Reply to referee 2

A. Introduction section

1. Give figures also on the change in overall productivity;

Answer:

Yes, we give it in the revised paper.

2. Mention that the "Schumpeter mechanism" means that the market is efficient : it is if the market works well that then "creative destruction" will happen.

Answer:

Yes, we mention it in the revised paper.

3. Motivate the focus on export and on the period more convincingly. To justify your focus on exporters, the main question is : why considering only exporters to do the decomposition ? You have to justify it: either by saying that exporters' production is the main driver of Chinese production; and/or that they are the main source of productivity growth. And why this is specific to China (as you start to do).

Answer:

We say that exporters' production is the main driver of Chinese production.

4. Mistake: page 4: Petrin et al.'s results are in percentage points ! You have to reformulate. In general, harmonise the results of the different studies in terms of impact to make them comparable or say in what it is not comparable.

Answer:

We rewrite it by saying: Petrin et al. (2011) find that resource reallocation increases productivity growth by 1.7%-2.1% in American.

5. Reconsider the sentence "but few of them shed light on the empirical research of ...markets". First, the sentence is unclear: do you mean that there are few empirical analysis ? Second, if yes, this is not totally true because there is a lot of studies on exporters productivity and some of them explore the entry-exit aspect.

Answer:

We rewrite it by saying: nothing has yet been said about the productivity growth contributed by the dynamics of exporting firms

B. Data section

1. Say whether the data have been already used in other studies.

Answer:

We say "This firm-level data is widely used by many authors in their studies for China".

2. Specify the extent of the data regarding information on ownership, sectors, export status, location. Give the demography of observations conditional on these characteristics.

Answer:

We supplement data description in the revised paper.

3. Specifically on Chinese data, information on foreign ownership is important. This characteristic is going to drive the dynamics (affiliates, mergers) as well as the change in productivity. Combine the information on ownership with the one on export status.

Answer:

We provide it in the revised paper.

C. Section 3

1. How the estimation of productivity is done? Up to page 13, the reader is not sure about your productivity indicator. You have to define it.

Answer:

The starting point of all decompositions is the definition of aggregate productivity which is given by following form:

$$\Phi = \sum_i s_{it}\, \varphi_{it}$$

Where Φ, φ and s denote aggregate productivity, firm productivity and weight respectively. There are many choices to estimate firm productivity and represent weight. We choose OP method to estimate firm productivity and use value-added shares as weights. The main interest is the change in aggregate productivity over time (from t=1 to 2) $\Delta\Phi = \Phi_2 - \Phi_1$.

2. Provide in this section statistics on productivity growth by type of firms, by export status, by main sectors, by ownership.

Answer:

Table 5: Firm productivity of entering exporters and exiting exporters

		2006	2007	2008	2009
Productivity of exiting firms		3.94	4.09	4.14	4.22
By ownership:	SOEs	3.32	3.45	3.80	3.89
	POEs	4.07	4.23	4.33	4.27
	FIEs	4.06	4.21	4.21	4.25
	COEs	3.80	3.87	3.97	4.10
	HIEs	3.94	4.08	4.18	4.22
By location:	East	4.92	4.03	4.15	4.15
	Middle	4.02	4.13	4.25	4.33
	West	3.73	3.81	3.94	4.19

	North	3.96	4.05	4.13	4.23
By sector:	Main	4.06	4.16	4.20	4.33
	Rest	3.93	4.03	4.09	4.18
Productivity of entering firms		4.02	4.08	4.23	4.26
By ownership:	SOEs	3.51	3.93	3.82	3.84
	POEs	4.15	4.26	4.32	4.46
	FIEs	4.09	4.16	4.31	4.33
	COEs	3.88	3.92	4.23	4.19
	HIEs	4.01	4.06	4.21	4.21
By location:	East	4.07	4.12	4.32	4.29
	Middle	4.06	4.06	4.16	4.37
	West	3.87	3.88	3.94	4.04
	North	3.97	4.06	4.39	4.13
By sector:	Main	4.07	4.16	4.24	4.34
	Rest	3.92	4.00	4.08	4.16
Productivity of surviving firms		4.05	4.11	4.25	4.29
By ownership:	SOEs	3.59	3.78	3.95	4.05
	POEs	4.14	4.18	4.19	4.26
	FIEs	4.08	4.15	4.20	4.30
	COEs	3.80	3.86	3.97	4.09
	HIEs	4.09	4.17	4.20	4.31
By location:	East	4.06	4.12	4.16	4.26
	Middle	4.14	4.21	4.29	4.42
	West	3.81	3.94	4.04	4.22
	North	3.99	4.08	4.11	4.24
By sector:	Main	4.06	4.15	4.20	4.33
	Rest	4.04	4.10	4.17	4.27

