

# Government Competition, Credit Mismatch and the Effectiveness of Monetary Policy—An Explanation for M2/GDP

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**Abstract.** This paper points out that the key of the current China monetary policy cannot effectively promote the economic growth of the local government is central to the relationship between competition and credit preference for state-owned enterprises, strengthen the local government intervention, reduce the efficiency of the allocation of resources of monetary policy. In the future, reshaping the relationship between the central and local governments and the further reform of state-owned enterprises is the key to improve the efficiency of monetary policy.

**Keywords:** Government Competition; credit mismatch; monetary policy; M2/GDP.

## 1. Introduction

In past decades, China's broad money M2 growth persistently exceeded its GDP growth, shows that the high level of M2/GDP, rising from 1.5 in 2008 to 2.08 in 2016. However, China's monetary growth remained at a high level smoothly, the broad money M2 growth while GDP growth rate decline after 2008 financial crisis. The direct result is the rapid promotion of M2/GDP. The M2/GDP in China is not only higher than that in the same level of development, but also far higher than that in most developed countries. The reason for the rapid growth of the broad money in China have been discussed by many authors, whereas the most popular explanations focus on 2008 pre-financial crisis and have not reached a consensus. Wang Yang (2007) gives a relatively comprehensive review of M2/GDP, is a better economic perspective to understand the broad money M2 growth before 2008. In this context, it's natural to ask the reason of different growth rate of M2/GDP before and after 2008. We contribute to the literature in several ways. First, we explain M2/GDP from the view of government intervention in credit allocation. Second, we use fixed effect model to verify the relationship. Third, we analyze the heterogeneity by sub-time and sub-region samples. By separating samples, we study the relationship between government intervention and broad money growth comprehensively.

## 2. Data

The panel data covers the period 2003-2013. We split our sample at 2008 because the finance environment in China starts to take shape in 2008 after a series of financial reforms. In view of different development level of the eastern and western, heterogeneity analysis by dividing the sample into the East and the west region as well. The panel data used in this paper about government intervention and broad money growth are mainly derived from China's urban statistical yearbook, and the core variable is M2/GDP. In view of no broad money supply data at the prefectural level, we obtain the M2/GDP by credit/GDP. In addition, we use fiscal expenditure/GDP to represent the extent of government intervention and fiscal revenue/GDP in the robustness test. All the real variables are transformed into natural logarithms.

### 3. Empirical Models and Results

#### 3.1 Basic Regression Results

This article focuses on explain the relationship between Credit misallocations caused by government intervention and broad money growth comprehensively. The basic panel regression model used in this paper is  $Y_{it} = \alpha + \beta \cdot Gov_{it} + \gamma X + \lambda_t + \mu + \varepsilon_{it}$ .  $Y_{it}$  denotes the explanatory variable M2/GDP. The core explanatory variable is  $Gov_{it}$ , which represents the degree of government intervention. We use fiscal expenditure/GDP (exp\_gdp) to denote the extent of government intervention. The bigger the indicator, the higher the level of government intervention. In addition, we control other variables at the urban level to alleviate the missing variable problem, the fixed effects of year and city are also controlled.

First, we use full sample to explain the relationship between government intervention and M2/GDP. Table 1 reports on the relationship between government intervention and M2/GDP with full samples. The coefficients on the government intervention and M2/GDP are significant at the 1% level. Without controlling other variables, Table 1 (1) shows that the higher the level of government intervention, the higher the M2/GDP ratio. Table 1 (2) shows that the impact of government intervention on M2/GDP remains significant at the 1% level after controlling city's fixed effects. The average level of government intervention increased by 10 units per unit of M2/GDP. The regression of Table 1 shows that government intervention does increase M2/GDP. In addition, we also control the possible impact on the level of government intervention and other urban level features of M2/GDP for alleviating the missing variables problem. By controlling variable results, GDP per capita (lnpergdp) and population size (lnpop) have no significant effect on M2/GDP, while the industrial structure (three/second output value) have a significant negative effect on M2/GDP. This may be due to the more developed areas of services, which are less capital intensive and require less credit.

