

Entrepreneurship and Information on Past Failures: A Natural Experiment*

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December 2017

Abstract

We analyze how public information on past entrepreneurial failure affects an entrepreneur's ability to borrow. We exploit a policy shock from 2013 in France, which eliminated a highly salient public reporting to banks of managers involved in non-fraudulent corporate liquidations. We find that the elimination of this flagging system makes failed entrepreneurs significantly more likely to restart a business or to borrow from a surviving business, despite the fact that bankers can find the failure information from other public sources for a small cost. The effect is more pronounced for industries where failure is a stronger signal about entrepreneurial ability. Restarters create companies that have a higher probability of default.

*We would like to thank Shai Bernstein, Bruno Biais, Julien Sauvagnat, Larissa Schäfer, Antoinette Schoar, Giacomo Rodano, David Thesmar, Harald Uhlig, and conference participants at the Law and Economics Workshop at University of Michigan, First Banque de France – Banca d'Italia workshop in empirical corporate finance, NBER Summer Institute 2017 – Entrepreneurship, Baffi CAREFIN Annual International Banking Conference 2017, and Brussels EFI Network workshop 2017. Landier acknowledges financial support from the European Research Council under the European Community's Seventh Framework Programme (FP7/2007-2013) Grant Agreement no. 312503 SolSys. The views expressed herein are those of the authors and should under no circumstances be interpreted as reflecting those of the Banque de France or the Eurosystem.

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I Introduction

A large debate in theoretical and empirical economics is concerned with the optimal public memory of past negative individual outcomes. If information about past failures is never removed from public records, individuals might be permanently deprived from the possibility of a second chance to start a business. This might be inefficient if failure is often due to bad luck and if some failed entrepreneurs have new positive NPV projects for which they need external financing. On the contrary, if failure is mostly due to the poor ability of the manager to run a business, losing track of her history can lead to a bad allocation of resources through the financing of negative NPV projects.

In this paper, we analyze the causal impact of public information regarding past corporate defaults on entrepreneurial outcomes. To do so, we exploit a natural experiment that resulted in the elimination of a highly visible record of past corporate bankruptcy for firm managers produced by Banque de France, the French central bank. Before 2013, this individual flagging of managers involved in a bankruptcy was lasting for exactly three years and was made available to banks via Banque de France FIBEN's database, a widely used scoring system of firms and managers. A 2013 reform suppressed the publication of this flag in the FIBEN data for individuals involved in one bankruptcy only.

The result of the reform was that more than 140,000 entrepreneurs previously flagged got deflagged and informed about it. Among them, some had failed one year or two years before the reform took place. The reform thus creates heterogeneity in the flag duration. Such heterogeneity allows us to use a difference-in-differences methodology to measure how the information on past failures affects the restart probability. Indeed, it allows us to compare the relative propensity to restart a company at a given time after failing when the flag is public vs. when the flag is not public. We find that the removal of the flag causally increases the restart probability of failed entrepreneurs in a significant manner.

We also analyze the impact of the information on past failures through the prism of entrepreneurs managing multiple companies: After one of the companies fails, the other companies suffer from the entrepreneur's stigma on the credit market. We show that after the removal of the failure flag, these companies borrow significantly more. The flag reduces the firm's access to credit especially when (1) the manager has failed in the same industry, (2) the volatility of

the industry in which the manager has failed is low, and (3) the firm asking credit operates in an industry where individual talent is important. These results corroborate the idea that the failure flag is taken by banks as a signal of bad managerial ability and that they treat it in a Bayesian manner: Banks put more weight on it when the signal is more informative.

Overall, the effects related to the removal of the flag are somewhat of a surprise. In fact, banks can (legally) reconstruct this information based on public bankruptcy files at a very small cost (namely, a few Euros).

Our paper connects to several strands of the literature.

First, in the theoretical literature, several papers model the equilibrium impact of information on past failure: Elul and Gottardi (2015) develop a model of repeated borrowing and lending in which an optimal length of memory arises. Making information about past default available for less time can deteriorate ex-ante incentives, but improves ex-post incentives, as entrepreneurs whose failure is forgotten want to preserve their reputation. Kovbasyuk and Spagnolo (2016) study a dynamic market game with feedback. In their model, an optimal finite length for negative feedback memory emerges. If negative feedback is kept forever in memory, the market can break down. Landier (2005) analyzes a serial entrepreneurship game in which information on failure can prevent failed entrepreneurs from restarting which can be inefficient if entrepreneurial projects are intrinsically risky.

Second, we contribute to the large empirical literature analyzing the impact of bankruptcy institutions on credit markets. Djankov et al. (2007) document a positive relationship between information sharing through credit bureaus and equilibrium levels of lending. Rodano et al. (2016) exploit a 2005 reform in Italy facilitating loan renegotiation. They find that the reform increases interest rates and reduces investment, suggesting that more creditor-friendly rules post financial distress can deteriorate entrepreneurial incentives ex-ante.

A large literature studies the impact of limiting negative memory in consumer lending markets. Musto (2004) finds that sudden deletion of negative information creates a boost in creditworthiness but the effect is reversed and even worsened in the long term.

Some papers use a difference-in-differences strategy quite similar to ours to study how information on past personal bankruptcy affects individual outcomes on the credit and labor market: Dobbie et al. (2016) use the removal of personal bankruptcy ‘flags’ from credit reports in the

US as an instrument to document the causal impact of credit score on individual economic outcomes. They use the fact that the maximum legal time bankruptcy information can be kept in credit reports vary by bankruptcy type. Bos and Nakamura (2014) use a policy change in the legal retention time of the flag applied in Sweden to defaulting consumers. They find that shorter retention times result in a restriction of the aggregate supply of credit and a higher likelihood of default. Bos et al. (2016) document that individuals who are flagged longer are more often unemployed and earn lower incomes. They find a large effect of the flag removal on credit card and mortgage borrowing but no impact on labor outcomes. González-Uribe and Osorio (2014) study the impact of a law passed in Columbia, which erased information on past defaults from Private Credit Bureaus files. They find that after information removal, clean borrowers borrow less and tend to switch bank less often, suggesting that the information removal impacts them negatively. Garmaise and Natividad (2016) study negative liquidity shocks on Peruvian consumers and show that ratings downgrades causally impact their ability to borrow. While those papers focus on consumer credit, we are among the first to study the effect of failure information on entrepreneurship and firms' access to credit.

Last, our paper relates to the literature on serial entrepreneurs. For instance Lafontaine and Shaw (2014) find that an owner's prior experience at starting a business increases the longevity of the next business opened. This suggests that institutions preventing restart are potentially inefficient as they prevent the use of past experience. Rocha et al. (2015) shows that self-selection is important when evaluating how much serial entrepreneurs benefit from learning from past experiences. Our paper emphasizes the fact that entrepreneurs sometimes run multiple companies at the same time, and exploits the fact that one of the companies might fail while the others survive. We also find that companies restarted by failed entrepreneurs are, everything else equal, more risky.

An key insight uncovered by our analysis is that details in the framing of public information strongly matter in equilibrium. We show that a small friction in accessing information can change discontinuously how much this information weights on economic agents' decisions. When the flag was highly salient, bankers used to heavily penalize individuals that had experienced liquidation in the last three years. Once this information is made less visible, albeit accessible at a trivial cost, we find that it does not weight as much in conditioning access to credit. This

suggests that policy makers ought to be careful when making public information highly visible not to create a form of stigmatization of certain categories of individuals, especially if it is not clear that this stigmatization improves market efficiency. One way to prevent unnecessary stigmatization is to create a small (cognitive or monetary) cost of accessing information. In our example, entrepreneurs who did not fail can still “prove they are clean” at a small cost by accessing public data. In turn, this means that the welfare cost associated with removing the flag is capped by the number of would-be entrepreneurs times the cost of “reconstructing” a certification equivalent to the flag information based on public data.¹

Section II describes the institutional framework underlying the Banque de France’s information system about individual entrepreneurial failures and presents a summary of the 2013 reform. Section III describes the data and documents the composition of our sample of firms and managers. Section IV presents the empirical results regarding the propensity to restart a company and to borrow as a function of the flag. Section V explores the policy implications from our analysis. Last, Section VI presents a few robustness checks. Section VII concludes.

II Institutional Framework

A Legal Framework for French Firms

A.1 Legal Form and Managers

French law defines a firm as the smallest (i.e., non consolidated) legal unit to which it is assigned legal capacity. At the moment of creation, a firm is attributed an identification number (the *SIREN* number), an indicator identifying the industry, and a legal form (*catégorie juridique*). Examples of legal forms include joint stock companies (*SA*, *SAS*), private limited companies (*SARL*), and sole proprietorships (*EI*). The legal form characterizes the governance type and thus shapes the relationships between shareholders and managers.² In fact, the legal form defines the different managing roles (*mandat social*) for corporate officers: depending

¹ This insight about the important of salience is reminiscent of Jin and Leslie (2003) who find that restaurant health inspection scores have much stronger impact on consumer demand when they have to be displayed on restaurant windows rather than accessible in a more indirect manner (prior to the reform studied in Jin and Leslie (2003), consumers had to send requests information about violations of an individual restaurant to the administration); hence information was formally available, but rarely used in practice, as in Jin and Leslie (2009).

²The terms ‘manager’ and ‘entrepreneur’ are used interchangeably thereafter. We do so because (i) the probability that the manager of a newly created company is the entrepreneur is high a priori and (ii) we are interested in companies that are relatively small, for which entrepreneurs are often their managers.

on the legal form, firms may have an Executive or Supervisory Board, a Board Chairman, a managing director (the French equivalent for CEO), a President of simplified joint stock company, and several other subordinated managing roles. Additionally, based on the firm's legal status, only a subset of managing roles are attributed the status of legal representatives (*représentant légal*) of the firm. Legal representatives are then the only entitled to sign binding contracts for the firm.

A.2 Bankruptcy Proceedings

If a firm is unable to service its short-term debt or reimburse its creditors, the firm suspends its payments and its representatives must report a failure (*cessation de paiements*) to a commercial court.³ A judge then decides either to start an observation period during which a recovery scheme is investigated (a phase called *redressement judiciaire*), or orders the firm's liquidation (*liquidation judiciaire*) if recovery seems impossible. During the recovery period, the firm's liabilities are subject to rescheduling but the firm continues to operate, though under the court's scrutiny. If the firm fails to recover after a certain period, it gets liquidated. Otherwise, the situation goes back to normal.

B Information Available to Banks

B.1 The Banque de France's FIBEN database

The Banque de France collects information on French non-financial companies and stores it in the FIBEN (*F*ichier *B*ancaire *d*es *E*ntreprises) database. Information include court rulings, trade bill payment incidents, balance sheets, and managers' roles and history. The main reason the Banque de France collects such information is to ease the implementation of monetary policy. In fact, based on the information collected, the Banque de France assigns firms a credit rating (see, e.g., Cahn et al. (2017)). Then, in the Eurosystem's refinancing operations, banks can pledge as collateral only claims issued by firms with a sufficiently high credit rating.

³French law introduced in 2005 the possibility for a firm to access judiciary support, mainly under the form of debt rescheduling, before failure occurs (*procédure de sauvegarde*). This procedure is similar to the one allowed by the US Chapter 11.

French banks have remote access to FIBEN.⁴ In this way, they have access to all the information there contained on French non-financial companies. The reason banks access the FIBEN database include, for example, credit risk analysis, assessing the quality of a credit portfolio, and detecting the risks inherent to each lending operation.

B.2 FIBEN's Information on Managers and the Flagging System

FIBEN contains data on the population of executives in France. These include biometric information as well as all current and terminated managing functions each manager has or had in French firms. Furthermore, each manager is assigned a flag called *indicateur dirigeant*, which records if the manager has experienced one or more liquidations as a legal representative.

Until September 2013, the *indicateur dirigeant* took four different values: '000', '040', '050', or '060' depending on whether the manager went into zero, one, two, or at least three liquidations in the preceding three years. Consequently, the flag is time-varying, depends on the sequence of liquidations, and is turned on for at most three years after the last liquidation. For example, following the liquidation of a company where a manager was the legal representative, the manager's flag moves from '000' to '040'. After three years without having incurred any other liquidations, the flag goes back to '000'. This course of events is illustrated in the upper panel of Figure 1.

By contrast, the lower panel of Figure 1 shows the change in the flag when the manager experiences two liquidations: the flag is set to '050' as the manager enters the second liquidation. Then, three years after the first event, the flag changes to '040', until three years have passed since the second liquidation, when it returns to '000'.⁵

B.3 How Banks Access to FIBEN

In practice, FIBEN's information is organized by thematic units, or *modules* (e.g., 'Panorama', 'Manager', 'Credit Rating', and so forth). Browsing the different modules, bankers can collect information on non-financial French firms and their managers. For instance, a banker seeking

⁴Access to the FIBEN database, which is granted by French law, has been recently extended to credit insurance companies and assets management funds under agreement with the AMF, the French Market Authority.

⁵All in all, the length of the flag depends on the number of liquidations the manager experienced. If only one liquidation occurred, the most frequently observed case, the duration is exactly three years. However, it may be the case that for one reason or another (e.g., new resolution from Commercial Court of Appeal, protest against bankruptcy judgment, etc.), the flag duration may be shortened as the triggering event is rendered invalid. Nevertheless these cases are pathological and can be adequately identified in the FIBEN database.

information on a given manager would access the ‘Panorama’ module, a snapshot of which is shown in the Appendix in Figure 5. This module returns basic information such as family names and addresses, along with the manager flag.

