Response to Referee Report 2

First, I would like to thank the reviewer for the useful comments, which will help to significantly improve the new version of the paper. Bellow, the remarks of the referee are reproduced in italics.

- ***Regarding the theoretical framework,*** *my main concern is about the relevance of persistence of exports. Author should consider not only export propensity in a current year but also the persistence or mobility through the export distribution. To what extent does the link between size and exports hide a deeper relationship between size and persistence in a particular export status?. In other words, Are the smallest (largest) firms more (less) persistent in their export activities?.*
    - *In this sense, theoretical framework about firm heterogeneity could include a revision of numerous "learning by exporting" literature. (Mañez-Castillejo et. al, 2010; and Díaz-Mora et. al, 2015 are some examples using the ESEE").*

      Firm productivity and size impact on exports through several dimensions, like export propensity and export status persistence. This multiple dimensions likely are positive correlated. I will explain this in the next version of the paper with the literature suggested by the reviewer. In this paper I focus in one of dimension, like export propensity. My main aim is the analysis of the relationship between firm size and exports in a current year, "which is often considered as a stylized fact" (Wagner, 2001, page 229).

- ***Regarding the data and descriptive analysis (section 2):***
    - *It is striking the high difference between ESEE and EFIGE results for Spain even when the same year (2008) is considered. A deeper explanation about of features of each database is required. It could be interesting provide mean tests in order to contrast the similitude of the results.*

      Effectively, ESEE and EFIGE dataset are not surveys methodologically homogeneous, because they have different objectives. The average of number of employees of the firm is higher in ESEE than in EFIGE dataset for Spain. For the percentage of exporting firms and the average export propensity of Table A1, the mean comparison tests with ESEE dataset in 2008 show that they are also different to values of EFIGE data set.

```
. ttest Perc_export=47.92

One-sample t test
```

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Perc_e~t	**2004**	**.6327345**	**.0107711**	**.48218**	**.6116108**	**.6538583**

```
    mean = mean(Perc_export)                                      t = -4.4e+03
Ho: mean = 47.92                                 degrees of freedom =     2003

  Ha: mean < 47.92               Ha: mean != 47.92                 Ha: mean > 47.92
 Pr(T < t) = 0.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 1.0000
```

```
. ttest Export_prop=25.61

One-sample t test
```

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Export~p	**1268**	**30.61893**	**.7933321**	**28.24975**	**29.06254**	**32.17532**

```
    mean = mean(Export_prop)                                      t =   6.3138
Ho: mean = 25.61                                 degrees of freedom =     1267

  Ha: mean < 25.61               Ha: mean != 25.61                 Ha: mean > 25.61
 Pr(T < t) = 1.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 0.0000
```

In any case, the main reason to use the EFIGE dataset is not to replicate again the results of Spain, but to check if these results occur in others countries. The preferred estimate is carried out with ESEE because this panel dataset allows including firms fixed effects.

- *Page6 (table1): ¿How many firms are there in each quantile?. It is seems reasonable to expect a very small number of firms. For instance, the small firms in the highest quantiles (from 90 to 95 quantiles) could be unrepresentative.*

The number of firms in Table 1 is shown in the next table, which will be included as an Appendix in the revised paper. Although the number in each cell is not huge, it enough to obtain statistically significant results.

Number of firms

			Quantile				
			<5%	**5-25%**	**25-50%**	**50-75%**	**75-95%**
ESEE	**1990**	Fewer than 50 employees	15	72	72	58	42
		Between 50-249 employees	12	41	58	54	64
		More than 249 employees	20	79	110	130	90
	2000	Fewer than 50 employees	29	120	90	64	38
		Between 50-249 employees	18	66	84	90	77
		More than 249 employees	13	57	128	149	127
	2010	Fewer than 50 employees	38	130	137	78	58
		Between 50-249 employees	14	96	126	147	138
		More than 249 employees	13	36	65	103	67
EFIGE		Fewer than 50 employees	1211	1129	982	924	874
		Between 50-249 employees	300	323	404	448	474
		More than 249 employees	49	109	174	203	196

- *Page7 (table2): Author should specify how the change of firm size is treated. It is necessary to know if a significant number of firms change their size range from year to year. If a dynamic approach is considered, the same firm could be in different size ranges depending on year. For instance, this could explain the increasing share of medium size firms in the 5th quintile: successful firms increase their size and it positively affects movement toward higher quintiles.*

  Thank you, I agree with the potential explanation you provide and will include it in the revised paper. Annual data in Table 2 are treated like a different cross-sectional dataset.

