Can Unemployment Insurance Spur Entrepreneurial Activity? Evidence From France

J. Hombert, A. Schoar, D. Sraer, and D. Thesmar (2017)

Presentation by Ximeng Fang (BGSE)

30 November 2017

Lowering entry barriers can encourage entrepreneurship.

- Entrepreneurship is vital for long-term economic innovation and growth
- ... and promoting self-employment by lowering entry barriers is a potential policy tool for reducing unemployment.
- One key barrier to entry is the significant economic risk involved in starting a business.
- Potential remedy: Provide downward insurance.
- Think Roy model: Reducing costs will increase selection into self-employment. The impact strength depends on the (joint) distribution of returns and costs.

Lowering entry barriers can encourage entrepreneurship.

- Entrepreneurship is vital for long-term economic innovation and growth
- ... and promoting self-employment by lowering entry barriers is a potential policy tool for reducing unemployment.
- One key barrier to entry is the significant economic risk involved in starting a business.
- Potential remedy: Provide downward insurance.
- Think Roy model: Reducing costs will increase selection into self-employment. The impact strength depends on the (joint) distribution of returns and costs.

But how is the selection into entrepreneurship affected?

For welfare/cost-benefit analyses, it is crucial to understand how selection into unemployment is affected by (lowering) entry barriers. HSST contrast two opposing views:

1. "Self-selection" view
   - Entry barriers might deter "bad" entrepreneurs from starting firms
   - Downward insurance would reduce quality of newly created firms
2. "Experimentation" view
   - Risks involved might dissuade talented but risk averse individuals from starting firms.
   - Downward insurance can encourage "good" entrepreneurs to enter

But how is the selection into entrepreneurship affected?

For welfare/cost-benefit analyses, it is crucial to understand how selection into unemployment is affected by (lowering) entry barriers. HSST contrast two opposing views:

1. **"Self-selection" view**
   - Entry barriers might deter "bad" entrepreneurs from starting firms
   - Downward insurance would reduce quality of newly created firms
2. **"Experimentation" view**
   - Risks involved might dissuade talented but risk averse individuals from starting firms.
   - Downward insurance can encourage "good" entrepreneurs to enter

But how is the selection into entrepreneurship affected?

For welfare/cost-benefit analyses, it is crucial to understand how selection into unemployment is affected by (lowering) entry barriers. HSST contrast two opposing views:

1. **"Self-selection" view**
   - Entry barriers might deter "bad" entrepreneurs from starting firms
   - Downward insurance would reduce quality of newly created firms
2. **"Experimentation" view**
   - Risks involved might dissuade talented but risk averse individuals from starting firms.
   - Downward insurance can encourage "good" entrepreneurs to enter

The authors study this exploiting an UI reform in France.

- Plan d'Aide au Retour à l'Emploi (PARE)
- Signed in July 2001, came into full effect as of mid-2002
- Significantly extends UI to unemployed who start a business:
  - Eligible entrepreneurs can claim unemployment benefits in case of business failure.
  - Income from entrepreneurial activity is supplemented if it falls below the entitled benefits (70% of pre-unemployment income) at any time.
  - These rights can be claimed for up to three years after the beginning of unemployment.

The authors study this exploiting an UI reform in France.

- Plan d'Aide au Retour à l'Emploi (PARE)
- Signed in July 2001, came into full effect as of mid-2002
- Significantly extends UI to unemployed who start a business:
  - Eligible entrepreneurs can claim unemployment benefits in case of business failure.
  - Income from entrepreneurial activity is supplemented if it falls below the entitled benefits (70% of pre-unemployment income) at any time.
  - These rights can be claimed for up to three years after the beginning of unemployment.

They shed light on three aspects.

1. Effect of lowering entry barriers on the level of entrepreneurial activity
2. Effect on the composition of entrepreneurs who are shifted into self-employment
3. Effect of increased firm creation (due to the reform) on incumbent firms and aggregate effects on employment and productivity

Effect on the Level of Entrepreneurial Activity

Boom in firm creation following PARE ... Causal?

