing industries. This census is conducted every year, covers most manufacturing establishments,⁶ and surveys several essential financial variables, such as sales, costs, and assets. However, it records only manufacturing establishments, and thus it is impossible to obtain coherent information at the enterprise level.⁷

⁵ Strictly speaking, the CBPL does not approve firms themselves, but each business plan that firms submit. Hence, this number includes a number of approvals for the same firm. According to the approved firm list used in this paper, such cases constitute only a small percentage of the total.

⁶ All manufacturing establishments are surveyed every 2–3 years. In other years all manufacturing establishments with four or more employees, and all establishments in the several Specified Industries, are surveyed.

⁷ The biggest problem is what non-manufacturing establishments (including not only retail or service establishments but also headquarters and research facilities if they located away from the factory) of manufacturing enterprises are not surveyed, while manufacturing establishments of mainly

For example, Motohashi's (2001) study, described above, was also conducted on establishment-base, not on enterprise-base. The *Financial Statements Statistics of Corporations by Industry* of the Ministry of Finance covers many incorporated enterprises in most industries (excluding those in the finance and insurance industry), and can provide detailed financial information of them. However, enterprises whose capital funds are less than one billion yen are only sampled. Moreover, since the enterprises surveyed are selected by sampling anew every year, we cannot create an adequate panel dataset of SMEs from this micro data. Finally, the *Basic Survey of Japanese Business Structure and Activities* of the Ministry of Economy, Trade and Industry has the clear advantage of which we can construct an annual comprehensive panel dataset since 1994. However, it surveys only large and medium enterprises with 50 or more employees and capital funds of 30 or more million yen, and thus is not suitable as a dataset for the study of SMEs.⁸

To avoid these problems, this paper attempts to use a dataset from the database provided by TSR. The TSR is a credit investigation company that has one of the largest datasets for firms in Japan, along with Teikoku Databank Ltd. From the TSR database, we extract all unlisted SME financial and other data for joint-stock companies in manufacturing industries that are consistently available from 1994 to 1999. As a result, we obtain a micro panel dataset of 6448 SMEs. Although TSR has data on firms in other industries, our research focuses on manufacturing firms because most previous empirical investment studies using a micro dataset are on manufacturing industries, and about 60 percent of CBPL-approved firms are in manufacturing (cf. Kansai Research Institute, 2003).

non-manufacturing enterprises are included in the survey. Therefore, the re-grouped and summed financial status data do not correspond to the total financial status of these enterprises.

⁸ The previous SME Basic Law before amendment in 1999 defined "SME" as an enterprise 1) with 300 or fewer employees or capital funds of 100 or fewer million yen in manufacturing and other industries, excluding wholesale, retail and services industries; 2) with 100 or fewer employees or capital funds of 30 or fewer million yen in wholesale industries; and 3) with 50 or fewer employees or capital funds of 10 or fewer million yen in retail and services industries. The present SME Basic Law, following the amendment, has somewhat enhanced the criteria, e.g., as enterprises with 300 or fewer employees or capital funds of 300 or fewer million yen in manufacturing and others industries. In each definition, we can see that most SMEs are not covered by the *Basic Survey of Japanese Business Structure and Activities*.

Further, we match this dataset with the SME Agency's full list of CBPL-approved firms from 1995 (since implementation of CBPL) to 1999, which contains information on when each business plan is approved and when each approved plan finishes. A total of 206 firms out of 6448 were approved in this period. In the next section, using this dataset, we examine the investment behavior for unlisted SMEs.

4. Investment behavior

4.1. Model

Numerous papers in economics have investigated firm investment behavior in both theoretical and empirical. In addition, many studies have examined a Japanese firm's investment behavior, using macro and micro data. Among them, a sequence of stimulus studies using manufacturing micro data applying Tobin's average q model (Hoshi and Kashyap (1990); Hayashi and Inoue (1991); and Hoshi, Kashyap and Scharfstein (1991)) has encouraged successive micro data analysis of Japanese firm investment. These successive studies are conducted from various motivations and approaches (e.g., Gibson, 1995, 1997; Ogawa and Suzuki, 1998; Sekine, 1999; Ogawa and Suzuki, 2000; Honda and Suzuki, 2000; Hayashi, 2000; Hoshi, 2000; Nagahata and Sekine, 2002; Goyal and Yamada, 2003; and McGuire, 2003).

