Adjustable-Rate Credit and Monetary Policy Transmission: A Cross-Country Analysis

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October, 2024

Abstract

This study investigates the influence of adjustable-rate credit (ARC) prevalence on monetary policy transmission. Introducing a novel methodology, I estimate ARC prevalence across OECD countries by analyzing the interest income sensitivity of commercial banks to short-term rate fluctuations. The subsequent phase of the research investigates the correlation between ARC prevalence and the efficacy of monetary policy transmission mechanisms across various macroeconomic indicators. The analysis reveals that economies with higher ARC prevalence demonstrate more pronounced and accelerated responses to monetary policy interventions across key macroeconomic variables. Finally, the study finds that during the 2022-2024 cycle, high-ARC countries implemented less stringent monetary policies, suggesting greater policy transmission in these economies. These findings underscore the significance of credit market structure in determining monetary policy transmission mechanisms and central bank behavior, offering new insights into the interplay between financial system characteristics and macroeconomic dynamics.

JEL Classification: E52, E43, G21, F42

Keywords: Monetary policy transmission, Adjustable-rate credit, Cross-country analysis.

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1 Introduction

The structure of a country's credit market, particularly the composition of fixed-rate versus adjustable-rate credit, has long been a subject of interest in economic literature Bernanke and Gertler [1995]. Theoretical models suggest that the prevalence of ARC could potentially influence the transmission of monetary policy to the real economy Calza et al. [2013], Garriga et al. [2017].

In economies with a higher share of ARC, changes in central bank interest rates might more directly affect borrowers' debt service costs. For instance, when rates rise, borrowers with ARC may face increased payments, potentially reducing their disposable income and affecting spending patterns. Conversely, in economies dominated by fixed-rate credit, the immediate impact of rate changes on existing borrowers' cash flows and disposable income may be more limited. This potential difference in the speed and magnitude of monetary policy effects raises important questions about the role of credit market structure in shaping economic responses to central bank actions Auclert [2019].

Despite the importance of credit market structure in monetary policy transmission, there is a striking lack of comprehensive research examining this relationship across a wide sample of countries. Existing literature often focuses on a limited number of economies or specific credit markets, such as mortgages Calza et al. [2013], Campbell [2013]. This narrow focus leaves a significant gap in the understanding of how different credit market structures influence monetary policy effectiveness on a global scale. The scarcity of cross-country analyses is partly due to challenges in measuring adjustable-rate credit prevalence consistently across diverse financial systems. This study builds upon and enhances existing research that has primarily relied on surveys and supervisory reports. The methodology introduced here offers several advantages, including longer time-series data, improved methodological consistency across countries, and greater granularity in measuring ARC prevalence.

Moreover, the term "variable rate" can encompass a range of interest rate adjustment mechanisms, from those closely linked to central bank policy rates to those that change over longer periods. Variations in loan refinancing practices, or securitization prevalence across countries further complicate the assessment of ARC prevalence and its implications for monetary policy transmission. These factors underscore

the need for a robust, wide-ranging analysis that employs a consistent and reliable measure of ARC prevalence across various types of credit and a broad spectrum of economies.

This study addresses these challenges and contributes to the literature through a three-stage analysis, proposing a novel methodology to estimate ARC prevalence across OECD countries using bank-level financial report data. The methodology's foundation rests on the premise that financial institutions with higher ARC proportions in their loan portfolios exhibit more pronounced sensitivity of income to policy rate adjustments. This sensitivity is quantified to infer the relative ARC prevalence within a country's financial system, offering a more nuanced assessment than previous methods. The approach captures the aggregate impact of interest rate changes on actual payments, providing a comprehensive view of credit market rate adjustability without relying on borrower-side complexities. Results from this cross-sectional analysis reveal substantial heterogeneity across OECD countries, aligning with existing literature where prior data is available. Unlike previous studies that primarily focused on European countries and new loans, this method encompasses a broader range of OECD nations and considers the existing credit stock. By focusing on financial institutions' income rather than borrowers' payments, the approach directly captures the aggregate effect of interest rate changes on actual payments, reflecting the true extent of rate adjustability in the credit market. This method thus provides a more comprehensive picture of ARC prevalence, unencumbered by variations in credit classification or borrower-side complexities.

Building on the ARC prevalence measurement, the study investigates the impact of ARC variations on monetary policy transmission to key macroeconomic variables: real GDP, price level (CPI), and private consumption. I employ panel local projections in two complementary analyses. The first examines the differential impact of interest rate shocks across OECD countries grouped by ARC prevalence. The second approach employs an interaction specification, where the monetary policy shock is interacted with the continuous measure of ARC prevalence for each country.

The results consistently demonstrate that higher ARC prevalence is associated with significantly stronger monetary policy transmission to macroeconomic variables. Following an interest rate shock, high-ARC countries exhibit more substantial

and persistent responses across all three macroeconomic indicators - GDP, price levels, and consumption - relative to their low-ARC counterparts. The interaction specification further corroborates these findings, indicating that higher levels of ARC prevalence amplify the effects of monetary policy shocks on all three macroeconomic variables. These findings suggest a more potent transmission of monetary policy to the real economy in high-ARC environments, underscoring the importance of credit market structure in shaping macroeconomic dynamics.

Finally, a simple measure of monetary restraint demonstrates that countries with higher ARC prevalence implemented less aggressive policy measures in response to inflationary pressures during the recent cycle (2022-2024). This analysis, utilizing an intuitive index of monetary policy stance, reveals that central banks in high-ARC countries maintained policy rates closer to their respective inflation rates, resulting in lower average real policy rates compared to their low-ARC counterparts. These findings suggest potentially greater monetary policy effectiveness in high-ARC economies, where smaller interventions may suffice to achieve desired outcomes. However, it is important to note that these observations, based on a simplified measure, warrant further investigation to fully elucidate the underlying mechanisms and potential confounding factors influencing central bank decision-making processes.

The rest of the paper is structured as follows: Section 2 reviews relevant literature. Section 3 describes the data used in the analysis. Section 4 outlines the methodology. Section 5 presents the results and robustness tests. Section 6 provides a discussion, analysis, and interpretation of the findings. Section 7 concludes.

2 Literature Review

This study contributes to three interconnected strands of literature: the measurement of adjustable-rate credit prevalence across countries, the impact of credit structure on monetary policy transmission, and the influence of ARC prevalence on optimal monetary policy decisions.