3. Among exporting firms, the share of foreign ownership is very important, amount of export value too. You may consider an export threshold, otherwise it is obvious that very small exporters are going to create a lot of noise. Tell us more about the distribution of export intensity among exporters. For instance, you observe that one over five exporting firms exits the market each year: how many have a very low export intensity; how many are going to re-enter the year after?
Answer:

Table 1: Firm distribution

	2005	2006	2007	2008	2009
Number of all firms:	264714	294397	330981	370395	389216

By ownership:	SOEs	15584	14066	10924	9703	9882
	COEs	15930	14912	13083	6526	6072
	POEs	177751(67%)	205743(70%)	240618(72%)	295659(80%)	315874(81%)
	FIEs	28348	30960	34832	37221	37292
	HIEs	27101	28776	31524	21286	20096
By location:	East	139980(53%)	152566(52%)	171352(52%)	283521(76%)	300183(77%)
	Middle	54903	62707	71523	43803	45336
	West	38435	42039	46333	21269	21269
	North	31396	37085	41773	21802	22428
By sectors:	Main sectors	59416(23%)	86279(29%)	98505(30%)	114435(31%)	115936(30%)
Number of exporting firms:		74764(28%)	78511(27%)	78412(24%)	80848(22%)	77150(20%)
By ownership:	SOEs	1900	1622	1211	916	954
	COEs	2463	1724	872	717	617
	POEs	35731(48%)	38442(49%)	36425(46%)	43248(53%)	42940(55%)
	FIEs	17793	19230	21107	22722	20906
	HIEs	16697	17493	18797	13250	11732
By location:	East	46898(63%)	49996(64%)	37328(48%)	54173(67%)	67695(88%)
	Middle	14582	14562	9379	5967	5230
	West	7347	7464	7963	1779	1529
	North	5937	6489	6897	3269	2696
By sectors: Main sectors		29211(39%)	30773(39%)	32246(41%)	34312(42%)	32316(42%)

Note: The export values are in 1000 RMB.

4. How do you treat mergers? It is really different from an exit in terms of reallocation process. Check whether the exiting firms during the period have been absorbed.

Answer:

Meanwhile, there must be some firm M&As over the sample period. Some merged firms are excluded from the data. However, we argue that this isn't a major concern in our data, because (1) the M&A in China over the sample period isn't active. Data from Chinese M&A yearbook shows that the yearly number of domestic M&As is 117 in 2007,109 in 2008, 223 in 2009. (2) About 40% of M&As happened in manufacturing industry. (3) not all M&As lead to firm disappearances.

5. Provide a table of entry, exit and incumbents per year.

Answer:

Table 3: Entry and exit of exporting firms

	2006	2007	2008	2009

Number of exiting firms (exit rate)		16882(21.5%)	19346(24.7%)	26799(33.1%)	23127(30%)
By ownership:	SOEs	630	683	645	307
	POEs	9366(55%)	11829(61%)	13495(50%)	12141(52%)
	FIEs	2929	3054	6383	5867
	COEs	1036	952	420	261
	HIEs	2921	2828	5856	4551
By location:	East	9213(55%)	8953(46%)	17156(64%)	17521(75%)
	Middle	4600	7470	4065	2950
	West	1624	1449	2982	947
	North	1445	1474	2596	1709
By export intensity:	Low	6037	8987	6339	6553
	High	10845(64%)	10359(54%)	20460(76%)	16574(72%)
Export value of exiting firms		31251	33351	67817	47773
Number of entering firms (entry rate)		20647(26.3%)	19247(24.5%)	29235(36.2%)	19429(25.2%)
By ownership:	SOEs	403	264	359	349
	POEs	11653(56%)	10003(52%)	15468(53%)	10949(56%)
	FIEs	4531	4752	7527	4519
	COEs	460	180	242	171
	HIEs	3600	4048	5639	3441
By location:	East	12327(60%)	13144(68%)	22692(77%)	14664(75%)
	Middle	4582	2276	3325	2729
	West	1741	1953	1175	915
	North	1997	1874	2043	1121
By export intensity:	Low	6533	4901	7690	6099
	High	14114(68%)	14346(75%)	21545(74%)	13330(69%)
Export value of entering firms		48121	49434	66733	60177

Note: We report the previous export values for exit firms. The export values are average values in 1000 RMB. Export intensity is measured by the ratio of export value over sales. Low and high export intensity is divided according to the mean of export intensity.

6. page 7: the sentence "First, the surviving ability Chinese firms..." has to be rewritten.

Answer:

We drop it, just describe the data.

