SERVIR L'AVENIR

THE IMPACT OF PUBLIC LOAN GUARANTEES ON BANKS' RISK TAKING AND FIRMS' GROWTH: EVIDENCE FROM FRANCE

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Reminder about public loan guarantees operated by Bpifrance

- **General principle**: risk sharing with French commercial banks in order to improve SMEs' access to bank loans
  - Open to all French commercial banks
  - Partial guarantee (40 % - 70 %)
  - Guarantees cover banks' final loss
  - Trigerring event: legal bankruptcy procedure
  - Banks pay a commission
  - Two distribution modes : case by case / « guarantee contracts » (loan amount < 200 K€)
- **Several guarantee funds according to the purpose of the project**: business creation, business expansion, working capital, business transfer …
- **Activity figures for 2019**: about 50 000 supported companies, which received about 7 GE of covered bank loans.
- **Exceptional stimulus with the « Prêt Garantis par l'Etat » program (PGE)** in the context of the Covid-19 pandemic (to date, about 620,000 recipients and 130 GE granted), following the same logic than « usual » guarantee programs

A need to re-assess public loan guarantees

- **Context of the study:**
  - Request from Bpifrance's shareholders and from the French parliament to strenghen impact assessment studies and to increase their transparency and visibility
  - Few academic studies available for the French case, covering either old programs (Lelarge *et al.*, 2010) and exceptional ones (Barrot *et al*., 2020)
  - Public loan guarantees have reached a new scale with the Covid 19 pandemic

- **Construction of a large impact assessment program:**
  - First stone of a long-run effort
  - With this study, two guarantee funds evaluated (out of four)
  - Peer review process through a steering committee
  - Collaboration with academic researchers

Literature review: no consensus on the impact of public loan guarantees

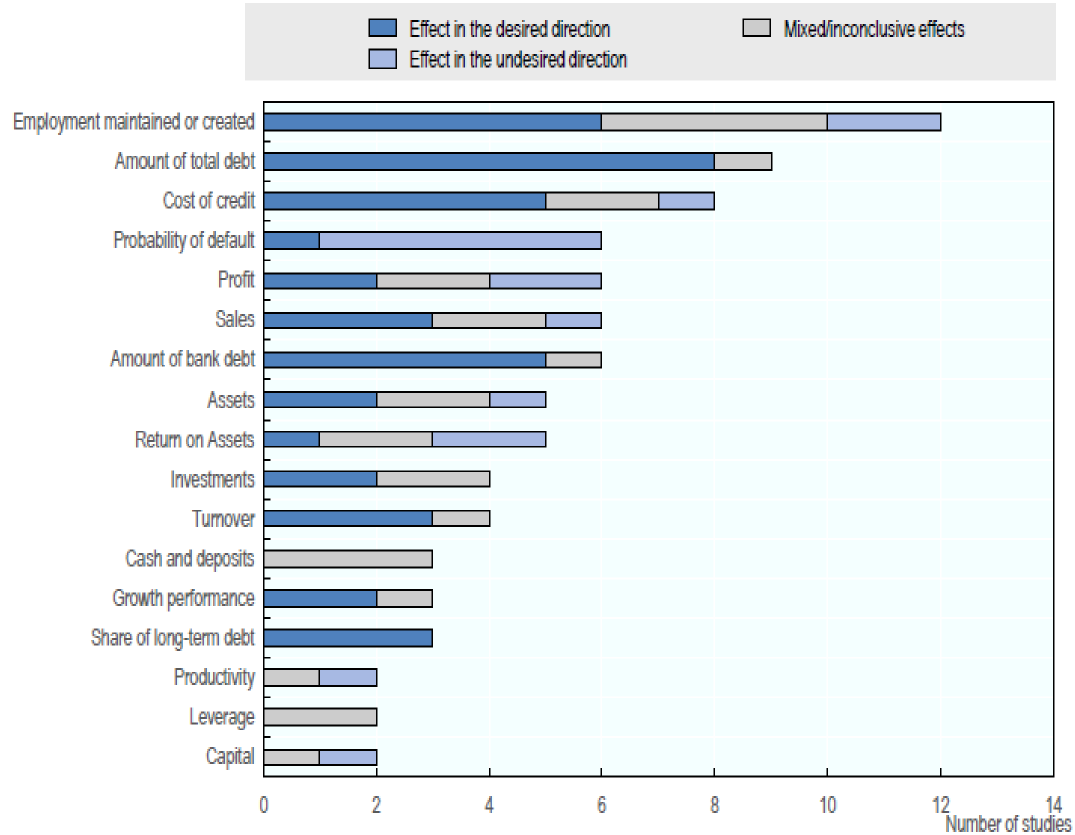
- **Rationale for public loan guarantees**: information asymetries, transaction costs, lack of collateral (especially for SMEs)

