Entry and Exit of formal firms in Vietnam 2000-2015[*]

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Abstract

Following Dunne, Roberts, and Samuelson (1988) and using Vietnamese firm survey, I report summary statistics of formal firms in Vietnam from 2000 to 2015.

1 Single plant share

Figure 1 reports the shares of single-plant firms and their sales shares from 2000-2014. The shares of single plant firms are comparable to the US starting from 2002. The overall trend is increasing despite the strange numbers in 2000 and 2001. I will check the matching of these two years.

Before 2002, it looks like the shares of single-plant firms are relatively low. It is likely due to the high share of state-owned enterprises (SOEs). I will compute these shares again disaggregated by ownership.

2 Entry and exit

I report entry and exit rates, following the definitions in Dunne, Roberts, and Samuelson (1988). These definitions are as follow:

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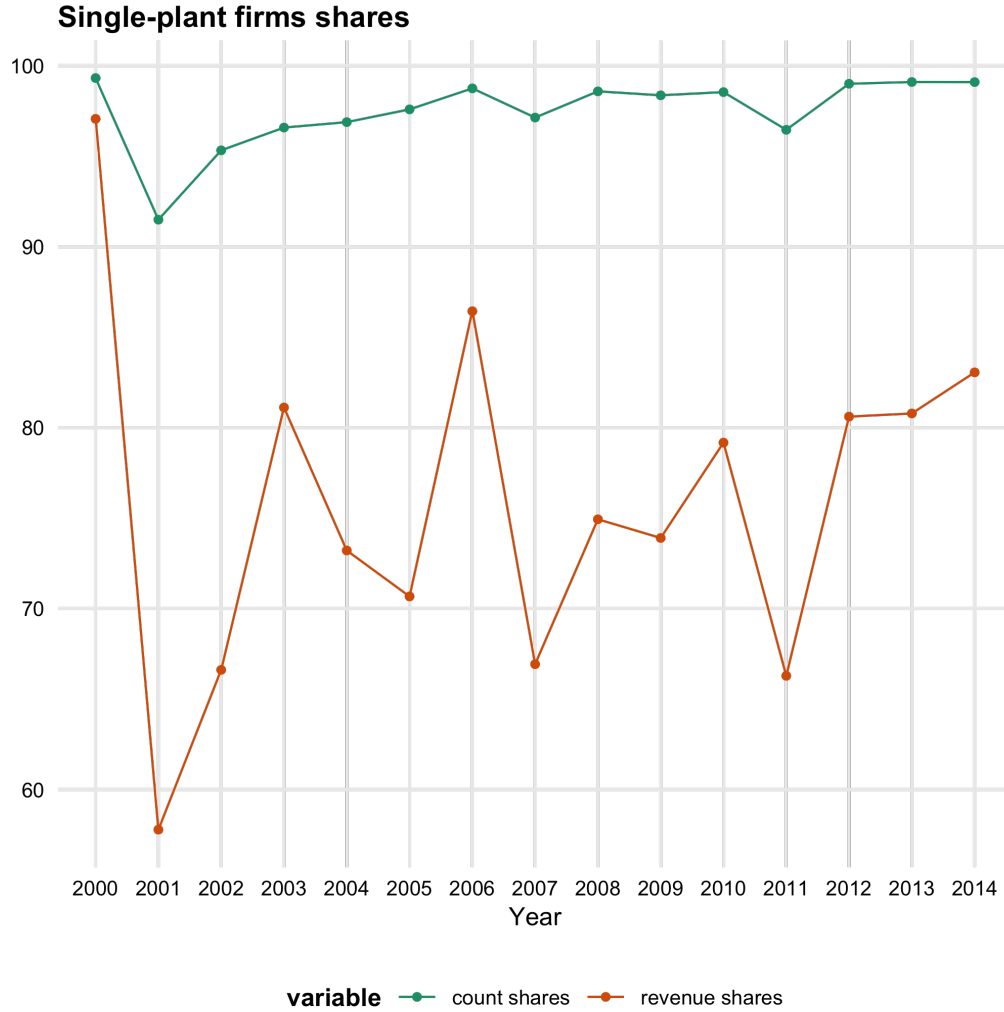
Figure 1: Single plant share

$$NE_i(t) = \text{number of firms that enter industry } i \text{ between census years } t-1 \text{ and } t;$$

$$NT_i(t) = \text{total number of firms in industry } i \text{ in census year } t. \text{ This includes firms that enter industry } i \text{ between census years } t-1 \text{ and } t;$$

$$NX_i(t-1) = \text{number of firms that exit industry } i \text{ between census years } t-1 \text{ and } t;$$

$$QE_i(t) = \text{total output of firms that enter industry } i \text{ between census years } t-1 \text{ and } t.$$

$$QT_i(t) = \text{total output of all firms in industry } i \text{ in census year } t;$$

$$QX_i(t-1) = \text{total year } t-1 \text{ output of firms that exit industry } i \text{ between census years } t-1 \text{ and } t.$$

