FINANCIAL LIBERALIZATION AND FINANCING CONSTRAINTS ON THE CORPORATE SECTOR IN TUNISIA

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Abstract

This paper studies the impact of the financial and economic liberalization in Tunisia since the mid-1980s on the financial structure and behavior of the corporate sector. We analyze the effect of financing constraints, due to market imperfections as well as credit allocation policies, on the determinants of investment and indebtedness of the corporate sector. A number of firm characteristics are found to imply significantly different financing constraints: government ownership, trade orientation, and size of firm. We also investigate the impact of financial liberalization on the economic performance of firms. Our results show a strong, mostly positive, effect of financial liberalization on the economic performance, as well as on financial structure, investment and financing behavior of Tunisian firms.

Introduction

This paper presents an empirical investigation of the impact of financial liberalization on the investment and financing behavior of the corporate sector and the efficiency of credit allocation by the banking system using panel data from the manufacturing sector in Tunisia for the period 1984-94. The move from a highly controlled to a more liberalized financial system since the mid-1980s should have a significant impact on the extent and nature of financing constraints on the corporate sector and the financial decisions of firms as well as on performance.

The existence of financing constraints for corporations means that some firms with specific characteristics might either face a wedge between the cost of internal and external financing or be denied credit because of problems of asymmetric information, agency costs, financial distress and credit rationing policies. The analysis of these constraints helps understand the observed financial behavior of firms and its departure from the classical neutrality theorem of Modigliani and Miller (1958, 1961, 1963). More generally financing constraints amplify the effects of shocks, contribute to macroeconomic volatility (Calomiris 1995) and affect economic performance.

Financing constraints can result from many factors. First, access to external finance may be conditional on the firm's signaling its ability and willingness to invest its own resources. Firm's investment will depend on the firm's capacity of generating internal funds, this is what is referred to as the cash flow constraint. Second, when its net worth is low, the firm is more likely to face higher costs of external finance and can even be denied access to credit if interest rates are administrated or cannot be raised to include an adequate risk premium. This is what is referred to as a balance sheet constraint (or leverage constraint) in Ben Bernanke and Gertler (1990). The firm can also be constrained because of the weaknesses of the banking system: bank failure due to low quality of borrowers may accelerate or cause the distress of other firms. And finally, availability of credit can be rationed by government regulations of credit markets. Such policies aim usually to assure a desired sectoral allocation of credit.

Adverse selection and moral hazard problems may arise from allocation of credit by higher interest rates; indeed the interest rate offered to borrowers influences the degree of risk of loans in two main ways. First, only those managers with the worst risk might be willing to pay high interest rates because the probability of failure is higher than average, which lowers the average quality of borrowers: this is the adverse selection problem which can be reduced if the borrower can offer suitable collateral. Second, the increase in interest rates may encourage borrowers to use the funds to engage in more risky projects but with higher returns in case of success than those for which the loan had been granted: this is the moral hazard problem which can be viewed as an agency[1] problem as well. Indeed, the lender must monitor the borrower to insure that the borrower is making the best use of the funds received.

Akerlof (1970) was the first to attempt to model asymmetric information in the market; he applied the adverse selection problem to the market of used cars showing that under asymmetric information no trade and hence no market equilibrium may take place (the no trade theorem). Leland and Pyle (1977) develop a signaling model of financial structure in which entrepreneurs seek financing of projects whose true qualities are known only to them. They show that entrepreneur's willingness to invest in their own project can serve as a signal of project quality. Stiglitz and Weiss (1986) argue that when banks increase collateral requirement in order to distinguish between high and low risk borrowers they may indirectly influence the risk as wealthier borrowers may be willing to undertake more risky projects with the highest probability of failure which can lower banks profit.

Myers and Majluf (1984), showed that problems of asymmetric information may arise even in case of equity finance as the shareholders may perceive the issuance of new shares as an adverse signal that the shares are overvalued by the market and may be reluctant to provide the funds. Because of the effect of this adverse selection problem on the market value of the firm, issuing new shares must therefore be the last in the pecking order of the firm's financing .

The financing decision of the firm may be also affected by agency problems as outlined by Jensen and Meckling (1976). These agency costs are induced by debt contracts as well as by equity contracts. The lender as well as the providers of equity finance must monitor the use of their funds by the managers of the firm. The managers might be willing to seek their own interest rather than the interest of the shareholders or the lenders.

We organize this paper as follows: in section 2 we identify those groups of firms which are more likely to be financially constrained based on some indicators from balance sheet data. Section 3 tests for the presence of financing constraints using an investment equation; and in section 4 we investigate the role of financing constraints in determining the financing behavior of firms by testing the impact of collateral, internal finance, and the availability of cash on the debt ratio. In section 5 we test a model investigating the impact of the financial liberalization on economic performance. Concluding remarks are given in the last section.

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[1] First noted by A. Smith (1776).

Financial structure and performance of firms: some stylized facts

Since the early 1960s, and despite some liberalization in the 1970s, Tunisia followed until the mid to late 1980s a highly protectionist trade policy as well as active industrial policies with heavy direct involvement of the state. The financial system, composed mainly of the banking system, was also heavily regulated and dominated by state banks. Five out of the twelve commercial banks are public and they represent 68 percent of the total loans. The efficiency of the banking sector remained low, however, due to the predominant role of the public sector, and limited domestic and foreign competition. Non-performing loans in 1993 were approximately 14-25 percent of the total assets and off-balance sheet items for some private banks compared to 36 and 72% for the two main public banks.

The system was based on a selective credit allocation, regulated interest rates with subsidization in favor of those sectors considered as high priority or of strategic value: agriculture, export activities, small and medium sized firms and energy saving activities. Until the structural adjustment program initiated in 1986/1987 real creditor interest rates remained negative which is a manifestation of financial repression.

Following a balance of payments crisis in 1985-86 Tunisia began implementation of a stabilization program, as well as a structural adjustment program of economic and financial liberalization. The objective was to move away from a controlled economy and an administratively managed financial system towards an open and market oriented system with a reduced direct involvement of the state. Measures taken to reform the financial and banking systems since 1987 included eliminating progressively credit allocation controls by the abolishing credit ceilings and preferential interest rates. Interest rates were progressively freed, but the Central Bank maintained a strong involvement in their determination. Reforms of the financial system included the development of non-bank financial institutions and of the capital market.

The process of financial deepening in Tunisia is comparable to that of the most advanced of the developing countries. The M2/GDP ratio increased from 33% in 1972 to 51% in 1989. The ratio of financial sector assets to GDP increased even more reaching 125% in 1989 compared to 64% in 1972.

In this section we explore the impact of credit rationing policies and / or asymmetric information on Tunisian manufacturing firms through analysis of some indicators of financial structure and performance of groups of firms according to the type and degree of financing constraints they may have faced. We use data obtained from the annual industrial survey by the Institut National de la Statistique (INS) of Tunisia which provides accounting reports and balance sheets data. From an initial set of 229 firms and after checking the quality and availability of the data we obtain a sample of 163 firms for the period 1984-1994. Our sample represents about 14.5% of the total value added of the Tunisian manufacturing sector in 1984.