However, most of these studies have examined only firms listed on the stock markets in Japan, and their data have depended on either the financial database of listed companies, provided by the Japan Development Bank (now the Development Bank of Japan) or Nihon Keizai Shimbun, Inc [Nikkei].⁹ This may be relatively natural because the number of issued stocks and their price in the stock market are required to obtain the value of Tobin's average q . However, average q is not the only model which can be estimated empirically. We can also apply a marginal q model as this paper does. In this approach, stock price in the market is not

⁹ The exception, as far as the authors know, is Ogawa (2003) Chapter 4, which used micro data from the *Financial Statements Statistics of Corporations by Industry*. However, due to the limitation of the dataset, he estimated investment equations for each time period, not as panel data. Although Honda and Suzuki (2000) and Suzuki (2001) also measured the marginal q of Japanese firms, their studies focused on listed manufacturing companies using the dataset of the Japan Development Bank.

required, and thus we can apply the analysis to unlisted companies.

The proportion of all companies that are publicly listed is very low. While a select number of listed companies can achieve the initial public offering and raise funds through stock markets, and hence have sufficient bargaining power with potential fund suppliers, most of overwhelmingly unlisted SMEs must depend on loans from financial institutions. Therefore, we can presume that the financing and investment behavior of these firms must be different from that of listed companies. However, mainly because of the difficulty of obtaining financial data for unlisted SMEs, almost no one has studied the investment behavior of listed SMEs in Japan. To overcome this problem, we construct a new panel dataset of unlisted manufacturing SMEs as mentioned above.

We examine the investment behavior under the marginal q model.¹⁰ Further, we incorporate firm leverage (the debt–asset ratio), which can be considered as a proxy for their credit risk, following recent information economics and empirical investment studies (Cantor, 1990; Whited, 1992; Lang, Ofek and Stulz, 1996; Sekine, 1999; Nagahata and Sekine, 2002; Ogawa, 2002, Chapter 4). In theory, it is possible that an increase of the debt–asset ratio increases the risk of future bankruptcy, and suppliers of finance become reluctant to provide loans and/or the firm itself prefers repayment of loans to new investment. Therefore, an increase of leverage is expected to repress investment. Also, annually constructed dummies for CBPL approval are incorporated in the investment equation. If CBPL approval reduces the adjustment cost of enhancing the capital stock, CBPL approval will be expected to have a positive effect on investment.

The full specification of the model is described as follows:

$$I/K_{-1}=f(q, LEVERAGE_{-1}, DUM), \quad (1)$$

where I is real investment, K_{-1} is real capital stock at the end of the previous year, q is the marginal q , $LEVERAGE_{-1}$ is leverage at the end of previous year, and DUM is the CBPL-approved dummy.

¹⁰ For an early representative empirical study on the marginal q model, see Abel and Blanchard (1986).

Real investment I is defined as the nominal investment [which is estimated = (tangible fixed asset - land) – (tangible fixed asset (-1) - land (-1)) + depreciation] divided by the investment goods price p . As p , we use the deflators (base year = 1995) of private sectors' gross domestic capital formation from the *System of National Accounts* of the Economic and Social Research Institute, Cabinet Office. Real capital stock at the end of the previous year K_{-1} is defined as [the total of tangible fixed asset (-1) - land (-1)] divided by the average of p and p (-1).¹¹ Although capital stock is usually estimated by the perpetual inventory method, we do not use it because our dataset not provide a sufficiently old benchmark to apply it.