Entrant share (%)
Fraction of entrants among all surveyed firms in a year

Source: Annual Firm Survey 2001–2015

Figure 2: All firm entry

Entrant share (%)
Fraction of entrants among all surveyed firms in a year

Source: Annual Firm Survey 2001–2015
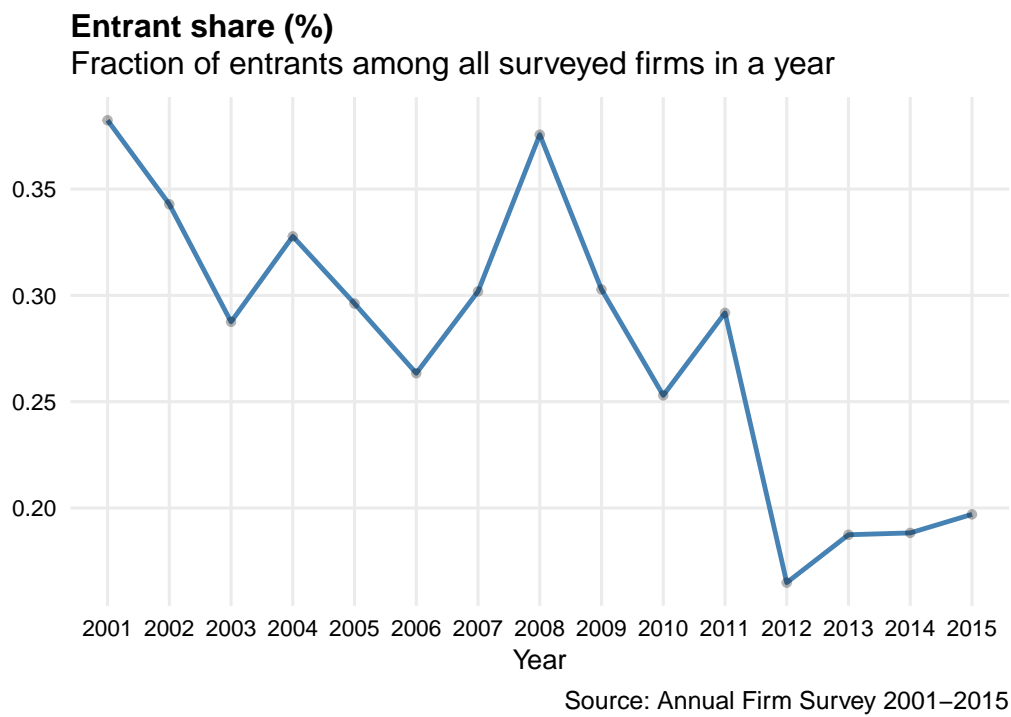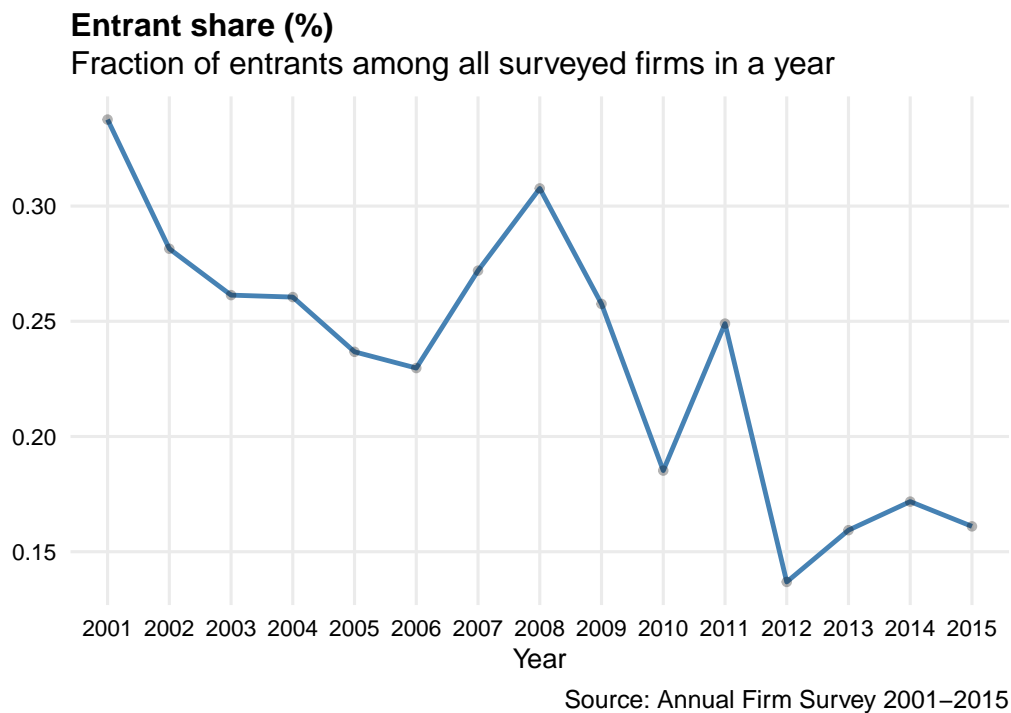
Figure 3: Manu Entry

Table 1: Entry and exit all and manufacturing Vietnamese plants 2000-2015

	All			Manufacturing		
	00-05	05-10	10-15	00-05	05-10	10-15
Entry						
Entry Rate (ER)	2.024	1.996	1.012	2.325	1.526	0.801
Entrant Market Share (ESH)	0.519	0.499	0.350	0.487	0.394	0.311
Entrant Relative Size (ERS)	0.226	0.267	0.305	0.604	0.536	0.531
Exit						
Exit Rate (XR)	0.578	0.465	0.426	0.496	0.357	0.350
Exiter Market Share (XSH)	0.386	0.281	0.257	0.314	0.153	0.204
Exiter Relative Size (XRS)	0.460	0.451	0.465	0.876	0.431	0.623

