Family CEO successions and corporate bankruptcies : evidence from France*

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This paper measures the effect of family CEO successions on French firms' probability of bankruptcy.

Previous studies on family successions assess the effect of dynastic transitions on accounting measures of economic performance, but these can be proxies for window-dressing skills or for riskier and less long-termist firm strategies. Firm bankruptcy is an outcome less prone to such criticisms. And results might differ in countries where family values are more prevalent.

Using a unique firm-level dataset on CEO transitions among French firms, we find that the probability of default for family transitions is lower for small firms and greater for big firms, suggesting that the "lower ability" effect is increasing with firm size while the "long-termism" effect is not.

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1 Introduction

In this paper, we assess the effect of family CEO successions on French family firms' performance as defined by the firms' probability of defaulting on their debt following the transition.

This question is of particular interest since family firms still represent a great portion of firms, even in developed economies and even among big listed firms : Faccio and Lang (2002) report that family ownership prevalence among listed firms ranges from 24% in the United Kingdom (the lowest proportion in Western Europe) to around 65% in France and Germany. However, looking at ownership only is of little interest for the majority of firms that are closely held; for instance, in France more than 80% of employees in the private sector are not under the control of a listed firm, according to Skalitz (2002). Therefore, one had better take a more dynamic view : real family firms are then those firms whose management and/or control remains within a given family across generations, instead of being relinquished to some new investors and/or professional managers. Evidence on the prevalence of such dynastic patterns outside the peculiar world of listed firms is scarce but suggestive : for Denmark, Bennedsen et al. (2007) show that around a third of all CEO successions are dynastic.

Taking a dynamic view of the family firm is all the more necesary as tax policies are thought to have a big impact on the degree of meritocracy in the choice of the CEO. In their model of dynastic management, Caselli and Gennaioli (2003) suggest that gift and estate taxes might have a positive effect on productive efficiency. In the presence of capital market imperfections, the market for firm ownership will be inefficient either on the supply side, where incumbent families might not be compensated for the loss of their private benefits of management and/or control, or on the demand side, where external investors and/or professional managers might be credit constrained. This will pose a problem to productive efficiency as soon as inheritability of human capital is imperfect, because the matching between firms and owners will then be imperfect. However, for estate taxes to increase efficiency, state redistribution must do a better job than genetics at giving high-performing individuals a chance to run a firm. In other words, state redistribution should be targeted to deserving individuals as much as possible while skills should not be too persistent across generations.

Thus, assessing the quality of heirs in managing their ancestors' firms is of first-order importance in the tax policy debate. Previous studies on family successions are typically focused on assessing the effect of family transitions on accounting measures

of economic performance such as Operating Return on Assets or Return on Equity 3 years after the transition versus 3 years before the transition. This literature was initiated by Perez-Gonzalez (2006), who implemented such a methodology on a sample of CEO successions among US listed firms with family ownership. He finds that dynastic successions underperform external successions but this does not take into account the possibility that dynastic successions occur particularly when firms' perspectives are bad. Bennedsen et al. (2007) have data on Danish CEO successions and use the gender of the firstborn child of the incumbent CEO as an instrument. They find that family transitions underperform transitions to a professional CEO by more than 20%. This result was deemed as ultimate proof that CEOs chosen within the family are on average of worse ability than professional managers picked on the labour market for CEOs.

However, OROA and ROE may not be sufficient indicators of performance for various reasons. Firstly, accounting measures may suffer from more "window-dressing" when professional CEOs come to the fore, making better "official" performance simply reflect better accounting abilities : Sraer and Thesmar (2007) actually confirm that professional managers are more financially literate than heirs; this is not however direct proof that professional managers are more prone to earnings manipulation.

Secondly, better performance might also be related to more risk-taking, which is poorly measured by simply averaging economic returns over 3 years after the transition. This could be particularly problematic as one widely-cited argument in favor of family firms is the protection they may provide against economic fluctuations : Sraer and Thesmar (2007), using French data on listed firms, gave some confirmation of this argument.

It is why looking at the probability of default is of particular importance. To begin with, it is less subject to accounting manipulation as liquidation decisions are assessed by judicial courts after a firm claims that it cannot face its debt repayments.

Secondly, default probability constitutes a better measure of the firms' risk-taking. This is especially true for private firms since usually accounting data is not available anymore when firms default. But this is also more accurate because we can trace default after a longer horizon than just three years after a succession.

