Entrepreneurship and Credit Constraints Evidence from a French Loan Guarantee Program*

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Abstract

This paper proposes an empirical analysis of a French loan guarantee program targeting new ventures and explores the link between credit constraints and entrepreneurship. Our empirical strategy exploits an exogenous regulatory shift in the mid 1990s which led to an increase in the overall size of the program and to the new eligibility of several industries. Using a detailed dataset with information on all French firms created between 1989 and 2002 as well as additional large scale survey data, we take advantage of the difference-in-differences setting to show that marginally, the obtention of a loan guarantee helps newly created firms grow faster and pay a lower cost for their capital but also significantly increases their probability of default, suggesting that risk shifting may be a serious drawback for such loan guarantee programs. Moreover, we show that at a larger scale, the impact on growth shrinks very quickly while the excess bankruptcy rate is magnified, suggesting that these schemes are not scalable.

JEL Codes: G24, G28, G33, H81, L26, M13.

Keywords: New Firms, Entrepreneurship, Credit Constraints, Loan Guarantees.

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1 Introduction

Public schemes aiming at facilitating SMEs and young firms' access to external finance are pervasive around the world. While these programs have been implemented for years, their evaluation has long been lagging behind. This task has however been taken up in a recent literature. Several contributions propose an assessment of the performance of directed lending programs (e.g. Bach [2005] for France, Banerjee and Duflo [2004] for India, Prantl [2006] for Germany) or start-up subsidies for the unemployed (Crépon and Duguet [2004]). Another strand of the literature focuses on policies specifically designed to support innovative start-ups (Lerner [1999] for the US, Brander, Egan and Hellmann [2007] for Canada). All of these public interventions share the common feature that they are *direct* subsidies, which take the form of low interest rates or cheap equity finance.

In the present contribution, we evaluate the effects of a loan guarantee program, which is to be considered as an *indirect* subsidy. Indeed, agencies in charge of these programs provide insurance to lenders against borrowers' risk of default, while The (often subsidized) insurance premium is paid for by the borrower. The main rationale for this type of public intervention is the widespread belief that the lack of collateral hinders the access of new firms to external finance. Credit guarantee programs can be found in most OECD countries, as for instance in the US (SBA's 7a Loan Program, described by Graig, Jackson and Thompson [2005]), the UK (Small Firms Loan Guarantee, launched in 1981), or France (SOFARIS, launched in the late 1980s). Yet, although widespread, these programs have rarely been evaluated using firm level data[1]. In this paper, we rely on an exhaustive, large scale dataset to fill this gap.

The impact of any directed policy is typically difficult to evaluate, primarily because of potential selection biases: firms which successfully apply to the program may be those which have the best growth prospects, *i.e.* those which would have had no trouble raising external finance on financial markets. They may enter the program both because the agency in charge might prefer attracting high-potential firms and because these firms find it profitable to apply to the program in order to benefit from a subsidized, lower cost of external finance. When such selection occurs, firm level analyses will systematically overestimate the benefits of the program. To date, few papers have sought to alleviate this concern, although Bach [2005] and Banerjee and Duflo [2004] are important exceptions.

In this paper, we take advantage of a quasi-natural experiment to provide a causal assessment of the effectiveness of the French loan guarantee program. The "SOFARIS" program was set up in the late 1980s and was initially restricted to firms active in the manufacturing and business services industries. In 1995, the public endowment of the program was increased and new industries (construction, retail and wholesale trade, transportation, hotels and restaurants and personal services) became eligible. Using firms already eligible before 1995 as a control group, we focus on the behavior of firms active in these newly eligible industries before and after 1995 to provide difference-in-differences type of estimates of the impact of the program on various outcomes: debt, employment and capital growth, as well as financial expenses and bankruptcy probability.

Our results suggest that the French loan guarantee program significantly impacted the development of newly created firms. Firms targeted by the program are found to raise systematically more external

[1]Two notable exceptions are Uesugi *et al.* [2006] and Glennon and Nigro [2005], who provide evaluations of the Japanese and U.S. schemes respectively using firm level datasets. However, both of these contributions lack a proper identification strategy, in that they do not exploit exogenous variations in the probability of obtaining a guaranteed loan.

finance, pay (weakly) lower interest rates and experienced a higher growth than other similar firms. These results are shown to be causal, suggesting that this program is effective at helping small, credit constrained, firms to grow. A particular concern however emerges from our finding that loan guarantees *cause* firms to become more likely to go bankrupt. This result is not surprising: loan guarantees make limited liability strict[2] and can thus provide entrepreneurs with risk-shifting incentives. The overall efficiency of the small-scale program thus boils down to the trade-off between increased growth and increased risk. Furthermore, amore long-term analysis of the growing program between 1989 and 2003 shows that when the loan guarantee sheme becomes too large and affects a larger set of firms, the impact on growth shrinks very quickly while the excess bankruptcy rate of recipients is magnified, suggesting that these loan guarantee schemes are in fact not scalable.

Our paper is organized as follows: we first present the French Loan Guarantee Program in terms of institutional background (Section 2). We then provide some basic economic intuitions for the functioning of such a program (Section 3). We present the data we use (Section 5), describe our estimation strategies (Section 4) before presenting our results (Section 6). We then conclude in Section 7.

2 Institutional Design

"SOFARIS", recently relabeled as "OSEO-Garantie", was created in 1982 as a French implementation of the SBA 7(a) Loan program. It is a semi-public agency: the French State owns 50% of voting rights, while a consortium of private banks and public financial institutions (the "Caisse des Dépôts et Consignations") owns the remaining 50%.

Bruneau [1990], Bachelot [1992], and a report issued by the French Ministry of Finance (Direction de la Prévision [1993]) provide a good description of the main features of the program. The French government has entire discretion for the creation of the various funds and furthermore decides upon their respective, broadly defined "objectives" while the main source of financing is the French state budget. More specifically, SOFARIS is divided into four main funds, each of them having specific objectives:

- The "Development Fund" aims at improving access to external finance for old, mature SMEs. In this case, the backed medium-to-long term loans are mainly supposed to finance capital expenditures.
- The "Export Fund" is designed to help French SMEs to settle into foreign markets.
- The objective of the "Transmission Fund" is to secure firms' transmission, most frequently when the owner gets retired. These periods are among the most risky of the SMEs' life cycle (Betemps and Salette [1997]).
- Lastly, the "Creation Fund" improves credit access for new ventures, mostly through medium-to-long term loans.

These broad objectives are imposed to SOFARIS, but the agency has full autonomy to choose the ways to reach them. In most cases, this translates into eligibility conditions which are specific to each

[2]While banks can in general require personal guarantees fromentrepreneurs, making the entrepreneur almost fully liable, they cannot do so if the loan they provide is guaranteed by SOFARIS

Table 1: Description of the Various SOFARIS Funds (2005)

Main funds	**Size**	**Equity**	**Financial perf.**	**Other financial earnings**	**Operat. costs**	**Earnings**	**ROE** (%)	**Equival. subsidy**
Development	354	79	28	5	11	22	28	-11
Transmission	394	88	18	5	12	11	13	2
Financial Restructuring	181	40	-5	2	5	-8	-20	14
Creation	375	84	-18	5	11	-24	-28	**36**
All funds	1,582	354	37	21	47	11	3	42

fund and which are defined in terms of industry affiliation, firm age, size (total sales) and group affiliation. In most cases, only independent firms can benefit from subsidized loans.
Conditional on firms' eligibility, all applications for SOFARIS guarantees are made by banks, and not by the firms themselves. Once granted, a guarantee allows the bank to recover a pre-specified amount of the remaining loan principal in case the firm defaults. This fraction usually varies between 40% and 70%, and is not set case by case, but rather at the fund-year level, with the view to manage the aggregate risk faced by the SOFARIS agency. The counterpart of these guarantees is that the "benefiting" firm has to pay a fee, which is also set at the fund-year level, and which adds to the interest rate it has to pay to the bank. This fee usually varies between 50 and 150 base points.
In contrast to the U.S. SBA's 7a Loan Program, firms do not have to prove that they were unable to obtain credit on the regular market. It is also worth noticing that the regulation of the French system is only made through prices (fraction guaranteed and fee paid to SOFARIS), while there is no "quantity" rationing[3].

The financial performances of the various funds, and the implied public subsidies, are quite contrasted, as shown in table 1. Assuming that the average ROE in the bank and insurance industries is about 15%, the Creation Fund would benefit from the largest subsidy (about 36 millions euros, or FF 236 millions), partially (11 millions euros, FF 72 millions) cross-financed by the Development Fund.

In the remainder of the paper, we focus on this latter Creation Fund, which specifically aims at fostering entrepreneurship and firm creation. In 2005, the amount of loans backed by this latter fund represented one third (1.5 out of the 4.5 billions euros) of the total amount of debt guaranteed by SOFARIS. 26,000 firms (of the total 40,000 firms backed by a SOFARIS guarantee) benefited from such early stage loan guarantees.

3 Some Basic Intuitions about Credit Guarantee Programs

The previous literature has since long outlined the main mechanisms inducing credit constraints.
Adverse selection on one hand impedes the ability of the market to allocate credit through prices (interest rates) only, because it increases the proportion of high-risk investors in the pool of prospective borrowers (Stiglitz and Weiss [1981]. However, in absence of an informational advantage, it is unclear how public intervention may alleviate this source of credit rationing (Gale [1991]). Bester [1985] showed

[3]For certain funds, only the largest applications are scrutinized on a case by case basis by the agency.

that collateral might be used to screen safe from risky investors when collateral is relatively more costly for risky borrowers, but if the price of the credit guarantee cannot be differentiated according to the (unobservable) risk of entrepreneurs lacking collateral, it is impossible to replicate this self-revealing mechanism.
In such an adverse selection setting, the introduction of a loan guarantee program might however increase the set of financed projects, be they in some cases excessively risky, depending on the price (up-front fee) and guaranteed share set by SOFARIS. The public agency chose to combine a high up-front fee with a high level of guarantee, thus making low risk and collateral rich firms which do not need to be subsidized reluctant to apply, while allowing riskier or less wealthy entrepreneurs to obtain more external financing. In the presence of several sources of heterogeneity however (risk of the project, net initial worth, profitability of projects, *etc.*), the two available instruments are not sufficient to precisely target a specific population of firms defined over all relevant dimensions. This induces potential selection issues (see section **??**) or increased social inefficiencies. *E.g.* firms with inefficient risk may obtain financing with a guarantee while firms with efficient risk would not get financed, or firms which would have obtained financing anyway would find it profitable to apply to the program.

Moral hazard on the other hand reduces the ability of prices alone to clear lending markets because once loan is extended the actions of the borrowers is not independent of the lending rate (Myers and Majluf [1985]). The problem may be partly alleviated if the debtor is able to pledge private collateral to be transferred to the bank in case of project failure. Credit guarantees however do not reallocate risk between debtor and lender, but to the government instead, so that these schemes decrease the overall risk faced by both parties, and do not generically alleviate moral hazard[4]. This reasoning suggests that loans issued with public credit guarantees may be riskier than non-backed loans. Moreover, public support schemes in general are likely to have deleterious impact on efficiency, since (conversely) credit-constrained entrepreneurs have strong incentives to find ways of cutting costs.

The previous developments show that the expected impact of the launching of a loan credit guarantee program might increase the set of entrepreneurs obtaining finance, but at the cost of subsidizing riskier projects and lower efforts of both the entrepreneur and the lender (screening and monitoring costs) such that the net effect on total welfare might even be negative. Additional arguments explain why such programs may however be appealing, for example:

- There are some non-convexities in the production function: for instance, there is a minimum level of investment (indivisibility) needed to start a company (see *e.g.* Galor and Zeira [1993]). This might in particular be the case of industries with high sunk entry costs related to investment in machinery or high-tech equipments.
- Credit guarantees might correct for unequally distributed endowments, if lack of collateral is more acute for certain individuals or in poorer geographical areas (Craig *et al.* [2005]).
- Guarantee schemes can help diversify risk across lenders with different sectoral or geographic specialization.

[4]Arpring *et al.* [2009] show that guarantees might in some cases enhance welfare when entrepreneurs having positive NPV investment projects are excluded from the credit market due to lack of collateral. More specifically, the authors show that for sufficiently small guarantees, the borrower's incentives are increasing in the size of the guarantee, and hence so is welfare. However, as previously stated, the actual SOFARIS guarantee is quite large.

- Credit guarantees help starting relation-based relationships between banks and entrepreneurs (Petersen and Rajan [1994]) which may be fruitful in the future.
- There are some positive "social" externalities associated to increased entrepreneurial dynamism: fostering innovative and informational spillovers, infant industry or learning-by-doing arguments (Honohan [2008]), *etc.*[5]. This kind of arguments reaches obviously further away from young firms' financing concerns.

We argue that the program evaluation which follows will provide some evidence about the existence of credit constraints faced by entrepreneurs in case the program proves to increase young firms' external financing, either on the extensive or intensive margins, and if the underlying additional projects have a total NPV which is greater than the implied public subsidy. However, we also recognize that these conditions are neither necessary[6] nor sufficient since the cost of the program may be higher than the subsidy[7].

4 Estimation Strategy

Estimated Equation

We rely on firm level information about each firm created between 1989 and 2000 (resp. 2002), together with matched firm level information about participation into the SOFARIS program in the first three years after creation. Therefore, the baseline evaluation equation can be written as:

$$Y_{i,j,c+a} = \alpha + \beta.SOF_{i,j,c/c+3} + \mu.t \times \delta_j + \xi.X^{(0)}_{i,j,c} + \delta_c + \delta_j + \epsilon_{i,j,c} \tag{4.1}$$

where i denotes firms, j industries, c denotes the considered cohort (creation year) and a denotes firm age. $SOF_{i,j,c/c+3}$ indicates whether the firm received a guarantee, $X^{(0)}$ stands for a set of observable characteristics observed at creation ($a = 0$) that were arguably decided upon before the decision to apply to the SOFARIS scheme: start-up equity, inventories, legal form, location choice and the calendar month corresponding to firm creation. Year (δ_c) and industry (δ_j) fixed effects are included in all regressions, and the preferred specification also allows for industry specific time trends.