The following indicators of financial structure are calculated (Tables A1 and A2, stock variables are valued end-of-year) :

- R is ratio of total interest payments and financial charges to total debt at mid year, a measure of the nominal cost of financing.
- RR is real cost of debt financing, i.e. R – inflation rate.
- DT/K: total debt to capital stock, where capital stock is measured at gross value, acquisition prices.
- DT/AN: ratio of total debt to net worth.
- DLT/DT: ratio of long term to total debt.
- DLT/K: ratio of long term debt to fixed assets.
- DLT/AN: ratio of long term debt to net worth.
- $dDT/(K_{t-1})$: average yearly change of total debt over the period to the stock of capital at the beginning of year.
- A number of indictors of performance are also calculated (Tables A3 and A4)
- EBE/K: gross rate of return on capital assets.
- VA/K: ratio of value added to fixed capital.
- CF/K_{t-1}: internal funds to fixed assets of the beginning of the year.
- I/K_{t-1} new investment to fixed assets of the beginning of the year.
- TA/K_{t-1} ratio of cash or liquid assets to fixed assets of the beginning of period.
- EBE/IE interest coverage ratio: gross return on capital over interest expenses.

These indicators are computed for the total balanced data sample of 163 firms, as well as for the different groups of firms discussed below and for four sub-periods. While the reform of the financial sector started in 1987 it was not obvious until 1989-1990 that there was a significant qualitative change in the system.[2] We actually consider four sub-periods: 1984-86 referred to as a pre-reform period, 1987-89 a period of transition from a controlled economy to an open economy, 1990-92 a post-reform period where the results of the financial and economic liberalization program became obvious, and 1993-94 a period characterized by a

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[2] Other dates for break-up of the sample confirmed the significance of the 1984-89 and 1990-94 decomposition.

low inflation rate followed by a decrease in interest rates. The stylized facts from this analysis and the impact of financial reforms on financial structure and performance are evident from Figures 1 to 3, which highlight two sub-periods: one representing

Public vs. private sector firms.
The sample includes 15 public sector firms among which 8 are fully state owned, and 7 have more than 34% government share of capital. The rest (148) are private firms with only a few with a foreign participation.
On average public sector firms have "better access to credit" than the private sector, as indicated by the higher total and long term debt ratios (Fig. 2 and 3, Table A1). The ratio DLT/K compares the importance of long term debt to the amount of fixed capital held by the firm and helps understand the evolution of the asset-liability management of firms: firms with a higher proportion of fixed assets in total assets should have a higher proportion of long term debt in total liabilities. The results suggest that once again the public sector is less constrained in the access of long term finance. The long term to capital stock ratio is twice as large for the public sector. Debt ratios decline significantly for both categories after financial liberalization, but the public sector remains twice more indebted in terms of long term debt than the private sector.
The real cost of debt to the public sector was close to zero before liberalization (Fig.1). It increased significantly after reform, but remains almost one third that of the cost to the private sector (6% vs. 16%).
The various economic indicators, such as productivity of capital and rate of return on fixed assets, show much better performance for the private sector (Table A3). They also deteriorate significantly after liberalization for the public sector, while the investment rate increases. The average rate of investment I/K_{t-1} when compared to the average yearly internal finance available CF/K_{t-1} ($[I-CF]/K_{t-1}$ gives the difference between the average yearly investment rate and the average cash flow per unit of capital) confirms a structural change in the investment/financing behavior of the different groups of firms: the public sector invests after the liberalization much more than warranted by sustainability.
The financial indicators, interest coverage ratio (EBE/IE) and cash flow to assets ratio (CF/K), of the public sector are better than the private sector. This reflects mainly the low cost of debt. The public sector holds also more cash per unit of fixed assets than the private sector.
Kaplan and Zingales(1997), when classifying firms according to the degree of financing constraints, consider indeed that a large amount of cash held by the firm indicates the absence of financing constraints. Calomiris (1995) considers that

firms tend to hold "liquid assets reflecting their role as a buffer stock to prevent fixed capital from fluctuating as much in response to earnings shocks". Public sector firms hold the largest amount of cash compared to fixed assets, implying again weaker financing constraints (Table A3).

Trade orientation and growth of firms.
Among the 163 firms, 22 are considered as exporting because they export 10% or more of total sales on average over the period. We also distinguish between growth firms and non growth firms by separating those firms with assets growing at a rate of 15% per year on average (51 growth firms) from the rest of the sample. In the private sector both the degree of leverage (measured by DT/K, DT/A) was more favorable to the more export oriented firms (Table A1, Fig. 2 and 3). This bias increased significantly after financial liberalization. The long term credit to capital stock ratio increased for exporting firms while it declined overall. The differential in the real cost of debt increased significantly in favor of exporting firms. The same differences are also observed in favor of growth as compared to non growth firms (Table A1, Fig. 2 and 3).
The exporting firms in the private sector had better performance indicators before liberalization, during the periods 1984-86 and during the 1987-89 macroeconomic adjustment period (Table A4). However the indicators deteriorated greatly after liberalization and became worse than for the non-exporting firms. The good performance during the earlier period reflects partly the large exchange rate adjustment during 1984-1986 which had a strong impact on the profitability of exports. But other factors must also be playing a role.
Growth firms, on the other hand, maintained their favorable performance throughout the periods. Their higher returns on capital of growth firms are associated with a better access to long term finance.
For public sector exporting firms the real cost of debt was even negative before and after liberalization (Table A1) and debt ratios were the highest among all categories of firms. Their indicators of performance are also the worst among all groups, despite the continuing large increase in their indebtedness at the lowest cost (Table A3).

Size of private firms.
The private sector firms are grouped into three classes according to size of assets: the small size firms (83) with total assets of less than 1 million dinars in 1984,

medium sized firms (48) with assets between 1 and 5 millions dinars and large size firms (13) with assets greater than 5 millions dinars.[3]

Indicators of financial structure differ significantly between firms according to size (Fig. 2 and 3). Large firms have the largest indebtedness ratios and lowest cost of credit. A surprising finding is that small firms have higher long term debt to capital stock ratio and lower cost of credit than medium size firms during financial repression. But this order is reversed after liberalization. The cost of credit increased for all categories of firms but most significantly for the small size firms (from less than 10% to 17%). They have a lower proportion of fixed assets in their balance sheets hence to a higher proportion of short term financing in their liabilities, short term financing being more expensive.

Small and medium size firms, facing the highest cost of financing, have also higher returns and productivity of capital than larger firms (Table A4). After liberalization the indicators for small firms improve compared to the medium size firms as their cost of debt increases more.

Medium sized firms on average hold much more cash per unit of fixed capital since the reforms. This may reflect less constraints, but a firm also can be committed to holding more cash assets in order to smooth investment in period of low earnings because it can not rely on the availability of external finance.

