The importance of cooperative networks in the internationalization of Wine SMEs

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COMPETE

1. INTRODUCTION

- The intense process of globalization offers a great opportunity and this challenge is not always easy for the SMEs (small medium-sized enterprise)

- Despite the small size of most of wine firms in Spain, exports have more than doubled in recent decades and the number of firms with transactions in foreign markets is constantly on the rise.

- In this context, the aim of this paper is to analyze the importance of cooperative networks in export perfomance in Spanish wine industry using a homogenous sample of Spanish SMEs.

Structure of presentation:

- Introduction
- Context
- Theoretical framework
- Empirical analysis
- Conclusion

2. CONTEXT

Figure 1. Wine exports and n. of exporters (2000-2015)
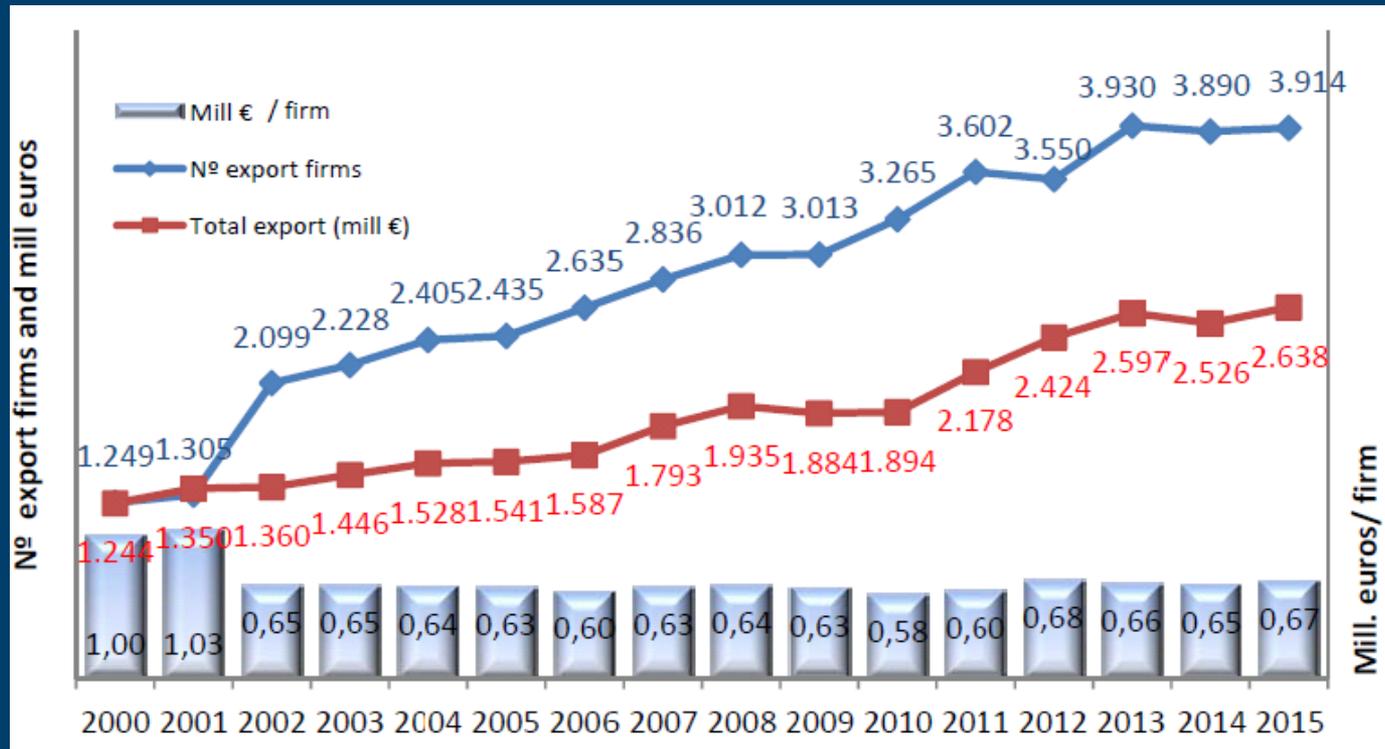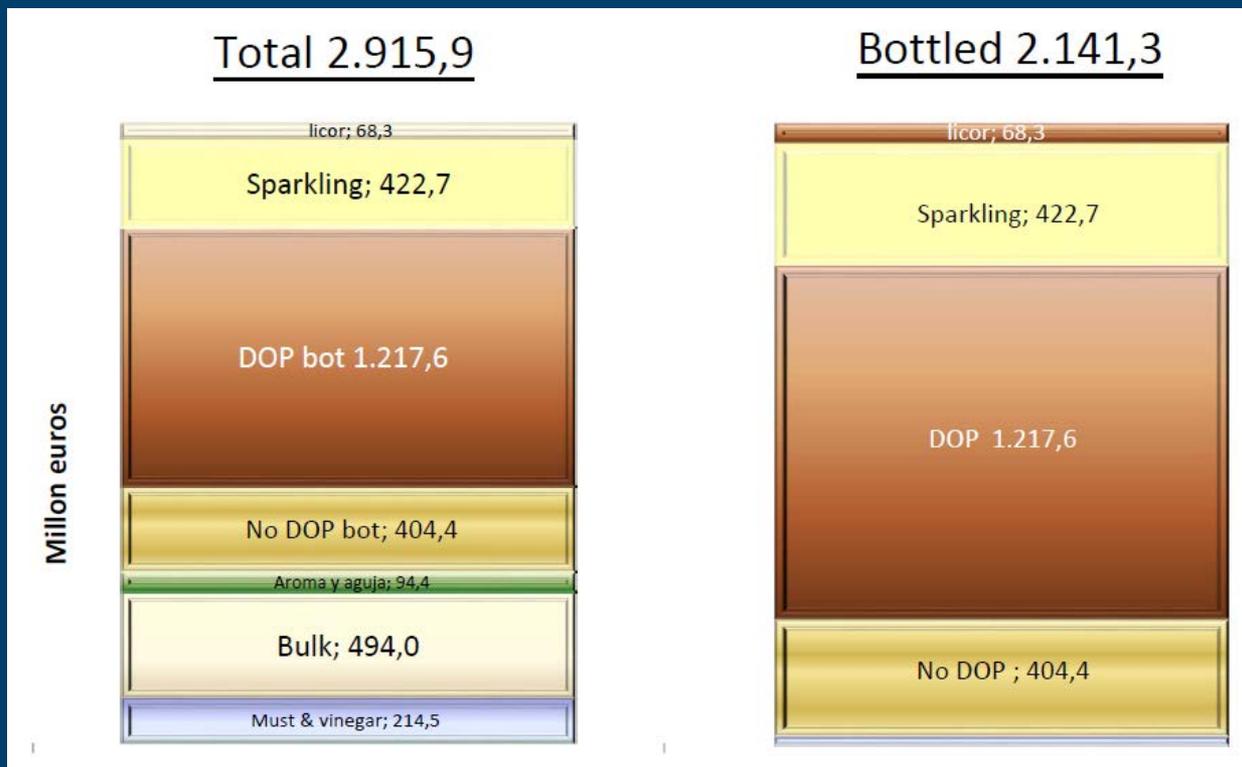