The measurement of ARC prevalence has been a persistent challenge in economic research due to data limitations and methodological inconsistencies. Campbell

[2013] provided a seminal analysis of mortgage contract designs across countries, focusing on interest rate fixation conventions. His work established a foundation for understanding cross-country differences in credit markets. Building on this, Badarinza et al. [2018] offered a comprehensive international comparison of household finance, including variations in mortgage interest rate types. While these studies provide valuable insights, they primarily rely on aggregate data, and focus on the mortgage market and a partial sample of countries, leaving a gap in the understanding of broader credit market structures.

Recent work by International Monetary Fund [2024] extended the analysis of adjustable-rate credit prevalence using the European Central Bank's (ECB) database on floating rate lending, offering valuable insights into European credit markets. However, this approach primarily captures flow data of new loans and is limited in geographical scope. My study significantly expands on these previous efforts by introducing a novel methodology that utilizes bank-level financial data to estimate ARC prevalence. This approach offers several key advantages over existing methods. First, it provides longer time-series data, allowing for a more comprehensive analysis of ARC prevalence over time. Second, it improves methodological consistency across countries, addressing a major limitation of previous studies that often relied on disparate data sources and definitions. Third, it allows for greater granularity in measuring ARC prevalence across a broader range of credit types, not just mortgages.

Crucially, my analysis encompasses all OECD countries, offering unprecedented coverage and revealing important variations in credit structures across a diverse range of economies. Furthermore, my approach introduces greater nuance in differentiating adjustment frequencies, distinguishing between credits with annual rate adjustments (common in countries like Canada, the UK, and Australia) and those with more frequent adjustments. This level of detail was largely absent in previous studies. By using bank-level data, I am able to capture the aggregate impact of interest rate changes on actual interest payments, providing a more accurate representation of rate adjustability in the credit market without relying on borrower-side complexities or variations in credit classification.

This comprehensive and nuanced methodology allows for a more precise assessment of ARC prevalence across the entire OECD, capturing subtle yet significant

differences in national credit markets that were previously unexamined. The resulting cross-sectional analysis reveals substantial heterogeneity across OECD countries.

The impact of credit structure on monetary policy transmission has been a subject of ongoing research in macroeconomics. Calza et al. [2013] showed that the prevalence of fixed-rate credit can dampen the impact of monetary policy shocks on consumption and investment. Cooper and Luengo-Prado [2021] compared the effects of interest rate changes in the USA, where mortgages are primarily fixed-rate, to Spain where they are primarily ARMs, finding stronger effects in Spain. While these studies provided valuable insights, they were limited in scope, often focusing on a small number of countries or specific credit markets like mortgages. My study extends this literature in several important ways. First, by employing the more accurate and granular measure of ARC prevalence developed in the first stage of my research, I am able to provide a more robust analysis of how credit market structures influence monetary policy transmission. Second, and perhaps most significantly, my study covers a much larger sample of countries than previous research. This expansive cross-country analysis allows for a more comprehensive understanding of how ARC prevalence affects monetary policy transmission across diverse economic contexts. A key innovation in my approach is the construction of monetary policy shocks for each country, including recent years, using a methodology that builds on the work of Gertler and Karadi [2015]. For the period 2019-2023, I extend the high-frequency identification approach by calculating shocks based on changes in one-year government bond yields during the day of interest rate decisions. This method ensures a consistent interpretation of monetary policy stance changes across diverse economic environments throughout the entire sample period, addressing a significant gap in the literature for recent years. By combining this innovative shock measure with my comprehensive ARC prevalence estimates, I demonstrate more robust and nuanced relationships between credit market structure and the strength of monetary policy transmission. My findings show that countries with higher ARC prevalence exhibit significantly stronger transmission of monetary policy to key macroeconomic variables, including private consumption, GDP, and inflation.

The literature on optimal monetary policy has long recognized the importance of financial frictions in shaping policy decisions. Svensson [2003] argued that optimal monetary policy may deviate from standard Taylor rule prescriptions when

considering financial stability and structural economic factors. Woodford [2010] theoretically argued for incorporating financial frictions into monetary policy frameworks. However, these studies lacked a comprehensive empirical measure of credit market structure to inform their theoretical insights. My study bridges this gap by providing a quantifiable basis for considering credit market structure in monetary policy decisions. By demonstrating how ARC prevalence influences the strength of monetary policy transmission, I offer policymakers a concrete tool for calibrating their policy responses based on the expected effectiveness of monetary policy in their respective credit market structures. My analysis of central bank responses during the recent inflationary cycle (2022-2024) provides empirical evidence that central banks in countries with higher ARC prevalence implemented less aggressive policy measures, suggesting they may already be accounting for the heightened sensitivity of their economies to interest rate changes. This finding extends the theoretical work of Borio and Zhu [2012] on the risk-taking channel of monetary policy by providing empirical support for the idea that the structure of the financial system influences the appropriate policy stance. It also complements the work of Calza et al. [2013] on housing finance structure and monetary policy transmission by broadening the scope to include all forms of adjustable-rate credit and providing a more comprehensive cross-country analysis.

3 Data

This study employs three distinct datasets, each corresponding to a stage of the analysis: Bank-level financial data for estimating ARC prevalence across OECD countries; Quarterly macroeconomic data and monetary policy shocks for analyzing policy transmission; Recent policy rates and CPI data for examining central bank responses.

The following subsections provide a detailed description of each dataset's composition and relevance to the study's objectives.

3.1 Data for ARC Prevalence Estimation

The data for estimating ARC prevalence is sourced from Fitch Connect, a comprehensive database that compiles detailed financial information from the official financial statements of commercial banks and financial institutions worldwide. This ensures that the data used in the analysis is based on audited, publicly reported financial figures. The dataset consists of bank-level financial data spanning from 2002 to 2023, covering a diverse set of 38 (all) OECD countries. The dataset undergoes a thorough cleaning and preparation process to ensure data quality and comparability. The final dataset comprises a total of 694,262 bank-quarter observations, representing 10,958 unique banks in all 38 OECD countries.