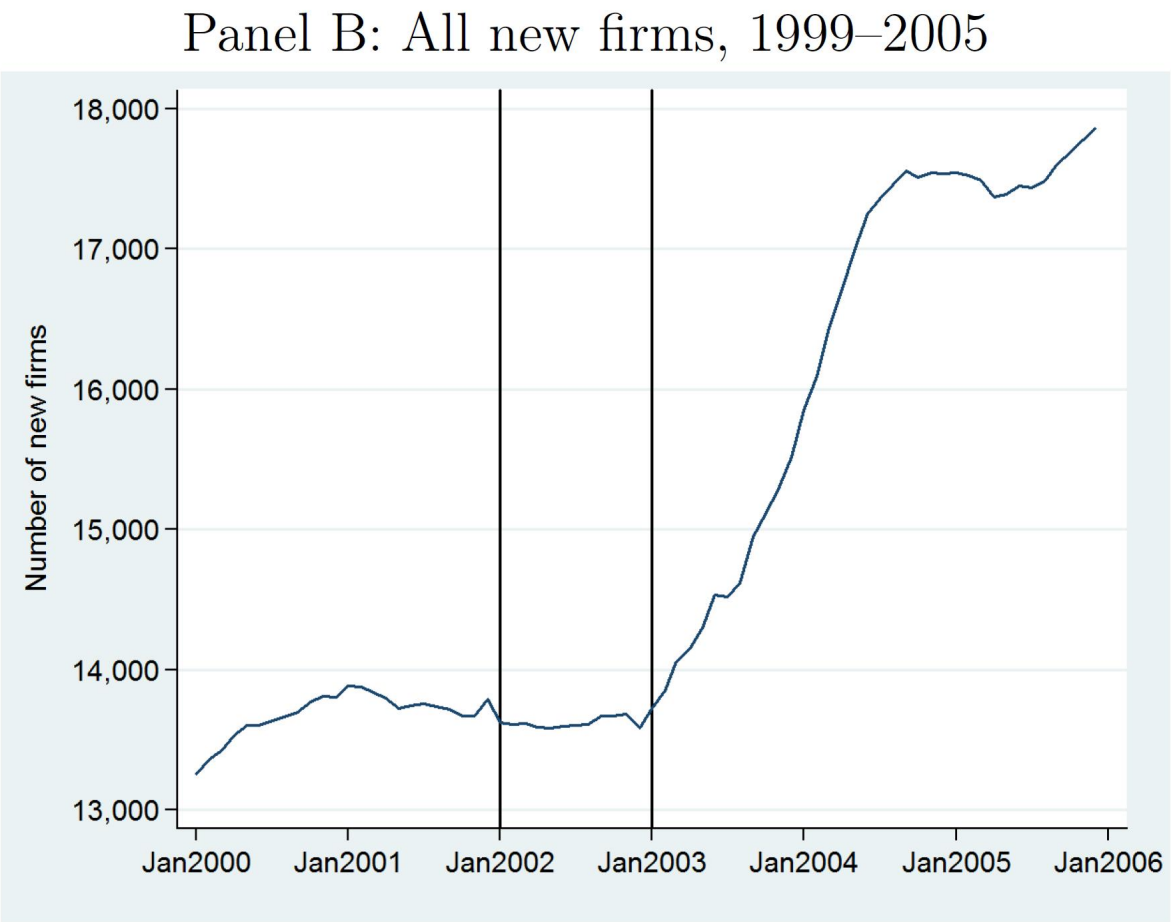


Figure: Number of newly created firms per month

▸ ACCRE take-up

The empirical strategy follows a DiD approach.

- Unemployed founders are most likely to choose sole proprietorship as legal business form, which is suited for low-scale firms with limited starting capital.
- Idea: Use this to set up a difference-in-differences estimator.
  - Define treatment intensity as fraction of sole proprietorships in each (4-digit code level) industry prior to the reforms.
  - Construct four quartiles (Q1–Q4) of treatment intensity
  - Industries with high treatment intensity should be affected more strongly by the PARE reform

▸ Identification assumption

- Data: French firm registry, tax accounting files, and SINE survey

The empirical strategy follows a DiD approach.