Investment and financing constraints

In order to analyze the impact of informational asymmetries and administrative credit controls on the corporate sector in Tunisia we first estimate an investment equation for the private sector firms. We exclude the public sector firms group from this analysis as evidence suggests that administrative and direct government intervention were predominant in the determination of investment decisions. We follow the approach used by Fazzari, Hubbard and Peterson (FHP 1987) for US firms, Hoshi, Kashyap and Scharfstein (1991) for Japanese firms (showing that for firms affiliated with Keiretsu groups, cash flow has a smaller impact on investment), Harris, Schiantarelli and Siregar (1994) for Indonesian firms, Chirinko and Schaller(1995) for Canadian firms, Hermes (1996) for Chilean firms and Gelos (1997) for Mexican firms.[4]

The model is based on the standard accelerator hypothesis, and extended to account for financing constraints. Assuming that investment is financed by both cash flow and new debt, we introduce a cash flow variable as a proxy for the availability of internal finance which places constraints on actual investment. We also test for the significance of collateral on investment, another indication of financial constraints.

The following model is tested:
$$I_{i,t}/K_{i,t-1} = \alpha_1 (\Delta Y_{i,t-1}/K_{i,t-1}) + \alpha_2 (CF_{i,t-1}/K_{i,t-1}) + \alpha_3 (GAR_{i,t}/K_{i,t-1})$$

with $I_{i,t}/K_{i,t-1}$ is the investment to capital stock ratio (or rate of growth of the capital stock), $\Delta Y_{i,t-1}/K_{i,t-1}$ is the change in sales to capital stock ratio which is expected to measure future profitability, $CF_{i,t-1}/K_{i,t-1}$ is cash flow to capital stock ratio, and $GAR_{i,t}/K_{i,t-1}$ ratio of potential collateral to capital stock

We estimate the model using Feasible Generalized Least Squares (FGLS) with the white heteroskedasticity - consistent standard errors and covariance on a panel of 195 firms. The results are reported in Table 1.[5] D is a multiplicative dummy variable used to test for structural change after financial liberalization (1990-94), and EX is a dummy for exporting firms[6]

The accelerator variable has the expected positive coefficient, and is significant for all groups but large firms. All groups except large firms are likely to invest in reaction to recent changes in sales which convey information about future sales.

The cash flow variable (net of tax profits + depreciation allowances + provisions) represents the internal finance possibilities of the firms, and is expected to be non significant when firms are not financially constrained. Because of informational asymmetries the ability of the firm to raise external finance can be conditioned by its ability to generate internal finance: one should expect that an increase in cash flow, as a sign of creditworthiness, influences investment positively. Recent empirical work investigating the presence of financial constraints, considers that if a firm has difficulties obtaining external finance, its investment should display excess sensitivity to the availability of cash flow. Fazzari, Hubbard and Peterson (FHP 1987) when investigating for the presence of constraints for small US firms due to asymmetric information considerations, compared cash flow sensitivities of different size or groups of firms and interpreted the higher sensitivity as evidence of facing more financial constraints.

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[3] In 1984 one Tunisian dinar was $ 1.3, and in 1994 it was $ 1.0.
[4] A problem with the methodology is that it assumes that changes in cash flows are not related to investment opportunities. If the cash flow variable reflects such opportunities, which are not captured by other included variables, the coefficient of CF may not measure the extent of financial constraints.

[5] This sample includes 195 firms which is more than the (148) sample of private firms used in Section 2, because we use the balanced panel data sample of firms for which the data needed for these tests are available.
[6] Exporting firms are those exporting on average 5% yearly of their total sales, which is different from the criterion used in Section 2.

Based on the FHP interpretation we find that the coefficient of the cash flow variable is insignificant for exporting firms and large firms. These groups of firms appear to be not financially constrained prior and after liberalization. They have informational advantages which make them less subject to credit constraints. The striking finding, however, is that small size firms would appear less financially constrained than the medium size group. This is consistent with the stylized facts description above. The coefficient of the cash flow variable is significantly different from zero but much lower than that of the medium size group. It increases after financial liberalization, while the coefficient for the medium size firms does not change.

Kaplan and Zingales (1997) recently questioned the underlying assumption of a monotonic increase of cash flow sensitivities with the degree of financing constraints. They argue that "there is no strong theoretical reason to expect a monotonic relationship"[7] and show for example that, some of the firms classified by FHP as financially constrained firms are healthy firms and "could have increased their investment without tapping external sources of capital". Indeed, while it is evident to conclude that there is no constraints if investment exhibits no sensitivity to the cash flow variable, one can not expect necessarily that a higher coefficient be a sign of more constraints.

The cash flow variable represents the internal finance possibilities of firms, and signals their willingness to risk own resources. It is true that the higher the coefficient and the bigger the impact of internal finance on investment. But does a higher coefficient necessarily mean tighter constraints? A higher coefficient of the cash flow variable may indicate less financial constraints for a given category of firms, as these firms are able to invest more (and mobilize more external resources) than firms from another group for a given cash flow. First, under the Jensen(1986) "free cash flow" hypothesis firms generating high cash flow will tend to waste the excess cash flow by investing in low efficiency projects detrimental to shareholders' interest. If firms differ in their governance structure in some systematic way so as to make them more likely to engage in such behavior this may be reflected in the coefficient of cash flow variable. Second, cash flow acts as collateral and indicator of creditworthiness. Banks may value this collateral more for some firms than others, yielding different cash flow coefficients. This effect is similar to that of real collateral discussed below. This alternative interpretation of the investment sensitivity to the cash flow variable is in contradiction with the previous studies using this methodology, and more consistent with the conclusions of Kaplan and Zingales (1997).

This interpretation would indicate from the results of Table 1 that small sized firms are more credit constrained than medium sized ones. Financial liberalization has also loosened their external finance constraints. The fact that the cash flow coefficient is insignificant for the large and exporting firms, which are presumably less financially constrained, would imply under this interpretation that for these groups investment does not depend on the availability of internal finance. Or in other words that the variability of investment can not be explained by the variability of internal finance. This would imply a discontinuity in the effect of cash flow on investment: firms are either not subject to constraints when the coefficient is zero or constrained if it is positive, but a larger positive coefficient would mean less constraints.

Because of information asymmetries, "collateralizable" net worth can improve the firm's ability to raise new financing so that investment should respond positively to an increase in the net worth of the firm. We test for this effect by using the collateral variable which is a measure of guarantees the firm can provide to banks. Measured as the value of land and construction (real estate), it captures the impact of net worth on investment and should be positively correlated with investment. The coefficient value of the collateral variable will depend, however, on how valuable is collateral for credit decisions. For instance collateral may be irrelevant and its effect on investment low either because the collateral is not enforceable due to difficulties and high costs to foreclose, or because the firm has other characteristics of creditworthiness which compensate the need for collateral.