Table 1: Descriptive Statistics of Key Variables and Dataset Composition for ARC Prevalence Estimation

Panel A: Key Variables	
Variable	Mean (Std. Dev.)
Total Assets (Billions)	259.1 (22.1)
Gross Interest and Dividend Income (Billions)	953.7 (581.9)
Interest Income/ Average Earning Assets	0.08 (0.2)
Panel B: Dataset Composition	
Category	Value
Total Observations (Bank-Quarter)	694,262
Number of Countries	38
Number of Banks	10958
Time Range	2002 - 2023
Average Banks per Country	313.1
Average Total Assets per Country (Billions)	1.7
Average Gross Interest and Dividend Income per Country	5.4

In addition to the bank-level financial data, the explanatory variable for the ARC prevalence estimation, as will be detailed in the methodological section, is the central bank interest rate for each of the OECD countries. These interest rate data were sourced directly from the official websites of the respective central banks, supplemented by data from the OECD's official website where necessary. This approach of using official central bank rates as a key explanatory variable is consistent with standard practices in the monetary policy literature (e.g., Bernanke and Kuttner [2005])

3.2 Data for Monetary Policy Transmission Analysis

For the analysis of monetary policy transmission, I employ a separate dataset covering OECD countries.

The dataset comprises quarterly observations spanning the period from 1999 to 2023, providing a longer and more recent time series than many previous studies in this field. It includes two main components: a series of monetary policy shocks for each country, and key macroeconomic variables for each country.

This comprehensive dataset allows for a detailed examination of how monetary policy shocks affect various aspects of the economy across different OECD nations. The extended time frame and the inclusion of recent data up to 2023 enable this study to capture the effects of both conventional and unconventional monetary policies, including responses to recent global economic events. This approach provides a more nuanced and contemporary understanding of monetary policy transmission mechanisms, building upon and enhancing the methodologies established in the existing literature.

3.2.1 Monetary Policy Shocks

To measure monetary policy shocks for each country, I employ a combination of existing data and my own calculations, covering the period from 1999 to 2023. For the years 1999-2019, I utilize the comprehensive dataset provided by Choi et al. [2023]. Their paper makes a significant contribution by offering a set of interest rate shock measures across various countries. They employ a high-frequency identification approach, isolating changes in policy-sensitive interest rates within narrow windows around central bank policy announcements.

For the period 1999-2019, I utilize the comprehensive dataset provided by Choi et al. [2023]. Their paper makes a significant contribution by offering a set of interest rate shock measures across various countries. They employ a high-frequency identification approach, isolating changes in policy-sensitive interest rates within narrow windows around central bank policy announcements. For the period 2019-2023, I extend this approach by calculating the shocks myself, following a methodology similar to that of Gertler and Karadi [2015]. For each OECD country, I measure the

change in the yield of a one-year government bond at a high frequency around interest rate decisions. Specifically, I compare the bond yield at the end of the trading day before the interest rate decision to the yield at the end of the trading day on which the decision is announced. In cases where there is no trading on the day of the interest rate decision, I use the following day's data. The bond yield data is sourced from Bloomberg, while the dates of interest rate decisions are collected from the respective central banks' websites. Importantly, to validate my methodology, I applied it to the period 2018-2019, for which Choi et al. [2023] also provide data. The results from my calculations for this period closely align with their findings, demonstrating the consistency and reliability of my approach. This comparison serves as a robustness check, confirming that my methodology for calculating monetary policy shocks produces results comparable to those in the established literature. The high degree of similarity between the two sets of results for this period provides confidence in the extension of the series to 2023, ensuring methodological continuity throughout the entire sample period.

This approach to measuring monetary policy shocks is particularly valuable for cross-country analysis. It accounts for differences in monetary policy frameworks and financial market structures, ensuring a consistent interpretation of monetary policy stance changes across diverse economic environments throughout the entire sample period.

3.2.2 Macroeconomic Variables

For the analysis of monetary policy transmission, I utilize a comprehensive dataset of macroeconomic variables for OECD countries. The data are sourced from national CBSs websites, the OECD statistical database, and Bloomberg terminal. The dataset covers the period from 1999-Q1 to 2023-Q2, providing a long time series that spans various economic cycles and policy regimes.

The key variables in this dataset are: Private Consumption; Gross Domestic Product; Consumer Price Index (CPI) and Interest Rate.

This rich dataset enables a comprehensive analysis of how the transmission of monetary policy to main macroeconomic variables varies across countries with different levels of adjustable-rate credit prevalence. It also facilitates the control of

various macroeconomic factors that might influence the relationship between monetary policy and consumption, enhancing the robustness of the empirical analysis.

3.3 Data for Central Bank Response Analysis

For the examination of central bank responses to inflationary pressures, I utilize a dataset covering OECD countries for the period 2022-2024. This dataset includes central bank policy rates, sourced from individual central bank websites, and inflation rates, obtained from national statistical offices and the OECD database.

4 Methodology

The study employs a three-part approach to investigate the relationship between adjustable-rate credit prevalence, monetary policy transmission, and central bank responses across OECD countries.

4.1 Conceptual Framework

Before detailing the specific methodologies, it is crucial to establish the conceptual framework underlying the relationship between ARC prevalence and monetary policy transmission. This framework provides the foundation for the empirical analysis that follows.

Consider two hypothetical economies: Country A, where adjustable-rate credit predominates, and Country B, where fixed-rate credit is more common. When the central bank in each country raises interest rates, the effects on borrowers and, consequently, on aggregate demand, differ markedly. In Country A, a significant portion of borrowers experience an immediate increase in their debt service costs, potentially leading to a rapid contraction in discretionary spending. Conversely, in Country B, the impact on existing borrowers is more muted, as their debt service costs remain largely unchanged in the short term.

This difference in borrower responses has significant implications for the transmission of monetary policy to the real economy. In Country A, where ARC is

prevalent, changes in the central bank rate are likely to have a more immediate and pronounced effect on aggregate demand, as a substantial portion of borrowers quickly adjust their spending in response to changing debt service costs. In Country B, with predominantly fixed-rate credit, the impact of monetary policy changes on aggregate demand may be more gradual and muted.

The varying prevalence of ARC across countries also manifests in the behavior of financial institutions' income streams. Banks in high-ARC economies are likely to see their interest income change more rapidly in response to central bank rate adjustments. While this effect on bank income is not the primary channel of monetary policy transmission, it provides a valuable indicator for measuring the prevalence of ARC in an economy. By analyzing the sensitivity of bank income to interest rate changes, I can infer the underlying structure of the credit market and, by extension, the potential strength of monetary policy transmission in that economy.

