## Vienna 2019 Abstract Submission

**Title**
Is there a Veblen effect for fine wine?

**I want to submit an abstract for:**
Conference Presentation

**Corresponding Author**
Britta Niklas

**E-Mail**
britta.niklas@rub.de

**Affiliation**
Institute of Development Research and Development Policy, Ruhr University Bochum

**Co-Author/s**

| Name | E-Mail | Affiliation |
|---|---|---|
| Elkhan Richard Sadik-Zada | elkhan.r.sadik-zada@rub.de | Institute of Development Research and Development Policy, Ruhr University Bochum |


**Keywords**
Fine Wine Imports, Luxury Goods, Inequality, Veblen Effect, Pooled Mean Group Estimator

**Research Question**
Do imports (consumption) of fine wine increase with the income gap and therefore can be defined as a Veblen (Snob) effect?

**Methods**
Panel Cointegration Analysis, Mean Group Estimator, Dynamic Fixed Effects Estimator

**Results**
In the long-run (short-run) there is a negative (positive) inequality-fine wine imports nexus. The emergence of the broad middle class leads to the increased long run fine wine consumption.

**Abstract**
Fine Wine, especially highly priced wine, can be defined as a luxury good, with a luxury good being “anything that is desirable and more than necessary or ordinary” (Heine 2013). In the respective literature it is not precise, when a bottle of wine can be called a luxury good. Cholette and Castaldi (2005) define different segments of luxury wine, ranging from luxury wine ($ 25-50), super luxury wine ($50-100) and Icon wine (> $100), while Geene (1999) defines Icon wine as wine being priced > $50. Jarrett and Jarvis (2016) define for Australia premium wines ($51-$72) and luxury/Icon wines (> $73) and Brager (2016) chooses wine with prices above $25 as the most expensive wines. Thach et al. (2017) propose a luxury wine price continuum, ranging from affordable luxury ($50-99) over luxury wine ($100-499) and Icon wine ($500-999) to dream wine (> $1000).
In the end, consumers differ in their definition of luxury. Fang and Pan (2003) for example show for China, that wine – independent of the price – is a luxury good for consumers, while beer and juice are normal goods. Corsi (2016) states, that wine in China is moving from a luxury to a premium good, but that for example wines from France have far greater associations with luxury goods than wines from other regions.

When it comes to literature dealing with the relationship between income inequality and alcohol consumption, there is a small number of studies dealing with the relationship of income inequality and health behaviors with regard to alcohol consumption. These suggest a positive relationship between increase frequencies of alcohol consumption, volume of alcohol consumed, drunkness and death from illnesses due to alcohol abuse (Karriker-Jaffe et al. (2013), Grittner et al. (2012)). These studies are more focusing on heavy spirits drinking and alcohol dependence than on wine drinking and not at all on fine wine drinking as a form of consumption of a luxury good. There are other studies, dealing with income disparities and the demand for luxury goods in a more general way. Ray and Vatan (2013) find, that the demand for luxury goods increases with the income gap between two socio-economic groups (wealthy and non-wealthy) and that the higher these disparities, the more are wealthy individuals willing to pay for these.
Bouet et al. (2017) deal with the case of Cognac as a luxury good and try to find the determinants of the export of Cognac with the GDP as the most important, significantly positive variable.
All studies mentioned use the Gini Coefficient as an indicator for income inequality.
There is no literature so far, dealing with the relationship of fine wine imports (and consumption) as a luxury good and income inequality. Hence this paper is set out in order to examine, if imports (consumption) of fine wine increase with the income gap and therefore can be defined as a Veblen (Snob) effect as shown for other luxury goods (Uzgoren, E.; Guney, T. (2012)).

