The Different Impacts of Central and Local Public Expenditure on Consumption under the Perspective of Fiscal Decentralization

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Abstract. China economic development has entered a new normal. Consumption plays a more and more important role in promoting economy. Based on the empirical statistics, we adopted the VEC model to analyze the dynamic linkages and influences between public expenditure and consumption. The conclusion is there are different impacts between central and local public expenditure, and in the long run, only the latter has a strongly positive effect on consumption. So trying to coordinate the relationship between central and local finance is of vital importance under the background of economic transition.

Introduction

The economic developmental structure and endogenous driving factors have been changing significantly after the economy of our country entered into the new normal stage of evolution. The consumption has been playing an increasingly important role in promoting the economy. Although our government insists on adopting comprehensive means of public finance to expand consumption with the support of public expenditure expanding especially after the outbreak of the financial crisis in 2008, but consumption's contribution to the economic growth is still insufficient for the consumption rate of our country being low obviously at present. Researching the effects of public expenditure on the residents' consumption and how to make better use of it to stimulate consumption for promoting economic development have become the practical problems, which need to be solved at the stage of economic transition.

The international and domestic scholars processed a series of researches to the influence of public expenditure on consumption, whose conclusions are mainly divided into two views, whether public expenditure has a positive or negative effect on consumption. The studies of Linnemann & Schabert (2003), Schclarek (2007), Jianqiang Li (2012) and Linfeng Mao (2015) found when the government increases public expenditure, the consumption can be promoted. On the contrary, the studies’ results of Burnside et al (2004), Romer (2007) and Deyu Yuan (2010) and Kaimou He (2012) suggested that fiscal public expenditure has an extrusion effect on consumption. Increasing public expenditure will reduce consumption. Some other scholars studied the different kinds of public fiscal expenditures on consumption more carefully. For example, Wenjun Xiao (2014) found that the social security and employment fiscal expenditures have an extrusion impact on consumption, while medical and health care fiscal expenditures has an crowing-in impact on consumption. Regrettably, existing researches focused on analyzing the influence of the state's overall public expenditure on consumption and
ignored the characteristics of the central finance expenditure and local finance expenditure. The
former mainly focus on macroeconomic regulations and controls while the latter tends to place
plan as a whole. Due to the different focuses, the impact of central finance expenditure and local
government expenditure on the consumption must be discrepant. So this article is aimed to
study the effects on consumption with distinguishing between central and local finance
expenditure from a new perspective of fiscal decentralization.

Overview of Fiscal Expenditure’s and Consumption’s Development

Figure 1 depicts the development trend of the central finance expenditure (CF) of per capita
and local finance expenditure (LF) of per capita in our country.

Through longitudinal comparison, our country public finance expenditure of per capita
overall assumes shows the twists and turns upward trend in most of the time since our country
reformed and opened up, except that pursuing a policy “eight” in 1979, adopting a policy of the
“double tight” in 1988 and moderately tight fiscal policy in 1993. Which made the public
expenditure of per capita decreased. Through the lateral comparison, we found that the gaps
between the local finance expenditure of per capita and the central finance expenditure of per
capita has obviously increased relatively after 1994, during when the tax reform has been
implemented that the tax of China's macroscopic readjustment and control belong to central
government and central accounted for the lion's share of the national fiscal revenues.

Figure 2 depicts the relationship between the per capita consumption expenditure (CE) and
the per capita gross domestic product (GDP). Our country's per capita GDP and per capita
consumption level generally shows a trend of rising since reforming and opening up. But it can be obviously found that the role of consumption to economic growth was weaker and consumption grows slower than economic apparently, although the public expenditure scale has been expanding year by year. How to serve the consumption level better still needs further discussion.