- *It is necessary to know, for each year, the number of firms and the export threshold in each quintile.*

  The number of firms and the export threshold in each quintile in Table 2 are shown in the next table, which will be included as an Appendix in the revised paper.

Number of firms and export propensity threshold in each quintile

			Quintile				
			1	**2**	**3**	**4**	**5**
ESEE	1990	Threshold	14.90	38.68	86.51	173.54	
		Fewer than 50 employees	70	64	46	45	51
		Between 50-249 employees	44	44	45	49	56
		More than 249 employees	74	89	94	97	84
	1995	Threshold	15.1	49.23	100.18	178.04	
		Fewer than 50 employees	97	68	47	36	39
		Between 50-249 employees	47	55	61	62	65
		More than 249 employees	54	75	88	99	92
	2000	Threshold	17.34	54.25	103.21	177.54	
		Fewer than 50 employees	120	92	58	43	49
		Between 50-249 employees	64	70	74	68	74
		More than 249 employees	58	81	109	132	118
	2005	Threshold	17.28	50.32	104.42	177.88	
		Fewer than 50 employees	111	88	80	40	46
		Between 50-249 employees	66	76	80	79	92
		More than 249 employees	53	80	77	119	99
	2010	Threshold	16.13	49.68	106.74	177.19	
		Fewer than 50 employees	143	116	75	61	59
		Between 50-249 employees	83	99	115	124	137
		More than 249 employees	36	47	73	77	66
EFIGE		Threshold	24.69	62.95	101.45	166.67	
		Fewer than 50 employees	1211	1129	982	924	874
		Between 50-249 employees	300	323	404	448	474
		More than 249 employees	49	109	174	203	196

- *In order to analyse the degree of firm heterogeneity in each quintile, author should compute mobility across quintiles. ¿Which is the probability of changing quintile for each size range?. For instance, if mobility is lower for the largest firms, the apparent heterogeneity in the 5th could be spurious: Each year, some small firms could have achieved the highest quintile temporarily. On the contrary, the largest firms could be consolidated during several year in the top of distribution. One, two or three-year transition matrices can be a simple way to compute the changing probability across quintiles.*

  It is very interesting to analysis the persistence dynamic. However, it is not the focus of this paper. Still, another way to account for the effect noted by the referee is to calculate means of export propensity over the whole period. I will include this information in the revised paper.

Regarding estimation results

- *In order to control endogeneity problems, author should clarify how an increase of exports might affect firm size. To what extent does size matter to stay in the highest export quintiles?.*

I agree, it is a very interesting point, but it is no relevant in this case. In the literature about learning by exporting that explain this relationship, the most studies conclude that there is not learning by exporting but self-selection hypothesis: firms with higher productivity, as proxied by their firm sizes in this case, are more likely to increase the exports.

- *As a robustness check, in specification models should be considered the degree of quantile persistence. It could be done by introducing dummy variables to identify if firms remains in the quantile regarding the previous year.*

  It is very interesting, but as I already indicated, it is not the focus is this paper. I plan in the future to analyze this issue.

- *Given the direct relationship between firm size and industry characteristics, it seems necessary to control sectoral effects in the ESEE database estimation.*

  My measure of export propensity considers these sectoral effects. It is the percentage of exported sales measured as a percentage of the average value off export propensity in the 20 industries considered and for each 21 years included in the ESEE dataset. Moreover, sectoral effects are time invariant variables, so it is controlled with firm fixed effects.

References

Wagner, J. (2001): “A note on the firm size-export relationship”, *Small Business Economics*, 17(4): 229-237.