

***Determinants and Consequences of Financial
Constraints Facing Firms in Argentina***

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Abstract

Over the last ten years, profound structural changes have occurred in the Argentine economy, including the monetary and exchange rate regimes and the banking sector. In spite of structural reforms and the market friendly environment, evidence shows that financial constraints are still tight and that market segmentation is important. This research suggests that: (i) credit markets are markedly segmented, (ii) firms are dependent on owned funds; (iii) the volatility of the environment and external shocks affect the firms' capital structure. We focus on micro data from Stock Exchange and Encuesta Nacional de Grandes Empresas to: (a) present the stylized facts characterizing the capital structure of Argentine firms based on the analysis of balance-sheet items; (b) assess the relevance of financial constraints on investment at the firm level; (c) obtain quantitative evidence of firm's financial structure and choices; (d) investigate the effects of financial imperfections on different types of firms according to different sample splits; (e) evaluate the effects of macroeconomic volatility and shocks on firms' financial structure.

Journal of Economic Literature Classification

C2 Models with Panel Data

E2 Investment

G1 Portfolio Choice

Introduction

Over the last ten years, profound structural changes have occurred in the Argentine economy. The monetary and exchange rate regimes and the banking sector have been no exception. As a consequence, the country is currently showing a unique combination of characteristics:

- The exchange rate/monetary regime has been a currency board since 1991.
- There are no obstacles to capital flows.
- Private portfolios and banks' balance sheets are highly dollarized.

In spite of structural reforms and the market friendly environment, evidence shows that financial constraints are still tight and that market segmentation is important - different kinds of firms enjoy different access to capital. In addition, the environment is still volatile and there were two important credit-crunch episodes when the so-called Tequila effect and the Russian-Brazilian crises hit the economy in 1995 and 1998, respectively.

The causes and consequences of financial constraints are much better understood today than in the past (for a survey, see Hubbard 1998). The few existing studies point to the relevance of financial constraints (Fanelli and Damill 1988; Fanelli and Keifman, 1999; Bebczuk, 2000; Schmuckler and Vesperoni, 2000). This research suggests that: (i) credit markets are markedly segmented, (ii) firms are dependent on owned funds; (iii) credit Granger causes the activity level and country risk matters for real decisions, and (iv) the volatility of the environment and external shocks affect the firms' capital structure. However, our knowledge of the precise way in which financial constraints affect the firms' financial structure and investment decisions in Argentina is still quite limited, specially so regarding the impact of the above-mentioned features of the Argentine economy. Taking into account the well-known influence financial factors have on both business cycles and long-run growth, the little effort devoted to research in this area represents a restriction on policy design and policy making.

The main purpose of the paper is to contribute to our knowledge of this topic in the specific case of Argentina. Unlike most papers in the field which rely on listed firms, we will also analyze for the first time one comprising 500 large firms (although in the number of usable observations for econometric purposes are 308). Since the number of listed firms in Argentina is very small and this group may exhibit a different behavior than other firms, studying that new set of firms is bound to shed further light on the subject for a country like Argentina. The caveat is that, as expected, the set of available variables and the time frame differ across the two databases, preventing us from running the same econometric exercises and strictly comparing the results from each sample. Although this imposes a cost in terms of the desirable structure of the paper, we believe that the additional insights derived from the new sample outweigh such disadvantage. Similarly, the wide range of issues covered -stylized facts, investment and capital structure decisions- intends to fill some gaps detected in the empirical literature referred to Argentina.

Specifically, we focus on micro data to:

- present the stylized facts characterizing the capital structure of Argentine firms based on the analysis of balance-sheet items;
- assess the relevance of financial constraints on investment at the firm level;
- obtain quantitative evidence of firm's financial structure and choices;
- investigate the effects of financial imperfections on different types of firms according to different sample splits;
- evaluate the effects of macroeconomic volatility and shocks on firms' financial structure.

The paper is organized into three parts. Section One presents the stylized facts that can be identified in the balance-sheet data. In order to set the context for our discussion, this section includes an introduction describing the evolution of credit and other relevant monetary variables under Convertibility. Section Two studies the investment and capital structure decisions in the Convertibility period. Some conclusions close.

I. Convertibility Regime and Firms' Financial Decisions: The Stylized Facts

The Convertibility Law put in force a currency board-like regime in 1991. The peso was pegged to the U.S. dollar and the parity was fixed at one peso per dollar. It was established that the Central Bank would hold an amount of international reserves that would at least be equal to the currency in circulation. The most remarkable result of the Convertibility Regime was the reduction in the inflation rate. Under Convertibility Argentina ceased to be a high-inflation country. Today, the rate of inflation is well below international standards. Another important fact is that the average rate of growth of the economy was considerable in the nineties (4.1% per year). In spite of these encouraging results, however, sustainable growth is far from ensured. The above-mentioned average growth rate is the result of two completely different periods, separated by the Tequila effect in 1995. In the first years of the reform, the increase in GDP was strong. But, after 1995, the evolution of the economy showed several disappointing features: The activity level followed a stop-and-go pattern; the average increase in GDP was low; and, the unemployment rate soared. Likewise, the fiscal deficit and the stock of the external debt experienced an upward trend. In such a context, Argentina faced increasing difficulties to meet its external obligations. Ultimately, at the end of 2000, the country was forced to resort to the IMF. The financial agreement (the so-called "blindaje") was reached in December 2000.

Convertibility, Dollarization and Country Risk Premium

High inflation, frequent maxi-devaluation and uncertainty were the rule rather than the exception during the so-called "lost decade" which followed the debt crisis in 1982. In such a context, the domestic demand for financial assets fell systematically in the eighties. As a result, in 1991, the degree of financial deepening of the economy was very low. Total deposits amounted to around 5% of GDP. The changes induced by the Convertibility Plan in this financial scenario, a legacy of the lost decade, were as significant as those in the price dynamics. The stabilization of the exchange rate and disinflation greatly favored the recovery in the demand for domestic assets. Nonetheless, this recovery additionally benefited from the substantial improvement in the conditions of the capital markets for emerging countries in the first part of the nineties.

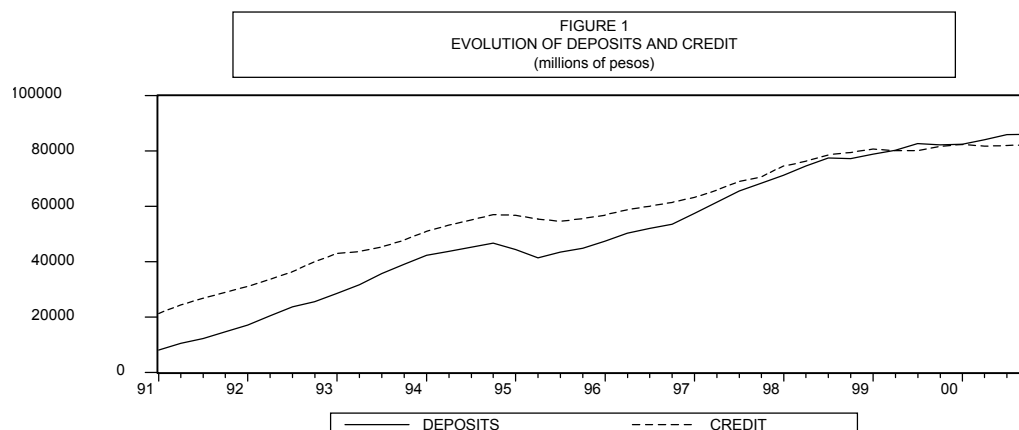
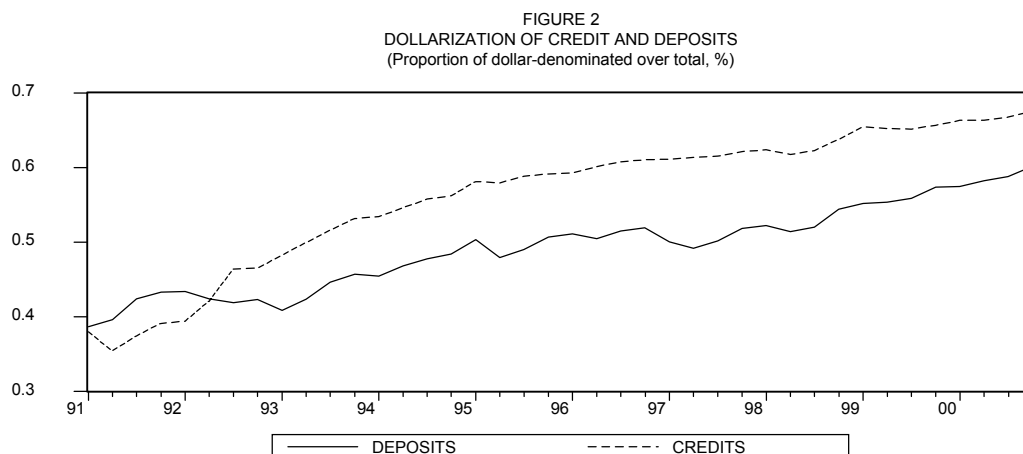


Figure 1 shows the continuous improvement in financial deepening in the 1991-94 period as measured by the increase in the demand for deposits and total credit. These developments not only softened the tight credit rationing of the eighties but also opened up new opportunities for the firms to innovate in the form of financing capital projects.