The methodology employed in this study aims to capture and quantify these differences in ARC prevalence across countries, providing a foundation for analyzing their implications for monetary policy transmission and central bank behavior. The following sections detail the specific approaches used in each part of the analysis.

4.2 Estimating ARC Prevalence

The first part introduces a novel methodology to estimate ARC prevalence using bank-level data from financial reports. This approach addresses limitations in existing data sources and provides a more accurate measure of credit market structure across countries.

To capture this effect empirically, I propose the following fixed effects panel regression for each country j:

$$\Delta Y_{i,t} = \alpha_i + \tau_t + \beta_j \Delta r_{j,t} + \gamma X_{i,t} + \varepsilon_{i,t} \tag{1}$$

Where: $\Delta Y_{i,t}$ is the quarterly change in Interest Income/Average Earning Assets for bank i in quarter t $\Delta r_{j,t}$ is the quarterly change in the short-term interest rate in country j in quarter t α_i are bank fixed effects τ_t are time fixed effects $X_{i,t}$ is a vector of control variables for bank i in quarter t $\varepsilon_{i,t}$ is the error term.

The vector $X_{i,t}$ includes control variables designed to isolate other effects beyond changes in interest rates. Specifically, it contains total assets, total credit (where applicable), and equity. These variables are intended to account for changes in credit demand or the size of the bank's market, helping to isolate the effect of interest rate changes on bank income.

The coefficient of interest, β_j, represents the country-specific interest rate sensitivity, interpreted as a measure of ARC prevalence in that country's banking system. The key insight behind this approach is that banks with a higher proportion of ARC in their loan portfolios will exhibit a stronger contemporaneous sensitivity of interest income to changes in short-term interest rates within the same quarter. This immediate effect indicates credit with variable interest rates closely tied to the central bank's interest rate.

This approach builds on the methodology used by Drechsler et al. [2017], who examines the sensitivity of bank deposit rates to changes in the Fed funds rate to study the deposits channel of monetary policy. While their focus is on deposits in the U.S., my application extends this concept to estimate ARC prevalence across countries. By applying this methodology to a large sample of banks across OECD countries, I can construct a comprehensive measure of ARC prevalence that captures cross-country differences in credit market structures. This measure forms the foundation for the subsequent analysis of monetary policy transmission and central bank behavior.

4.3 Analyzing Monetary Policy Transmission

The second part of this study employs panel local projections to estimate the impact of monetary policy shocks on main macroeconomic variables (private consumption, Price level (CPI), and gross domestic product) across countries with different levels of ARC prevalence. This approach, introduced by Jordà [2005] and extended to panel settings, allows for a direct comparison of monetary policy transmission mechanisms in economies with varying credit market structures.

This analysis employs two distinct panel local projection specifications to examine the impact of monetary policy shocks on key macroeconomic variables across countries with varying levels of adjustable-rate credit prevalence. The first specification compares responses between high-ARC and low-ARC country groups, pro-

viding insights into broad differences in monetary policy transmission. The second specification incorporates an interaction term between monetary policy shocks and country-specific ARC levels, allowing for a more granular analysis of how the degree of ARC prevalence influences policy effectiveness.

These complementary approaches serve different analytical purposes: the group comparison offers a clear, intuitive contrast between extreme cases of ARC prevalence, while the interaction model captures the nuanced, continuous relationship between ARC levels and policy transmission across all countries in the sample. Together, they provide a comprehensive view of how credit market structures affect monetary policy outcomes, balancing simplicity with detailed analysis.

4.3.1 High vs. Low ARC Groups

In the baseline model, countries are divided into two groups based on their estimated ARC prevalence from Stage 1: a high ARC group (countries with β_j above the 70th percentile) and a low ARC group (countries with β_j below the 30th percentile).

For each horizon $h = 0, 1, ..., H$, the following panel local projection regression is estimated separately for each group:

$$\log(Y_{i,t+h}) = \alpha_i + \delta_t + \beta_h MPS_{i,t} + \sum_{j=1}^{20} \gamma_j MPS_{i,t-j} + \sum_{k=1}^{20} \phi_k \log(Y_{i,t-k}) + \theta X_{i,t} + \varepsilon_{i,t+h} \quad (2)$$

In this equation, $Y_{i,t+h}$ is the outcome variable for country i at time $t + h$; α_i represents country fixed effects; δ_t represents time fixed effects; $MPS_{i,t}$ is the monetary policy shock for country i at time t; $X_{i,t}$ is a vector of control variables; and $\varepsilon_{i,t+h}$ is the error term. The coefficient of interest is β_h, representing the effect of the shock h periods ahead. The inclusion of lagged monetary policy shocks and the outcome variable allows for dynamic effects and controls for persistence in patterns.

4.3.2 Interaction between ARC Prevalence and Monetary Policy Shocks

To further investigate how the prevalence of adjustable-rate credit influences the transmission of monetary policy, I extend the baseline model to include an interaction

term. This approach allows for a direct examination of how the effect of monetary policy shocks varies with different levels of ARC prevalence across countries.

For each horizon $h = 0, 1, ..., H$, the following panel local projection regression is estimated:

$$\begin{aligned}\log(Y_{i,t+h}) =& \alpha_i + \delta_t + \beta_h MPS_{i,t} + \gamma_h (MPS_{i,t} \times ARC_i) \\ &+ \sum_{j=1}^{20} \lambda_j MPS_{i,t-j} + \sum_{j=1}^{20} \psi_j (MPS_{i,t-j} \times ARC_i) + \sum_{k=1}^{20} \phi_k \log(Y_{i,t-k}) + \theta X_{i,t} + \varepsilon_{i,t+h}\end{aligned} \tag{3}$$

In this extended model, $Y_{i,t+h}$, α_i, δ_t, $MPS_{i,t}$, $X_{i,t}$, and $\varepsilon_{i,t+h}$ are defined as in the baseline model; ARC_i is the measure of ARC prevalence for country i, estimated in the first stage of the analysis. $MPS_{i,t}$ appears both as a standalone term and in the interaction with ARC_i, allowing the model to capture both the general effect of monetary policy shocks and how this effect varies with ARC prevalence. The ARC_i measure itself does not appear as a separate regressor because it is constant over time for each country and is therefore absorbed by the country fixed effects (α_i).