The collateral variable has a highly significant effect on investment for all groups of firms, again supporting the significance of informational problems in financial markets. It may indicate also difficulties for the lenders to asses the risk due to lack of experience, skill and human resources; credit is allocated mainly against collateral. Exporting and large firms have the largest coefficients on collateral due to better creditworthiness and less moral hazard. For medium sized firms, on the other hand, collateral has a lower coefficient than larger sized firms indicating higher costs of enforcement and lower value of collateral

The coefficient of collateral for small sized firms is higher than for medium firms, and is similar to that of the large firms. Like for the cash flow variable this may indicate that they are less constrained than the medium size firms. The coefficient decreases after the liberalization making small firms also more constrained. This suggests either that the liberalization was not accompanied by an improve in the banks technical abilities to evaluate or to monitor credit risk or may reflect government intervention during the pre-liberalization period and a more market oriented system after liberalization.

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[7] Kaplan and Zingales (1997), pages 170 and 184.

Financing constraints and indebtedness

In this section we present the second set of tests for the presence of financing constraints by investigating directly the determinants of indebtedness, as measured by the total debt to capital ratio. The following equation is used:

$$DT_{i,t}/K_{i,t-1}=\beta+\beta_1(CF_{i,t-1}/K_{i,t-1})+\beta_2(GA_{i,t}/K_{i,t-1})+\beta_3R$$

with variables as previously defined and R is the nominal cost of debt. Our hypothesis concerning the cost of debt is that firms which face the highest cost of debt are less levered. We expect a negative link between the cost of financing and the level of debt.

The results reported in Table 2 support our earlier finding of different financing behavior between groups of firms. Market orientation is also an important determinant of indebtedness. The equations are significantly different between exporting and non-exporting firms and according to size of firm. Also, the coefficient of the dummy for exporting firms (EX) in the equations by size of firms is significant for all the size groups.

The regression coefficient of the cash flow variable reflects two effects: the cash flow generated at time t-1 can serve either to reimburse prior debt or to finance at least partly new investments with a negative effect on debt, but it can convey information on future investment profitability and can act as a collateral cash to allow the firm to raise new financing and have a positive effect on debt. The negative sign for most groups before the liberalization shows that internal finance was mostly a substitute to external finance. For large sized groups, however, the coefficient is insignificant, and the positive collateral and profitability signal effect of cash flow is sufficiently large to compensate for the negative substitution effect: this result supports our earlier finding of weak constraints for large firms before as well as after the liberalization. Moreover the higher (in absolute value) the coefficient of cash flow the more constrained is the firm. Indeed the more constrained is the firm the quicker it will adjust its debt ratio when the cash flow goes up. The cash flow coefficient is higher for non-exporting than exporting and for small firms than for medium or large firms.

After liberalization we observe a positive shift in the parameter of cash flow for non exporting as well as for medium and small sized firms making them less financially constrained: their recourse to external finance is less dependent on the availability of internal finance.

The collateral variable has a significant and positive impact on the debt ratio for all groups of firms again supporting the significance of informational problems in the credit market. The results are consistent with those found in the investment

equations. A higher coefficient indicates a higher ability to leverage more for a given collateral. Large size and exporting firms have the greatest leverage for a given collateral and smaller firms the lowest. After liberalization the effect of collateral on the debt ratio is reduced significantly for most groups except for non-exporting and for large firms. This may reflect either better possibilities for banks to discriminate between borrowers following liberalization by charging appropriate risk premium as collateral becomes less important for indebtedness. For large firms, however, collateral remains as important for indebtedness; possibly indicating that liberalization did not change in any significant way their informational problems with respect to banks.

The results show also a strong negative and significant link between the debt ratio and the cost of financing. Even during financial repression the real cost of finance remains a significant determinant of indebtedness. The coefficient for cost of debt is about the same order of magnitude for all groups, except exporting firms where it is strongest. There is, however, a significant drop in this negative link after liberalization only for exporting as for small firms, making them similar to other groups.

Financial liberalization and performance of firms

Given the prevalence of financial constraints, whether due to market imperfections or to government interventions, one issue of major interest is how efficient was the banking sector' performance in the allocation of resources. We observed in section 2 that there were significant differences in "access" to credit which can be related also to performance. Such first indications relating to the period 90-92 after liberalization are summarized in Table 3.

The public sector with 42% of value-added had 55% of total debt, and lower rates of return. This feature is even more striking for exporting public firms with half the stock of debt and the lowest rates of return. We observe more generally that firms which are more levered have a lower return on capital, which may indicate lack of efficiency in the allocation of resources.

We observe also a positive relationship between economic performance and the cost of financing. This is consistent with the theoretical hypothesis that higher rates of return are associated with higher risk and higher interest rates. According to the McKinnon(1973) and Shaw (1973) analysis of the impact of financial conditions of developing countries on economic growth, financial liberalization which leads the interest rate towards its higher equilibrium level, is expected to increase both saving and investment and exert a positive effect on economic growth. A high interest rate deters entrepreneurs from undertaking low-yielding investments, which in the long run leads to productivity growth. Fry (1997)

reports that cross countries investigations of the impact of real interest rate on economic growth find a positive and significant relationship between the average rates of growth in real gross domestic product and the interest rate. More over, these studies indicate that the average productivity of investment in countries with positive real interest rates is much higher than in countries with negative real interest rates (Fry 1997). All these studies aimed to show at the country level that countries of high interest rate have higher economic growth; none of these papers was interested in making evident this positive link at the firm level within one country. Indeed it was shown in the previous section of this paper that in Tunisia financial government policies and asymmetric information problems lead to a segregation among different groups of firms in the cost of financing. One way to test whether the McKinnon-Shaw hypothesis holds is to estimate the relationship between the cost of financing and economic performance for a sample of firms at a given time, and to compare the relationship prevailing before and after the liberalization.

We investigate this issue further using regression analysis and testing for changes in the relationship between the cost of financing and economic performance after financial liberalization. We focus on two sub periods 1985-87 as a pre-reform period and 1990-92 as a post reform period.

The following model is tested:

$$EBE/K_{it-1} = \alpha_1 + \alpha_2\ R_{it} + \alpha_3\ (DT/K)_{it-1}$$

with variables as defined above, and run the regression on the mean variables of sample of 148 private firms for each sub period (cross section analysis)[8]. The method used is least square with the Newey-West HAC standard errors and covariance correction for cross section heteroskedasticity. The results are reported in Table 4.

The results show a positive and significant correlation between the level of the cost of financing and the gross return on capital before as well as after liberalization. Firms which face higher interest rates have a better performance. The explanatory power of the model tested is much better after the liberalization with R^2 almost twice as high as before the liberalization. The coefficient of the cost of financing is also higher after the liberalization which shows a stronger relation between economic performance and cost of financing. Financial liberalization had a significant impact on the performance of the corporate sector in Tunisia.

The coefficient of the total debt ratio (α_3) captures the impact of the degree of leverage on the gross return on capital. For a given interest rate, in the context of an economy characterized by credit rationing, one may expect that greater availability of credit would allow firms to leverage more and undertake more risky but with higher expected returns projects. But policy induced credit allocation may go in the other direction if it gives priority to lower profitability activities and projects. Our results show a positive relationship between indebtedness and gross returns on capital. The strength of this link is twice greater after the liberalization (0.325 vs 0.159), which suggests an improvement in the overall efficiency of capital within the private sector. However as we observe from Table 3 this positive correlation is reversed when we consider the private versus the public sector as a whole, which reflects mostly policy induced credit allocation.