The process of increasing financial deepening under Convertibility, however, has certain features which are very important for our research on firms' financial decisions. In the first place, there has been an increasing dollarization of portfolios. Figure 2 shows the evolution of the stock of dollar-denominated credit and deposits in the domestic financial system as a proportion of the total stock of credit and deposits.



As can be seen, the proportion of dollar-denominated instruments grew continuously. At the end of 2000 more than 60% of credits and deposits were denominated in dollars. However, the proportion of dollarized credit is greater than the proportion of deposits. This implies that, in fact, banks are hedged against a devaluation of the currency.

A second feature is that the evolution of the demand for domestic assets proved to be highly dependent on external conditions. As can be seen in Figure 1, external shocks impacted rapidly on the demand for domestic assets and the credit supply. The Mexican crisis interrupted the upward trend in deposits and credit. After the recovery in 1996/97, the Russian crisis had the same effect. Note that the speed of the recovery in deposits and credit is very different after the Tequila and the Russian

shocks. While the recovery is very rapid in the former case, credits and deposits show a much more sluggish evolution in the latter.

External shocks, both positive and negative, also influenced the cost of domestic credit. In this regard, the main link between external and domestic credit markets is the country risk premium. Changes in the conditions in emerging countries' capital markets and/or in the domestic macroeconomic scenario are reflected immediately in changes in the country risk premium. The volatility of both domestic and external conditions echoed in the evolution of the country risk. Via its influence on the cost of credit, this volatility increased the variance of aggregate demand. Figure 3 shows the evolution of the country risk premium as measured by the EMBI spread and compares it with the economy's quarterly rate of growth. Both variables show high volatility and there is a marked and negative association between changes in the country risk premium and changes in the growth rate of quarterly GDP.



The third feature is, precisely, the close association between the supply of credit and the activity level. Indeed, given that Argentina's capital markets are far from perfect, it seems plausible that changes in the availability of credit does matter to the level of activity. Using an error correction model, Fanelli and Keifman (1999) find results which are consistent with the hypotheses of a relevant influence of credit on output in the short run and of a negative correlation between the country risk premium and the evolution of the macroeconomy.

In sum, the features analyzed suggest that, under convertibility and free capital movements, there is a close association between capital flows, the generation of credit and the activity level because the money and credit supplies are to a great extent passively determined by the evolution of the demand for domestic assets. This is an important potential source of macroeconomic and financial uncertainty, as international capital flows into "emerging" countries are far from stable.

It must be taken into account, nonetheless, that the economic authorities' degrees of freedom under Convertibility are not equal to zero. In fact, it seems that the depth of the recession since 1998 has not been independent of some policy actions on the financial and fiscal sides. In order to show this, notice that there has been a persistent tendency for the rate of growth of credit to lag behind the rate of growth of deposits since 1995. In fact, in 1999 the line representing deposits crosses the credit line (Figure 1). The tightening in prudential and liquidity regulations of the Central Bank in the second part of the nineties is closely associated with this result.

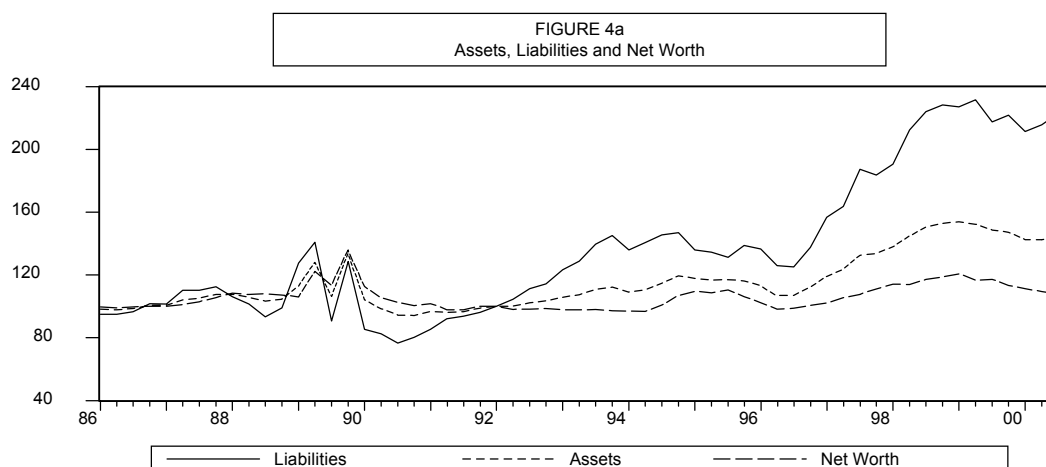
But, in fact, the credit squeeze in the private sector since 1998 has been stronger than what is suggested in Figure 1. The Figure clearly shows that the aggregate stock of credit as a proportion of GDP has stagnated since 1998. But the

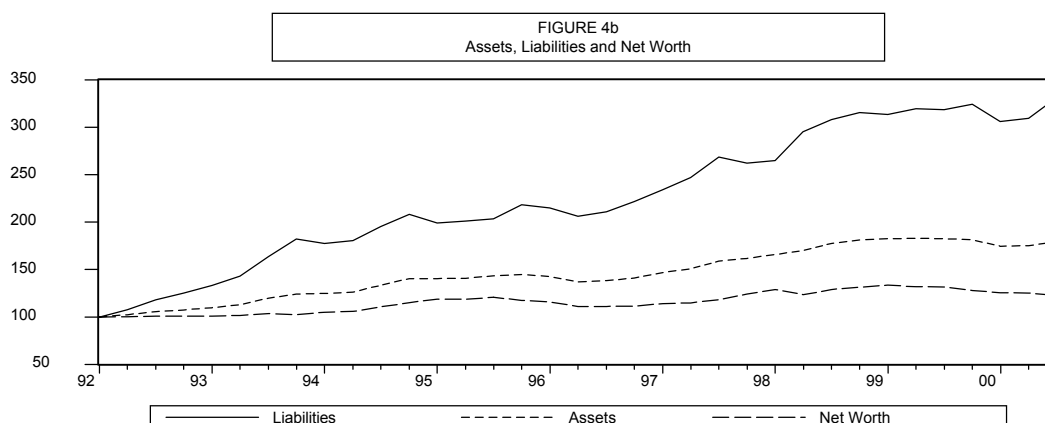
aggregate conceals the fall in the stock of private credit that was offset by an increase in the amount of public sector credit demand. The increase in the fiscal deficit from 1998 (which was associated with the political cycle) raised the public sector's borrowing needs and, as a consequence, the government crowded out the private sector. The private/public credit ratio fell from 7.7 when the Russian crisis hit the economy in 1998 to 4.4 at the end of 2000. The tightening of credit conditions for the private sector was, undoubtedly, one major factor that deepened the recession. The funds available for financing the private sector suffered, simultaneously, from the pressure exerted by the fall in capital inflows, the tightening in prudential regulations, and a mounting public demand for credit. In such a context, it is not surprising that the demand for investment and consumer durables, which is a major factor behind the present stagnation of aggregate demand plummeted.