Note:

Manufacturing are averages over 374 4-digit VSIC1993 manufacturing industries

$$ER_i(t) = NE_i(t)/NT_i(t-1)$$
$$XR_i(t-1) = NX_i(t-1)/NT_i(t-1).$$
$$ESH_i(t) = QE_i(t)/QT_i(t)$$
$$XSH_i(t-1) = QX_i(t-1)/QT_i(t-1).$$
$$ERS_i(t) = \frac{QE_i(t)/NE_i(t)}{\left(QT_i(t) - QE_i(t)\right)/\left(NT_i(t) - NE_i(t)\right)}$$
$$XRS_i(t-1) = \frac{QX_i(t)/NX_i(t-1)}{\left(QT_i(t-1) - QX_i(t-1)\right)/\left(NT_i(t-1) - NX_i(t-1)\right)}.$$

Table 1 reports these statistics for three pairs of years, 2000-2005, 2005-2010, and 2010-2015. The first three columns are statistics for all firms, while the last three columns are averages over 374 4-digit VSIC 1993 manufacturing industries.

Table 2 reports numbers from Dunne, Roberts, and Samuelson (1988) to compare with the Vietnamese numbers.

2.1 Discussion

While most Vietnamese statistics are comparable to the US, the entry rate of Vietnam is about 4 times as high as that of the US during the period of rapid economic growth 2000-2010. Using the same data source, McCaig and Pavcnik (2021) independently reports a comparable annualized rate at 27%.

This rate is high even compared to developing countries as documented in McCaig and Pavcnik (2021) and much higher than developed countries. McCaig and Pavcnik (2021)

Table 2: Entry and exit of US manufacturing firms

	1963-1967	1967-1972	1972-1977
Entry			
ER	0.307	0.427	0.408
ESH	0.136	0.185	0.169
ERS	0.369	0.359	0.324
Exit			
XR	0.308	0.390	0.372
XSH	0.144	0.191	0.173
XRS	0.367	0.367	0.344

Note:

Figures are from Dunne et. al (1988)

observe that this number is comparable to other countries that transition out of centrally planned economies. That is, as the economy privatizes SOEs, private and foreign firms seize this opportunity to open new firms.

3 Surviving firms

I document market shares, average firm size, and exit rates of four cohorts 2001, 2005, 2010, 2015. Based on the following figures, I observe the following:

First, sales shares of each cohort fall over time. Besides, the average revenue shares of entering cohorts is about 0.108 which is smaller than that of the US . This can be due to high exit rate or falling of average size of incumbents or both. In the US, the former is true while the latter is not. Incumbents become larger over time in the US.

Second, the average size of surviving do not always increase. Both 2001 and 2005 cohorts experience a decline in their average size from 2005.

Finally, the exit rates are about the same as the US.
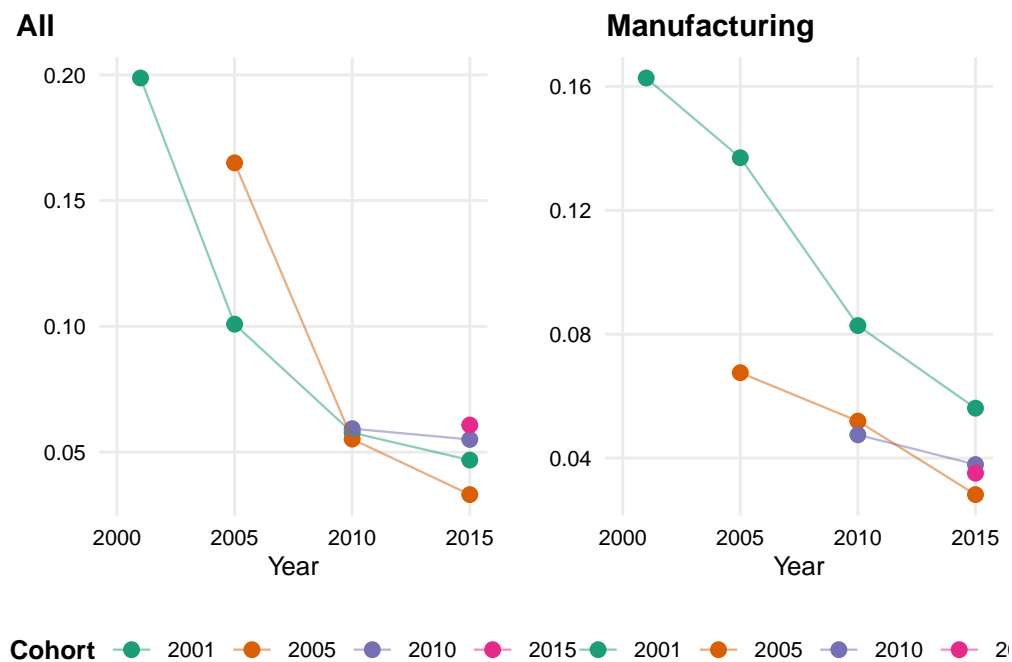
Sales shares (%) by cohort over time

