Japan Society of International Economics
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# Industry and regional import effects on job flows by single- and multi-unit firms

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## Introduction 1/4

- Purpose: estimate the effect of imports on job flows in Japan
  - Trade impact on job flows is the underlying factor through which globalization impacts domestic employment
- Import shock: import from China ("China Shock")
- Job flows: decadal job changes in establishments
  - Job creation: establishments' entry and expansion
  - Job destruction: establishments' exit and contraction
  - Decadal job changes: following Autor et al. (2013 AER)

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## Introduction 2/4

- Firm/est.-level analyses about import shocks from developing countries on domestic jobs in developed countries
  - Bernard et al. (2006 JIE, USA, 5y), Mion and Zhu (2013 JIE, Belgium, annual): negative effect on net jobs and exit
  - Kamal and Lovely (2017 JAE, USA, 5y): negative on production emp.
  - Groizard et al. (2015 EI, California, 3y): depend on est.' productivity
    - Increase (decrease) job expansion, decrease (increase) job contraction, and lower (higher) exit likelihood, for more (less) productive est.
  - Uysal et al. (2015 EER, USA, 3y): depend on firms' export status
    - Increase (decrease) layoffs with productivity for non-exporting (exporting) firms

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## Introduction 3/4

- This study's framework:
  - Import shock from China & decadal job changes (Autor et al. 2013 AER; Dauth et al. 2014 JEEA)
  - Import shock on job creation and destruction (Groizard et al. 2015 EI; Asquith et al. 2019 JIE)
  - Groups of est. by organization and by size
    - Single-unit firms / Multi-unit firms
  - Three variables of import shocks on est. in industry *i* in region *r*
    - Industry-level shock: import penetration ratio in industry *i*
    - Region-level shock:

      per-job import in region *r*

      = industry *i*'s import in region *r* + import of other industries in region *r*

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## Introduction 4/4

- This study complements the findings of the following Japanese research from the point of job flows
  - Industry-level: Tomiura (2004 JER), Kiyota et al. (2021 WE)
  - Region-level: Taniguchi (2019 JJIE), Kainuma and Saito (2022 WE)
  - Firm/est.-level: Hayakawa et al. (2021 JWE), Matsuura (2021 WE)

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## Data & Classifications 1/6

- Establishment 2006-2016
  - *Establishment and Enterprise Census*: 2006
  - *Economic Census for Business Frame*: 2009
  - *Economic Census for Business Activity*: 2012 & 2016
- Establishments' longevity
  - *Establishment and Enterprise Census*: 1996, 1999, 2001, 2004, 2006
- An est. is considered to be under a multi-unit firm in 2006 if:
  - It reports the phone number of its headquarters
  - Its phone number is reported by other establishments as their headquarters

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## Data & Classifications 2/6

- Trade
  - Japanese imports: Japan Customs
  - World trade (for IV): *World Integrated Trade Solution*
- Domestic production (for import penetration ratio)
  - *Census of Manufacture*
- 108 industries (same as Endoh 2021 JJIE & Endoh 2021 JWE)
  - Petroleum and non-ferrous metals refining are excluded
- 228 employment areas
  - Urban employment areas developed by the Center for Spatial Information Service, the University of Tokyo

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## Data & Classifications 3/6

- Industry-level import shock: import penetration rate

$$\Delta t_i^C \equiv \underbrace{\frac{\Delta m_{i,2006}^C}{y_{i,2006} + m_{i,2006} - e_{i,2006}}}_{\text{Direct effect}} + \underbrace{\sum_j \hat{a}_{j,i} \frac{\Delta m_{j,2006}^C}{y_{j,2006} + m_{j,2006} - e_{j,2006}}}_{\text{Indirect effect from downstream industries}} \quad (1)$$

  - Denominator: domestic supply = production + import - export
  - $\hat{a}_{j,i} \equiv \frac{x_{j,i}}{y_i}$ : the ratio of industry *i*'s output purchased by downstream industry *j* to total output of industry *I* (from Japanese I-O table)

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## Data & Classifications 4/6

- Region-level import shock: per-job import

$$\Delta t_r^{E,C} \equiv \sum_i \frac{E_{i,r,2006}}{E_{r,2006}} \Delta t_i^{E,C}$$

$$\Delta t_i^{E,C} \equiv \frac{\Delta m_{i,2006}^C}{E_{i,2006}} + \sum_j \hat{a}_{j,i} \frac{\Delta m_{j,2006}^C}{E_{j,2006}}$$

- $E_{i,r,2006}$ : ind *i*'s total number of jobs in region *r*
- $E_{r,2006}$ : total number of jobs, including non-mfg jobs, in region *r*
- $E_{i,2006}$ : industry *i*'s total number of jobs

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## Data & Classifications 5/6

- Region-level shock is further divided into ind *i*'s and the others'

$$\Delta t_{r,i}^{E,C} \equiv \frac{E_{i,r,2006}}{E_{r,2006}} \Delta t_i^{E,C} \qquad (2)$$

Regional weighted sum of industry *i*'s per-job import

It is used to estimate how regional agglomeration of the industry affects the impact of import shocks on establishments' business

$$\Delta t_{r,-i}^{E,C} \equiv \Delta t_r^{E,C} - \Delta t_{r,i}^{E,C} \qquad (3)$$

Regional shocks brought in from all industries except industry *i*

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# Data & Classifications 6/6

- IV for Japanese imports from China: Chinese exports to eight developed countries
  - Australia, Denmark, Finland, Germany, New Zealand, Spain, Switzerland, and the United States
  - à la Autor et al., 2013 and Acemoglu et al., 2016
  - IV for three trade variables are constructed in the same manner

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# Job Flows 1/8

- Figure 1: Number of establishments by their types
- # est. 2006 -> 2016

  Single-unit firms

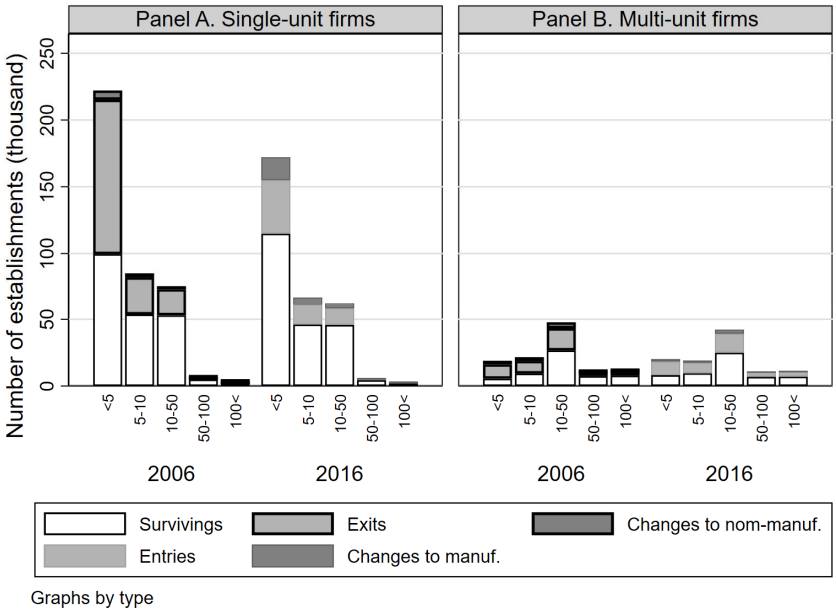
  393,000 -> 310,000

  Multi-unit firms

  112,000 -> 103,000
- Mode

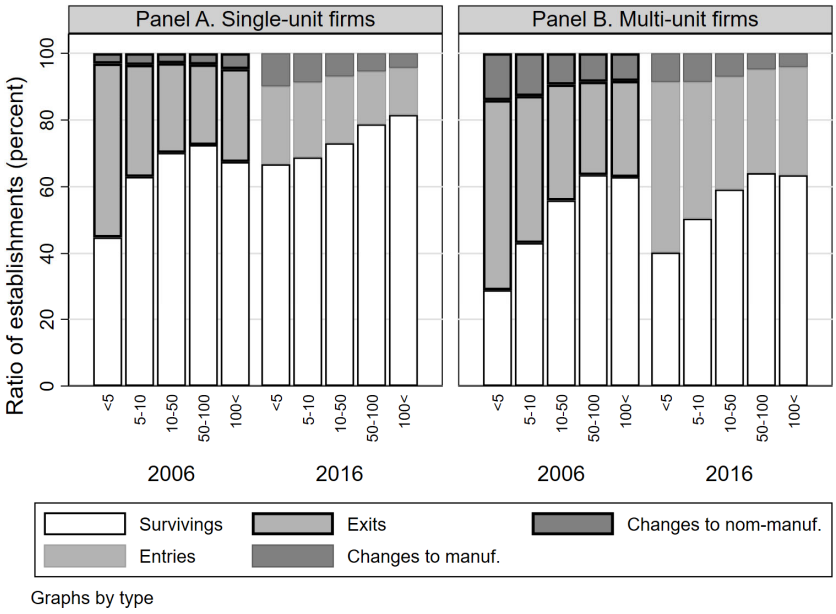
  S-unit firms <5

  M-unit firms 10-50



# Job Flows 2/8

- Figure 2: Ratio of establishments by their types
- Smaller est. group tends to have more exits and entries
- Multi-unit firms tend to have more exits and entries




# Job Flows 3/8

- Figure 3: Number of jobs by establishment types
- # job 2006 -> 2016

  Single-unit firms

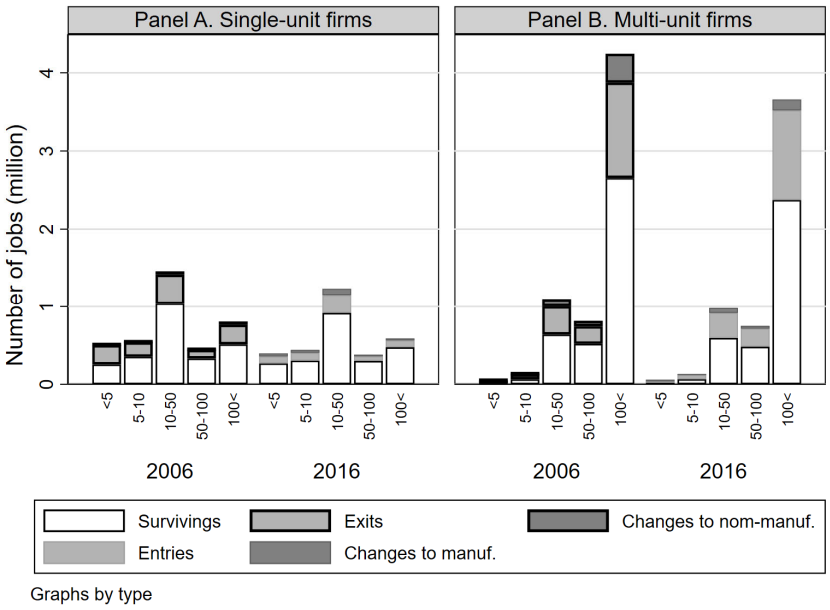
  3.8 m -> 3.0 m

  Multi-unit firms

  6.4 m -> 5.6 m
- Mode

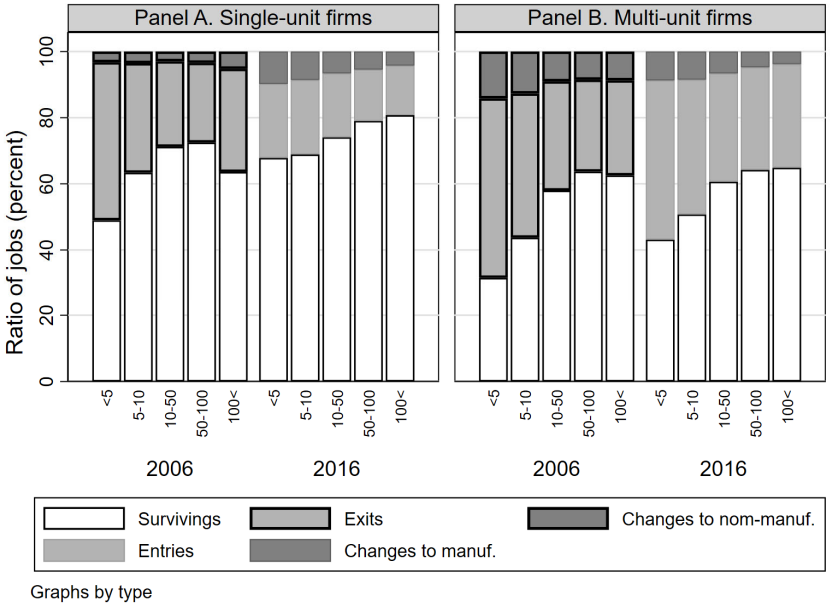
  S-unit firms 10-50

  M-unit firms 100<



# Job Flows 4/8

- Figure 4: Ratio of jobs by establishment types
- Smaller est. group tends to have more exits and entries
- Multi-unit firms tend to have more exits and entries