Argentine Firms' Capital Structure: The Stylized Facts

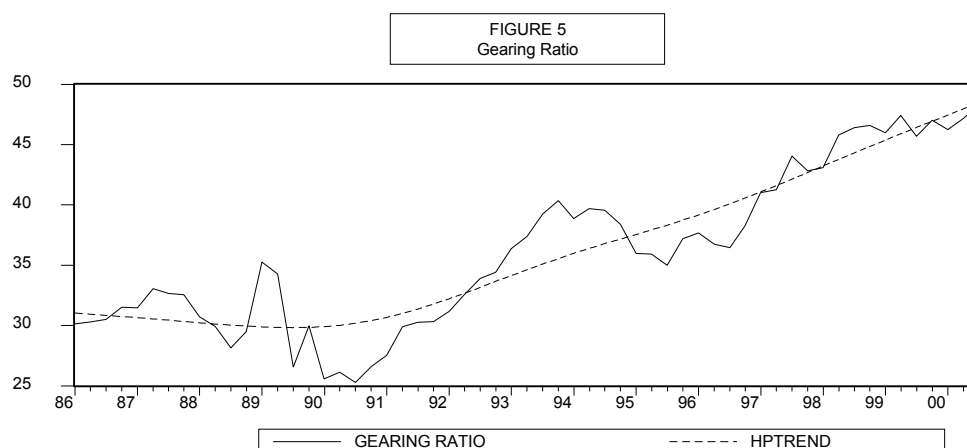
In this section we will explore the data in our panels in order to identify a series of stylized facts. First, we will analyze the evolution of the main components of the firms' capital structure in the last fifteen years and, second, the changes in the gearing ratio in that period. In the third place, we will concentrate on the relationship between short- and long-term debt and the role of liquidity. Finally, we will focus on three related issues which are highly relevant under the Convertibility regime: liquidity, currency risk and short-run debt as a disciplinary device. One important feature of the panel of firms listed on the Buenos Aires Stock Exchange that we elaborated for this project is that it is quarterly and, consequently, it allows for a better understanding of the short-run dynamics of financial decisions and their relationship with macroeconomic shocks. The analysis concentrates on the Convertibility period

Figures 4a and 4b (1) show the evolution of the capital structure of Argentine firms listed on the Stock Exchange in the pre- and post-Convertibility period. In the years preceding convertibility it is difficult to identify a definite pattern in the relationship between net worth, total assets and liabilities. In the nineties, in contrast, there is a clear tendency for the level of leverage to increase. This tendency is very marked: In the 1992:I /2000:III period, net worth increased by 22% in real terms while total debt grew by 221%.

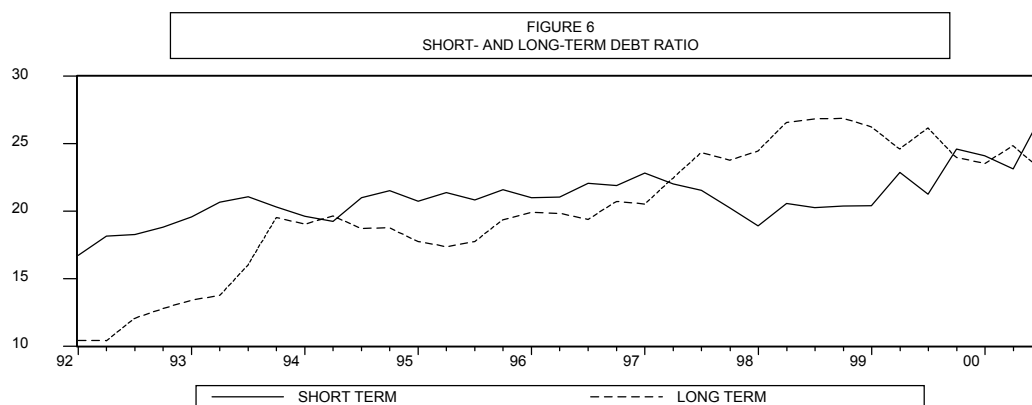




It would be very difficult to understand why there was such an important growth in indebtedness after the implementation of Convertibility without referring to macroeconomic factors. In the early nineties, following two hyperinflationary episodes in 1989 and 1990, foreign capital markets were closed to most Argentine firms and the domestic credit/GDP ratio was extremely low. Under such circumstances, it seems logical to assume that firms were in disequilibrium and that the observed leverage ratio did not reflect long-run equilibrium values. As stability consolidated in the nineties and capital inflows recovered, the firms sought to reduce the gap between existing and preferred levels of leverage. In order to highlight the relevance of macroeconomic factors to microeconomic decisions we draw the observed values of the gearing ratio (debt over total assets) against its “medium-run” trend (using the H-P filter) in Figure 5 (2).



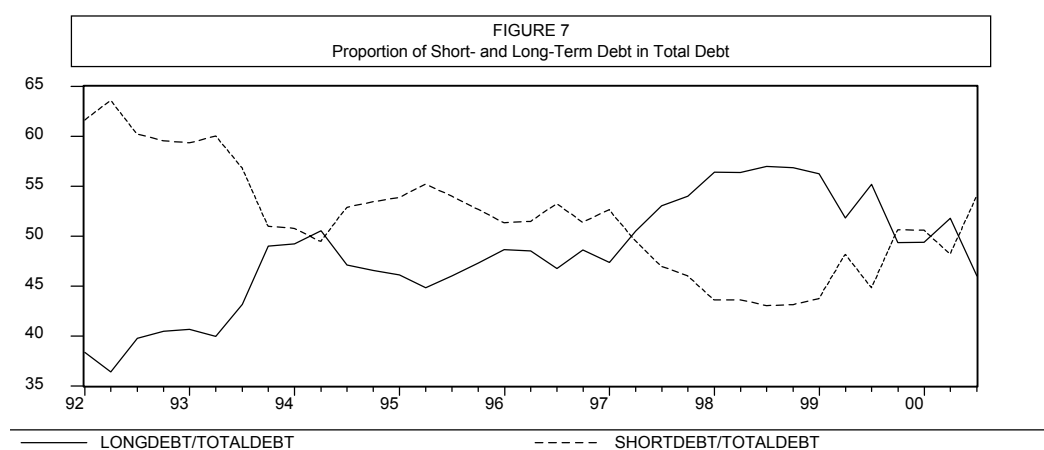
Substantial deviations from the trend are associated with major macroeconomic shocks. The two largest downward deviations coincide with the hyperinflationary period and with the Tequila effect. In both cases, nonetheless, as the effects of shocks faded, the gearing ratio recovered rapidly. Notice particularly the years of booming capital inflows (1992-94). These fluctuations in leverage suggest that negative shocks tend to worsen credit conditions rapidly, driving firms' leverage to sub-optimal levels. It also implies that firms may have to resort to liquidate assets to smooth the effects of short-run credit crunches. In contrast, firms take advantage of “tranquil” periods in credit markets to correct deviations from long-run equilibrium.



The dynamics of short- and long-term debt held by firms throughout the cycle also suggest that credit conditions can quickly react to changes in investor sentiment. Figure 6 shows the evolution of long- and short-term debt. By comparing Figures 5 and 6, we can see that the behavior of the long-term liabilities/asset ratio tends to mimic the behavior of the gearing ratio. But the fluctuations of the latter ratio are smoother. This implies that agents tend to resort to short-term debt when they face either increasing costs in the markets for long-term debt or rationing.

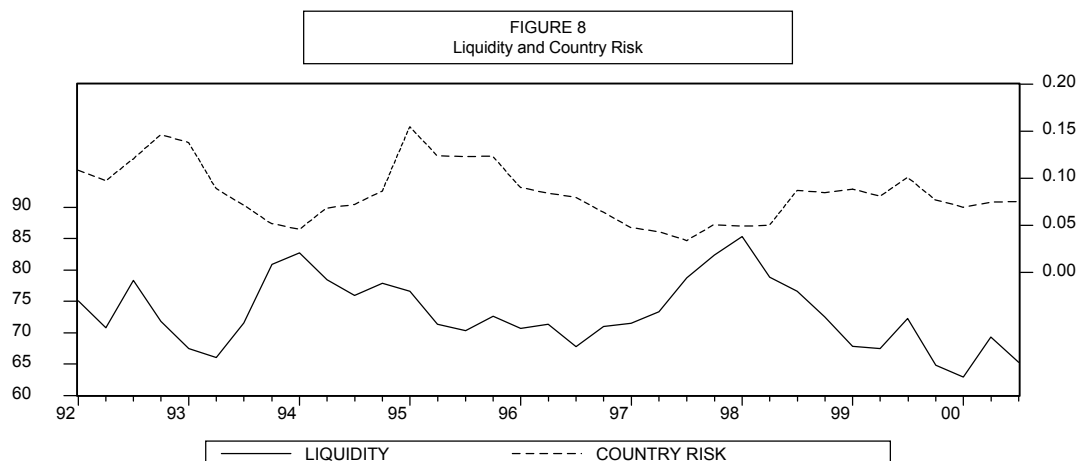
Under Convertibility, the stock of short-term debt held by firms is higher than that of long-term debt during almost all of the sample period and their proportion is comparable to other developing countries (See Booth et. al., 2000). The telling presence of instruments with short maturity implies that staged finance is a feature characterizing Argentina's debtor/creditor relationships (Stulz, 2000).