Average Size of Surviving Firms Relative to All Firms

Cumulative Cohort Exit Rates
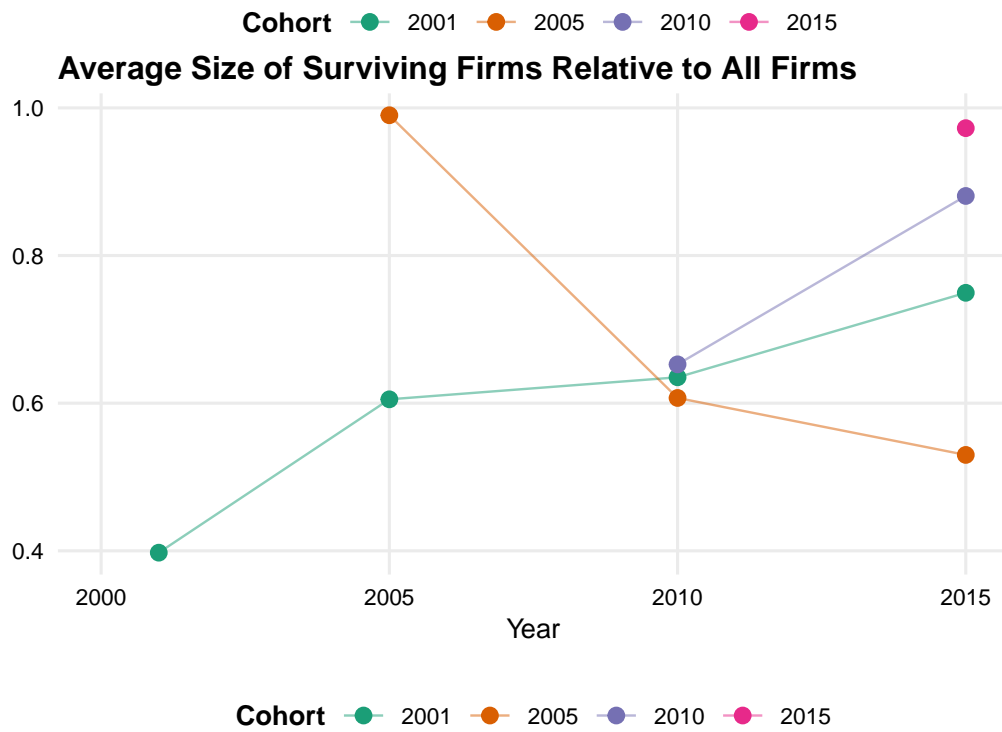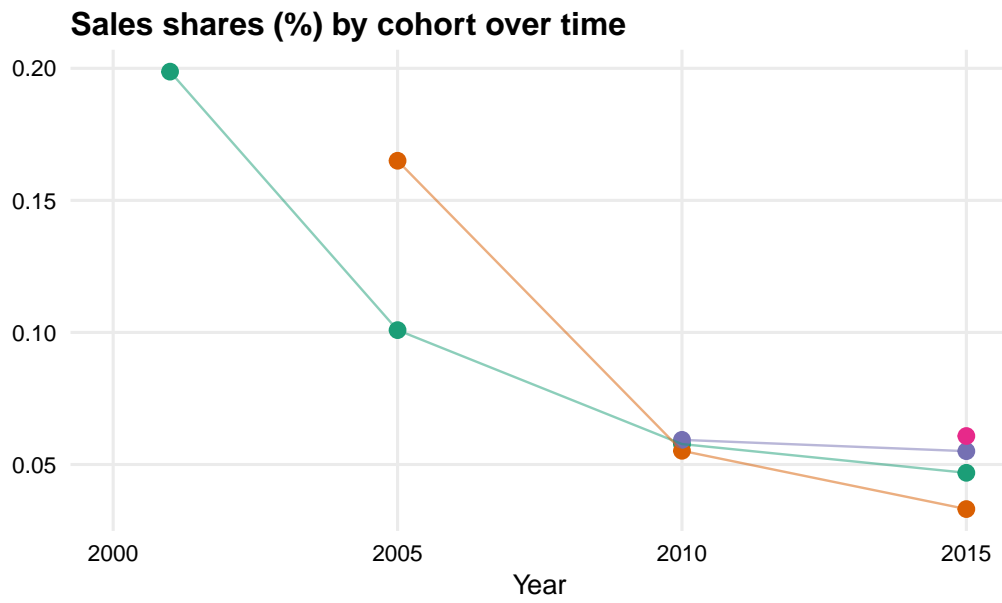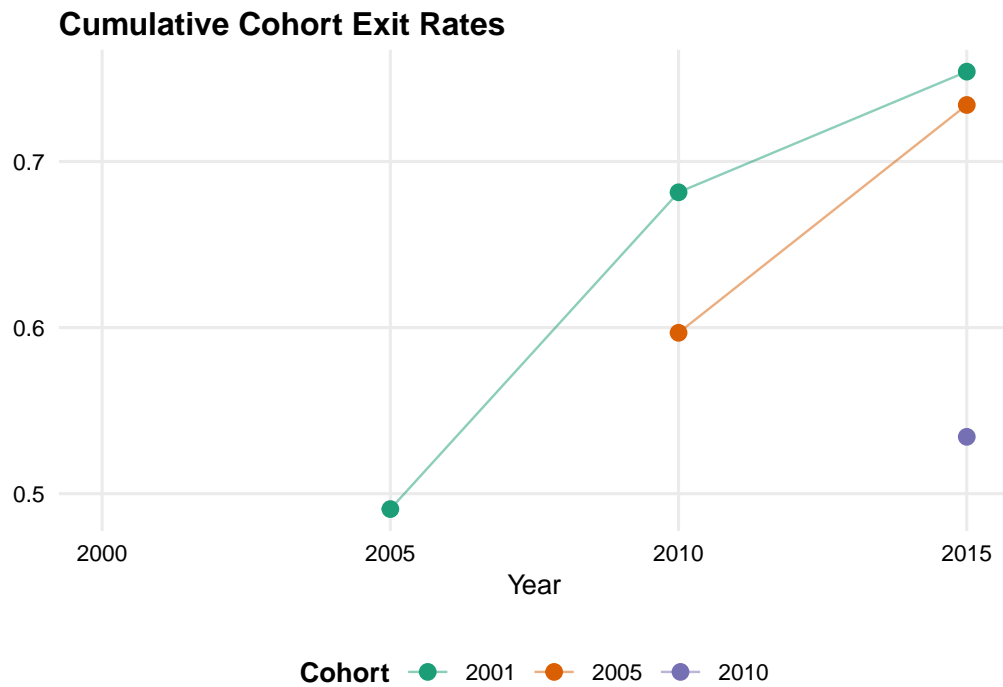
3.1 Manufacturing

