

ABS Issuance and Lending Attitude of Banks *

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Abstract

This paper investigates whether an increase in ABS issuance, or securitized products, by leasing companies has been influenced by Japanese banks' tightened lending attitudes in 1990s. Our focus is in particular to examine the importance of asset securitization for leasing companies when bank lending is decreased. Leasing companies have been major originators and equipment lease receivables have been the most commonly securitized assets in Japanese ABS market. Leasing companies, however, have heavily relied on bank lending as their funding measures that the effect of credit crunch to the industry is examined. The conclusions in this paper are the following;

(1) Disintermediation of bank lending tends to lead an increase in ABS issuance in the market. It is also obtained that banks' lending attitude is granger-cause securitization issuance of leasing companies. (2) The issuance by leasing companies significantly increases in September mid-year and March end-year periods, the first and the third quarters. (3) CP issuance seems to be an alternative method of ABS issuance, however bond issuance doesn't. No significant relation is observed between ABS and corporate bond issuance.

1. Introduction

The purpose of this paper is to examine the importance of asset securitization for leasing companies. As it is widely known, Japanese banks have experienced large shocks in the 1990s. It started with an increase in non-performing loans due to bursting of asset bubbles in the first half of the 1990s and a difficulty compounded by incomplete disclosure of bank balance sheet conditions (see, for example, Ito and Harada (2000), Hoshi (2000) and Ogawa and Kitasaka (2000)). Since bank lending has been decreased as shown later in the paper, Japanese finance companies especially leasing companies that excessively relied on a single funding source, bank lending, has started to face difficulties.¹

Securitization in Japan has started after the Specified Claims Law (the Law Concerning the regulation of Business Relating to Specified Claims) has enforced in 1993 and the issuance of ABS and ABCP has been allowed in 1996.² Japanese leasing companies have been major originators and equipment lease receivables are the most commonly securitized assets.

Shiratsuka et al.(2000) empirically examine whether the non-performing loan problem brought financial disintermediation of banks. Hoshi (2000) argues that growth in real estate lending in 1980s has a strong explanatory power of non-performing loan. Ogawa and Kitasaka (2000) analyzes the role of bank loans in the Japanese economy and finds that

¹ Commercial bank loans as a source of funding for leasing companies is important and it occupied 98.8% of the capital needs in 1998 (Japan Leasing Association).

² Since the enforcement of the Specific Claims Law, legal infrastructure has been developed steadily. Under the Law, the securitization of assets classified as specified claims, not normal ABS, such as lease receivables and credit-card receivables have started.

the response of loans to land-price changes is much larger than any other aspects. In addition to these papers, some other papers are also examining the role of loans, the impact of non-performing loans and the declining role of bank-system lending.

While bank loans have been decreasing, Japanese securitization market has grown rapidly (see Figure 1) and considered as an alternative source of funds to bank lending.^{3 4} One of the reasons that securitized products have been increasingly issued is attributed to a radical reform of the conventional corporate bond trustee system in 1993.⁵ The deterioration of bank-system lending has been broadly examined in many papers. However, most of them see why and how Japanese banks got into a trouble. No paper has yet analyzed the importance of asset securitization and the relation between bank lending and securitization. The approach in this paper is the first in Japan.⁶

This paper is organized as follows. Section 2 provides some details of the data used in

³ In this paper, substitutability of bank-system lending and borrowings in capital markets are assumed, however perfect substitutability is not assumed. The differences such as financing costs are examined in next subsection.

⁴ Official statistics having securitization market size as a whole do not exist. Accurate figures of ABS issued in Japan and those issued by Japanese firms in overseas markets, such as those privately placed on the domestic market, those issued on the euro market, and loan participation certificates, are not available. Therefore it is difficult to grasp the market scale. Figure 1 is based on an estimate that covers privately placed ABS made by a financial institution. The scale of market is believed to have expanded due to rapid increases in loan trusts issued by trust banks and securitized claims on receivables issued by firms. They are followed by securitized products of specified claims.