- Unemployed founders are most likely to choose sole proprietorship as legal business form, which is suited for low-scale firms with limited starting capital.
- Idea: Use this to set up a difference-in-differences estimator.
  - Define treatment intensity as fraction of sole proprietorships in each (4-digit code level) industry prior to the reforms.
  - Construct four quartiles (Q1–Q4) of treatment intensity
  - Industries with high treatment intensity should be affected more strongly by the PARE reform

▸ Identification assumption

- Data: French firm registry, tax accounting files, and SINE survey

The empirical strategy follows a DiD approach.

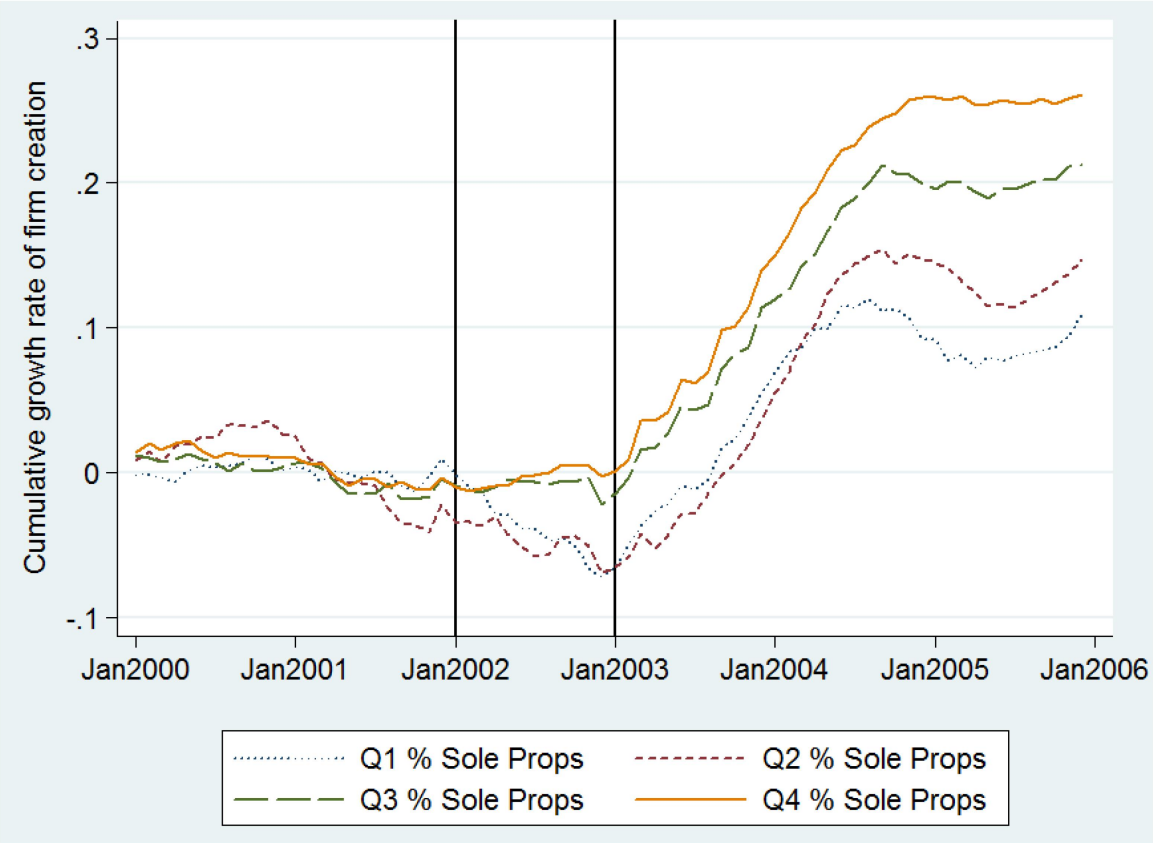
- Unemployed founders are most likely to choose sole proprietorship as legal business form, which is suited for low-scale firms with limited starting capital.
- Idea: Use this to set up a difference-in-differences estimator.
  - Define treatment intensity as fraction of sole proprietorships in each (4-digit code level) industry prior to the reforms.
  - Construct four quartiles (Q1–Q4) of treatment intensity
  - Industries with high treatment intensity should be affected more strongly by the PARE reform

▸ Identification assumption

- Data: French firm registry, tax accounting files, and SINE survey

More firms were created in strongly affected industries.