I include manufacturing figures next to the previous figures
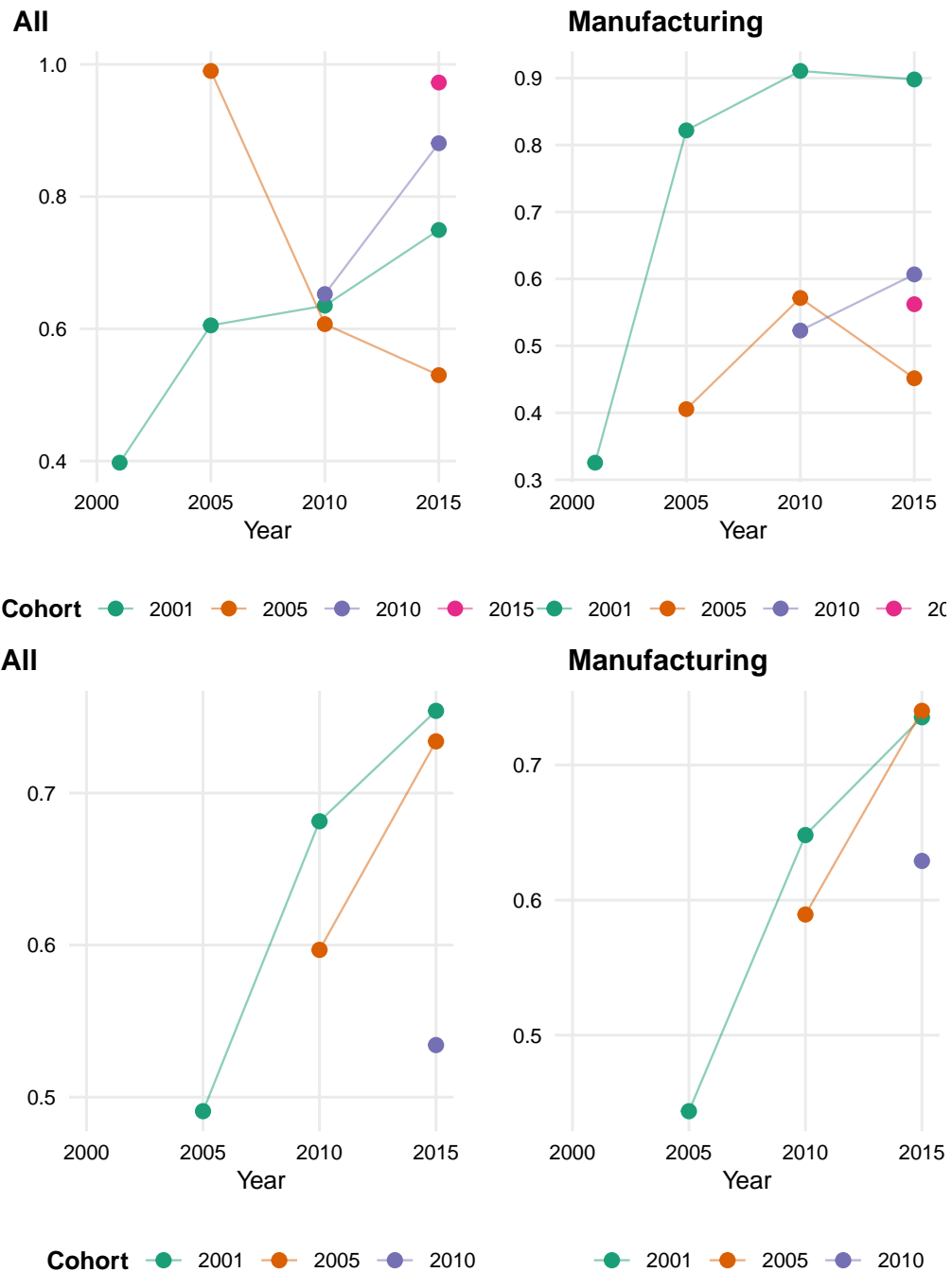
4 Size distribution