To our knowledge, Bennedsen et al. (2007) is the unique attempt in the literature to measure the effect of dynastic management on default and they find either a positive but poorly significant (at the 10% level) or an insignificant effect of family successions on firm liquidation depending on the specifications. For these reasons, assessing the

effects of family transitions with a bigger sample seems of primary importance.

Finally, another problem with the previous literature is that it's focused on one country - Denmark, which may be less subject to family-oriented values, as suggested by results from international Value Surveys for Scandinavian countries (see Alesina (2007)). One could think that in countries whose values give more importance to family, family transitions may on average be more efficient. This is why it is of particular interest to look at these questions with data from a typically more family-oriented country. To our knowledge, no such study has ever been undertaken. It so happens that France seems to belong to this category of family-oriented countries, as evidenced by Alesina (2007).

The estimates we obtain suggest that the effects of dynastic management on bankruptcies crucially depend on the size of the firm. Dynastic successions reduce default risk by around 24% with respect to professional transitions when firms have less than 50 employees, but they increase default risk by around 53% when firms have more than 100 employees. Our estimates suggest that the potential ability problem of dynastic management is greater when firms are bigger, while the "long-termist" attitude of dynastic managers is relatively more beneficial when firms are smaller.

The organisation of the paper is as follows. Section 2 details the process of data collection as well as descriptive statistics on dynastic successions in France. Section 3 details the econometric methodology as well as the results of our estimations of the effect of dynastic successions on performance. Section 4 adresses the endogeneity issues and provides the foundations for an Instrumental Variables estimation.

2 Data description

2.1 Data sources

We collected data from several sources on CEO successions happening between 1997 and 2002 for any French firm with more than 20 employees. We identified CEOs names for every French firm using the DIANE dataset published every month by the Bureau Van Dijk. This dataset compiles all the corporate information that has to be transmitted to commercial courts : accounts, address, and ID of the CEO. All in all, about 90% of firms with more than 100 employees and 76% of firms between 20 and 49 employees are included in that dataset. Comparing each DIANE dataset from month to month, we were able to identify the time of a CEO succession for a given firm. Given the occurrence of a succession, we were able to compare the spouse and maiden names of

both the departing and the incoming CEO in order to track the family status of each CEO transition.

We should stress here that the DIANE dataset does not allow us to distinguish a son-in-law from a professional manager. Assuming that in-laws performances as managers range between those of regular family members and those of professional managers, this omission should bias our estimates towards zero. More importantly, it is questionable whether in-laws should be considered as dynastic managers, as one cannot rule out that the marriage market acts as a market for professional CEOs.

In order to avoid "fake" successions, i.e. changes in CEO motivated by short-term judicial or fiscal matters, we removed from the sample any firm experiencing more than one succession between 1997 and 2005. Keeping these firms in the sample does not change the results whatsoever

Through this process, we finally obtained a dataset of more than 20,000 observed successions, 20% of which could be identified as being transitions within a family.

Because the DIANE dataset also contains the national identification number of each firm, we were able to match our dataset of successions with other firm-level datasets. In order to collect precise information on the firms' characteristics, we used the Bénéfices Réels et Normaux dataset, compiled by the French National Institute of Statistics (INSEE). This dataset is a recollection of all firm-level data collected by the fiscal administration. Therefore, this dataset is exhaustive and contains very detailed and accurate accounting information on French firms. This allows us to obtain yearly variables such as sector, firm size, sales, assets, profits, financing patterns, etc., for any year between 1978 and 2005. But these data do not inform us about the occurence of default. That is why we also collected data from the judicial courts on firm liquidation decisions : for any liquidation decision after 1992, we know the identification number of the liquidated firm and the exact date of bankruptcy filing.

Note that at the time of the succession, the matching between our dataset of successions and the BRN dataset is almost perfect. However, we cannot compute performance indicators following the succession for all firms since some of them disappear for various reasons : bankruptcies, buy-outs, mergers, etc. As a result, forward indicators of accounting performance are available only for about 13,000 successions. This gives even more importance to our default measure, because it does not suffer as much from that survivor bias. However, because the horizon of analysis of default is not infinite (from 4 to 9 years), our estimation of default probabilities will suffer from a survivor bias, albeit less pronounced than for accounting performance.

2.2 Descriptive statistics

Descriptive statistics are given in Table 1. The main characteristic of our sample is that dynastic successions occur in smaller firms : these are about twice smaller both in terms of sales and in terms of number of employees. This is not surprising, as in Bennedsen et al. (2007) Danish firms experiencing dynastic rather than professional CEO successions were more than five times smaller in terms of assets. Moreover, studies on listed family firms also underline this stylised fact : according to Sraer and Thesmar (2007), among listed firms, those owned by a family are about four times as small as widely-held firms.