The coefficient of primary interest is γ_h, which captures how the effect of monetary policy shocks on the outcome variable varies with different levels of ARC prevalence. A significant γ_h would indicate that the transmission of monetary policy indeed differs based on the prevalence of adjustable-rate credit in an economy. Meanwhile, β_h captures the average effect of monetary policy shocks across all countries.

For both models, the h-period ahead change in the outcome variable captures the effect of a monetary policy shock over different horizons. The models are estimated using Panel OLS with entity and time fixed effects. Newey-West standard errors are employed to account for potential serial correlation and heteroskedasticity in the error terms. The baseline results are presented using a 5-year lag, with robustness checks examining results across a range of different lag lengths.

The local projections method offers several advantages over traditional vector autoregression (VAR) approaches, as highlighted by Ramey [2016]. It does not impose dynamic restrictions inherent in VARs, allowing for more flexible estimation of impulse responses; it is more robust to misspecification, as each horizon is estimated

separately; and it easily accommodates non-linearities and state-dependencies in the dynamic relationships.

The panel structure increases statistical power and allows for the inclusion of country fixed effects, capturing time-invariant country-specific factors [Jord'a et al., 2020]. The extended model with interaction terms further allows for a more nuanced analysis of the relationship between ARC prevalence and monetary policy effectiveness, utilizing the full variation in ARC levels across countries and potentially revealing more detailed patterns in how credit market structures influence policy transmission.

4.4 The impact of ARC prevalence on monetary policy stance

This section extends the analysis by examining how central banks in countries with different levels of ARC prevalence respond to inflationary pressures.

To investigate this, I constructed a simple index of monetary policy stance, defined as the difference between the central bank interest rate and the actual inflation rate.[1] It provides a straightforward indicator of how aggressively central banks are responding to inflation relative to the current price level changes. This approach offers an intuitive way to compare policy responses across countries.

The analysis tracks this index over a 20-month period n the current cycle of interest rate increases (2022-2024) following a deviation of inflation from the central bank's target. The sample includes eight OECD countries with high ARC prevalence and eight with low ARC prevalence, excluding Eurozone countries to maintain comparability of independent monetary policy.

The central bank policy stance index (PSI) for country i at time t can be represented as:

$$PSI_{i,t} = r_{i,t} - \pi_{i,t} \tag{4}$$

where $r_{i,t}$ is the central bank interest rate and $\pi_{i,t}$ is the actual inflation rate for

[1]This index appeared in a number of Bank of Israel publications, both by the Research Division and by the Monetary Committee, and was called "an index of the degree of tightening of monetary policy."

country i at time t.

The average PSI for high-ARC and low-ARC countries over a 20-month period:

$$\overline{PSI}g, t = \frac{1}{N_g} \sum i \in gPSI_{i,t} \tag{5}$$

where $\overline{PSI}_{g,t}$ is the average policy stance index for group g (high-ARC or low-ARC) at time t, and N_g is the number of countries in group g.

4.5 Limitations

This study is subject to several methodological and data-related limitations:

Assumption of ARC as primary driver: The approach assumes that banks' interest income sensitivity to policy rate changes primarily reflects ARC prevalence. However, other factors such as bank pricing power or market competition could also influence this sensitivity. The fixed effect in the model aims to address this issue, assuming that pricing power or market competition do not change over time. This approach is conceptually similar to that of Drechsler et al. [2017], who use bank-level sensitivity to interest rate changes to study the deposits channel of monetary policy. While their study provides support for the validity of this methodological approach, it's important to note that the interpretation of sensitivity as a measure of financial structure may vary across different contexts.

Sample size variations: For some countries, like Finland, the limited number of banks in the dataset may not fully represent the national banking sector.

Monetary Policy Stance Index: The analysis of central bank responses employs a simple index of monetary policy stance, defined as the difference between the central bank interest rate and the actual inflation rate. While this index provides a straightforward indicator of the relative tightness of monetary policy, it is a simplified measure and does not account for other critical factors considered in more comprehensive frameworks, such as the Taylor Rule.

Despite these limitations, this approach provides valuable insights into cross-country differences in credit market structures and their implications for monetary policy transmission.

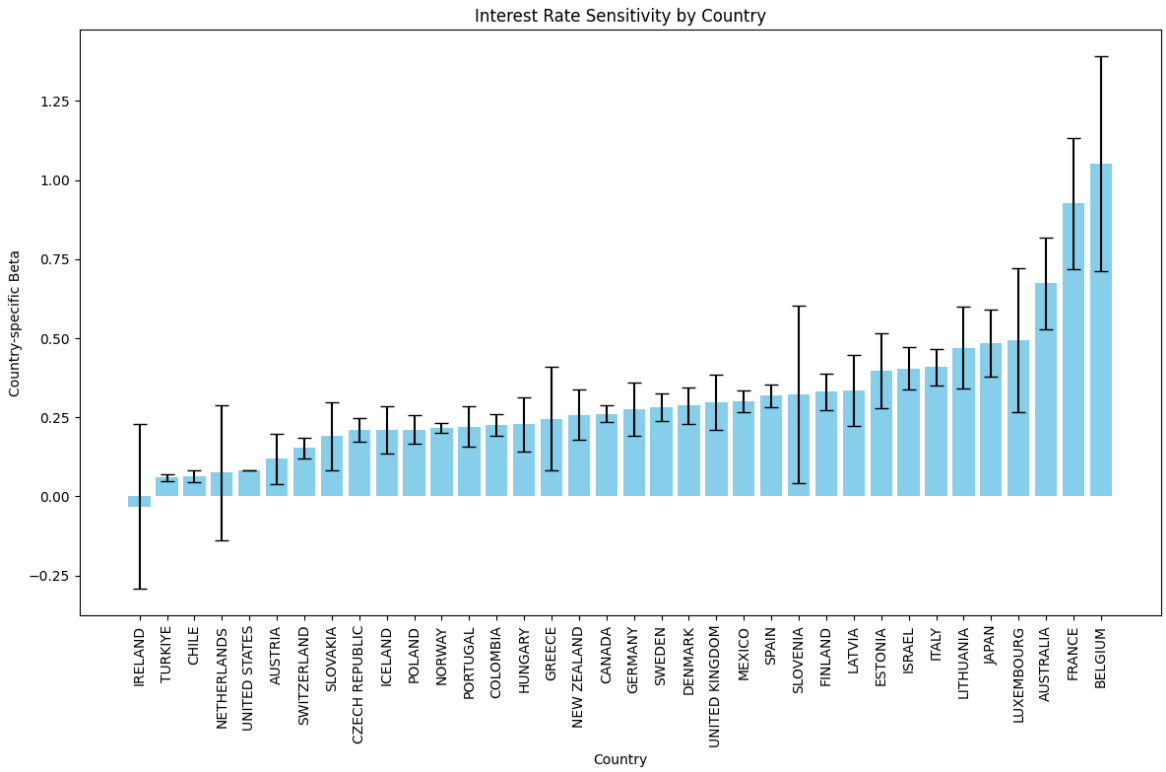
5 Results

This section presents the key findings from each stage of the analysis. The results are reported objectively, focusing on the empirical outcomes of the methodologies employed. A more detailed interpretation of these results, their implications, and their context within the broader economic literature will be provided in the subsequent discussion section.