As was mentioned before, the behavior of the long-term debt/total assets ratio reproduces the general shape of the gearing ratio, but it is more volatile. This higher volatility reflects the fact that the short-term debt ratio is much more stable. The coefficient of variation of the long-term ratio is more than twice that of short-term debt. Figure 8 shows the co-movement of the proportions of short- and long-term debt in total debt.



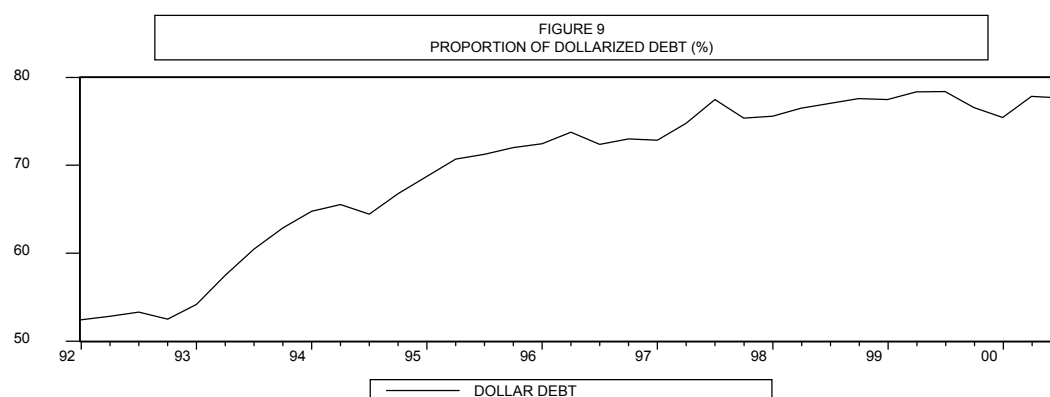
As can be seen the gap between the two variables tends to augment in recessionary periods and to diminish in expansionary ones. This implies that the ratio between short- and long-term liabilities tends to move pro-cyclically and, therefore, that negative shocks not only reduce leverage but also tend to shorten the duration of debt. If average maturity falls, to maintain their liquidity position (i.e. to keep the liquid assets/short-term debt ratio constant), the firms should increase their demand for liquid assets during downturns. The available evidence, however, points against this hypothesis. It seems that in the Argentine case, the firms' liquidity position tends to

worsen in periods of macroeconomic instability. To illustrate this point, Figure 8 compares the evolution of liquidity (liquid assets/short-term liabilities) with the evolution of country risk, which is interpreted as a proxy for macroeconomic disequilibrium. The behavior of these two series is compatible with the conjecture that, under Convertibility, liquidity constraints move pro-cyclically (3).



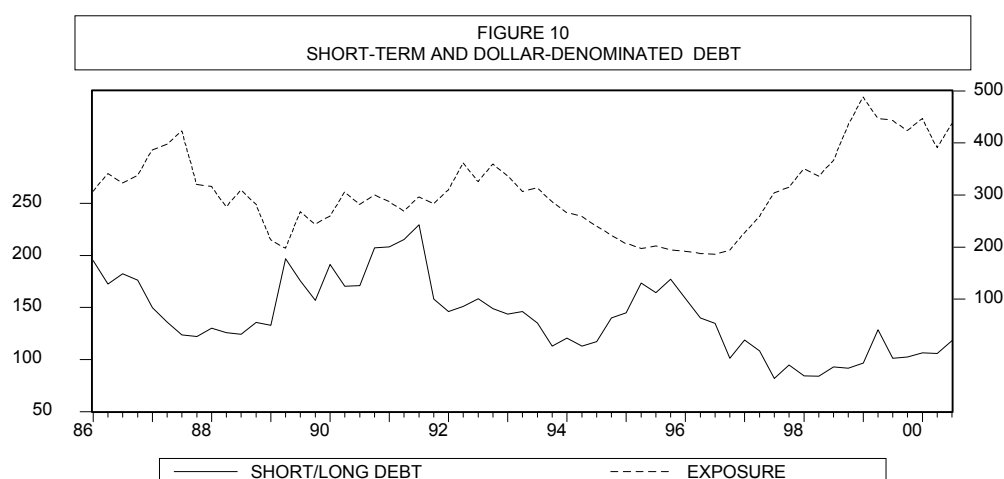
The behavior of the different debt components throughout the cycle raises interesting analytical questions. An important one is why we observe this increase in the proportion of short-term liabilities after a shock. Our hypothesis is that negative shocks reduce the firms' net worth, increasing the probability of financial distress. Under such circumstances, creditors react by shifting their demand toward assets with short-term maturity to better monitor the behavior of debtors and because the liquidity premium rises in uncertain environments. But, if we assume that the duration of assets is somewhat constant throughout the cycle, when the shortening in the term to maturity of debt occurs, the firms' financial position further deteriorates and default turns more probable. This increase is perceived by creditors as an upward movement in the costs of financial distress (if we calculate these costs as the probability of default times its cost). Under these circumstances, a logical result is that creditors will try to shorten maturity to better monitor and discipline debtors. In sum, if this reasoning holds, there are endogenous factors which tend to reduce maturity and increase financial duress during recessionary periods. This hypothesis of maturity-shortening as a disciplinary device is fully consistent with the hypothesis of staged finance as an anti-moral hazard mechanism in contexts where institutional underdevelopment impedes the precise definition of property rights

The increase in the proportion of dollar-denominated liabilities under Convertibility that we observed at the aggregate level is also clear in the firm panels. The proportion of dollar-denominated debt in total debt rose from 52 % in 1992 to 77% in 2000 (Figure 9) This figure suggests that the growth rate of dollar-denominated debt was even higher than the rate corresponding to total liabilities which, as was mentioned, was very high: In the 1992:I/2000:III period the total amount of dollar-denominated debt almost quadrupled.



There is a close link in the evolution of dollar-denominated and long-term liabilities which suggests that for Argentine firms, domestic dollar-denominated credit and external capital markets are critical sources of long-run funds. Under the assumption that firms prefer to match the duration of their assets and liabilities, dollarization and capital inflows must have had a positive influence on capital formation. However, it is also true that as the proportion of dollar-denominated liabilities increases, so does the exposure to unanticipated changes in the real exchange rate. Hence, there is a trade-off between the benefits of matching the duration of the two sides of the balance sheet and the increased currency risk taken because of higher mismatching in the currency-denomination of assets and liabilities. The existence of currency risk implies an inverse relationship between the expectations of a change in the real exchange rate and the degree of currency mismatch between assets and liabilities. If we further assume that devaluation risk is higher when the overall macroeconomic environment worsens and, consequently, use the country risk as a proxy for the latter, currency mismatch and country risk must correlate negatively. Furthermore, given that dollar-denominated liabilities are biased in favor of long-term debt, there should be a positive correlation between country risk and the proportion of short-term debt in total liabilities. Although the available observations under convertibility do not suffice to draw strong conclusions, the observed sign of the correlation between these three variables in the sample are consistent with these assumptions.

If the previous argument is valid, every time the firms seek to hedge against devaluation, the participation of long-run liabilities in the firms' balance sheets will tend to fall. Figure 10 presents evidence that this conjecture merits investigating in the Argentine case. We plot the ratio between short- and long-term debt against the ratio between dollar-denominated liabilities and assets.