TABLE I : DESCRIPTIVE STATISTICS (WHOLE SAMPLE)

Succession status :	Professional	Dynastic
Sales (in M Eur) :	70124 *(523539)*	38835 *(547554)*
Nb. of employees	170 *(2523.4)*	90 *(582.1)*
Age of the firm	19.1 *(12.7)*	22.6 *(12.2)*
Female new CEOs	9.9%	21.5%
"German" boards	4.4%	8.3%
Nb of observations	17076	3959

On the other hand, and still not so surprisingly, family successions occur in older firms : on average, dynastic firms are 3.5 years older. Together with their small size, these figures could suggest that family firms follow a more prudent growth path, which is a typical result of theoretical models of family firms reviewed in Morck et al. (2000). But this is not incompatible with other stories, since we only look at firms that managed to survive until the time when the incumbent CEO leaves the firm : one would need to trace firms right from their births in order to correctly address this survivor bias.

We also look at some characteristics of the new CEOs : dynastic successions promote women about twice as often as professional successions, which is wholly consistent with

the fact that dynastic firms have to select their CEOs in a much narrower pool of applicants and therefore are not as able to practice sex discrimination in their CEO nominations. Note however that these differences are biased in the sense that female in-laws are counted as family while male in-laws are not. Though they discriminate less, dynastic successions are still biased towards male applicants as only about a fifth of them promote women; this is not so different from Denmark where about a third of dynastic promotions concern women.

One last stylised fact is about the status of companies : dynastic firms are twice as likely to have German board systems. This is probably because these two-tier governance structures allow for greater family interference in the firms' decisions than usual boards of directors do.

In Table 2, we present the same descriptive statistics for three different size categories : category 1 includes firms with 20 to 49 employees, category 2 includes firms with 50 to 99 employees, while category 3 includes firms with more than 100 employees. We split the sample in order not to be misled by the huge heterogeneity of size. We can already see that the stylised facts we mentioned remain true in all subsamples, but are often more pronounced in the third subsample; this would be consistent with theories of the dynamics of firms such as the one developed by Helwege et al. (2007) : all firms begin as family firms, and as they grow they should be less and less dynastic, therefore those firms that remain dynastic at later stages should have more peculiarities.

TABLE II : DESCRIPTIVE STATISTICS (SUBSAMPLES)

	20-49 employees		50-99 employees		> 99 employees	
Succession status :	Prof.	Dynastic	Prof.	Dynastic	Prof.	Dynastic
Sales (in th. Eur) :	16316 *(104873)*	12387 *(30459)*	28990 *(68538)*	22694 *(35894)*	223782 *(1023527)*	189218 *(1452414)*
Nb. of employees	32.1 *(8.74)*	32.2 *(8.82)*	70.4 *(14.2)*	69.1 *(14.7)*	559.1 *(5051.7)*	401.8 *(1518.5)*
Age of the firm	18.2 *(12.1)*	22.1 *(12)*	19.5 *(13)*	23.4 *(12.4)*	21.1 *(13.6)*	24.5 *(12.8)*
Female new CEOs	12.2%	22.7%	9.1%	19.9%	5.3%	17.8%
"German" boards	3.3%	6.5%	4.5%	9.7%	6.7%	14.8%
Nb of observations	9560	2767	3288	637	4228	555

3 Multivariate Evidence

3.1 Econometric methodology

3.1.1 Differences-in-differences analysis

As a first step, we look at the effect of family successions using a differences-in-differences analysis, in the fashion of Perez-Gonzalez (2006). That is, we build a measure of relative performance of a given firm with respect to the average performance in its industry, defined at the 4-digit level. More precisely, our measure is the difference between the Operating Return on Assets (OROA) of the firm and the average OROA in its industry. Then, like in the event studies literature, we compare average performance of firm i during the three years after the succession, $\overline{OROA}_{t+1}^{t+3}$ with average performance during the three years before the succession, $\overline{OROA}_{t-3}^{t-1}$. The differences-in-differences consists then in the OLS estimation of the following model :

$$[\overline{OROA}_{t+1}^{t+3} - \overline{OROA}_{t-3}^{t-1}]_i = \alpha Dyn_i + \beta X_{it} + \varepsilon_{it}$$

where Dyn_i indicates whether or not firm i experienced a dynastic succession, and X_{it} are controls such as the log of the sales of the firm in t-1, year fixed-effects, and a dummy indicating whether firm i is integrated in a greater economic entity.