The banker could then access the ‘Manager’ module, which returns the current managing roles of a manager (see Figure 6) and the functions he or she had over the past three years (see Figure 7). For each firm in which the manager has or had an appointment, the ‘Manager’ module indicates whether or not the firm has been liquidated (and the date of liquidation, if applicable). By doing this, the banker may gather all the information needed to construct the manager flag.

Bankers access FIBEN’s modules for a fee. In general, this cost is small. For example, in 2015 accessing the module containing the Banque de France’s credit rating cost 3 euros.

B.4 Alternative Sources of Information

FIBEN is not the only source of information on companies and managers. For instance, the French registries of commercial courts provide both free and paid access to a centralized database via the website infogreffe.com. This database also contains financial information and significant events arising over the lifetime of a company (including events related to bankruptcy proceedings). Moreover, the website search engine allows to search for information on managers and the firms in which she had a managing role. As a consequence, these alternative sources enable an analyst to know if a manager failed in the past.

C The “flag reform” of September 2013

In September 2013, the French government decided to suppress the ‘040’ level of the flag, and to replace it by ‘000’.⁶ About 140,000 managers benefited from the policy change and were “deflagged” at that time, as shown in Table I. As a result, bankers accessing the ‘Panorama’ module would not be able to distinguish between once-liquidated managers and managers who did not experience a liquidation in the previous three years.

⁶As Fleur Pellerin, the Minister of SME, Innovation and the Digital Economy at that time, puts it: “This is a fact that French society now suffers from not allowing enough a second chance, risking to curb the boldness of his youth and all talents of which France is rich. In the economic field, the totem of this stigma of failure was the “040 indicator”, which stigmatized any entrepreneurs having filed for bankruptcy during the previous three years. I fought at the Congress for Entrepreneurship to remove this injustice. In September 2013, 140,000 managers have received a letter from the Banque de France informing them that they would now be treated with the same respect as any new entrepreneur.” (03/15/2014, The Huffingtonpost’s Blog)

However, information about current and past managing roles is still available to bankers via other FIBEN’s modules and the alternative sources of information. Hence, bankers are still able to reconstruct the flag. In fact, the reform also modified the availability of information on past managing roles in the FIBEN system by expanding the time limit of disclosure from three to five years.

III Data

We extract several datasets from the FIBEN database. The first dataset contains information on the date of creation, the industry, and the legal form for the quasi-exhaustive set of French firms existing in 1985 and since then. The date of creation is the date at which a firm is attributed the SIREN number (see Section II) and corresponds to the date at which the firm starts its operations. The industry variable follows the French national activities classification (NAF) and is coded over five digits. Similarly, the legal form follows the classification used in the management of the official French business repository (SIRENE) and consists of a 4-digit index, divided into 9 subdivisions that define the main legal categories (sole proprietorship, business company, public corporation, and so forth).

A second dataset includes information on the whole population of managers. The set of data consists of biometrics variables, namely gender, date, and country of birth, and the information on the manager flag (i.e. the *indicateur dirigeant*). For each manager, we know the value of the flag (from ‘000’ to ‘060’), and the date at which this value is attributed or changed.

The third dataset includes the complete record of manager-firm pairs. Each pair corresponds to a specific mandate such as those described in section II.⁷ Since managing roles can tie and untie along time, each manager-firm pair is defined by validity periods, which indicate precisely when the manager is connected to the firm. The combination of the social mandate with the legal form qualifies the manager as legal representative.

The fourth dataset includes information on when each firm incurs a legal event. Specifically, this dataset, which is collected from French commercial courts, records all the different judicial steps leading to a liquidation.

⁷Note that managers may have more than one mandate in a firm. For instance, the Chair of the Board may also be the CEO, counting for two different mandates.

We complement the extracted information with firm level accounting data. Firms' financial statements are available in FIBEN only for a subsample of the whole population of French firms and are collected when the firm's turnover exceeds EUR 0.75 million. This financial information consists essentially of tax forms that are collected for the computation of Banque de France's credit rating. These tax forms follow the basic French accounting principles and report each firms's total assets, bank debt, interest payments, property, plant, and equipment, with yearly frequency.

Additionally, we use the French national credit register to compute the number of bank relationships a firm has. This credit register is operated by Banque de France, and collects bilateral credit exposures between resident financial institutions and non-financial corporations. A bank reports individual credit exposure of all their client firms when total exposure per firm is larger than EUR 25,000.⁸

Before presenting the datasets that we construct from these data, we highlight the importance of entrepreneurs that manage more than one firm at the same time. Managers running more than one firm will enable us to identify the effects of the flag on firms that have not been subject to a liquidation. As shown in Table XVI in the Appendix, 'multi-firm' managers account for nearly 16% of the entire managers' population. The distribution of the number of firms per manager is right-skewed as more than 50% of these managers are tied to two firms. Importantly, since the sectoral concentration is around .25, it does not appear that multi-firm managers focus on just one industry.

In terms of demographics, the average age of multi-firm managers is very similar to that of the rest of the population (Table XVII). Multi-firm managers tend to be males and French. In terms of the financial conditions of the firms they are related to, Table XVIII shows that, compared to other firms, companies run by multi-firm managers are slightly larger in terms of turnover, have a higher leverage ratio, and have slightly less tangible assets.

We use the raw datasets presented above to first identify which managers incur a flag, and which firms caused such flags. Those are the firms that went bankrupt at the time the manager was a legal representative. Then, we associate each firm creation to the managers involved in it. Finally, we identify if an entrepreneur manages more than one firm at the time she is attributed

⁸Total exposure includes drawn and undrawn credit, as well as guarantees granted by the bank.

a flag. If that is the case, we isolate those surviving firms. This procedure leads to the creation of two datasets: the managers' dataset and the firms' dataset.

A Managers' dataset

The managers' dataset is a manager-quarter level panel, spanning from 2005Q1 to 2015Q4. It includes all flagged managers and a randomly drawn 5% of the universe of unflagged managers. Flagged managers are those whose flag duration is three years (the standard before the policy change), and those affected by the policy change and whose flag duration is thus less than three years. Flagged managers are tracked from the first to the eleventh quarter after the start of the flag. A variable 'firm creation' indicates whether the manager creates at least a firm or not (in a given quarter). Other variables detail the managers' demographics.

Table II presents the summary statistics of the managers' dataset distinguishing by whether managers are flagged or not. A comparison between the two subsamples indicates that flagged managers tend to be slightly younger than unflagged managers on average, but this difference is non statistically significant. Also, the proportion of foreign-born and male managers tend to be higher on average for flagged managers than unflagged ones. For both types of managers, the quarterly rate of firm creation is about 1%.

B Firms' dataset

The firms' dataset is a firm-year level panel, which reports firm-year specific financial information from 2005 to 2014. Firms are distinguished by whether they are managed by a flagged manager or not. We isolate firms with maximum one flagged manager along their life. The flags considered include both those lasting three years and those affected by the policy change, which thus last less than three years. The firms associated to a flagged manager are created before the start of the flag, are managed by him at the time he gets flagged. However, they are not the cause of the flag and continue to operate. For these firms, we retain only the first, second, and third balance sheets after the flag start. At any of those dates, the company is managed by the flagged entrepreneur.

Table III reports the summary statistics distinguishing by whether a firm is related to a flagged or an unflagged manager. Overall, the two groups do not displays statistically significant differences. Over the sample period, both types of firms experience a deleveraging. Yet, this

is slightly more pronounced in flagged firms. Also, flagged firms tend to pay a higher, though not statistically significant, loan rate and issue 1% less of dividends (as of total assets). Finally, flagged firms tend to be smaller than unflagged firms.

IV Results

A Restarting after failure

We start our empirical analysis by looking at how the event of “deflag” impacts the propensity to start a business. In fact, the political motivation for banning the publication of the failure flag was to ease restart for failed entrepreneurs by decreasing the stigma of failure on the credit market.

A.1 Are restarts more likely after the three-year deflag?

As a first pass at measuring the deflag effect, we focus on the sample of failed entrepreneurs whose flag expires before the reform occurs, and thus lasts three years. We call this the “old-regime” sample. We analyze whether such entrepreneurs tend to restart more after the three-year deflag occurs relative to when they are still flagged. We do this by plotting the probability of starting a business depending on the distance from flag start and flag removal.

We first remove effects related to the manager’s age and the business cycle by regressing a dummy capturing firm creation over the manager’s age, dummies capturing gender and non-French nationality, and time fixed effects. This regression is performed over a sample composed of three-year flagged managers and of managers who have never failed. Note that the group of unfailed managers enables us to more precisely estimate the time fixed effects, and thus the business cycle component, as well as the effects of manager’s age, gender and non-French nationality. We then isolate the residuals for the group of three-year flagged managers, and average them depending on the distance from flag start. Each average represents the probability of starting a business at a given distance from flag start net of the effects of managers’ demographic characteristics and the business cycle. The dynamics is represented by the solid line in Figure 3, where time 0 is when the entrepreneur fails. After three years, he gets deflagged. The assignment of the flag is identified by the vertical solid red line placed after time zero, and the deflag is identified by the vertical solid red line placed after time 3. We observe a clear

U-shaped pattern, with an upward dynamics at the time the flag is removed. That suggests that when the manager gets flagged its ability to start a business decreases, and when he gets deflagged its ability recovers.

To precisely measure the deflag effect on the probability of starting a business, we posit the following Probit model:

$$Pr(\text{firm creation}_{it} = 1 | X_{it}) = \Phi(\delta \mathbb{1}\{\text{flag}_i \neq \emptyset\} + \beta \mathbb{1}\{t \geq \text{deflag}_i\} + \text{controls}_i + \eta_t) \quad (1)$$

where the dependent variable is the probability of starting a business. As independent variables, flag_i represents the quarter at which manager i is attributed the flag, and so $\mathbb{1}\{\text{flag}_i \neq \emptyset\}$ indicates if manager i has ever received a flag in the past. The dummy $\mathbb{1}\{t \geq \text{deflag}_i\}$ indicates whether at time t manager i has been deflagged. controls_i include demographic characteristics of manager i , and η_t are time fixed effects. X_{it} includes all such explanatory variables and $\Phi(\cdot)$ is the cumulative normal distribution function.

Equation 1's identification strategy is to compare the restart dynamics before and after the time the manager is deflagged, and attribute the difference to the deflag. We run Model 1 over a sample of managers that never get flagged and of managers that get flagged once in their life with a flag lasting three years (the standard in the old-regime). To clean the deflag effect from other trends, flagged managers are analyzed from three quarters before to three quarters after deflag. Note that unflagged managers mainly contribute to the identification of the time fixed effects, and are therefore useful to capture overall rises and slowdowns in the probability to create a business at a given time. However, since the universe of unflagged managers is too large to be managed computationally, we randomly sample a 5% subset of it.

Results appear in the first two columns of Table IV. They indicate that after the manager gets deflagged, he is substantially more likely to create a business. Relative to unflagged managers, flagged managers are also on average more likely to create a business, reflecting the need to restart after a failure. Finally, younger as well as male and non-French individuals are associated to a greater probability to create a business.

It is however difficult to conclude from this analysis alone that the flag has a causal impact on restart: after all, it might be that after a failure, entrepreneurs take a few years to find a

new project or simply to recover psychologically from the trauma of failure. What we attribute to the deflag effect may then be an upward trend, due to such “natural” recovery.

A.2 Measuring the flag effect via the policy shock

The policy shock offers us an identification strategy that overcomes the limits of just looking at the before-after dynamics of old regime flags. When the reform is enacted, more than 140,000 entrepreneurs previously flagged by the Banque de France get deflagged. Among them, some failed one year or two years before. The reform thus creates heterogeneity in the flag duration. Under the hypothesis that failed managers follow a similar trajectory after the initial failure, the only difference between policy-affected and three-year flagged managers is the timing of the deflag. Thus, as depicted in Figure 2, we can derive the effect of the deflag on the propensity to restart by comparing the dynamics of the two groups.

We first repeat the graphic analysis of Subsection *A.1*. We complement the sample of never-failed managers and three-year flagged managers with policy-affected managers whose flags last either one or two years. We then regress the dummy capturing firm creation over the manager’s age, dummies capturing gender and non-French nationality, and time fixed effects. We isolate the residuals within each group of flagged managers, and average them depending on the distance from flag start. As before, each average represents the probability of starting a business at a given distance from flag start net of the effects of managers’ demographic characteristics and the business cycle. The dynamics are represented in Figure 3. Comparing the pattern of restart of the policy-affected groups to the one of the pre-reform regime group (solid line) as a function of the time since flag start, it appears very clearly that the early deflag induced by the reform causes an early rise in restarts.

The econometric strategy reflects this graphical analysis and compares the dynamics of three-year flagged managers and policy-affected managers depending on the distance from the flagging event. This leads us to the difference-in-differences Probit model:

$$Pr(firm\ creation_{it} = 1 | X_{it}) = \Phi \left(\sum_{q=1}^{11} \gamma_q \mathbb{1}\{t = flag_i + q\} + \beta \mathbb{1}\{t \geq deflag_i\} + controls_i + \eta_t \right) \quad (2)$$

where $flag_i$ is the quarter at which manager i is attributed the flag, and $\mathbb{1}\{t = flag_i + q\}$ are thus eleven time-from-flag-start dummies, ranging from the first to the eleventh quarter after flag start. $deflag_i$ is the quarter at which the manager gets deflagged, and therefore $\mathbb{1}\{t \geq deflag_i\}$ indicates whether at time t manager i has been deflagged. $controls_i$ include demographic characteristics of manager i , and η_t are time fixed effects. X_{it} includes all such explanatory variables and $\Phi(\cdot)$ is the cumulative normal distribution function.