Conclusions

We showed in this paper that because of asymmetric informational problems and credit rationing policies size of firm, trade orientation and public ownership are important determinants of access to credit and financial structure before as well as after financial liberalization. The analysis indicates that because of market imperfections, asymmetric information and/or lenders lack of skill and experience in assessing risk, cash flow and real collateral are major determinants of investment and of indebtedness. The size and significance of these effects depend on firm characteristics. Public sector firms had the best access to external finance, with lowest cost and highest debt ratios. Large firms and exporting firms have informational advantages and are less or not at all constrained. The more constrained in terms of access to credit are small and medium sized private firms, especially non exporting firms.

The financial and economic liberalization program initiated since the mid-1980s in Tunisia had significant effects on the investment and financing behavior of the corporate sector. Total indebtedness declined but its allocation and the extent of financial constraints changed towards more efficient credit allocation. We find also a positive link between firms economic performance and the cost of financing which is stronger after financial liberalization; which suggests that financial liberalization has a positive effect on economic growth.

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[8] We use the same sample as the one used for computing the financial structure and performance indicators in section 2 because of missing data.

References:

Akerlof, George A. 1970 "The Market for lemons: qualitative uncertainty and the market mechanism". *Quarterly Journal of Economics*, 89 8.

Ben, Bernanke and Mark Gertler. 1990. "Agency Costs, Net worth, and Business Fluctuations". *The American Economic Review* 79-1

Calomiris, Charles and Glenn Hubbard. 1995. "Internal Finance and Investment: evidence from the Undistributed Profits Tax of 1936-37" *Journal of Business* Vol. 68 No. 4 1995.

Calomiris, Charles. 1995. "Financial fragility: Issues and policy implications" *Journal of Financial Services Research 9*: p 241-257.

Chirinko, Robert S. and Huntley Schaller. 1995. "Why does Liquidity Matter in Investment Equations?" *Journal of Money, Credit and Banking*, Vol. 27, No. 2 May.

Davis, E. P. 1992 "Debt, Financial Fragility, and Systematic Risk" Oxford University Press NY.

Fazzari, Steven M, Glenn Hubbard and Bruce C. Petersen B. 1987. "Financing Constraints and Corporate Investment" *NBER 2387* Sept. Page 6.

Fry, Maxwell J. 1997. "In Favor of Financial Liberalization". *The Economic Journal*, May.

Gelos Gaston. 1997. "How did Financial Liberalization in Mexico Affect Investment? Evidence from the Manufacturing Sector" *Working paper, Yale University*.

Harris, John R., Fabio Schiantarelli And Miranda G. Siregar. 1994. "The Effect of Financial Liberalization on the Capital Structure and Investment Decisions of Indonesian Manufacturing Establishments". The *World Bank Economic Review*, Vol. 8.

Hermes, Neils. 1996. "Financial Reform and Financial Intermediation in Chile, 1983 – 1992" Financial Development and Economic Growth. R. edition

Hoshi, Takeo, Anil Kashyap, and David Scharfstein. 1991 "Corporate structure, Liquidity, and Investment: evidence from Japanese panel data" *Quarterly Journal of Economics* 106 33 60

Hubbard, R. Glenn. 1998. "Capital Market Imperfections and Investment." *Journal of Economic Literature*, Vol. XXXVI, March. p.193-225

Jensen, Michael C. 1986. Agency Costs of free Cash flow, Corporate Finance and takeovers' AER 76 323-9

Jensen, Michael C. And William Meckling W.H. 1976. "Theory of the firm: managerial behavior, agency costs and ownership structure." *Journal of Financial Economics*, October.

Kaplan Steven and Luiji. Zingales. 1997. "Do investment cash flow sensitivities provide useful measures of financing constraints." *Quarterly Journal of Economics*, February.

Leland, Hayne and David Pyle. 1997. "Informational Asymmetries, Financial Structure and Financial Intermediation" *The Journal of Finance*, Vol. 2 May.

Levine Ross. 1997. "Financial development and economic growth : views and Agenda" *Journal of Economic Literature*, June.

Levine, Ross and Sara Zervos. 1998. "Stock Markets and Economic Growth." *American Economic Review*, Vol.88 (3). June, p. 537-58.

Modigliani, Franco and Merton Miller. 1958. "The Cost of Capital, Corporate Finance, and the theory of investment" *American Economic Review*, June.

Modigliani, Franco and Merton Miller. 1961. "Dividend policy, growth, and the valuation of shares" *Journal of Business*, Vol. 34, October.

Modigliani, Franco and Merton Miller. 1963. " Corporate income, Tax and the Cost of Capital: a correction" *American Economic Review*, June.

Myers, Stewart and N. Majluf. 1984. "Corporate Financing and Investment decisions when firms have information that investors do not have". *Journal of Financial Economics*,Vol.13, June.

Myers, Stewart. 1984. " The capital structure puzzle", *Journal of Finance*, Vol. 39 July.

Rajan, B G. and Luiji. Zingales, 1998, "Financial Dependence and Growth." *American Economic Review*, Vol.88, No3, June, pp. 559-586.

Smith Adam. 1776. "The Wealth of Nations:" rep 1937, Canaan ed., Modern Library, New York

Stiglitz, Joseph. E. and Andrew Weiss. 1981. "Credit rationing in Markets with imperfect information", *American Economic Review*, Vol.71 June.

Stiglitz, Joseph. E. and Andrew Weiss. 1986. "Credit Rationing and Collateral" in J. Edwards et al eds. *Recent Developments in Corporate Finance*, Cambridge Univ. Press.