We estimate this model on three subsamples of successions according to the size of the firm : 20-49 employees, 50-99 employees and more than 100 employees. Note that because we have to observe firm data up to three years after the succession, we implicitly remove from the sample those firms that disappeared after the succession either because of bankruptcy, take-over, or voluntary closure : therefore, we end up estimating the model with 13,290 observations on a total of 20,166.

3.1.2 Probit analysis of default

As said above, measuring the effect of family successions on accounting performance delivers very partial evidence on the relationship between dynastic management and performance. That is why we now look at the occurence of bankruptcies. Because we know the date of liquidation for any firm liquidated, we can proceed to two different series of estimations : either we directly estimate the probability that a firm will default after the succession, following a Probit model, or we estimate the default hazard function of a firm after the succession, following a duration estimation. We detail the former in this subsection and the latter in the following subsection.

The most intuitive way to use default data is to look at the probability that in a given horizon after the succession, the firm will have experienced a bankruptcy. To do this, we estimate through Maximun Likelihood methods Probit models of the following kind :

$$Prob(Def_i^k) = \alpha Dyn_i + \beta X_{it} + \varepsilon_{it}$$

where Def_i^k indicates whether or not firm i has experienced bankruptcy within the k years after the succession, Dyn_i indicates whether or not firm i experienced a dynastic succession, and X_{it} are controls such as the log of the sales of the firm in t-1, year and industry fixed-effects, and a dummy indicating whether firm i is integrated in a greater economic entity.

We estimate this model on three subsamples of successions according to the size of the firm : 20-49 employees, 50-99 employees and more than 100 employees. We choose to estimate the model on three different horizon lengths : 3 years, 6 years, and infinite horizon.

3.1.3 Survival analysis

Estimating probabilities of default through Probit is attractive because it is very intuitive. But it does not use efficiently all the information we have since we not only know that a bankruptcy occurs in a given window of time but we also know at which exact date the firms go bankrupt. With such data, estimating duration models seems more appropriate and should yield more precise results. Broadly speaking, these models estimate hazard functions, that is to say the probability that firm i will default in $t + \triangle$ conditional on the fact that it was not bankrupt in t.

Assuming that there is no unobserved heterogeneity, the most appropriate model is a Cox duration model estimated in a semi-parametric way. But because unobserved heterogeneity is very common in firm-level data, we also use a Weibull duration model with frailty distributed as inverse Gaussian (this is the equivalent of random effects for duration models) estimated in a parametric way : Jimenez and Mencia (2007) suggest that this an appropriate way to model the effect of latent variables on credit risk. In both models, we use the same covariates and the same subsamples as our Probit estimations in subsection 3.1.2. In particular, we want to obtain an estimate of the relative default hazard ratio of a dynastic transition versus a professional one.

3.2 Results

3.2.1 Differences-in-differences analysis

Differences-in-differences estimates are in Table III. In all subsamples, there is no specification indicating a significant effect of dynastic management on industry-adjusted OROA. The estimations do not gain significance if we control for potential mean reversion of performance : we add a measure of industry-adjusted OROA as a control and do not find any more significance.

Table III : The effect of dynastic successions on Accounting Performance
(Dependent Variable : Industry-adjusted change in OROA after 3 years)

Nb. of employees :	20-49	50-99	>99
Explanatory variables :			
Dynastic transition	0.004	0.011	0.022
	(0.010)	*(0.018)*	*(0.013)*
Firm belongs to a group	0.023*	0.000	0.016
	(0.012)	*(0.013)*	*(0.013)*
Log of Sales	-0.007	0.009	-0.000
	(0.010)	*(0.011)*	*(0.005)*
Nb. observations	11716	2476	3230
Year fixed-effects	Yes	Yes	Yes

Note : Robust standard errors are in parenthesis.
** : 10% significance level ; ** : 5% significance level ; *** : 1% significance level*

These OLS results differ from those obtained by Bennedsen, Nielsen, Perez-Gonzalez (2007) on Danish data : using exactly the same OLS specification, and with three times fewer observations, they find a negative and significant effect of family transitions on industry-adjusted OROA. We should however stress that these results are biased in the sense that a lot of firms are excluded from the sample used here because of events that may be correlated with both the family status and accounting performance. For instance, if dynastic firms are overrepresented among firms going bankrupt while professional firms are overrepresented among firms being taken over, one can make the hypothesis that the effect we obtain is largely biased upwards. As a matter of fact, Bloom and Van Reenen (2007) make the case that dynastic firms are largely overrepresented in the thick lower tail of the quality of management distribution in France and the United Kingdom.