# Job Flows 5/8

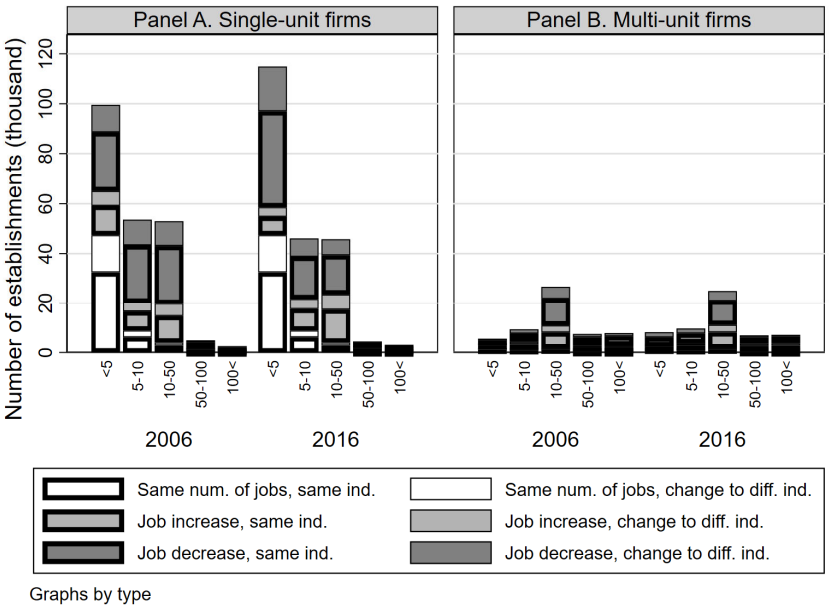
- Figure 5: Number of establishments surviving in mfg by their types
- S-unit firms 06 -> 16

  Same ind. 147,000

  Diff. ind. 67,000
- M-unit firms 06 -> 16

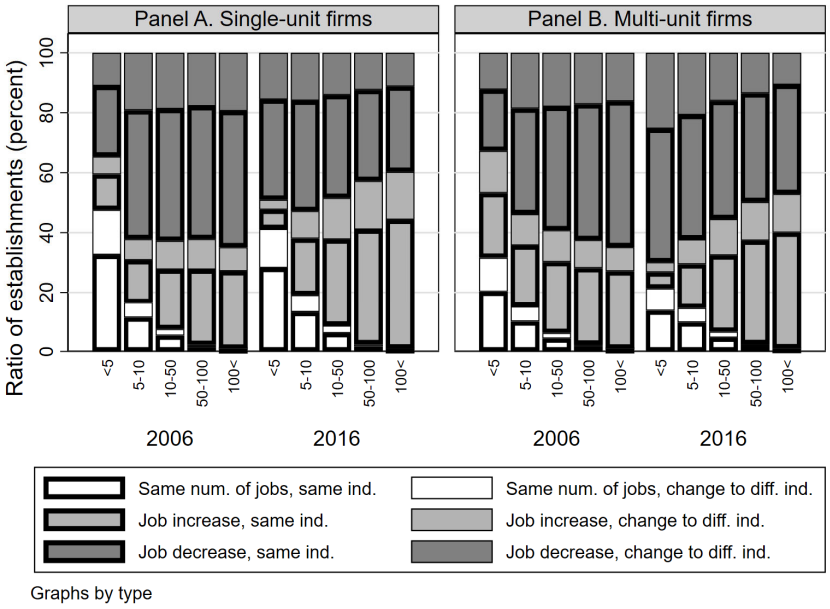
  Same ind. 39,000

  Diff. ind. 17,000



# Job Flows 6/8

- Figure 6: Ratio of establishments surviving in mfg by their types
- The ratio of est. shifting to diff. ind. is similar in each est.-size group




# Job Flows 7/8

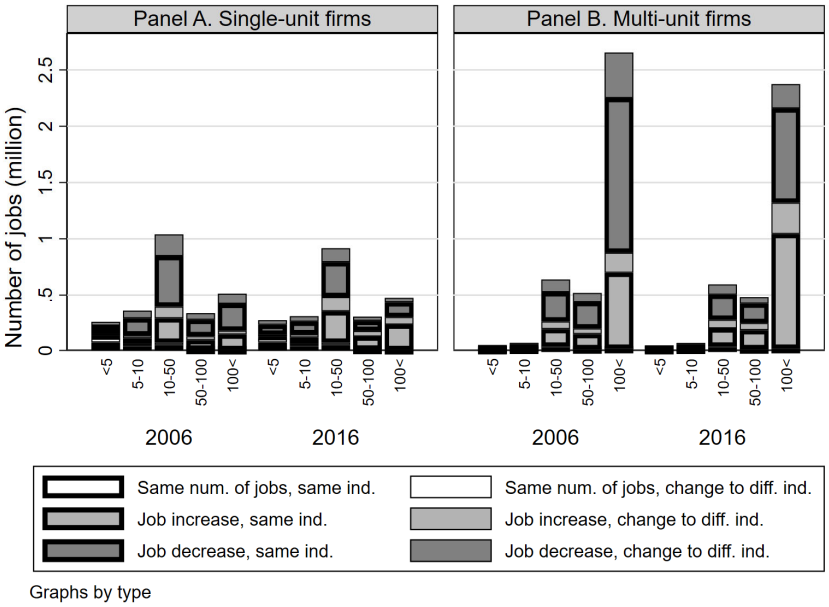
- Figure 7: Number of jobs by surviving establishment types
- S-unit firms 06 -> 16

  Same ind. 1.8 m

  Diff. ind. 0.7 m
- M-unit firms 06 -> 16

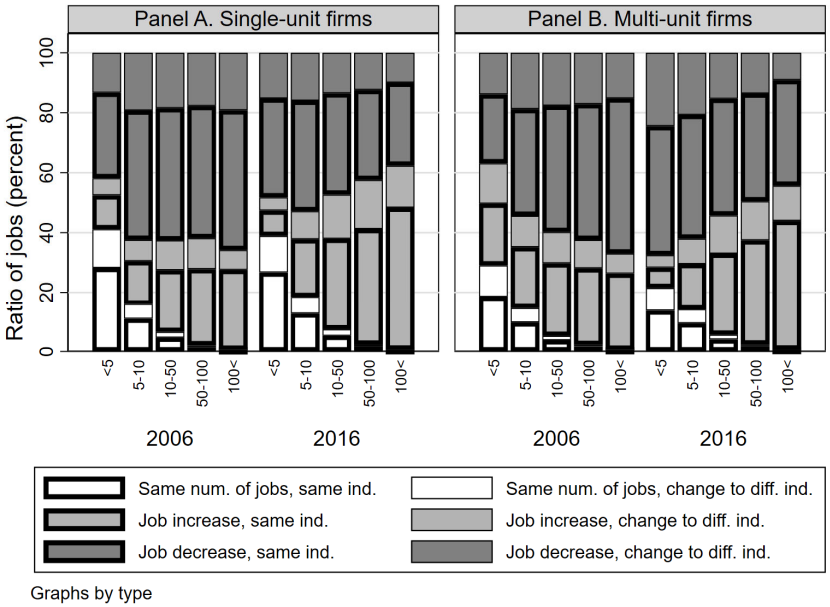
  Same ind. 3.0 m

  Diff. ind. 0.9 m



# Job Flows 8/8

- Figure 8: Ratio of jobs by surviving establishment types
- The ratio of jobs shifting to diff. ind. is similar in each est.-size group




# Regression Equation 1/3

- Discrete dependent variable: iv probit, iv multinomial probit

$$Pr(Outcome_{e,r,i}) = \Phi(\beta_1 \Delta t_i^C + \beta_2 \Delta t_{r,i}^{E,C} + \beta_3 \Delta t_{r,-i}^{E,C} + \boldsymbol{X_e'}\boldsymbol{\beta_4} + \boldsymbol{X_i'}\boldsymbol{\beta_5} + \boldsymbol{X_r'}\boldsymbol{\beta_6} + \beta_7 X_{i,r} + \epsilon_e)$$

$X_e$ : est.-level control variables (est. longevity, the ratio of regular workers, the ratio of female workers)

$X_i$: industry-level control variable (nine comprehensive ind. categories)

$X_r$: region-level control variable (seven large regions, regional ratio of female workers, regional ratio of manufacturing workers)

$X_{i,r}$: the ratio of jobs in an industry *i* to total jobs in region *r*, $\frac{E_{i,r,2006}}{E_{r,2006}}$ (to control industry agglomeration)

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# Regression Equation 2/3

- Continuous dependent variable: iv reg

$$Outcome_{e,r,i} = \alpha + \beta_1 \Delta t_i^C + \beta_2 \Delta t_{r,i}^{E,C} + \beta_3 \Delta t_{r,-i}^{E,C} + \boldsymbol{X_e'\beta_4} + \boldsymbol{X_i'\beta_5} + \boldsymbol{X_r'\beta_6} + \beta_7 X_{i,r} + \epsilon_e$$

$$Outcome_{e,r,i} \equiv \frac{2(job_{e,2016} - job_{e,2006})}{job_{e,2016} + job_{e,2006}}$$