Marginal q is defined as the present discounted value of profits from new fixed capital investment. Since this value cannot be directly observed, some assumptions have been made to estimate it. Following Yoshikawa (1980), Honda and Suzuki (2000) and Suzuki (2001), we specify the marginal q by the ratio of profit per unit of capital to the cost of capital, under the assumption of constant returns to scale of production function and static expectations:¹²

$$q = (\pi / K_{-1}) / [p(r + d)]. \quad (2)$$

π is the gross profit defined as including depreciation, which is [ordinary profit – reserve for corporation taxes + interest and discount paid + depreciation]¹³. r is the cost of debt, which is simply defined as [(interest and discount paid)/(short term debt (-1) + long term debt (-1) + notes discounted (-1))]. d is the nominal depreciation rate, which is defined as [depreciation/($p \cdot K_{-1}$)]. Following Honda and Suzuki (2000), we use the average of all firms in each year as r , the average of total sample (i.e., all firms and all years) as d , and exclude outliers that are in the upper 0.5 percent and the bottom 0.5 percent of the respective data for (I/K_{-1}) and q .

¹¹ The average of p and p (-1) is used here instead of p , because the assets in financial statements are stock variable valued at the end of the period while the deflator is a flow variable.

¹² Because the time-series side of our panel data is too short, we cannot apply more sophisticated time-series models for the treatment of future variables in the marginal q . Static expectation is probably the most realistic and feasible assumption to apply to such short series panel data.

¹³ For this definition including depreciation as gross profit, see Blanchard, Rhee and Summers (1993) and Honda and Suzuki (2000).

$LEVERAGE_{it}$ is defined as the debt–asset ratio [=total debt (-1)/total asset (-1)]. This variable is constructed by the book value of assets mainly because we cannot observe the market value from the financial statements. This means, indirectly, assuming that the debt–asset ratio constructed by book values is a workable or practical proxy for its market value. Finally, the CBPL-approved dummy DUM takes the value 1 for the years from business plan approval by CBPL to the end of the plan, otherwise it takes the value 0.¹⁴

For panel estimation, we apply the fixed effects model because we presume unobservable heterogeneity bias, especially in the correlations between the CBPL-approved dummy and unobserved individual firm characteristics and we intend to certainly remove it by fixed effects.¹⁵ When the correlation exists, the fixed effects model yields unbiased estimators, while the random effects model is biased. Equation (1) is rewritten as below in more specific terms:

$$I_{it} / K_{it-1} = \beta_0 + \gamma_i + \gamma_t + \beta_1 q_{it} + \beta_2 LEVERAGE_{it-1} + \beta_3 DUM_{it} + \varepsilon_{it} \quad (3)$$

where subscript i represents each firm, t represents each year, β and γ are parameters to be estimated, and ε_{it} is the error term.

Table 1 summarizes the variable definitions and means. The total observations are 32240 from 6448 firms from 1995 to 1999. The mean of the marginal q is 2.3, which is bigger than the expected value in theory. This is probably because marginal q in this paper is close to a proxy, constructed under some additional assumptions such as constant returns to scale and static expectations. This tendency for marginal q to be larger than expected also appears in the marginal q measurements of Suzuki (2001, p.115) and Ogawa (2003, p.103).

The number of CBPL-approval observations is about 2 percent of all observations. As mentioned above, at the firm level, over the five-year period, there were 206 firms approved by a prefectural governor for at least one year among 6448 firms. Of the 206, there were seven firms approved for all five years.

¹⁴ Therefore, the DUM for SMEs that have no CBPL approval between 1995 and 1999 is zero in all years.

¹⁵ Secondly, we apply the Hausman test to verify which model, the fixed or random effects model, is statistically preferred.

4.2. Empirical Results

Table 2 presents the estimation results of equation (3). The eight variations are due to the inclusion or exclusion of time-effects, leverage and the CBPL-approved dummy. As stated above, we use the fixed effects model. The Hausman tests also show that the null hypotheses – that the individual effects are uncorrelated with the other regressors – are statistically rejected, and that the fixed effects models are preferred in all eight estimations.

First, we show that the CBPL-approved dummy has a significantly positive effect on investment in all four estimations [2], [4], [6] and [8]. This result suggests that CBPL approval has enhanced SMEs' new capital investment. Moreover, the estimated coefficients indicate that CBPL approval increased the investment ratio by 0.057–0.076 per year, which is about 50 percent of annual investment of average SMEs, which is a ratio of 0.133, as shown in Table 1. The effect is large, and thus we can say that the law has had substantial effects, at least in terms of fostering new capital investments of SMEs and inducing demand for investment.