3.2.2 Probit analysis of default

Probit estimates of default probabilities are in Table IV. Among small firms (less than 50 employees), firms with family successions have a 20% smaller chance of filing for bankruptcy one day or another than average, but the effect is insignificant for middle-

sized firms. Interestingly, the effect switches sign once we look at the set of bigger firms (more than 100 employees) : dynastic firms have a 35% greater probability of eventually going bankrupt after a succession. Specifications including the degree of insolvency of firms (interest payments over EBITDA) one year before the transition do not remove any significance to our estimates : the results are not driven by a bigger propensity of default prior to the succession (results available on request).

TABLE IV : THE EFFECT OF DYNASTIC SUCCESSIONS ON DEFAULT PROBABILITIES
(PROBIT MODEL WITH MARGINAL EFFECTS REPORTED)

Nb. of employees :	20-49			50-99			> 99		
Explanatory variables :									
Dynastic transition	-0.015***	-0.019***	-0.019***	-0.008	-0.006	-0.008	0.008	0.015*	0.023**
	(0.004)	*(0.005)*	*(0.005)*	*(0.007)*	*(0.009)*	*(0.010)*	*(0.008)*	*(0.010)*	*(0.61)*
Firm belongs to a group	-0.021***	-0.040***	-0.046***	-0.017***	-0.026***	-0.030***	-0.016***	-0.023***	-0.028***
	(0.004)	*(0.005)*	*(0.005)*	*(0.006)*	*(0.008)*	*(0.008)*	*(0.006)*	*(0.007)*	*(0.008)*
Log of Sales	-0.018***	-0.028***	-0.032***	-0.035***	-0.043***	-0.046***	-0.014***	-0.022***	-0.024***
	(0.003)	*(0.004)*	*(0.004)*	*(0.005)*	*(0.006)*	*(0.006)*	*(0.002)*	*(0.003)*	*(0.003)*
Mean default proba.	0.050	0.079	0.090	0.052	0.079	0.087	0.038	0.056	0.064
Nb. observations	11716	11716	11716	3609	3609	3609	4244	4244	4244
Default horizon	3 years	6 years	∞	3 years	6 years	∞	3 years	6 years	∞
Year fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note : Robust standard errors are in parenthesis.

** : 10% significance level ; ** : 5% significance level ; *** : 1% significance level*

Other specifications show that each effect becomes significant once the horizon of observation is greater than 6 years, while they are all insignificant if the horizon of observation is smaller than 3 years. This suggests that looking at indicators of performance just three years after the event of a succession, as is usually done in the literature, might lead to gravely underestimate its effects.

3.2.3 Survival analysis

The results of the survival analysis are in Table V. The hazard ratio estimates parallel those obtained in the subsection above : the default hazard rate is 24% to 36% smaller for dynastic successions in small firms, but 53% to 217% bigger for dynastic successions

in firms with more than 99 employees. These results hold if we take into account the degree of insolvency of the firm prior to the succession (results available on request).

One way of accounting for these results is to assume that while long-termism may not increase with size, professional ability is more and more required as firms are bigger. If this is true, then we should observe that the "long-termism" effect dominates the "lower ability" effect when firms are small while the reverse is true when firms are big. There are some indications in the CEO compensation literature that general management abilities are more and more needed as firm size increases (see Frydman (2005)). If there is a human capital advantage of relatives over professional managers, it has to be firm-specific to a certain extent. Therefore, if firm-specific skills become less crucial as firms get bigger, we should indeed expect that dynastic managers see their relative management abilities decrease as firm size increases.

We should as well expect "long-termism" in the management decisions to be more prevalent where the market for firm control is less liquid. As far as liquidity of ownership requires some critical size for the firm to be attained, we should not be too surprised that "long-termism" does not increase with size.