A bold-eye inspection of Figure 10 reveals significant declines in dollar-denominated liabilities and a rise in the importance of short-term debt every time an important shock, be it domestic or external, hits the economy. Specifically, notice the widening in the gap between the two variables during hyperinflation (1989/90); the Tequila (1995/96) and after the Russian/Brazilian turmoils (1998/99). This means that when the macroeconomic setting worsens there is, simultaneously, a shift toward the demand for foreign exchange and a mounting demand for short term financing. It also means that economic downturns create pressures on both foreign exchange and domestic financial markets. When the exogenous macroeconomic shock is strong enough and the regulatory framework is weak, this combination of events can trigger the so-called “twin crises” which, in fact, have occurred in Argentina. Domestic markets for short-term credit are unable to make up for the fall in dollar-denominated and long-run loans and firms face increasing difficulties to meet their short-run obligations.

Exogenous macroeconomic shocks play a significant role in Argentina because they are sizable and occur frequently. Agents must take financing decisions in a highly uncertain environment in which substantial wealth losses can result from errors in expectations. When a fiscal or an external shock leads to an unexpected currency devaluation (and, eventually, to a change of the exchange rate regime), those agents facing severe losses typically feel as if the authorities had violated their property rights. This fear of losses and the need to “protect property rights” from moral hazard is behind the economy’s tendency to dollarize which is observed under increasing macroeconomic instability.

II. Capital Structure, Investment and Dollarization

Our analysis of firms’ financial decisions in Argentina in the 90s is based on the panels described in the Appendix. In this section we focus on the main results and privilege the discussion of the analytical implications.

Analytical Framework, Hypotheses To Be Tested and Methodology

The stylized facts that we have identified in the previous section strongly suggest that:

- (a) *prima facie* financial constraints matter in Argentina;(4)
- (b) dollarization is a structural feature of financial intermediation;
- (c) macroeconomic factors have a bearing on the tightness of financial constraints;

Point (a) means that we are not in the presence of a Modigliani-Miller (1958) world of perfect capital markets and that we need to approach the Argentine case within a theoretical framework in which informational asymmetries, contract enforceability, and other frictions matter. In such a framework, lenders may be willing to provide additional financing for investment only at an increasing interest premium (Bernanke and Gertler, 1990), credit rationing may be observed (Stiglitz and Weiss, 1981) and changes in investor sentiment may trigger sudden flight to quality episodes (Bernanke, Gertler and Gilchrist, 1994) with significant consequences on the activity level and the country’s macroeconomic stability. To test the plausibility of the imperfect financial market assumption in the case of Argentina, we will investigate the determinants of investment and of capital structure.

A key characteristic of imperfect capital markets is that they are segmented. This means that different firms face financial constraints of varying intensity and, therefore, the partition of the sample of firms may uncover important differences regarding the relevance of financial constraints. We will split the sample according to

the likelihood that the firm will suffer from incentive and information problems. The sample-splitting criteria are likely to be correlated with both the firms-specific and time-invariant component of the error term, as well as with the idiosyncratic component (see, for example, Schiantarelli, 1996). Hence, we have looked for exogenous criteria and proved many of them. The dummy variables used to partition the sample were based on the following:

- (i) whether the firm is affiliated to a group;
- (ii) whether the firm was able to issue either Obligaciones Negociables or a Eurobond (i.e. to participate in bond markets);
- (iii) whether the firm is owned by foreigners;
- (iv) whether the firm was able to quote in foreign markets (i.e. to issue an ADR)

The dollarization of financial instruments alluded to in point (b) characterizes many emerging economies. But, the literature on capital structure emphasizes the decision on the level of leverage and the proportion of long-term debt. Not much research has been done on the factors which determine the proportion of dollar-denominated debt a firm decides to hold. In this regard, much attention focused on whether financial reform affects capital structure and investment decisions. But dollarization is a structural change whose consequences can be even stronger than those induced by financial reform. Consequently, we will analyze whether the factors that the literature identifies as relevant to determining the capital structure and the mix of short- and long-term debt are also relevant to the choice of the proportion of dollar-denominated liabilities in the capital structure. We will also examine whether debt dollarization has a bearing on investment.

Point (c) is clearly stated in the literature. It is very well known that the severity of financial constraints is likely to vary with overall macroeconomic conditions and the stance of economic policy because they influence net worth. In this way, it is stressed that monetary policy works not only through the traditional cost-of-capital channel but also through collateralizable net worth. Very little is known, however, about the way in which changes in macroeconomic conditions affect financial constraints in the context of a currency board where, by definition, there is no room for monetary policy. When expectations change, as reflected for example in a variation of the country risk premium, there will be variations in the rate at which returns are discounted and more pessimistic forecasts. This is true to all economies. But volatility is higher in emerging markets. We have seen, for example, that shocks induce sizable changes in both the level of leverage and the composition of debt. We suggest that these questions are under-researched in the literature because of the lack of data on emerging markets. The main purpose of this section is to present some evidence of the way changes in macroeconomic conditions affect microeconomic financial decisions in an economy which adopted a currency board-like scheme and where sizable shocks are frequent. To take into account these effects we will introduce the country risk, an index of financial deepening (the aggregate banking credit/GDP ratio), and the proportion of dollar debt in total debt as explanatory variables in the regressions.

Investment and financial constraints

Financial constraints must influence the investment process. Hence, one way to test the hypothesis that market imperfections are relevant is to go beyond the traditional approach based on Tobin's q and to include, in addition to variables related to profit maximization, variables representing financial constraints in the investment equation (see Fazzari, Hubbard and Petersen, 1988, Hubbard, 1998, and Schiantarelli, 1996). If markets are imperfect, not only profitability but also liquidity and the cost of external financing matter. Accordingly, as a first step, we estimate the following regression model, using a panel of firms that are quoted on the stock market (5):

$$I_{i,t} = \gamma_0 + \gamma_1 q_{i,t-1} + \gamma_2 c_{i,t-1} + \gamma_3 d_{i,t-1} + \gamma_4 S_{i,t-1} + \gamma_5 H_{j,i,t} + \varepsilon_{i,t}$$

where I is investment as a ratio to the capital stock, q is Tobin's q (market value of the firm over its book value), c is the cash flow as a ratio to the capital stock, S stands for the log capital stock which proxies for size and d is the debt/capital ratio (6). The subscript i is an index for firms and t for time. In the absence of financial restrictions and agency problems, investment depends exclusively on q . Hence, if coefficients γ_2 , γ_3 and γ_4 are significant, this would be an indication of the existence of market imperfections. Coefficient γ_2 is assumed to reflect the influence that variations in internal funds, liquidity and net worth have on investment. Coefficient γ_3 should be significant if it is true that an increasing debt to capital ratio accentuates incentive problems because the growth rate of debt is higher than the growth in the value of collateral. Finally, a positive and significant coefficient γ_4 would imply that bigger firms are less affected by financial constraints. The rationale for including size in this equation appears in Schiantarelli (1996).

We also intend to use this model to check whether there are differences in the coefficients corresponding to different sample groups and periods, adding some macro-financial indicators to test whether they have an independent effect in addition to microeconomic channels. Therefore, we introduce H_j which stands for the set of variables which will be used to test different splits of the sample and macroeconomic effects. We will present the results by using three different techniques. They are pooled OLS, Fixed Effects (FE) and a GMM estimator to control for the joint endogeneity of the explanatory variables. Q , cash flow and leverage are treated as weakly endogenous. This model is standard in the literature (see Mairesse, Bronwyn and Mulkay, 1999 and Harris, Schiantarelli and Siregar, 1994). If endogeneity problems are present, an instrumental variable or generalized method of moments is appropriate. However, most empirical contributions rely on pooled or least squares dummy variables (LSDV or within) estimators. Hence, we decided to present the equation estimated on the bases of all these methods so as to compare the Argentine case with results corresponding to other countries and to show the sensitivity of our results to the estimation technique. In order to ease the exposition, the regression results are summarized in Table 1 and available upon request (7).