Figure: Growth rate of firm creation by treatment intensity



Effect on firm creation was 12-14 %p higher in Q4 than Q1.

	Number of firms created			
	(1)	(2)	(3)	(4)
POST	.1***	.046*	-.16***	-.25***
	(.014)	(.027)	(.031)	(.072)
Q2 % Sole Props × POST		.019	.035	.027
		(.043)	(.044)	(.043)
Q3 % Sole Props × POST		.08**	.11***	.11***
		(.038)	(.037)	(.036)
Q4 % Sole Props × POST		.12***	.13***	.14***
		(.038)	(.039)	(.039)
Industry capital intensity × POST				.041*
				(.025)
Industry growth × POST				-.048
				(.038)
Industry capital intensity × Trend				-.014
				(.0085)
Industry growth × Trend				.054***
				(.017)
Constant	3.2***	3.2***	.98***	.98***
	(.017)	(.018)	(.24)	(.23)
Treatment-specific trend	No	No	Yes	Yes
Month-of-the-year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	24,360	24,360	24,360	24,360
R-squared	.92	.92	.92	.92

▸ Survey evidence

Effect on the Composition of Entrepreneurs

No effect on average exit/failure rate in the first two years.

	Exit		
	(4)	(5)	(6)
POST	.011***	.0036	.019
	(.0017)	(.0058)	(.014)
Q2 % Sole Props × POST		.0032	.0038
		(.0096)	(.01)
Q3 % Sole Props × POST		.000016	-.00077
		(.0074)	(.007)
Q4 % Sole Props × POST		-.0087	-.0086
		(.0083)	(.0077)
Industry capital intensity			-.006
× POST			(.0052)
Industry growth × POST			-.0011
			(.0062)
Industry capital intensity			.0032**
× Trend			(.0015)
Industry growth × Trend			.0023
			(.0021)
Constant	.17***	.048	.048
	(.0028)	(.034)	(.033)
Treatment-specific trend	No	Yes	Yes
Month-of-the-year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	1,034,674	1,034,674	1,034,674
R-squared	.037	.038	.038

Table: Exit rate from firm registry within 2 years of firm creation

No effect on average probability of hiring new employees.

	Hire		
	(1)	(2)	(3)
POST	.01***	.0076	-.0021
	(.0038)	(.0046)	(.013)
Q2 % Sole Props × POST		-.0058	-.0088
		(.008)	(.0081)
Q3 % Sole Props × POST		.0053	.0052
		(.007)	(.0069)
Q4 % Sole Props × POST		-.0064	-.0089
		(.0056)	(.0061)
Industry capital intensity			.0066
× POST			(.0044)
Industry growth × POST			-.0086*
			(.005)
Industry capital intensity			-.0029
× Trend			(.002)
Industry growth × Trend			.0082*
			(.0043)
Constant	.26***	.21***	.21***
	(.0043)	(.049)	(.05)
Treatment-specific trend	No	Yes	Yes
Month-of-the-year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	1,034,674	1,034,674	1,034,674
R-squared	.091	.091	.091

Table: Probability of hiring within 2 years of firm creation

No effect on ex ante characteristics of entrepreneurs.