4.1 Number of workers

4.2 Revenue

Figure 6 shows the firm size distribution by revenue of all firms in 2001 and 2010, and Figure 7 the distribution of manufacuturing only. The vertical axis is the ratio between the
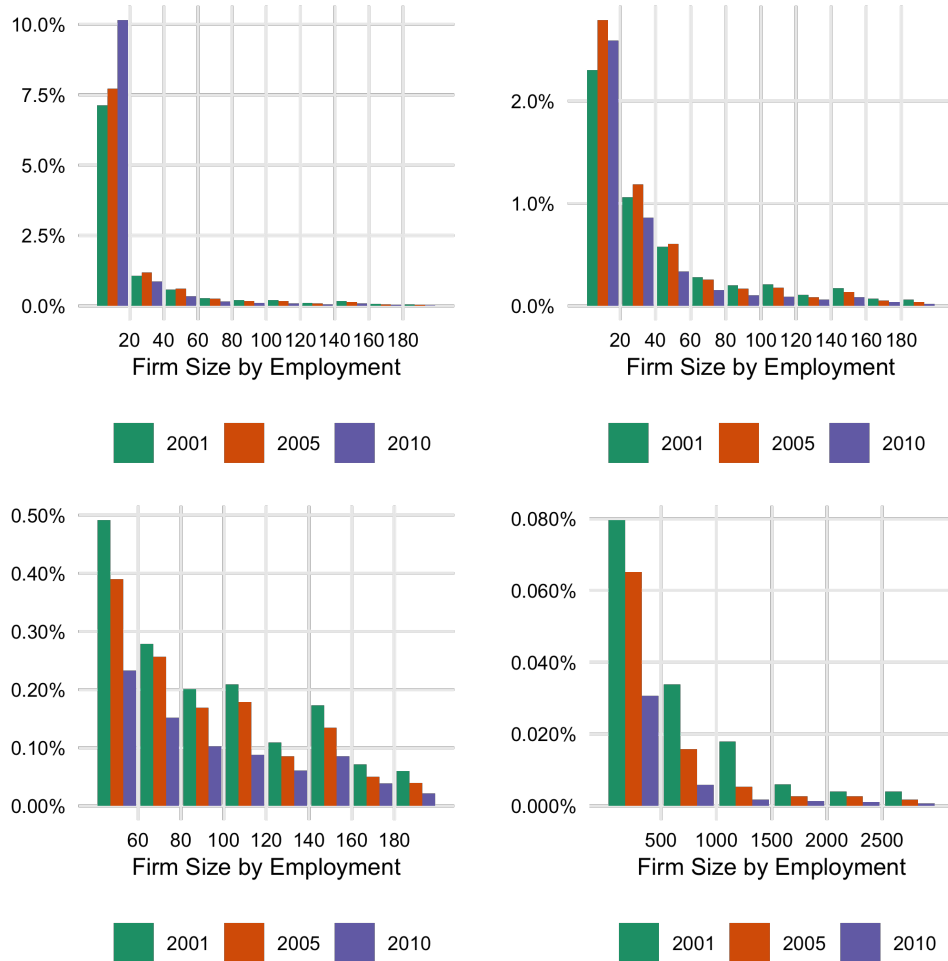
Figure 4: Firm Size Distribution by Employment of All Firms

Figure 5: Firm Size Distribution by Employment of Manufacturing Firms

revenues of the firms at a specific percentiles and the mean sales among firms in the year of interest.

These figures look very similar to the US.

Furthermore, the revenue size of firms increase from 2001 to 2010.

Sales of Percentile / Mean Sales

Figure 6: Firm Size Distribution of All Firms

5   Next steps

First, I should check single-plant by ownership.

Second, firm size distribution by age group

Third, distribution of entry relative to incumbent across districts.

