I want to submit an abstract for:
Conference Presentation

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Keywords
Wine Import, Demand Forecasts, ADLM Model, Elasticity

Research Question
What are the factors that affect the demand for imported wines in China?

Methods
Auto-regressive distributed lag error correction models will be used to estimate the demand for imported wines in China.

Results
Income, price, exchange rate and cross price elasticities will be estimated and the forecasts of imported wines will be generated.

Abstract
The wine consumption in China has attracted the global attention in recent years. Wine imports soared from 286.04 million litres in 2010 to 554.8 million litres in 2015 with an average annual growth rate of 14.2% (China Customs Statistics, 2016). Meanwhile, China has become the 8th largest wine production country and the 4th largest wine consumption country in the world (Wine Institute, 2016). Although around 80% of the wine consumption in China is domestic wine, the imported wine was ranked the 5th worldwide in 2015 (World’s Richest Countries, 2016). Given the impressive volume of total consumption, wine exporters across the world have tried their best to embrace the Chinese market. However, some factors such as the anti-corruption campaign since 2012 and the depreciation of RMB may also generate fluctuations of the imported wine market. Thus, curate forecasts of the demand for imported wine in China are essential for both the domestic and foreign wine productions.

Compared with the traditional wine consumption countries in Americas and Europe, studies focus on China are still very limited. Only 16 papers published in the last decade are related to the Chinese wine consumption. As a newly emerged wine consumption market, researchers are more interested in analyzing the Chinese consumer behaviors using both qualitative (Bouzdine-Chameeva & Zhang, 2014; Somogyi et al., 2011) and quantitative (Camillo, 2012; Qing & Hu, 2015; Yang & Paladion, 2016) methods. Only until recently, has the demand for imported wine in China start to attract the attention of researchers. Muhammad et al. (2014) used the Rotterdam demand system to investigate the demand for imported wine from France, Spain, Italy, Australia, Chile and the USA. Capitello, Agnoli and Begalli (2015) further explored the demand for bulk, still and sparkling wines from France, Italy, Australia and Chile, respectively, using the almost ideal demand system (AIDS).

The wine demand analysis is dominated by system equation modeling method. The Rotterdam and AIDS models
were also used to study the demand for wines in Canada by Carew, Florkowski and He (2004), in Korea by Lee, Kennedy and Hilbun (2009), and in the USA by Seale, Marchant and Basso (2003) and in the US by Muhammad (2011). However, the one of the disadvantages of system modeling approach is that the determinants of the demand for wines from each country need to be the same which is a very strong assumption to make. To overcome this problem, the single equation modeling approach could be used to estimate the imported bottled, bulk and sparkling wines in China from different source countries. To the best of our knowledge, this is the first study to forecast the demand for imported wines using econometric method. The country specific demand models would allow us to identify the specific factors that affect the demand for imported wines with a view to generating more accurate forecasts of future demand for imported wines by China from different wine producing countries.

Method and Data

The autoregressive distributed lag-error correction model (ADLM-ECM) is proposed to estimate the demand for imported wines in China. The demand for imported wine is measured by volume. The sample data cover the period 2001 Q1-2016 Q3 and they are obtained from the China Custom Statistics. Income is represented by GDP index (2010=100) which is collected from International Monetary Fund (IMF). Import price index (2010=100) equals the value of imported wines divided by the corresponding volume adjusted by the real effective exchange rate index (2010=100). The cross prices are weighted indexes of the imported wine prices for Old World and New World markets, respectively.

The unit root tests will be conducted for each time series first before the bounds test is used to test for the co-integration relationships among all the variables concerned (Pesaran, Shin and Smith, 2001). In specifying the demand models, the general-to-specific method will be used. The final models used for forecasting need to pass a series of diagnostic tests, and the ex post forecasts of the demand for imported wines for the period 2016 Q1-Q3 will be generated to evaluate the forecasting accuracy using the mean absolute percentage error (MAPE) and the root mean square error (RMSE), respectively. The models will be further refined until satisfied forecasting accuracies are obtained. Finally, the forecasts of the demand for imported wines from each source markets in the next five years will be generated.

At the time of writing this abstract, the project is still on-going. We expect to estimate the income, price, exchange rate, and cross price elasticities with a view to examining the magnitudes of the determinants that affect the demand for imported wines in China according to country. More importantly, the forecasts of bottled, bulk and sparkling wines from the top five exporting countries over the period 2017-2021 will be generated. To enhance the robustness of the prediction, in addition to the point forecasts, the interval forecasts with 90% confidence intervals will also be produced. The estimated demand elasticities should provide valuable information on the Chinese wine consumption behaviour which can be used by the Chinese wine importers in their decision-makings. The forecasts generated by this study could also be used by wine exporters in their production planning and marketing strategies in order to better penetrate the Chinese wine markets.