The model is run over a sample composed of 1) managers that never get flagged, 2) managers that get flagged once in their life, with a flag lasting three years (the standard in the old regime), and 3) managers that get flagged once in their life, are affected by the policy change, and thus experience a flag lasting less than three years. For the two groups of flagged managers we focus on the period between the first and the eleventh quarters after flag start. Over this period, the only events of deflag that realize are due to the policy shock. Old-regime flagged managers, in fact, get deflagged at the twelfth quarter after flag start. After the twelfth quarter, all flagged managers are deflagged, and, as a result, we cannot separate the effect of the deflag from the distance from flag start. Such observations are then not useful to identify the effect of deflag and are excluded from the analysis. Also, note that the group of unflagged managers mainly contributes to the identification of the time fixed effects. This is particularly needed in our estimation as three-year flagged managers and policy-affected managers get flagged at different points in time. So, in order to compare their dynamics we need to absorb time fixed effects. However, since the universe of unflagged managers is too large to be managed computationally, we need to randomly sample a 5% subset of it.

The time-from-flag-start dummies capture the benchmark dynamics that failed managers take after failure. The key parameter of interest is then β , which measures the deviation from such benchmark dynamics that happens after the flag is removed. As a result, β captures the causal impact of being deflagged on the quarterly propensity to start a business. Note that the identification of β happens purely through the early deflags. In fact, between the first and the eleventh quarters after flag start, the managers whose flag lasts three years are still flagged.

Results appear in the third and fourth columns of Table IV. They confirm that the deflag is associated to a higher probability of creating a business. Similarly to what found earlier, younger as well as male and non-French individuals have a higher probability to start a business.

Also, since the parameter attached to the eleven time-from-flag-start dummies appear with positive sign, we find confirmation that failed managers are more likely to create a new company than non-failed managers. According to column 4, the effect of deflag increases the quarterly probability of starting a new business of about .1%, while the fact of having failed in the past is associated to an increase of about .2%. Overall, this suggests that at the time of assignment the flag causes a reduction in the increase in the probability to restart of about one third.

A.3 Created firms' financial conditions and productivity

We analyze the financial conditions of firms created by unfailed managers vis-à-vis firms created by failed and still flagged managers, and firms created by failed but deflagged managers. Our sample includes firms created after 2005 by either unflagged managers, old-regime flagged managers, and policy-affected flagged managers. We retain the first balance sheet appearing in the FIBEN system if presented within three years from the date of creation. We then study the leverage (bank debt over total assets), loan rate effectively paid, and trade credit (total payables less total receivables, over total assets) as a function of whether the entrepreneur is flagged or deflagged at creation. Control variables include log total assets, year and industry fixed effects.

Results appear in Table V. Relative to firms created by unfailed managers, firms created by a manager who has received a flag in the past lack of bank debt. This is especially true if the firm creation happens while the manager is still flagged. This result suggests that entrepreneurs have a lower ability to borrow while being flagged. In the same vein, the loan rate is higher if the manager has received a flag, and more so if the creation happens while he is still flagged. Lacking bank debt, firms substitute it with trade credit. Indeed, we observe that firms created while the manager is still flagged display more trade credit than firms created while the manager has been deflagged.

When new firms do not have access to sufficient funding, they may underinvest. This may result in a lower productivity. We thus complement the results on the financial conditions by studying the productivity at creation. We use the same econometric approach as before but analyze the Return on Assets (ROA, defined as EBITDA over total assets) and the EBITDA over total sales as a function of whether at the creation the manager is flagged, or deflagged. Table VI shows that according to both productivity measures, firms created by a manager that

has received a flag are less productive at restart. However, this is less so if the firm is created after the manager has been deflagged. This indicates that the lower productivity may come from underinvestment, which is in turn due to the lower access to credit.

We check if the observed differences at restart persist in the medium run and study both the financial conditions and the productivity of newly created firms after six years from creation. Tables XIX and XX in the Appendix report the results. After six years from creation, firms started at the time the manager is flagged do not display significant differences in terms of bank debt over total assets and loan rate relative to firms created by unfailed managers. However, they do display higher levels of trade credit. Conversely, firms started by a failed but deflagged manager are more levered and pay higher loan rates than firms started by unfailed managers. There are no appreciable differences in terms of productivity between firms started by unfailed, flagged, and deflagged managers.

The main drawback of the results presented is that the sample does not include every newly created firm. To be in our firms' balance sheet database, in fact, firms need to be sufficiently large. Since newly created firms are likely small on average, our sample accounts for a minority of them, and the sample size is not sufficient to perform the difference-in-difference identification strategy used in subsection A.2. Ideally, we would like to study the financial conditions and the productivity of firms created by flagged managers differentiating by whether creation happens while the manager has already been deflagged, holding constant the distance from flag start. As before, we would focus on the 36 months right after flag start, and the deflag effect would be estimated thanks to the early deflag induced by the policy change. However, that requires to have a sufficient number of firms created within 36 months from flag start in both old regime and policy-affected managers, and this is not the case in our sample.

A.4 Created firms' probability of failure

The results obtained so far indicate that banks limit the funding to failed entrepreneurs as soon as they observe the failure flag. This may be because the flag makes a past failure immediately visible and banks take a past failure as a bad signal on the manager's abilities. We study if a past failure is indeed indicative of worse managerial abilities by measuring whether failed entrepreneurs are more likely to fail again.

The sample of firms we consider is composed of a randomly drawn 15% of the universe of firms created after 2005. We then study if firm failure depends on whether its manager has been involved in a failure and on whether he is currently flagged. The Probit model writes:

$$Pr(\text{firm fails}_{jq} = 1 | X_{jq}) = \Phi \left(\sum_{y=1}^5 \gamma_y \mathbb{1}\{\text{year}(q) = \text{year}(\text{fail}_j) + y\} + \beta \mathbb{1}\{\text{flag}_j \leq q \wedge q \leq \text{deflag}_j\} + \zeta \text{age}_{jq} + \eta_{\text{industry}_j; q} + \eta_j \right) \quad (3)$$

where the dependent variable is the probability of firm failure. $\text{year}(q)$ is the year of quarter q , fail_j is the quarter in which firm j 's manager failed, flag_j is the quarter in which the manager is assigned the flag, and deflag_j is the quarter in which the flag is removed. Therefore, $\mathbb{1}\{\text{year}(q) = \text{year}(\text{fail}_j) + y\}$ are time-from-manager-failure dummies, and $\mathbb{1}\{\text{flag}_j \leq q \wedge q < \text{deflag}_j\}$ indicates if the firm's manager is flagged at q . Additionally, age_{jq} is the firm's age at q , and $\eta_{\text{industry}_j; q}$ are industry x quarter fixed effects. X_{jq} includes all such explanatory variables and $\Phi(\cdot)$ is the cumulative normal distribution function.

The sample includes firms with managers that never fail, and managers that fail. In the latter case, we focus on observations up to the fifth year after the manager's initial failure. Failed entrepreneurs include either those that fail before or after the policy change. It is important to note that we consider all types of flag (see Subsection *B.2*). In fact, we do not restrict our attention to failed managers with a three-year flag or a policy-affected flag. Otherwise, by construction, we would focus only on those flagged managers who do not fail again, thus biasing the estimation.

The five parameters γ_y capture to what extent a failed manager is more (or less) likely to fail again after an initial failure. The identification of these parameters works by comparing the probability of failure of a firm with a manager who failed for example one year before with the probability of failure of a firm with a manager that never failed. Clearly, until the first failure, a manager has never failed in his life. So, the identification of γ_y is achieved measuring the difference in the probability of failing a second (or third, fourth, etc.) time vis-a-vis the probability of failing the first time.

β measures the effect of the manager being currently flagged on the probability of failure.

Disentangling the effect of being flagged from the effect of the past failure is possible because the managers in the sample are not flagged over the entire five-year period that follows the initial failure. In fact, the flags considered have very heterogeneous duration. First, the old-regime flags last three years. Second, as described in Subsection *B.2*, if the manager fails again within three years from the initial failure the flag lasts more. Third, the policy-affected flags have a duration shorter than three years. Fourth, all managers that fail after the policy change are not flagged. As a consequence, for any time distance from failure, the sample includes failed managers that are flagged and managers that are not flagged. This enables us to identify the effect of being flagged separately from the effect of having failed.

Table VII presents the results, with each of the four columns analyzing a different event of failure. The dependent variable in Column 1 captures whether the firm fails the following quarter. In column 2, this is replaced by an indicator of whether failure happens over the following year but that is the last quarter the entrepreneur manages the firm. In column 3, the dependent variable is an indicator of whether the firm is involved in a legal proceeding. Finally, in column 4, the dependent variable captures whether the firm fails over the following quarter or whether the firm is currently involved in a legal proceeding.

All columns point in the same direction. A manager that has been involved in a past failure is more likely to fail again. The probability of failing again does not change with the distance from the initial failure. Taking the last column, a median firm has a quarterly probability of failure equal to .6%. If that firm is managed by a manager that has failed two years before, that probability increases by .4%. Thus, the probability of failure almost doubles. At the same time, the manager being flagged is associated to a further increase in the probability of failing again. The increase due to this effect for the median firm is of .4%. We interpret this second effect as coming from the fact that the flag leads to a decrease in lending to the firm, and thus to suboptimal investment. The ultimate effect is then a higher probability of failure.

B The effect of the failure flag on the existing firms managed by the entrepreneur

The previous subsection has focused on the ability of flagged entrepreneurs to restart. The estimated effects may be considered as those related to the extensive margin of the failure flag. We focus here on firms which are managed by a flagged manager at the time he receives the

flag, but are not causing the attribution of the flag themselves and continue to operate. We follow the strategy used in subsection *A* and study the dynamics of those surviving firms as a function of the deflag. Our goal is to estimate if after the flagging of the manager those companies borrow relatively less and start to borrow more after the flag is removed. This may be interpreted as the intensive margin of the failure flag.

B.1 Do bank debt and investment increase after the three-year deflag?

We repeat the strategy followed in subsection *A.1* and start our analysis by tracking the bank loan flow dynamics of the firms associated to old-regime flagged managers in the period around the flag and the deflag. We take the yearly change in bank debt deflated by lagged total assets as a measure of flow of bank loans to the firm. We consider a sample of firms that are never associated to a flagged manager, and firms associated to just one flagged manager. For the latter firms, we retain old-regime flags, which thus last three years. We then regress the normalized flow of bank loans over firm and industry \times time fixed effects. In this way we absorb industry dynamics and time-invariant effects related to the firm. We obtain the residuals for the group of firms with flagged managers, and take the average at any distances from flag start.

The resulting dynamics is described by the solid line in Figure 4. The pattern is U-shaped, with a decreasing trend before the flag is assigned, and an upward trend when the flag is removed. This is remarkably similar to what found for the probability to start a business.

The decrease in the flow of bank loans starts before the flag is assigned. The reasons for such early decrease may be at least two. First, since the manager is experiencing a hard time with one firm, which eventually fails, he may reduce the demand for credit in the other firms he manages. This may be the case especially if those firms have complementarities with the failing one. Second, before the firm gets liquidated, bankers may observe that it is experiencing a hard time, and may perceive the entrepreneur as riskier. Thus, they may reduce the credit to the other firms he manages. As a result at the moment the flag is assigned, supply effects mix with demand effects. At deflag, the case is different. Unless managers increase their willingness to borrow exactly three years after the flag is assigned, their demand for credit does not differ before and after deflag. Thus, the upward trend around that point may be attributed to an increase in banks' willingness to lend.

We provide the econometric counterpart of Figure 4, exploring also the flow of short-term and long-term bank loans, the loan rate, the flow of trade credit, different investment components, and the dividends distributed. The econometric model writes:

$$y_{jt} = \beta \mathbb{1}\{t \geq deflag_j\} + \eta_{industry_j;t} + \eta_j \quad (4)$$

where j is a firm, t is a year, and the dependent variable y_{jt} is a variable of interest, for example the normalized flow of bank loans. $\mathbb{1}\{t \geq deflag_j\}$ indicates whether firm j 's manager has already been deflagged at year t . $\eta_{industry_j;t}$ and η_j are respectively industry x time fixed effects and firm fixed effects.

Equation (4) is estimated over a sample composed of firms that are never associated to a flagged manager, and firms associated to just one old-regime flagged manager. For the latter firms, we retain observations from two years before to two years after the deflag realizes. β is the main parameter of interest, and its identification is achieved comparing the trajectories before and after deflag.

Results appear in Tables VIII and IX. They suggest that bank loans and investment increase after deflag, and correspondingly the loan rate decreases. This is indication that banks reduce their lending to existing firms whose managers get flagged. However, the identification rests on the assumption that managers do not modify their demand for credit exactly three years after the flag is assigned, and is subject to the same critiques of Equation 1. We thus proceed by exploiting the policy shock of September 2013 in a difference-in-difference setting similar to the one explained in subsection A.2.