⁵ It was enacted by the Amendment Commercial Code and the enforcement of the Specified Claims Law. As another reason, it is said that legal infrastructure has been steadily developed and various laws were enacted mainly to help banking industry.

⁶ A related paper is Gorton and Pennacchi (1993). They examine nonbank lending in the United States and consider whether loans made by nonbank are substitutes for bank loans. They find that improvements of information technology have stimulated the growth in nonblank loan creation. It is also noted that policy makers need to recognize the new possibilities created by the innovation.

empirical examination in this paper. The estimation results of basic models to examine the relation between bank lending attitude and securitization is provided in section 3. In section 4, using VAR, whether weakening bank's lending behavior is attributed to an increase in ABS issuance or not is examined. Section 5 contains some concluding remarks.

2. Funding history and the Statistics

2.1 Funding History of leasing companies

As Figure 2 indicates, borrowing from financial institutions (year-to-year base) of leasing companies has been decreasing from 1991 Q2 to 2001 Q1, regardless of the industry's firm sizes. The decline in borrowing is not caused by shortage of demand for bank loan, but it is due to deterioration of lending behavior. This idea is supported by Figure 3 and Figure 4. Level of Liquidity (Diffusion Index of "Rise" minus "Fall") in Figure 3 was turning downward from 1990, it is suspected that their financial position was gradually deteriorating. Financial Position of leasing companies in Figure 4 and Lending Attitude of Financial Institutions in Figure 5 are also showing circumstances that leasing companies can be easily affected by traditional funding sources and that their funding constraints were very severe.^{7 8}

⁷ Financial position is Diffusion Index (DI). This is the judgment of the general cash position of the responding enterprise. For taking into account the level of cash and cash equivalent, enterprises are asked about lending attitude of financial institutions and payment and repayment terms, choosing, "Easy", "Not so tight" and "Tight". Lending attitude of financial institutions is the judgment of financial institutions' attitude towards lending as perceived by the responding enterprise, choosing "Accommodative", "Not so severe" and "Severe". The responding enterprises are asked to choose one alternative among three as the best descriptor of prevailing change. Seasonal factors are excluded. See the following for more detail description.
<http://www2.boj.or.jp/en/dlong/tk/faqtk.htm>

By looking at the Figure 4 and Figure 5, lending attitude of financial institutions perceived by leasing companies became much worsen compared with all industries. Judging from Tankan data, leasing companies had faced tightened financial position from the end of 1980s to the early 1990s and it is anticipated that they needed an alternative source of funds.

Contrary, from mid 1993 to the first half of 1997, borrowing from financial institutions (Figure 1) didn't change year-to-year base, however financial position of leasing companies (Figure 4) has improved sharply. An important feature of the improvement must be the availability of alternative source of funding. Another drastic decline in the middle of 1997 to 1998 shown in Figure 4 and 5 is attributed to financial instability hit the economy.⁹

2.2 Data Descriptions and Sources

The sources of leasing companies' variables are "the Short-term Economic Survey of All Enterprises" and "the Short-term Economic Survey of Principal Enterprises" (Tankan for short) by the Bank of Japan. They are end of period quarterly data and seasonally adjusted.

All Tankan data are used as macro variables of leasing companies to obtain financial information of them.

⁸ Tankan is a famous quarterly survey on business sentiments and on actual data in Japan. The results of the survey are based on two: Short-Term Economic Survey of All Enterprises and Short-Term Economic Survey of Principal Enterprises.

⁹ In November 1997, two banks---including one of the top 10 banks---and two securities firms---including one of Big Four---have failed and a widespread fear of financial meltdown was observed among market participants. In August 1998, the Diet discussion about LTCB for temporarily nationalization has started, however the negotiation took a longer-than-expected period and markets' participants were skeptical about effectiveness of the Japanese safety net. The Diet discussion ended with a new measure introducing effective measures to force banks to quickly re-capitalize in autumn 1998. See Ito and Harada (2000) for more detail.