Empirical Analysis Tables

Variable Selection and Data Processing

This article will select the per capita consumption expenditure, per capita expenditure of the central public finance, per capita expenditure of the local public finance and the per capita GDP as the empirical variables, whose standard is Yuan. All the statistical data of this paper is from 1978 to 2014 China Statistical Yearbook, and all of them are treated by the GDP price index to deflate. In order to avoid the influence of heteroscedasticity, the variables are analyzed in their natural logarithm. The name of these variables is as follows: LNCE, LNCF, LNLF and LNGDP.

The Unit Root Test of Variable Series

Due to spurious regression problem may exist, ADF test should be adopted to judge the stationarity of variable series. The inspection results are shown in Table 1: at the 5% significance level, all the series are not stable. For further inspection of the first difference of the variable series, they have no unit root at the 5% significance level. It is proved the origin series are the first order single whole I (1) series.

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF Statistic</th>
<th>ADF Critical Value</th>
<th>p-value</th>
<th>Stationarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNCE</td>
<td>-2.241596</td>
<td>-4.284580</td>
<td>0.4514</td>
<td>No</td>
</tr>
<tr>
<td>LNCF</td>
<td>-2.613577</td>
<td>-4.252879</td>
<td>0.2770</td>
<td>No</td>
</tr>
<tr>
<td>LNLF</td>
<td>-3.455086</td>
<td>-4.23497</td>
<td>0.0599</td>
<td>No</td>
</tr>
<tr>
<td>LNGDP</td>
<td>-2.396656</td>
<td>-4.243644</td>
<td>0.3748</td>
<td>No</td>
</tr>
<tr>
<td>Δ LNCE</td>
<td>-3.694387</td>
<td>-3.639407</td>
<td>0.0087</td>
<td>Yes</td>
</tr>
<tr>
<td>Δ LNCF</td>
<td>-4.943766</td>
<td>-4.252879</td>
<td>0.0018</td>
<td>Yes</td>
</tr>
<tr>
<td>Δ LNLF</td>
<td>-3.698905</td>
<td>-3.632900</td>
<td>0.0085</td>
<td>Yes</td>
</tr>
<tr>
<td>Δ LNGDP</td>
<td>-3.184160</td>
<td>-3.639407</td>
<td>0.0298</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Cointegration Test and Vector Error Correction Model

In the presence of I(1) variables in the model, we have to check for the potential existence of long-run relationships among them by means of a cointegration test. The AIC and SC information criterion are used to judge the number of lags before conducting the Johansen cointegration test. According to that, we select five (5) lags. The results of the Johansen trace test are shown in the table 2.
Table 2. Johansen Trace Test for Cointegration.

<table>
<thead>
<tr>
<th>Hypothesized Number</th>
<th>Eigen Value</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.890596</td>
<td>125.1492</td>
<td>47.85613</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.613147</td>
<td>56.55524</td>
<td>29.79707</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.538237</td>
<td>27.11419</td>
<td>15.49471</td>
<td>0.0006</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.096922</td>
<td>3.160352</td>
<td>3.841466</td>
<td>0.0754</td>
</tr>
</tbody>
</table>

The results suggest the existence of three (3) cointegrating relationship in the system. So in order to account for the long-run equilibrium relationships among the variables, the VEC model should be used to estimate through the error correction. While there are more than one cointegration relationship between variables, we inspect the stationarity of residual of model to ensure that the selection of this VEC model is correct. The statistic of LLC, ADF and PP are -10.50, 78.83 and 87.34 respectively, which means the model is stable at the 1% level of significance. We can get the error correction results.

\[
ECM_t = LNCE_{t-1} + 1.01LNCF_{t-1} - 0.71LNLF_{t-1} - 0.89LNGDP_{t-1} + 1.99
\]  

The estimation result is shown as follows.