Table V : The effect of dynastic successions on survival duration
(Relative default hazard ratios)

Nb. of employees :	20-49		50-99		> 99	
Explanatory variables :						
Dynastic/Professional	0.76***	0.64***	0.91	0.86	1.53***	2.17***
	(0.06)	*(0.08)*	*(0.13)*	*(0.22)*	*(0.24)*	*(0.60)*
Group/Single Unit	0.49***	0.34***	0.64***	0.48***	0.61***	0.44***
	(0.04)	*(0.05)*	*(0.08)*	*(0.10)*	*(0.08)*	*(0.09)*
Log of Sales	0.65***	0.49***	0.50***	0.30***	0.59***	0.42***
	(0.04)	*(0.05)*	*(0.05)*	*(0.05)*	*(0.04)*	*(0.05)*
Nb. of observations	104034	104034	33255	33255	41363	41363
Semi-parametric	Yes	No	Yes	No	Yes	No
Unobserved heterogeneity	No	Yes	No	Yes	No	Yes
Year fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes

Note : Standard errors clustered at firm-level are in parenthesis. Semi-parametric estimations use a Cox model. Estimations allowing for unobserved heterogeneity use a Weibull model with frailty distributed as Inverse Gaussian.
** : 10% significance level ; ** : 5% significance level ; *** : 1% significance level*

3.3 Endogeneity issues

How sure can we be that the results we obtain are causal ? Most of the literature on family firms does hardly anything to answer this question. Actually, the only contribution coming up with a proper instrument for whether a succession is dynastic or not is Bennedsen, Nielsen, Perez-Gonzalez (2007). Their results suggest that on average, an incumbent CEO will be more likely to hand over his or her position to a member of the family when the firm's prospects are good rather than bad. In that case, our estimates of the quality of dynastic managers are biased upwards, and our result that dynastic managers lead to more default for big firms should be even more significant, while our result that dynastic managers lead to less default for small firms should lose some significance .

Another possibility is that the firm is left to the family only when no professional manager was willing to take the job because the prospects were too bad. In that case, our estimates of the quality of dynastic managers are biased downwards, and our result that dynastic managers lead to more default for big firms should lose significance, while our result that dynastic managers lead to less default for small firms should gain significance.

In fact, the real endogeneity issue for our paper is whether the decreasing relationship that we obtained between dynastic management quality and size is biased or not. The endogeneity stories that we have just listed crucially depend on the degree of liquidity of the market for firm ownership : on the one hand, if markets are not liquid, it will be more difficult to find an external investor for a firm with bad prospects, so the firm will be overkept by the family when prospects are bad; on the other hand, if markets are liquid and there is a private benefit of control for the family, the firm should be overkept by the family when prospects are good. This mechanism parallels the one described for American IPOs by Helwege et al. (2007) wherein block-holding shareholders decide to dilute their shares when the stock market is liquid enough. Assuming that there is a positive link between firm size and firm ownership liquidity, this mechanism would then lead all our estimates to gain significance once we account for the endogeneity of the dynastic transition. Therefore, our main result looks robust enough to the usual endogeneity criticism.

4 Conclusion

Until now, the literature has either taken a static view wherein family firms are just compared in cross-section with widely-held firms or a short-term dynamic view wherein the effects of dynastic transitions are supposed to be most visible just three years after the transition. Data issues are the main reason why we usually do not look further : firms are not as stable as human beings and they tend to disappear very often so that short-term analysis is less prone to a survivor bias. By looking directly at the most disruptive of these events, bankruptcy, we were able to overcome this problem. The results we have obtained are not as clear-cut as they were in previous studies : dynastic firms are neither always better nor always worse. They seem to be more apt for survival when they are small enough but also more prone to bankruptcy when they are big enough.

In terms of public policy, these results suggest that gift and estate taxes should not discourage the transmission of small businesses from one generation to the other, but should be more discouraging for the transmission of bigger businesses. Tax systems in Europe are very different as regards the easiness with which a business can be transferred from one generation to the other. But all systems include this principle that there should be a sizeable allowance specific to business estates. The issue rather concerns the limit up to which this allowance should be given : in Germany, the marginal tax rate for business transmission is equal to 30% only when the business is worth more than 50 million euros while in France, the marginal tax rate for business transmission is equal to 40% if the business is worth more than 2 million euros (see Conseil des Impôts (2004) for a review).

However, in order to determine an optimal tax rate, one should also knwow the tax elasticity of dynastic transitions. To our knowledge, no such study has ever been undertaken. This is what we plan to do as further research. We will use brutal variations across time in French gift tax reductions depending on the donor's age, in the period 1997-2000. This will allow us to make a differences-in-differences analysis. To this date, we only have data on CEOs' age on about 20% of the CEOs so we don't have enough statistical power to perform the second stage of a 2SLS estimation. We are in the process of getting exhaustive information on French CEOs' age, using the French Social Security dataset (the so-called Données Annuelles-Données Sociales dataset). Once we will have full information, we will be able to test a causal effect of gift taxes on family successions and on family firms' long-term prospects.

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