For examining the relationship, we first use (1) fine wine imports in general as proxy for a luxury good and then repeat our estimations for (2) fine wine imports from France, Spain, Italy, Australia and USA and finally (3) fine wine imports from France, as French wines and especially Bordeaux wines belong to the most expensive wines worldwide and use three different data sets respectively. For data set 1 we use fine wine import data of 12 countries (Argentina, Australia, Canada, China, Denmark, Germany, Japan, Netherlands, South Africa, Sweden, UK, USA) for a long time period (1835-2016) and so covering the biggest wine importers worldwide (together more than 60% of all imports, including three of the fastest-growing wine market since 2013 (China (up 79.8%) ; USA (up 12,4%), Netherlands (up 10.2%)), for data set 2 we use for these 12 countries wine import data from 5 destinations (France, Spain, Italy, USA and Australia) for the years 1988-2017 and for data set 3 we focus on wine imports of 275 countries only from France for the years 1988-2018. Data on wine consumption and imports in general come from Anderson and Pinilla (2017) for the years 1835 to 2016. Data on wine imports (wine and sparkling wine) of Argentina, Australia, Canada, China, Denmark, France, Germany, Japan, Netherlands, Sweden, South Africa, UK and USA from the exporting countries France, Spain, Italy, USA and Australia come from UN Comtrade Database (2018) for the years 1988-2017. Data on France wine exports for the years 1988-2018 comes additionally from Eurostat (2018) both in quantities (in 100kg) as well as values (in Euro).

We use wine imports (consumption) as dependent variable and a set of explanatory variables such as GDP, GDP/capita, which is also available from Anderson and Pinilla (2017) and additionally transport distances and a trend variable. Due to the availability of the long time series (large T) we employ the inequality indicators of the World Inequality Database (WID) as the explanatory variable for income disparities. For most countries the data between 1913 and 2017 is consequently available. Due to a low number of the consequent observations of the Gini coefficient for most panel countries the employment of this indicator does not fit most panel time series techniques. The preliminary Pesaran panel unit root tests indicate that the variables of interest are integrated of order one, I(1), or zero, I(0). Hence, the fixed effect, random effect or GMM estimators are not efficient in our case, s that we employ the pooled mean group (PMG) estimators. Due to the mixture of I(0) and I(1) series, panel heterogeneity and cross-sectional dependence, we employ the panel analysis techniques suggested in Pesaran, Shin and Smith (1999). These are the pooled mean group (PMG) and mean group (MG) panel cointegration estimators. Hausman test statistics yields the criterion for the appropriateness of the homogeneity in the long-run coefficients (H0), i.e., PMG versus the alternative MG estimates. PMG and MG techniques can be employed if the variables are I(0), I(1) or a mixture of them. The PMG approach of Pesaran, Shin and Smith (1999) is an intermediate methodology ARDL procedure involving both averaging and pooling. PMG yields homogenous long-run coefficients, but allows for country-specific intercepts, short-run coefficients (adjustment speed) and error variances. In addition, the PMG estimator also estimates the consistent mean for the short-run coefficients across countries (Mohaddes and Raissi 2018). In addition, to vindicate the robustness of the PMG estimations, we also run a cointegration test for the I(1) series and FE panel estimations with Discroll and Kraay standard errors in the cross-sectionally dependent panel estimations (Hoechle 2007). The reason for conducting the tedious unit root tests is the application of methods other than PMG or MG on the grounds of assessment of the robustness of the PMG and

MG estimators.
Based on Hausman test statistics, we conclude that the PMG estimator, the efficient estimator under the null hypothesis, is preferred. The results of the PMG estimations suggest a statistically significant short- and long-run relationship between inequality and fine-wine consumption. In the short-run there is an N-shaped and in the long-run an inverted N-shaped relationship between the level of inequality and the preference for the imported fine wines. Nevertheless, due to the weak elasticity (coefficient) of the squared (long run: 1.49e+07; short-run: -1.57e+08) and cubed (long-run: 12.41e+07; short-run: 1.30e+08) inequality indicators the long-run nonlinearities are rather weak. Hence, in the long-run (short-run) there is in essence a negative (positive) inequality-fine wine imports nexus with some negligible nonlinearities. The emergence of the broad middle class which corresponds with the decrease of the inequality leads to the increased fine wine consumption in the long run. In the short run, we have a diametrically opposed result indicating that more inequality in the short run leads to more wine consumption. This could be an indication that the emerging middle class does adjust its wine-consumption immediately to the increased level of income.

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