- **Ambiguous impact from a theorical point of view**
  - Potential moral hazard and/or adverse selection issues
  - Potential crowding-out of non-guaranteed loans

- **No empirical consensus on the economic impact of guarantees**
  - Generally positive impacts on access to finance
  - More mixed results regarding the impact on firms' activity (sales, employment, survival, TFP …)

- Greater effects for firms most likely to suffer from financial constraints (young and/or small)

Summary of the empirical evidence about the economic impact of public loan guarantees



Source : OECD (2017)

Objectives, scope and data

- **Objective**: assessing the impact of public loan guarantees on firms' growth and access to finance, as well as their cost efficiency

- **Focus on two of the main guarantee funds operated by Bpifrance** (creation and expansion funds)

- **A very rich dataset** merging proprietary data of Bpifrance wth several external sources:
  - Income statements and balance sheets of most French firms (FARE / FICUS)
  - A specific survey on a cohort of about 40,000 entrepreneurs, with the ability to track their activity over a period of 5 year after business foundation (« SINE » survey).

- **Final sample for impact estimates:**
  - Creation fund: about 2,000 supported companies in each cohort (2010 and 2014)
  - Expansion fund: between 2,000 and 4,000 in each cohort (2007, 2008, 2012, 2013)

- **Contributions to the literature:**

  - Exploiting data at the entrepreneur level

  - Replication of the results of Lelarge *et al.* (2010) using alternative measures for firms' survival

Methodology

- **Need to control for selection bias**
  - By definition, recipients of guarantees have investment opportunities
  - The guarantee has a cost for commercial banks → use of guarantees is more likely for investment projects with high risk premia

- **Difference in difference approach**

$$Y_{i,t} = FIRM_i + \sum_{\tau=1}^{T} \alpha_\tau YEAR_\tau + \sum_{\tau=1}^{T} \beta_\tau TREAT_{i,\tau} + \mu_{i,t}$$

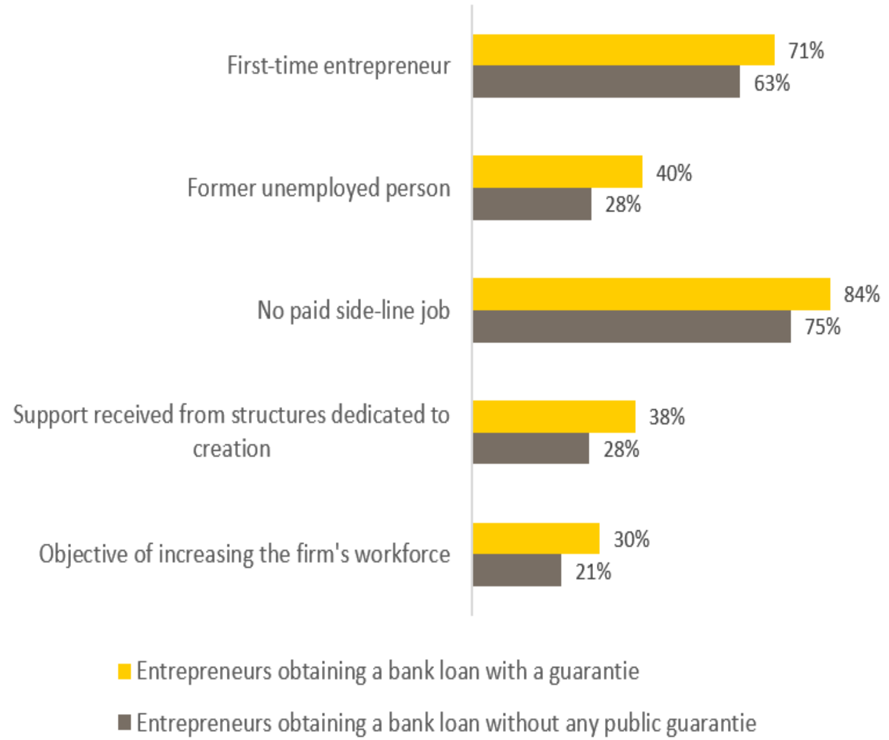
- **Combination with « propensity-score matching » techniques** : supported companies are compared with non-supported firms which had a similar economic profile ex-ante

- **Results relying on the conditional independence assumption**

- **Several sensitivy tests** (matching techniques, control of other support from Bpifrance …)