If selection into the group of SOFARIS subsidized firms is correctly accounted by the observed characteristics $X^{(0)}$, δ_c and δ_j, then OLS estimates are consistent. We present them as a benchmark for our empirical analysis. One-to-one nearest neighbor matching estimators are also computed, which also rely on the same unconfoundedness assumption (Rosenbaum and Rubin [1983]) but which do not rely on an homogeneous treatment assumption.

The obvious limitation of this first (benchmark) approach is that self-selection is potentially driven by characteristics that are unobservable in the data, e.g. manager ability, risk or profitability of the underlying projects. As an example, for a given level of risk, entrepreneurs having more profitable projects are more likely to accept to pay the upfront fee associated with a SOFARIS guarantee. This would lead to an upward bias on β in equation 4.1 if Y is a measure of profitability since this coefficient

[5]This may be the case when, for instance, an unemployed is creating a new venture: there is a positive externality through the Unemployment Insurance fund in this latter case (Duguet and Crépon [2004]

[6]If the program scheme is not designed in a suitable way, it won't be able to alleviate credit constraints.

[7]Li [2002] shows that general equilibrium (mis-)allocation effects might be large.

would then partly reflect the self-selection process, in addition to the "true" impact of benefiting from a SOFARIS guarantee. Conversely, it may be the case that for a given level of risk, the SOFARIS agency only selects projects that are profitable enough to be socially desirable (on the basis of an information set which is larger than the information available to the econometrician), but not profitable enough to access private funding. This selection process would also lead to an upward bias on the parameter of interest[8].

Exploiting a Quasi-Natural Experiment

In order to solve these potential endogeneity issues, we take advantage of the recent history of the SOFARIS scheme. More specifically, we argue that its 1995 extension can be considered as a valid quasi-natural experiment and provide an exogenous variation in the probability of getting a guaranteed loan that does not affect firms' post-grant behavior.

Indeed, the recent history of SOFARIS was marked by two major shocks:

1. In 1993, a newly elected right-wing government extended these small-business oriented program widely. Between 1993 and 1995, the funds available to SOFARIS were almost multiplied by three. Unfortunately, the number of treated firms remained low, and this shock does not provide much identifying variation since it affected all eligible firms the same way and at the same date. Therefore, it is difficult to disentangle the effects of the extension of the SOFARIS program from those resulting from alternative cyclical shocks experienced by the French economy over this period.

2. In 1995, a subsequent right-wing government decided to keep on increasing this loan guarantee scheme by further increasing the budget allocated to SOFARIS - and therefore increasing the amount of subsidized loans in already eligible industries - but also by enlarging the eligibility conditions to additional industries. Construction, retail and wholesale trade, transportation, hotels and restaurants and personal services became eligible at this date while manufacturing industries and corporate services remained so.
   This latter event provides a better identification opportunity, since under the assumption that new eligibility was not decided in anticipation of (negative) cyclical shocks affecting specifically the corresponding newly eligible industries[9] - and not the previously eligible ones - then we are able to take advantage of this shock in a standard difference-in-differences (IV) setting.

Note that in our DID setting, identification of the causal impact of the program is at the industry level. Furthermore, since both set of industries are in the same status in the post-1995 period but not in the pre-1995 period, then the DID estimator identifies the impact of the program in the "control" industries in the pre-1995 period, i.e. *the impact of the early small scale program*. This is the reason why we also choose to report OLS and matching estimators by sub-periods (before and after 1995).

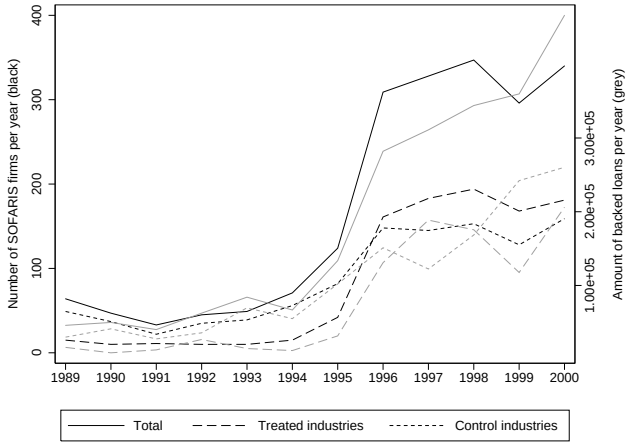
Figure 1 depicts the evolution of the Creation Fund over the 1989 to 2000 period. Its shows that the first 1993 shock was negligible as compared to the subsequent 1995 program extension, both in terms of the number of firms which participated intothe program, and in terms of the amount of backed loans[10].

[8]Note that if the SOFARIS scheme create risk shifting towards riskier projects, then conditionnally on observables, the OLS should not be biased.

[9]This aspect is investigated in detail in the appendix A and in partcilar in figure 4.

[10]A small number of firms belonging to the not yet eligible industries already benefitted from a SOFARIS guarantee before 1995, which can be explained by changes in industry classification over the period or coding errors.

Figure 1: The SOFARIS Creation Fund Program



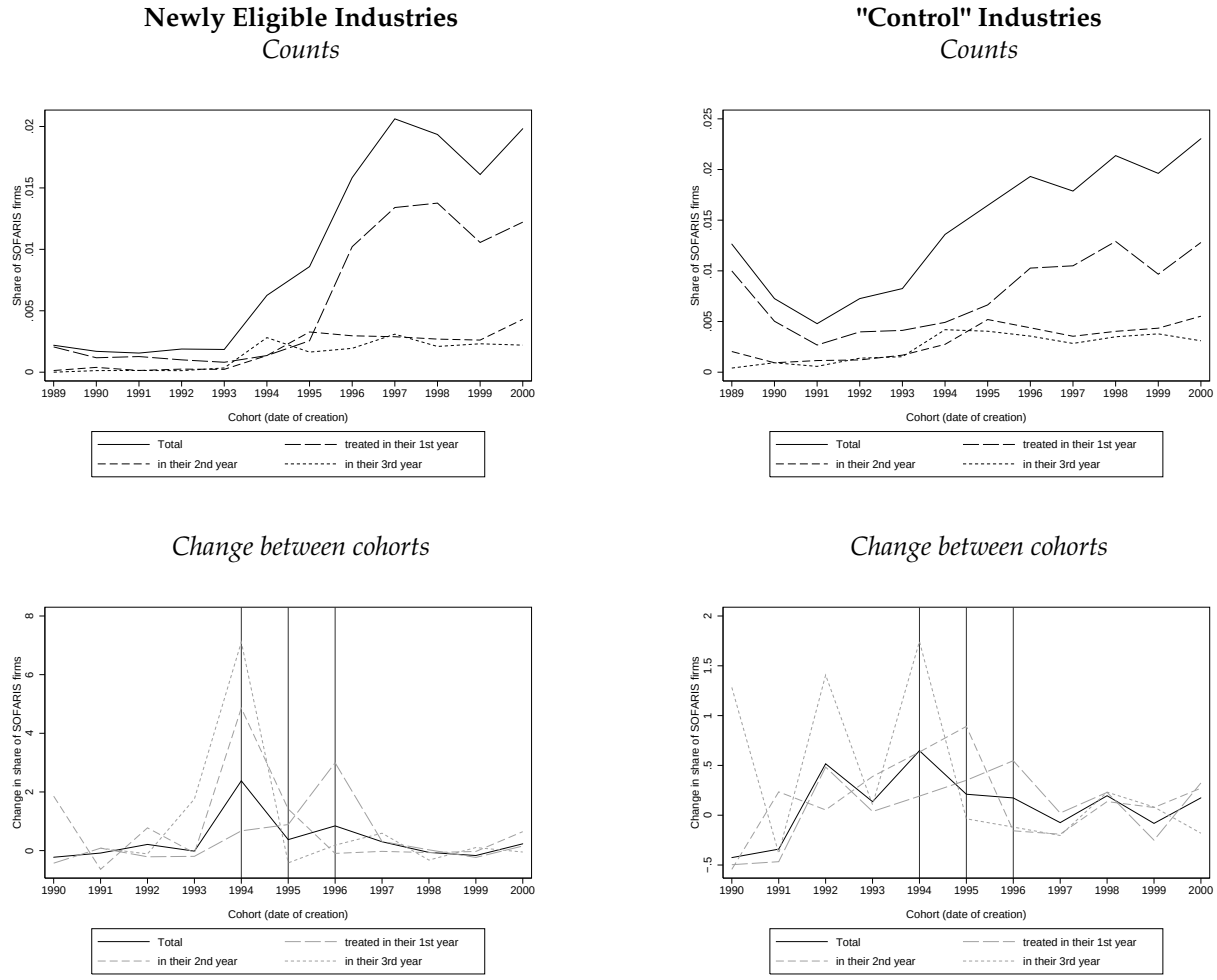
Notes: "Treated" (newly eligible) industries: construction, retail and wholesale trade, transportation, hotels and restaurants. "Control" industries (remained eligible over the entire period): manufacturing industries and corporate services.

Second, figure 2 replicates the analysis by cohort, on the subsample of firms belonging to the set of newly eligible industries on one hand, and in the subsample of control industries on the other hand. Several aspects are worth noticing: first, the small size of the program, with less than 1% of firms being backed by a SOFARIS guarantee in the pre-1995 period, and the proportion reaching about 2% in 2000. This is the reason why we also report estimates obtained on the sub-sample of industries which were most responsive to the program in general and to the 1995 in particular. The selection procedure of this "selected" sample is explained in full detail in appendix A[11].
Second, the main part of the program is concentrated on firms which received the guarantee within their first year[12], while the fraction of firms receiving the guarantee in the third year is low and unstable, especially in control industries. Third, the 1993 is noticeable in the control industries (especially for the 1992 cohort, with a time lag which might be driven by calendar effects) and in those industries, the shock is of the same magnitude as the 1995 program extension, which affected mostly the 1994 cohort. Fourth, the shock was much more pronounced in the newly eleigible industries, and affected mainly (but differentially) three different cohorts: the 1994 cohort which was only exposed to the program during one year, the 1995 which was exposed during two years and the 1996 and subsequent cohorts which became exposed for three years[13].

This last remark motivates the use of three different interactions as instrumental variables in order to maximize the identifying power of our setting. More precisely, we specifiy the firm-level first stage

[11]This methodological appendix also includes a discussion of the strength of our IVs.
[12]Note that these firms were excluded of the analysis in Lelarge et al [2010]
[13]In the bottom left panel of figure 2, the "changes" in the proportion of exposed firms are positive for these three cohorts, and then stick to 0 again.

Figure 2: Differential Exposition to the 1995 Shock across Industries and Cohorts



Notes: "Treated" (newly eligible) industries: construction, retail and wholesale trade, transportation, hotels and restaurants. "Control" industries (remained eligible over the entire period): manufacturing industries and corporate services. In the bottom panel, we report the growth rate of the share of SOFARIS backed firms between any two adjacent cohorts.

equation as[14]:

$$SOF_{i,j,c/c+3} = a + b_{94}.\mathbb{I}_{\{c=1994\}} \times \mathrm{NE}_j + b_{95}.\mathbb{I}_{\{c=1995\}} \times \mathrm{NE}_j b_{96+}.\mathbb{I}_{\{c\geq 1996\}} \times \mathrm{NE}_j + m.(c) \times TREAT_j + g.X^{(0)}_{i,j,c} + d_c + d_j + e_{i,j,c} \quad (4.2)$$

where $\mathbb{I}$ is the indicator function and NE is a dummy indicating newly eligible industries.
In the second stage estimation (where SOF in equation 4.1 is intrumented by $\mathbb{I}_{\{c=1994\}} \times \mathrm{NE}_j$, $\mathbb{I}_{\{c=1995\}} \times \mathrm{NE}_j$ and $\mathbb{I}_{\{c\geq 1996\}} \times \mathrm{NE}_j$), results[15] are robust to the estimation method, either linear (2SLS) or non-linear; we choose to report the Heckman specification which is more flexible for sub-sample analy-

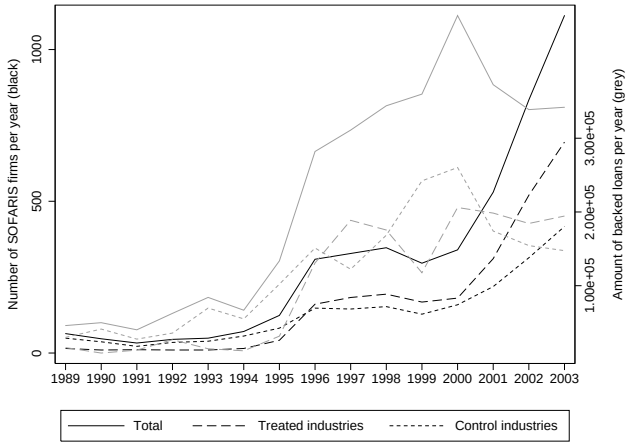
[14]We choose to run these regressions at the firm rather than the industry level for practical reasons, to ensure that the estimates are computed on the same sample as the matching and OLS estimators.
[15]Especially our main result with respect to bankruptcy - robustness checks available upon request.

ses. All regressions are also clustered at the industry-post 1995 period level (Bertrand, Duflo and Mullainathan [2002]).

Further Analysis in the Longer Term

The last part of our empirical analysis investigates the impact of the program in the post-2000 period, which was marked by a further very large incresae of the size of the program. Figure 1 shows that the number of backed firms was multiplied by more than 3 between 2000 and 2003, which provides an opportunity to investigate the scalability of the program. However, it is not possible to provide convincing IV estimates for this last period, since all industries experienced the same increase in their exposure to the program. We rather report OLS and matching estimators to describe at least the evolution of the correlation between program participation and various outcomes across time.

