

# FISCAL MULTIPLIERS IN THE NEW KEYNESIAN MODEL: THE INFLUENCE OF GOVERNMENT SPENDING ON ECONOMIC OUTPUT

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**Abstract:** The thesis focuses on the influence of fiscal multipliers on economic output in the framework of New Keynesian, emphasizing the dominant position of government spending. By integrating the price concepts and wage stickiness, the analysis explores how fiscal policy may either stabilize or destabilize the economy, depending on the timing and nature of interventions. The research contrasts both short-term and long-term effects of government spending, considering interactions with monetary policy and the broader economic context. An insight into fiscal policy optimizing for enhancing stability of macroeconomic is provided in the thesis through both theoretical examination and case studies. The findings finally suggest that proper interventions do have ability to mitigate economic downturns and sustain the growth of output, making them essential tools for managing in modern macroeconomic.

**Keywords:** New Keynesian model; Fiscal multipliers; Government spending; Economic output; Price stickiness; Business cycle

## INTRODUCTION

Fiscal policy, particularly government spending, plays an important role in influencing economic output and stabilizing the macroeconomy. Under the framework New Keynesian, the concept of fiscal multipliers—how government spending variation impact the demand of aggregate—offers vital insights into the effectiveness of such policies. In this thesis, a closer look will be taken at the intricate relationship between fiscal policies and economic growth. We'll be focusing on two key factors: price stickiness and the timing of policy implementation. The study aims to shed light on how fiscal policy can be optimized to achieve greater economic stability, especially during the economic fluctuation periods by theoretical perspectives and empirical evidence examination.

## 1 THE NEW KEYNESIAN MODEL: AN OVERVIEW

### 1.1 Core Principles of the New Keynesian Model

The New Keynesian model extends the traditional Keynesian framework by integrating microeconomic concepts like price and wage stickiness, which explain why output and employment can deviate from their natural rates during economic shocks. Price stickiness refers to the slow adjustment of prices, while wage stickiness results from long-term contracts and social norms that prevent quick wage changes. Expectations also play a crucial role in decision-making, as firms may increase production and hiring today based on anticipated future demand [1]. This forward-looking behavior distinguishes the New Keynesian model from the backward-looking nature of traditional Keynesian economics.

### 1.2 Fiscal Multipliers in the New Keynesian Context

The change in aggregate output resulting from a change in government spending or taxation is measured as fiscal multipliers. The unit however, usually are particularly significant when using the New Keynesian model as background, due to the presence of price and wage stickiness. When prices and wages cannot be timely changed (which represents most of the cases), the government spending will have a larger impact on the economy. Businesses and households aren't able to adjust right away, so changes in government policy can lead to a more significant shifts in things like output and employment.

The New Keynesian model incorporates fiscal policy tools through the lens of intertemporal optimization, where agents optimize their consumption and labor supply decisions over time, considering the effects of government spending and taxes. The model suggests that fiscal policy can be particularly effective during periods when monetary policy is constrained, such as at the zero lower bound of interest rates [2]. In such situations, fiscal multipliers tend to be larger, as government spending can directly increase aggregate demand without being offset by rising interest rates.

### 1.3 Interaction Between Fiscal and Monetary Policy

The New Keynesian model emphasizes the interaction between fiscal and monetary policy, where fiscal multipliers are influenced by interest rates. If the central bank targets inflation, increased government spending can raise inflation, prompting higher interest rates, which may reduce private investment and consumption, weakening fiscal stimulus [3].

However, when monetary policy is constrained, such as when interest rates are already low, fiscal policy becomes more effective, leading to a stronger and longer-lasting impact on output [4]. This underscores the importance of coordinating fiscal and monetary policies, especially during economic downturns.

## **2 THE IMPACT OF GOVERNMENT SPENDING ON ECONOMIC OUTPUT**

### **2.1 Theoretical Analysis**

In the New Keynesian framework, government spending influences aggregate demand, with short-term effects boosting output and employment, especially during recessions when idle capacity is high [5]. However, long-term effects depend on the nature of the spending (on consumption or investment), financing methods (through taxes or borrowing), and the economy's structural characteristics. While public investments may lead to sustained output growth by increasing the economy's productive capacity, excessive spending, particularly when financed by debt, can raise interest rates, crowd out private investment, and potentially reduce long-term output growth.

### **2.2 Price Stickiness and Output Fluctuations**

Price stickiness significantly impacts the effectiveness of fiscal multipliers, as it causes delays in price adjustments to changes in demand. This lag allows government spending to boost real demand, resulting in higher short-term output and employment [6]. However, price stickiness also risks inflation if spending continues without corresponding increases in productive capacity. Eventually, as prices adjust, inflationary pressures may reduce the real value of money and erode consumers' purchasing power, underscoring the importance of balancing short-term output gains with long-term inflation risks.

### **2.3 Empirical Evidence**

Empirical studies provide mixed evidence on the impact of government spending on output, reflecting the complexity of fiscal multipliers. Research by [7]Auerbach and Gorodnichenko suggests that fiscal multipliers are larger during recessions, as government spending is more effective in stimulating demand when there is significant slack in the economy. Conversely, studies such as those by [8]Ramey highlight that the effects of government spending can be limited by crowding out effects, particularly when the economy is near full employment. Case studies, such as the 2008 global financial crisis, demonstrate that countries with substantial fiscal stimulus, like the United States and China, experienced stronger recoveries, underscoring the critical role of government spending during economic downturns [9].