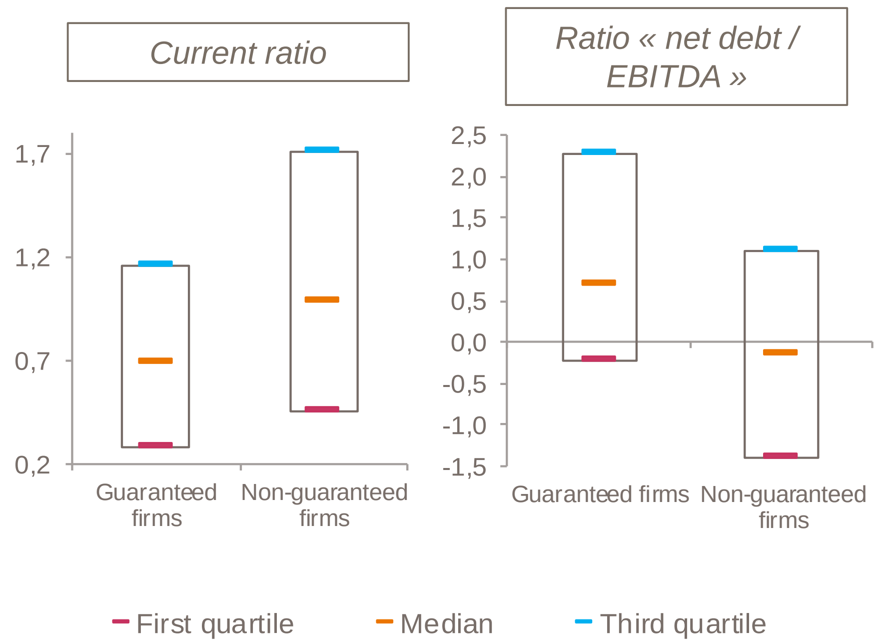
Initial characteristics of guarantees' recipients

Creation fund: recipients of guarantees vs entrepreneurs obtaining a bank loan without any public support



Reading note: among recipients of credit guarantees, 40 % were unemployed persons before founding their company, against 28 % for founders obtaining a bank loan without any public support.*

Expansion fund: recipients of guarantees vs companies increasing their financial debt without a loan guarantee*



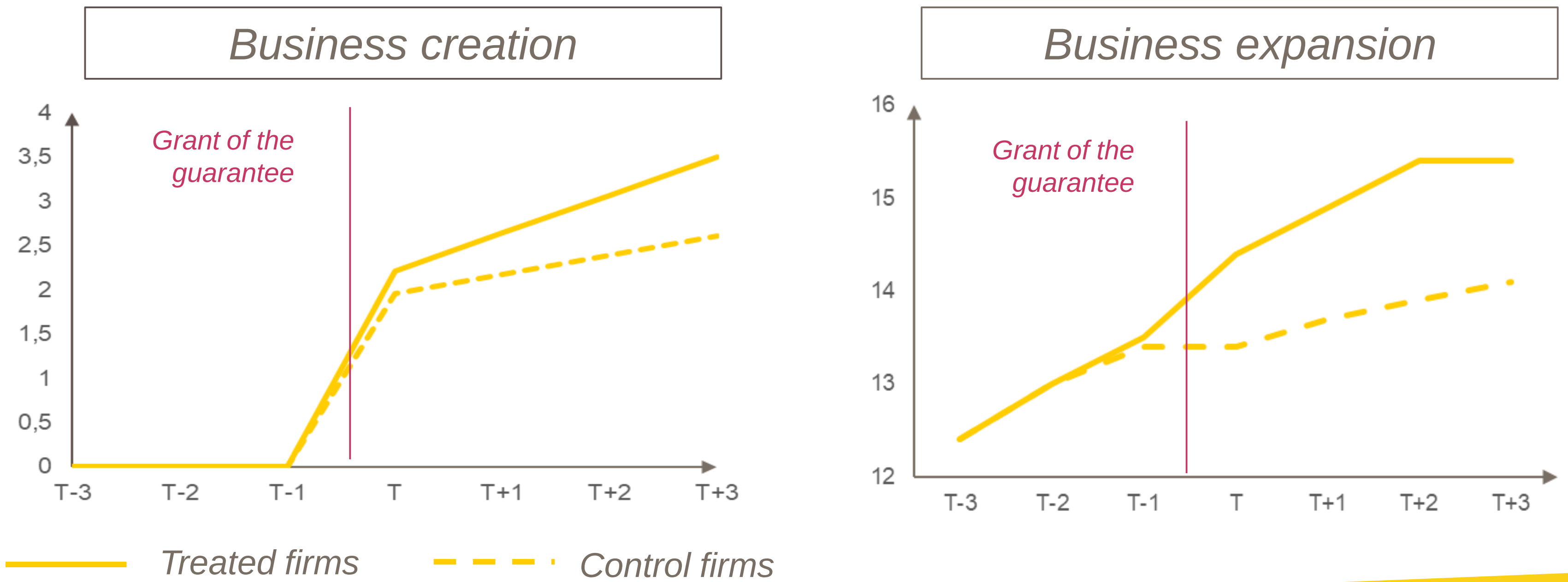
Reading note: the year before obtaining the « expansion » guarantee, the median for the current ratio reaches 0,69 for firms benefiting from the guarantee, against 0,99 for firms increasing their financial debt without any credit guarantee.