Panel B: Education and ambition after the reform

	High school		College		Plan to hire	
	(1)	(2)	(3)	(4)	(5)	(6)
POST	.03**	.026	-.0047	-.009	-.031**	-.026
	(.015)	(.035)	(.008)	(.023)	(.014)	(.025)
Q2 % Sole Props × POST	.0073	.000073	-.0094	-.014	-.00082	-.0035
	(.022)	(.022)	(.019)	(.02)	(.019)	(.019)
Q3 % Sole Props × POST	.033*	.031*	.0078	.0068	.029*	.028
	(.019)	(.018)	(.011)	(.011)	(.018)	(.017)
Q4 % Sole Props × POST	.012	.0052	.0047	.00076	.038**	.035**
	(.018)	(.017)	(.0092)	(.0097)	(.015)	(.016)
Industry capital intensity × POST		.0088		.0058		.00089
		(.014)		(.0092)		(.0084)
Industry growth × POST		-.023**		-.013**		-.012
		(.012)		(.0063)		(.01)
Constant	.5***	.5***	.14***	.14***	.25***	.25***
	(.0038)	(.0037)	(.0022)	(.0021)	(.0029)	(.0028)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	56,321	56,321	56,321	56,321	56,321	56,321
R-squared	.25	.25	.29	.29	.07	.07

Table: DiD based on responses from the 2002 and 2006 SINE survey

Concluding, the experimentation view does hold some merit.

- Despite a sizeable increase in firm creation in response to the reform, there are no significant effects on the composition of entrepreneurs based on observables.
- This holds both for ex post performance measures (exit rate and hiring rate) and ex ante characteristics (educational background and growth expectation).
- Hence, new entrepreneurs in response to the reform do not seem to be of considerably "worse" quality, as far as we can observe.
- These combined findings seem to support the "experimentation view" rather than the "selection view".

▸ Marginal entrepreneurs

Aggregate Effects on Employment and Productivity

New firms created jobs but crowded out from incumbents.

- The reform had a significant positive effect on aggregate job creation by newly-created firms (21%p in Q4 relative to Q1, corresponding to about 9,000 - 24,000 jobs per year).
- But it also decreased employment growth of small incumbent firms ($\leq$ 5 employees) by a magnitude of about 8,000 jobs per year in total. There is no significant impact on large incumbents.
- The net effect on aggregate employment (Q4 relative to Q1) is around +2%p and not statistically significant. Hence, newly-created firms crowd-out employment from incumbents almost one-to-one!

▸ Employment new
▸ Employment incumbent

New firms created jobs but crowded out from incumbents.

- The reform had a significant positive effect on aggregate job creation by newly-created firms (21%p in Q4 relative to Q1, corresponding to about 9,000 - 24,000 jobs per year).
- But it also decreased employment growth of small incumbent firms ($\leq$ 5 employees) by a magnitude of about 8,000 jobs per year in total. There is no significant impact on large incumbents.
- The net effect on aggregate employment (Q4 relative to Q1) is around +2%p and not statistically significant. Hence, newly-created firms crowd-out employment from incumbents almost one-to-one!

▸ Employment new
▸ Employment incumbent

New firms created jobs but crowded out from incumbents.

- The reform had a significant positive effect on aggregate job creation by newly-created firms (21%p in Q4 relative to Q1, corresponding to about 9,000 - 24,000 jobs per year).
- But it also decreased employment growth of small incumbent firms ($\leq$ 5 employees) by a magnitude of about 8,000 jobs per year in total. There is no significant impact on large incumbents.
- The net effect on aggregate employment (Q4 relative to Q1) is around +2%p and not statistically significant. Hence, newly-created firms crowd-out employment from incumbents almost one-to-one!

▸ Employment new

▸ Employment incumbent

However, productivity of new firms is higher.

Panel A: Simple measures of productivity

	Wage		Value added per worker		Sales per worker	
	(1)	(2)	(3)	(4)	(5)	(6)
New firm	5.2***	5.7***	7***	6.6***	9.3***	5.4***
	(.39)	(1.6)	(.37)	(.78)	(.51)	(1.9)
New firm × POST	.014	.18	.19	.62	.23	1.8
	(.18)	(.39)	(.15)	(.55)	(.29)	(1.1)
Q2 % Sole Props × New firm × POST		-.41		-.22		-2.2
		(.54)		(.65)		(1.3)
Q3 % Sole Props × New firm × POST		-.72		-.94		-2.3*
		(.47)		(.63)		(1.2)
Q4 % Sole Props × New firm × POST		.56		-.25		-1.4
		(.53)		(.6)		(1.2)
Constant	22***	22***	26***	26***	43***	43***
	(.11)	(.11)	(.61)	(.61)	(.86)	(.88)
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Quartile treatment × New firm	No	Yes	No	Yes	No	Yes
Observations	265,586	265,586	1,269,812	1,269,812	1,258,595	1,258,595
R-squared	.16	.16	.12	.12	.2	.2

Figure: Responses from the 2002 and 2006 SINE survey

Policy evaluation: What are the costs/benefits of PARE?