## **3 FISCAL MULTIPLIERS AND ECONOMIC STABILIZATION**

### **3.1 Government Spending During Economic Recessions**

During economic recessions, fiscal policy, particularly through government spending, serves as a counter-cyclical tool to mitigate declines in output and employment. The New Keynesian model suggests that during periods of economic slack, fiscal multipliers are particularly large, as the increase in government spending directly raises aggregate demand without being offset by inflationary pressures or interest rate hikes [10]. This counter-cyclical role of fiscal policy is crucial in preventing deeper recessions and facilitating quicker recoveries.

For example, during the Great Recession, the American Recovery and Reinvestment Act (ARRA) of 2009 provided significant fiscal stimulus through increased government spending on infrastructure, education, and healthcare. Studies have shown that this stimulus played a key role in stabilizing output and employment in the U.S., demonstrating the effectiveness of fiscal multipliers in times of economic distress [11].

### **3.2 Government Spending in Overheated Economies**

In overheated economies, where demand exceeds supply, expansionary fiscal policy can lead to inflation rather than increased output. The New Keynesian model suggests that fiscal multipliers are less effective in these contexts, with heightened risks of overheating and inflation [12]. For example, during periods of strong growth, increased government spending may result in higher interest rates as central banks tighten monetary policy to curb inflation, potentially crowding out private investment and reducing fiscal policy's effectiveness. Therefore, fiscal interventions in overheated economies must be carefully managed to prevent exacerbating inflation and destabilizing the economy.

### **3.3 Policy Implications**

The New Keynesian model and empirical evidence highlight the need for careful design of fiscal policy. The effectiveness of fiscal multipliers varies, being more impactful during recessions and less so during economic overheating [7]. To maximize their stabilizing effects, it is crucial to coordinate fiscal and monetary policies, ensuring government spending aligns with monetary objectives. Additionally, long-term factors like public debt sustainability and potential crowding out of private investment must be considered. Balancing these factors allows fiscal policy to contribute effectively to economic stabilization and sustained growth.

## 4 CASE STUDIES: FISCAL MULTIPLIERS IN PRACTICE

### 4.1 Case Study 1: The Global Financial Crisis (2008-2009)

The 2008-2009 Global Financial Crisis provided a unique opportunity to observe fiscal multipliers in action, as governments implemented large-scale stimulus measures. In the United States, the American Recovery and Reinvestment Act (ARRA) of 2009 allocated approximately \$787 billion in government spending, tax cuts, and aid, significantly boosting economic output, with large fiscal multipliers observed as the economy was operating below potential [10]. In China, aggressive infrastructure investment led to a rapid recovery, showcasing the effectiveness of fiscal multipliers in large, emerging economies [13]. Conversely, European countries like Greece and Spain, with limited fiscal capacity, struggled to implement effective stimuli, resulting in prolonged recessions [14].

### 4.2 Case Study 2: Fiscal Policy in the Eurozone

A compelling case study for examining the role of fiscal multipliers in a monetary union is provided by the Eurozone, an organization where a common currency is shared but independent fiscal policies between members. Post-2008 crisis, fiscal policy coordination was challenging due to asymmetry in economic conditions. Germany, with a strong fiscal position, implemented significant stimulus, while Greece faced constraints due to high debt and austerity measures [12]. The centralized monetary policy complicated fiscal multipliers' effectiveness, as countries couldn't devalue their currencies, leading to divergent outcomes. Core countries maintained stable output, while peripheral nations faced recessions and unemployment, highlighting the need for coordinated fiscal responses to stabilize output in diverse economic environments [15].

### 4.3 Case Study 3: Emerging Markets and Fiscal Policy

Emerging markets face unique challenges in applying fiscal multipliers due to factors like institutional quality, financial market depth, and vulnerability to external shocks. In countries with strong institutions, such as Brazil, government spending during the global financial crisis effectively mitigated the downturn and supported a quick recovery [16]. However, in many emerging markets, issues like corruption, limited administrative capacity, and reliance on external financing hinder fiscal policy effectiveness, reducing fiscal multipliers. Additionally, external shocks, such as sudden stops in capital flows, can undermine fiscal interventions [17]. This highlights the need for tailored fiscal policies that consider emerging markets' unique characteristics to maximize government spending's impact on stability and growth.

## 5 SUMMARY OF FINDINGS

An analysis of the fiscal multiplier within the New Keynesian framework reveals that price and wage stickiness significantly amplify the impact of fiscal multipliers, especially during economic downturns. The effectiveness of fiscal policy varies, with larger multipliers observed during recessions and more limited effects in overheated economies. The interaction between fiscal and monetary policy is crucial, as coordinated efforts can better stabilize output. Case studies further emphasize that the fiscal multiplier effect differs across economic environments, underscoring the importance of institutional quality, policy coordination, and external factors. Overall, well-designed fiscal policies, considering timing, scale, and macroeconomic conditions, can significantly enhance economic stability and support sustained growth.

## COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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