* Comparison the year before obtaining the credit guarantee.

A positive impact on firms’ growth and employment

- Bpifrance credit guarantees have a positive impact on companies’ growth.
- Estimates consistent with other studies on France (Lelarge *et al*., 2010; Bertoni *et al*., 2018)
- The amount of public endowment required to create one job ranges between 2,800 and 3,500 euros.

Average impact of Bpifrance loan guarantees on employment



Guarantees for business creation: detailed results

Guarantees for business creation: impacts on firms' survival and employment for cohort 2010

	Number of observations			Impact estimates according to methodology - total sample		
	Total sample	Treated firms	Treated firms after caliper	ATT - NN1	ATT - NN2	ATT - NN3
Impact on survival rate in T+3 (percentage points)	38 224	2 152	2 152	0,05*** (0,013)	0,06*** (0,013)	0,05*** (0,013)
Impact on total employment in T+3	24 487	1 551	1 551	0,5*** (0,149)	0,4*** (0,158)	0,4*** (0,183)

Source : SINE survey, authors' calculation. Figures correspond to impact estimates and standard deviations (in parenthesis).

Guarantees for expansion: detailed results

Guarantees for business expansion: impacts on firms' survival and employment for cohort 2013

	Number of observations			Impact estimation according to methodology		
	Total sample	Treated firms	Treated firms after caliper	ATT - NN1	ATT - NN2	ATT - NN3
Impact on survival rate in T+3 (percentage points)	683 711	4 496	4 496	0,035*** (0,006)	0,036*** (0,006)	0,034*** (0,006)
Variation of sales between T-1 and T+3 (K€)	734 675	4 479	4 479	127,68*** (35,25)	152,3*** (33,88)	163,21*** (34,53)
Variation of number of employees between T-1 and T+3	481 351	3 019	3 019	1,13*** (0,26)	1,23*** (0,27)	1,23*** (0,26)
Variation of financial debt between T-1 and T+3 (K€)	734 675	4 479	4 479	100,51*** (15,44)	93,55*** (10,9)	79,08*** (13,53)
Variation of tangible assets between T-1 and T+3 (K€)	734 675	4 479	4 479	64,86*** (14,12)	84,36*** (15,09)	81,77*** (14,96)

Replication of Lelarge et al. (2010)

- Results suggest that guarantees increase survival, opposite to the conclusion of Lelarge *et al.* (2010)

- Replication of Lelarge *et al.* (2010) using the same indicator (probability of bankruptcy)

	Impact on total employment		Impact on the rate of bankruptcies		Impact on the rate of dissolutions in T+3	
	T+3	T+5	T+3	T+5	T+3	T+5
Lelarge *et al.* (2010)	0,6	0,42	+ 12 ppt	+ 29 ppt	NA	NA
Impact with our baseline methodology (ATT NN1) - cohort 2010	0,5	0,7	+ 8 ppt	+ 10 ppt	- 5 ppt	- 7 ppt

- **Guarantees seem to affect the way firms exit the market**
  - Loan guarantees improve access to external finance → recipients have more creditors, which increases the probability of going through a legal bankruptcy filing in case of financial difficulties.

Conclusion and next steps

- Public loan guarantees appear to be an efficient way of alleviating financial frictions for SMEs throughout the cycle.

- Additional research still needed on several issues:
  - The risk profile of entrepreneurs using guarantees is not unequivocal
  - Regarding survival, opposite conclusions depending on whether we focus on bankruptcies (higher rate for recipients of guarantees) or business terminations (lower rate)

- Other studies planned for 2021:
  - Extending the study to guarantees for acquisition of business ownership
  - Exploiting a new identification strategy (break in the distribution process of guarantee) covering the period 2015 - 2016

Thank you !