Borrowing from financial institutions and level of liquidity¹⁰ are both variables (year-to-year base, the unit of measurement is %) in the Short-term Economic Survey of All Enterprises”. If the signs of the variables are negative, then they mean that ABS issuance is urged by demand for cash. Commercial paper (CP) and Corporate bonds (CB) are also year-to-year variables (the unit of measurement is %) in the Short-term Economic Survey of All Enterprises”. If the signs of these variables are negative and significant, it means that they are competitive to ABS issuance. It is assumed that they act as a substitute to bank lending. As a variable representing supply side problem, lending attitude of financial institutions is used. Issuance of Commercial Paper and corporate bonds by leasing companies are authorized in April 1996.¹¹

3. Analysis of ABS issuance

As shown in Figure 6, leasing companies’ securitization of equipment lease and credit has cyclical highs at Q1 and Q3. A dummy variable that takes 1 at Q1 and Q3 of each year is included as one of the explanatory variables to capture the cyclical movements. This variable is called as mid-year and end-year dummy.

The first model is an estimation of whole sample period, from 1994 Q4 to 2001 Q1.

This equation models some elements of the cause of ABS issuance. It has of the form:

¹⁰ Level of liquidity includes total balance of cash, deposits and marketable securities. Therefore in the analysis, total balance of cash, deposits and securities data are not used to avoid multicollinearity.

¹¹ In April 1996, as a method of securitization under the Specified Claims Law, the issuance of ABS and ABCP (Asset Backed Securities and Asset Backed Commercial Papers) is authorized. It also became possible to issue ABS and ABCP under the Specified Claims Law. Therefore the data is available since 1997 Q2.

$$ABS_t = \beta_0 + \beta_1 D_t + \beta_2 DI_{t-1} + \beta_3 LOAN_{t-1} + \beta_4 LIQ_{t-1} + \varepsilon_t \quad (3.1)$$

where ABS_t is the quarterly ABS issuance, D_t is mid-year and end-year dummy, DI_t is lending attitude of financial institutions, $LOAN_t$ is borrowing from financial institutions and LIQ_t is liquidity of leasing companies. Equation (3.1) is estimated by OLS and equation (3.2) is estimated based on IV, Instrumental variable method. There is a possibility that independent variable has simultaneous problem, therefore lagged explanatory variables are used in OLS estimation.

$$ABS_t = \beta_0 + \beta_1 D_t + \beta_2 DI_t + \beta_3 LOAN_t + \beta_4 LIQ_t + \varepsilon_t \quad (3.2)$$

The coefficients of equation (3.1) and equation (3.2) estimated over the entire period are presented in Table 1. Three different equations are used to take any possibility of inconsistency into consideration because of the small samples. Coefficients obtained from IV are reported for references since t statistics in small samples don't follow t distributions. To test the robustness of these results to the choice of proxy, an alternative proxy is also obtained.¹²

Lending attitude of financial institutions DI_t which is a variable of supply side (banks) is shown to have significant negative impact on ABS issuance in all three cases. It is possible to stress that a cause in ABS issuance by leasing companies is decreasing bank lending and that ABS issuance has grown as an alternative source of funds to bank lending. Not only lending attitude of banks but borrowing from financial institutions has negative

¹² There is a possibility that other proxies might be used for the estimation. The use of two different instrument sets can be interpreted as using slightly different proxies for the estimation.

and significant effect on ABS issuance, therefore it is said that the turndown of borrowing from other financial institutions also made leasing companies issue ABS. Mid- and end-year dummy variable is significant, indicating that more assets are securitized in response to seasonal demand.