- The reform effectively created a (costly) subsidy for unemployed who start their own business.
- While it led to a large increase in firm creation (and probably shorter unemployment spells), the aggregate effects on employment are largely offset by crowding-out from incumbents.
- However, this job reallocation created additional value, because new firms tend to be more productive than incumbents.
- The latter holds both pre- and post-reform, because the quality of entrepreneurs has not worsened in response to lower entry barriers, which is consistent with the "experimentation view".

Policy evaluation: What are the costs/benefits of PARE?

- The reform effectively created a (costly) subsidy for unemployed who start their own business.
- While it led to a large increase in firm creation (and probably shorter unemployment spells), the aggregate effects on employment are largely offset by crowding-out from incumbents.
- However, this job reallocation created additional value, because new firms tend to be more productive than incumbents.
- The latter holds both pre- and post-reform, because the quality of entrepreneurs has not worsened in response to lower entry barriers, which is consistent with the "experimentation view".

That was my part – time to turn to the audience.

Thanks for your attention!

Questions?

Comments?

Concerns?

Ideas?

Tweets?

...

Appendix

But we are also interested in the marginal entrepreneurs.

- So far we have looked at the effect on average characteristics. What about the marginal entrepreneurs, i.e. those who are actually shifted into entrepreneurship by the reform?
- We compute the average quality of marginal entrepreneurs using two additional assumptions.
  1. All firms in Q1 are created by infra-marginal entrepreneurs:

$$\Delta q^{Q1} = q^{Q1}_{i,post} - q^{Q1}_{i,ante} = \Delta q_i$$

  2. Differential entry between Q1 and Q4 is 100% driven by marginal entrepreneurs (relative share δ):

$$\Delta q^{Q4} = \Big[\underbrace{q^{Q4}_{i,post} - q^{Q4}_{i,ante}}_{=\Delta q_i} + \delta \left(q_m - q^{Q4}_{i,ante} \right) \Big] \frac{1}{1+\delta}$$

But we are also interested in the marginal entrepreneurs.

- So far we have looked at the effect on average characteristics. What about the marginal entrepreneurs, i.e. those who are actually shifted into entrepreneurship by the reform?
- We compute the average quality of marginal entrepreneurs using two additional assumptions.
  1. All firms in Q1 are created by infra-marginal entrepreneurs:

$$\Delta q^{Q1} = q^{Q1}_{i,post} - q^{Q1}_{i,ante} = \Delta q_i$$

  2. Differential entry between Q1 and Q4 is 100% driven by marginal entrepreneurs (relative share δ):

$$\Delta q^{Q4} = \Big[\underbrace{q^{Q4}_{i,post} - q^{Q4}_{i,ante}}_{=\Delta q_i} + \delta \left(q_m - q^{Q4}_{i,ante} \right) \Big] \frac{1}{1+\delta}$$

But we are also interested in the marginal entrepreneurs.

- So far we have looked at the effect on average characteristics. What about the marginal entrepreneurs, i.e. those who are actually shifted into entrepreneurship by the reform?
- We compute the average quality of marginal entrepreneurs using two additional assumptions.
  1. All firms in Q1 are created by infra-marginal entrepreneurs:

$$\Delta q^{Q1} = q^{Q1}_{i,post} - q^{Q1}_{i,ante} = \Delta q_i$$

  2. Differential entry between Q1 and Q4 is 100% driven by marginal entrepreneurs (relative share δ):

$$\Delta q^{Q4} = \Big[\underbrace{q^{Q4}_{i,post} - q^{Q4}_{i,ante}}_{=\Delta q_i} + \delta \left(q_m - q^{Q4}_{i,ante} \right) \Big] \frac{1}{1+\delta}$$