Figure 1: Real Cost of Debt
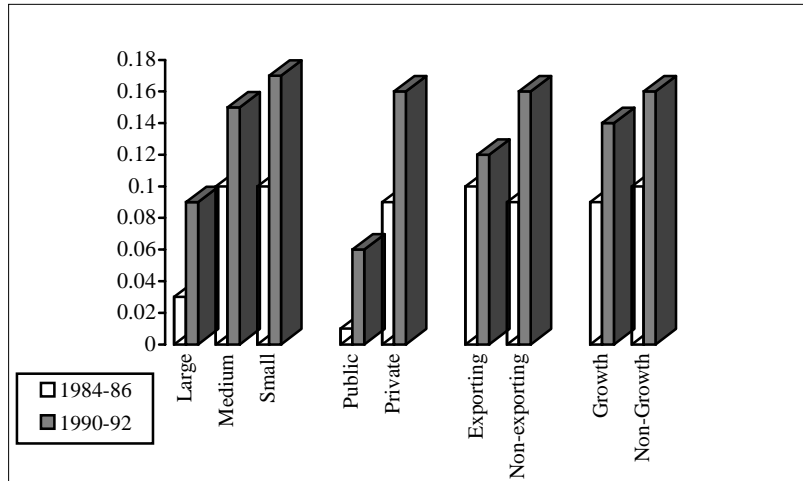
Figure 3: Long Term Debt to Fixed Assets: DLT/K
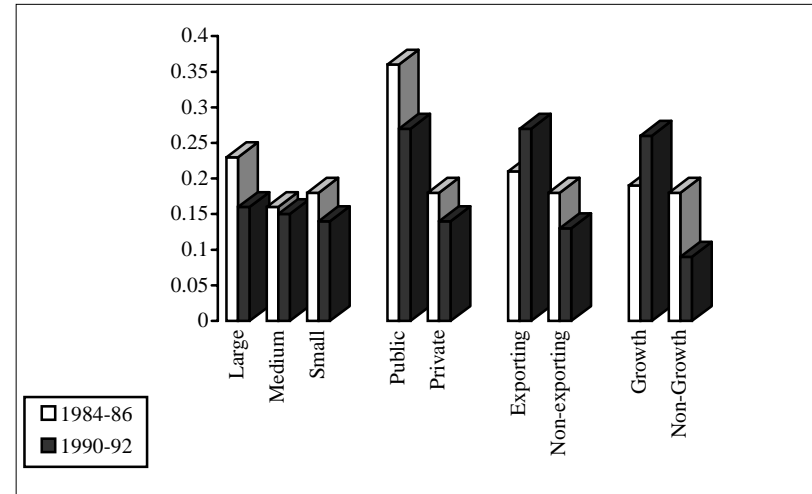
Figure 2: Total Debt to Total Assets:DT/A
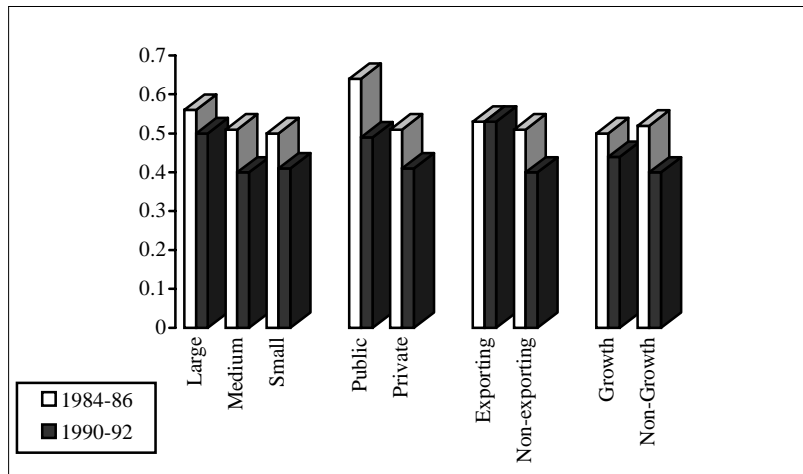
Table 1: Determinants of Investment

	ΔY/K	CF/K	DxCF/K	GA/K	DxGA/K	EX
Whole sample	0.006*	0.064*	0.053*	0.245*	-0.050*	0.030**
(195)	(6.89)	(9.47)	(2.70)	(19.44)	(-3.58)	(19.02)
Exporting	0.015*	0.080	0.134	0.590*	-0.300	-
(44)	(7.92)	(0.84)	(0.83)	(3.44)	(-1.75)	-
Non-exporting	0.002*	0.036*	-0.011	0.138*	0.050*	-
(151)	(2.37)	(7.77)	(-1.38)	(18.76)	(5.30)	-
Small-size	0.005*	0.024*	0.081*	0.25*	-0.070*	0.030*
(120)	(4.96)	(3.16)	(3.57)	(13.68)	(-3.52)	(20.76)
Medium-size	0.012*	0.146*	-0.009	0.171*	0.028	0.022*
(57)	(6.96)	(10.01)	(-0.34)	(10.69)	(1.50)	(5.33)
Large-size	-0.007	0.118	0.123	0.260*	-0.060	0.018
(18)	(-0.40)	(1.07)	(0.99)	(2.55)	(-0.66)	(1.64)

Notes: (a) number of firms is indicated under each category in the first column; (b) t ratios in parentheses under coefficients; (c) a * indicates significance at 5%. Method of estimation is FGLS with-White Heteroskedasticity-consistent standard errors and covariance. F test of the significance of difference between size groups is F = 6.52. F test of significance between exporting and non exporting is F = 120.58.

Table 2: Determinants of Indebtedness

	c	CF/K	DxCF/K	GA/K	DxGA/K	R	DxR	EX	R2
Whole sample	0.54*	-1.08*	0.35*	0.54*	-0.21*	-0.64*	0.068*	0.114*	0.54
(172)	(58.6)	(-17.3)	(4.56)	(10.61)	(-4.51)	(-28.34)	(2.16)	(13.88)	-
Exporting	0.68*	-0.40*	-0.54*	0.83*	-0.76*	-1.23*	0.47*	-	0.38
(44)	(18.8)	(-2.46)	(-2.63)	(3.17)	(-3.62)	(-13.5)	(4.18)	-	-
Non-exporting	0.55*	-1.28*	0.61*	0.34*	-0.02	-0.55*	-0.028	-	0.51
(128)	(52.2)	(-14.6)	(5.77)	(5.83)	(-0.43)	(-17.9)	(-0.69)	-	-
Small-size	0.51*	-1.11*	0.28*	0.52*	-0.19*	-0.63*	0.12*	0.15*	0.45
(98)	(30.2)	(-11.9)	(2.40)	(6.11)	(-2.49)	(-16.6)	(2.33)	(10.5)	-
Medium-size	0.61*	-1.08*	0.72*	0.61*	-0.33*	-0.71*	0.0005	0.029*	0.64
(56)	(58.1)	(-10.53)	(6.08)	(8.95)	(-4.42)	(-19.2)	(0.01)	(2.44)	-
Large-size	0.33*	-0.52	-0.71	0.76*	0.13	-0.52*	-0.15	0.19*	0.37
(18)	(9.17)	(-1.42)	(-1.36)	(6.35)	(0.82)	(-10.40)	(-0.98)	(5.10)	-

Notes: (a) number of firms is indicated under each category in the first column, (b) t ratios in parentheses under coefficients, (c) a * indicates significance at 5%. Method of estimation FGLS with - White Heteroskedasticity-consistent standard errors and covariance. F statistic is highly significant for all groups.

Table 3: Credit Allocation and Efficiency, 1990-92

	R	EBE/K	DT/A	DLT/K	Share of Total debt	Share of value added In total (%)	Share of investment In total (%)
Public	0.124	0.172	0.494	0.273	55.2	41.9	47.5
SOEs	0.116	0.169	0.442	0.282	33.8	26.9	31.2
Mixed	0.133	0.175	0.553	0.263	21.4	15.0	16.3
Exporting	0.046	0.123	0.825	0.616	46.7	23.0	26.0
Private	0.224	0.244	0.414	0.145	44.8	60.0	52.5
Exporting	0.182	0.200	0.529	0.265	20.3	20.5	22.9
Domestic	0.223	0.244	0.414	0.145	28.5	40.3	35.8
						In private domestic(%)	
Large	0.155	0.189	0.500	0.164	33.7	32.3	38.1
Medium	0.213	0.215	0.403	0.149	46.6	45.6	44.2
Small	0.239	0.269	0.407	0.14	19.7	22.1	17.7

Table 4: Economic Performance and Financial Liberalization.