Figure 3: Program Scaling Up after 2000



Notes: "Treated" (newly eligible) industries: construction, retail and wholesale trade, transportation, hotels and restaurants. "Control" industries (remained eligible over the entire period): manufacturing industries and corporate services.

5 Data and Descriptive Statistics

5.1 Sample Construction

Our information about the SOFARIS (Creation Fund) backed loans is directly sourced from the SOFARIS Information System and includes firm and loan-level information over the 1989 to 2004 period, specifically: the date at which any guarantee was granted, the amount of the backed loan, the fraction of the loan that is guaranteed and the upfront fee paid to SOFARIS. These files also include the official (and unique) firm identifiers (Siren codes) allowing to match these information with complementary firm level datasets.

The SIRENE files reporting the yearly creations of firms are built at the Firm Demography Department of the French National Institute of Statictics (INSEE). The geographical location of each firm is also sourced from these files.

The FICUS files consist of firms' balance sheets collected yearly by the fiscal administration ("Direction Générale des Impôts") via the different corporate tax regimes, mainly "BRN" ("Bénéfice réel normal") chosen by approximately 500,000 firms per year, and the simplified scheme ("Régime simplifié d'imposition") chosen by approximately 2 million "small" firms per year[16]. These files provide firm level accounting information (value added, capital investment, debt, financial fees, inventories, equity, *etc.*). All accounting variables have been deflated using the corresponding price index constructed at the industry 3 digit level by the INSEE department in charge of national accounting.

Last, bankruptcy files also provide an exhaustive list of all bankruptcy filings in France from 1989 to 2009, along with the identifying number of the corresponding bankrupted companies.

We matched these four datasets and were therefore able to track all corporations or limited liability firms which were created over the 1989 to 2002 period and which provided information to the fiscal administration within their first two years of life.

The definition of a SOFARIS backed firm is whether it benefitted from a guarantee from the Creation fund within their first three or four years of existence. We pool all these firms together in the same category, because there no way to exhibit specific IVs allowing to identify separately the impact of a guarantee received in the first year as opposed to later on in the firm's life cycle. Rather, we investigate whether treatment might be heterogeneous across size (and therefore maybe age) classes.

"Control" firms are all other (corporation or limited liability) firms, which have not been backed by the SOFARIS Creation Fund.

The sample used for our main causal analysis contains 1,696 backed firms and 124,639 controls, resulting in a sample of 126,335 enterprises created between 1989 and 2000[17]. All of these firms were observed in their first year of existence, and then (conditional upon surviving) in their fifth and seventh

[16]These files only miss the non-employer firms which are not legally distinct from their owner - i.e. the wealth of the entrepreneur is not separated from the equity of her business, and there is no limited liability in this case. However, such businesses are not eligible to the SOFARIS scheme.

[17]This sample is smaller than in Lelarge et al [2010] because a few industries have been discarded due to the unavailability of price indices.

year.

In the last section of the paper, we extend this sample to firms which were created in 2001 and 2002, and which experienced a higher exposure to the program: this sub-sample includes 809 additional SOFARIS firms and 22,615 controls.

Last, to further investigate the profile of firms taking part into the program, we matched this sample constructed from administrative and exhasutive data with complementary firm level survey data. Namely, we used the same information system as in Landier and Thesmar [2009], the SINE surveys, to construct the same indicators as they do (in particular, the indicator of "optimism"). Each fourth year (1994, 1998 and 2002), the statistical institute launches a comprehensive survey among ca one third of all businesses which were created in the first semeter of the considered year[18]. The timing of these surveys is convenient in our case, since each wave corresponds to a different "regime" of the SOFARIS scheme: very small in 1994 (pre-1995 period), small in 1998 (1995 to 2000 period) and larger in 2002.

We use these surveys to construct the following variables (the typology is partly taken from Landier and Thesmar [2009]):

- "EXPERTISE" (competence) is a dummy indicating whether the entrepreneur has previous experience within the industry. The exact phrasing of the question is: "In your previous job experiences, did you acquire skills: (1) in the industry you are setting this business in? (2) in a similar activity? (3) in a very different activity? and (4) you have very diverse skills." The EXPERT dummy is equal to 1 when the entrepreneur answers (1).
- "SERIAL ENTREPRENEURS" (competence) is a dummy indicating when the entrepreneur created at least one business before this one.
- "OPTIMISM IN TERMS OF EMPLOYMENT" (risk) is a dummy indicating that the empirical proxy for the expectation error on "employment" is positive. This last empirical proxy was contructed as in Landier and Thesmar [2009] as the difference between the hiring expectations reported in the survey[19] and the actual hirings reported for the subsequent years in the fiscal files.
- "OPTIMISM IN TERMS OF DEVELOPMENT" (risk) is constructed similarly using the expectations about further development, as compared to the actual sales growth observed in the fiscal files[20].

[18]The response rate is always high ($> 85\%$) because answering most INSEE surveys is mandatory.

[19]The question is phrased in the following way: "Do you plan to hire in the next 12 months?" and the possible answers are: (1) yes, (2) no, or (3) I do not know. The expectation dummy ($EXEMP^{(0)}$) equals 1 when the entrepreneur answers (1), and 0 when she answers (2). Entrepreneurs responding (3) were removed from estimation. The expectation error is constructed as:

$$\Delta_E^{(0)} = EXEMP^{(0)} - \mathbb{I}_{\{\Delta \text{Emp}_{c,c+2} > 0 \cap \text{Survival}\}}$$

[20]The question is phrased as: "What is your view of the future?", and the possible answers are: (1) the firm will develop, (2) the firm will keep its current balance, (3) I will have to struggle, (4) I will have to shut down the firm, (5) I will sell it, (6) I do not know. Our dummy ($EXPGR^{(0)}$) is equal to 1 when the entrepreneur answers (1), and 0 when he answers (2), (3), or (4). Entrepreneurs responding (5) or (6) were removed from estimation. The expectation error is constructed as:

$$\Delta_S^{(0)} = EXPGR^{(0)} - \mathbb{I}_{\{\Delta \text{Sales}_{c,c+2} > 3\% \cap \text{Survival}\}}$$

- "Former CEO" indicates that the previous position of the entrepreneur was at the higher level of management (this variable is highly correlated with "SERIAL ENTREPRENEURS"). On a different level, the "status" variable indicates whether the entrepreneur was active, or unemployed before deciding to create a new business. These two variables are indictors of her experience in assessing the riskiness of projects.

- The number of clients at creation is also an indicator of riskiness of the activity, in the sense that it describes the ability of the entrepreneur to diversify and insure her business against the risk of default of her clients.

5.2 Descriptive Statistics

Table 2 reports descriptive statistics about the main firm level estimation sample. Note that "personal services" became eligible after 1995 but were removed from the analysis, since the inclusion of these activities deteriorated the plausibility of the "common trend" assumption between these two broad sets of industries. The upper panel describes the full sample, whilthe lower panel describes the "selected" set of industries which responded most to the 1995 shock and thus provides a greater identification opportunity for the DID estimation strategy. 318 different 4-digit industries are represented in the upper panel, of which 126 became elgible after 1995, while only a subset of 181 of these industries are included in the "selected" sample (of which 106 "switching" industries, ie a higher weight of those sectors).

The features are both datasets are very similar, although the smaller sample is more homogenous. The average size of newly created firms is around 2 employees in their first year of life. These ventures start with a very high amount of debt, which tend to decrease over the subsequent years. Typically, debt at creation might be affected by the SOFARIS scheme, as well as its evolution in the first phase of the life cycle of these firms. The financial burden for such young firm is extremely high: the average interest rate (defined as total financial costs over debt) is 12%, with a median of around 6 base points. Around 18% of all firms experienced a bankruptcy procedure before reaching the age of 7 years, and this proportion raises 20% in the case of SOFARIS backed firms. We show below that this differential mortality still holds when controlling for observed or unobserved initial characteristics[21].
What is also noticeable is the huge differential growth of employment between non-SOFARIS and SOFARIS firms, espcecially those who benfitted from the SOFARIS guarantee in their third or fourth year: the difference in average growth rates reaches 50 percentage points, although our sample obviously shows a high amount of heterogeneity.
As a last technical point, it is worth noticing that outcome variables that are specified in levels were introduced in logs in the regression analysis, with bankrupted firms being set at the conventional value of 0[22]. Similarly, growth rates were computed "à la" Haltiwanger et al to address the selection issues generated by exits.

[21] Unfortunately, we are not able to accurately track the alternative ways of exiting the market, e.g. mergers or death without formal legal bankruptcy procedure.

[22] The only exception is the variable describing financial burden, which is specified as a ratio and is only defined for surviving firms.

Table 2: Descriptive Statistics

Full Sample

	Non-Sofaris Firms			Sofaris in 1st year			Sofaris in 2nd year			Sofaris in 3rd or 4th year		
	Obs	**Mean**	**Median**	**Obs**	**Mean**	**Median**	**Obs**	**Mean**	**Median**	**Obs**	**Mean**	**Median**
Newly eligible industries	124639	0.50	-	990	0.50	-	339	0.38	-	367	0.40	-
Inventories at age 0	124639	1.39	0	990	0.57	0	339	0.70	0	367	0.68	0
Start-up capital at age 0	124639	875.67	30	990	186.12	15	339	272.83	18	367	136.66	23
Employment at age 0	124639	3.13	1	990	4.94	2	339	7.15	2	367	4.10	2
Debts at age 5	124639	631.56	0	990	161.33	21	339	344.76	20	367	265.81	53
Debts at age 7	124639	515.91	0	990	149.57	3	339	405.70	1	367	228.97	36
Debt growth, btw 0-5	124639	-0.38	0	990	-0.66	-0.91	339	0.09	0	367	0.42	0.62
Debt growth, btw 0-7	124639	-0.50	0	990	-0.92	-1.60	339	-0.21	0	367	0.15	0.05
Av. interest rate at age 5	51907	0.12	0.06	638	0.12	0.07	212	0.14	0.07	282	0.16	0.08
Av. interest rate at age 7	43435	0.12	0.05	530	0.12	0.06	171	0.14	0.07	236	0.15	0.08
Bankruptcy before age 5	124639	0.15	0	990	0.20	0	339	0.27	0	367	0.18	0
Bankruptcy before age 7	124639	0.18	0	990	0.24	0	339	0.35	0	367	0.26	0
Bptcy and exit before age 5	124639	0.13	0	990	0.16	0	339	0.21	0	367	0.12	0
Bptcy and exit before age 7	124639	0.16	0	990	0.22	0	339	0.28	0	367	0.19	0
Employment at age 5	124639	4.52	0	990	7.15	2	339	13.61	3	367	14.29	6
Employment at age 7	124639	4.47	0	990	6.62	1	339	14.45	1	367	13.32	4
Emp. Growth, btw 0-5	124639	-0.19	0	990	0.00	0	339	0.11	0.35	367	0.69	1
Emp. Growth, btw 0-7	124639	-0.31	0	990	-0.19	0	339	-0.16	0	367	0.31	0.67
Tangible capital at age 5	124639	264.49	0	990	232.15	52.5	339	249.46	45	367	254.70	83
Tangible capital at age 7	124639	226.29	0	990	201.03	32	339	292.81	17	367	296.36	53
Capital growth, btw 0-5	74786	1.64	2	711	1.90	2	234	1.89	2	307	1.91	2
Capital growth, btw 0-7	63181	1.66	2	623	1.86	2	196	1.91	2	255	1.93	2

Sub-ample of industries that were most affected by the 1995 shock (selected sample)

	Non-Sofaris Firms			Sofaris in 1st year			Sofaris in 2nd year			Sofaris in 3rd or 4th year		
	Obs	**Mean**	**Median**	**Obs**	**Mean**	**Median**	**Obs**	**Mean**	**Median**	**Obs**	**Mean**	**Median**
Newly eligible industries	72241	0.74	-	990	0.57	-	339	0.43	-	367	0.46	-
Inventories at age 0	72241	1.66	0	814	0.64	0	259	0.69	0	279	0.88	0
Start-up capital at age 0	72241	267.66	18	814	174.79	15	259	244.01	15	279	89.60	23
Employment at age 0	72241	3.19	1	814	5.06	3	259	6.44	2	279	4.27	2
Debts at age 5	72241	313.99	0	814	163.16	22.5	259	324.29	18	279	232.33	54
Debts at age 7	72241	278.20	0	814	158.52	3	259	383.47	1	279	205.19	44
Debt growth, btw 0-5	72241	-0.44	0	814	-0.69	-0.92	259	0.03	0	279	0.46	0.70
Debt growth, btw 0-7	72241	-0.57	0	814	-0.95	-1.68	259	-0.25	0	279	0.22	0.41
Av. interest rate at age 5	30551	0.12	0.07	528	0.11	0.07	160	0.14	0.08	220	0.17	0.08
Av. interest rate at age 7	25391	0.12	0.06	433	0.12	0.06	131	0.14	0.07	186	0.15	0.09
Bankruptcy before age 5	72241	0.16	0	814	0.20	0	259	0.27	0	279	0.16	0
Bankruptcy before age 7	72241	0.19	0	814	0.25	0	259	0.34	0	279	0.23	0
Bptcy and exit before age 5	72241	0.14	0	814	0.17	0	259	0.21	0	279	0.09	0
Bptcy and exit before age 7	72241	0.17	0	814	0.22	0	259	0.28	0	279	0.17	0
Employment at age 5	72241	4.62	0	814	7.26	3	259	13.91	3	279	14.27	7
Employment at age 7	72241	4.33	0	814	6.76	1	259	14.57	1	279	12.77	4
Emp. Growth, btw 0-5	72241	-0.21	0	814	-0.03	0.13	259	0.10	0.37	279	0.75	1
Emp. Growth, btw 0-7	72241	-0.34	0	814	-0.22	0	259	-0.19	0	279	0.36	0.67
Tangible capital at age 5	72241	297.53	3	814	251.29	60.5	259	255.49	51	279	260.28	107
Tangible capital at age 7	72241	247.08	0	814	219.13	40.5	259	315.44	20	279	304.62	66
Capital growth, btw 0-5	43107	1.79	2	581	1.90	2	179	1.92	2	239	1.94	2
Capital growth, btw 0-7	36414	1.79	2	506	1.86	2	151	1.90	2	199	1.96	2

Notes: Information sourced from administrative files (fiscal balance sheets, business register and bankruptcy filings) and describing the cohorts of firms which were created between 1989 and 2000 in the following industries: manufacturing industries and corporate services (control industries) and construction, retail and wholesale trade, transportation, hotels and restaurants (newly eligible after 1995).