Marginal versus average effect

- Combining the assumptions, we get

$$\underbrace{\Delta q^{Q4} - \Delta q^{Q1}}_{=\Delta q} = \frac{\delta}{1+\delta}\left(q_m - q_{i,post}^{Q4}\right)$$

- Now the difference between marginal and infra-marginal firms $q_m - q_{i,post}^{Q4}$ can be computed if we plug in the respective estimates.
- Take as example the probability of hiring new employees: $\Delta q = -0.89\%p$, $\delta = 0.14/1.1^*$, implying $q_m - q_i = -7.88\%p$
- Quite sizeable given a Q1 baseline of 27%, but recall that the difference in averages was insignificant in the first place.

*Note: The authors get the δ wrong, because they confuse % and %p!

Marginal versus average effect

- Combining the assumptions, we get

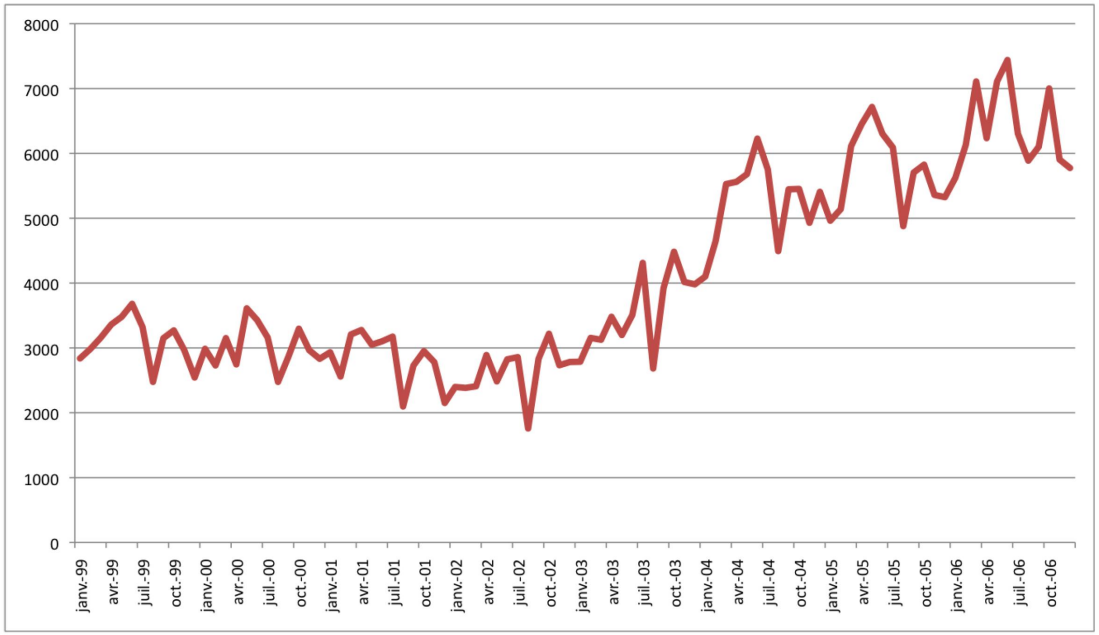
$$\underbrace{\Delta q^{Q4} - \Delta q^{Q1}}_{=\Delta q} = \frac{\delta}{1+\delta}\left(q_m - q_{i,post}^{Q4}\right)$$

- Now the difference between marginal and infra-marginal firms $q_m - q_{i,post}^{Q4}$ can be computed if we plug in the respective estimates.
- Take as example the probability of hiring new employees: $\Delta q = -0.89\%p$, $\delta = 0.14/1.1^*$, implying $q_m - q_i = -7.88\%p$
- Quite sizeable given a Q1 baseline of 27%, but recall that the difference in averages was insignificant in the first place.

* *Note: The authors get the δ wrong, because they confuse % and %p!*

Increase in subsidy take-up by unemployed

Figure 1: Monthly Number of New Firms Started With the ACCRE Subsidy



Source: French Ministry of Labor. Note: This figure shows the monthly number of individuals receiving the ACCRE subsidy, which is granted to unemployed individuals creating a new firm. The sample period covers 1999 to 2006.