In 1996, bond issuance guideline (Tekisaikijyun) was removed and CP issuance and corporate bond issuance by leasing companies were approved. To take account of the effect of new products on ABS issuance, another estimation over the period since 1997 Q2 to 2001 Q1 has estimated. The equation estimated is basically equation (3.1) including two variables, Commercial Paper, CP_t and Corporate Bond CB_t .¹³

$$\begin{aligned}
 ABS_t = & \beta_0 + \beta_1 D_t + \beta_2 DI_t + \beta_3 LOAN_t + \beta_4 LIQ_t \\
 & + \beta_5 CP_t + \beta_6 CB_t + \varepsilon_t
 \end{aligned}
 \tag{3-3}$$

Table 2 contains the results of the sample over the period from 1997 Q3 to 2001 Q1. The signs of the borrowing from financial institutions (LOAN) and the lending attitude (DI) are determined by β_3 and β_2 respectively. The fourth column of IV equation in Table 2 shows that the coefficient is negative, as expected, and that its absolute value is decreased with the availability of other sources such as CP and CB. The result is no longer significant even at 10% level. Thus, 1997, it seems like that disintermediation would not have been affecting ABS issuance of leasing companies. The estimate of CP is negative and significant, this indicates that CP issuance is an alternative and competitive source of funds to ABS

¹³ Lagged variable of CP are not used in the estimation since seasonal demand of issuing CP is considerably high. CP and CB of current statistics are used.

issuance. The estimate of corporate bonds (CB) is not significantly different from zero but it seems to suggest that the enlarged risk premium in bond market from 1997 has prevented low-grade companies or companies which had deteriorated balance sheets from issuing bonds.¹⁴

As Figure 3 indicates liquidity (LIQ) shortage was gradually dissolved in the latter half of 1990s, however negative relation between ABS issuance and liquidity in Table 2 suggests that its relation, the connection between ABS issuance by leasing companies and their liquidity shortage, is still firm. Mid-year and end-year dummy is positive and significant.

4. Determinant of ABS Issuance and the Causal Relation

In this section, whether weakening banks' lending behavior is granger-causes ABS issuance or not is examined. This question is addressed by constructing VAR model of the relationships----the ABS issuance and the lending attitude.

As noted in Table 3, the VAR equation includes four lags of all variables. The lags of "ABS" equation and those of "LIQ" equation (ABS and LIQ are dependent variables respectively) are statistically significant. The results indicate that ABS issuance is affected by lending attitude, liquidity and borrowing from financial institutions, that is they granger-cause ABS issuance (its F statistics is 3.96). The results also indicate that two sources of

¹⁴ Japanese capital markets have experienced large shocks in the second half of the 1990s. The deterioration of balance sheets forced some financial institutions, especially banks to fail or to withdraw from operations abroad. It started with an increase in non-performing loans due to bursting of asset bubbles in the first half of the 1990s and a difficulty compounded by incomplete disclosure of bank balance sheet conditions (See Ito and Harada (2000)).

funding and lending attitude affect the changes in liquidity since the lags of liquidity “LIQ” equation is significant (F statistics is 4.89).

Results of this section suggest that the influence of bank lending’s disintermediation seems to have brought severe difficulties for leasing companies in the first half of 1990s, that seems to be associated with an increases in other funding sources such as ABS or CP issuance in the latter half of 1990s. That is, disintermediation granger-causes ABS issuance, but not vise-versa

5. Conclusion

This paper examines role of asset securitization originated by leasing companies to examine whether ABS has been issued as an alternative source of disintermediation of bank lending in Japan. Finance companies, especially leasing companies excessively relied on bank lending as their funding source until in the beginning of the 1990s when they faced difficulty in raising funds. It is empirically examined whether ABS issuance of leasing companies is based on the demand side of leasing companies or the supply side of funding which banks provided.

The results stress that an increase in ABS issuance by leasing companies is attributed to decreasing bank lending and that leasing companies brought CP and CB into productive use for their funding to compensate for decreased borrowing from banks. As discussed in Rybczynski (1997), the evolution of the financial system or the role of new financial tool has been observed as an alternative source of funds.

It is also seen that disintermediation of bank lending seems to have brought severe

difficulties for leasing companies in the first half of 1990s, they seem to be associated with an increases in other funding sources such as ABS and CP issuance in the latter half of 1990s. That is, disintermediation granger-causes ABS, but not vice-versa.