6 Results

6.1 Investigating the 1995 Shock

First stages over the 1989 to 2000 period

The first-stage equation enables to check whether the quasi-natural experiment provides a significant identifying shock on the probability of getting a guaranteed loan.

Actually table 3 shows that all three interaction terms described in the section 4 above are significant in the baseline specification without controls. However, only the marginal effect of the main interaction term between "belonging to a newly elgible industry" and "having been created after 1995" remains significant at conventional levels when including firm level characteristics (location, legal status, equity at creation and inventories at creation) as well as industry specific time trends, but coefficients in the underlying probit estimation remains significant at the 1%, 5% and 10% levels respectively. This shows that in the preferred specification, all three instrumental variables provide additional identifying power for the estimation of the impact of the program.

Due to the small size of the program as a whole, the absolute magnitude of this shock is not higher than 1.4 percentage point for firms created in newly eligible industries after 1995, but since the base was on average at 1.3% this shock represents a doubling of the rate of subsidized firms.

The last three columns replicate the same specifications in the "selected" sample. Unsurprisingly (it has been designed to achieve this goal), instrumental variables are stronger, and the estimated shock corresponding to the 1995 program extension is somewhat larger (1.7 percentage point).

Table 3: First Stages

	Full sample			Selected sample		
	(1)	(2)	(3)	(4)	(5)	(6)
t>1995 × NE Ind.	0.0187***	0.0157**	0.0143**	0.0221***	0.0213***	0.0166***
	(0.0048)	(0.0063)	(0.0056)	(0.0044)	(0.0072)	(0.0060)
t=1995 × NE Ind.	0.0084*	0.0069	0.0080	0.0099*	0.0094	0.0084
	(0.0045)	(0.0049)	(0.0051)	(0.0051)	(0.0062)	(0.0057)
t=1994 × NE Ind.	0.0089*	0.0078	0.0059	0.0116*	0.0113*	0.0083
	(0.0050)	(0.0052)	(0.0044)	(0.0060)	(0.0066)	(0.0057)
NE Ind. × trend		0.0002	0.0001		0.0001	0.0002
		(0.0004)	(0.0003)		(0.0006)	(0.0004)
Deciles of start-up capital	no	no	yes	no	no	yes
Deciles of start-up inventories	no	no	yes	no	no	yes
Creation month FE	no	no	yes	no	no	yes
Legal status FE	no	no	yes	no	no	yes
"Region" (county) FE	no	no	yes	no	no	yes
Industry FE	yes	yes	yes	yes	yes	yes
Time FE	yes	yes	yes	yes	yes	yes
N	142517	142517	126335	83907	83907	73593

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects obtained from probit estimations; clustered standard errors in parentheses (at the 4-digit industry times post 1995 level).

Impact of the SOFARIS scheme on Access to Credit: Debt and Financial Burden

We first investigate whether getting a guaranteed loan causally implies that firms take on more debt. If firms are credit constrained, and under the further assumption that the scheme is properly calibrated,

subsidized firms benefit from more favorable borrowing conditions and from an easier access to banking credit. Therefore, in this case, SOFARIS guarantees enable eligible firms to be more leveraged. On the contrary, if the pricing scheme is inadequate (low enough), a windfall effect could occur, that unconstrained firms only apply for SOFARIS guarantees in order to get lower interest rates than on the non-subsidized credit market[23]. In this latter "winner picking" case, SOFARIS firms would not show higher levels of debt but a lower financial burden.

We test these two alternative stories in tables 4 and 5. In table 4, we investigate first whether, controlling for size (equity) at creation, SOFARIS backed firms have more debt than the non-backed firms. We obtain that OLS and matching estimates point to a positive correlation, while the IV estimate is not significant in the full sample. In the selected sample however, the IV point estimate remains significant in the short term (age 5), with a magnitude that is somewhat lower than the corresponding OLS and matching estimators reported for 1989 to 1994, but which is more sensible (increase in debt ranging from 20% to 150%) and with an overlapping confidence interval at 95%. Unsurprisingly, estimates are also lower in the longer term (at age 7), but remain significant. The specification in growth rates is only reported for information, because the initial level of debt of SOFARIS firms (especially those which received the guarantee very early, ie the majority of them) is likely to be affected by the program already. This is why the obtained estimates are very low, and incorrectly signed in several specifications.
The further analysis of firms' financial burden might help disentangling whether this long term effect of the program on debt is driven by a more favorable access to longer term loans, or whether it is driven by a more favorable sequence of debt contracts, e.g. in the case of trust building with the firm's bank.

In table 5, we measure financial burden as the average interest rate, i.e. the ratio of firms' financial expenditures over financial debt. This ratio is a quite precise measure of the marginal interest rate in the first years, but it becomes noisier as time goes by, since it then mixes various debt issuances. The obtained pattern is contrasted. In the early period, OLS and matching estimators at age 3 are not significant whereas the corresponding IV estimator tend to be negative and (weakly) significant. This difference might be driven by a compositional effect of heterogeneous program impact within the population of SOFARIS backed firms between 1989 and 1994: some might have benfitted from a higher ability to raise money, but at a high cost, and other might simply have benefitted from lower interest rates due to the lower remaining risk from the point of view of their bank. After the 1995 scaling-up of the program, OLS and matching estimators indicate that SOFARIS loans were associated with significantly higher interest rates, and that this effect is persistant up to age 7. These results do not allow to reject any of the two previous hypotheses: it is consistent with easier access to longer term (and more expesive) loans, or with the trust building hypothesis associated with higher fees due to the riskiness of projects backedby SOFARIS.

Overall, all the previosuly described results remain however rather descriptive since loan sizes and interest rates are obviously not independent and their empirical evolution is difficult to interpret in the absence of a proper structural (pricing) model.

[23]This may be the case since the backed loan is partly secured

Impact of the SOFARIS scheme on Firm Development: Employment and Capital Growth

Do credit constraints hinder firm growth? First insights regarding this aspect are reported in tables 6 and 7. Estimates for employment growth are reported in table 6. In both sample, estimates obtained for employment (at age 5 and controlling for size at creation in terms of equity) from the IV strategy are similar to the corresponding matching estimates, and somewhat higher than the OLS coefficients for the 1989 to 1994 period. For age 7, the reverse prevails, but in each case, the obtained coefficients are positive and highly significant. In the small scale version of the program (1989 to 1994), SOFARIS backed firms hired on average 60% (IV estimate) more employees in the long term (at age 7). Since the sample average is around 4.5 employees per firm, this amounts to 2.7 additional worker in each of the ca 50 firms that were annually backed by SOFARIS - say, around 100 long term jobs[24].
The lower panel of table 6 shows the same mis-specification problem as in table 4, since employment at creation seems to be affected by the SOFARIS guarantee.

Beyond employment, the increased debt capacity brought by a guaranteed loan can be allocated to increased investment and faster capital growth. Results obtained (reported in table 7) are robust to the estimation method except in the case of lon term capital growth. More precisely, OLS and matching estimates tend to under-estimate, if anything, the true impact on the dynamic of firms' capital. Controlling for initial size, a guaranteed loan has a permanent, significant and sizeable impact on capital growth. Guaranteed firms have an amount of tangible assets which is twice as high as in the case of non-backed firms, and this result is obtained while controlling for initial start-up equity. This figure is surprisingly high, but the specifications in growth rates, though less stable as usual, also point to positive and highly significant estimates[25].

Impact of the SOFARIS scheme on Exits

Reducing the burden of credit constraints should induce a more balanced development over the firm's life cycle and therefore fewer failures. On the other hand, as previously stated, a potential concern with loan guarantee programs is that they might induce more risk taking by both entrepreneurs and banks[26].

In order to investigate which effect dominates in the French case, we simply use the probability of bankruptcy (after two or four years, or at any point in time) as a dependent variable in equation **??**.

We obtain (results reported in table 8) that firms obtaining a guaranteed loan experience a subsequent significant and sizable increase in their default (exit) probability: this increase ranges from around 6 percentage points at age 5, up to 8% two year later. Moreover, the impact appears to be highly heterogenous

[24] This (coarse) figure can be interpreted as the total effect of SOFARIS on employment, since we argue below that the impact on firm creation is likely to be zero, and since exits are takent into account in the computation of the outcome variable.

[25] This might indicate that initial investment is decided upon very early in the life cycle of young business, and is therefore less suspected of endogeneity in our setting. A corollary conclusion is that this early stage investment might be financed by equity rather than by bank debt.

[26] A first argument relies on the deformation of the entrepreneurs' objective function induced by SOFARIS. Even in absence of external guarantees, entrepreneurs theoretically benefit from a limited liability. However, it is fairly common that banks require private guarantees from entrepreneurs (like mortgage on their private real estate). An important feature of the SOFARIS system is that it is explicitly forbidden to require such additional private guarantee when the loan is already backed by SOFARIS, so that entrepreneurs *de facto* have a limited liability and thus incentives to adopt riskier strategies.
The second argument is indirect and relies on banks' behavior. Indeed, banks have lower incentives to monitor SOFARIS backed loans (i.e. investigate firms' use of assets, etc.). The entrepreneur, who is residual claimant on its firm, should anticipate this behavior and adopt riskier strategies.

across firm size classes, with the excess bankruptcy rate being as large as 30 percentage point in the case of large firms, while it might be negative for smaller ventures[27]. An alternative interpretation of these results might however be that, conditional on exit, guaranteed firms have more incentives to file for a formal bankruptcy procedure (rather than exiting the market in a more informal way), *e.g* because there are more stake-holders in the company[28]. However, results are robust in the lower part of table 8 to the use of a combined indicator of bankruptcy *and* exit from the fiscal files, which tends to mitigate this concern.

Note as a final remark that we estimated in Lelarge et al. [2010] that the impact of the SOFARIS scheme on firm entry was negligible. This indeed completes the picture and was to be expected, since the program in the 1990's was too small (around 1% of treated firms) to have an impact on the entrepreneur's decision to enter the market.

[27]Size is here measured as equity at creation (initial start-up capital).

[28]However, using an alternative measure of firms' failures (exits from the fiscal files) provides similar results, though less significant. The main drawback of this latter alternative measure is that we are not able to distinguish "true" deaths from potential "successful" exits (mergers and acquisitions).

Table 4: Second Stages: Debt Amount

	Full sample							Selected sample						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Estimation	OLS	OLS	Matching	Matching	IV	IV	IV	OLS	OLS	Matching	Matching	IV	IV	IV
Cohorts	89-94	95-00	89-94	95-00	89-00	89-00	89-00	89-94	95-00	89-94	95-00	89-00	89-00	89-00
Sub-sample	full	full	full	full	full	smallest	largest	full	full	full	full	full	smallest	largest
Debt amount at age 5														
Loan guarantee	1.0970***	0.8777***	1.6257***	1.3520***	-0.2296	0.2632	1.1788	1.1435***	1.0305***	1.5788***	1.4683***	0.8428***	2.2014	1.6096*
	(0.1623)	(0.1066)	(0.1296)	(0.0596)	(0.3079)	(1.1016)	(1.1365)	(0.1905)	(0.0914)	(0.1455)	(0.0616)	(0.3270)	(1.4762)	(0.9696)
NE Ind. × trend	-0.0267	-0.0129			-0.0203***	-0.0041	-0.0285	-0.0085	0.0324			0.0049	0.0537***	0.0332
	(0.0416)	(0.0276)			(0.0037)	(0.0109)	(0.0227)	(0.0253)	(0.0245)			(0.0057)	(0.0172)	(0.0261)
Debt amount at age 7														
Loan guarantee	0.7473***	0.6644***	1.1718***	1.0702***	-0.2070	0.0781	0.9038	0.7666***	0.8138***	1.1490***	1.1847***	0.6446**	1.3067	1.1396
	(0.1515)	(0.0969)	(0.1164)	(0.0583)	(0.2946)	(1.0670)	(1.0902)	(0.1843)	(0.0874)	(0.1304)	(0.0605)	(0.3119)	(1.4295)	(0.9146)
NE Ind. × trend	-0.0274	0.0025			-0.0178***	0.0057	-0.0362*	-0.0121	0.0229			0.0009	0.0532***	0.0222
	(0.0352)	(0.0132)			(0.0036)	(0.0105)	(0.0218)	(0.0224)	(0.0166)			(0.0054)	(0.0166)	(0.0246)
Debt growth between age 0 and age 5														
Loan guarantee	0.0563	0.0044	0.0223	-0.0410	0.1550	-1.0067	0.9384*	-0.0299	0.0027	-0.0293	-0.0092	0.5405**	-1.1097	0.9654**
	(0.0840)	(0.0459)	(0.0752)	(0.0368)	(0.1944)	(0.8145)	(0.5070)	(0.0925)	(0.0539)	(0.0868)	(0.0416)	(0.2143)	(1.1088)	(0.4568)
NE Ind. × trend	-0.0127	-0.0029			-0.0068***	-0.0230***	-0.0062	-0.0452***	0.0110			-0.0056	0.0084	0.0191
	(0.0103)	(0.0127)			(0.0023)	(0.0080)	(0.0101)	(0.0112)	(0.0145)			(0.0037)	(0.0129)	(0.0123)
Debt growth between age 0 and age 7														
Loan guarantee	-0.0633	-0.1142***	-0.1351*	-0.1787***	0.0516	-1.5383*	0.6401	-0.1545*	-0.1059**	-0.1793**	-0.1388***	0.3666*	-2.2073**	0.6795
	(0.0856)	(0.0438)	(0.0731)	(0.0373)	(0.1932)	(0.8179)	(0.4943)	(0.0917)	(0.0502)	(0.0843)	(0.0420)	(0.2124)	(1.1072)	(0.4404)
NE Ind. × trend	-0.0069	0.0027			-0.0075***	-0.0141*	-0.0060	-0.0388***	0.0066			-0.0100***	0.0183	0.0174
	(0.0109)	(0.0073)			(0.0023)	(0.0081)	(0.0099)	(0.0114)	(0.0102)			(0.0037)	(0.0129)	(0.0119)
N	54199	72136	54029	72136	126335	14737	12534	31722	41871	31691	41871	73593	8307	7131

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects; clustered standard errors in parentheses (at the 4-digit industry times post 1995 level). All regressions include time and industry fixed effects, and the set of controls indicated in table 3: dummies for eciles of start-up capital, deciles of start-up inventories, creation month fixed effects, legal status fixed effects and "Region" (county) fixed effects.