▸ Back

Discussing the identifying assumptions

- **Main identifying assumption:** Absent the reform, changes in number and composition of newly created firms across industries would not be systematically related to treatment intensity.
- What e.g. if treatment intensity is correlated with exposure to aggregate fluctuations?
- Increase in aggregate industry sales not related to treatment intensity
- Additionally, control for pre-reform capital intensity and industry growth rate in DiD-regressions

Back

Significant part of firm creation was by unemployed

Table: Firm creation growth and increase in unemployed entrepreneurs

	2002–2006 entry growth		
	(1)	(2)	(3)
Change in % former unemployed	.23**		
	(.12)		
Change in % former unemployed ACCRE takers		.28***	
		(.095)	
Change in % former unemployed non-ACCRE takers			-.033
			(.24)
Aggregate sector growth rate	.39***	.42***	.37***
	(.11)	(.11)	(.11)
Constant	.073*	.025	.11***
	(.044)	(.049)	(.04)
Observations	195	195	195
R-squared	.071	.093	.053

Back

The reform stimulated job creation in the new firms.

	Number of jobs created adding entrepreneurs' jobs		Number of jobs created	
	(1)	(2)	(3)	(4)
POST	-.23***	-.48***	-.23***	-.53***
	(.051)	(.096)	(.049)	(.1)
Q2 % Sole Props × POST	.087	.075	.093	.087
	(.065)	(.064)	(.066)	(.066)
Q3 % Sole Props × POST	.17***	.18***	.21***	.22***
	(.059)	(.058)	(.06)	(.06)
Q4 % Sole Props × POST	.2***	.21***	.21***	.22***
	(.059)	(.058)	(.061)	(.061)
Industry capital intensity × POST		.096***		.1***
		(.033)		(.033)
Industry growth × POST		-.025		.055
		(.044)		(.057)
Industry capital intensity × Trend		-.037***		-.042***
		(.012)		(.013)
Industry growth × Trend		.079***		.12***
		(.014)		(.018)
Constant	.85***	.85***	.4	.4
	(.27)	(.25)	(.3)	(.27)
Treatment-specific trend	Yes	Yes	Yes	Yes
Month-of-the-year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	24,360	24,360	24,360	24,360
R-squared	.84	.84	.76	.77

Table: Responses from the 2002 and 2006 SINE survey

Back

But it crowded out employment from small incumbents.

	Small incumbents		Large incumbents		Small incumbents + New firms	
	(1)	(2)	(3)	(4)	(5)	(6)
POST	-.027***	-.027	-.058***	-.093**	.0016	-.14
	(.01)	(.04)	(.016)	(.038)	(.027)	(.13)
Q2 % Sole Props × POST	-.025*	-.024**	.02	.016	-.014	-.019
	(.013)	(.012)	(.019)	(.019)	(.031)	(.026)
Q3 % Sole Props × POST	-.019*	-.019	.03	.031	.0095	.012
	(.011)	(.012)	(.019)	(.019)	(.028)	(.028)
Q4 % Sole Props × POST	-.022**	-.022**	.01	.0099	.018	.024
	(.010)	(.011)	(.018)	(.017)	(.031)	(.033)
Industry capital intensity × POST		-.00031		.017		.053
		(.013)		(.012)		(.043)
Industry growth × POST		.0012		-.02		.00087
		(.0092)		(.022)		(.037)
Industry capital intensity × Trend		-.0013		-.0063***		-.019*
		(.0024)		(.002)		(.01)
Industry growth × Trend		.00073		-.002		.0043
		(.0019)		(.0034)		(.0077)
Constant	-.09	-.09	-7.1***	-7.1***	1.9	1.9
	(1.4)	(1.4)	(2.1)	(2.1)	(4.2)	(3.9)
Treatment-specific trend	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,610	2,610	2,610	2,610	2,610	2,610
R-squared	.47	.47	.17	.18	.61	.62

Table: Employment growth of incumbent firms

Back