

The Effect of Household Credit Expansion on the Fiscal Multiplier

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This research proposal aims to evaluate the impact of cyclical fluctuations and long-term trend increases in credit access from 1970 to 2020 on the fiscal multiplier. The study will use a Heterogeneous Agent New Keynesian (HANK) model, coupled with a labor market block, to capture the dual effects of credit expansion. The proposed model framework allows for a deep analysis of how changes in credit availability influence both household consumption and labor market dynamics, providing critical insights into the broader implications of fiscal policy transmission in varying credit environments.

I. Introduction

The fiscal multiplier measures the effect of changes in government spending on overall economic output, such as GDP. This concept plays a crucial role in macroeconomic policy, especially during economic downturns when governments rely on fiscal tools like public spending to stimulate aggregate demand. Kaplan et al. [KMV18] demonstrated that fiscal multipliers depend on the marginal propensity to consume (MPC) of different agents. The MPC, in turn, is significantly influenced by the level of available credit to households. Over the past three decades, households' access to unsecured revolving credit has more than tripled. For example, the fraction of unemployed households with access to unsecured revolving credit (e.g., credit cards) rose from 13% in 1977 to 45% in 2010 [Her19].

The increased availability of credit fundamentally alters household behavior, particularly in terms of consumption, saving, and labor market participation. Workers with better access to credit are less compelled to accept the first available job due to financial pressure. Instead, they can search longer for better job matches, enhancing job quality while extending unemployment spells. This dynamic significantly influences unemployment durations and overall labor market outcomes [Her19].

The central research question of this study is whether and how both cyclical fluctuations and long-term increases in credit access affect the fiscal multiplier of an increase in government spending. Understanding this relationship is essential for policymakers. Prior research by Herkenhoff [Her19] indicated that credit fluctuations can deepen and prolong recessions, whereas credit growth trends tend to dampen business cycle dynamics. Despite this, limited research exists on how

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credit fluctuations and trends affect fiscal multipliers, creating a notable gap in the literature.

If credit expansion amplifies or dampens fiscal multipliers, it could alter the effectiveness of fiscal policy measures aimed at stimulating economic growth. This study aims to bridge this gap by explicitly linking household credit dynamics, **labor market frictions**, and fiscal multipliers.

Additionally, this research seeks to address several sub-questions, including:

What are the transmission channels through which credit expansion affects fiscal multipliers? How do labor market dynamics, such as job search behavior and unemployment durations, interact with credit expansion to influence fiscal multipliers? Does credit expansion amplify or dampen the output response to government spending shocks? To answer these questions, I propose using a Heterogeneous Agent New Keynesian (HANK) model augmented with a Diamond-Mortensen-Pissarides (DMP) job market block. This modeling approach allows for a unified framework that integrates household credit dynamics and labor market frictions.

Previous studies have attempted to merge elements from search models with those from New Keynesian literature. For example, Ravn and Sterk [RS17] developed a tractable New Keynesian model incorporating incomplete asset markets and labor market frictions to explore the relationship between unemployment risk, aggregate demand, and monetary policy. Similarly, Gornemann, Kuester, and Nakajima [GKN21] built a fully stochastic New Keynesian model with uninsurable idiosyncratic risk and search frictions using a DMP block.

Building on these approaches, my research extends the framework proposed by Gornemann et al. [GKN21] by incorporating on-the-job search mechanisms or even transitioning from a traditional search protocol to a directed search framework. This enhancement will allow a more comprehensive examination of how credit dynamics, labor market frictions, and fiscal policy shocks interact, providing valuable insights for both academic research and policy design.

II. Literature Review

There is a rich body of literature on fiscal multipliers, credit availability, and labor market dynamics, but few studies combine these elements into a unified framework.

Fiscal Multiplier Literature: Traditional New Keynesian models, such as those by Blanchard and Perotti [BP02], assume representative agents with perfect credit markets. These models overlook household heterogeneity and borrowing constraints, which are crucial features of modern economies. Fiscal multipliers in such models depend largely on government spending responses, with limited attention to household-level consumption dynamics driven by credit access. **Kaplan, Moll, and Violante [KMV18] advanced this literature by introducing Heterogeneous Agent New Keynesian (HANK) models that account for credit-constrained households.** They show that fiscal multipliers depend on agents' marginal propen-

sities to consume (MPC), with liquidity-constrained households responding more strongly to government spending. However, these models do not incorporate labor market frictions, limiting their applicability in studying fiscal-multiplier dynamics when labor search behavior interacts with credit access.