Table 5: Second Stages: Financial Burden

	Full sample							Selected sample						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Estimation	OLS	OLS	Matching	Matching	IV	IV	IV	OLS	OLS	Matching	Matching	IV	IV	IV
Cohorts	89-94	95-00	89-94	95-00	89-00	89-00	89-00	89-94	95-00	89-94	95-00	89-00	89-00	89-00
Sub-sample	full	full	full	full	full	smallest	largest	full	full	full	full	full	smallest	largest
Financial fees (normalized by debt) at age 5														
Loan guarantee	0.0106	0.0133**	0.0202*	0.0178***	-0.0682**	0.0874	-0.0042	-0.0023	0.0131**	0.0090	0.0183***	-0.0838**	-0.0548	0.0299
	(0.0121)	(0.0055)	(0.0122)	(0.0059)	(0.0320)	(0.1285)	(0.0926)	(0.0131)	(0.0056)	(0.0139)	(0.0064)	(0.0343)	(0.1614)	(0.0875)
NE Ind. × trend	0.0037**	0.0013			0.0003	0.0009	0.0011	0.0068*	0.0008			0.0015**	0.0023	0.0023
	(0.0017)	(0.0015)			(0.0005)	(0.0017)	(0.0019)	(0.0035)	(0.0019)			(0.0007)	(0.0024)	(0.0025)
Financial fees (normalized by debt) at age 7														
Loan guarantee	0.0311**	0.0136***	0.0464***	0.0163***	-0.0644*	0.1521	0.0393	0.0253	0.0137***	0.0447***	0.0188***	-0.0754**	0.0885	0.0175
	(0.0139)	(0.0050)	(0.0138)	(0.0062)	(0.0344)	(0.1388)	(0.1010)	(0.0171)	(0.0051)	(0.0160)	(0.0066)	(0.0367)	(0.1741)	(0.0929)
NE Ind. × trend	-0.0011	0.0002			-0.0008	0.0001	-0.0001	-0.0010	0.0002			0.0013	0.0029	0.0010
	(0.0017)	(0.0011)			(0.0005)	(0.0018)	(0.0021)	(0.0030)	(0.0018)			(0.0008)	(0.0025)	(0.0027)
N	22825	30214	22720	30210	53039	4896	7286	13774	17685	13449	17683	31459	2953	3853

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects; clustered standard errors in parentheses (at the 4-digit industry times post 1995 level). All regressions include time and industry fixed effects, and the set of controls indicated in table 3: dummies for eciles of start-up capital, deciles of start-up inventories, creation month fixed effects, legal status fixed effects and "Region" (county) fixed effects.

Table 6: Second Stages: Employment

	Full sample							Selected sample						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Estimation	OLS	OLS	Matching	Matching	IV	IV	IV	OLS	OLS	Matching	Matching	IV	IV	IV
Cohorts	89-94	95-00	89-94	95-00	89-00	89-00	89-00	89-94	95-00	89-94	95-00	89-00	89-00	89-00
Sub-sample	full	full	full	full	full	smallest	largest	full	full	full	full	full	smallest	largest
Employment at age 5														
Loan guarantee	0.6625***	0.5203***	0.9553***	0.7345***	0.9636***	-0.0263	1.0095*	0.5257***	0.4511***	0.8958***	0.7136***	0.7104***	0.9787	0.4618
	(0.0901)	(0.0501)	(0.0566)	(0.0272)	(0.1419)	(0.5177)	(0.5217)	(0.0990)	(0.0488)	(0.0663)	(0.0308)	(0.1557)	(0.6969)	(0.4973)
NE Ind. × trend	-0.0050	0.0135*			0.0028*	0.0109**	0.0650***	0.0025	0.0273**			0.0111***	0.0347***	0.0299**
	(0.0124)	(0.0075)			(0.0017)	(0.0051)	(0.0104)	(0.0186)	(0.0115)			(0.0027)	(0.0081)	(0.0134)
Employment at age 7														
Loan guarantee	0.5256***	0.4226***	0.8007***	0.6194***	0.6060***	-0.2345	0.5024	0.3983***	0.3749***	0.7410***	0.6074***	0.3793**	0.5575	0.0359
	(0.0941)	(0.0454)	(0.0571)	(0.0272)	(0.1430)	(0.5150)	(0.5366)	(0.1005)	(0.0500)	(0.0666)	(0.0305)	(0.1570)	(0.7007)	(0.5066)
NE Ind. × trend	-0.0090	0.0092			0.0010	0.0090*	0.0489***	-0.0003	0.0190*			0.0088***	0.0315***	0.0273**
	(0.0098)	(0.0063)			(0.0017)	(0.0051)	(0.0107)	(0.0150)	(0.0102)			(0.0027)	(0.0082)	(0.0136)
Employment growth between age 0 and age 5														
Loan guarantee	0.3869***	0.2803***	0.4242***	0.2944***	-0.5339***	0.0458	0.3439	0.4066***	0.3074***	0.4467***	0.2839***	-0.2196	1.3864	0.7857*
	(0.0810)	(0.0397)	(0.0725)	(0.0355)	(0.1869)	(0.7905)	(0.4521)	(0.0946)	(0.0392)	(0.0848)	(0.0399)	(0.2087)	(1.0637)	(0.4436)
NE Ind. × trend	-0.0050	0.0101			-0.0011	-0.0073	-0.0054	-0.0174	0.0214*			-0.0055	-0.0076	0.0073
	(0.0129)	(0.0083)			(0.0023)	(0.0078)	(0.0090)	(0.0125)	(0.0116)			(0.0036)	(0.0124)	(0.0120)
Employment growth between age 0 and age 7														
Loan guarantee	0.1884**	0.1833***	0.2227***	0.1880***	-0.7450***	0.5145	-0.0216	0.2171**	0.2249***	0.2501***	0.1890***	-0.4924**	1.5633	0.3058
	(0.0831)	(0.0503)	(0.0742)	(0.0365)	(0.1912)	(0.8045)	(0.4724)	(0.0892)	(0.0501)	(0.0867)	(0.0410)	(0.2134)	(1.0883)	(0.4592)
NE Ind. × trend	-0.0083	0.0036			-0.0040*	-0.0085	-0.0152	-0.0205	0.0154*			-0.0081**	-0.0077	0.0058
	(0.0147)	(0.0071)			(0.0023)	(0.0079)	(0.0094)	(0.0129)	(0.0086)			(0.0037)	(0.0127)	(0.0124)
N	54199	72136	54029	72136	126335	14737	12534	31722	41871	31691	41871	73593	8307	7131

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects; clustered standard errors in parentheses (at the 4-digit industry times post 1995 level). All regressions include time and industry fixed effects, and the set of controls indicated in table 3: dummies for eciles of start-up capital, deciles of start-up inventories, creation month fixed effects, legal status fixed effects and "Region" (county) fixed effects.

Table 7: Second Stages: Tangible Capital

	Full sample							Selected sample						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Estimation	OLS	OLS	Matching	Matching	IV	IV	IV	OLS	OLS	Matching	Matching	IV	IV	IV
Cohorts	89-94	95-00	89-94	95-00	89-00	89-00	89-00	89-94	95-00	89-94	95-00	89-00	89-00	89-00
Sub-sample	full	full	full	full	full	smallest	largest	full	full	full	full	full	smallest	largest
Tangible capital at age 5														
Loan guarantee	1.3090***	1.1762***	1.7431***	1.6179***	1.7786***	1.3035	2.0056**	1.0727***	1.0284***	1.5513***	1.4913***	0.8988***	2.6015	0.7989
	(0.1646)	(0.0973)	(0.1260)	(0.0555)	(0.3012)	(1.1200)	(1.0111)	(0.1935)	(0.0960)	(0.1514)	(0.0642)	(0.3419)	(1.5857)	(0.9643)
NE Ind. × trend	-0.0096	0.0140			-0.0066*	-0. 0021	0.0937***	-0.0168	0.0325			-0.0035	0.0498***	0.0067
	(0.0290)	(0.0136)			(0.0036)	(0.0111)	(0.0202)	(0.0279)	(0.0261)			(0.0059)	(0.0185)	(0.0260)
Tangible capital at age 7														
Loan guarantee	1.0560***	0.9554***	1.4335***	1.3666***	1.2243***	1.2955	1.4736	0.8284***	0.8503***	1.2764***	1.2708***	0.5452	2.2529	0.3216
	(0.1688)	(0.0888)	(0.1201)	(0.0569)	(0.3011)	(1.1320)	(1.0036)	(0.1972)	(0.0987)	(0.1448)	(0.0659)	(0.3430)	(1.6087)	(0.9479)
NE Ind. × trend	-0.0207	0.0145			-0.0089**	-0.0036	0.0741***	-0.0249	0.0339			-0.0037	0.0495***	0.0280
	(0.0214)	(0.0129)			(0.0036)	(0.0112)	(0.0201)	(0.0253)	(0.0212)			(0.0060)	(0.0187)	(0.0255)
Capital growth between age 0 and age 5														
Loan guarantee	0.2480***	0.2117***	0.2617***	0.2673***	0.3979***	-0.0719	0.2547	0.1453***	0.0935***	0.1607***	0.1215***	0.0666	0.4298	0.1230
	(0.0512)	(0.0499)	(0.0509)	(0.0254)	(0.1296)	(0.6327)	(0.3921)	(0.0311)	(0.0187)	(0.0490)	(0.0228)	(0.1208)	(0.7383)	(0.2819)
NE Ind. × trend	0.0118	-0.0030			0.0045**	-0.0081	0.0297***	-0.0013	-0.0097*			-0.0016	0.0021	0.0023
	(0.0245)	(0.0054)			(0.0018)	(0.0072)	(0.0076)	(0.0072)	(0.0057)			(0.0023)	(0.0095)	(0.0076)
Capital growth between age 0 and age 7														
Loan guarantee	0.3450***	0.2879***	0.4363***	0.4109***	-0.1175	0.6964	0.5638	0.2605***	0.2338***	0.3705***	0.3453***	-0.2630	1.2952	0.2592
	(0.0668)	(0.0395)	(0.0683)	(0.0334)	(0.1764)	(0.7820)	(0.4110)	(0.0688)	(0.0391)	(0.0798)	(0.0373)	(0.1957)	(1.0430)	(0.3994)
NE Ind. × trend	-0.0119	0.0052			-0.0081***	-0.0036	0.0156*	-0.0176	0.0159*			-0.0052	0.0244**	0.0100
	(0.0110)	(0.0077)			(0.0021)	(0.0077)	(0.0082)	(0.0125)	(0.0095)			(0.0034)	(0.0121)	(0.0108)
N	54199	72136	54029	72136	126335	14737	12534	31722	41871	31691	41871	73593	8307	7131

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects; clustered standard errors in parentheses (at the 4-digit industry times post 1995 level). All regressions include time and industry fixed effects, and the set of controls indicated in table 3: dummies for eciles of start-up capital, deciles of start-up inventories, creation month fixed effects, legal status fixed effects and "Region" (county) fixed effects.