Table 1
Summary of Results, Investment Equation
Stock Exchange Panel (1992/2000)

Variables / Panels	SE (Pool)	SE (FE)	SE (GMM)
Q	+	+	+
Cash Flow	No	+	+
Long Run Leverage	+	No	No
Size	+	+	+
Dollar Debt	No	-	-
Lagged Variable	...	...	...
Tequila & Risk	No	No	No
Credit/GDP	No	No	No
Q * Group	No	No	No
Q * ADR	+	No	+
Q * Bond	+	No	+
CF * Group	No	No	No
CF * ADR	No	No	No
CF * Bond	No	No	No

"NO" = The coefficient is not significant

" + " = The coefficient is significant (5%) and its sign is positive

" +*" = The coefficient is significant (10%) and its sign is positive

" - " = The coefficient is significant (5%) and its sign is negative

" -* " = The coefficient is significant (10%) and its sign is negative

One solid result of our research is that q 's coefficient is highly significant, independently of the method used. This contrasts with the results obtained by Gallego and Loayza (2000) who found that investment does not significantly depend on the firm's q value. This suggests that the firms in our sample are less constrained in capital markets than Chilean ones. This is an interesting finding because the level of domestic financial deepening is higher in Chile than in Argentina. However, we must take into account that the firms in our sample are bigger than their Chilean counterparts and that they have relatively fluent access to international capital markets. Also, in the light of the noticeable delisting process in the Argentine stock market over the nineties, the higher sensitivity of investment to q in Argentina may reflect some auto-selection bias, in the sense that only the bigger and stronger firms in the country decided to continue quoting. In any case, it would be interesting to compare Argentine and Chilean firms, controlling for size and other characteristics to isolate the effects of financial deepening.

We were not able to detect a significant role for cash flow in the pooled regressions but found that coefficient γ_2 is highly relevant when we use fixed effects and GMM estimation. Just the opposite occurs with the significance of coefficient γ_3 which is not significant (see Table 1). In any case, these results suggest that market imperfections play a role.

To test whether debt composition affects investment, we included the proportion of long-term over total debt on the right-hand side of the equation. This variable is relevant only in the case of the pooled regression. When we control for firm specific characteristics and endogeneity, the coefficient ceases to be significant. The result, nonetheless, is interesting. As we have seen, there is a trade-off relationship between short- and long-term debt. Hence, it may be that firms try to avoid adjusting investment when there is a fall in the availability of long-term finance and, instead of reducing capital expenditures, try to make up for such a fall by increasing short-run indebtedness and by liquidating assets. This hypothesis is consistent with the

argument that working capital is used as a buffer to avoid changing investment when external funds are more expensive than internal resources or impossible to obtain.

We also undertook an empirical exercise introducing the proportion of dollar-denominated debt in total debt. The coefficient of this variable is not significant in the pooled regression but it is in the case of FE and GMM. The sign of the coefficient is negative. Our interpretation is that, *ceteris paribus*, a greater proportion of dollar-denominated debt has a negative influence on investment because of the higher exposure to currency risk in a context in which the instruments to hedge the risk are either extremely expensive or do not exist. We have seen that firms try to reduce their exposure when currency risk increases.

In order to test for an independent influence of macroeconomic factors, we experimented with three different aggregates: the credit/GDP ratio, a dummy for the Tequila Effect and country risk. Since these variables do not change across firms they are similar to time-specific effects. As summarized in Table 1, we were unable to detect any significant influence of Macro variables. Neither were they relevant as constant dummies nor as multiplicative dummies affecting the q , cash flow or leverage variables. This clearly indicates that macroeconomic factors work through microeconomic variables. This result is similar to the findings of Gallego and Loayza (2000) for Chile.

We compare all firms in the sample with subgroups that are expected to have differential access to financial markets. We use multiplicative dummies to compare the coefficients for different groups. Specifically, we split the sample according to whether the firm is affiliated to a business group; whether the firm quotes its shares in foreign markets; and whether the firm was able to participate in the market for Obligaciones Negociables and Eurobonds. As a general rule, we found that market segmentation (reflecting the incidence of informational and incentive problems) is relevant in relation to the market/book ratio but it is not regarding cash flow or leverage.

Those firms which do not have access to more sophisticated markets (ADR and Bonds) are less sensitive to q . This is consistent with the predictions of the approach stating that financial constraints matter (8). It must be taken into account, nonetheless, that the significance of the multiplicative factor varies according to the method used. When we use GMM, the coefficients of interaction between q and the dummies for bonds and ADR are significant (10%) and something similar occurs in the case of the pooled regression. In the fixed effect regression there is no indication that the interaction of q with ADR and access to bond markets have a significant influence on investment. Affiliation to a business group is not important for investment, regardless of the method used and the variable chosen for the interaction.

Together with q , the other variable whose coefficient was consistently positive is size. Independently of the method used, the influence of size on investment proved positive and highly significant. This result admits more than one interpretation. Size is highly correlated with the fundamental factors that determine the probability of being constrained. Smaller firms are likely to suffer from idiosyncratic risk, less likely to have developed a track record, have lower collateral, unit bankruptcy costs are likely to decrease with size and the transaction costs they face in capital markets are higher. In this regard, the result can be interpreted as a clear signal that financial constraints matter. Beyond this, however, it must be taken into account that several large public enterprises were privatized in the nineties. Many of these large firms are in our sample and contractual clauses obliged them to invest heavily in the years following privatization. Consequently, we should expect to find some positive correlation between size and investment. In order to test for this factor we introduce a dummy splitting the sample between newly privatized firms and the rest. When this variable is introduced (into the pooled regression) its coefficient is not significant. However, if we drop the size variable, it becomes highly significant. We interpret this result as a

confirmation that the variables are collinear but that there is an effect of size which is independent of the effect privatization has on investment.

Capital Structure and Dollarization

The evidence in Fanelli and Keifman (1999), Schmuckler (2000) and the stylized facts of the previous section suggest two points about the interaction between leverage, maturity, and currency denomination in Argentina. First, the variables which appear in the literature on capital structure should play a relevant role in the Argentine case. In this sense, Argentina would be consistent with Booth et. al. (2000) findings. Second, the analysis of balance sheets show specific features which may probably be associated with the volatility of the Argentine context and the particular characteristics of the currency board regime. To study these issues, we use a regression model like the one Gallego and Loayza (2000) used in the Chilean case and Booth et al. (2000) used for a set of emerging countries. We will add, nonetheless, an equation to analyze the firm's decision regarding the proportion of dollar-denominated debt in total debt. Specifically, the equations to be estimated are:

$$Z_{i,t} = \beta_0 + \beta_1 S_{i,t} + \beta_2 K_{i,t} + \beta_3 B_{i,t} + \beta_4 D_{i,t} + \beta_5 M_{i,t} + v_{i,t}$$

$$L_{i,t} = \alpha_0 + \alpha_1 S_{i,t} + \alpha_2 K_{i,t} + \alpha_3 B_{i,t} + \alpha_4 D_{i,t} + \alpha_5 M_{i,t} + \mu_{i,t}$$

$$F_{i,t} = \delta_0 + \delta_1 S_{i,t} + \delta_2 K_{i,t} + \delta_3 B_{i,t} + \delta_4 D_{i,t} + \delta_5 M_{i,t} + \eta_{i,t}$$

The variable Z is the leverage ratio (debt to equity) and L and F are the proportions of long-term debt and dollar-denominated debt in total debt. S stands for the log capital stock which proxies for size; B represents the operational profits/assets ratio which proxies for the firm's profitability. K is the ratio of fixed to total assets which measures tangibility of total assets. Variable D is introduced to distinguish firms with different degrees of market access and M to test for macroeconomic effects. The strategy for estimating these equations is similar to that followed in the case of investment. In this case, however, the data at our disposal are richer because we can use an additional panel of firms to the one corresponding to the firms listed on the stock exchange. To distinguish between the two, we will call the stock exchange panel SE and the new one ENGE (Encuesta Nacional de Grandes Empresas). ENGE's time series dimension, however, is too short and, so, we cannot use the GMM method (see the Appendix for a detailed description of the time span and other characteristics of the panel). As in the case of the investment equation, the exposition is based on Tables 2, 3 and 4 summarizing the results obtained for each of the three equations, which are available upon request.