Hagedorn, Manovskii, and Mitman [HMM19] extended the fiscal multiplier literature by employing a heterogeneous-agent model with incomplete markets and nominal rigidities. Their framework includes income and wealth heterogeneity, allowing for varied MPCs across households. Their findings highlight how borrowing constraints amplify consumption responses. They show that deficit-financed government spending generates a fiscal multiplier of 1.34 when nominal interest rates are fixed. However, the multiplier falls to 0.61 if spending is tax-financed. Under a standard Taylor rule, where monetary policy adjusts interest rates, the fiscal multiplier further declines to 0.66 for deficit-financed spending and 0.54 for tax-financed policies. These results underscore the importance of household heterogeneity and incomplete markets in determining fiscal policy effectiveness.

Broer, Krusell, and Oberg [BK1] take a similar approach by using a HANK model focused on income distribution, household heterogeneity, and nominal rigidities. They find that fiscal multipliers are larger in economies with more households concentrated at the lower end of the income and wealth distribution, where households are more sensitive to government spending or transfers. Their work implies that credit access plays a crucial role in shaping fiscal multipliers, suggesting that expanding credit could significantly influence fiscal policy outcomes. However, like previous models, their framework lacks a more detailed labor market structure, such as the Diamond-Mortensen-Pissarides (DMP) model.

Despite these valuable contributions, no study has directly examined how fluctuations in credit access impact fiscal multipliers. While the role of borrowing constraints and household heterogeneity has been explored, most models assume static credit conditions. They fail to consider how changes in credit availability over the business cycle or long-term credit growth might amplify or dampen fiscal policy's effectiveness.

HANK Meets SAM Literature: The intersection of Heterogeneous-Agent New Keynesian (HANK) models and Search-and-Matching (SAM) labor market frameworks has gained traction in recent macroeconomic research. These studies explore how household credit dynamics interact with labor market frictions, particularly through job-search behavior and unemployment dynamics. However, the existing literature has yet to fully connect these mechanisms to fiscal multiplier analysis, leaving a key research gap.

Ravn and Sterk [RS17] and Herkenhoff [Her19] provide foundational insights into how credit availability impacts the labor market. They show that greater access to credit enables workers to extend their job search, allowing them to wait for better job matches. This behavior leads to longer unemployment durations but also improves job quality, boosting long-term income potential. While these findings are central to understanding labor market dynamics, they do not explicitly

link these credit-driven mechanisms to the size or variability of fiscal multipliers.

Nils Gornemann, Keith Kuester, and Makoto Nakajima [GKN21] explore the distributional effects of monetary policy in a HANK model with a Diamond-Mortensen-Pissarides (DMP) labor market block. They examine how “dovish” central bank policies focused on unemployment stabilization disproportionately benefit liquidity-constrained households by reducing income volatility and providing consumption insurance. In contrast, “hawkish” policies aimed at price stability benefit wealthier households by stabilizing asset returns. Their findings reveal a trade-off between employment stabilization and wealth inequality: reducing unemployment risk provides broader economic benefits but can depress asset prices, harming high-income households with significant financial investments. This study highlights how credit access and unemployment insurance can serve as consumption stabilizers, suggesting that labor market dynamics should be considered alongside monetary and fiscal policies. However, their focus on monetary policy leaves the fiscal multiplier implications of such credit-driven labor market dynamics underexplored.

Serdar Birinci, Fatih Karahan, Yusuf Mercan, and Kurt See [BSKM22] explore how labor market transitions, particularly employer-to-employer (EE) job changes, influence inflation and monetary policy. Their HANK model includes a frictional labor market with on-the-job search (OJS), emphasizing how job mobility impacts real marginal costs for firms. They find that rising EE transitions increase firms’ wage pressures, raising marginal costs and driving inflation upward. Empirically, they estimate that if EE transitions had risen along with falling unemployment from 2016 to 2019, inflation would have been 0.6 percentage points higher. This dynamic reveals a significant interaction between labor market fluidity and inflation, challenging traditional models that focus solely on unemployment as a key labor market indicator. Their analysis underscores the need for monetary policy rules that consider both unemployment and EE transitions, offering a broader view of labor market conditions. However, the study does not address the role of fiscal policy or how credit availability might amplify or dampen these inflationary pressures through changes in job search behavior and consumption responses.