Source: Datacomex (2017)

2. CONTEXT

Figure 3. Exporters by region (2000- 2015)

Nº of firm exports by region

Nº firms	2000	2008	2015	Variación 2000-15	00-08	08-15
UE	560	629	867	307	69	238
Rest Europa	387	770	730	343	383	-40
Northamerica	471	1.326	1.757	1.286	855	431
LatinAmerica	340	689	984	644	349	295
Rest of Americas	33	85	78	45	52	-7
Asia	337	1.119	1.832	1.495	782	713
Africa	89	199	387	298	110	188
Oceania	74	213	392	318	139	179
WORLD	1.249	3.012	3.914	2.665	1.763	902

Source: OeMv (2017)

Figure 5. Appelation D´Origine Controllée Participation
(In Spanish D.O.P) (2016)

Source: Datacomex (2017)

3. THEORETICAL FRAMEWORK

- In recent years the literature has expanded its focus by introducing firm heterogeneity in international trade models (Melitz, 2003; Chaney, 2008; Bernard et al., 2012; among others). Several studies have highlighted the need to include more of the firms' individual characteristics (Bernard et al., 2012). The paper, from the network theory point of view, introduce an alternative mechanism that firms use to overcome resource and skill limitations, is cooperation with other firms (Johanson and Mattsson, 1988; Mínguez, 2010)

- For small and medium-sized wineries, crossing the border involve paying high initial costs, and competing in a more complex environment.

- Nevertheless, the limitations of a small size, the scarcity of financial, human and technical resources and the lack of dimension to take advantage of economies of scale can be compensated by managers establishing collaborative networks with other firms or institutions (Johanson and Mattsson, 1988).