	Constant	DT_{t-1}/K	R	R^2
Pre-reform 85-87	0.090	0.159	0.485*	0.22
148 firms	(2.50)	(3.19)	(3.21)	-
Post-reform 90-92	-0.037	0.325	0.699*	0.39
148 firms	(-0.60)	(4.31)	(3.94)	-

Notes: t ratios in parentheses under coefficients, (c) a * indicates significance at 5%. Method of estimation least square with Newey-West HAC standard errors and covariance correction for heteroskedasticity.

Table A1: Financial Structure of Firms I

	Period	R	RR	DT/K	DT/A	DLT/DT	DLT/K	DLT/A
Total (163)	1984-86	0.158	0.085	0.641	0.524	0.349	0.200	0.191
	1987-89	0.188	0.111	0.544	0.457	0.302	0.156	0.138
	1990-92	0.215	0.149	0.510	0.421	0.303	0.157	0.138
	1993-94	0.191	0.147	0.460	0.392	0.316	0.142	0.132
Public (15)	1984-86	0.080	0.007	0.793	0.638	0.470	0.364	0.294
	1987-89	0.092	0.016	0.614	0.555	0.477	0.322	0.227
	1990-92	0.124	0.058	0.529	0.494	0.460	0.273	0.258
	1993-94	0.108	0.064	0.542	0.547	0.484	0.306	0.313
Private (148)	1984-86	0.166	0.093	0.626	0.512	0.337	0.183	0.181
	1987-89	0.198	0.121	0.537	0.447	0.284	0.139	0.129
	1990-92	0.224	0.158	0.508	0.414	0.287	0.145	0.126
	1993-94	0.200	0.156	0.452	0.377	0.299	0.125	0.113
SOEs (8)	1984-86	0.077	0.004	0.759	0.604	0.443	0.333	0.272
	1987-89	0.089	0.013	0.527	0.485	0.507	0.257	0.226
	1990-92	0.116	0.050	0.530	0.442	0.481	0.282	0.245
	1993-94	0.094	0.050	0.498	0.463	0.437	0.253	0.244
Mixed public-private (7)	1984-86	0.083	0.010	0.831	0.676	0.501	0.400	0.319
	1987-89	0.096	0.019	0.712	0.635	0.443	0.396	0.227
	1990-92	0.133	0.067	0.527	0.553	0.435	0.263	0.274
	1993-94	0.125	0.081	0.591	0.644	0.539	0.367	0.392
Private-domestic (142)	1984-86	0.166	0.093	0.624	0.509	0.335	0.180	0.179
	1987-89	0.198	0.121	0.541	0.448	0.283	0.138	0.128
	1990-92	0.223	0.157	0.512	0.414	0.286	0.145	0.125
	1993-94	0.199	0.155	0.455	0.377	0.301	0.126	0.113
Private domestic & foreign (6)	1984-86	0.172	0.098	0.663	0.585	0.369	0.256	0.225
	1987-89	0.196	0.120	0.447	0.427	0.311	0.165	0.147
	1990-92	0.244	0.178	0.415	0.412	0.304	0.141	0.143
	1993-94	0.221	0.177	0.370	0.369	0.251	0.107	0.111

Table A2: Financial Structure of Firms II

	Period	R	RR	DT/K	DT/A	DLT/DT	DLT/K	DLT/A
Total Private-Domestic								
Large (13)	1984-86	0.105	0.031	0.615	0.559	0.409	0.226	0.218
	1987-89	0.119	0.042	0.569	0.518	0.451	0.207	0.206
	1990-92	0.155	0.089	0.449	0.500	0.473	0.164	0.170
	1993-94	0.135	0.091	0.486	0.542	0.483	0.151	0.142
Medium (46) *	1984-86	0.175	0.101	0.532	0.512	0.344	0.164	0.180
	1987-89	0.211	0.135	0.441	0.438	0.288	0.111	0.122
	1990-92	0.213	0.147	0.477	0.403	0.310	0.149	0.136
	1993-94	0.193	0.149	0.338	0.341	0.306	0.090	0.119
Small (83)	1984-86	0.171	0.097	0.677	0.500	0.319	0.182	0.172
	1987-89	0.202	0.125	0.591	0.443	0.255	0.142	0.120
	1990-92	0.239	0.173	0.542	0.407	0.243	0.140	0.112
	1993-94	0.212	0.168	0.516	0.371	0.269	0.141	0.105
Public								
Export (4)	1984-86	0.048	-0.025	1.224	0.814	0.688	0.739	0.520
	1987-89	0.041	-0.036	1.254	0.732	0.662	0.876	0.477
	1990-92	0.046	-0.020	1.079	0.825	0.608	0.616	0.503
	1993-94	0.037	-0.007	1.060	0.904	0.626	0.658	0.589
Non-export (11)	1984-86	0.092	0.018	0.636	0.573	0.391	0.228	0.212
	1987-89	0.111	0.035	0.381	0.491	0.410	0.121	0.136
	1990-92	0.152	0.086	0.328	0.374	0.406	0.148	0.169
	1993-94	0.134	0.090	0.353	0.418	0.433	0.178	0.213

Table A2: contd.

Total	Period	R	RR	DT/K	DT/A	DLT/DT	DLT/K	DLT/A
Private Export (22)	1984-86	0.171	0.098	0.670	0.527	0.316	0.213	0.173
	1987-89	0.180	0.103	0.588	0.448	0.341	0.168	0.148
	1990-92	0.182	0.116	0.673	0.529	0.388	0.265	0.168
	1993-94	0.182	0.138	0.606	0.610	0.403	0.169	0.157
Non-export (130)	1984-86	0.165	0.092	0.620	0.510	0.340	0.179	0.182
	1987-89	0.200	0.123	0.530	0.447	0.276	0.135	0.126
	1990-92	0.230	0.164	0.486	0.398	0.273	0.128	0.120
	1993-94	0.202	0.158	0.431	0.344	0.284	0.119	0.107
Private Growth (51)	1984-86	0.161	0.088	0.643	0.500	0.316	0.186	0.178
	1987-89	0.185	0.108	0.643	0.484	0.299	0.201	0.154
	1990-92	0.211	0.145	0.645	0.436	0.381	0.257	0.184
	1993-94	0.181	0.137	0.559	0.399	0.414	0.234	0.177
Non-Growth (97)	1984-86	0.169	0.095	0.617	0.519	0.348	0.182	0.182
	1987-89	0.204	0.127	0.482	0.428	0.276	0.106	0.115
	1990-92	0.231	0.165	0.437	0.403	0.237	0.086	0.096
	1993-94	0.210	0.166	0.396	0.365	0.238	0.067	0.079