$Outcome_{e,r,i}$ is normalized to have the value between -2 and 2

Negative: job destruction by est. contraction

Positive: job creation by est. expansion

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# Regression Equation 3/3

Table 1: Descriptive statistics

| | Mean | Std. Dev. | P5 | P50 | P95 |
|---|---|---|---|---|---|
| Surviving establishments (# obs.: 270,140) | | | | | |
| Num. of jobs in 2006 | 23.630 | 120.764 | 1 | 6 | 79 |
| Num. of jobs in 2016 | 21.486 | 125.421 | 1 | 5 | 73 |
| $\Delta t_i^C$ | 0.038 | 0.059 | −0.005 | 0.029 | 0.108 |
| $\Delta t_{r,i}^{E,C}$ | 0.006 | 0.018 | −0.001 | 0.002 | 0.023 |
| $\Delta t_{r,-i}^{E,C}$ | 0.197 | 0.106 | 0.066 | 0.179 | 0.372 |
| Exiting establishments (# obs.: 235,218) | | | | | |
| Num. of jobs in 2006 | 16.046 | 96.158 | 1 | 4 | 50 |
| $\Delta t_i^C$ | 0.039 | 0.061 | −0.005 | 0.030 | 0.108 |
| $\Delta t_{r,i}^{E,C}$ | 0.006 | 0.017 | −0.001 | 0.001 | 0.022 |
| $\Delta t_{r,-i}^{E,C}$ | 0.189 | 0.100 | 0.067 | 0.173 | 0.363 |
| Entrying establishments (# obs.: 143,310) | | | | | |
| Num. of jobs in 2016 | 19.609 | 93.417 | 1 | 5 | 66 |
| $\Delta t_i^C$ | 0.034 | 0.057 | −0.020 | 0.021 | 0.108 |
| $\Delta t_{r,i}^{E,C}$ | 0.005 | 0.015 | −0.001 | 0.001 | 0.017 |
| $\Delta t_{r,-i}^{E,C}$ | 0.188 | 0.106 | 0.061 | 0.172 | 0.368 |

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# Marginal Effects 1/5

- Table 3: Establishments' exit, IV probit

Marginal effects on exit

| Variables | Establishments in single-unit firms $< 5$ (1) | $5-50$ (2) | $50 <$ (3) | Establishments in multi-unit firms $< 10$ (4) | $10-100$ (5) | $100 <$ (6) |
|---|---|---|---|---|---|---|
| $\Delta t_i^C$ | −0.123** | 0.168*** | 0.172 | 0.090 | −0.060 | −0.082 |
| | (0.051) | (0.050) | (0.123) | (0.107) | (0.078) | (0.112) |
| $\Delta t_{r,i}^{E,C}$ | 0.918*** | 0.008 | 0.264 | −0.122 | 0.219 | 0.886*** |
| | (0.205) | (0.140) | (0.245) | (0.295) | (0.177) | (0.223) |
| $\Delta t_{r,-i}^{E,C}$ | −0.049* | −0.033 | −0.030 | −0.047 | 0.038 | 0.054 |
| | (0.026) | (0.026) | (0.083) | (0.058) | (0.036) | (0.074) |

- The effect of import shocks is quite uneven
- Small single-unit firms are sensitive to industry-level shocks
  - Establishments of 1-5 (Column 1) choose to shift to non-mfg, rather to exit (Table 4)
- Regional agglomeration makes est. (1) & (6) more sensitive to import shocks

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# Marginal Effects 2/5

- Table 4: Est' shift to non-mfg and their exit, multinomial IV probit
- Positive effects on exit correspond to negative effects on surviving in mfg.
- Industry-level shock promotes est. of 1-5 in single-unit firms (Column 1) to shift to non-mfg, rather to exit.
  - Establishments in this group are agile to survive

| Variables | Establishments in single-unit firms $< 5$ (1) | $5-50$ (2) | $50 <$ (3) | Establishments in multi-unit firms $< 10$ (4) | $10-100$ (5) | $100 <$ (6) |
|---|---|---|---|---|---|---|
| Survive in manufacturing | | | | | | |
| $\Delta t_i^C$ | 0.028 | −0.134*** | −0.014 | −0.060 | −0.050 | 0.050 |
| | (0.051) | (0.051) | (0.129) | (0.102) | (0.082) | (0.120) |
| $\Delta t_{r,i}^{E,C}$ | −0.554*** | 0.095 | −0.291 | 0.278 | 0.153 | −0.943*** |
| | (0.210) | (0.150) | (0.252) | (0.290) | (0.196) | (0.243) |
| $\Delta t_{r,-i}^{E,C}$ | 0.042* | 0.030 | 0.062 | 0.097 | −0.032 | −0.109 |
| | (0.025) | (0.026) | (0.087) | (0.055) | (0.039) | (0.080) |
| Shift to non-manufacturing | | | | | | |
| $\Delta t_i^C$ | 0.097*** | −0.035* | −0.163*** | −0.021 | 0.107** | 0.015 |
| | (0.020) | (0.021) | (0.063) | (0.077) | (0.049) | (0.070) |
| $\Delta t_{r,i}^{E,C}$ | −0.436*** | −0.128 | 0.009 | −0.210 | −0.450*** | 0.099 |
| | (0.145) | (0.089) | (0.107) | (0.240) | (0.165) | (0.152) |
| $\Delta t_{r,-i}^{E,C}$ | 0.004 | 0.002 | −0.039 | −0.051 | −0.016 | 0.050 |
| | (0.009) | (0.010) | (0.041) | (0.041) | (0.027) | (0.055) |
| Exit | | | | | | |
| $\Delta t_i^C$ | −0.124** | 0.169*** | 0.177 | 0.081 | −0.057 | −0.065 |
| | (0.051) | (0.050) | (0.123) | (0.107) | (0.078) | (0.111) |
| $\Delta t_{r,i}^{E,C}$ | 0.989*** | 0.033 | 0.282 | −0.068 | 0.297 | 0.844*** |
| | (0.214) | (0.143) | (0.248) | (0.298) | (0.184) | (0.223) |
| $\Delta t_{r,-i}^{E,C}$ | −0.046* | −0.032 | −0.023 | −0.047 | 0.048 | 0.058 |
| | (0.026) | (0.026) | (0.083) | (0.058) | (0.037) | (0.076) |

# Marginal Effects 3/5

- Table 5: Establishments' entry, IV probit

Marginal effects on entry

| Variables | Establishments in single-unit firms $< 5$ (1) | $5-50$ (2) | $50 <$ (3) | Establishments in multi-unit firms $< 10$ (4) | $10-100$ (5) | $100 <$ (6) |
|---|---|---|---|---|---|---|
| B2. Without exit ratio of the region | | | | | | |
| $\Delta t_i^C$ | 0.003 | 0.122** | −0.098 | −0.059 | −0.252** | −0.234 |
| | (0.052) | (0.059) | (0.163) | (0.139) | (0.100) | (0.158) |
| $\Delta t_{r,i}^{E,C}$ | 0.392 | −1.014*** | −0.277 | −0.965** | 0.014 | 0.804*** |
| | (0.214) | (0.195) | (0.269) | (0.483) | (0.227) | (0.297) |
| $\Delta t_{r,-i}^{E,C}$ | 0.004 | −0.031 | 0.106 | −0.092* | −0.008 | −0.023 |
| | (0.025) | (0.025) | (0.075) | (0.054) | (0.037) | (0.082) |

- Two positive effects correspond to exit promotion of import shocks
- Other significant effects are negative: import shock deter establishments to enter

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# Marginal Effects 4/5

- Table 6: Est' shift from non-mfg and their exit , multinomial IV probit

- Generally, import shocks have positive significant effect on surviving and negative significant effect on shift and entry to mfg.
  - Import shocks relatively deter establishments' entry and shift to mfg.

| Variables | Establishments in single-unit firms $< 5$ (1) | $5-50$ (2) | $50 <$ (3) | Establishments in multi-unit firms $< 10$ (4) | $10-100$ (5) | $100 <$ (6) |
|---|---|---|---|---|---|---|
| Survive in manufacturing | | | | | | |
| $\Delta t_i^C$ | −0.066 | 0.083 | 0.183 | 0.198 | 0.282*** | 0.231 |
| | (0.059) | (0.067) | (0.184) | (0.138) | (0.104) | (0.163) |
| $\Delta t_{r,i}^{E,C}$ | 0.468* | 1.142*** | 0.156 | 1.237** | 0.105 | −0.839*** |
| | (0.280) | (0.230) | (0.291) | (0.493) | (0.242) | (0.316) |
| $\Delta t_{r,-i}^{E,C}$ | −0.014 | 0.026 | 0.031 | 0.185*** | −0.012 | −0.010 |
| | (0.027) | (0.027) | (0.088) | (0.054) | (0.039) | (0.085) |
| Shift from non-manufacturing | | | | | | |
| $\Delta t_i^C$ | 0.069 | −0.197*** | −0.083 | −0.130 | −0.027 | 0.002 |
| | (0.040) | (0.042) | (0.107) | (0.086) | (0.057) | (0.072) |
| $\Delta t_{r,i}^{E,C}$ | −1.014*** | −0.222 | 0.113 | −0.483 | −0.197 | 0.022 |
| | (0.263) | (0.173) | (0.146) | (0.428) | (0.154) | (0.172) |
| $\Delta t_{r,-i}^{E,C}$ | 0.008 | 0.006 | −0.148*** | −0.100*** | 0.018 | 0.029 |
| | (0.016) | (0.017) | (0.057) | (0.033) | (0.021) | (0.040) |
| Entry | | | | | | |
| $\Delta t_i^C$ | −0.003 | 0.114* | −0.101 | −0.069 | −0.256*** | −0.233 |
| | (0.052) | (0.059) | (0.163) | (0.140) | (0.100) | (0.157) |
| $\Delta t_{r,i}^{E,C}$ | 0.546** | −0.921*** | −0.269 | −0.754 | 0.093 | 0.818*** |
| | (0.225) | (0.196) | (0.271) | (0.508) | (0.230) | (0.297) |
| $\Delta t_{r,-i}^{E,C}$ | 0.007 | −0.032 | 0.118 | −0.085 | −0.007 | −0.019 |
| | (0.025) | (0.025) | (0.075) | (0.054) | (0.037) | (0.082) |