Table 2
Summary of Results, Leverage Equation
Stock Exchange (1992/2000) and ENGE (1995/1998) Panels

Variables / Panels	ENGE (Pooled)	ENGE (FE)	SE (Pooled)	SE (FE)	SE (GMM)
Size	+	No	No	No	No
Tangibility	_*	-	No	No	_*
Profit	No	No	-	No	No
Q	...	...	No	No	...
Lagged Variable	...	...	...	...	...
Risk	...	...	No	No	No
Credit/GDP	...	...	No	+	No
Group	_*	...	+	...	...
Foreign Capital	No	No	...	...	...
ADR	...	...	-	...	...
Bonds	-	No	No	...	...

Table 3
Summary of Results, Long-Term Debt Equation
Stock Exchange (1992/2000) and ENGE (1995/1998) Panels

Variables / Panels	ENGE (Pooled)	ENGE (FE)	SE (Pooled)	SE (FE)	SE (GMM)
Size	+	+	+	+	No
Tangibility	+	_*	+	+	+
Profit	-	No	_*	+	No
Q	...	...	_*	+	...
Lagged Variable	...	...	...	...	...
Risk	...	...	-	-	-
Credit/GDP	...	...	+	+	+
Group	-	No	-	...	...
Foreign Capital	-	No	...	...	...
ADR	...	...	+	...	...
Bonds	+	+	+	...	...

Table 4
Summary of Results, Dollar-Denominated Debt Equation
Stock Exchange (1992/2000) and ENGE (1995/1998) Panels

Variables / Panels	ENGE (Pooled)	ENGE (FE)	SE (Pooled)	SE (FE)	SE (GMM)
Size	+	+	+	+	+
Tangibility	-	-	No	No	No
Profit	No	No	-	No	-
Q	...	...	-	_*	...
Lagged Variable	...	...	...	...	...
Risk	...	...	No	No	No
Credit/GDP	...	...	+	+	No
Group	No	_*	-	...	...
Foreign Capital	+	No	...	...	...
ADR	...	...	-	...	...
Bonds	+	+	+	...	...

We use the logarithm of total assets as a proxy for size. This variable enters the equations because it alleviates information asymmetries. But since larger firms are likely to be more diversified, it also reduces repayment risk. It must be taken into account that diversification may have a premium in economies where markets for

allocating risk are incomplete. In the Argentine case, for example, the stock exchange can only be partially used to diversify risk. Owing to the reduced number of firms listed, many sectors in the economy are not represented.

In the leverage equation, the coefficient corresponding to size is not significant. The results are very different in the other two equations since, in all cases, the coefficient is positive and significant. It seems that larger firms either have a higher preference and/or face softer constraints to access markets for long-term and external markets (8).

A greater degree of tangibility (fixed assets over total assets) in the composition of the asset mitigates asymmetric information problems and favors the use of long-run debt owing to firms' desire to match the duration of assets and liabilities. Consequently, we expect a positive sign in the leverage and long-term debt equations. In the case of dollar-denominated debt, on the contrary, we would expect a negative sign. To a foreign creditor, it is much more difficult to liquidate tangible assets to recover a non-paid dollar-denominated loan. For both foreign and domestic creditors, the existence of currency risk may imply that the liquidation value of some tangible assets is low due to irreversibility. On the demand side, if those firms holding tangible assets belonged to the non-tradable sector, the purpose of limiting currency risk would result in a preference for domestic currency-denominated debt.

The overall results of the role of tangibility in the leverage equation are weaker than in the case of the size variable. We were unable to detect either the sign of the variable or its significance since those factors change according to the estimation method and the panel used. The most robust result was found in the ENGE panel in which the coefficient is negative and significant (in one case at 10%). These results are consistent with the evidence presented in Booth et al. (2000). They also found a negative but unstable coefficient.

In the case of the equation explaining the behavior of debt with longer maturity, the evidence suggests that tangibility exerts a positive influence. This favors the matching argument. It seems that firms with more tangible assets try to lengthen the maturity of their liabilities. The coefficient of the variable in the dollar-debt equation is negative in the ENGE panel and not significant in the SE panel. The former finding favors the hypothesis that, *ceteris paribus*, external creditors find *ex ante* distress costs higher as the proportion of tangible assets in the capital structure increases. Likewise, firms holding such assets prefer to reduce the currency risk exposure. It is interesting here to recall our previous argument. Given the *de facto* association between dollar-debt and long-term debt, firms seeking to finance long-run assets face a troublesome trade-off between the benefits of extending the duration of liabilities and the higher currency-risk that long-term debt entails.

It is difficult to tell *ex ante* the sign of the coefficient of the return on assets (ROA) in each of the equations. The higher the ROA, the lower the repayment risk is. However, higher profits reduce the need for the more expensive external funds and, additionally, firms with better growth prospects may want to avoid the possibility that (bank) creditors extract rents from them. In order to control for the firms' growth prospects, we included the market to book ratio. As a proxy for growth, it is expected that a higher q will reduce perceived repayment risk.

The results in Tables 2, 3, and 4 suggest that profits do not play a relevant role in explaining leverage. We only found a significant (negative) coefficient in the case of the pooled regression corresponding to the SE panel. In the larger ENGE panel there is no leverage response to changes in profits. In the case of the market to book value, our results only refer to the SE panel because many of the firms in the ENGE panel are not listed. We were unable to detect a significant influence on leverage but it appears that growth prospects have a bearing on the decisions regarding the proportion of long-term and dollar-denominated debt. We found that q has a significant and positive effect on the proportion of debt of longer maturity held by firms

as a proportion of the total stock of debt and a negative one on dollar debt. This suggests that while growth prospects ease access to long-term credit markets, currency exposure makes lenders and/or borrowers reluctant to write dollar-denominated debt contracts.

Business groups may help to cope with information and contract enforcement and, in the case of financial distress, individual firms may also rely on the financial resources of the group. It is reasonable to assume that multinationals operating in Argentina can also count on internal capital markets. It is likely that both groups and multinationals have better access to foreign credit markets. On the other hand, independently of whether the firm is affiliated to a group, one can assume that firms which gained access to bond markets or placed an ADR face fewer constraints when deciding on leverage and debt composition. We designed several dummy variables to split the sample and test these hypotheses.

Although the significance and size of the effect may vary with the method of estimation and the panel utilized (see Tables 2, 3 and 4), we find that firms in different categories face financial constraints of diverse intensities. The main conclusions are the following. Affiliation to a group tends to increase leverage, but reduces the proportion of long-term debt and the participation of dollar-denominated debt. Affiliation to a foreign firm, on the other hand, also reduces the role of this latter participation and seems to affect (positively) only the proportion of foreign debt. In this case one may hypothesize that it is the relationship with the main branch that helps to hedge currency risk.

Regarding market access, we find that the possibility of accessing the market for ADR and for bonds seems to be relevant. In some of the exercises (see tables) we found that firms that participate either in the ADRs or bond markets tend to reduce leverage and increase long-term and dollar-denominated debt. This means that less constrained firms prefer to rely on internal funds or equity to meet their financial needs and tend to use credit markets to increase the duration of their liabilities. They also have better access to international markets and can take advantage of the better conditions offered by dollar-denominated credit markets in terms of both maturity and price.

Finally, we tested whether the financial constraints for all types of firms were dependent on the macroeconomic situation and the evolution of financial deepening. To examine the importance of macroeconomic disequilibria we introduced the country risk premium among the right-hand variables in the three equations. Regarding financial development, our hypothesis is that increasing financial deepening and capital inflows increased credit supply in the nineties, thus allowing firms to elevate their leverage after a long period of tight rationing. We have already indicated the higher increment in the stock of total liabilities. We did not perform these exercises in the case of the ENGE panel because of its short time span.

As can be seen in Tables 2, 3 and 4, we found that both the macroeconomy and financial deepening matter to debt composition (in terms of maturity and currency denomination) but not for total leverage. Specifically, the country risk coefficient is significant and negative in some of the exercises while the influence of the credit/GDP ratio is significant and positive. Unlike our findings in the case of investment, here we detect a direct link between aggregate variables and decisions at the micro level.

Concluding remarks

Structural reforms and increased capital flows certainly affected the investment and financing decisions of Argentine firms made in the nineties. Our findings in this paper strongly suggest that this process took place in a context of imperfect capital markets, as demonstrated by the significant effect (in some but not all of the regressions) of variables thought to reflect information and agency problems, such as

firm size, tangibility, and cash flow, among others. Besides, the macroeconomic environment, characterized by continued volatility, a fixed exchange rate and dollarization of financial transactions, played a role in this regard.