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Figure 1 ABS Issurance: Breakdown by Underlying Assets

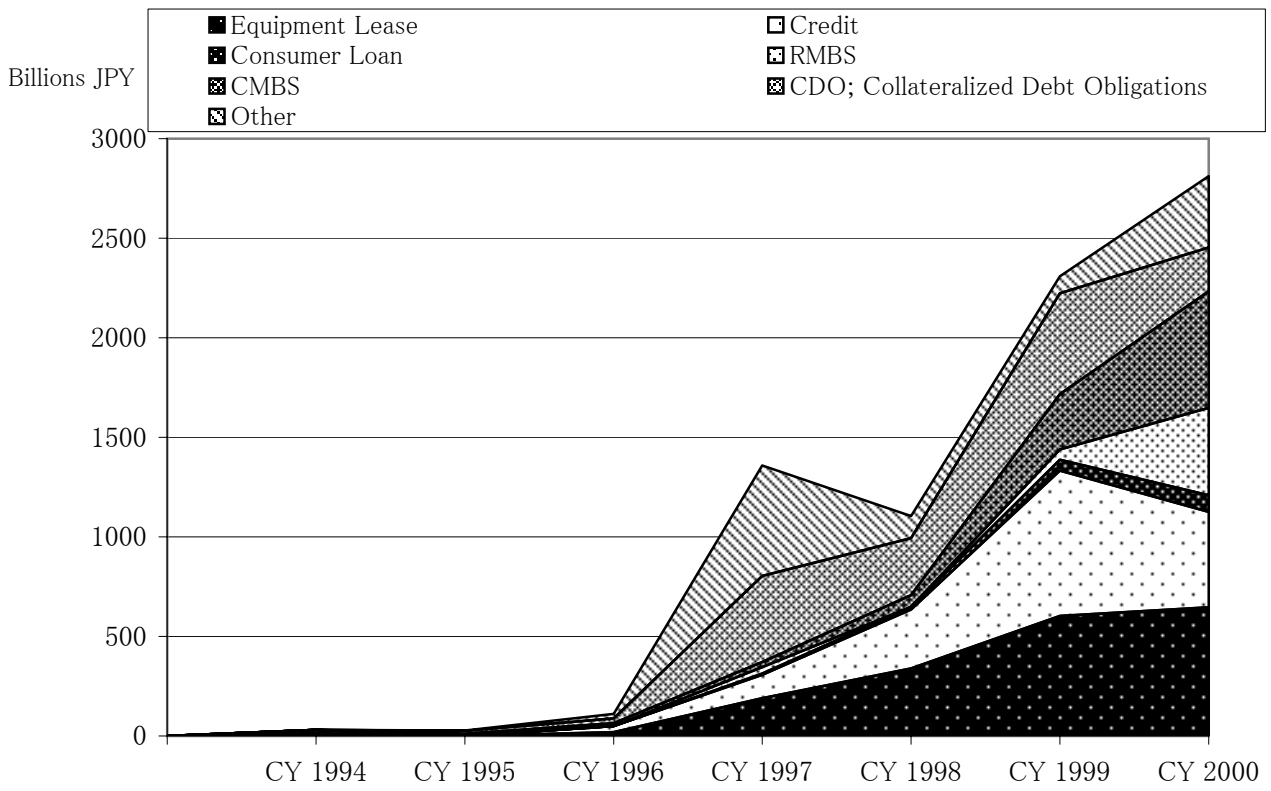
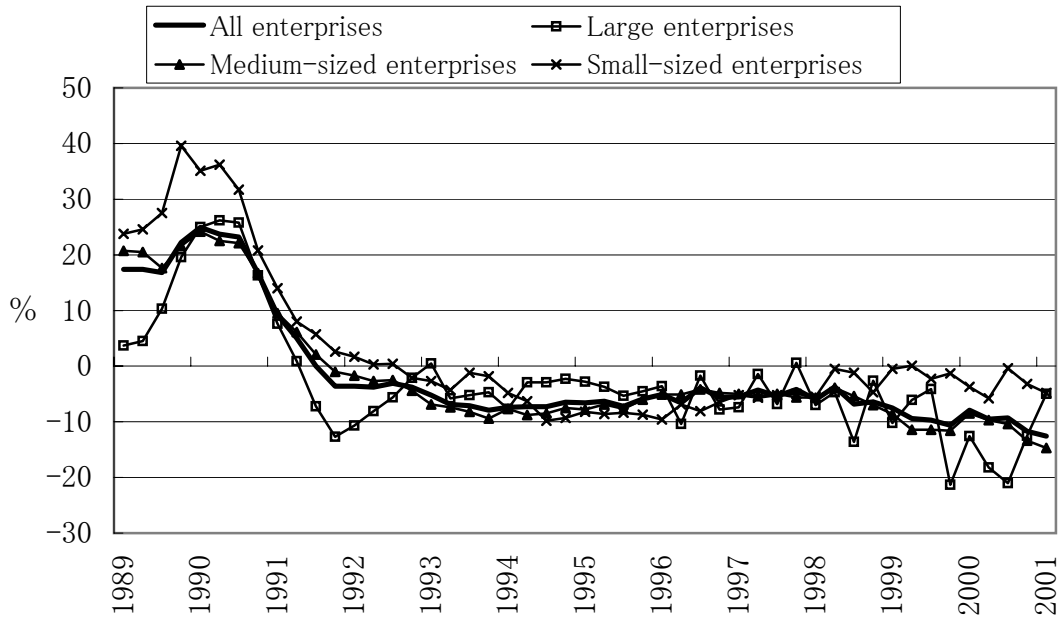
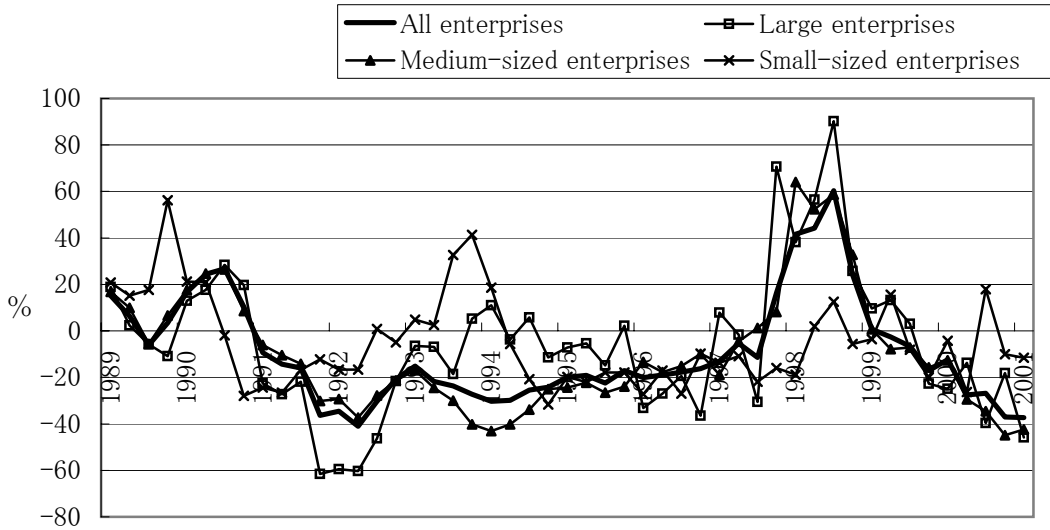