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# Marginal Effects 5/5

- Table 7: Establishments' job changes, IV
- Import penetration ratio and regional import shock to other industries enhance job flows
  - They increase both job increase and job decrease
  - It is observed across all groups
- Regional agglomeration weakens job flows for small est. in single-unit firms (Columns 1 & 2)
  - This effect is limited, since $\Delta t_{r,i}^{E,C}$ has small values

| Variables | Establishments in single-unit firms $< 5$ (1) | $5-50$ (2) | $50 <$ (3) | Establishments in multi-unit firms $< 10$ (4) | $10-100$ (5) | $100 <$ (6) |
|---|---|---|---|---|---|---|
| A1. Three import indices | | | | | | |
| $\Delta t_i^C$ | 0.084 | 0.088 | 0.011 | −0.085 | −0.232* | −0.593*** |
| | (0.064) | (0.066) | (0.155) | (0.208) | (0.120) | (0.194) |
| $\Delta t_{r,i}^{E,C}$ | −0.334 | −0.252 | −0.952** | −0.364 | −0.025 | −0.695 |
| | (0.229) | (0.173) | (0.414) | (0.604) | (0.255) | (0.438) |
| $\Delta t_{r,-i}^{E,C}$ | −0.018 | −0.039 | −0.135 | 0.041 | −0.097* | −0.192** |
| | (0.030) | (0.030) | (0.095) | (0.086) | (0.050) | (0.095) |
| K-P $F$ stat. | 3,002 | 2,542 | 272 | 433 | 830 | 223 |
| A2. Three import indices with interaction terms | | | | | | |
| $\Delta t_i^C$ | 0.631*** | 0.653*** | 0.274 | 0.952*** | 0.520*** | 0.102 |
| | (0.036) | (0.044) | (0.242) | (0.134) | (0.088) | (0.220) |
| × job inc. × same ind. | 2.614*** | 1.612*** | 0.504* | 2.880*** | 1.143*** | 0.856*** |
| | (0.133) | (0.097) | (0.272) | (0.348) | (0.150) | (0.291) |
| × job inc. × diff. ind. | 2.095*** | 0.882*** | 0.670** | 1.245*** | 1.134*** | 1.165*** |
| | (0.154) | (0.085) | (0.319) | (0.330) | (0.167) | (0.351) |
| × job dec. × same ind. | −2.732*** | −1.841*** | −1.091*** | −3.178*** | −1.588*** | −1.041*** |
| | (0.063) | (0.068) | (0.282) | (0.221) | (0.133) | (0.280) |
| × job dec. × diff ind. | −2.214*** | −1.601*** | −0.939*** | −1.963*** | −1.758*** | −1.066*** |
| | (0.072) | (0.066) | (0.279) | (0.187) | (0.133) | (0.328) |
| $\Delta t_{r,i}^{E,C}$ | −0.371*** | −0.461*** | 0.138 | −0.733* | −0.336 | 0.186 |
| | (0.133) | (0.121) | (0.312) | (0.416) | (0.255) | (0.381) |
| × job inc. × same ind. | −2.082*** | −0.576** | 0.198 | −2.599** | −0.235 | −0.095 |
| | (0.431) | (0.225) | (0.416) | (1.165) | (0.319) | (0.469) |
| × job inc. × diff. ind. | −2.732*** | −0.600*** | −0.372 | −0.257 | −0.328 | −0.919 |
| | (0.500) | (0.193) | (0.740) | (0.838) | (0.337) | (0.699) |
| × job dec. × same ind. | 1.665*** | 0.205 | −0.810** | 1.957*** | −0.047 | −0.689 |
| | (0.210) | (0.169) | (0.380) | (0.662) | (0.286) | (0.452) |
| × job dec. × diff ind. | 1.869*** | 0.716*** | −1.312* | 1.929*** | 0.625** | −0.565 |
| | (0.206) | (0.159) | (0.698) | (0.495) | (0.307) | (0.649) |
| $\Delta t_{r,-i}^{E,C}$ | 0.546*** | 0.384*** | 0.009 | 0.903*** | 0.378*** | 0.128 |
| | (0.025) | (0.026) | (0.091) | (0.085) | (0.049) | (0.120) |
| × job inc. × same ind. | 1.815*** | 1.098*** | 1.017*** | 1.564*** | 1.173*** | 1.118*** |
| | (0.031) | (0.018) | (0.053) | (0.075) | (0.031) | (0.076) |
| × job inc. × diff. ind. | 1.841*** | 1.129*** | 1.155*** | 1.758*** | 1.199*** | 1.136*** |
| | (0.045) | (0.024) | (0.068) | (0.102) | (0.046) | (0.099) |
| × job dec. × same ind. | −1.989*** | −1.373*** | −1.002*** | −2.037*** | −1.484*** | −1.239*** |
| | (0.014) | (0.013) | (0.051) | (0.045) | (0.027) | (0.073) |
| × job dec. × diff ind. | −2.042*** | −1.426*** | −1.027*** | −2.243*** | −1.497*** | −1.377*** |
| | (0.022) | (0.019) | (0.070) | (0.058) | (0.037) | (0.096) |
| K-P $F$ stat. | 640 | 488 | 38 | 78 | 148 | 43 |
| # obs. | 110,117 | 96,550 | 6,760 | 15,845 | 33,430 | 7,438 |

# Summary

- The stark contrast between establishments' turnover (entry/exit) and their size change
- Establishments' turnover: the effect of import shocks is uneven
  - Industry agglomeration strengthens the import effect on exit for some groups
  - Import shocks stimulate both exit and entry in some groups
- Establishments' size change: the effect is universal
  - Import penetration ratio and regional import shock to other industries enhance both job increase and job decrease
- Further exploration: the logic behind the uneven effect of trade shocks on establishments' exit and entry