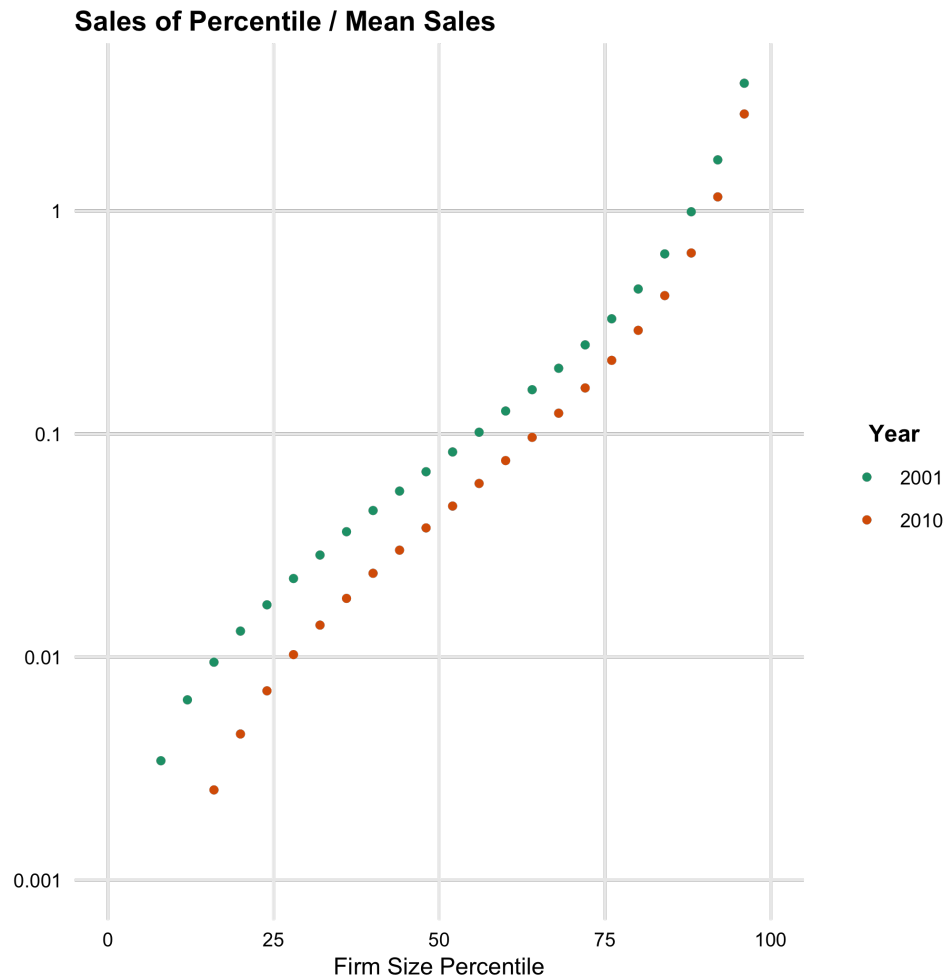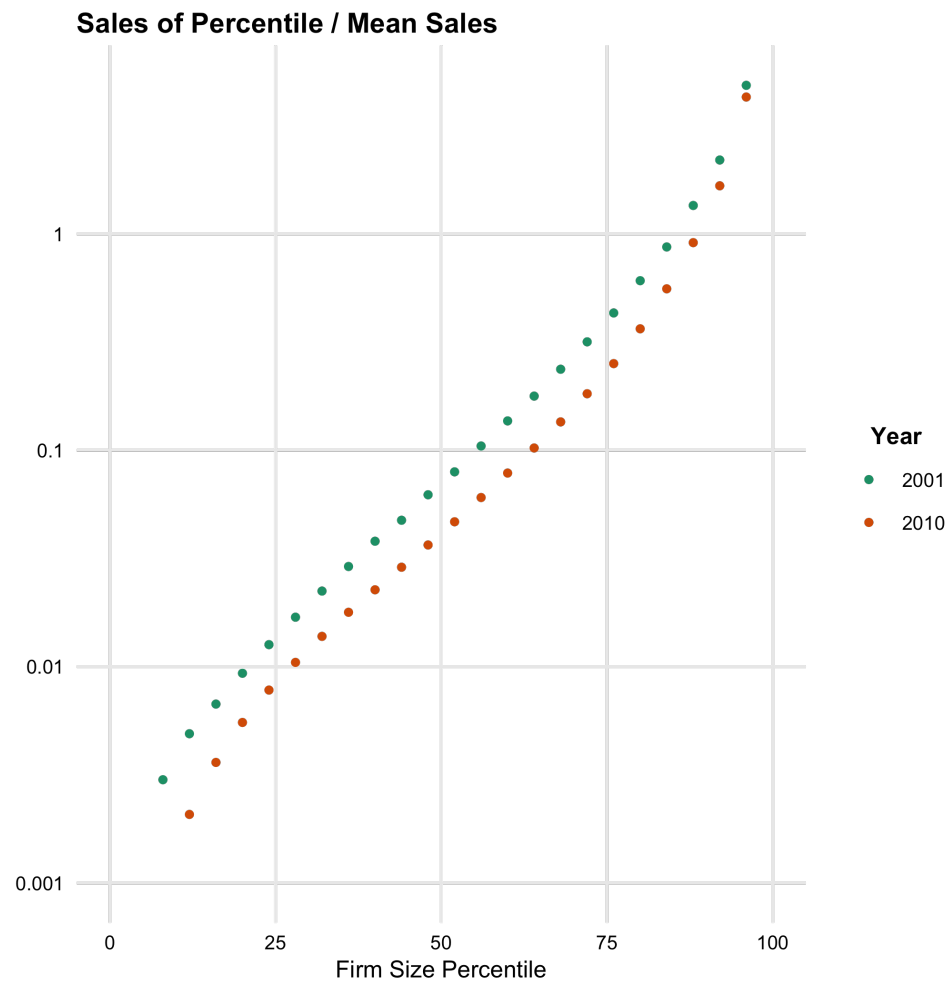Figure 7: Firm Size Distribution of Manufacturing Firms

6 Appendix

Here are the entry and exit rates from McCaig and Pavcnik (2021)

Table A14: Estimates of entry rates in the literature - developed countries

Source	Country	Firm type	Period	Annual entry rate
Bartelsman, Haltiwanger, and Scarpetta (2009)	Germany (West)	Manufacturing	1977-1999	5
		All sectors	1977-1999	6
	Finland	Manufacturing	1988-1998	8
		All sectors	1988-1998	9
	Italy	Manufacturing	1986-1994	7
		All sectors	1986-1994	8
	Netherlands	Manufacturing	1987-1997	8
		All sectors	1987-1997	10
	Portugal	Manufacturing	1983-1998	12
		All sectors	1983-1998	15
	USA	Manufacturing	1988-1997	9
		All sectors	1988-1997	11
	Denmark	Manufacturing	1981-1994	7
		All sectors	1981-1994	9
	France	Manufacturing	1989-1997	10
		All sectors	1989-1997	720
	UK	Manufacturing	1980-1988	11
	Canada	Manufacturing	1984-1998	8