Figure 2 Borrowing from Financial Institutions (year-to-year)



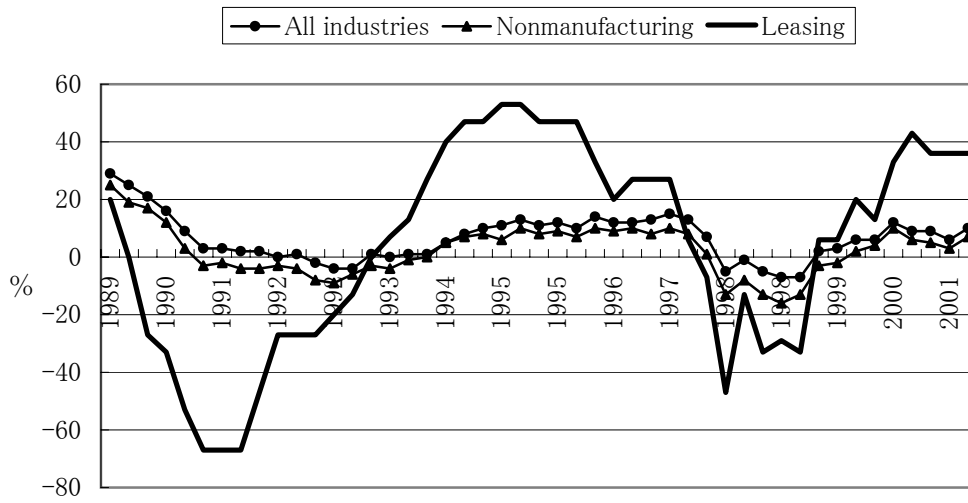
Source: Bank of Japan "Short-Term Economic Survey of All Enterprises"

Figure 3 Liquidity (year-to-year)



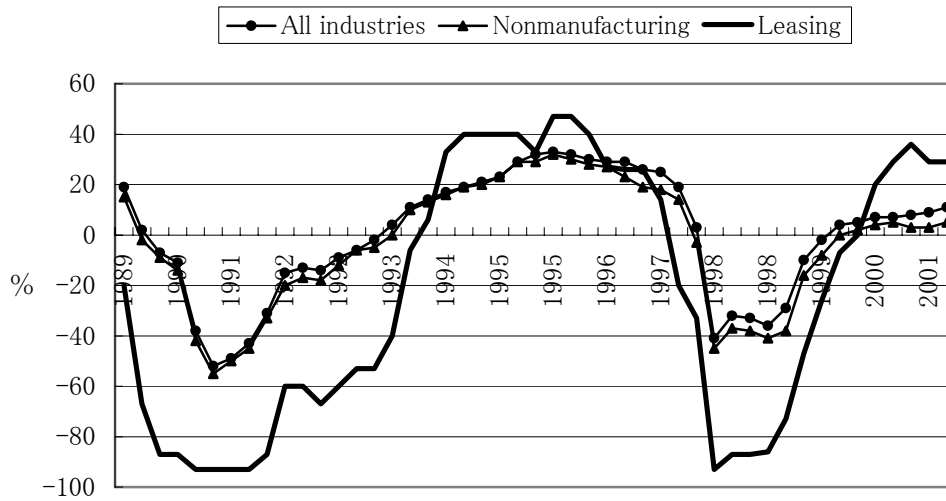
Source: Bank of Japan "Short-Term Economic Survey of All Enterprises"

Figure 4 Financial Position (D.I.)



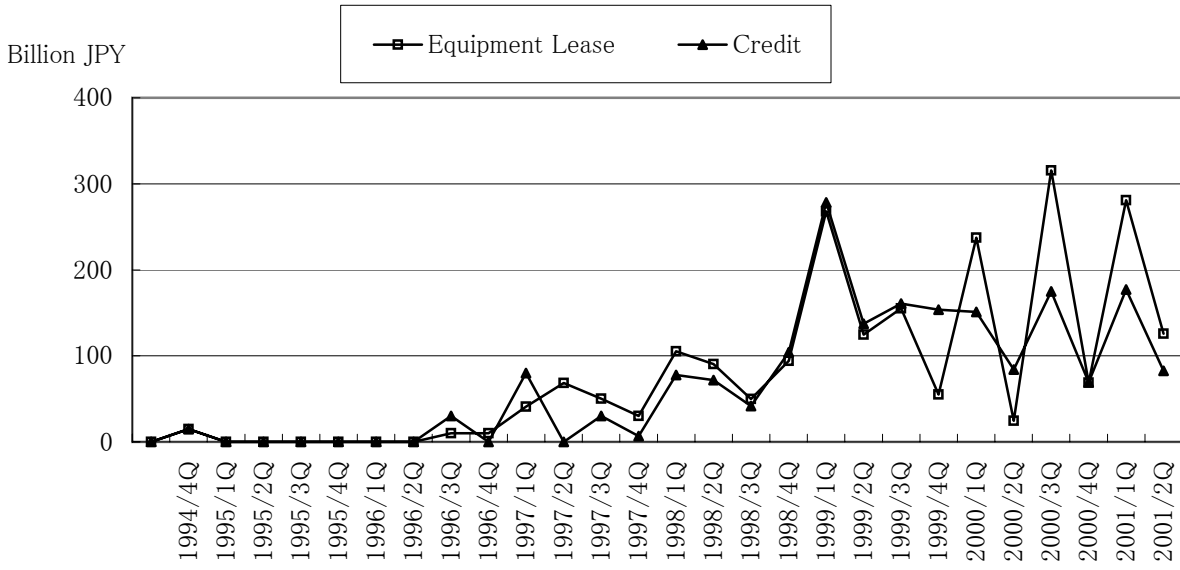
Source: Bank of Japan "Short-Term Economic Survey of Principal Enterprises"