B.2 Measuring the flag effect via the policy shock

As described, the policy change of September 2013 exogenously erased all existing flags irrespectively of when they were assigned. As a result, the affected flags lasted less than three years, and had heterogeneous durations. We identify the deflag effect comparing the trajectories of firms with old-regime flagged managers and of firms with policy-affected managers. Holding constant the distance from flag start, the only difference in the two trajectories is due to the reduced flag duration of the policy-affected managers.

We first provide a graphical comparison of the trajectories of firms with old-regime and policy-affected managers, as done in subsection *A.2*. We saturate the flow of bank loans deflated by lagged total assets with industry x time and firm fixed effects, and obtain the residuals. We group firms depending on whether the manager’s flag is old-regime, or is policy-affected and lasts 1 year, or is policy-affected and lasts 2 years. We then take the average of the residuals within group and time distance from the start of the flag. Figure 4 plots the three curves. All share a decreasing trend around the time the flag is assigned, but show a clear upward trend at the time each group gets deflagged.

We then proceed with the econometric counterpart of the figure presented. We consider a sample composed of firms whose managers fall in one of the following categories: unflagged managers, old-regime flagged managers, and policy-affected managers. At most one of the managers may be flagged along the life of a firm. This is to ensure that we can precisely identify what flag applies to each firm and when it starts and ends. Firms with a flagged manager are tracked from the first year after flag start up to the third year. The model then writes:

$$y_{jt} = \gamma_1 \mathbb{1}\{t = flag_j + 2yrs\} + \gamma_2 \mathbb{1}\{t = flag_j + 3yrs\} + \beta \mathbb{1}\{t \geq deflag_j\} + \eta_{industry_j;t} + \eta_j \quad (5)$$

where j is a firm, t is a year, and the dependent variable y_{jt} is a variable of interest, for example the flow of bank loans normalized by lagged total assets. The dummy variables $\mathbb{1}\{t = flag_j + 2yrs\}$ and $\mathbb{1}\{t = flag_j + 3yrs\}$ indicate whether year t is the second, respectively third, year after flag start, which happens at $flag_j$. They thus control for the dynamics taken by a firm after its manager is assigned the flag. $\mathbb{1}\{t \geq deflag_j\}$ indicates whether firm j ’s manager has already been deflagged at year t . β thus captures the effect of being deflagged on the variable of interest. Finally, $\eta_{industry_j;t}$ and η_j are respectively industry x time fixed effects and firm fixed effects.

Identification comes as follows. Industry dynamics (i.e. $\eta_{industry_j;t}$) is mainly identified from the sample of firms with no flags. Controlling for it, we remove every industry-specific pattern that affects firms’ desires to demand credit (or invest) and banks’ willingness to lend. The effects of the two dummies that control for the distance from the assignment of the flag are identified from the firms with flagged managers. They isolate, for example, the pattern in firms’

demand that is due to the managers having been flagged. The main comparison is then between firms whose managers are subject to an early deflag and firms whose managers are not.

As a result, β captures the difference in the dynamics of policy-affected firms and policy-unaffected firms due to the deflag, holding constant the distance from the attribution of the flag and the industry dynamics. Its identification is possible thanks to the fact that policy-induced deflags happen at different time distances from the attribution of the flags, and earlier than three years from the flag assignment. Note, in fact, that since the observations of the firms with flagged managers are included up to three years after the flag assignment, the sample does not include the events of deflag of the old-regime flagged managers. The deflag effect is thus estimated from the group of policy-affected flagged managers only.

Results appear in Tables X and XI. Consistently with the results obtained exploiting the three-year discontinuity, the flow of bank loans increases after deflag, and the loan rate decreases of about 44 bps. Correspondingly, investment in plant as well as dividends paid also increase. This corroborates the idea that even with firms created before the manager fails, the attribution of the flag to the firm's manager decreases the firm's access to credit, and its ability to invest.

B.3 The value of the flag as a signal on managerial ability

In theory, if banks take the flag as a (bad) signal on the manager's ability, they should be less willing to provide credit to a firm if (1) the manager has failed in the same industry, (2) the volatility of the industry in which the manager has failed is low, and (3) the firm asking credit operates in an industry where individual talent is important. Indeed, the signal may be more valuable if the manager has already failed in the same industry. Moreover, in a sector where the volatility of the cash-flows is low, there is less chance that the failure was not due to the entrepreneur's abilities. Finally, when individual talent matters more for performance, there is more reason to expect that another venture of a failed entrepreneur might be of poor quality.

We test these hypotheses by differentiating the firms in the cross-section. We first study if the flag has stronger consequences when the manager has failed in the same industry. We modify model (5) by interacting $\mathbb{1}\{t = flag_j + 2yrs\}$, $\mathbb{1}\{t = flag_j + 3yrs\}$, and $\mathbb{1}\{t \geq deflag_j\}$ with a dummy capturing if the industry of the firm asking credit is different from the one in which the manager has failed. The results, which appear in Table XII, indicate that the deflag has effect

mainly when the firm asking credit belongs to the same industry of the firm with which the manager has failed. This corroborates the idea that, at the time of the flag assignment, banks place more value in the flag if the manager has already failed in the same industry.

We then study the importance of the volatility of the industry in which the manager has failed. We compute an industry-specific measure of the volatility of cash flows. We take the universe of firms, and regress the Returns on Assets over time fixed effects. We take the time-series standard deviation of the residuals within each firm, and average it within 3-digit industry group. We obtain the distribution of that statistic and split industries in terciles. Finally, we modify model (5) by interacting $\mathbb{1}\{t = flag_j + 2yrs\}$, $\mathbb{1}\{t = flag_j + 3yrs\}$, and $\mathbb{1}\{t \geq deflag_j\}$ with a dummy capturing whether the firm's industry is in the top tercile, and therefore displays a high volatility of cash-flows. Results appear in Table XIII. They confirm the theoretical predictions: banks assign more weight to the failure flag when the manager has failed in an industry with low volatility of the cash flows.

Finally, we study the effect of operating in an industry where entrepreneurial talent matter a lot. We use a methodology from Bertrand and Schoar (2003) to identify the importance of talent in a given industry. We take the universe of firms and construct a panel where the unit of observation is $(entrepreneur, firm, time)$. The fact that some managers i run multiple firms j_1, j_2 and some firms j are run by successive managers allows us to estimate manager fixed effects in the regression:

$$ROA_{i,j,t} = \eta_i + \eta_j + \eta_{industry_j;t} \quad (6)$$

where the manager fixed effect, η_i , measures common productivity of firms run by the same individual. For each 3-digit industry, we measure the dispersion of individual fixed effects, which we use as a proxy for how much individual talent matters for productivity in that industry. Industries are split in terciles depending on the average dispersion. We then modify model (5) by interacting $\mathbb{1}\{t = flag_j + 2yrs\}$, $\mathbb{1}\{t = flag_j + 3yrs\}$, and $\mathbb{1}\{t \geq deflag_j\}$ with a dummy capturing whether the firm's industry is in the top tercile, and therefore individual talent matters a lot for productivity in the industry. Results appear in Table XIV. They indicate that banks reduce their funding more when individual abilities matter more. In that case, in fact, a past failure is more indicative of worse managerial ability.

B.4 Do firms borrow from new banks after deflag?

When an entrepreneur fails with one firm, the banks that deal with him observe the failure directly. Then, when he applies for funding with a surviving company, such banks may still remember his past failure without searching on FIBEN. If that is the case, we should observe that the increase in bank debt at deflag primarily comes from new banks. Moreover, according to this argument, there should be an increase in the number of bank relationships after the manager gets deflagged.

We test this idea exploiting model (6) and using as dependent variable the change in the number of bank relationships. This variable is obtained first counting the number of banks a given firm deals with as appearing in the credit register data, and then taking the year change. Table XV presents the results. They confirm that firms increase the number of bank relationships after deflag. This corroborates the idea that, for banks, the flag is a primary element to assign credit when they do not have prior relationship with the firm.

V Policy implications

Welfare and redistributive implications of a policy that changes the information sets of agents are in general hard to evaluate. It might for example be the case that restricting information on failure makes the rates at which other entrepreneurs borrow higher, or hurts their incentives; After all if the stigma of failure is lower, entrepreneurs might be less cautious. Also, we do not observe the outside options of failed entrepreneurs, which makes it hard to assess the loss from a delayed restart.

However, in the case of the 2013 reform which we analyze in this paper, we can be somewhat assertive about the induced cost of the reform: Indeed, the information about past failures can be reconstructed by market participants at the cost of a few Euros. This means that an entrepreneur who wants to separate from the pool of entrepreneurs by proving that she has a clean history can do so at a small cost and return to the equilibrium prevailing before the policy change. Our regressions show that this pre-reform equilibrium is separating, in that flagged entrepreneurs are treated differently from non-flagged ones. In turn, this suggests that the individual welfare cost borne by non-failed entrepreneurs due to the reform is smaller or equal to this small cost of signaling they are clean.

Regarding “failed entrepreneurs”, assuming that they are rational agents, it is clear that the reform has a positive impact on them as the number of early restarts rises. For this fraction of the population, the gains from the reform are likely to be of a higher order of magnitude than a few Euros; but a precise estimate would require a measure of the outside options of this population. Of course, if one believes that serial entrepreneurs are over-optimistic (see, e.g., Landier and Thesmar (2009)), one might argue that the restarts by failed entrepreneurs might be inefficient. However, firms restarted by entrepreneurs with prior liquidations do not appear strongly less productive than their peers. Having already failed makes the quarterly probability of failure increase from .6% to 1.1%. Failed managers are thus more risky in a significant manner (the probability of failure almost doubles), but this remains a small effect in absolute terms.

The aggregate cost of the reform is theoretically ambiguous: Failed entrepreneurs who benefit substantially are a small group, whereas non-failed entrepreneurs are a larger group. Policy makers might also anticipate that by reducing the stigma of failure, the reform might increase the number of first-time entrepreneurs, which might be welfare enhancing. Basically, what one can confidently conclude is the following: The reform substantially improves access to credit for failed entrepreneurs and the individual cross-subsidy induced by the reform is not costing more than a few Euros to “clean” entrepreneurs as they can still establish their status at such small cost.

Our analysis also shows that banks do not all “reconstruct the flag”. Otherwise, we should not observe the significant changes in early restarts that we document. This can seem surprising given the small cost of reconstruction and begs the question of whether this is an optimal response on the part of the banks. This is a complex question as organizational costs and incentive constraints within banks are not observable. However, a crude back-of-the-envelope computation can shed some light on this question. Let us start from a pooling equilibrium where banks do not bother reconstructing the flag and ask whether the cost of reconstructing is less than the potential expected loss coming from lending to a failed entrepreneurs.

First, we can compute the base rate of entrepreneurs who failed in the last three years in the population of entrepreneurs: It is the rate of flagged managers pre-reform, i.e. 2.5%. The median debt level in our sample is EUR 54k. The additional yearly mortality given past failure is around 2%. Assume 5-year debt with a loss given default of 20% (see Keijsers et al. (2015)):

The expected additional loss from lending to a failed entrepreneur is $2.5\% * 54k * (5 * 2\%) * 20\% =$ EUR 27. This is an upper bound as it assumes that banks are not able to generate a noisy proxy of the flag based on their existing information set: In reality, biographical elements included in an entrepreneur's application might help inferring past failures and thus might be partially redundant with the flag; This would reduce the gains from reconstructing it by buying outside information. This rough estimate thus suggests that the cost from not fully reconstructing the flag might realistically be dominated by the organizational or logistical costs of additional information retrieval.

To conclude, the reform can be seen as substantially alleviating the poorer access to credit of a fraction of the population at a cost that is bounded to be a few Euros for other entrepreneurs. In turn, the lower fear of post-failure outcomes might in theory have increased the expected value of becoming an entrepreneur. There might be a general lesson for policy-making here: Details in the framing of public information seem to matter strongly in equilibrium. This suggests that policy makers ought to be careful when they make public information highly visible not to create a form of stigmatization of certain categories of individuals especially if it is not clear that this stigmatization improves market efficiency. One way to prevent unnecessary stigmatization is to create a small (cognitive or monetary) cost of accessing information.

VI Robustness checks

This Section provides two main robustness checks to our difference-in-differences methodology.

The first robustness check relates to the control group used. We take the three-year flagged managers as a control group for the policy-affected managers. However, three-year flagged managers fail between 2005 and 2010, while policy-affected managers fail between 2010 and 2013. We make their trajectories comparable by absorbing aggregate dynamics with time fixed effects (Equation 2) or industry x time fixed effects (Equation 5). One critique might be that such fixed effects do not fully absorb all the heterogeneity that may be due to failing in, for example, 2005 vis-à-vis failing in, for example, 2012. We thus proceed by considering only the firms that fail after 2008. This makes the failures of three-year flagged managers and policy-affected managers happening at closer points in time. The two groups are therefore more

similar. The results for the probability of creating a new firm appear in Table XXI, and the results for the access to credit and investment in existing firms in Tables XXII and XXIII, all in the Appendix. The three Tables confirm the results presented in Section IV.