Figure 1: Number of establishments by their types

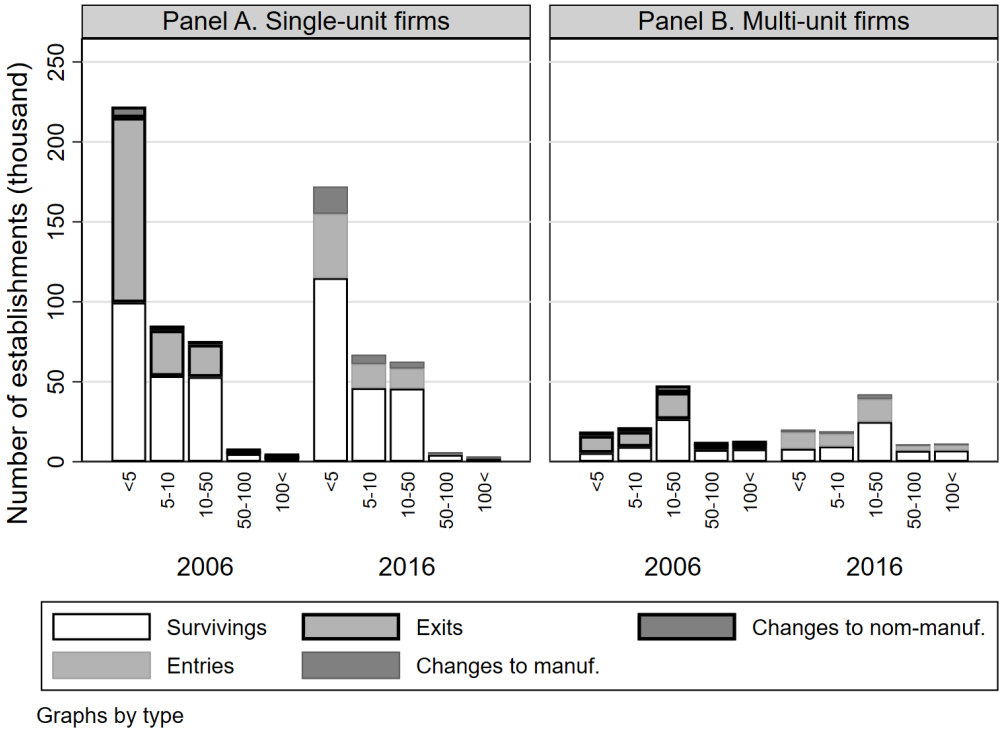


Figure 2: Ratio of establishments by their types

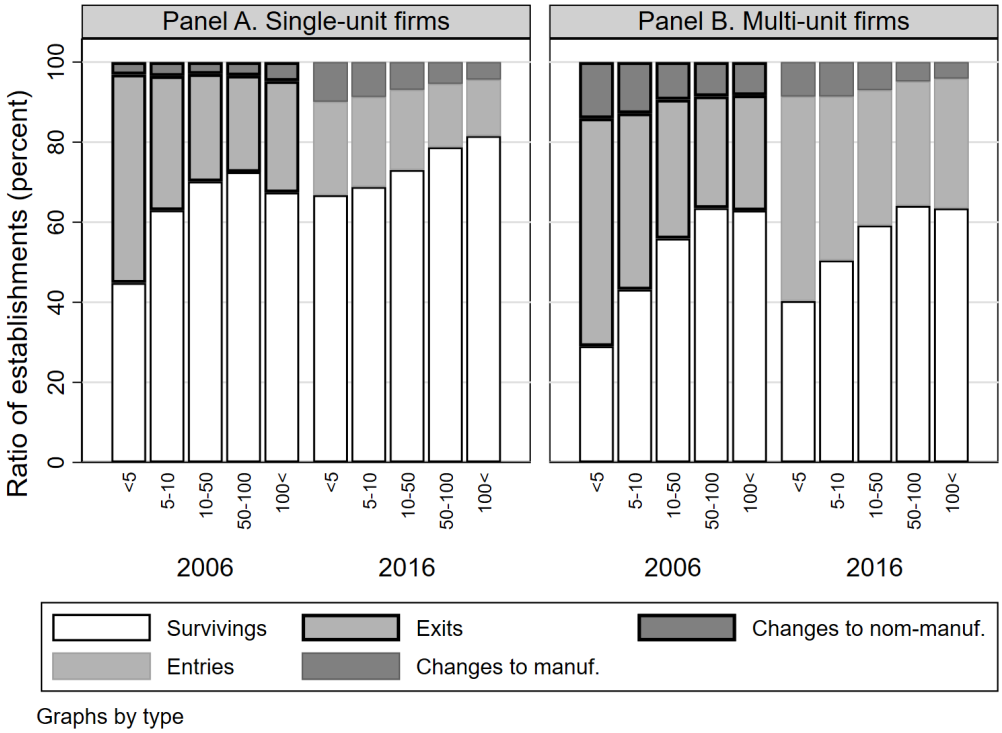

Figure 3: Number of jobs by establishment types

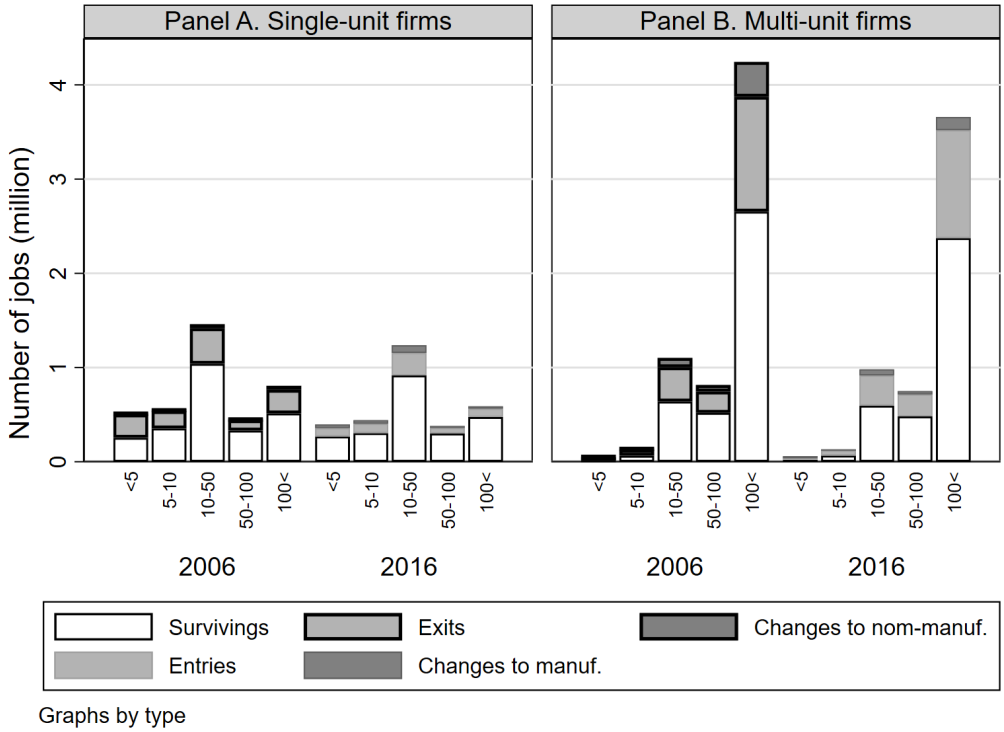


Figure 4: Ratio of jobs by establishment types

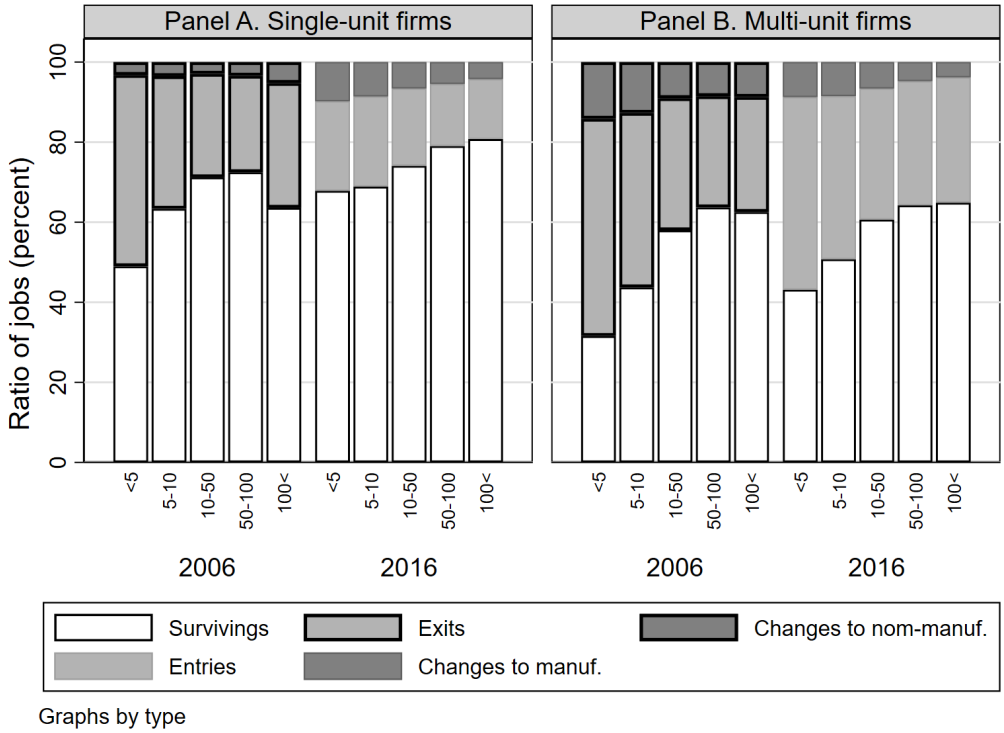

Figure 5: Number of surviving establishments by their types

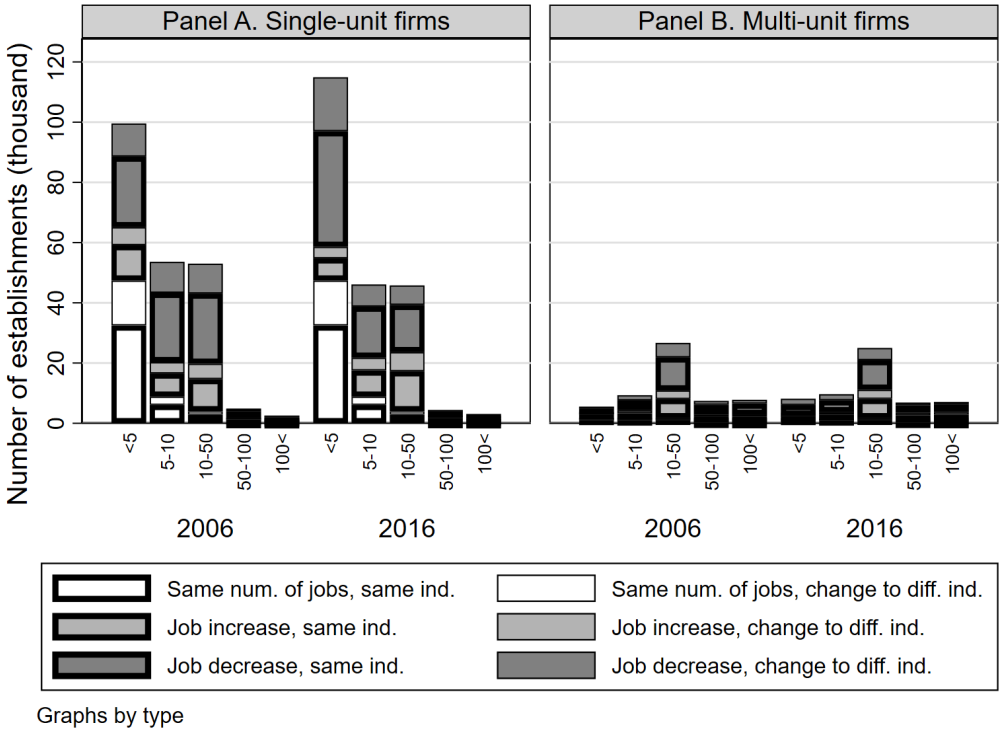


Figure 6: Ratio of surviving establishments by their types

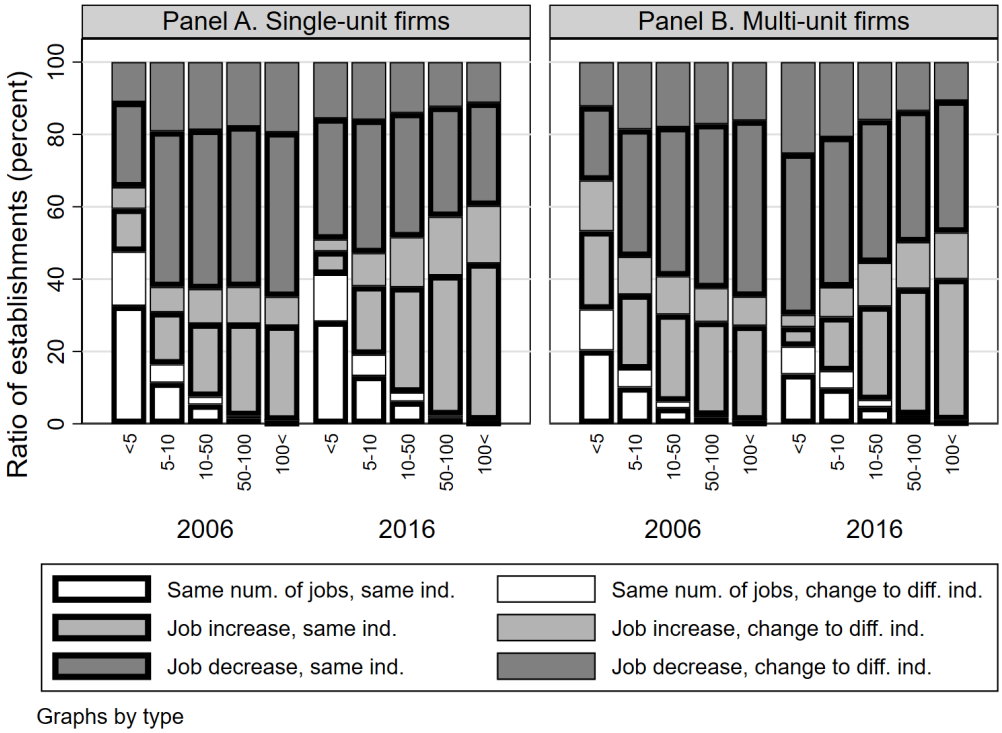

Figure 7: Number of jobs by surviving establishment types

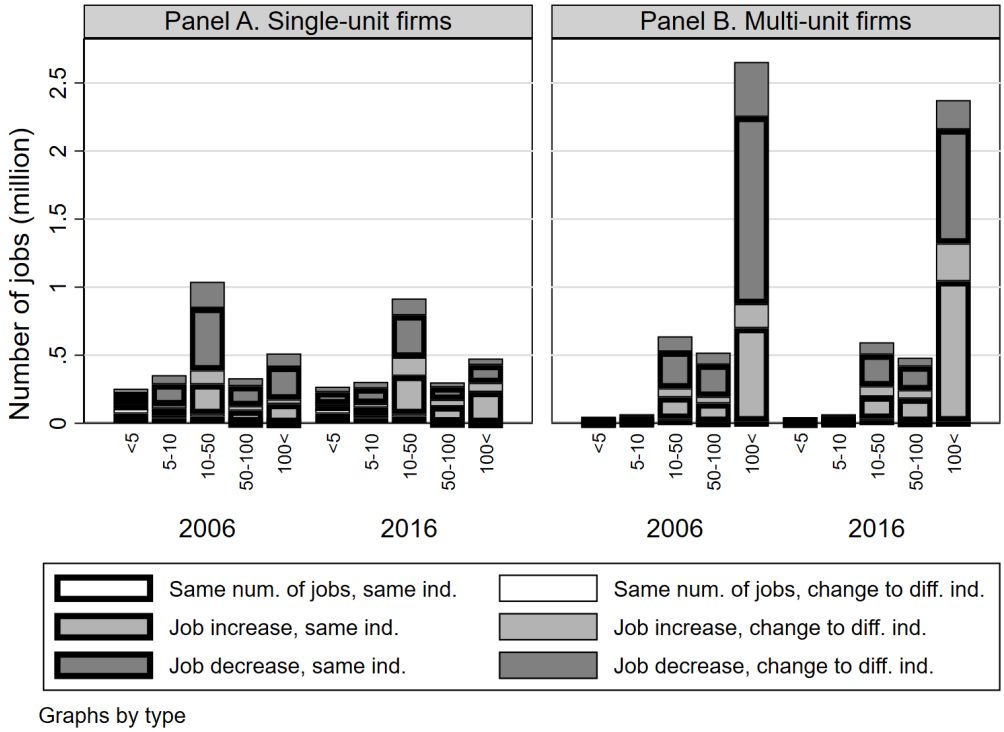


Figure 8: Ratio of jobs by surviving establishment types

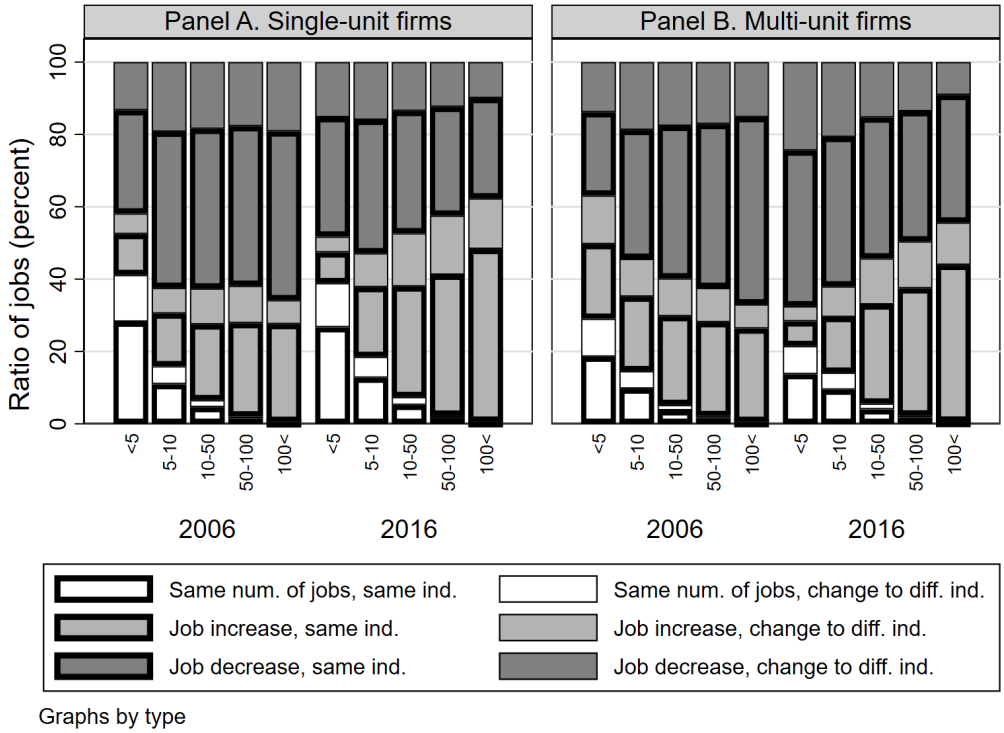

Table 1: Descriptive statistics

| | Mean | Std. Dev. | P5 | P50 | P95 |
|---|---|---|---|---|---|
| Surviving establishments (# obs.: 270,140) | | | | | |
| Num. of jobs in 2006 | 23.630 | 120.764 | 1 | 6 | 79 |
| Num. of jobs in 2016 | 21.486 | 125.421 | 1 | 5 | 73 |
| $\Delta t_i^C$ | 0.038 | 0.059 | $-0.005$ | 0.029 | 0.108 |
| $\Delta t_{r,i}^{E,C}$ | 0.006 | 0.018 | $-0.001$ | 0.002 | 0.023 |
| $\Delta t_{r,-i}^{E,C}$ | 0.197 | 0.106 | 0.066 | 0.179 | 0.372 |
| Exiting establishments (# obs.: 235,218) | | | | | |
| Num. of jobs in 2006 | 16.046 | 96.158 | 1 | 4 | 50 |
| $\Delta t_i^C$ | 0.039 | 0.061 | $-0.005$ | 0.030 | 0.108 |
| $\Delta t_{r,i}^{E,C}$ | 0.006 | 0.017 | $-0.001$ | 0.001 | 0.022 |
| $\Delta t_{r,-i}^{E,C}$ | 0.189 | 0.100 | 0.067 | 0.173 | 0.363 |
| Entrying establishments (# obs.: 143,310) | | | | | |
| Num. of jobs in 2016 | 19.609 | 93.417 | 1 | 5 | 66 |
| $\Delta t_i^C$ | 0.034 | 0.057 | $-0.020$ | 0.021 | 0.108 |
| $\Delta t_{r,i}^{E,C}$ | 0.005 | 0.015 | $-0.001$ | 0.001 | 0.017 |
| $\Delta t_{r,-i}^{E,C}$ | 0.188 | 0.106 | 0.061 | 0.172 | 0.368 |

Table 2: Establishments' exit, probit

| Variables | Establishments in single-unit firms | | | Establishments in multi-unit firms | | |
|---|---|---|---|---|---|---|
| | $< 5$ | $5 - 50$ | $50 <$ | $< 10$ | $10 - 100$ | $100 <$ |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| A. Coefficients | | | | | | |
| A1. Import penetration ratio of the industry | | | | | | |
| $\Delta t_i^C$ | $-0.131^{***}$ | $-0.209^{***}$ | 0.274 | $-0.145$ | $-0.318^{***}$ | $0.405^{**}$ |
| | (0.048) | (0.061) | (0.225) | (0.119) | (0.104) | (0.197) |
| Pseudo $R^2$ | 0.01 | 0.02 | 0.03 | 0.02 | 0.03 | 0.03 |
| A2. Regional per-job import of the industry | | | | | | |
| $\Delta t_{r,i}^{E,C}$ | $-0.051$ | $-0.432$ | 0.477 | $-0.153$ | $-0.145$ | $1.640^{***}$ |
| | (0.312) | (0.264) | (0.470) | (0.499) | (0.312) | (0.410) |
| Pseudo $R^2$ | 0.01 | 0.02 | 0.03 | 0.02 | 0.03 | 0.03 |
| A3. Regional per-job import of the other industries | | | | | | |
| $\Delta t_{r,-i}^{E,C}$ | $-0.043$ | $-0.053$ | $-0.193$ | $-0.048$ | 0.103 | 0.032 |
| | (0.047) | (0.055) | (0.195) | (0.111) | (0.078) | (0.166) |
| Pseudo $R^2$ | 0.01 | 0.02 | 0.03 | 0.02 | 0.03 | 0.03 |
| A4. All three import indices | | | | | | |
| $\Delta t_i^C$ | $-0.148^{***}$ | $-0.203^{***}$ | 0.196 | $-0.154$ | $-0.348^{***}$ | 0.008 |
| | (0.052) | (0.066) | (0.260) | (0.128) | (0.113) | (0.231) |
| $\Delta t_{r,i}^{E,C}$ | 0.262 | $-0.150$ | 0.229 | 0.061 | 0.303 | $1.677^{***}$ |
| | (0.336) | (0.280) | (0.541) | (0.537) | (0.339) | (0.479) |
| $\Delta t_{r,-i}^{E,C}$ | $-0.048$ | $-0.070$ | $-0.156$ | $-0.056$ | 0.088 | 0.129 |
| | (0.047) | (0.056) | (0.198) | (0.111) | (0.078) | (0.167) |
| Pseudo $R^2$ | 0.01 | 0.02 | 0.03 | 0.02 | 0.03 | 0.03 |
| # obs. | $222,083$ | $161,022$ | $9,926$ | $40,523$ | $59,560$ | $12,244$ |
| B. Marginal effects on exit | | | | | | |
| B1. Import penetration ratio of the industry | | | | | | |
| $\Delta t_i^C$ | $-0.052^{***}$ | $-0.072^{***}$ | 0.085 | $-0.057$ | $-0.112^{***}$ | $0.134^{**}$ |
| | (0.020) | (0.021) | (0.070) | (0.047) | (0.037) | (0.065) |
| B2. Regional per-job import of the industry | | | | | | |
| $\Delta t_{r,i}^{E,C}$ | $-0.020$ | $-0.148$ | 0.148 | $-0.060$ | $-0.051$ | $0.542^{***}$ |
| | (0.123) | (0.090) | (0.146) | (0.195) | (0.110) | (0.135) |