3. THEORETICAL FRAMEWORK

- Cooperation helps firms accumulate the required information on foreign consumers, facilitates product adaptation to the target market's needs and demands, and ultimately enhances export performance (Karelakis et al., 2008)

- In other words, by collaborating with other firms, SMEs can benefit from the same advantages as large firms when exporting by benefiting from economies of scale and minimizing risks or removing redundant risks (Gebhard, 1987)

- Furthermore, cooperation between organizations is especially useful for small firms in wine industry as it helps them to improve product quality and takes advantage of synergies and complementarity of resources, increases size to improve their results.

4. DATA, MODEL AND RESULTS

- In these preliminary paper we use a panel-data from the Spanish Business Strategies Survey (*Encuesta sobre Estrategias Empresariales –ESEE* by SEPI Foundation - Ministry of Industry of Spain)

- The paper analyses the export performance from a sample of 30 Spanish Small and Medium Size firms (employing less than 250 workers) of the Beverages Sector (Alcoholic producers of 110 code following NACE-2009, most of them are wineries) from 2006 to 2012.

- The econometric strategy employed consists of estimating a Heckman-model. Two equations are estimated for that purpose: the first includes the determinants of firms' decision to export (propensity), while the second considers the determinants of export intensity.

4. DATA, MODEL AND RESULTS

- **Selection model (propensity to export)** describe firms' decision to export as the result of a series of the firms' individual characteristics and the specific costs of entering each target market [(Roberts and Tybout (1997), Bernard and Jensen (2004) and Bernard et al. (2012)]

- The first equation is estimated using a probabilistic model (Probit). This analyses the factors affecting the likelihood of exporting and also provides the inverse Mills ratio for each firm and market.

$$D_{i,j,t}^{\exp} = \begin{cases} 1(\exp) \Rightarrow P(D_{i,j,t} = 1) = f(\text{Networks} + \text{Control Variables}) \\ 0(no-\exp) \text{ in other case} \end{cases}$$

- The dependent variable (D_exp) is a fictitious variable taking the value 1 if firm i exported to region j in year t and zero otherwise. We considered 4 regions.

- The second stage of the Heckman model analyses the determinants of export intensity.

- The possible selection bias has been corrected in this stage using the inverse Mills ratio calculation for each firm and target market, as seen in the equation. The second stage uses econometrics technics from panel-data analysis.

$$ln\ V\_Exp_{ijt} = \beta_1 + \beta_2\ Networks_{it}\ + \beta_3\ l\_Productivity_{it} + \ \beta_4 HumanResources_{it}$$
$$+ \beta_5\ Age_{it} + \beta_6\ Innova_{it} + \beta_7\ l\_ExternalDemand_{jt} + \beta_8\ InvMills_{ijt} + U_{ijt}$$

- The dependent variable (V_exp) is the firm's export value i towards region j in year t. The model takes four target regions into account: EU, OECD-Countries, Latinamerica and the rest of the world, and would be specified as follows

4. DATA, MODEL AND RESULTS

Variable	Description	Mean	Standard Deviation	Min.	Max
D_Exp (1st Stage)	**Export Propensity**: Dummy variable- Identifies whether the firm exports	0.760	0.426	0	1
V_Exp	**Export Value**: Firm's export value i towards region j in year t.	2245149	7463166	0.04	7.60e+07
Networks	**Collaborative Networks**: Dummy variable that takes value 1 if firm i participated in year t in a collective marketing action for overseas expansion, such as sector export agreement, association of exporters or export cooperatives, and zero if it did not.	0.172	0.377	0	1
Productivty	**Productivity**: Added value / number of hours effectively worked.	65.478	77.165	0.9	514.2
HumanResources	**Human Resources**: Proportion of the firm's employees with a university degree (percentage of engineers and other graduates out of the staff total).	0.056	7.201	0	33.3
Age	**Firm Age**: Number of years (plus one) from the year the firm was established up to the year in which the survey is taken.	39.477	27.471	2	514.2
Innova	**Innovate Product**: Dummy variable that takes value 1 if firm i innovates in year t , and zero if not.	0.098	0.298	0	1
External Demand	$ExternalDemand_{jt}^{region} = \sum \dfrac{GDP_{country\_i}}{Dist_{country\_i}}$	3.95e+09	3.57e+09	3.30e+08	9.90e+09

4. DATA, MODEL AND RESULTS

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Random-effects probit regression              Number of obs    =        756
Group variable (i): id                        Number of groups =        164