In the second robustness check, we address the concern that when we study existing firms' access to credit, we should include other explanatory variables in addition to the failure flag. We thus add Banque de France credit rating fixed effects as independent variables in Equation 5. Rating fixed effects control for the firm's risk, as well as the firm loans' pledgeability as collateral in monetary policy refinancing operations, which may in turn affect banks' willingness to lend to that firm. The results, which appear in Tables XXIV and XXV, confirm earlier findings.

VII Conclusion

This paper studies the causal effect of information on past entrepreneurial liquidations on the ability to access corporate credit markets and restart a business. We take advantage of the suppression by a 2013 legal reform of a salient flag on past liquidations provided by Banque de France to banks. We find that deflagged entrepreneurs tend to restart a business sooner and benefit from better credit conditions than prior to the reform. This happens despite the fact that the flag can be "reconstructed" by bankers based on other public data sources at a small cost. Changing the salient Banque de France flag on prior liquidations into an information that can be accessed at a small cost strongly improves the equilibrium outcome for individuals that used to suffer from the stigma of past failures. This result has possibly important policy implications. It suggests that policy makers can avoid public information to stigmatize certain categories of individuals by avoiding negative information to be too salient.

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VIII Figures

Figure 1
The functioning of the manager flag

This figure displays the functioning of the manager flag. At any moment in time, the outstanding flag depends on whether the manager has been involved in one or more liquidations.

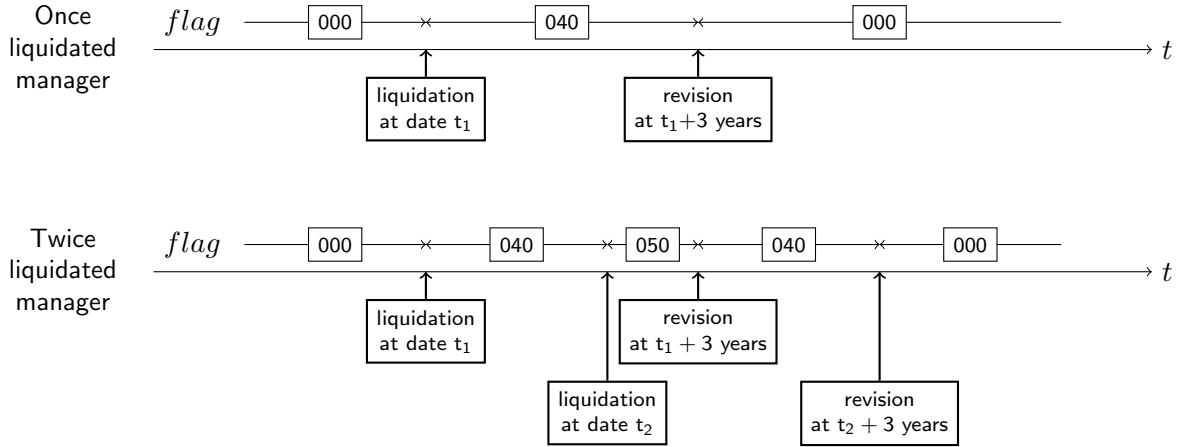


Figure 2

Comparison of the trajectories of old-regime and policy-affected flagged managers

This figure compares the trajectories of old-regime and policy-affected flagged managers. Because of the policy shock, policy-affected managers have a shorter flag duration.

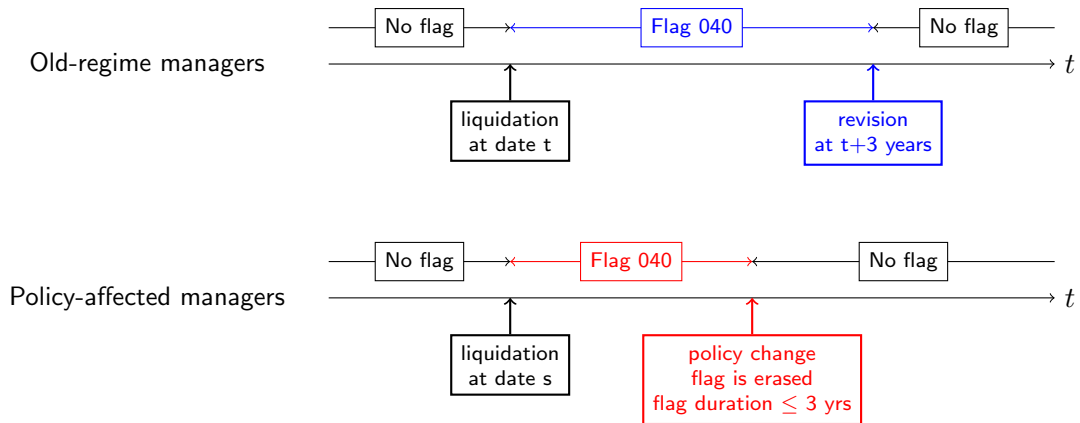


Figure 3

Entrepreneurs' probability to start a business depending on the distance from flag and deflag

This figure plots the average (residuals in the) entrepreneurs' yearly probability to start a business depending on the distance from the flagging and deflagging events. We consider three groups of flags. Those that last three years (the standard in the old regime), those that are affected by the policy change and last one year, and those that are affected by the policy change and last two years. Preliminarily, we regress a dummy capturing firm creation over the manager's age, dummies capturing gender and non-French nationality, and time fixed effects. The regression is performed over a sample composed of managers with one of the flag types listed above and managers who have never failed. The obtained residuals are then averaged within each of the group of flagged managers depending on the distance from flag start.

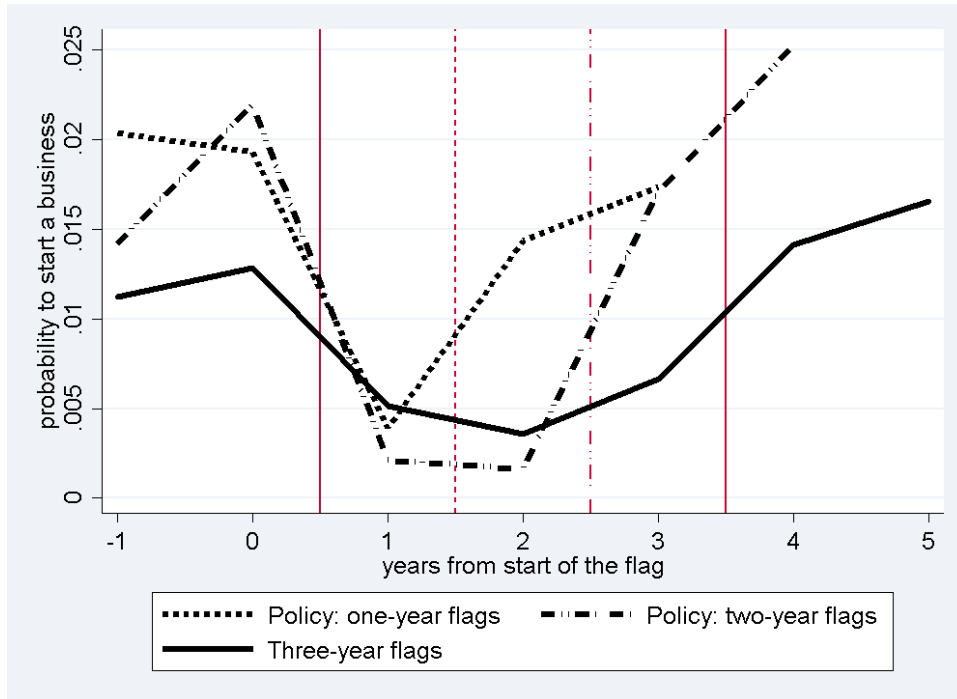
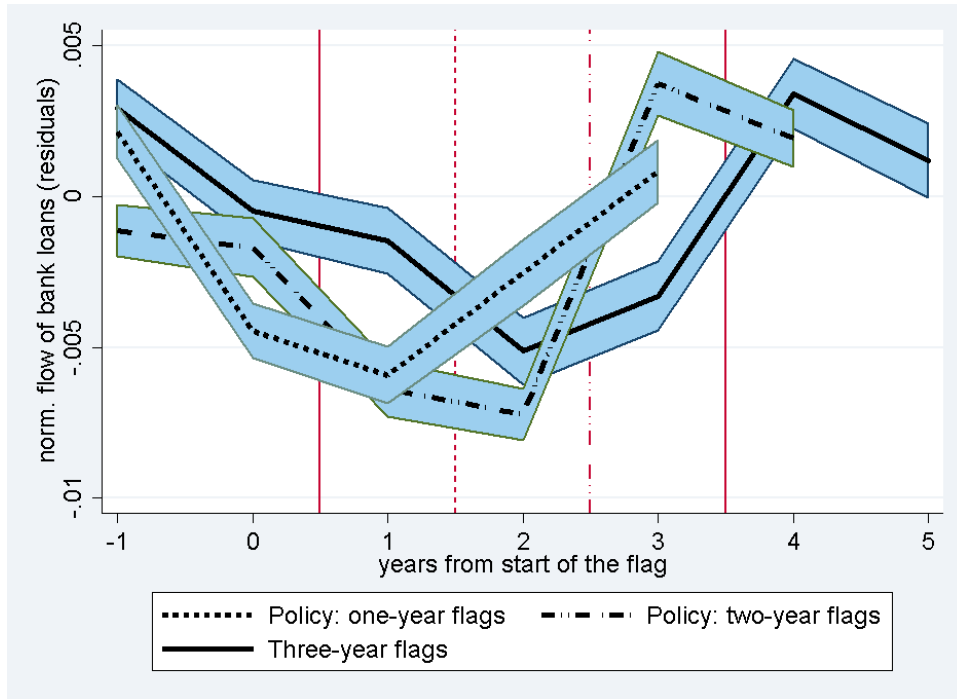


Figure 4

Flow of bank loans depending on the distance from flag and deflag

This figure plots the (average residuals in the) normalized flow of bank loans depending on the distance from the flagging and deflagging events for a firm managed by a flagged entrepreneur. The sample is composed of firms managed by a flagged entrepreneur at the time he gets the flag. The flags considered either last three years (the standard in the old regime), or are affected by the policy change and last one year, or are affected by the policy change and last two years. The normalized flow of bank loans is the difference between bank debt at year t and bank debt at year $t - 1$, over total assets at $t - 1$. This is regressed over firm FEs and industry x time FEs, and the obtained residuals are averaged depending on the distance from flag start.



IX Tables

Table I

Breakdown of the managers' population depending on the manager flags

This table displays the breakdown of the managers' population as of August and December 2013 depending on the manager flags '000', '040', '050', and '060'.

<i>as of</i> Flag	Aug. 2013		Dec. 2013	
	Population	Share (%)	Population	Share (%)
000	5 712 990	96.9	5 917 297	99.4
040	143 473	2.4	–	–
050	6 276	0.1	6 600	0.1
060	31 045	0.5	30 878	0.5
Total	5 893 784	100.0	5 954 775	100.0

Table II

Summary statistics of the managers' dataset

This table displays the summary statistics of the managers' dataset. The unit of observation of the panel is manager-quarter. The table distinguishes by whether managers are flagged or not. Unflagged managers in this sample represent a randomly drawn 5% of the universe of unflagged managers. Flagged managers include those whose flag duration is three years (the standard in the old regime), and those affected by the policy change and whose flag duration is thus less than three years. Flagged managers are tracked from the first to the eleventh quarter after the start of the flag. 'firm creation' indicates whether the manager creates at least a firm (in a given quarter). Other variables relate to the managers' demographics.

	N	Flagged managers			
		Mean	St.Dev.	Min.	Max.
firm creation	781,050	0.01	0.10	0.0	1.0
manager's age	781,050	46.26	10.62	19.6	79.7
manager is female	781,050	0.19	0.39	0.0	1.0
manager is non-French	781,050	0.21	0.41	0.0	1.0
	N	Unflagged managers			
		Mean	St.Dev.	Min.	Max.
firm creation	10,690,636	0.01	0.08	0.0	1.0
manager's age	10,690,636	47.48	12.82	18.0	79.8
manager is female	10,690,636	0.32	0.47	0.0	1.0
manager is non-French	10,690,636	0.17	0.38	0.0	1.0

Table III
Summary statistics of the firms' dataset

This table displays the summary statistics of the firms' dataset. The unit of observation of the panel is firm-year. The table distinguishes by whether firms are managed by a flagged manager or not. There is maximum one flagged manager along the life of a firm. The flags considered include both those lasting three years (the standard in the old regime), and those affected by the policy change and thus lasting less than three years. The firms associated to a flagged manager are created before the start of the flag and are managed by him at the time he gets flagged. For such firms, only the first, second, and third balance sheets after the flag start are retained, and the flagged entrepreneur manages the company at any of those dates. Variables are defined as follows. 'Bank loans (norm. yearly flow)' is the yearly change in bank debt divided by lagged total assets. 'ST bank loans (norm. yearly flow)' is the yearly change in short-term bank debt divided by lagged total assets. 'LT bank loans (norm. yearly flow)' is the yearly change in long-term bank debt divided by lagged total assets. 'Loan rate' is the average loan rate paid and is proxied by interest payments divided by total financial debt. 'Trade credit (norm. yearly flow)' is the yearly change in the difference between accounts payable and accounts receivable, divided by lagged total assets. Investment variables are yearly changes in the stock of the corresponding tangible asset (i.e. property, plant, or equipment), divided by lagged total assets. Dividends paid (norm. yearly) is defined as dividends paid over total assets. 'ROA' indicates the EBITDA over total assets. 'log sales' indicates the log of total sales. 'log tangible assets' indicates the log of the sum of property, plant, and equipment. 'Change in N bank rel.' indicates the yearly change in the number of bank relationships.

