Econometric Model Analysis of Influencing Factors of Import and Export in Zhanjiang City
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Abstract. In order to analyze the quantity and regularity of Zhanjiang's total import and export with the changes of GDP and residents' consumption level in Zhanjiang, this essay uses econometrics method to establish a model to study the influencing factors of import and export in Zhanjiang. The results show that GDP and residents' consumption level in Zhanjiang have a great impact on import and export trade in Zhanjiang, and import and export have become an important factor in economic growth in Zhanjiang. Therefore, it can be concluded that the import and export trade in Zhanjiang should be vigorously developed so as to promote economic development in this city.

Introduction
In recent years, the ratio of total import and export volume of Zhanjiang City in GDP has been increasing, and the import and export trade in Zhanjiang has had a tremendous impact on economic development of the city. The development of import and export trade in Zhanjiang City is more and more important. Therefore, increasing the total import and export of Zhanjiang City has become a long-term strategy for Zhanjiang's foreign economic development. Only in this way can Zhanjiang further promote economic development and improve the level of economic development in Zhanjiang City.

Based on the annual statistics of the total imports and exports, GDP and consumption level in Zhanjiang from 1979 to 2013, the econometric analysis method is used to establish the model. Using Eviews software, the paper analyzes the relationship between the change of total import-export volume in Zhanjiang and GDP and residents’ consumption level there, and the paper finds that the change of GDP and residents’ consumption level in Zhanjiang has certain influence on the change of total import-export volume of Zhanjiang. The paper presents the effective recommendations for the further development of import and export and the economic development of Zhanjiang.

Model Setting and Data Description
In this paper, Eviews7.2 econometric software was used to select the annual data of GDP and residents’ consumption level in Zhanjiang during the 35 years from 1979 to 2013 to analyze the data of gross domestic product and residents’consumption level of Zhanjiang and find out the influence of GDP and residents’consumption level of Zhanjiang on the total import-export volume of Zhanjiang.

Table 1 lists the total import and export volume, the GDP, the residents’ consumption level of Zhanjiang. Data are from Zhanjiang statistical information website and Zhanjiang Bureau of Foreign Trade and Economic Cooperation website.
Table 1 Total import-export volume, GDP and residents' consumption level of Zhanjiang

| Year | Total import-export volume $Y_i$ | GDP $X_{1i}$ | Residents' consumption level $X_{2i}$ |
|------|----------------------------------|-------------|--------------------------------------|
| 1979 | 7373.3358                        | 133105      | 172031                               |
| 1980 | 7551.936                         | 151994      | 196205                               |
| 1981 | 9033.09                          | 180079      | 211719                               |
| 1982 | 11004.8875                       | 212520      | 241306                               |
| 1983 | 10151.1466                       | 229192      | 265273                               |
| 1984 | 8775.117                         | 263326      | 298307                               |
| 1985 | 28000.481                        | 320641      | 316991                               |
| 1986 | 30626.336                        | 392862      | 337396                               |
| 1987 | 41866.1808                       | 534426      | 391055                               |
| 1988 | 57759.5478                       | 728667      | 457461                               |
| 1989 | 57233.2851                       | 840464      | 483834                               |
| 1990 | 91708.2936                       | 966346      | 534383                               |
| 1991 | 154013.7156                      | 1133420     | 623408                               |
| 1992 | 183801.618                        | 1320334     | 726355                               |
| 1993 | 281514.034                       | 1582212     | 882535                               |
| 1994 | 523473.9819                      | 2118833     | 980480                               |
| 1995 | 766446.429                       | 2618453     | 623408                               |
| 1996 | 629717.508                        | 2891561     | 1171520                              |
| 1997 | 807103.2178                       | 3127872     | 1286768                              |
| 1998 | 745797.8862                      | 3298629     | 1346359                              |
| 1999 | 618595.9675                      | 3451172     | 1456827                              |
| 2000 | 966470.0864                       | 3738104     | 1597517                              |
| 2001 | 902035.737                        | 4006426     | 2528062                              |
| 2002 | 988580.049                        | 4256642     | 2653760                              |
| 2003 | 1601417.3                        | 4839463     | 2831217                              |
| 2004 | 1525532.757                       | 5517005     | 3183042                              |
| 2005 | 1473997.819                       | 6809679     | 3630752                              |
| 2006 | 1676441.994                       | 8055223     | 3969953                              |
| 2007 | 1881000.241                       | 9244084     | 3840039                              |
| 2008 | 2274390                           | 10994066    | 4246394                              |
| 2009 | 1924988.4                         | 11566787    | 4095318                              |
| 2010 | 2279956.4                         | 14050630    | 4220703                              |
| 2011 | 2787555.84                        | 17002272    | 6021095                              |
| 2012 | 2838997.7                         | 18602206    | 6451370                              |
| 2013 | 3335368.3                         | 20600069    | 7101243                              |

The linear regression model is as follows:

$$Y_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \mu_i, \quad (i = 1, 2, 3, \ldots, 35)$$

Where, $Y_i$ means the total import-export volume of Zhanjiang; $X_{1i}$ is the GDP of Zhanjiang; $X_{2i}$ is the residents' consumption level in Zhanjiang; $\mu_i$ is the error term, which represents other factors that affect the import and export of Zhanjiang City besides the explanatory variables.

**Estimation of Model Parameters**

Regression is conducted by virtue of OLS method, and the results are as follows:
The regression equation is as follows:

$$Y_i = -27714.81 + 0.038276X_{1i} + 0.376018X_{2i}, \quad (i = 1, 2, 3, \ldots, 35)$$

### Conclusion

We can see from the equation that GDP and residents’ consumption level of Zhanjiang has a significant influence on the total import-export volume of Zhanjiang. When the GDP of Zhanjiang is increased by a unit, the total import-export volume will be increased by 0.038 unit. When the residents’ consumption level of Zhanjiang is increased by one unit, the total import-export volume will be increased by 0.376 unit. GDP and residents’ consumption level of Zhanjiang have a great influence on the total import-export volume. The government can take the macro-control measures to control the CPI, and thus controlling the import and export trade of Zhanjiang to certain extent.

Zhanjiang is a port city, and import and export trade takes up an important position in the local economy. Therefore, import and export trade should become the focus of the development of export-oriented economy of Zhanjiang; in particular, the import and export of aquatic products in Zhanjiang. Under the current trend of increasing demand in the international aquatic products market, the export of aquatic products in Zhanjiang should formulate practical and feasible development strategies as soon as possible so as to give full play to advantages and reverse disadvantages seize opportunities and resolve threats. At the same time, on the basis of comprehensively enhancing the international competitiveness of aquatic products, the city should promote the healthy development of import and export trade. Therefore, the development of good import and export trade is of great significance to the development of local economy of Zhanjiang, especially to the outward-oriented development.

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