| B3. Regional per-job import of the other industries | | | | | | |
| $\Delta t_{r,-i}^{E,C}$ | $-0.017$ | $-0.018$ | $-0.060$ | $-0.019$ | 0.036 | 0.011 |
| | (0.018) | (0.019) | (0.061) | (0.043) | (0.028) | (0.055) |
| B4. All three import indices | | | | | | |
| $\Delta t_i^C$ | $-0.059^{***}$ | $-0.070^{***}$ | 0.061 | $-0.060$ | $-0.123^{***}$ | 0.003 |
| | (0.020) | (0.023) | (0.081) | (0.050) | (0.040) | (0.076) |
| $\Delta t_{r,i}^{E,C}$ | 0.103 | $-0.052$ | 0.071 | 0.024 | 0.107 | $0.554^{***}$ |
| | (0.133) | (0.096) | (0.168) | (0.210) | (0.120) | (0.158) |
| $\Delta t_{r,-i}^{E,C}$ | $-0.019$ | $-0.024$ | $-0.048$ | $-0.022$ | 0.031 | 0.043 |
| | (0.019) | (0.019) | (0.061) | (0.044) | (0.028) | (0.055) |

*Notes*: Estimates of other independent variables have not been reported. Robust standard errors are in parentheses. $^{***}$ $p < 0.01$, $^{**}$ $p < 0.05$, $^{*}$ $p < 0.1$.

Table 3: Establishments' exit, IV probit

| Variables | Establishments in single-unit firms $< 5$ (1) | $5-50$ (2) | $50 <$ (3) | Establishments in multi-unit firms $< 10$ (4) | $10-100$ (5) | $100 <$ (6) |
|---|---|---|---|---|---|---|
| A. Coefficients | | | | | | |
| A1. Import penetration ratio of the industry | | | | | | |
| $\Delta t_i^C$ | $-0.042$ | $0.507^{***}$ | $0.763^{**}$ | $0.200$ | $-0.080$ | $0.417$ |
| | $(0.110)$ | $(0.124)$ | $(0.324)$ | $(0.234)$ | $(0.186)$ | $(0.267)$ |
| K-P $F$ stat. | $24,543$ | $14,891$ | $1,397$ | $3,249$ | $4,807$ | $1,842$ |
| A2. Regional per-job import of the industry | | | | | | |
| $\Delta t_{r,i}^{E,C}$ | $1.813^{***}$ | $0.813^{**}$ | $1.458^{**}$ | $0.092$ | $0.361$ | $2.359^{***}$ |
| | $(0.440)$ | $(0.355)$ | $(0.664)$ | $(0.633)$ | $(0.416)$ | $(0.533)$ |
| K-P $F$ stat. | $1,628$ | $1,145$ | $220$ | $233$ | $532$ | $311$ |
| A3. Regional per-job import of the other industries | | | | | | |
| $\Delta t_{r,-i}^{E,C}$ | $-0.131^{**}$ | $-0.131^{*}$ | $-0.178$ | $-0.131$ | $0.113$ | $0.092$ |
| | $(0.064)$ | $(0.074)$ | $(0.262)$ | $(0.146)$ | $(0.103)$ | $(0.221)$ |
| K-P $F$ stat. | $32,711$ | $25,230$ | $1,836$ | $5,524$ | $11,007$ | $2,673$ |
| A4. All three import indices | | | | | | |
| $\Delta t_i^C$ | $-0.313^{**}$ | $0.491^{***}$ | $0.556$ | $0.230$ | $-0.170$ | $-0.248$ |
| | $(0.130)$ | $(0.145)$ | $(0.396)$ | $(0.273)$ | $(0.221)$ | $(0.340)$ |
| $\Delta t_{r,i}^{E,C}$ | $2.328^{***}$ | $0.023$ | $0.851$ | $-0.313$ | $0.620$ | $2.681^{***}$ |
| | $(0.520)$ | $(0.409)$ | $(0.791)$ | $(0.753)$ | $(0.501)$ | $(0.676)$ |
| $\Delta t_{r,-i}^{E,C}$ | $-0.126^{*}$ | $-0.097$ | $-0.096$ | $-0.120$ | $0.107$ | $0.164$ |
| | $(0.065)$ | $(0.075)$ | $(0.266)$ | $(0.147)$ | $(0.103)$ | $(0.225)$ |
| K-P $F$ stat. | $6,836$ | $4,824$ | $426$ | $995$ | $1,528$ | $384$ |
| # obs. | $222,083$ | $161,022$ | $9,926$ | $40,523$ | $59,560$ | $12,244$ |
| B. Marginal effects on exit | | | | | | |
| B1. Import penetration ratio of the industry | | | | | | |
| $\Delta t_i^C$ | $-0.017$ | $0.174^{***}$ | $0.236^{**}$ | $0.078$ | $-0.028$ | $0.138$ |
| | $(0.044)$ | $(0.043)$ | $(0.100)$ | $(0.092)$ | $(0.066)$ | $(0.088)$ |
| B2. Regional per-job import of the industry | | | | | | |
| $\Delta t_{r,i}^{E,C}$ | $0.715^{***}$ | $0.279^{**}$ | $0.452^{**}$ | $0.036$ | $0.128$ | $0.779^{***}$ |
| | $(0.173)$ | $(0.122)$ | $(0.206)$ | $(0.248)$ | $(0.147)$ | $(0.175)$ |
| B3. Regional per-job import of the other industries | | | | | | |
| $\Delta t_{r,-i}^{E,C}$ | $-0.052^{**}$ | $-0.045^{*}$ | $-0.055$ | $-0.051$ | $0.040$ | $0.030$ |
| | $(0.025)$ | $(0.025)$ | $(0.081)$ | $(0.057)$ | $(0.036)$ | $(0.073)$ |
| B4. All three import indices | | | | | | |
| $\Delta t_i^C$ | $-0.123^{**}$ | $0.168^{***}$ | $0.172$ | $0.090$ | $-0.060$ | $-0.082$ |
| | $(0.051)$ | $(0.050)$ | $(0.123)$ | $(0.107)$ | $(0.078)$ | $(0.112)$ |
| $\Delta t_{r,i}^{E,C}$ | $0.918^{***}$ | $0.008$ | $0.264$ | $-0.122$ | $0.219$ | $0.886^{***}$ |
| | $(0.205)$ | $(0.140)$ | $(0.245)$ | $(0.295)$ | $(0.177)$ | $(0.223)$ |
| $\Delta t_{r,-i}^{E,C}$ | $-0.049^{*}$ | $-0.033$ | $-0.030$ | $-0.047$ | $0.038$ | $0.054$ |
| | $(0.026)$ | $(0.026)$ | $(0.083)$ | $(0.058)$ | $(0.036)$ | $(0.074)$ |