	Flagged firms				
	N	Mean	St.Dev.	Min.	Max.
Bank loans (norm. yearly flow)	6,322	-0.010	0.060	-0.245	0.427
ST bank loans (norm. yearly flow)	6,322	-0.003	0.045	-0.223	0.258
LT bank loans (norm. yearly flow)	6,322	-0.007	0.044	-0.190	0.337
Loan rate (in pp)	5,315	5.445	5.429	0.000	29.885
Trade credit (norm. yearly flow)	6,014	-0.003	0.104	-0.372	0.362
Inv. in property (norm. yearly)	6,322	-0.000	0.001	-0.011	0.022
Inv. in plant (norm. yearly)	6,322	-0.002	0.012	-0.077	0.177
Inv. in equipment (norm. yearly)	6,322	-0.001	0.015	-0.074	0.132
Dividends paid (norm. yearly)	6,322	0.025	0.054	0.000	0.406
ROA	6,206	0.092	0.118	-0.428	0.604
log sales	6,287	7.365	1.938	0.000	11.563
log tangible assets	6,290	4.031	2.131	0.000	9.879
Change in N bank rel.	5,104	0.079	0.658	-1.000	4.000
	Unflagged firms				
	N	Mean	St.Dev.	Min.	Max.
Bank loans (norm. yearly flow)	1,372,324	-0.007	0.059	-0.283	0.501
ST bank loans (norm. yearly flow)	1,372,324	-0.000	0.041	-0.226	0.272
LT bank loans (norm. yearly flow)	1,372,324	-0.007	0.046	-0.191	0.372
Loan rate (in pp)	1,167,930	4.647	4.672	0.000	29.985
Trade credit (norm. yearly flow)	1,315,915	-0.003	0.096	-0.400	0.370
Inv. in property (norm. yearly)	1,372,324	-0.000	0.001	-0.012	0.026
Inv. in plant (norm. yearly)	1,372,324	-0.001	0.015	-0.082	0.223
Inv. in equipment (norm. yearly)	1,372,324	-0.001	0.016	-0.075	0.140
Dividends paid (norm. yearly)	1,372,324	0.035	0.063	0.000	0.435
ROA	1,356,109	0.115	0.114	-0.476	0.608
log sales	1,354,956	7.475	1.902	0.000	11.720
log tangible assets	1,359,115	4.220	2.130	0.000	9.917
Change in N bank rel.	1,106,569	0.085	0.607	-1.000	4.000

Table IV

Entrepreneurs' probability to start a business

This table analyzes the quarterly probability to start a business for an entrepreneur. This is a function of whether he is a flagged manager, of whether he has been deflagged, of demographic controls, and time fixed effects. In the first two columns, the sample is composed of a randomly drawn 5% of the universe of unflagged managers, and of all flagged managers whose flag duration is three years (the standard in the old regime). Those flagged managers are tracked from the ninth to the fourteenth quarters after flag start. Identification of the deflag effect is achieved comparing the dynamics of the restarting probability before and after deflag. In the second two columns, we add to the previous sample policy-affected managers, whose flag duration is thus less than three years. We track both groups of flagged managers from the first to the eleventh quarter after flag start. Policy-affect managers get deflagged over this period, while old regime managers do not. The distance-from-flag-start dummies capture the average dynamics taken after flag start. The deflag effect is measured as the differential taken after deflag by policy-affected managers relative to that benchmark dynamics. Parameters are estimated using a Probit model. The estimates refer to marginal effects setting the variables to their median or to zero in the case of dummy variables. The conditional probability of failure is obtained setting the explanatory variables to their median, except the dummies which are set to zero. Standard errors are clustered at the manager level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:				
	(1)	(2)	(3)	(4)
	firm creation	firm creation	firm creation	firm creation
manager has been deflagged	0.001*** (4.09)	0.001*** (3.97)	0.002*** (7.63)	0.001*** (4.99)
flagged manager	0.002*** (12.32)	0.002*** (10.13)		
1 quarter since flag start			0.004*** (14.37)	0.003*** (11.94)
2 quarters since flag start			0.002*** (7.85)	0.002*** (5.68)
3 quarters since flag start			0.002*** (5.93)	0.001*** (3.81)
4 quarters since flag start			0.001*** (4.90)	0.001*** (2.87)
5 quarters since flag start			0.002*** (8.52)	0.002*** (6.48)
6 quarters since flag start			0.002*** (7.87)	0.002*** (5.93)
7 quarters since flag start			0.002*** (7.71)	0.002*** (5.67)
8 quarters since flag start			0.002*** (7.04)	0.001*** (5.11)
9 quarters since flag start			0.002*** (7.53)	0.002*** (5.68)
10 quarters since flag start			0.002*** (9.05)	0.002*** (7.32)
11 quarters since flag start			0.003*** (9.46)	0.002*** (7.80)
manager's age		-0.000*** (-140.55)		-0.000*** (-139.58)
manager is female		-0.003*** (-39.55)		-0.003*** (-40.85)
manager is non-French		0.001*** (23.39)		0.001*** (23.10)
Conditional proba. (at median)	0.007	0.006	0.007	0.007
Time FE	Yes	Yes	Yes	Yes
Observation	10,943,602	10,943,602	11,471,686	11,471,686

Table V
Created firms: financial conditions at restart

This table focuses on new firms' financial conditions at creation. The sample includes firms created by unfailed managers, by flagged managers whose flag duration is three years (the standard in the old regime), and by policy-affected managers whose flag duration is thus less than three years. Independent variables capture whether, at the creation, the manager is flagged or has already been deflagged. The related parameters' estimates measure the difference relative to unfailed managers. The table also reports the difference between the two parameters' estimates, which corresponds to the stigma effect, and tests if this is different from zero. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:						
	(1)	(2)	(3)	(4)	(5)	(6)
	Bankdebt/assets	Bankdebt/assets	Loan rate	Loan rate	Trade credit	Trade credit
manager is flagged at creation	-0.101*** (-8.59)	-0.086*** (-6.12)	0.008* (2.19)	0.008* (2.03)	0.007 (0.34)	0.027 (1.74)
manager is deflagged at creation	-0.060*** (-3.17)	-0.052** (-2.39)	0.004 (1.54)	0.004 (1.28)	-0.020 (-1.41)	-0.010 (-0.64)
log(total assets)	0.019*** (15.02)	0.019*** (15.82)	-0.003*** (-8.27)	-0.003*** (-8.37)	-0.006*** (-3.28)	-0.001 (-0.51)
Param. difference: stigma effect	-0.041	-0.034	0.004	0.004	0.027	0.037
t-statistic	-1.96	-1.31	0.68	0.74	1.27	1.86
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	Yes	No	Yes
Observation	73,923	72,932	54,849	54,116	73,923	72,932
R ²	0.031	0.102	0.042	0.054	0.002	0.197

Table VI
Created firms: productivity at restart

This table focuses on new firms' productivity at creation. The sample includes firms created by unfailed managers, by flagged managers whose flag duration is three years (the standard in the old regime), and by policy-affected managers whose flag duration is thus less than three years. Independent variables capture whether, at the creation, the manager is flagged or has already been deflagged. The related parameters' estimates measure the difference relative to unfailed managers. The table also reports the difference between the two parameters' estimates, and tests if this is different from zero. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:				
	(1)	(2)	(3)	(4)
	ROA	ROA	EBITDA/sales	EBITDA/sales
manager is flagged at creation	-0.017* (-1.90)	-0.021** (-2.82)	-0.142*** (-4.51)	-0.129*** (-3.65)
manager is deflagged at creation	-0.007* (-1.90)	-0.010** (-2.94)	-0.030 (-1.04)	-0.022 (-0.70)
log(total assets)	-0.005 (-0.85)	-0.004 (-0.74)	0.054*** (10.80)	0.031*** (5.15)
Param. difference	-0.009	-0.011	-0.112	-0.108
t-statistic	-1.20	-1.44	-2.17	-1.98
Year FE	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	Yes
Observation	73,923	72,932	60,834	60,115
R ²	0.008	0.014	0.009	0.094

Table VII

Created firms: probability of failure

This table analyzes created firms' quarterly probability of failure. The sample is composed of a randomly drawn 15% of the universe of firms created between 2005 and 2015. The flags considered are of any type and do not include only those lasting three years or those affected by the policy change. Otherwise, by construction, we would focus only on flagged managers who do not fail again, thus biasing the estimation. Firms are tracked until the fifth year from the date of creation and, in case the manager has failed in the past, until the fifth year from such failure. Failure in a quarter is function of whether the manager is currently flagged and of distance-from-initial-failure dummies. The parameters are estimated using a Probit model. Parameters' estimates refer to marginal effects setting firms' age to the median, and the flag and the distance-from-initial-failure dummies to zero. The conditional probability of failure is obtained setting firms' age to the median, and the flag and the distance-from-initial-failure dummies to zero. Standard errors are clustered at the firm level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:				
	(1)	(2)	(3)	(4)
	fail next quarter	fail in 1yr	have bad event	have bad event or fail
manager is currently flagged	0.004*** (7.04)	0.004*** (8.25)	0.001** (2.30)	0.004*** (5.50)
1 yr since manager's initial failure	0.006*** (11.06)	0.005*** (10.25)	0.003*** (8.92)	0.008*** (12.30)
2 yrs since manager's initial failure	0.003*** (4.30)	0.002*** (3.37)	0.001*** (3.55)	0.004*** (5.44)
3 yrs since manager's initial failure	0.002*** (3.25)	0.002*** (2.84)	0.001* (1.83)	0.003*** (3.21)
4 yrs since manager's initial failure	0.004*** (6.65)	0.004*** (6.49)	0.001*** (3.65)	0.005*** (6.66)
5 yrs since manager's initial failure	0.004*** (6.87)	0.005*** (7.67)	0.001*** (3.03)	0.005*** (6.40)
firm's age	0.001*** (28.44)	0.001*** (28.56)	0.001*** (37.18)	0.001*** (40.04)
Condit. proba. of failure (at median)	0.005	0.006	0.002	0.006
Industry x Quarter FE	Yes	Yes	Yes	Yes
Observation	3,006,367	3,007,713	2,927,615	3,023,452

Table VIII

Existing firms: funding sources as a function of deflag. Identification by 3-year discontinuity

This table shows the effect of the manager being deflagged on existing firms' debt flows and loan rate, obtained exploiting the three-year discontinuity in the flag. The sample is composed of firms with no flagged manager, and firms with an old regime flagged manager who manages the firm at the time he gets the flag. Flags have thus a duration of three years. Firms with flagged managers are tracked from two years before to two years after the manager gets deflagged. Dependent variables are defined in the summary statistics. The 'manager has been deflagged' dummy identifies the difference in the dynamics before and after the three-year discontinuity. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:					
	(1) Bank loans (norm. yearly flow)	(2) ST bank loans (norm. yearly flow)	(3) LT bank loans (norm. yearly flow)	(4) Loan rate (in pp)	(5) Trade credit (norm. yearly flow)
manager has been deflagged	0.007*** (3.61)	0.004*** (2.58)	0.003** (2.47)	-0.330** (-2.14)	-0.000 (-0.15)
Firm FE	Yes	Yes	Yes	Yes	Yes
3 digit industry x Year FE	Yes	Yes	Yes	Yes	Yes
Observation	1,337,301	1,337,301	1,337,301	962,438	1,280,184
R^2	0.234	0.129	0.268	0.552	0.122

Table IX

Existing firms: employment of funds as a function of deflag. Identification by 3-year discontinuity

This table shows the effect of the manager being deflagged on existing firms' investment and dividends paid, obtained exploiting the three-year discontinuity in the flag. The sample is composed of firms with no flagged manager, and firms with an old regime flagged manager who manages the firm at the time he gets the flag. Flags have thus a duration of three years. Firms with flagged managers are tracked from two years before to two years after the manager gets deflagged. Dependent variables are defined in the summary statistics. The 'manager has been deflagged' dummy identifies the difference in the dynamics before and after the three-year discontinuity. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:				
	(1) Inv. in property (norm. yearly)	(2) Inv. in plant (norm. yearly)	(3) Inv. in equipment (norm. yearly)	(4) Dividends paid (norm. yearly)
manager has been deflagged	-0.000 (-0.10)	0.001*** (2.68)	-0.000 (-0.42)	-0.001 (-0.45)
Firm FE	Yes	Yes	Yes	Yes
3 digit industry x Year FE	Yes	Yes	Yes	Yes
Observation	1,337,301	1,337,301	1,337,301	1,337,301
R^2	0.279	0.301	0.218	0.620

Table X

Existing firms: funding sources as a function of deflag. Identification by policy shock