In a context of imperfect credit markets, some firms may forgo profitable opportunities while others are able to undertake them because they enjoy better access to credit. In this way, segmented capital markets became a source of inefficiency and a deterrent to growth. Likewise, the existence of financial imperfections means that macroeconomic fluctuations do not affect all firms equally. Our main conclusion, then, is that financial development in Argentina would both foster growth and improve macroeconomic stability.

Are there economic policy lessons that can be drawn from our research? We consider that the following are the most relevant. First, macroeconomic shocks affect the financial position of firms (liquidity, access to long-run finance) and a negative shock, in particular, can induce a rapid deterioration in the firm's financial position. Under a currency board, monetary policy cannot be used to smooth the effects of shock and the Central Bank has a limited scope to act as lender of last resort. Consequently, it is necessary to develop alternative stabilization mechanisms. Among the options are: contracting contingency credit lines with foreign banks and building regional funds (in the Latin American or Mercosur context) oriented to stabilizing financial conditions when a shock occurs. We believe, nonetheless, that the IMF's role will continue to be critical, as the Tequila and the present crisis shows.

Second, given that liquidity conditions access to foreign markets and to long-run finance and deteriorates quickly during cyclical downturns, fiscal policy and the financing of the public sector deficit should avoid replicating the pattern of the private sector finance along the cycle. This was not taken into account by the Argentine policy makers in the late nineties. As we have seen, in the period following the Asian crisis the government crowded out the private sector when a significant worsening in the financial conditions of the private sector was taking place.

Third, there is no doubt that the Basle Committee guidelines are a good base for designing prudential regulations. But, it is also true that the special features of the Argentine economy should be taken into account. In this regard, there are two points worth mentioning in light of our findings. One, given the cyclical patterns of liquidity and long-run indebtedness, prudential regulations should be carefully designed to avoid accentuating such patterns. At present, the norms regulating capital requirements in Argentina require an important increase in capital when the quality of credit in the banks' balance sheet deteriorates. This can introduce a bias in favor of government credit during cyclical downturns. Increasing the proportion of credit to the public sector in the balance sheet helps avoid having to increase capital. Two, because of their inability to meet capital requirements, many small national banks were driven out of the market in the second half of the nineties. As a consequence, there was a deterioration in the stock of knowledge accumulated in the financial sector. This may have aggravated the financial constraints facing smaller firms, contributing to prolonging and deepening the recession that began in 1998.

Finally, we believe that the Argentine case is particularly interesting from the perspective of economic policy. Argentina has made important efforts to reform and liberalize its financial markets. Since the implementation of Convertibility, the country eliminated almost every financial repression element, and introduced Basel regulations. Inflation, another important deterrent to financial deepening, was also radically eliminated. But, in spite of these developments, our research suggests that firms still face important financial constraints. We believe that the institutional environment has much to do with this result. To a great extent, some financial markets are weak and others are absent because institutions are weak in Argentina. The policies that were implemented in the nineties implicitly assumed that the abandonment of repressive policies would automatically result in financial deepening.

But there are other factors that generate market failures in developing countries such as the underdevelopment of the legal and regulatory framework, corruption, deficient skilled human resources and of experience regarding screening, monitoring and enforcement of contracts in a free market environment. To soften financial constraints facing firms it is necessary to create those financial markets which are lacking and to improve the functioning of the existing ones and, for this, institutional strengthening is a key policy goal.

Notes

(1) The letter accompanying the number of the figure refers to the panel utilized. In order to cover as wide a time span as possible and, simultaneously, preserve the homogeneity of the panels, the number of firms in Panel “a” is lower than in Panel “b”. See Appendix.

(2) The reference to the trend is only illustrative. It follows from our arguments in the text that, after hyperinflation and stabilization, the Argentine economy is at present in a period of adjustment.

(3) It is interesting to note, in this regard, that liquidity conditions seem to respond very quickly to changes in foreign capital markets. Notice, for example in Figure 8, that the worsening in liquidity conditions occurs well before the Tequila effect hit the economy. In fact, there is a clear worsening in the liquidity indicator after the tightening of monetary policy in the USA in the first quarter of 1994. This suggests that the Tequila and the change of orientation in monetary policy in the USA are not independent phenomena.

(4) Also see the papers cited in the Introduction

(5) See Appendix for a description of the panel used.

(6) We present the precise definition of these variables in terms of firms’ balance sheets in the Appendix.

(7) The tables show the estimations of equations without lagged dependent variables, which is the specification followed by Gallego and Loayza (2000) using the GMM technique. Due to mathsize problems in these estimations, and following the commentator’s useful suggestions, we have also specified dynamic equations with lagged dependent variables and estimated them using the GMM-System technique. For this purpose we used the program DPD OX version 3 2001.

The latter results do not differ from the former. Actually, the coefficients have the same sign and significance for almost all variables (the main exceptions being Cash Flow and Dollar Debt in the Investment equation, Tangibility in the Leverage equation, Size in the Long-Term Debt equation, and Profits in the Dollar Debt equation). The autocorrelation tests reject the presence of a first-order serial correlation and the Sargan tests do not reject the set of instrumental variables chosen.

Estimations of equations without lagged dependent variables are one-step estimations; GMM estimates are based on instrumenting the differenced equation with the lagged level-value of the endogenous and predetermined variables and with the first-differenced values of the exogenous variables.

Estimations of equations with lagged dependent variables are one-step estimations; GMM-System estimates are based on instrumenting the differenced and level equation with (a) the lagged level-value of the endogenous and predetermined variables and with the first-differenced values of the exogenous variables for the differenced equation, and (b) the lagged first-differenced value of the endogenous and predetermined variables for the level equation.

(8) In fact, this argument deserves a qualification. Like other developing countries, Argentina’s stock market is considerably volatile and thin, which in turn poses some doubts about market efficiency. Under these circumstances, the observed q may lose informative power at the time of making investment decisions. Consequently, a low sensitivity of investment to q may reflect this problem in addition to the financial constraints approach.

(9) We were unable to find a set of instruments that passed the Sargan test in the long-term debt equation.

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Appendix

1. Data Sources

SE Panel: Balance Sheet and market value data are based on information taken from Buenos Aires Stock Exchange (Sistema de Información Bursátil and Biblioteca de la Bolsa de Buenos Aires). The Panel covers quarterly data for the period I:1992 / III:2000 for 45 listed firms. For the elaboration of Figures 4.a and 5 we used a Panel of 36 listed firms for the period I:1986 / III:2000.

ENGE Panel: Balance Sheet data are based on information provided by INDEC (Instituto Nacional del Estadísticas y Censos) on the basis of Encuesta Nacional de Grandes Empresas (ENGE). The Panel covers yearly data for the period 1994 / 1998 for 308 large firms.

Macroeconomic data on credit, GDP and country risk is taken from the Central Bank.

2. Definition of Variables

SE Panel

Investment: I_t/K_{t-1} $q : (MV+D)/K$ Cash Flow: CF/K Leverage: D/K
 Long-term Debt Ratio: LD/D Dollar-denominated Debt Ratio: DD/D
 Size: $\log K$ Tangibility: FA/TA Profitability: P/TA

Where,

K = Total Assets - Short-term Assets	$I = K_t - K_{t-1} + \text{Depretiation}$
D = Total Debt	MV = Market Value of the Firm Equity
CF = Operative Profits + Depreciation	LD = Long-term Debt
DD = Dollar-denominated Debt	FA = Fixed Assets
TA = Total Assets	P = Operative Profits

All variables are in real terms, deflated using WPI.

ENGE Panel

Leverage: D/K Size: $\log K$ Long-term Debt Ratio: LD/D
 Dollar-denominated Debt Ratio: DD/D Tangibility: FA/TA Profitability: P/TA

Where,

K = Total Assets - Short-term Assets	D = Total Debt
LD = Long-term Debt	DD = Dollar-denominated Debt
FA = Fixed Assets	TA = Total Assets
P = Operative Profits	

Macroeconomic and Financial Variables

Private Credit by Banks / GDP is the ratio between bank credit to the non-financial private sector and real GDP.

Country Risk (EMBI Spread) is the Emerging Market Bond Index Spread for Argentina.

Tequila Effect is a dummy variable with I:95 / III:95 = 1.