Credit and Fiscal Policy Interaction: Several studies highlight how credit constraints influence the effectiveness of fiscal policy, emphasizing how borrowing limits can amplify economic downturns and shape fiscal multiplier dynamics. Eggertsson and Krugman [EK12] developed a Two-Agent New Keynesian (TANK) model showing how credit constraints exacerbate recessions through debt deleveraging. In their framework, borrowing households face borrowing limits tied to future income. During recessions, these households must cut consumption drastically, reducing aggregate demand. Their analysis highlights that in a liquidity trap—where interest rates are near zero and monetary policy becomes ineffective—fiscal policy becomes crucial. Since monetary stimulus cannot raise demand, increased government spending offsets reduced private consumption. As a

result, the fiscal multiplier rises because constrained households rely on government spending to stabilize consumption. Their model also shows that temporary fiscal expansions can produce lasting positive effects by sustaining demand while households rebuild their financial positions. However, their study overlooks labor market dynamics such as unemployment duration and job search behavior, which are essential for understanding fiscal multipliers in credit-constrained economies.

Demyanyk, Loutskina, and Murphy [DLM19] analyze the relationship between consumer debt and fiscal stimulus effectiveness using regional data from the 2007–2009 recession. They find that fiscal stimulus had a greater impact on consumption and output in regions with higher household debt levels. This effect stems from indebted households’ higher marginal propensities to consume (MPCs), as they are more likely to spend additional income from fiscal transfers or government spending. Additionally, these debt-heavy regions often have greater economic slack, meaning idle resources can be mobilized more effectively. Their findings suggest that household debt levels should be a critical factor when evaluating fiscal policy impacts, especially during recessions when consumption responses are more pronounced.

Gap in Literature: Despite extensive research on fiscal multipliers, credit constraints, and labor market dynamics, no existing study integrates HANK models, labor market frictions (DMP framework), and historical credit expansion to analyze fiscal multipliers comprehensively.

III. Methodology

One of the primary challenges in addressing this research question is the complexity of the model. Integrating a HANK model with a DMP labor market block requires detailed calibration and **significant computational resources**. The HANK model effectively captures household heterogeneity by considering differences in income, wealth, and borrowing constraints, while the DMP framework introduces labor market frictions such as job search and matching processes. Combining these models necessitates a comprehensive representation of both credit dynamics and labor market behaviors, making the modeling and computation task highly complex.

Another critical challenge is the availability of data on credit access. Accurate model calibration requires historical data on household credit expansion, unemployment durations, job vacancies, and consumption responses to fiscal shocks. To address this, I will incorporate key findings from Herkenhoff [Her19], which provide essential data points for calibrating the model.

In this framework, households exhibit heterogeneity in terms of income, wealth, and borrowing constraints. Credit expansion relaxes borrowing constraints, enabling households to smooth consumption over time and extend job search durations. This heterogeneity introduces variability in marginal propensities to consume (MPC), which play a crucial role in determining the fiscal multiplier’s size and responsiveness.

On the labor market side, the DMP framework models the job search and matching process. Workers search for job opportunities, while firms post vacancies, creating a dynamic labor market environment characterized by search frictions. Credit expansion affects unemployment durations by allowing workers with better access to credit to search longer for higher-quality job matches. Although this prolongs unemployment spells, it can improve long-term job quality and income stability.

To evaluate how credit expansion influences the effectiveness of fiscal policy, I will simulate a fiscal policy shock represented by an exogenous increase in government spending. The fiscal multiplier will be measured under two distinct credit regimes:

- 1970: Characterized by low credit availability, representing a restrictive borrowing environment.
- 2020: Characterized by high credit availability, reflecting a more liberal credit market.

By comparing these two regimes, I aim to isolate the effect of credit expansion on the fiscal multiplier. This approach will provide valuable insights into how credit access interacts with labor market performance and fiscal policy transmission, helping to bridge critical gaps in the literature on macroeconomic policy effectiveness.

A. Expected Results and Contributions

I expect that credit expansion further amplifies the fiscal multiplier through the consumption channel, where households with a relaxed borrowing constraint increase consumption in response to government spending shocks.

In turn, credit expansion affects the labor market channel. Accordingly, longer unemployment spells cut short-term income but might boost long-term job quality and, thereby, consumption. However, such a channel extends unemployment duration, requiring agents to sustain consumption over an extended period, which dampens the overall capacity of their consumption. The critical subject of this research proposal is comprehension of the very end result of these interactions.

This paper is quite contributing because this study fills the gap in credit dynamics, labor market frictions, and fiscal multipliers. Therefore, such a finding provides important input for policymakers concerning the question of how credit expansion may affect the efficiency of fiscal policy, especially during times of economic recession.

IV. Conclusion

This paper investigates the impact of increased household credit availability on the fiscal multiplier of government spending. With a HANK model featuring a DMP labor market block, I study the interplay between credit dynamics, labor

market behavior, and fiscal policy transmission. This study puts into perspective how credit access influences fiscal policy outcomes by comparing 1970-2020 regimes. The findings would add to the literature on fiscal multipliers, credit markets, and labor economics, informing policymakers of very valuable insights.

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