5.1 ARC Prevalence Estimation

The first stage of the analysis reveals significant heterogeneity in the sensitivity of banks' interest income to changes in short-term interest rates across different countries.

Figure 1: **Interest Rate Sensitivity to Interest Rate by Country**



**Notes*: Figure 1 illustrates the country-specific interest rate sensitivity coefficients (β_j) estimated from Equation (1). These coefficients represent the sensitivity of banks' interest income to changes in short-term interest rates, serving as a proxy for the prevalence of adjustable-rate credit in each country's banking system. Countries are ordered from highest to lowest estimated β_j. Error bars represent 95% confidence intervals. A higher β_j indicates greater sensitivity to interest rate changes, suggesting a higher prevalence of ARC.

Figure 1 presents the country-specific interest rate sensitivity coefficients (β_j) estimated using the panel regression model described in Equation (1). These coefficients capture the contemporaneous effect of changes in short-term interest rates on banks' interest income relative to their earning assets, serving as a proxy for the prevalence of adjustable-rate credit in each country. Table 4 in the appendix provides detailed results.

5.2 Monetary Policy Transmission Analysis

This section presents the key findings from my analysis, examining how the prevalence of adjustable-rate credit influences the transmission of monetary policy to three main macroeconomic variables: Gross Domestic Product (GDP), private consumption, and Price level (CPI). For each variable, I present two types of analysis: a comparison between high-ARC and low-ARC country groups, and an interaction effect between monetary policy shocks and ARC levels.

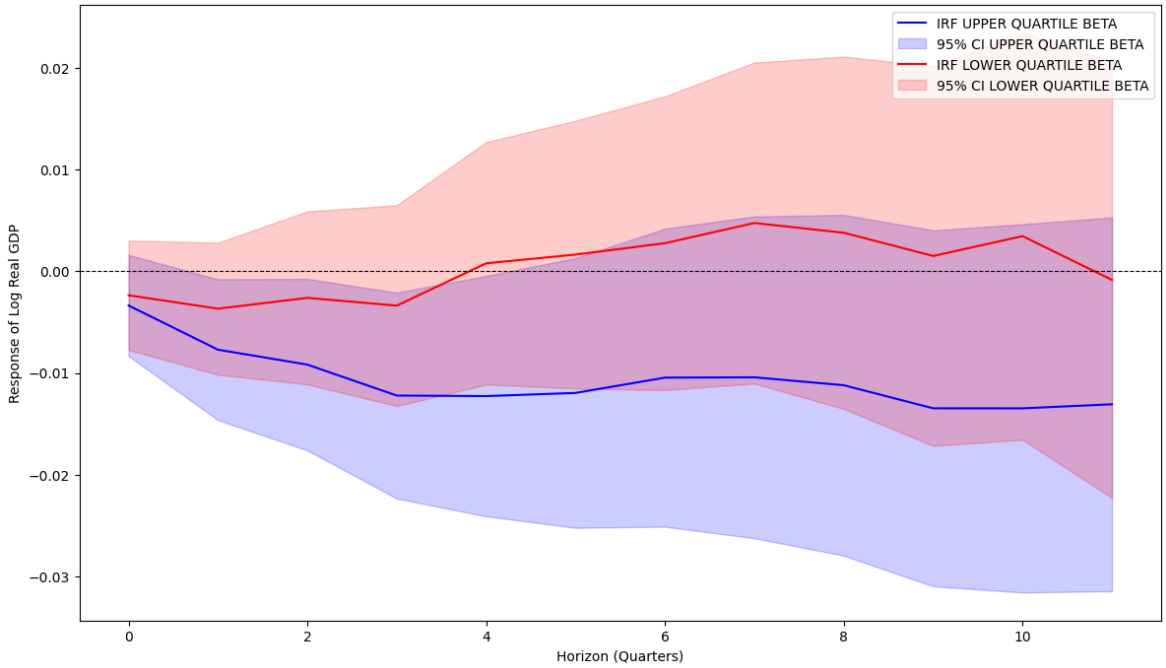
5.3 Gross Domestic Product (GDP)

The analysis of Gross Domestic Product (GDP) responses to monetary policy shocks reveals significant heterogeneity between countries with high and low prevalence of adjustable-rate credit Figure 2 illustrates the impulse response functions (IRFs) for the natural logarithm of real GDP following a 100 basis point monetary policy shock, comparing countries with high and low ARC prevalence.

In high-ARC countries, a 100 basis point increase in interest rates leads to a substantial and statistically significant decrease in GDP levels, with the maximum effect reaching approximately one percent (0.01 log points) below the pre-shock level. This effect is most pronounced and statistically significant in the first four quarters following the shock, after which the level of significance moderately diminishes. In contrast, low-ARC countries exhibit a more muted response, with a negative but statistically indistinct effect observed only in the initial three quarters post-shock.

To further elucidate the role of ARC in monetary policy transmission, Figure 3 presents the interaction effect between ARC levels and monetary policy shocks on GDP, derived from Equation 3.