Marginal q has a significantly positive effect on investment in all estimations. The positive effect of q is consistent with the hypothesis of the model. The coefficients are 0.028–0.029, which are almost the same in all results. Suzuki (2001, p. 72) showed that the coefficient of marginal q for listed manufacturing companies was 0.0328. In comparison with the result, the sensitivity of marginal q to investment for unlisted manufacturing SMEs is not so different with listed companies.

Leverage has a significantly negative effect in all four estimations [3], [4], [7] and [8]. The result verifies the hypothesis that increasing leverage raises the credit risk of firms and works to repress their new capital investments, as expected. However, the estimated coefficients seem to be large. Suzuki (2001, p.72) showed that the coefficient of the capital ratio on investment for listed manufacturing companies is 0.0564 (the capital ratio is considered to be close to [1 minus the debt–asset ratio]). Our results may indicate that the sensitivity of leverage to investment is very high for unlisted SMEs whose external funding must depend on loans from financial institutions, but it is also possible that our definition of leverage should be improved (for example, it may too simple). Although the point is unclear and left for further

research, in any case, the results for other variables shown in Table 2 hold, with or without leverage.

5. Conclusions

The aim of this paper was to examine whether the CBPL enacted in 1995 had helped to enhance SMEs' capital investment. For the purposes of this study, we first constructed a panel dataset of unlisted manufacturing SMEs in Japan from all TSR data from 1994 to 1999 and the SME Agency's full list of CBPL-approved firms. We then examined their investment behavior under the marginal q model, incorporating leverage and annually constructed CBPL-approved dummies. Since there have been very few studies of the investment behavior of unlisted companies in Japan, our attempt also contributes the study of investment.

The result of panel estimation using 6448 firms for five years, from 1995 to 1999, showed that CBPL approval increased SMEs' investments by about 50 percent per year. The result suggests that CBPL substantially increases SMEs' new capital investments. Moreover, we showed the significantly positive effect of marginal q and the significantly negative effect of leverage, both of which were consistent with the hypothesis of the model.

However, some room is left for further research. First, although we treated information on CBPL approval as a 0/1 dummy variable, there are many different support measures that approved firms obtain, and some approved firms do not obtain any support measures (see footnote 3). It would be a natural extension of our study to examine differences of effects between these support measures. However, this approach requires detailed information, on support measures applied to each approved firm, and that is not available; no institution (even the SME Agency) keeps such detailed records.

Second, and more fundamentally, the effectiveness and efficiency of the whole system of SME policies currently in place, which seems to be a complex cluster of relatively small policies should be investigated. Although it is beyond the scope of this paper, there is no doubt that the issue is very important. We hope that this paper plays a part as an early milestone for the further research on SME policies in Japan.

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Table 1
Variable Definitions

Variable	Definition	Mean
I/K_{-1}	Real investment/real capital stock at the end of previous year	0.1329
q	Marginal q	2.3442
$LEVERAGE_{-1}$	Debt-asset ratio at the end of previous year	0.7535
DUM	CBPL-approved dummy (annually constructed)	0.0170
		n=32240

Table 2
Investment Equations

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<i>q</i>	0.0283 ** (34.17)	0.0283 ** (34.19)	0.0293 ** (35.28)	0.0293 ** (35.29)	0.0277 ** (33.40)	0.0277 ** (33.40)	0.0287 ** (34.58)	0.0287 ** (34.59)
<i>LEVERAGE</i> ₋₁	-	-	-0.5163 ** (-12.42)	-0.5160 ** (-12.41)	-	-	-0.5815 ** (-13.89)	-0.5823 ** (-13.91)
<i>DUM</i>	-	0.0583 * (2.33)	-	0.0573 * (2.30)	-	0.0742 ** (2.96)	-	0.0764 ** (3.06)
Firm Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Effect	No	No	No	No	Yes	Yes	Yes	Yes
Adj R ²	0.0970	0.0972	0.1023	0.1025	0.1005	0.1008	0.1072	0.1074
Hausman statistics	80.71 **	81.41 **	225.29 **	225.36 **	43.13 **	43.9 **	209.74 **	210.68 **

Fixed Effects Model

n=32240

t-statistics are in parentheses.

* Statistically significant at the 5 percent level

** Statistically significant at the 1 percent level