Random effects u_i ~ Gaussian                 Obs per group: min =          1
                                                             avg =        4.6
                                                             max =          7

                                              Wald chi2(6)     =      60.14
Log likelihood  = -214.62238                  Prob > chi2      =     0.0000

------------------------------------------------------------------------------
        d_x |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
------------+-----------------------------------------------------------------
    network |   2.497117   .5758776     4.34   0.000     1.368417    3.625816
l_prouctivity|   .4445203   .1871391     2.38   0.018     .0777345    .8113062
HumanResources|  .1399594   .0292573     4.78   0.000     .0826162    .1973027
        age |   .0080792   .0070073     1.15   0.249    -.0056549    .0218132
innova product|  .2982618    .317209     0.94   0.347    -.3234565      .91998
external demand|  .9307325   .1972668     4.72   0.000     .5440967    1.317368
      _cons |  -24.05918   4.437231    -5.42   0.000    -32.75599   -15.36236
------------+-----------------------------------------------------------------
   /lnsig2u |   1.704033   .1645946                      1.381434    2.026632
------------+-----------------------------------------------------------------
    sigma_u |   2.344369   .1929352                      1.995145    2.754721
        rho |   .8460607   .0214371                      .7992211    .8835651
------------------------------------------------------------------------------
Likelihood-ratio test of rho=0: chibar2(01) =    330.77 Prob >= chibar2 = 0.000
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4. DATA, MODEL AND RESULTS

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Linear regression, heteroskedastic panels corrected standard errors

Group variable:    id                      Number of obs    =        285
Time variable:     year                    Number of groups =         66
Panels:            heteroskedastic (unbalanced)  Obs per group: min =      1
Autocorrelation:   no autocorrelation                      avg =   4.318182
                                                           max =          7

Estimated covariances      =      66    R-squared        =     0.6007
Estimated autocorrelations =       0    Wald chi2(7)     =     502.36
Estimated coefficients     =       8    Prob > chi2      =     0.0000

-------------------------------------------------------------------------------
                |              Het-corrected
       l_val_exp |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
----------------+--------------------------------------------------------------
        networks |   3.619461   .9034484     4.01   0.000     1.848735    5.390188
   l_productivity |   .9095113   .3276669     2.78   0.006     .2672959    1.551727
   HumanResources |   .2112315   .0458093     4.61   0.000     .1214469    .3010162
            age |   .0185985   .0114349     1.63   0.104    -.0038134    .0410104
   innova product |   .7718708   .7994094     0.97   0.334    -.7949428    2.338684
  external demand |   6.359503    .380281    16.72   0.000     5.614166     7.10484
         invmills |   4.817425   .6738368     7.15   0.000     3.496729     6.13812
           _cons |  -143.9551   9.955481    -14.46   0.000    -163.4675   -124.4427
-------------------------------------------------------------------------------
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5. DISCUSSION AND CONCLUSIONS

- This preliminary paper has studied the relationship between firm collaboration and firm export performance for a uniform sample of Small Spanish firms.

- This study shows that the Spanish industry has a dynamic behavior. Despite the small size of the majority of wine firms, the exports have more than doubled in last decades and the number of exporters have been tripled.

- The results obtained in the empirical analysis suggest a positive network effect on export propensity and export intensity. (Please, The work presented is in a preliminary. Therefore the results can not be generalized)

- Our paper has shown how SM-Wineries, despite of scarce financial, human and technical resources, have developed an intense process of internationalization.

- The initial limitations to taking advantage of economies of scale could be compensated by their managers establishing collaborative networks with other firms.

5. DISCUSSION AND CONCLUSIONS

- The study also highlights some limitations that open up interesting areas for possible lines of research. The main limitation is that the study considers exports to only four target regions (EU, OECD, LatinAmerica and the rest of the world).

- It would also be interesting if future research analyzed the effect of other forms of collaboration, for example technological or manufacture collaboration, rather than merely trade collaboration.

- Finally, the results could be interesting for policymakers. As shown in this paper, inter-firm cooperation allows small firms to access foreign markets. It might, therefore, be of interest to produce export support programs especially for SMEs focusing on encouraging cooperation between organizations. Also, policymakers could establish new programs that promote collaboration between firms and research centers as an alternative mechanism to improve firm competitiveness.

Session #1A: Trade I
Chair: Jean-Marie Cardebat (University of Bordeaux)

Thanks for listening!

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