*Notes*: Estimates of other independent variables have not been reported. Robust standard errors are in parentheses. $^{***}$ $p < 0.01$, $^{**}$ $p < 0.05$, $^{*}$ $p < 0.1$.

Table 4: Establishments' shift to non-manufacturing and their exit, IV multinomial probit

| Variables | Establishments in single-unit firms | | | Establishments in multi-unit firms | | |
|---|---|---|---|---|---|---|
| | $< 5$ | $5 - 50$ | $50 <$ | $< 10$ | $10 - 100$ | $100 <$ |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| A. Coefficients | | | | | | |
| Shift to non-manufacturing | | | | | | |
| $\Delta t_i^C$ | $1.659^{***}$ | $-0.374$ | $-2.393^{**}$ | $0.030$ | $0.854$ | $0.036$ |
| | $(0.366)$ | $(0.384)$ | $(1.005)$ | $(0.513)$ | $(0.423)$ | $(0.676)$ |
| $\Delta t_{r,i}^{E,C}$ | $-6.679^{**}$ | $-2.328$ | $0.607$ | $-1.700$ | $-3.476^{**}$ | $2.444^{*}$ |
| | $(2.692)$ | $(1.611)$ | $(1.743)$ | $(1.594)$ | $(1.372)$ | $(1.463)$ |
| $\Delta t_{r,-i}^{E,C}$ | $-0.019$ | $-0.008$ | $-0.681$ | $-0.479^{*}$ | $-0.062$ | $0.597$ |
| | $(0.173)$ | $(0.188)$ | $(0.666)$ | $(0.274)$ | $(0.227)$ | $(0.521)$ |
| Exit | | | | | | |
| $\Delta t_i^C$ | $-0.271$ | $0.644^{***}$ | $0.543$ | $0.282$ | $-0.051$ | $-0.258$ |
| | $(0.184)$ | $(0.204)$ | $(0.558)$ | $(0.394)$ | $(0.311)$ | $(0.480)$ |
| $\Delta t_{r,i}^{E,C}$ | $2.791^{***}$ | $-0.068$ | $1.306$ | $-0.757$ | $0.452$ | $3.869^{***}$ |
| | $(0.731)$ | $(0.576)$ | $(1.119)$ | $(1.092)$ | $(0.703)$ | $(0.959)$ |
| $\Delta t_{r,-i}^{E,C}$ | $-0.162^{*}$ | $-0.129$ | $-0.171$ | $-0.306$ | $0.170$ | $0.344$ |
| | $(0.092)$ | $(0.105)$ | $(0.376)$ | $(0.213)$ | $(0.146)$ | $(0.319)$ |
| K-P $F$ stat. | $6,836$ | $4,824$ | $426$ | $995$ | $1,528$ | $384$ |
| # obs. | $222,083$ | $161,022$ | $9,926$ | $40,523$ | $59,560$ | $12,244$ |
| B. Marginal effects | | | | | | |
| Survive in manufacturing | | | | | | |
| $\Delta t_i^C$ | $0.028$ | $-0.134^{***}$ | $-0.014$ | $-0.060$ | $-0.050$ | $0.050$ |
| | $(0.051)$ | $(0.051)$ | $(0.129)$ | $(0.102)$ | $(0.082)$ | $(0.120)$ |
| $\Delta t_{r,i}^{E,C}$ | $-0.554^{***}$ | $0.095$ | $-0.291$ | $0.278$ | $0.153$ | $-0.943^{***}$ |
| | $(0.210)$ | $(0.150)$ | $(0.252)$ | $(0.290)$ | $(0.196)$ | $(0.243)$ |
| $\Delta t_{r,-i}^{E,C}$ | $0.042^{*}$ | $0.030$ | $0.062$ | $0.097$ | $-0.032$ | $-0.109$ |
| | $(0.025)$ | $(0.026)$ | $(0.087)$ | $(0.055)$ | $(0.039)$ | $(0.080)$ |
| Shift to non-manufacturing | | | | | | |
| $\Delta t_i^C$ | $0.097^{***}$ | $-0.035^{*}$ | $-0.163^{***}$ | $-0.021$ | $0.107^{**}$ | $0.015$ |
| | $(0.020)$ | $(0.021)$ | $(0.063)$ | $(0.077)$ | $(0.049)$ | $(0.070)$ |
| $\Delta t_{r,i}^{E,C}$ | $-0.436^{***}$ | $-0.128$ | $0.009$ | $-0.210$ | $-0.450^{***}$ | $0.099$ |
| | $(0.145)$ | $(0.089)$ | $(0.107)$ | $(0.240)$ | $(0.165)$ | $(0.152)$ |
| $\Delta t_{r,-i}^{E,C}$ | $0.004$ | $0.002$ | $-0.039$ | $-0.051$ | $-0.016$ | $0.050$ |
| | $(0.009)$ | $(0.010)$ | $(0.041)$ | $(0.041)$ | $(0.027)$ | $(0.055)$ |
| Exit | | | | | | |
| $\Delta t_i^C$ | $-0.124^{**}$ | $0.169^{***}$ | $0.177$ | $0.081$ | $-0.057$ | $-0.065$ |
| | $(0.051)$ | $(0.050)$ | $(0.123)$ | $(0.107)$ | $(0.078)$ | $(0.111)$ |
| $\Delta t_{r,i}^{E,C}$ | $0.989^{***}$ | $0.033$ | $0.282$ | $-0.068$ | $0.297$ | $0.844^{***}$ |
| | $(0.214)$ | $(0.143)$ | $(0.248)$ | $(0.298)$ | $(0.184)$ | $(0.223)$ |
| $\Delta t_{r,-i}^{E,C}$ | $-0.046^{*}$ | $-0.032$ | $-0.023$ | $-0.047$ | $0.048$ | $0.058$ |
| | $(0.026)$ | $(0.026)$ | $(0.083)$ | $(0.058)$ | $(0.037)$ | $(0.076)$ |

*Notes*: Estimates of other independent variables have not been reported. Robust standard errors are in parentheses. $^{***}$ $p < 0.01$, $^{**}$ $p < 0.05$, $^{*}$ $p < 0.1$.

Table 5: Establishments' entry, IV probit

| Variables | Establishments in single-unit firms $< 5$ (1) | $5-50$ (2) | $50 <$ (3) | Establishments in multi-unit firms $< 10$ (4) | $10-100$ (5) | $100 <$ (6) |
|---|---|---|---|---|---|---|
| A. Coefficients | | | | | | |
| A1. With exit ratio of the region | | | | | | |
| $\Delta t_i^C$ | $-0.000$ | $0.346^*$ | $-0.426$ | $-0.151$ | $-0.721^{***}$ | $-0.621$ |
| | (0.170) | (0.205) | (0.696) | (0.353) | (0.277) | (0.444) |
| $\Delta t_{r,i}^{E,C}$ | $1.271^*$ | $-3.207^{***}$ | $-1.168$ | $-2.440^{**}$ | 0.137 | $2.213^{***}$ |
| | (0.708) | (0.666) | (1.141) | (1.226) | (0.626) | (0.834) |
| $\Delta t_{r,-i}^{E,C}$ | $-0.055$ | $-0.207^{**}$ | 0.386 | $-0.236^*$ | $-0.051$ | $-0.203$ |
| | (0.083) | (0.087) | (0.328) | (0.138) | (0.104) | (0.235) |
| Exit ratio | $1.674^{***}$ | $2.343^{***}$ | $1.215^*$ | 0.074 | 0.775 | $2.880^{***}$ |
| | (0.151) | (0.163) | (0.697) | (0.280) | (0.228) | (0.533) |
| K-P $F$ stat. | $5,943$ | $3,811$ | 237 | 920 | $1,282$ | 335 |
| A2. Without exit ratio of the region | | | | | | |
| $\Delta t_i^C$ | 0.010 | $0.421^{**}$ | $-0.420$ | $-0.148$ | $-0.696^{**}$ | $-0.656$ |
| | (0.170) | (0.205) | (0.695) | (0.353) | (0.276) | (0.444) |
| $\Delta t_{r,i}^{E,C}$ | $1.297^*$ | $-3.511^{***}$ | $-1.185$ | $-2.447^{**}$ | 0.040 | $2.258^{***}$ |
| | (0.706) | (0.676) | (1.147) | (1.225) | (0.627) | (0.833) |
| $\Delta t_{r,-i}^{E,C}$ | 0.012 | $-0.108$ | 0.451 | $-0.233^*$ | $-0.021$ | $-0.065$ |
| | (0.081) | (0.086) | (0.320) | (0.136) | (0.103) | (0.230) |
| K-P $F$ stat. | $5,942$ | $3,823$ | 236 | 921 | $1,288$ | 335 |
| # obs. | $171,785$ | $129,670$ | $8,043$ | $39,209$ | $52,976$ | $10,988$ |
| B. Marginal effects on entry | | | | | | |
| B1. With exit ratio of the region | | | | | | |
| $\Delta t_i^C$ | $-0.000$ | $0.100^*$ | $-0.100$ | $-0.059$ | $-0.261^{***}$ | $-0.221$ |
| | (0.052) | (0.059) | (0.163) | (0.139) | (0.100) | (0.158) |
| $\Delta t_{r,i}^{E,C}$ | 0.384 | $-0.925^{***}$ | $-0.273$ | $-0.962^{**}$ | 0.049 | $0.787^{***}$ |
| | (0.214) | (0.192) | (0.267) | (0.483) | (0.227) | (0.296) |
| $\Delta t_{r,-i}^{E,C}$ | $-0.017$ | $-0.060^{**}$ | 0.090 | $-0.093^*$ | $-0.019$ | $-0.072$ |
| | (0.025) | (0.025) | (0.077) | (0.054) | (0.038) | (0.083) |
| B2. Without exit ratio of the region | | | | | | |
| $\Delta t_i^C$ | 0.003 | $0.122^{**}$ | $-0.098$ | $-0.059$ | $-0.252^{**}$ | $-0.234$ |
| | (0.052) | (0.059) | (0.163) | (0.139) | (0.100) | (0.158) |
| $\Delta t_{r,i}^{E,C}$ | 0.392 | $-1.014^{***}$ | $-0.277$ | $-0.965^{**}$ | 0.014 | $0.804^{***}$ |
| | (0.214) | (0.195) | (0.269) | (0.483) | (0.227) | (0.297) |
| $\Delta t_{r,-i}^{E,C}$ | 0.004 | $-0.031$ | 0.106 | $-0.092^*$ | $-0.008$ | $-0.023$ |
| | (0.025) | (0.025) | (0.075) | (0.054) | (0.037) | (0.082) |

*Notes*: Estimates of other independent variables have not been reported. Robust standard errors are in parentheses. $^{***}$ $p < 0.01$, $^{**}$ $p < 0.05$, $^{*}$ $p < 0.1$.