This table shows the effect of the manager being deflagged on existing firms' debt flows and loan rate, obtained exploiting the policy shock. The sample is composed of firms with no flagged manager, and firms with a flagged manager who manages the firm at the time he gets the flag. Flagged managers are either old regime or policy-affected. The first are flagged for three years, while the latter have a flag duration of less than three years. Firms with flagged managers are tracked from the first to the third balance sheet after the flag start. Dependent variables are defined in the summary statistics. The dynamics taken after the flag start is captured by the two dummies '2 yrs since manager's flag start' and '3 yrs since manager's flag start'. Since policy-affected flagged managers get deflagged between the first and the third year after flag start, the 'manager has been deflagged' dummy is identified comparing the dynamics of their firms with the dynamics of firms managed by old regime flagged managers, while controlling for the distance from flag start. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:					
	(1) Bank loans (norm. yearly flow)	(2) ST bank loans (norm. yearly flow)	(3) LT bank loans (norm. yearly flow)	(4) Loan rate (in pp)	(5) Trade credit (norm. yearly flow)
manager has been deflagged	0.008** (2.92)	0.004* (2.06)	0.004 (1.63)	-0.441* (-1.97)	-0.008* (-2.03)
2 yrs since manager's flag start	-0.002 (-1.06)	0.001 (0.58)	-0.003* (-2.18)	0.090 (0.48)	0.008* (2.07)
3 yrs since manager's flag start	-0.000 (-0.11)	-0.000 (-0.01)	-0.000 (-0.13)	0.170 (0.86)	0.008** (2.42)
Firm FE	Yes	Yes	Yes	Yes	Yes
3 digit industry x Year FE	Yes	Yes	Yes	Yes	Yes
Observation	1,337,906	1,337,906	1,337,906	962,775	1,280,707
R ²	0.234	0.129	0.269	0.553	0.123

Table XI

Existing firms: employment of funds as a function of deflag. Identification by policy shock

This table shows the effect of the manager being deflagged on existing firms' investment and dividends paid, obtained exploiting the policy shock. The sample is composed of firms with no flagged manager, and firms with a flagged manager who manages the firm at the time he gets the flag. Flagged managers are either old regime or policy-affected. The first are flagged for three years, while the latter have a flag duration of less than three years. Firms with flagged managers are tracked from the first to the third balance sheet after the flag start. Dependent variables are defined in the summary statistics. The dynamics taken after the flag start is captured by the two dummies '2 yrs since manager's flag start' and '3 yrs since manager's flag start'. Since policy-affected flagged managers get deflagged between the first and the third year after flag start, the 'manager has been deflagged' dummy is identified comparing the dynamics of their firms with the dynamics of firms managed by old regime flagged managers, while controlling for the distance from flag start. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:				
	(1) Inv. in property (norm. yearly)	(2) Inv. in plant (norm. yearly)	(3) Inv. in equipment (norm. yearly)	(4) Dividends paid (norm. yearly)
manager has been deflagged	0.000 (1.17)	0.001** (3.09)	0.001 (1.15)	0.003* (1.98)
2 yrs since manager's flag start	-0.000** (-2.38)	0.000 (0.39)	-0.000 (-0.01)	-0.000 (-0.07)
3 yrs since manager's flag start	-0.000 (-0.89)	-0.000 (-0.48)	0.001 (1.74)	-0.000 (-0.24)
Firm FE	Yes	Yes	Yes	Yes
3 digit industry x Year FE	Yes	Yes	Yes	Yes
Observation	1,337,906	1,337,906	1,337,906	1,337,906
R ²	0.280	0.301	0.218	0.620

Table XII

Existing firms: funding sources as a function of deflag. Differentiating by industry of initial failure

This table shows the effect of the manager being deflagged on existing firms' debt flows and loan rate, differentiating by whether the firm's industry is different from the one in which the manager initially failed. The sample is composed of firms with no flagged manager, and firms with a flagged manager who manages the firm at the time he gets the flag. Flagged managers are either old regime or policy-affected. The first are flagged for three years, while the latter have a flag duration of less than three years. Firms with flagged managers are tracked from the first to the third balance sheet after the flag start. The identification of the 'manager has been deflagged' dummy is achieved exploiting the policy shock, as in Table X. The effect of the manager being deflagged is differentiated depending on whether the industry of the firm considered is different from the one in which the manager initially failed. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:					
	(1) Bank loans (norm. yearly flow)	(2) ST bank loans (norm. yearly flow)	(3) LT bank loans (norm. yearly flow)	(4) Loan rate (in pp)	(5) Trade credit (norm. yearly flow)
manager has been deflagged	0.021*** (3.91)	0.015** (3.11)	0.006 (1.49)	-0.705 (-1.79)	-0.003 (-0.35)
— x ind. different from the one of failure	-0.021*** (-4.18)	-0.015*** (-3.75)	-0.006 (-1.20)	0.635 (1.69)	-0.008 (-0.88)
2 yr since manager's flag start	0.007* (1.91)	0.004** (2.51)	0.002 (0.66)	-0.322 (-0.98)	0.003 (0.39)
3 yrs since manager's flag start	0.006 (1.12)	0.004 (1.53)	0.002 (0.39)	-0.093 (-0.41)	0.006 (1.08)
Other dist. from flag start interac.	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
3 digit industry x Year FE	Yes	Yes	Yes	Yes	Yes
Observation	1,337,111	1,337,111	1,337,111	962,247	1,279,974
R^2	0.234	0.129	0.269	0.553	0.123

Table XIII

Existing firms: funding sources as a function of deflag. Differentiating by industry volatility

This table shows the effect of the manager being deflagged on existing firms' debt flows and loan rate, differentiating by the volatility of the industry in which the manager initially failed. The sample is composed of firms with no flagged manager, and firms with a flagged manager who manages the firm at the time he gets the flag. Flagged managers are either old regime or policy-affected. The first are flagged for three years, while the latter have a flag duration of less than three years. Firms with flagged managers are tracked from the first to the third balance sheet after the flag start. The identification of the 'manager has been deflagged' dummy is achieved exploiting the policy shock, as in Table X. The effect of the manager being deflagged is differentiated depending on the Return on Assets volatility of the industry in which the manager initially failed. This is obtained first regressing the Return on Assets of every firm over year FEs. We compute the standard deviation of the obtained residuals within each firm. We average it across firms of the same 3-digit industry, and split the industries in terciles. 'manager failed in high volat. industry' thus indicates if the industry in which the manager initially failed is in the top tercile for that ROA time series standard deviation statistic. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:					
	(1) Bank loans (norm. yearly flow)	(2) ST bank loans (norm. yearly flow)	(3) LT bank loans (norm. yearly flow)	(4) Loan rate (in pp)	(5) Trade credit (norm. yearly flow)
manager has been deflagged	0.007** (2.55)	0.003 (1.04)	0.004 (1.33)	-0.382 (-1.81)	-0.010* (-2.09)
— x manager failed in high volat. industry	-0.011** (-3.00)	-0.000 (-0.08)	-0.011* (-1.94)	0.821*** (3.59)	0.006 (0.44)
2 yrs since manager's flag start	-0.001 (-0.42)	0.002 (0.74)	-0.003 (-1.72)	0.132 (0.65)	0.003 (0.95)
3 yrs since manager's flag start	0.002 (0.71)	0.001 (0.45)	0.001 (0.28)	0.141 (0.65)	0.005 (1.04)
Other dist. from flag start interac.	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
3 digit industry x Year FE	Yes	Yes	Yes	Yes	Yes
Observation	1,337,111	1,337,111	1,337,111	962,247	1,279,974
R^2	0.234	0.129	0.269	0.553	0.123

Table XIV

Existing firms: funding sources as a function of deflag. Differentiating by importance of the manager

This table shows the effect of the manager being deflagged on existing firms' debt flows and loan rate, differentiating by the importance of the manager in the industry. The sample is composed of firms with no flagged manager, and firms with a flagged manager who manages the firm at the time he gets the flag. Flagged managers are either old regime or policy-affected. The first are flagged for three years, while the latter have a flag duration of less than three years. Firms with flagged managers are tracked from the first to the third balance sheet after the flag start. The identification of the 'manager has been deflagged' dummy is achieved exploiting the policy shock, as in Table X. The effect of the manager being deflagged is differentiated depending on the importance of the manager in the industry. This is proxied by first regressing the Return on Assets of every firm over industry x year FEs, firm FEs, and manager FEs. We compute the standard deviation of the estimated manager FEs within each 3 digit industry, and split the industries in terciles. 'manager's ability is important in the industry' indicates if the firm's industry is in the top tercile for that manager FE standard deviation statistic, and thus if the talent of the manager is particularly important to succeed in that industry. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:					
	(1) Bank loans (norm. yearly flow)	(2) ST bank loans (norm. yearly flow)	(3) LT bank loans (norm. yearly flow)	(4) Loan rate (in pp)	(5) Trade credit (norm. yearly flow)
manager has been deflagged	0.005 (1.18)	0.001 (0.50)	0.004 (1.29)	-0.267 (-1.06)	-0.004 (-0.89)
— x manager's ability is important in the industry	0.008 (1.82)	0.008*** (3.26)	0.001 (0.17)	-0.501 (-1.47)	-0.011 (-1.29)
2 yrs since manager's flag start	-0.003 (-1.41)	0.002 (0.83)	-0.005** (-2.67)	0.079 (0.41)	0.005 (1.28)
3 yrs since manager's flag start	-0.002 (-0.66)	0.001 (0.40)	-0.002 (-0.96)	-0.165 (-0.84)	0.006 (1.25)
Other dist. from flag start interac.	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
3 digit industry x Year FE	Yes	Yes	Yes	Yes	Yes
Observation	1,337,906	1,337,906	1,337,906	962,775	1,280,707
R^2	0.234	0.129	0.269	0.553	0.123

Table XV

Existing firms: change in the number of bank relationships

This table shows the effect of the manager being deflagged on existing firms' number of bank relationships. The sample is composed of firms with no flagged manager, and firms with a flagged manager who manages the firm at the time he gets the flag. Flagged managers are either old regime or policy-affected. The first are flagged for three years, while the latter have a flag duration of less than three years. Firms with flagged managers are tracked from the first to the third balance sheet after the flag start. The dependent variable is the yearly change in the number of bank relationships. The identification of the 'manager has been deflagged' dummy is achieved exploiting the policy shock, as in Table X. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:	
	Change in N bank rel.
manager has been deflagged	0.118*** (3.64)
2 yrs since manager's flag start	-0.028 (-0.97)
3 yrs since manager's flag start	-0.054* (-2.26)
Firm FE	Yes
3 digit industry x Year FE	Yes
Observation	1,067,004
R^2	0.191

X Appendix

Figure 5

FIBEN's 'Panorama' Module

This figure depicts FIBEN's 'Panorama' introductory module which provides basic information related to a manager.

010152TEST 00	TEST Jacques	Indicateur : 060
depuis le 24/12/2013 (actualisée le 25/09/2014)		
Homonyme	010152TEST 01	Plus d'infos
Adresse	141 RUE SAINT ANNE 75002 PARIS 02 EME	
Dossier géré par	BANQUE DE FRANCE : <u>PARIS - BASTILLE</u>	
Indicateur précédent attribué dans les 23 derniers mois	000	Date 01/01/2013

Figure 6

FIBEN's 'Manager' Module – Current managing roles

This figure depicts FIBEN's 'Manager' module which provides the current managing roles of a manager.

Gérant	Depuis le :	23/11/2006
EXEMPLE PRODUCTION		
Identifiant 111 111 112	Cotation <u>F4+</u>	Plus d'infos >>
Associé en nom	Depuis le :	23/11/2006
EXEMPLE PRODUCTION		
Identifiant 111 111 112	Cotation <u>F4+</u>	Plus d'infos >>
Associé en nom	Depuis le :	22/12/1995
STE DE FINANCEMENT EXEMPLE		
Identifiant 111 111 333	Cotation <u>X0</u>	Plus d'infos >>
Associé en nom		
STE FRANCAISE DES EXEMPLES		
Identifiant 111 111 444	Cotation Segmentation <u>X0 2</u>	Plus d'infos >>

Figure 7

FIBEN's 'Manager' Module – Past managing roles

This figure depicts FIBEN's 'Manager' module which provides the past managing roles of a manager.

Administrateur	Depuis le :	11/07/2007
Cessation de fonction	Depuis le :	08/09/2011
EXEMPLE AUTOMOBILES		
Identifiant 111 222 000	Cotation <u>D6</u>	Plus d'infos >>

Table XVI**Mono-firm and multi-firm managers: summary statistics**

This table reports summary statistics for the population of managers distinguishing by whether they manage one or more firms at the same time (respectively, ‘mono-firm’ and ‘multi-firm’ managers). We consider manager-firm relationships existing at the end of 2005 and 2015. Mention ‘top 1%’ refers to the managers belonging to the 99th percentile in the distribution of the number of firms by multi-firm managers. Sectoral concentration corresponds to the normalized Herfindhal Index in terms of the 3-digit industries in which the manager operates.