Table 8: Second Stages: Bankruptcy

	Full sample							Selected sample						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Estimation	OLS	OLS	Matching	Matching	IV	IV	IV	OLS	OLS	Matching	Matching	IV	IV	IV
Cohorts	89-94	95-00	89-94	95-00	89-00	89-00	89-00	89-94	95-00	89-94	95-00	89-00	89-00	89-00
Sub-sample	full	full	full	full	full	smallest	largest	full	full	full	full	full	smallest	largest
Bankruptcy before age 5														
Loan guarantee	0.0576**	0.0622***	0.0592***	0.0663***	0.0675	-0.3872*	0.2280**	0.0560*	0.0472***	0.0639***	0.0527***	0.1102*	-0.6497**	0.2582**
	(0.0234)	(0.0155)	(0.0201)	(0.0096)	(0.0513)	(0.2225)	(0.1132)	(0.0288)	(0.0175)	(0.0238)	(0.0109)	(0.0579)	(0.2930)	(0.1173)
NE Ind. × trend	0.0035	-0.0035			0.0024***	0.0017	0.0014	0.0011	-0.0068**			0.0024	-0.0041	-0.0047
	(0.0036)	(0.0022)			(0.0006)	(0.0022)	(0.0023)	(0.0035)	(0.0030)			(0.0015)	(0.0034)	(0.0032)
Bankruptcy before age 7														
Loan guarantee	0.0779***	0.0873***	0.0784***	0.0915***	0.0734	-0.2329	0.2911**	0.0686**	0.0732***	0.0745***	0.0786***	0.1478**	-0.4733	0.3313***
	(0.0240)	(0.0188)	(0.0217)	(0.0104)	(0.0555)	(0.2391)	(0.1230)	(0.0304)	(0.0217)	(0.0256)	(0.0118)	(0.0625)	(0.3155)	(0.1261)
NE Ind. × trend	0.0036	-0.0020			0.0025***	0.0021	0.0003	0.0015	-0.0045*			0.0003	-0.0032	-0.0050
	(0.0039)	(0.0021)			(0.0007)	(0.0024)	(0.0025)	(0.0042)	(0.0026)			(0.0011)	(0.0037)	(0.0034)
Bankruptcy and exit before age 5														
Loan guarantee	0.0245	0.0384***	0.0258	0.0390***	0.0398	-0.6272***	0.1285	0.0231	0.0265*	0.0306	0.0286***	0.0943*	-0.9223***	0.2297**
	(0.0214)	(0.0133)	(0.0190)	(0.0091)	(0.0486)	(0.2129)	(0.1054)	(0.0265)	(0.0146)	(0.0225)	(0.0103)	(0.0547)	(0.2810)	(0.1107)
NE Ind. × trend	0.0036	-0.0030			0.0024***	0.0026	0.0026	0.0025	-0.0066**			0.0007	-0.0029	-0.0024
	(0.0033)	(0.0021)			(0.0006)	(0.0021)	(0.0021)	(0.0032)	(0.0028)			(0.0010)	(0.0033)	(0.0030)
Bankruptcy and exit before age 7														
Loan guarantee	0.0557**	0.0656***	0.0576***	0.0660***	0.0912*	-0.3814*	0.2259*	0.0550*	0.0517***	0.0634**	0.0534***	0.1431**	-0.5065*	0.2865**
	(0.0240)	(0.0171)	(0.0209)	(0.0100)	(0.0535)	(0.2316)	(0.1173)	(0.0295)	(0.0195)	(0.0247)	(0.0113)	(0.0601)	(0.3052)	(0.1216)
NE Ind. × trend	0.0034	-0.0024			0.0025***	0.0023	0.0006	0.0011	-0.0053**			0.0008	-0.0032	-0.0054
	(0.0037)	(0.0020)			(0.0006)	(0.0023)	(0.0023)	(0.0040)	(0.0026)			(0.0010)	(0.0036)	(0.0033)
N	54199	72136	54029	72136	126335	14737	12534	31722	41871	31691	41871	73593	8307	7131

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects; clustered standard errors in parentheses (at the 4-digit industry times post 1995 level). All regressions include time and industry fixed effects, and the set of controls indicated in table 3: dummies for eciles of start-up capital, deciles of start-up inventories, creation month fixed effects, legal status fixed effects and "Region" (county) fixed effects.

6.2 Investigating the post-2000 Extension

In this last section, we go back to the difference in the estimates obtained for various regimes of the SOFARIS loan guarantee scheme. Indeed, the 1989 to 1994 period was characterized by a very small scale of the program, which was furthermore concentrated on manufacturing industries and business services. The 1995 to 2000 period was characerized by a large increase in the number of backed firms, from around 50 per year to around 300. The total amount of backed loans followed the same path, as previously shown on figures 1 or 3. Our dataset allows us to analyze the sheme up to 2003, with the latest perido being characterized by a even large scaling-up of the program. Our research question at this stage is whether the estimates provided earlier remain valid when the scale of such programs varies dramatically.Unfortunately, it is not possible to provide IV estimates of the program impact for each of these sub-periods. However, we checked above that the OLS and matching estimators did not seem to be highly biased - at least they provided some information. We therefore choose to implement these two simple estimators by sub-period, up to the 2002 cohort (not later for reasons of data availability).

Table 9 starts with the same specification of the propensity score as in table 3, but splitting the enlarged sample into three parts, and focusing on the firm level controls. It is worth noticing that the significant characteristics predicting participation into the program are highly differentiated across time periods: while SOFARIS firms were larger in terms of equity than the control firms in the early regimes, this variable is no longer significant in the full sample for the last two years of our analysis (this effect is however mitigated in the "selected" sample). Conversely, the amount of start-up inventories is highly significant in the last years of the estimation sample, even while controlling for industry fixed effects.

Table 10 incorporates richer survey based controls into the dataset. Columns 4 to 6 show that "expertise" tended to be correlated with program participation in the first two periods, but not in the last. Similarly, experienced entrepreneurs did not apply more often to the SOFARIS scheme in 1994 or in 1998 - on the opposite, *unexperienced* entrepreneurs were heavier users ofthe scheme in 2002. Columns 7 to 9 show more subtle patterns in the shifting profiles of SOFARIS entrepreneurs. While they tended to be excessively optimistic in the early years, there is no such effect in the most recent period. More strikingly, it appears that a significant share of those recent SOFARIS entrepreneurs had previously experienced spells of unemployment, which was not the case in earlier years. This completes the differential picture between early rather "creative", optimistic entrepreneurs, and later "subsitence" entrepreneurs. The type of risk associated to each profile is most likely to be differentiated too: over-confidence inthe first case, and lack of competence in the second.

All togehter, these facts tend to demonstrate that the set of selected businesses became significatively different, when the program experienced a large increase in the recent years. In other words, general equilibrium effects, among which different selection processes might significatively alter the estimates previoulsy presented. We investigate this point in table 11. The first line show that the impact on the amount of debt decreased dramatically over the period, and that this residual increase in the ability to raise credit was priced at an increasing interest rate. Unsurprisingly, the impact on employment or capital growth is shown to be divided by around two, while the effect on excess bankruptcy is multiplied by 3 over the period.

Table 9: Propensity Scores, Full Sample

Cohorts	Full sample			Selected sample		
	89-94	95-00	01-02	89-94	95-00	01-02
	(1)	(2)	(3)	(4)	(5)	(6)
8th decile of start-up capital	-0.0004	0.0802**	-0.0002	0.0025	0.1211*	0.1026
	(0.0016)	(0.0386)	(0.0278)	(0.0030)	(0.0663)	(0.1323)
9th decile of start-up capital	0.0057	0.0344***	0.0023	0.0063	0.0580***	0.0253*
	(0.0036)	(0.0099)	(0.0092)	(0.0053)	(0.0105)	(0.0148)
10th decile of start-up capital	0.0082*	0.0279**	0.0011	0.0156*	0.0596***	0.0451**
	(0.0043)	(0.0114)	(0.0070)	(0.0088)	(0.0127)	(0.0227)
8th decile of start-up inventories	-0.0018***	0.0029	0.0210***	-0.0018***	0.0048*	0.0325***
	(0.0006)	(0.0020)	(0.0051)	(0.0005)	(0.0028)	(0.0087)
9th decile of start-up inventories	-0.0003	0.0060***	0.0301***	-0.0010*	0.0145***	0.0420***
	(0.0006)	(0.0017)	(0.0070)	(0.0006)	(0.0043)	(0.0132)
10th decile of start-up inventories	-0.0006	0.0092**	0.0235***	-0.0004	0.0030	0.0076
	(0.0005)	(0.0036)	(0.0085)	(0.0006)	(0.0055)	(0.0128)
Other deciles of start-up capital	yes	yes	yes	yes	yes	yes
Other deciles of start-up inventories	yes	yes	yes	yes	yes	yes
Creation month FE	yes	yes	yes	yes	yes	yes
Legal status FE	yes	yes	yes	yes	yes	yes
"Region" (county) FE	yes	yes	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes	yes	yes
Time FE	yes	yes	yes	yes	yes	yes
N	54029	72136	23420	31691	41871	12173

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects; clustered standard errors in parentheses (at the 4-digit industry level).

Table 10: Propensity Scores, Survey Indicators

	Baseline			"Competence"			"Risk taking"		
Cohorts (SINE survey)	1994	1998	2002	1994	1998	2002	1994	1998	2002
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10th decile of start-up capital	0.0168	0.0777**	0.0251	0.0170	0.0802**	0.0293	0.0125	0.0736**	0.0490
	(0.0125)	(0.0328)	(0.0321)	(0.0125)	(0.0326)	(0.0339)	(0.0103)	(0.0326)	(0.0410)
10th decile of start-up inventories	-0.0117***	-0.0005	0.0321*	-0.0116***	-0.0003	0.0322*	-0.0107***	-0.0024	0.0349*
	(0.0040)	(0.0089)	(0.0189)	(0.0038)	(0.0086)	(0.0187)	(0.0034)	(0.0057)	(0.0185)
EXPERTISE				0.0070	0.0084**	-0.0011			
				(0.0056)	(0.0043)	(0.0065)			
SERIAL ENTREPRENEUR				0.0009	-0.0014	-0.0230***			
				(0.0055)	(0.0056)	(0.0069)			
Optimism in terms of employment							0.0144**	0.0098*	-0.0053
							(0.0073)	(0.0056)	(0.0091)
Optimism in terms of development							-0.0044	-0.0111***	0.0060
							(0.0044)	(0.0032)	(0.0094)
Former CEO							-0.0033	0.0242*	-0.0206**
							(0.0056)	(0.0126)	(0.0082)
Nb clients: 1 or 2							*ref*	*ref*	*ref*
Nb clients: 3 to 10							0.0027	0.0561**	0.0183
							(0.0112)	(0.0276)	(0.0118)
Nb clients: 10+							0.0093	0.0304***	0.0254**
							(0.0084)	(0.0098)	(0.0104)
St: Employed before creation							*ref*	*ref*	*ref*
St: Short-term unemployment before creation							0.0145*	0.0115*	0.0680***
							(0.0075)	(0.0064)	(0.0136)
St: Long-term unemployment before creation							-0.0000	0.0133	0.0521***
							(0.0104)	(0.0087)	(0.0160)
Legal status FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
"Region" (county) FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	1451	2095	3273	1451	2095	3273	1440	2072	3260

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects; clustered standard errors in parentheses (at the 4-digit industry level).

Table 11: Average treatment effect of the SOFARIS program across time

	Full sample						Selected sample					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Estimation	OLS	OLS	OLS	Matching	Matching	Matching	OLS	OLS	OLS	Matching	Matching	Matching
Cohorts	89-94	95-00	01-02	89-94	95-00	01-02	89-94	95-00	01-02	89-94	95-00	01-02
Debt amount at age 5												
Loan guarantee	1.0970***	0.8777***	0.3095***	1.6257***	1.3520***	0.5230***	1.1435***	1.0305***	0.4209***	1.5788***	1.4683***	0.6898***
	(0.1623)	(0.1066)	(0.0925)	(0.1296)	(0.0596)	(0.0746)	(0.1905)	(0.0914)	(0.1014)	(0.1455)	(0.0616)	(0.0871)
Debt growth between age 0 and age 5												
Loan guarantee	0.0563	0.0044	-0.4784***	0.0223	-0.0410	-0.5473***	-0.0299	0.0027	-0.4171***	-0.0293	-0.0092	-0.4794***
	(0.0840)	(0.0459)	(0.0496)	(0.0752)	(0.0368)	(0.0466)	(0.0925)	(0.0539)	(0.0633)	(0.0868)	(0.0416)	(0.0585)
Financial fees (normalized by debt) at age 5												
Loan guarantee	0.0106	0.0134**	0.0201**	0.0202*	0.0179***	0.0249***	-0.0021	0.0132**	0.0214**	0.0090	0.0183***	0.0229***
	(0.0120)	(0.0054)	(0.0084)	(0.0120)	(0.0059)	(0.0069)	(0.0129)	(0.0056)	(0.0104)	(0.0138)	(0.0063)	(0.0082)
Employment at age 5												
Loan guarantee	0.6625***	0.5203***	0.1562***	0.9553***	0.7345***	0.2456***	0.5257***	0.4511***	0.1365***	0.8958***	0.7136***	0.2411***
	(0.0901)	(0.0501)	(0.0401)	(0.0566)	(0.0272)	(0.0323)	(0.0990)	(0.0488)	(0.0510)	(0.0663)	(0.0308)	(0.0409)
Employment growth between age 0 and age 5												
Loan guarantee	0.3869***	0.2803***	0.1220**	0.4242***	0.2944***	0.1465***	0.4066***	0.3074***	0.0850	0.4467***	0.2839***	0.0937*
	(0.0810)	(0.0397)	(0.0519)	(0.0725)	(0.0355)	(0.0456)	(0.0946)	(0.0392)	(0.0591)	(0.0848)	(0.0399)	(0.0568)
Tangible capital at age 5												
Loan guarantee	1.3090***	1.1762***	0.4274***	1.7431***	1.6179***	0.7276***	1.0727***	1.0284***	0.4042***	1.5513***	1.4913***	0.6714***
	(0.1646)	(0.0973)	(0.0876)	(0.1260)	(0.0555)	(0.0690)	(0.1935)	(0.0960)	(0.1131)	(0.1514)	(0.0642)	(0.0898)
Capital growth between age 0 and age 5												
Loan guarantee	0.2480***	0.2117***	0.1961***	0.2617***	0.2673***	0.2748***	0.1453***	0.0935***	0.1084***	0.1607***	0.1215***	0.1358***
	(0.0512)	(0.0499)	(0.0387)	(0.0509)	(0.0254)	(0.0369)	(0.0311)	(0.0187)	(0.0327)	(0.0490)	(0.0228)	(0.0388)
Bankruptcy before age 5												
Loan guarantee	0.0576**	0.0622***	0.1307***	0.0592***	0.0663***	0.1433***	0.0560*	0.0472***	0.1321***	0.0639***	0.0527***	0.1435***
	(0.0234)	(0.0155)	(0.0199)	(0.0201)	(0.0096)	(0.0118)	(0.0288)	(0.0175)	(0.0266)	(0.0238)	(0.0109)	(0.0149)
Bankruptcy and exit before age 5												
Loan guarantee	0.0245	0.0384***	0.1009***	0.0258	0.0390***	0.1086***	0.0231	0.0265*	0.1015***	0.0306	0.0286***	0.1088***
	(0.0214)	(0.0133)	(0.0183)	(0.0190)	(0.0091)	(0.0109)	(0.0265)	(0.0146)	(0.0249)	(0.0225)	(0.0103)	(0.0135)
N	54198	72136	23424	54028	72136	23420	31721	41871	12174	31690	41871	12173

7 Conclusion

Motivated by perennial concerns about the role of capital market imperfections in entrepreneurship and the prevalence of government programs focused on encouraging new business formation, this paper evaluates the impact of a French loan guarantee program on new business formation and growth. Our empirical strategy exploits an exogenous regulatory shift in the mid 1990s which led to an increase in the overall size of the program and to the new eligibility of several industries. Using a detailed dataset with information on all new French firms founded between 1989 and 2002, we provide a difference-in-differences estimation of the impact of the loan guarantee program on the growth of start-up firms. We show that loan guarantees make the average new venture larger, both in terms of assets and employment. At the firm level, the obtention of a loan guarantee helps newly created firms grow faster. However, it also significantly increases their probability of default, suggesting that risk shifting may be a serious drawback for such loan guarantee programs.