Table 6: Establishments' shift from non-manufacturing and their entry, IV multinomial probit

| Variables | Establishments in single-unit firms | | | Establishments in multi-unit firms | | |
|---|---|---|---|---|---|---|
| | $< 5$ | $5 - 50$ | $50 <$ | $< 10$ | $10 - 100$ | $100 <$ |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| A. Coefficients | | | | | | |
| Shift from non-manufacturing | | | | | | |
| $\Delta t_i^C$ | $0.570^{*}$ | $-1.703^{***}$ | $-1.254$ | $-1.329^{*}$ | $-0.704$ | $-0.343$ |
| | (0.323) | (0.396) | (1.408) | (0.750) | (0.606) | (1.119) |
| $\Delta t_{r,i}^{E,C}$ | $-7.578^{***}$ | $-3.508^{**}$ | 1.097 | $-5.905$ | $-1.997$ | 1.638 |
| | (2.078) | (1.607) | (1.937) | (3.610) | (1.614) | (2.659) |
| $\Delta t_{r,-i}^{E,C}$ | 0.075 | 0.006 | $-1.796^{**}$ | $-1.088^{***}$ | 0.188 | 0.428 |
| | (0.134) | (0.156) | (0.738) | (0.287) | (0.223) | (0.612) |
| Entry | | | | | | |
| $\Delta t_i^C$ | 0.093 | 0.261 | $-0.729$ | $-0.510$ | $-1.060^{***}$ | $-0.928$ |
| | (0.240) | (0.287) | (0.973) | (0.501) | (0.388) | (0.623) |
| $\Delta t_{r,i}^{E,C}$ | 0.992 | $-4.854$ | $-1.439$ | $-3.788$ | 0.049 | $3.306^{***}$ |
| | (0.996) | (0.937) | (1.612) | (1.714) | (0.885) | (1.175) |
| $\Delta t_{r,-i}^{E,C}$ | 0.044 | $-0.147$ | 0.477 | $-0.516^{***}$ | 0.003 | $-0.030$ |
| | (0.114) | (0.120) | (0.447) | (0.194) | (0.146) | (0.324) |
| K-P $F$ stat. | $5,942$ | $3,823$ | 236 | 921 | $1,288$ | 335 |
| # obs. | $171,785$ | $129,670$ | $8,043$ | $39,209$ | $52,976$ | $10,988$ |
| B. Marginal effects | | | | | | |
| Survive in manufacturing | | | | | | |
| $\Delta t_i^C$ | $-0.066$ | 0.083 | 0.183 | 0.198 | $0.282^{***}$ | 0.231 |
| | (0.059) | (0.067) | (0.184) | (0.138) | (0.104) | (0.163) |
| $\Delta t_{r,i}^{E,C}$ | $0.468^{*}$ | $1.142^{***}$ | 0.156 | $1.237^{**}$ | 0.105 | $-0.839^{***}$ |
| | (0.280) | (0.230) | (0.291) | (0.493) | (0.242) | (0.316) |
| $\Delta t_{r,-i}^{E,C}$ | $-0.014$ | 0.026 | 0.031 | $0.185^{***}$ | $-0.012$ | $-0.010$ |
| | (0.027) | (0.027) | (0.088) | (0.054) | (0.039) | (0.085) |
| Shift from non-manufacturing | | | | | | |
| $\Delta t_i^C$ | 0.069 | $-0.197^{***}$ | $-0.083$ | $-0.130$ | $-0.027$ | 0.002 |
| | (0.040) | (0.042) | (0.107) | (0.086) | (0.057) | (0.072) |
| $\Delta t_{r,i}^{E,C}$ | $-1.014^{***}$ | $-0.222$ | 0.113 | $-0.483$ | $-0.197$ | 0.022 |
| | (0.263) | (0.173) | (0.146) | (0.428) | (0.154) | (0.172) |
| $\Delta t_{r,-i}^{E,C}$ | 0.008 | 0.006 | $-0.148^{***}$ | $-0.100^{***}$ | 0.018 | 0.029 |
| | (0.016) | (0.017) | (0.057) | (0.033) | (0.021) | (0.040) |
| Entry | | | | | | |
| $\Delta t_i^C$ | $-0.003$ | $0.114^{*}$ | $-0.101$ | $-0.069$ | $-0.256^{***}$ | $-0.233$ |
| | (0.052) | (0.059) | (0.163) | (0.140) | (0.100) | (0.157) |
| $\Delta t_{r,i}^{E,C}$ | $0.546^{**}$ | $-0.921^{***}$ | $-0.269$ | $-0.754$ | 0.093 | $0.818^{***}$ |
| | (0.225) | (0.196) | (0.271) | (0.508) | (0.230) | (0.297) |
| $\Delta t_{r,-i}^{E,C}$ | 0.007 | $-0.032$ | 0.118 | $-0.085$ | $-0.007$ | $-0.019$ |
| | (0.025) | (0.025) | (0.075) | (0.054) | (0.037) | (0.082) |

*Notes*: Estimates of other independent variables have not been reported. Robust standard errors are in parentheses. $^{***}$ $p < 0.01$, $^{**}$ $p < 0.05$, $^{*}$ $p < 0.1$.

Table 7: Establishments' job changes, IV

| Variables | Establishments in single-unit firms $< 5$ (1) | $5-50$ (2) | $50 <$ (3) | Establishments in multi-unit firms $< 10$ (4) | $10-100$ (5) | $100 <$ (6) |
|---|---|---|---|---|---|---|
| A1. Three import indices | | | | | | |
| $\Delta t_i^C$ | 0.084 | 0.088 | 0.011 | −0.085 | −0.232* | −0.593*** |
| | (0.064) | (0.066) | (0.155) | (0.208) | (0.120) | (0.194) |
| $\Delta t_{r,i}^{E,C}$ | −0.334 | −0.252 | −0.952** | −0.364 | −0.025 | −0.695 |
| | (0.229) | (0.173) | (0.414) | (0.604) | (0.255) | (0.438) |
| $\Delta t_{r,-i}^{E,C}$ | −0.018 | −0.039 | −0.135 | 0.041 | −0.097* | −0.192** |
| | (0.030) | (0.030) | (0.095) | (0.086) | (0.050) | (0.095) |
| K-P $F$ stat. | 3,002 | 2,542 | 272 | 433 | 830 | 223 |
| A2. Three import indices with interaction terms | | | | | | |
| $\Delta t_i^C$ | 0.631*** | 0.653*** | 0.274 | 0.952*** | 0.520*** | 0.102 |
| | (0.036) | (0.044) | (0.242) | (0.134) | (0.088) | (0.220) |
| × job inc. × same ind. | 2.614*** | 1.612*** | 0.504* | 2.880*** | 1.143*** | 0.856*** |
| | (0.133) | (0.097) | (0.272) | (0.348) | (0.150) | (0.291) |
| × job inc. × diff. ind. | 2.095*** | 0.882*** | 0.670** | 1.245*** | 1.134*** | 1.165*** |
| | (0.154) | (0.085) | (0.319) | (0.330) | (0.167) | (0.351) |
| × job dec. × same ind. | −2.732*** | −1.841*** | −1.091*** | −3.178*** | −1.588*** | −1.041*** |
| | (0.063) | (0.068) | (0.282) | (0.221) | (0.133) | (0.280) |
| × job dec. × diff ind. | −2.214*** | −1.601*** | −0.939*** | −1.963*** | −1.758*** | −1.066*** |
| | (0.072) | (0.066) | (0.279) | (0.187) | (0.133) | (0.328) |
| $\Delta t_{r,i}^{E,C}$ | −0.371*** | −0.461*** | 0.138 | −0.733* | −0.336 | 0.186 |
| | (0.133) | (0.121) | (0.312) | (0.416) | (0.255) | (0.381) |
| × job inc. × same ind. | −2.082*** | −0.576** | 0.198 | −2.599** | −0.235 | −0.095 |
| | (0.431) | (0.225) | (0.416) | (1.165) | (0.319) | (0.469) |
| × job inc. × diff. ind. | −2.732*** | −0.600*** | −0.372 | −0.257 | −0.328 | −0.919 |
| | (0.500) | (0.193) | (0.740) | (0.838) | (0.337) | (0.699) |
| × job dec. × same ind. | 1.665*** | 0.205 | −0.810** | 1.957*** | −0.047 | −0.689 |
| | (0.210) | (0.169) | (0.380) | (0.662) | (0.286) | (0.452) |
| × job dec. × diff ind. | 1.869*** | 0.716*** | −1.312* | 1.929*** | 0.625** | −0.565 |
| | (0.206) | (0.159) | (0.698) | (0.495) | (0.307) | (0.649) |
| $\Delta t_{r,-i}^{E,C}$ | 0.546*** | 0.384*** | 0.009 | 0.903*** | 0.378*** | 0.128 |
| | (0.025) | (0.026) | (0.091) | (0.085) | (0.049) | (0.120) |
| × job inc. × same ind. | 1.815*** | 1.098*** | 1.017*** | 1.564*** | 1.173*** | 1.118*** |
| | (0.031) | (0.018) | (0.053) | (0.075) | (0.031) | (0.076) |
| × job inc. × diff. ind. | 1.841*** | 1.129*** | 1.155*** | 1.758*** | 1.199*** | 1.136*** |
| | (0.045) | (0.024) | (0.068) | (0.102) | (0.046) | (0.099) |
| × job dec. × same ind. | −1.989*** | −1.373*** | −1.002*** | −2.037*** | −1.484*** | −1.239*** |
| | (0.014) | (0.013) | (0.051) | (0.045) | (0.027) | (0.073) |
| × job dec. × diff ind. | −2.042*** | −1.426*** | −1.027*** | −2.243*** | −1.497*** | −1.377*** |
| | (0.022) | (0.019) | (0.070) | (0.058) | (0.037) | (0.096) |
| K-P $F$ stat. | 640 | 488 | 38 | 78 | 148 | 43 |
| # obs. | 110,117 | 96,550 | 6,760 | 15,845 | 33,430 | 7,438 |

*Notes*: Estimates of other independent variables have not been reported. Robust standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.