Figure 5 Lending Attitude of Financial Institutions (D.I.)



Source: Bank of Japan "Short-Term Economic Survey of Principal Enterprises"

Figure 6 Leasing Companies' Securitization by Underlying Assets



Source: Credit Suisse First Boston Securities

Table1 Factors for issuing ABS (1994:Q4–2001:Q1)

Estimation method	Instrument set	Constant	D	DI	LOAN	LIQ	Adjusted R ²
OLS eq.(3.1)	—	-206.21 ** (74.58)	113.75 *** (37.99)	-2.81 *** (0.99)	-40.48 *** (11.54)	-2.52 (2.10)	0.67
IV eq.(3.2)	I	-167.96 (107.82)	95.24 ** (42.78)	-3.57 ** (1.76)	-32.17 * (17.97)	-4.81 (3.79)	0.60
IV eq.(3.2)	II	-142.76 (93.58)	103.63 ** (43.55)	-3.74 ** (1.48)	-27.86 * (14.92)	-5.52 (3.12)	0.60

For equation (3.2), instrument set I is DI_{t-1} , $LOAN_{t-1}$, LIQ_{t-1} , MON_t , MON_{t-1} . Instrument set II is DI_{t-1} , DI_{t-2} , $LOAN_{t-1}$, $LOAN_{t-2}$, LIQ_{t-1} , LIQ_{t-2} , MON_t , MON_{t-1} , MON_{t-2} . MON is Cash and Deposits from "Short-term Economic Survey of All Enterprises". LIQ contains Cash and Deposits, the variable is not included. Instrument sets I and II include a constant and a fiscal year book closing dummy as well.

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

Parentheses are standard errors.

Table2 Factors for issuing ABS (1997:Q3:-2001:Q1)

Estimation method	Instrument set	Constant	D	DI	LOAN	LIQ	CP	CB	Adjusted R ²
OLS eq.(3.1)	—	-263.77 ** (116.31)	183.42 *** (51.67)	-2.08 (1.29)	-46.73 *** (14.12)	-1.31 (2.32)			0.63
IV eq.(3.3)	III	108.71 (205.69)	168.01 *** (57.87)	-3.16 * (1.64)	-5.89 (19.89)	-6.51 ** (2.95)	-3.92 ** (1.79)	0.14 (2.42)	0.53

Instrument set III was DI_{t-1} , $LOAN_{t-1}$, LIQ_{t-1} , MON_t , MON_{t-1} , CP_{t-1} , CB_{t-2} , CAP_t , CAP_{t-1} .

MON is Cash and Deposits from "Short-term Economic Survey of All Enterprises". LIQ contains Cash and Deposits, the variable is not included.

Instrument sets I and II include a constant and a fiscal year book closing dummy as well.

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

Parentheses are standard errors.

Table3 F statistics by VAR(4) (1994:Q4-2001:Q1)

	ABS	DI	LOAN	LIQ
F statistics	3.96 **	1.30	1.46	4.89 **

The critical value of $F(4,13)$ is 5.21 at 1% level, 3.18 at 5% level.

** is significant at 5% level.