Figure 2: **Effect of 100 Basis Points Interest Rate Shock on (log) Real Gross Domestic Product (GDP)**

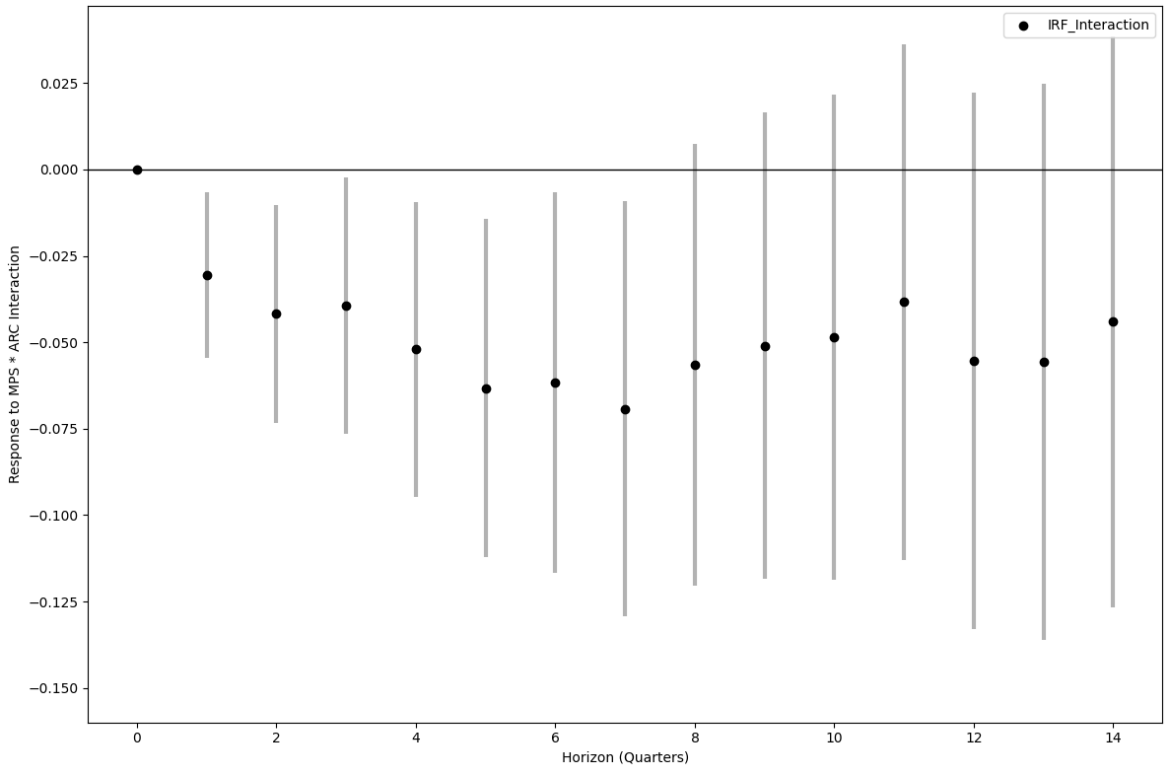


**Notes*: This figure shows Impulse Response Functions (IRFs) for log real GDP to a 100 basis point monetary policy shock, estimated using local projections (Equation 2), using a 5-year lag. The control variables include CPI, and interest rate level. Countries are grouped based on their interest rate sensitivity (β_j) from Equation (1). Blue area: IRF and 90% CI for high-ARC countries Red area: low-ARC countries. Horizontal axis: quarters post-shock; vertical axis: percentage change in GDP from pre-shock level. Dashed line at zero indicates no change in GDP. Turkey and Chile were excluded from the sample due to their significantly higher inflation rates and interest rate volatility during the sample period, which could potentially distort the results.

The interaction coefficient, which captures the additional effect of ARC on the monetary policy shock (MPS), averages approximately 0.05 across the projection horizon. This interaction effect is statistically significant for the first 8 quarters, after which the significance marginally declines. It is crucial to note that this coefficient represents the incremental impact of ARC on monetary policy transmission, as the regression model also includes the MPS as an independent variable.

These findings collectively suggest that the prevalence of adjustable-rate credit significantly influences the transmission of monetary policy to economic output. Countries with higher ARC levels exhibit a more pronounced and immediate GDP response to interest rate shocks, indicating a potentially higher sensitivity of their economies to monetary policy changes. This heightened sensitivity underscores the importance of considering the structure of credit markets in the formulation and implementation of monetary policy across different economies.

Figure 3: **Interaction Effect: ARC Levels and Monetary Policy Shocks on log GDP**



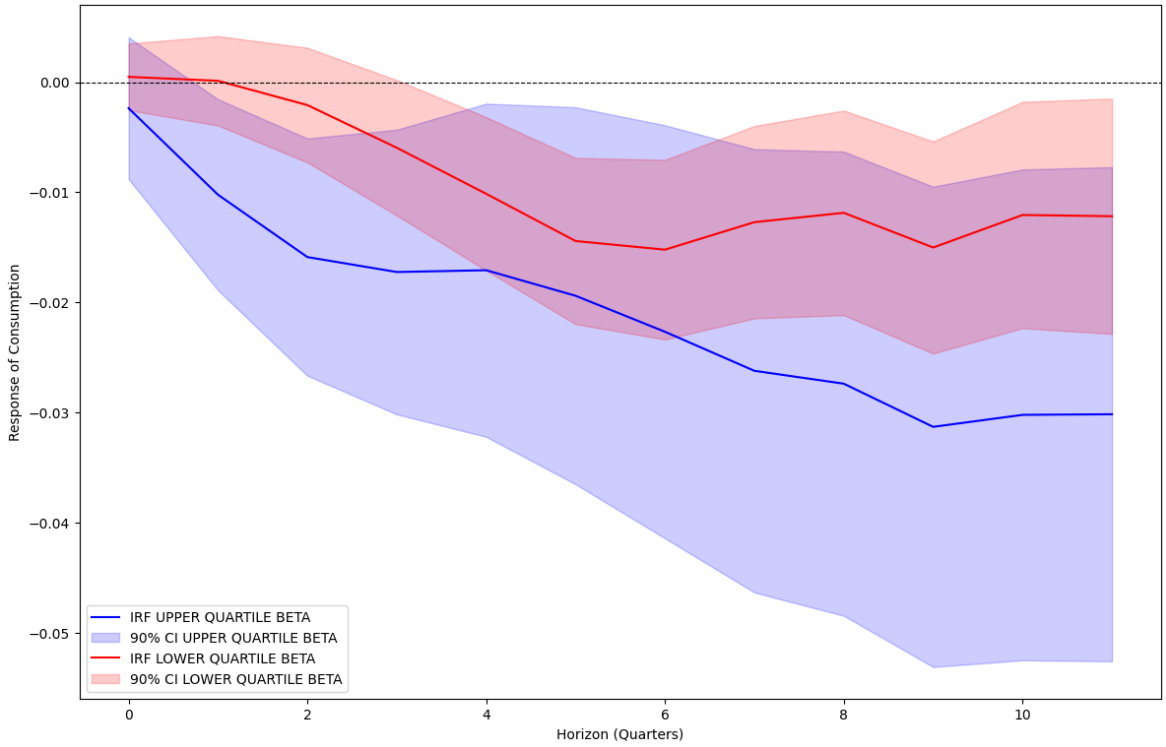
Notes: This figure shows the interaction effect between ARC levels and monetary policy shocks on the natural logarithm of real GDP, estimated using local projections (Equation 3), with a 5-year lag. The control variables include CPI and interest rate level. Each point represents the estimated interaction coefficient at that horizon, while the vertical lines depict the 90% confidence intervals. A negative interaction effect indicates that higher ARC levels amplify the impact of contractionary monetary policy on GDP. The horizontal axis shows quarters after the shock; the vertical axis shows the magnitude of the interaction effect. The sample includes all OECD countries, except Turkey and Chile, which were excluded due to their significantly higher inflation rates and interest rate volatility during the sample period, which could potentially distort the results.