7. page 7: Exporters are bigger, more profitable, more productive. Lots of evidence from several empirical papers. Cite some of them and attach your observation to them.

Answer:

We rewrite it by saying: the indicators of exporting firms are higher than all firms,

8. page 8: Regarding the result on the turnover rate. Make comparisons with other results

conditional on country development level. We would appreciate to ventilate the exit rate by export intensity quartile, by ownership; the entry rate by ownership...

Answer:

See Table 3.

9. Before Table 4: give explicitly the production function that is under the estimates of labor and capital coefficient.

Answer:

Yes, we give it in the revised paper.

D. Section 4

1. Section 4, page 9: list the four parts before the equation.

Answer:

Yes, we give it in the revised paper.

2. Section 4, page 10: how is defined the market in "market share"?

Answer:

It is too ambiguous, we say how exactly measure productivity.

3. The explanation of one of the result: "the entry effect is negative", is insufficient. You cannot just say it is the result of misallocation. It is more likely a problem of barriers to entry and you have to explore the cause of these barriers.

Answer:

We first   prove the negative effect with facts derived from the data. we are aware that misallocation is too strong, so we drop it.

4. Section 4, page 12: Set that 1 and 2 are the periods. s is conditional on it on the top of the page, then s is conditional on S1 or S2 after (in equation 5 and 6). Make all coherent. Define X and E, even if you think it is explicitly exit and entry. Is $\Delta\Phi$ the difference between period 1 and 2 ? Make it clearer.

Answer:

See answer to question 1 in this section.

E. Section 5

1. The total growth rate has to be either the average annual growth rate, or the growth rate between 2005 and 2009. The sum is not a growth rate. Change the comment in consequence.

Answer:

We decompose the annual growth rates and sum them. We don't say the total growth rate in the revised paper.

2. Mistake: Section 5 page 15: Table 6 is not coherent with Table 5 regarding the productivity growth rate in 2009 !

Answer:

Yes, we correct it.

3. Section 5.2.1: Once you have 5 types of ownership, augment the discussion about the state owned firms and their characteristics to the other types of ownership. Provide statistics on the number of each, the productivity growth of each in the statistics part. Because you are focusing on exporters, you have to explain the relationship between ownership and the probability of being an exporter and of being an intensive exporter which could explain then your overall results on productivity unconditional of the ownership.

Answer:

See table 1,3 and 5.

4. Identically, the location and the probability to be an intensive exporter is correlated. So given the distribution of the sample of firms into each region, overall results have to be discussed regarding the location distribution. In other words, results from section 5.2 should be used to interpret results from section 5.1.; given that you provide descriptive statistics on location, ownership and sectors on the overall sample. This should end the section 5 as a conclusion of the "Results" section.

Answer:

See table 1,3 and 5.

5. Improve the interpretation and subsequent argument: "We find the surviving ability of exporters to be generally weak, but the longer the firms survive in foreign markets, the stronger they become." First, "but" is not needed, second, the second result is obvious, either you acknowledge that, as expected, results support that.. or you give an explanation of why it shouldn't be so. "weak, slowly, turbulent" ... are all adjectives that contain poor information. Tell us relative to what it is "weak, slow, turbulent"...

Answer:

We discard all these adjectives in the revised paper.

F. Secondary Remarks:

1. Substitute the acronym DOPD in the abstract by its plain expression. Cite Melitz and Polanec (2015) here to be specific on the methodology.

2. In the abstract: It is at all not clear what you are doing: 1) you focus on exporting firms' change in productivity; 2) you analyse the source of this change by using an OP decomposition; 3) You found that "half..."; 4) "surviving ability" relative to what? 5) saying that "firm turnover is turbulent" is not a result, it brings nothing; 6)"market misallocation" is very general (see Haltiwanger), of course there is ! the question is : to which extent it is relative to other results in the literature, or relative to another time period, or in sectors comparisons, capital ownership comparisons...

Answer:

We give the abstract like this:

This paper assesses the productivity growth contributed by the dynamics of exporting firms using a firm-level production data for Chinese firms from 2005 to 2009. We apply the dynamic Olley-Pakes decomposition with entry and exit proposed by Melitz and Polanec (2015), which allows us to decompose the change in aggregate productivity in contributions of surviving firms,

entering firms and exiting firms. The study shows that in China the combined contribution of the three components capturing reallocation amounts to almost half of the change in aggregate productivity. The between-firm market reallocation is found to be contribute most among the three components, followed by exit of inefficient producers. This paper also finds that the aggregate productivity growth contributed by the dynamics of exporting firms at foreign markets varies with ownership, location and industry, which suggests a higher contribution of reallocation effect to the growth of aggregate productivity to private-owned firms, firms situated in the Eastern region and firms from high concentration industries.