Table A13: Estimates of entry rates in the literature - developing countries, large and formal firms

Source	Country	Firm type	Period	Annual entry rate
Klapper and Richmond (2011)	Cote d'Ivoire	All formal firms	1977-1997	12.4
Shiferaw (2009)	Ethiopia	Manufacturing (10+ workers)	1996-2002	20
Lay (2003)	Taiwan	Manufacturing plants	1987-1998	13.5
Tybout (1996)	Chile	Manufacturing plants (10+ workers)	1980-85	6
Haddad, de Melo, and Horton (1996)	Morocco	Manufacturing (10+ workers)	1984-1989	13.0
Roberts (1996)	Colombia	Manufacturing plants (all until 1982, 10+ workers after)	1977-1985	12
Bartelsman, Haltiwanger, and Scarpetta (2009)	Argentina	Manufacturing	1988-1997	7
		All sectors	1988-1997	10
	Latvia	Manufacturing	1996-2002	23
		All sectors	1996-2002	22
	Estonia	Manufacturing	1995-2001	10
		All sectors	1995-2001	11
	Colombia	Manufacturing (20+ workers)	1982-1998	4
	Romania	Manufacturing	1992-2001	17
		All sectors	1992-2001	20
	Chile	Manufacturing (20+ workers)	1996-2001	5.5
	Mexico	Manufacturing	1985-2001	12
		All sectors	1985-2001	15
	Brazil	Manufacturing	1996-2001	15
	Slovenia	Manufacturing	1992-2001	16
		All sectors	1992-2001	21
	Hungary	Manufacturing	1992-2001	15
		All sectors	1992-2001	20
Authors own calculation	Vietnam	Manufacturing	2000-2017	26
		All sectors	2000-2017	26

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Table A11: Estimates of exit rates in the literature - developed countries

Source	Country	Firm type	Period	Annual exit rate
Bartelsman, Haltiwanger, and Scarpetta (2009)	Germany (West)	Manufacturing	1977-1999	6
		All sectors	1977-1999	6
	Finland	Manufacturing	1988-1998	7
		All sectors	1988-1998	6
	Italy	Manufacturing	1986-1994	7
		All sectors	1986-1994	7.5
	Netherlands	Manufacturing	1987-1997	5
		All sectors	1987-1997	6
	Portugal	Manufacturing	1983-1998	6
		All sectors	1983-1998	6
	USA	Manufacturing	1988-1997	8
		All sectors	1988-1997	10
	Denmark	Manufacturing	1981-1994	10
		All sectors	1981-1994	11
	France	Manufacturing	1989-1997	9
		All sectors	1989-1997	7.5
	UK	Manufacturing	1980-1988	10
	Canada	Manufacturing	1984-1998	7.5

Table A10: Estimates of exit rates in the literature - developing countries, large and formal firms

Source	Country	Firm type	Period	Annual exit rate
Soderbom, Teal, Harding (2006)	Ghana	Manufacturing	5 years	3.8
	Kenya	Manufacturing	5 years	7.8
	Tanzania	Manufacturing	5 years	8.8
Davies and Kerr (2018)	Ghana	Small and large manufacturing firms	10 years	3.3
Klapper and Richmond (2011)	Cote d'Ivoire	All formal firms	1977-1997	10
Shiferaw (2009)	Ethiopia	Manufacturing (10+ workers)	1996-2002	16
Lay (2003)	Taiwan	Manufacturing plants	1987-1998	12.8
Tybout (1996)	Chile	Manufacturing plants (10+ workers)	1980-85	10.8
Haddad, de Melo, and Horton (1996)	Morocco	Manufacturing (10+ workers)	1984-1989	6
Roberts (1996)	Colombia	Manufacturing plants (all until 1982, 10+ workers after)	1977-1985	11.1
Bartelsman, Haltiwanger, and Scarpetta (2009)	Argentina	Manufacturing	1988-1997	8
		All sectors	1988-1997	9
	Latvia	Manufacturing	1996-2002	5
		All sectors	1996-2002	5
	Estonia	Manufacturing	1995-2001	6
		All sectors	1995-2001	6
	Colombia	Manufacturing (20+ workers)	1982-1998	4
	Romania	Manufacturing	1992-2001	6
		All sectors	1992-2001	7.5
	Chile	Manufacturing (20+ workers)	1996-2001	4
	Mexico	Manufacturing	1985-2001	10
		All sectors	1985-2001	11
	Brazil	Manufacturing	1996-2001	11
	Slovenia	Manufacturing	1992-2001	5
		All sectors	1992-2001	4
	Hungary	Manufacturing	1992-2001	6
		All sectors	1992-2001	6
Authors own calculation	Vietnam	Manufacturing	2000-2017	17
		All sectors	2000-2017	14

References

Dunne, Timothy, Mark J Roberts, and Larry Samuelson. 1988. "Patterns of Firm Entry and Exit in U.S. Manufacturing Industries." *The RAND Journal of Economics* 19 (4): 495. https://doi.org/10.2307/2555454.

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