Our results raise a number of questions requiring further inquiry. As previously stated, in absence of a thorough structural model, it is difficult to interpret whether our results are mainly driven by the magnitude of credit constraints, or by the unavoidable distortions induced by the specific features of the SOFARIS loan guarantee scheme. As pointed out by Beck et al. [2008], prices and coverage ratios, but also the assignment of responsibilities among government, private sector and donors might be important for the incentives of lenders in screening and monitoring lenders properly. Disentangling the relative contribution of the nested principal-agent relationships between public agencies, lenders and borrowers would require a more structural approach than the reduced-form estimation strategy proposed in our contribution, which we let for future research.

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Appendix

A Power Maximization in DID settings

A difficulty of our task of evaluating the French Loan Guarantee program is its small scale. Typically, the size of the control group is disproportionate as compared to the number of actually treated firms, even in the post-1995 period. An important concern is therefore that the quantity of information available for the estimation of the impact of the program might be limited due to the low rate of "compliers". Intuitively, if the baseline variance of the outcome is large as compared to the potential impact of treatment, and if this impact is not precisely estimated due to the small number of observations, then it is difficult to provide any impact of the programme in terms of this outcome. This issue is even magnified when attempting to take advantage of the 1995 shock to compute difference in differences "causal" estimators of the impact of the credit guarantee scheme.

One first strategy to assess the informativeness (or rather, power) of our DID setting is simply to look at the power of the instrumental variable(s) in the first stage estimation. In the main specification of table 3, we obtain a $\chi^2_{(3)}$ statistic of around 25, which signals that these IVs might at least have some explanatory power. However, it is not easy to assess whether it is enough power to expect this natural experiment to be informative about the causal impact of the program.

A first sensible strategy in this respect is to remove (eligible or newly eligible) industries with very low numbers of "treated" firms, with the idea that for some reason, the program was not very attractive in those sectors, and that estimating its impact for the corresponding firms is, first, very difficult because of the lack of information, and second, might not be very relevant. Appendix B provides estimation results obtained with the subset of industries having more than 15 treated firms in the 1995 to 2000 period.

In the main part of the text however, we adopt a slightly more subtle strategy based on a more complex but rather intuitive selection criterion[29] based on a re-interpretation of the DID setting into an experimental setting. To understand this alternative benchmark, let's consider the following very simple benchmark model:

- at the industry level (standard DD):

$$Y_{jt} = \alpha^J + \beta_0^J.\mathbb{I}_j \times \mathbb{I}_t + [\delta_j^J + \delta_t^J] + \underbrace{e_{jt}^I}_{(0,\tau^2)}, \quad t \in \{1,2\}$$

- at the firm level:

$$Y_{ijt} = \alpha + \beta_0.T_{ijt} + [\delta_j + \delta_t + \gamma.X_{ijt}] + \underbrace{e_{jt}}_{(0,\tau^2)} + \underbrace{\varepsilon_{ijt}}_{(0,\sigma^2)}, \quad t \in \{1,2\}$$

[29] We thank our NBER discussant S. Cole for suggesting this approach.

and $\mathbb{I}_j \times \mathbb{I}_t$ is a natural IV for T_{ijt}

i denotes firms, j denotes industries at the 4 digit level, and t denotes the time period (either before or after 1995, ie t takes on only 2 values). The considered outcome Y_{ijt} is (for example) the probability of bankruptcy.
Furthermore:

- e_{jt} is an error term at the industry level which is independently and identically distributed between industries (clusters) with a mean of 0 and a variance τ^2.
- ε_{jt} is an error which is independently and identically distributed between firms with a mean of 0 and a variance σ^2.

The key point is to interpret the key DID identifying assumption into a "randomized" setting. In this respect we consider that eligibility was *randomized* across the J industry $\times$ period clusters. Note that this is a synthetical way of expressing that sectoral eligibility to the SOFARIS scheme was locally (in the short term) not a response to the business cycle, but was rather driven by the political cycle, which can be considered as locally driven by the pre-established election calendar, and not by the business cycle.

In this setting, we can follow Bloom [1995] and compute a minimum detectable effect in terms of the outcome Y of interest as:

$$MDE\left(\beta_0\right) = \left(T_{2J-2}^{(97.5)} + T_{2J-2}^{(20)}\right) \cdot \left(\frac{\rho}{P.(1-P).2J} + \frac{1-\rho}{P.(1-P).2J.n}\right)^{1/2} \cdot \frac{\sigma_Y}{c-s}$$

where the bilateral significance level and the at statistical power have been set at conventional levels (say 5% and 80%, respectively). Furthermore:

- P is the proportion of clusters allocated to treatment.
- n is the harmonic mean of number of firms per cluster.
- c is the rate of compliers in clusters allocated to treatment (typically low in our setting), and s is the rate of treated firms in control groups (almost 0 in our case, most probably coding errors).
- $\rho = \frac{\tau^2}{\tau^2+\sigma^2}$ is the proportion of total variation across all firms that is due to variation between clusters.

Results in terms of several outcomes are reported in columns 2 to 4 of table 12 for different values of ρ, while column 1 reports a coarse estimate of this parameter for each considered variable. These MDEs are to be compared to IV estimates reported in tables 4 to 8 to assess the robustness of the result.

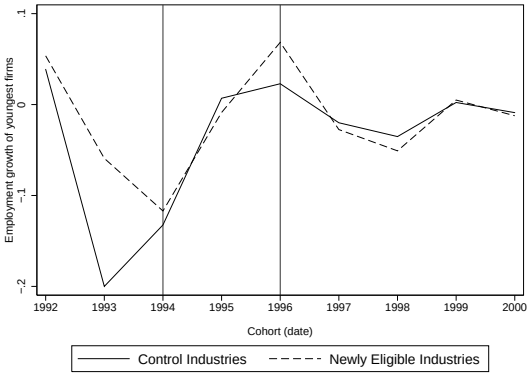
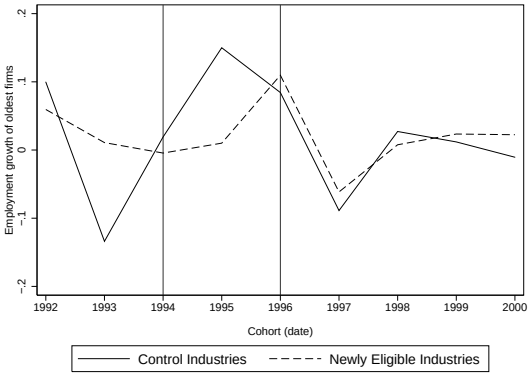
This computation also suggests an alternative way of selecting the "most relevant" subsample of industries, in the sense that the considered set of industries provided the highest response to the 1995

shock - or, in econometric terms, provided the highest identifying power. More precisely, we report in the main part of the text the estimates obtained in a sub-sample constructed from a sequential procedure where we remove the 4-digit industry which deteriorates the MDE most[30], until MDE cannot be improved by (unique) industry deletion. This procedure is sequential and most likely not optimal, but one main advantage is its simplicity: it is not too computationally intensive and preserves the DID structure of the sample.
It is worth underlying that this selection procedure is based on an optimisation of the strength of *first stage* of the IV estimation strategy, and *NOT* on an maximization of the effect obtained in the second stage.

In a DID perspective, removing mostly "control" industries (as it is the case) might weaken the "common trend" assumption across control and newly eligible industries, since this criterion was not taken into account in the selection procedure. However, figure 4 shows that at least for the population of young firms, the obtained patterns have not been much deteriorated.
In an IV perspective, removing industries typically alters the set of "compliers" in our sample. This induces that the estimated LATE is not the same in the initial and final samples, which will alter the estimate if the treatment effect is heterogeneous. However, the sample selection procedure described above will typically discard industries having few compliers, which mitigates the concern.

[30]In our sample selection procedure, we used equation A as the criterion to minimize and set $\sigma_Y = 0.5$ which is the worst case in terms of the dispersion of a binary variables like an indicator of bankruptcy.

Figure 4: DID Identifying Assumption

Business Cycle for Firms $\leq$ 3 years	**Business Cycle for Firms $>$ 3 years**
Full sample	
	
Selected sample	
	

Notes: XX

Table 12: Minimum Detectable Effects

	ANOVA estimate of ρ	Full sample Share of var. at cluster level:			MDE sample Share of var. at cluster level:			Threshold sample Share of var. at cluster level:		
		ρ = 0.0	ρ = 0.05	ρ = 0.20	ρ = 0.0	ρ = 0.05	ρ = 0.20	ρ = 0.0	ρ = 0.05	ρ = 0.20
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Debts at age 5 / Cap soc. 0	0.0035	22.228	26.069	35.159	10.761	19.225	33.631	18.912	67.853	131.693
Debts at age 7 / Cap soc. 0	0.0050	28.071	32.922	44.400	14.124	25.234	44.143	23.962	85.970	166.855
Debt growth, btw 0-5	0.0294	0.048	0.057	0.077	0.020	0.035	0.062	0.031	0.112	0.218
Debt growth, btw 0-7	0.0319	0.048	0.057	0.076	0.020	0.035	0.061	0.031	0.112	0.218
Av. interest rate at age 5	0.0314	0.010	0.011	0.015	0.004	0.007	0.012	0.006	0.022	0.043
Av. interest rate at age 7	0.0298	0.010	0.012	0.017	0.004	0.007	0.013	0.007	0.024	0.047
Bankruptcy before age 5	0.0396	0.013	0.015	0.020	0.005	0.009	0.016	0.008	0.029	0.056
Bankruptcy before age 7	0.0436	0.014	0.016	0.021	0.006	0.010	0.017	0.009	0.031	0.060
Bptcy and exit before age 5	0.0387	0.012	0.014	0.019	0.005	0.009	0.015	0.007	0.027	0.052
Bptcy and exit before age 7	0.0423	0.013	0.015	0.021	0.005	0.010	0.017	0.008	0.030	0.058
Employment at age 5	0.0182	1.685	1.976	2.665	0.678	1.211	2.119	0.833	2.990	5.803
Employment at age 7	0.0187	1.767	2.072	2.795	0.619	1.106	1.935	1.084	3.889	7.549
Emp. Growth, btw 0-5	0.0421	0.046	0.054	0.073	0.019	0.034	0.059	0.029	0.106	0.205
Emp. Growth, btw 0-7	0.0494	0.047	0.055	0.075	0.019	0.034	0.060	0.030	0.109	0.211
Tangible capital at age 5 / Cap soc. 0	0.0024	15.668	18.376	24.783	8.215	14.677	25.675	1.913	6.864	13.322
Tangible capital at age 7 / Cap soc. 0	0.0024	15.687	18.398	24.813	8.172	14.600	25.540	2.261	8.113	15.746
Capital growth, btw 0-5	0.1808	0.036	0.042	0.057	0.012	0.021	0.037	0.024	0.088	0.170
Capital growth, btw 0-7	0.1462	0.038	0.045	0.061	0.013	0.023	0.040	0.026	0.093	0.181

B Estimation results obtained with the subsample of industries having more than 15 treated firms in the 1995 to 2000 period

Table 13: First Stages

Propensity scores in the DID setting (1989-2000)

	(1)	(2)	(3)
t>1995 × NE Ind.	0.0174***	0.0185*	0.0193**
	(0.0065)	(0.0096)	(0.0096)
t=1995 × NE Ind.	0.0088	0.0093	0.0153
	(0.0064)	(0.0078)	(0.0104)
t=1994 × NE Ind.	0.0052	0.0055	0.0038
	(0.0063)	(0.0070)	(0.0060)
NE Ind. × trend		-0.0001	-0.0001
		(0.0006)	(0.0004)
Deciles of start-up capital	no	no	yes
Deciles of start-up inventories	no	no	yes
Creation month FE	no	no	yes
Legal status FE	no	no	yes
"Region" (county) FE	no	no	yes
Industry FE	yes	yes	yes
Time FE	yes	yes	yes
N	80933	80933	71762

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects; clustered standard errors in parentheses (at the 4-digit industry times post 1995 level).

Propensity scores for program participation across time

Cohorts	89-94	95-00	01-02
	(1)	(2)	(3)
9th decile of start-up capital	0.0054	0.0348***	0.0007
	(0.0067)	(0.0133)	(0.0116)
10th decile of start-up capital	0.0057	0.0334**	0.0016
	(0.0067)	(0.0152)	(0.0081)
9th decile of start-up inventories	-0.0011	0.0078***	0.0264***
	(0.0007)	(0.0025)	(0.0078)
10th decile of start-up inventories	-0.0006	0.0166***	0.0115
	(0.0008)	(0.0054)	(0.0083)
Other deciles of start-up capital	yes	yes	yes
Other deciles of start-up inventories	yes	yes	yes
Creation month FE	yes	yes	yes
Legal status FE	yes	yes	yes
"Region" (county) FE	yes	yes	yes
Industry FE	yes	yes	yes
Time FE	yes	yes	yes
N	24984	45311	14775

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects; clustered standard errors in parentheses (at the 4-digit industry level).