	2005	2015
Number of managers	3,622,469	4,244,983
Share of multi-firm managers	0.15	0.17
Number of firms per managers (mean)	1.23	1.27
Number of firms per multi-firm man. (median)	2	2
Number of firms per multi-firm man. (top 1%)	9	9
Sectoral concentration, multi-firm managers	0.24	0.27
Sectoral concentration, multi-firm managers (top 1%)	0.26	0.37

Table XVII**Mono-firm and multi-firm managers: demographic characteristics**

This table compares the demographic characteristics of the entrepreneurs managing one or more firms at the same time (respectively, ‘mono-firm’ and ‘multi-firm’ managers). Demographic characteristics include age, gender, and place of birth. We consider manager-firm relationships existing at the end of 2005 and 2015. Stars indicate statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

	2005			2015		
	Mono-firm	Multi-firm	Δ	Mono-firm	Multi-firm	Δ
Manager’s age	46.26	49.24	2.98*** (0.016)	43.32	43.03	-0.29*** (0.016)
Manager is female	0.284	0.164	-0.121*** (0.001)	0.284	0.172	-0.113*** (0.001)
Manager is non-French	0.147	0.140	-0.007*** (0.001)	0.160	0.150	-0.010*** (0.000)

Table XVIII**Mono-firm and multi-firm managers: characteristics of their firms**

This table compares the financial conditions of the firms in which at least one manager has a mandate in another firm (‘multi-firm’ managers) with the firms in which the managers have no other managing role (‘mono-firm’ managers). We consider manager-firm relationships existing at end of 2005 and 2015. Stars indicate statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

	2005			2015		
	Mono-firm	Multi-firm	Δ	Mono-firm	Multi-firm	Δ
log sales	7.53	7.81	0.28*** (0.005)	7.51	7.67	0.15*** (0.005)
Debt / Total assets	0.346	0.378	0.032*** (0.002)	0.295	0.321	0.026*** (0.001)
Loan rate	0.143	0.138	-0.004* (0.002)	0.078	0.076	-0.002* (0.001)
Trade credit / Sales	-0.027	-0.029	-0.002*** (0.001)	-0.035	-0.046	-0.011*** (0.001)
ST bank loans (fraction)	0.593	0.598	0.005*** (0.002)	0.544	0.555	0.012*** (0.002)
ROA	0.120	0.113	-0.007*** (0.001)	0.108	0.101	-0.007*** (0.000)
Tangible assets (fraction)	0.630	0.531	-0.099*** (0.002)	0.526	0.447	-0.079*** (0.002)

Table XIX

Created firms: financial conditions after six years from creation

This table focuses on new firms' financial conditions after six years from creation. The sample includes firms created by unfailed managers, by flagged managers whose flag duration is three years (the standard in the old regime), and by policy-affected managers whose flag duration is thus less than three years. Independent variables capture whether, at the creation, the manager is flagged or has already been deflagged. The related parameters' estimates measure the difference relative to unfailed managers. The table also reports the difference between the two parameters' estimates, which corresponds to the stigma effect, and tests if this is different from zero. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:						
	(1)	(2)	(3)	(4)	(5)	(6)
	Bankdebt/assets	Bankdebt/assets	Loan rate	Loan rate	Trade credit	Trade credit
manager is flagged at creation	0.004 (0.29)	0.008 (0.52)	0.003 (0.74)	0.004 (0.97)	0.039** (2.89)	0.040** (2.76)
manager is deflagged at creation	0.060*** (6.19)	0.056*** (5.16)	0.022*** (5.58)	0.022*** (5.78)	0.078* (2.27)	0.081 (1.66)
log(total assets)	0.017*** (5.13)	0.018*** (5.61)	-0.007*** (-14.16)	-0.007*** (-10.75)	-0.011** (-2.51)	-0.006 (-1.08)
Param. difference: stigma effect	-0.056	-0.048	-0.019	-0.018	-0.038	-0.041
t-statistic	-2.76	-2.31	-3.86	-3.68	-1.13	-0.90
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	Yes	No	Yes
Observation	6,165	6,094	4,186	4,136	6,165	6,094
R^2	0.032	0.084	0.041	0.052	0.009	0.178

Table XX

Created firms: productivity after six years from creation

This table focuses on created firms' productivity after six years from creation. The sample includes firms created by unfailed managers, by flagged managers whose flag duration is three years (the standard in the old regime), and by policy-affected managers whose flag duration is thus less than three years. Independent variables capture whether, at the creation, the manager is flagged or has already been deflagged. The related parameters' estimates measure the difference relative to unfailed managers. The table also reports the difference between the two parameters' estimates, and tests if this is different from zero. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:				
	(1)	(2)	(3)	(4)
	ROA	ROA	EBITDA/sales	EBITDA/sales
manager is flagged at creation	-0.034 (-1.77)	-0.032 (-1.72)	-0.009 (-0.21)	-0.031 (-0.66)
manager is deflagged at creation	-0.044 (-1.15)	-0.046 (-1.32)	-0.012 (-0.14)	-0.028 (-0.47)
log(total assets)	-0.001 (-0.18)	0.001 (0.22)	0.070*** (7.66)	0.059*** (5.83)
Param. difference	0.010	0.015	0.003	-0.003
t-statistic	0.22	0.33	0.03	-0.05
Year FE	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	Yes
Observation	6,165	6,094	5,725	5,665
R^2	0.012	0.025	0.029	0.111

Table XXI

Entrepreneurs' probability to start a business. Control group managers failed after 2008

This table analyzes the quarterly probability to start a business for an entrepreneur. This is a function of whether he is a flagged manager, of whether he has been deflagged, of demographic controls, and time fixed effects. The sample is composed of a randomly drawn 5% of the universe of unflagged managers, of flagged managers whose flag duration is three years and that failed after 2008, and of policy-affected flagged managers whose flag duration is thus less than three years. We track both groups of flagged managers from the first to the eleventh quarter after flag start. Policy-affect managers get deflagged over this period, while old regime managers do not. The main difference relative to the estimation presented in Table IV is that three-year flagged managers have failed fail after 2008, and thus have failed at a closer point in time relative to policy-affected managers. The identification of the 'manager has been deflagged' dummy is still achieved exploiting the policy shock. The distance-from-flag-start dummies capture the average dynamics taken after flag start. The deflag effect is measured as the differential taken after deflag by policy-affected managers relative to that benchmark dynamics. Parameters are estimated using a Probit model. The estimates refer to marginal effects setting the variables to their median or to zero in the case of dummy variables. The conditional probability of failure is obtained setting the explanatory variables to their median, except the dummies which are set to zero. Standard errors are clustered at the manager level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:	(1)	(2)
	firm creation	firm creation
manager has been deflagged	0.001*** (6.46)	0.001*** (4.86)
1 quarter since flag start	0.004*** (14.02)	0.003*** (10.99)
2 quarters since flag start	0.002*** (7.93)	0.002*** (5.14)
3 quarters since flag start	0.002*** (4.82)	0.001** (2.08)
4 quarters since flag start	0.002*** (4.70)	0.001** (2.06)
5 quarters since flag start	0.002*** (7.55)	0.001*** (4.83)
6 quarters since flag start	0.002*** (7.25)	0.001*** (4.60)
7 quarters since flag start	0.002*** (6.95)	0.001*** (4.17)
8 quarters since flag start	0.002*** (6.67)	0.001*** (3.97)
9 quarters since flag start	0.002*** (7.49)	0.001*** (4.88)
10 quarters since flag start	0.003*** (8.45)	0.002*** (5.98)
11 quarters since flag start	0.003*** (8.53)	0.002*** (6.15)
manager's age		-0.000*** (-140.86)
manager is female		-0.003*** (-36.78)
manager is non-French		0.002*** (23.70)
Conditional proba. (at median)	0.007	0.006
Time FE	Yes	Yes
Observation	8,364,295	8,364,295

Table XXII
Existing firms: funding sources as a function of deflag.
Control group firms managed by entrepreneurs failed after 2008

This table shows the effect of the manager being deflagged on existing firms' debt flows and loan rate. The sample is composed of firms with no flagged manager, and firms with a flagged manager who manages the firm at the time he gets the flag. Flagged managers are either old regime or policy-affected. The first are flagged for three years, while the latter have a flag duration of less than three years. Firms with flagged managers are tracked from the first to the third balance sheet after the flag start. The main difference relative to the estimation presented in Table X is that control group firms are managed by three-year flagged entrepreneurs who have failed fail after 2008, and thus have failed at a closer point in time relative to policy-affected managers. Dependent variables are defined in the summary statistics, and the identification strategy is the one of Table X. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:					
	(1) Bank loans (norm. yearly flow)	(2) ST bank loans (norm. yearly flow)	(3) LT bank loans (norm. yearly flow)	(4) Loan rate (in pp)	(5) Trade credit (norm. yearly flow)
manager has been deflagged	0.006* (2.32)	0.002 (1.20)	0.004 (1.31)	-0.332 (-1.36)	-0.010 (-1.92)
2 yrs since manager's flag start	-0.001 (-0.47)	0.003 (1.82)	-0.004* (-2.41)	0.040 (0.21)	0.009 (1.85)
3 yrs since manager's flag start	0.002 (1.12)	0.002 (0.98)	0.000 (0.04)	-0.007 (-0.03)	0.011* (2.06)
Firm FE	Yes	Yes	Yes	Yes	Yes
3 digit industry x Year FE	Yes	Yes	Yes	Yes	Yes
Observation	994,516	994,516	994,516	707,574	951,641
R^2	0.279	0.161	0.312	0.595	0.151

Table XXIII
Existing firms: employment of funds as a function of deflag.
Control group firms managed by entrepreneurs failed after 2008

This table shows the effect of the manager being deflagged on existing firms' investment and dividends paid. The sample is composed of firms with no flagged manager, and firms with a flagged manager who manages the firm at the time he gets the flag. Flagged managers are either old regime or policy-affected. The first are flagged for three years, while the latter have a flag duration of less than three years. Firms with flagged managers are tracked from the first to the third balance sheet after the flag start. The main difference relative to the estimation presented in Table X is that control group firms are managed by three-year flagged entrepreneurs who have failed fail after 2008, and thus have failed at a closer point in time relative to policy-affected managers. Dependent variables are defined in the summary statistics, and the identification strategy is the one of Table X. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:				
	(1) Inv. in property (norm. yearly)	(2) Inv. in plant (norm. yearly)	(3) Inv. in equipment (norm. yearly)	(4) Dividends paid (norm. yearly)
manager has been deflagged	0.000 (1.55)	0.001* (2.39)	0.001 (0.70)	0.003 (1.12)
2 yrs since manager's flag start	-0.000* (-2.07)	0.000 (0.20)	0.000 (0.07)	-0.001 (-1.03)
3 yrs since manager's flag start	-0.000 (-1.37)	-0.000 (-0.42)	0.001 (1.33)	0.001 (0.52)
Firm FE	Yes	Yes	Yes	Yes
3 digit industry x Year FE	Yes	Yes	Yes	Yes
Observation	994,516	994,516	994,516	994,516
R^2	0.349	0.356	0.271	0.656

Table XXIV
Existing firms: funding sources as a function of deflag.
Addition of rating FEs

This table shows the effect of the manager being deflagged on existing firms' debt flows and loan rate. The sample is composed of firms with no flagged manager, and firms with a flagged manager who manages the firm at the time he gets the flag. Flagged managers are either old regime or policy-affected. The first are flagged for three years, while the latter have a flag duration of less than three years. Firms with flagged managers are tracked from the first to the third balance sheet after the flag start. The identification of the 'manager has been deflagged' dummy is achieved exploiting the policy shock, as in Table X. Relative to that identification, we add rating FEs as controls. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:					
	(1) Bank loans (norm. yearly flow)	(2) ST bank loans (norm. yearly flow)	(3) LT bank loans (norm. yearly flow)	(4) Loan rate (in pp)	(5) Trade credit (norm. yearly flow)
manager has been deflagged	0.008** (2.89)	0.004* (1.96)	0.004 (1.65)	-0.432* (-1.90)	-0.008* (-2.00)
2 yrs since manager's flag start	-0.002 (-1.17)	0.001 (0.51)	-0.003* (-2.17)	0.082 (0.44)	0.008* (2.09)
3 yrs since manager's flag start	-0.001 (-0.50)	-0.001 (-0.34)	-0.001 (-0.30)	0.174 (0.89)	0.008** (2.33)
Firm FE	Yes	Yes	Yes	Yes	Yes
3 digit industry x Year FE	Yes	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes	Yes
Observation	1,337,862	1,337,862	1,337,862	962,756	1,280,670
R^2	0.242	0.135	0.271	0.553	0.124

Table XXV
Existing firms: employment of funds as a function of deflag.
Addition of rating FEs

This table shows the effect of the manager being deflagged on existing firms' investment and dividends paid, differentiating by manager fixed effect volatility. The sample is composed of firms with no flagged manager, and firms with a flagged manager who manages the firm at the time he gets the flag. Flagged managers are either old regime or policy-affected. The first are flagged for three years, while the latter have a flag duration of less than three years. Firms with flagged managers are tracked from the first to the third balance sheet after the flag start. The identification of the 'manager has been deflagged' dummy is achieved exploiting the policy shock, as in Table X. Relative to that identification, we add rating FEs as controls. Standard errors are clustered at the year level, and t-statistics are in parenthesis. Statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dependent Variable:				
	(1) Inv. in property (norm. yearly)	(2) Inv. in plant (norm. yearly)	(3) Inv. in equipment (norm. yearly)	(4) Dividends paid (norm. yearly)
manager has been deflagged	0.000 (1.16)	0.001** (3.01)	0.001 (1.16)	0.003* (2.12)
2 yrs since manager's flag start	-0.000** (-2.38)	0.000 (0.37)	-0.000 (-0.06)	-0.000 (-0.11)
3 yrs since manager's flag start	-0.000 (-0.92)	-0.000 (-0.59)	0.001 (1.57)	-0.001 (-0.69)
Firm FE	Yes	Yes	Yes	Yes
3 digit industry x Year FE	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes
Observation	1,337,862	1,337,862	1,337,862	1,337,862
R^2	0.280	0.301	0.220	0.632