\[
\begin{align*}
\Delta LNCE_t &= 1.08\Delta LNCE_{t-1} + 0.27\Delta LNCF_{t-2} - 0.96\Delta LNCE_{t-3} + 0.46\Delta LNCF_{t-4} - 0.09\Delta LNCE_{t-5} \\
&\quad - 0.06\Delta LNCF_{t-1} + 0.05\Delta LNCF_{t-2} + 0.18\Delta LNCF_{t-3} + 0.07\Delta LNCF_{t-4} + 0.37\Delta LNCF_{t-5} \\
&\quad - 0.03\Delta LNLF_{t-1} - 0.24\Delta LNLF_{t-2} + 0.05\Delta LNLF_{t-3} - 0.25\Delta LNLF_{t-4} - 0.31\Delta LNLF_{t-5} \\
&\quad - 0.36\Delta LNGDP_{t-1} - 0.96\Delta LNGDP_{t-2} + 0.81\Delta LNGDP_{t-3} - 0.46\Delta LNGDP_{t-4} - 0.07\Delta LNGDP_{t-5} \\
&\quad - 0.47ECM_{t} + 0.08
\end{align*}
\]

\[
R^2 = 0.86 \quad Log \ Likelihood = 379.65 \quad AIC = -18.56 \quad SC = -14.30
\]

On the one hand, the short-term elasticity coefficient of LNCF and LNLF is -0.06 and -0.03, which means both of central and local public expenditure would impede the growth of consumption in the short run. However, the long-term elasticity coefficient of LNCF and LNLF is -1.01 and 0.71, which suggests that over time the improvement of consumption will benefit from the local public expenditure but be negatively influenced by the central public expenditure. The reason of this different impact may be there are different focuses among central and local finance. Majority of central public expenditure are invested to support the development of our country such as public works, national defense construction and so on. Compared with that, more local public expenditure are used to the projections which are related to people’s life.

On the other hand, the long-term elasticity coefficient of LNGDP is 0.89. It is can be proved that the country’s economic development is fundamental to consumption of residents. Meanwhile, the GDP growth is the sources of funds of public finance expenditure. Owing to that, we cannot ignore the significance of GDP.

The Analysis of Impulse Responses

For further analysis of the dynamic linkages between the consumption and public expenditure. We obtain the Generalized Impulse Response Functions. The dynamic responses of LNCE to a shock in LNCE, LNCF, LNLF and LNGDP are presented in Fig. 1. In which the horizontal axis represents time, the vertical axis represents the IRF (Impulse Response Function).
Firstly, the response of LNCE to a shock in LNCF is negative in the long run, as well as this effect is more and more obvious over time. This negative impact of LNCF on LNCE could be attributed to the fact that quantities of funds of central finance are served to the country general development, which cause to the strength of improving people’s livelihoods is relatively deficient compared with local public expenditure. Secondly, a shock in LNLF affects positively the LNCE, as has already noted, many aspects of people’s living need to be supported by the local public expenditure such as housing allowance and medical insurance. It is more specific than central finance in the way of improving livelihoods. Finally, because consumption has inertia effect and ratchet effect, we can find the response of LNCE to a shock in itself has been always positive, although volatility exists in the mid-term.

Conclusions

Through econometric analysis the public expenditure efficiency in China consumption growth, the result shows a close relationship between public expenditure and consumption. With the continuous growth of local public expenditure, the residents’ consumption will continue to grow, especially in the long term. On the contrary, the central public expenditure will impede the development of consumption. How to deal with the relationship between the central and local public expenditure to promote the consumption? This paper points out some relevant suggestions from the following aspects. Such as:

(a) To strengthen the financial support of local finance. Now we can find too much money are controlled by the central government while the local government is faced the shortage of funds.

(b) To improve the initiative of local finance and reduce the intervention from central finance, which can make it easier for the local public expenditure policy is adjusted according to the different actual situations.

(c) To increase the efficiency of central public expenditure. Without the pressure of competence, the central government may ignore the responsibility of central finance.

(d) To optimize the structure of local public expenditure. The local government should pay more attention to people’s livelihood instead of their track record.

Acknowledgement

References