References


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Modeling and Forecasting the Demand for Imported Wine in China

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Introduction

The wine consumption in China has attracted the global attention in recent years. Wine imports soared from 286.04 million litres in 2010 to 554.8 million litres in 2015 with an average annual growth rate of 14.2% (China Customs Statistics, 2016). Meanwhile, China has become the 8th largest wine production country and the 4th largest wine consumption country in the world (Wine Institute, 2016). Although around 80% of the wine consumption in China is domestic wine, the imported wine was ranked the 5th worldwide in 2015 (World’s Richest Countries, 2016). Given the impressive volume of total consumption, wine exporters across the world have tried their best to embrace the Chinese market. However, some factors such as the anti-corruption campaign since 2012 and the depreciation of RMB may also generate fluctuations of the imported wine market. Thus, curate forecasts of the demand for imported wine in China are essential for both the domestic and foreign wine productions.

Literature Review

Compared with the traditional wine consumption countries in Americas and Europe, studies focus on China are still very limited. Only 16 papers published in the last decade are related to the Chinese wine consumption. As a newly emerged wine consumption market, researchers are more interested in analyzing the Chinese consumer behaviors using both qualitative (Bouzdine-Chameeva & Zhang, 2014; Somogyi et al., 2011) and quantitative (Camillo, 2012; Qing & Hu, 2015; Yang & Paladion, 2016) methods. Only until recently, has the demand for imported wine in China start to attract the attention of researchers. Muhammad et al. (2014) used the Rotterdam demand system to investigate the demand for imported wine from France, Spain, Italy, Australia, Chile and the USA. Capitello, Agnoli and Begalli (2015) further explored the demand for bulk, still and sparkling wines from France, Italy, Australia and Chile, respectively, using the almost ideal demand system (AIDS).

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demand for imported wines with a view to generating more accurate forecasts of future demand for imported wines by China from different wine producing countries.

Method and Data

The autoregressive distributed lag-error correction model (ADLM-ECM) is proposed to estimate the demand for imported wines in China.

\[
\Delta \ln Q_{ij,t} = \alpha_0 + \sum_{k=1}^{q_1} \psi_{1_{k,ij}} \Delta \ln Q_{ij,t-k} + \sum_{l=0}^{q_2} \psi_{2l} \Delta \ln Y_{t-l} + \sum_{m=0}^{q_3} \psi_{3n,ij} \Delta \ln P_{i,t-m} + \\
+ \sum_{n=0}^{q_4} \psi_{4n,ij} \Delta \ln P_{Oij,t-n} + \sum_{r=0}^{q_5} \psi_{5r,ij} \Delta \ln P_{Nij,t-n} + \sum_{s=0}^{q_6} \psi_{6s} \Delta \ln EX_{t-s} + \gamma_{1,ij} \ln Q_{ij,t-1} + \gamma_{2,ij} \ln Y_{t} + \\
+ \gamma_{3,ij} \ln P_{i,t} + \gamma_{4,ij} \ln P_{Oij,t} + \gamma_{5,ij} \ln P_{Nij,t} + \gamma_{6,ij} \ln EX_{t} + \\
+ \sum_{s=1}^{q_6} d_{n,ij} \text{Dummies}_{n,ij} + v_{it},
\]

where \(Q_{ij,t}\) stands for the \(j\)th type of imported wines (\(j\) represents bottled, bulk and sparkling wines, respectively) from the top five (\(i=1,2,3,\ldots,5\)) source markets in period \(t\). The market share of the top five source markets in 2015 for each product is presented in Table 1. \(Y_t\) is the income level of Chinese consumers in period \(t\) and \(P_{ij,t}\) denotes the price level of the wine. \(\ln P_{Oij,t}\) and \(\ln P_{Nij,t}\) are the cross price of old world and new world wines, respectively. \(EX_t\) is the real effective exchange rate of Chinese RMB against the US Dollar. The dummy variables (\(\text{Dummies}_{n,ij}\)) are also included in the model to capture the seasonal effect and the impact of one-off events such as the global financial crisis in 2008 and 2009.

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<tr>
<th>Bottled Wine</th>
<th>Bulk Wine</th>
<th>Sparkling Wine</th>
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<td>France</td>
<td>46.29%</td>
<td>63.68%</td>
</tr>
<tr>
<td>Australia</td>
<td>23.45%</td>
<td>10.90%</td>
</tr>
<tr>
<td>Spain</td>
<td>9.09%</td>
<td>9.72%</td>
</tr>
<tr>
<td>Chile</td>
<td>5.99%</td>
<td>6.02%</td>
</tr>
<tr>
<td>Italy</td>
<td>4.40%</td>
<td>5.54%</td>
</tr>
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</table>

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Expected Findings

At the time of writing this abstract, the project is still on-going. We expect to estimate the income, price, exchange rate, and cross price elasticities with a view to examining the magnitudes of the determinants that affect the demand for imported wines in China according to country. More importantly, the forecasts of bottled, bulk and sparkling wines from the top five exporting countries over the period 2017-2021 will be generated. To enhance the robustness of the prediction, in addition to the point forecasts, the interval forecasts with 90% confidence intervals will also be produced. The estimated demand elasticities should provide valuable information on the Chinese wine consumption behaviour which can be sued by the Chinese wine importers in their decision-makings. The forecasts generated by this study could also be used by wine exporters in their production planning and marketing strategies in order to better penetrate the Chinese wine markets.

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References