Table 14: Second Stages, Features of the program

Debt amount

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Estimation	OLS	OLS	Matching	Matching	IV	IV	IV
Cohorts	89-94	95-00	89-94	95-00	89-00	89-00	89-00
Sub-sample	full	full	full	full	full	smallest	largest
				Debt amount at age 5			
Loan guarantee	1.2926***	0.8822***	1.4923***	1.3094***	0.0278	2.4285	-0.2951
	(0.2363)	(0.1379)	(0.2125)	(0.0767)	(0.3990)	(1.5692)	(1.2555)
NE Ind. × trend	-0.0076	-0.0219			-0.0182***	0.0750***	0.0481
	(0.0849)	(0.0374)			(0.0054)	(0.0239)	(0.0387)
				Debt amount at age 7			
Loan guarantee	0.9206***	0.6247***	1.1204***	0.9800***	-0.2881	1.7102	-0.2819
	(0.2042)	(0.1272)	(0.1928)	(0.0749)	(0.3851)	(1.5310)	(1.2018)
NE Ind. × trend	-0.0087	-0.0024			-0.0101*	0.0742***	0.0744**
	(0.0659)	(0.0184)			(0.0052)	(0.0233)	(0.0370)
				Debt growth between age 0 and age 5			
Loan guarantee	0.0350	0.0585	0.0462	-0.0110	0.6164**	-1.3067	0.9285
	(0.1339)	(0.0594)	(0.1181)	(0.0455)	(0.2450)	(1.2355)	(0.6130)
NE Ind. × trend	-0.0362**	-0.0070			-0.0159***	-0.0118	0.0592***
	(0.0175)	(0.0187)			(0.0033)	(0.0188)	(0.0189)
				Debt growth between age 0 and age 7			
Loan guarantee	-0.0656	-0.0868	-0.0676	-0.1761***	0.2758	-2.0237*	0.7838
	(0.1357)	(0.0577)	(0.1148)	(0.0462)	(0.2446)	(1.2293)	(0.5910)
NE Ind. × trend	-0.0236	-0.0011			-0.0125***	-0.0007	0.0760***
	(0.0208)	(0.0105)			(0.0033)	(0.0187)	(0.0182)
N	26447	45315	24984	45311	71762	4596	3215

Financial Burden

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Estimation	OLS	OLS	Matching	Matching	IV	IV	IV
Cohorts	89-94	95-00	89-94	95-00	89-00	89-00	89-00
Sub-sample	full	full	full	full	full	smallest	largest
				Financial fees (normalized by debt) at age 5			
Loan guarantee	-0.0017	0.0107*	0.0065	0.0141*	-0.0785**	-0.1200	0.0283
	(0.0181)	(0.0063)	(0.0187)	(0.0073)	(0.0395)	(0.1670)	(0.1079)
NE Ind. × trend	0.0057**	0.0004			0.0008	-0.0004	-0.0058
	(0.0022)	(0.0020)			(0.0007)	(0.0034)	(0.0038)
				Financial fees (normalized by debt) at age 7			
Loan guarantee	0.0374	0.0217***	0.0494**	0.0225***	-0.0307	0.1380	-0.0544
	(0.0228)	(0.0059)	(0.0214)	(0.0077)	(0.0426)	(0.1870)	(0.1135)
NE Ind. × trend	-0.0003	-0.0002			-0.0012	0.0061*	-0.0113***
	(0.0020)	(0.0014)			(0.0007)	(0.0036)	(0.0043)
N	11758	19461	11077	19459	31219	1624	1783

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects; clustered standard errors in parentheses (at the 4-digit industry times post 1995 level). All regressions include time and industry fixed effects, and the set of controls indicated in table 3: dummies for eciles of start-up capital, deciles of start-up inventories, creation month fixed effects, legal status fixed effects and "Region" (county) fixed effects.

Table 15: Second Stages, Impact on growth

Employment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Estimation	OLS	OLS	Matching	Matching	IV	IV	IV
Cohorts	89-94	95-00	89-94	95-00	89-00	89-00	89-00
Sub-sample	full	full	full	full	full	smallest	largest
				Employment at age 5			
Loan guarantee	0.7594***	0.5588***	0.9353***	0.7568***	1.2622***	1.3008*	-0.4050
	(0.1127)	(0.0617)	(0.0884)	(0.0335)	(0.1790)	(0.7736)	(0.6581)
NE Ind. × trend	-0.0139	0.0086			-0.0042*	0.0390***	0.0392*
	(0.0208)	(0.0096)			(0.0024)	(0.0118)	(0.0203)
				Employment at age 7			
Loan guarantee	0.6029***	0.4394***	0.7682***	0.6210***	0.8061***	0.9325	-0.7268
	(0.1213)	(0.0585)	(0.0900)	(0.0336)	(0.1815)	(0.7811)	(0.6794)
NE Ind. × trend	-0.0150	0.0017			-0.0062**	0.0317***	0.0480**
	(0.0162)	(0.0085)			(0.0025)	(0.0119)	(0.0209)
				Employment growth between age 0 and age 5			
Loan guarantee	0.5564***	0.3327***	0.5900***	0.3207***	-0.3903*	0.9527	-0.2730
	(0.1230)	(0.0477)	(0.1136)	(0.0436)	(0.2354)	(1.1899)	(0.5954)
NE Ind. × trend	-0.0000	0.0040			-0.0027	0.0197	0.0198
	(0.0277)	(0.0114)			(0.0032)	(0.0181)	(0.0183)
				Employment growth between age 0 and age 7			
Loan guarantee	0.3085***	0.2025***	0.3326***	0.1805***	-0.6683***	1.3050	-0.5107
	(0.1154)	(0.0669)	(0.1167)	(0.0450)	(0.2411)	(1.2138)	(0.6190)
NE Ind. × trend	-0.0001	-0.0068			-0.0075**	0.0092	0.0319*
	(0.0303)	(0.0094)			(0.0033)	(0.0185)	(0.0191)
N	26447	45315	24984	45311	71762	4596	3215

Investment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Estimation	OLS	OLS	Matching	Matching	IV	IV	IV
Cohorts	89-94	95-00	89-94	95-00	89-00	89-00	89-00
Sub-sample	full	full	full	full	full	smallest	largest
				Tangible capital at age 5			
Loan guarantee	1.4802***	1.2370***	1.7401***	1.6489***	2.1761***	3.0002*	-0.9494
	(0.2157)	(0.1166)	(0.1974)	(0.0683)	(0.3779)	(1.7428)	(1.2665)
NE Ind. × trend	-0.0705	0.0114			-0.0346***	0.0752***	-0.0206
	(0.0481)	(0.0180)			(0.0051)	(0.0266)	(0.0390)
				Tangible capital at age 7			
Loan guarantee	1.2149***	0.9881***	1.4540***	1.3653***	1.1382***	3.9568**	-1.6841
	(0.2347)	(0.1095)	(0.1909)	(0.0701)	(0.3819)	(1.7699)	(1.2632)
NE Ind. × trend	-0.0592*	0.0087			-0.0302***	0.0757***	0.0504
	(0.0332)	(0.0173)			(0.0052)	(0.0270)	(0.0389)
				Capital growth between age 0 and age 5			
Loan guarantee	0.2455***	0.2260***	0.2951***	0.3211***	0.3758**	0.4387	0.1597
	(0.0777)	(0.0635)	(0.0846)	(0.0330)	(0.1678)	(0.7674)	(0.3484)
NE Ind. × trend	-0.0244	-0.0057			-0.0129***	-0.0102	-0.0369***
	(0.0447)	(0.0070)			(0.0026)	(0.0134)	(0.0117)
				Capital growth between age 0 and age 7			
Loan guarantee	0.3971***	0.3191***	0.4720***	0.4268***	-0.0301	1.9133	-0.6712
	(0.0812)	(0.0498)	(0.1061)	(0.0409)	(0.2217)	(1.1661)	(0.5379)
NE Ind. × trend	-0.0423***	-0.0009			-0.0239***	0.0383**	0.0146
	(0.0150)	(0.0104)			(0.0030)	(0.0178)	(0.0166)
N	26447	45315	24984	45311	71762	4596	3215

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects; clustered standard errors in parentheses (at the 4-digit industry times post 1995 level). All regressions include time and industry fixed effects, and the set of controls indicated in table 3: dummies for eciles of start-up capital, deciles of start-up inventories, creation month fixed effects, legal status fixed effects and "Region" (county) fixed effects.

Table 16: Second Stages, Impact on survival

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Estimation	OLS	OLS	Matching	Matching	IV	IV	IV
Cohorts	89-94	95-00	89-94	95-00	89-00	89-00	89-00
Sub-sample	full	full	full	full	full	smallest	largest
				Bankruptcy filings before age 5			
Loan guarantee	0.0227	0.0467**	0.0368	0.0555***	0.0651	-0.6535**	0.4336***
	(0.0290)	(0.0210)	(0.0319)	(0.0116)	(0.0641)	(0.3255)	(0.1599)
NE Ind. × trend	0.0104**	-0.0054*			0.0040***	-0.0132***	-0.0095*
	(0.0046)	(0.0031)			(0.0009)	(0.0050)	(0.0049)
				Bankruptcy filings before age 7			
Loan guarantee	0.0351	0.0805***	0.0500	0.0898***	0.0789	-0.5968*	0.4676***
	(0.0305)	(0.0264)	(0.0344)	(0.0127)	(0.0695)	(0.3518)	(0.1719)
NE Ind. × trend	0.0108**	-0.0028			0.0049***	-0.0115**	-0.0109**
	(0.0051)	(0.0028)			(0.0009)	(0.0054)	(0.0053)
				Bankruptcy and exit before age 5			
Loan guarantee	-0.0057	0.0241	0.0044	0.0296***	0.0445	-0.9364***	0.3958***
	(0.0266)	(0.0171)	(0.0300)	(0.0109)	(0.0602)	(0.3124)	(0.1508)
NE Ind. × trend	0.0092**	-0.0044			0.0037***	-0.0113**	-0.0070
	(0.0042)	(0.0029)			(0.0008)	(0.0048)	(0.0046)
				Bankruptcy and exit before age 7			
Loan guarantee	0.0053	0.0555**	0.0212	0.0612***	0.1185*	-0.8172**	0.4642***
	(0.0291)	(0.0239)	(0.0331)	(0.0121)	(0.0667)	(0.3399)	(0.1660)
NE Ind. × trend	0.0103**	-0.0029			0.0047***	-0.0115**	-0.0118**
	(0.0048)	(0.0027)			(0.0009)	(0.0052)	(0.0051)
N	26447	45315	24984	45311	71762	4596	3215

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects; clustered standard errors in parentheses (at the 4-digit industry times post 1995 level). All regressions include time and industry fixed effects, and the set of controls indicated in table 3: dummies for eciles of start-up capital, deciles of start-up inventories, creation month fixed effects, legal status fixed effects and "Region" (county) fixed effects.

Table 17: Average treatment effect of the SOFARIS program across time

	(1)	(2)	(3)	(4)	(5)	(6)
Estimation	OLS	OLS	OLS	Matching	Matching	Matching
Cohorts	89-94	95-00	01-02	89-94	95-00	01-02
			Debt amount at age 5			
Loan guarantee	1.2926***	0.8822***	0.3279**	1.4923***	1.3094***	0.5330***
	(0.2363)	(0.1379)	(0.1277)	(0.2125)	(0.0767)	(0.0985)
			Debt growth between age 0 and age 5			
Loan guarantee	0.0350	0.0585	-0.4277***	0.0462	-0.0110	-0.5170***
	(0.1339)	(0.0594)	(0.0652)	(0.1181)	(0.0455)	(0.0596)
			Financial fees (normalized by debt) at age 5			
Loan guarantee	-0.0015	0.0108*	0.0090	0.0065	0.0142**	0.0135
	(0.0179)	(0.0063)	(0.0088)	(0.0185)	(0.0072)	(0.0086)
			Employment at age 5			
Loan guarantee	0.7594***	0.5588***	0.1962***	0.9353***	0.7568***	0.2937***
	(0.1127)	(0.0617)	(0.0552)	(0.0884)	(0.0335)	(0.0407)
			Employment growth between age 0 and age 5			
Loan guarantee	0.5564***	0.3327***	0.1605**	0.5900***	0.3207***	0.1665***
	(0.1230)	(0.0477)	(0.0704)	(0.1136)	(0.0436)	(0.0581)
			Tangible capital at age 5			
Loan guarantee	1.4802***	1.2370***	0.5107***	1.7401***	1.6489***	0.8015***
	(0.2157)	(0.1166)	(0.1207)	(0.1974)	(0.0683)	(0.0881)
			Capital growth between age 0 and age 5			
Loan guarantee	0.2455***	0.2260***	0.1982***	0.2951***	0.3211***	0.2884***
	(0.0777)	(0.0635)	(0.0596)	(0.0846)	(0.0330)	(0.0490)
			Bankruptcy before age 5			
Loan guarantee	0.0227	0.0467**	0.1063***	0.0368	0.0555***	0.1240***
	(0.0290)	(0.0210)	(0.0252)	(0.0319)	(0.0116)	(0.0147)
			Bankruptcy and exit before age 5			
Loan guarantee	-0.0057	0.0241	0.0863***	0.0044	0.0296***	0.0966***
	(0.0266)	(0.0171)	(0.0231)	(0.0300)	(0.0109)	(0.0134)
N	26447	45315	14778	24984	45311	14775

Notes:

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects; clustered standard errors in parentheses (at the 4-digit industry level). All regressions include time and industry fixed effects, and the set of controls indicated in table 3: dummies for eciles of start-up capital, deciles of start-up inventories, month of creation fixed effects, legal status fixed effects and "Region" (county) fixed effects.