Table 1. Government intervention and M2/GDP

VARIABLES	(1) M2/GDP	(2) M2/GDP
exp_gdp	10.06*** (0.170)	10.02*** (0.175)
lnpergdp		-0.0433 (0.0499)
lnpop		-0.137 (0.130)
industrial structure		-0.214*** (0.0477)
Constant	0.181*** (0.0468)	1.405* (0.807)
Observations	3,047	3,026
R-squared	0.599	0.602
Number of city	285	285
Year FE	YES	YES
City FE	NO	YES

#### 3.2 Heterogeneity Analysis

##### 3.2.1 Sub-time Sample Test

In terms of the overall trend of the M2/GDP, the 2008 is a clear dividing line. Before 2008, the trend of M2/GDP is relatively smooth, but rise rapidly after that year. As a result, government intervention may have a strengthening trend after 2008. Then we have a sub-period analysis to explore whether the intensity of government intervention in the economy increased significantly between pre- and post- financial crisis period. The results are shown in Table 2, (1) and (2) denote 2003-2007, (3) and (4) represent 2008-2013. From the regression results, the intensity of government intervention

increased significantly after 2008. The coefficients in Table 2 (4) are nearly two times that of column (2). From a mechanism point of view, the government intervention in the economy means that China's enterprises are an important way before 2008 financial finance, whereas this trend has weakened after 2008. This may be because the government intervention in the economy, the increase in infrastructure investment is another important way.

Table 2. Sub-time sample (2008)

VARIABLES	(1) M2/GDP	(2) M2/GDP	(4) M2/GDP	(5) M2/GDP
exp_gdp	7.120*** (0.322)	7.001*** (0.327)	12.85*** (0.285)	12.94*** (0.292)
lnpergdp		-0.0544 (0.0594)		0.166** (0.0815)
lnpop		-0.312 (0.196)		-0.195 (0.138)
industrial structure		-0.291*** (0.0581)		-0.201*** (0.0743)
Constant	0.409*** (0.111)	2.579** (1.092)	-0.242*** (0.0886)	-0.823 (1.118)
Observations	2,015	2,000	1,032	1,026
R-squared	0.522	0.528	0.814	0.818
Number of city	222	218	101	101
Year FE	YES	YES	YES	YES
City FE	NO	NO	NO	NO

### 3.2.2 Sub-region Sample Test

In addition, the competitive environment facing Eastern and western regions may lead to significant differences between different mechanisms. By splitting the whole sample into the East and west (see table 3), we further examine whether government intervention affect the money growth and the significant level. In table 3, (1) and (2) denote east region, (3) and (4) represent west region. We show that the role of government intervention in the promotion of M2/GDP is more obvious in the eastern region than that of the western region, probably because the financial structure of the eastern region is more developed, and the credit expansion is easier.

Table 3. Sub-region sample (East and West)

VARIABLES	(1) M2/GDP	(2) M2/GDP	(3) M2/GDP	(4) M2/GDP
exp_gdp	1.548*** (0.135)	1.375*** (0.139)	4.170*** (0.262)	3.776*** (0.277)
lnpergdp		-0.143*** (0.0315)		-0.177*** (0.0429)
lnpop		-0.179* (0.0959)		-0.265*** (0.0703)
industrial structure		0.0797*** (0.0241)		0.0873** (0.0407)
constant	0.961*** (0.0239)	3.016*** (0.548)	0.703*** (0.0378)	3.681*** (0.594)
observations	1,634	1,599	832	827
R-squared	0.211	0.236	0.435	0.463
Number of city	216	214	98	98
Year FE	YES	YES	YES	YES
City FE	YES	YES	YES	YES

## 4. Summary

This article contributes to our understanding of the relationship between government intervention and broad money growth. The empirical results provide evidence that government intervention increases the proportion of M2/GDP. Using panel data fixed effect model and heterogeneity analyze contained time division and sub region, we study the relationship between government intervention in credit allocation and broad money growth comprehensively. Overall, we show that government intervention and M2/GDP keep significant positive correlation., the government intervention in the economy by credit allocation in the promotion of M2/GDP are an important way before 2008 finance crisis, but this trend become weaker after 2008. In addition, the role of government intervention in the promotion of M2/GDP is more obvious in the eastern region than that of the western region. Our study provides a novel perspective to deeply understand the relationship between government intervention in credit allocation and M2/GDP. Furthermore, we explain the reason M2/GDP growth rapidly better.

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