Table A3: Performance Indicators I

	Period	EBE/K	VA/K	EBE/IE	CF/K-1	I/K-1	(1-CF/K-1)	TA/K-1	dDT/K-1
Total (163)	1984-86	0.246	0.563	9.254	0.068	0.134	0.066	0.086	0.059
	1987-89	0.207	0.476	8.566	0.059	0.100	0.041	0.083	0.052
	1990-92	0.237	0.504	7.966	0.066	0.107	0.041	0.110	0.054
	1993-94	0.204	0.461	8.739	0.070	0.102	0.032	0.110	0.037
Public (15)	1984-86	0.206	0.460	18.233	0.070	0.093	0.023	0.127	0.018
	1987-89	0.199	0.430	17.932	0.108	0.124	0.016	0.133	0.032
	1990-92	0.172	0.405	9.066	0.080	0.150	0.07	0.188	0.061
	1993-94	0.150	0.343	12.228	0.105	0.188	0.083	0.129	0.105
Private (148)	1984-86	0.250	0.572	8.348	0.068	0.138	0.07	0.081	0.063
	1987-89	0.208	0.475	7.610	0.054	0.098	0.044	0.077	0.054
	1990-92	0.244	0.510	7.855	0.064	0.103	0.039	0.102	0.054
	1993-94	0.209	0.471	8.385	0.067	0.094	0.027	0.109	0.030
SOE (8)	1984-86	0.210	0.469	23.844	0.064	0.069	0.005	0.131	-0.060
	1987-89	0.176	0.417	19.588	0.098	0.067	-0.031	0.162	-0.010
	1990-92	0.169	0.403	11.207	0.103	0.183	0.08	0.219	0.081
	1993-94	0.166	0.348	20.264	0.124	0.182	0.058	0.180	0.079
Mixed Public Private (7)	1984-86	0.202	0.480	11.821	0.076	0.122	0.046	0.122	0.107
	1987-89	0.225	0.492	16.039	0.120	0.188	0.068	0.099	0.079
	1990-92	0.175	0.418	6.619	0.054	0.112	0.058	0.154	0.037
	1993-94	0.132	0.352	3.045	0.082	0.195	0.113	0.070	0.134
Private-Domestic (142)	1984-86	0.247	0.566	8.525	0.066	0.138	0.072	0.082	0.067
	1987-89	0.207	0.477	7.821	0.054	0.098	0.044	0.076	0.053
	1990-92	0.244	0.514	8.076	0.065	0.102	0.037	0.102	0.056
	1993-94	0.208	0.469	8.591	0.066	0.094	0.028	0.108	0.031
Private-Domestic & Foreign (6)	1984-86	0.311	0.722	4.131	0.116	0.133	0.017	0.078	-0.025
	1987-89	0.231	0.519	2.654	0.058	0.092	0.034	0.115	0.063
	1990-92	0.227	0.515	2.603	0.057	0.108	0.051	0.098	0.012
	1993-94	0.243	0.541	3.514	0.092	0.091	-0.001	0.118	0.022

Table A4: Performance Indicators II

	Period	EBE/K	VA/K	EBE/IE	CF/K-1	I/K-1	(I-CF)/K-1	TA/K-1	dDT/K-1
Private-Domestic									
Large (13)	1984-86	0.215	0.374	17.330	0.107	0.138	0.031	0.084	0.040
	1987-89	0.146	0.251	13.103	0.056	0.069	0.013	0.054	0.029
	1990-92	0.189	0.312	18.150	0.086	0.090	0.004	0.062	0.022
	1993-94	0.166	0.287	13.401	0.098	0.087	-0.011	0.089	0.013
Medium (46)	1984-86	0.244	0.475	8.082	0.068	0.073	0.005	0.078	0.023
	1987-89	0.205	0.388	8.011	0.071	0.111	0.04	0.068	0.055
	1990-92	0.215	0.401	7.029	0.082	0.100	0.018	0.168	0.059
	1993-94	0.183	0.362	11.350	0.080	0.082	0.002	0.134	-0.023
Small (83)	1984-86	0.254	0.647	7.358	0.058	0.174	0.116	0.083	0.095
	1987-89	0.217	0.560	6.912	0.045	0.096	0.051	0.083	0.056
	1990-92	0.269	0.608	7.083	0.052	0.105	0.053	0.072	0.059
	1993-94	0.228	0.557	6.308	0.053	0.101	0.048	0.097	0.064
Public									
Exporting (4)	1984-86	0.120	0.343	4.862	0.031	0.059	0.028	0.134	0.185
	1987-89	0.120	0.273	4.565	0.058	0.252	0.194	0.091	0.203
	1990-92	0.123	0.265	5.111	0.024	0.147	0.123	0.119	0.125
	1993-94	0.095	0.198	7.008	0.065	0.078	0.013	0.135	0.095
Non-exporting (11)	1984-86	0.238	0.502	23.095	0.084	0.106	0.022	0.125	-0.043
	1987-89	0.228	0.487	22.792	0.127	0.077	-0.05	0.148	-0.030
	1990-92	0.190	0.456	10.504	0.100	0.151	0.051	0.213	0.037
	1993-94	0.170	0.395	14.127	0.119	0.228	0.109	0.127	0.109

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Table A4: contd.

	Period	EBE/K	VA/K	EBE/IE	CF/K-1	I/K-1	(I-CF)/K-1	TA/K-1	dDT/K-1
Private									
Exporting (18)	1984-86	0.308	0.699	5.644	0.133	0.111	-0.022	0.111	0.081
	1987-89	0.234	0.516	4.184	0.085	0.150	0.065	0.118	0.047
	1990-92	0.200	0.467	5.501	0.034	0.113	0.079	0.231	0.156
	1993-94	0.175	0.438	4.873	0.022	0.091	0.069	0.103	0.018
Non-exporting (130)	1984-86	0.242	0.554	8.728	0.059	0.142	0.083	0.077	0.060
	1987-89	0.204	0.470	8.078	0.050	0.091	0.041	0.072	0.055
	1990-92	0.250	0.516	8.180	0.069	0.101	0.032	0.084	0.040
	1993-94	0.214	0.475	8.871	0.073	0.094	0.021	0.109	0.032
Growth (51)	1984-86	0.281	0.613	10.136	0.090	0.257	0.167	0.107	0.208
	1987-89	0.242	0.505	9.019	0.082	0.155	0.073	0.097	0.116
	1990-92	0.309	0.565	9.533	0.107	0.141	0.034	0.153	0.111
	1993-94	0.274	0.503	10.674	0.116	0.148	0.032	0.144	0.083
Non-Growth (97)	1984-86	0.233	0.550	7.395	0.056	0.074	0.018	0.068	-0.015
	1987-89	0.190	0.460	6.877	0.040	0.068	0.028	0.067	0.021
	1990-92	0.210	0.482	6.976	0.042	0.082	0.04	0.076	0.024
	1993-94	0.175	0.453	7.181	0.041	0.065	0.024	0.090	0.003

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