5.4 Private Consumption

The analysis of private consumption responses to monetary policy shocks reveals substantial differences between countries with high and low prevalence of adjustable-rate credit Figure 4 illustrates the effect of a 100 basis point interest rate shock on the natural logarithm of private consumption for high-ARC and low-ARC countries.

The results demonstrate a marked heterogeneity in the consumption response between high-ARC and low-ARC countries. In high-ARC economies, the average effect of a monetary policy shock on consumption throughout the observed period is -2.7%, with statistical significance emerging from the second quarter onwards. This indicates a rapid and substantial contraction in consumer spending following an interest rate increase. Conversely, in low-ARC countries, the average effect is considerably more muted at -1.1%, with statistical significance only manifesting

Figure 4: **Effect of 100 Basis Points Interest Rate Shock on (log) Private Consumption**



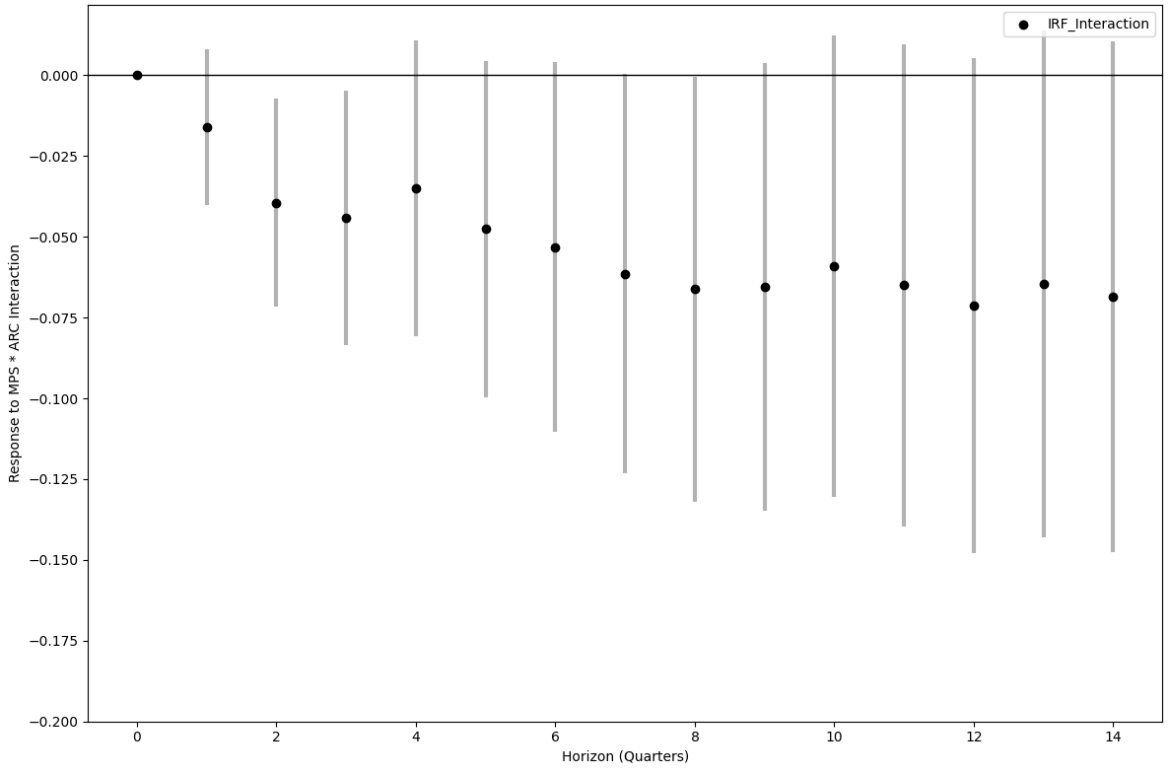
**Notes*: This figure shows Impulse Response Functions (IRFs) for log private consumption to a 100 basis point monetary policy shock, estimated using local projections (Equation 2), using a 5-year lag. The control variables include CPI, and interest rate level. Countries are grouped based on their interest rate sensitivity (β_j) from Equation (1). Blue line/area: IRF and 90% CI for high-ARC countries. Red line/area: low-ARC countries. Horizontal axis: quarters post-shock; vertical axis: percentage change in consumption from pre-shock level. Turkey and Chile were excluded from the sample due to their significantly higher inflation rates and interest rate volatility during the sample period, which could potentially distort the results.

from the third quarter. This contrast underscores the heightened sensitivity of consumption to monetary policy changes in economies with a higher prevalence of adjustable-rate credit. Figure 5 presents the interaction effect between ARC levels and monetary policy shocks on private consumption.

The interaction analysis yields a coefficient of -3.2%, indicating a substantial amplification effect of ARC on the transmission of monetary policy to private consumption. This interaction effect exhibits statistical significance from the second quarter through the ninth quarter post-shock, with a slight attenuation of significance in the fourth quarter. The persistence and magnitude of this interaction underscore the critical role that the prevalence of adjustable-rate credit plays in modulating the impact of monetary policy on consumer spending patterns.

These findings collectively suggest that the structure of credit markets, particu-

Figure 5: **Interaction Effect: ARC Levels and Monetary Policy Shocks on Private Consumption**



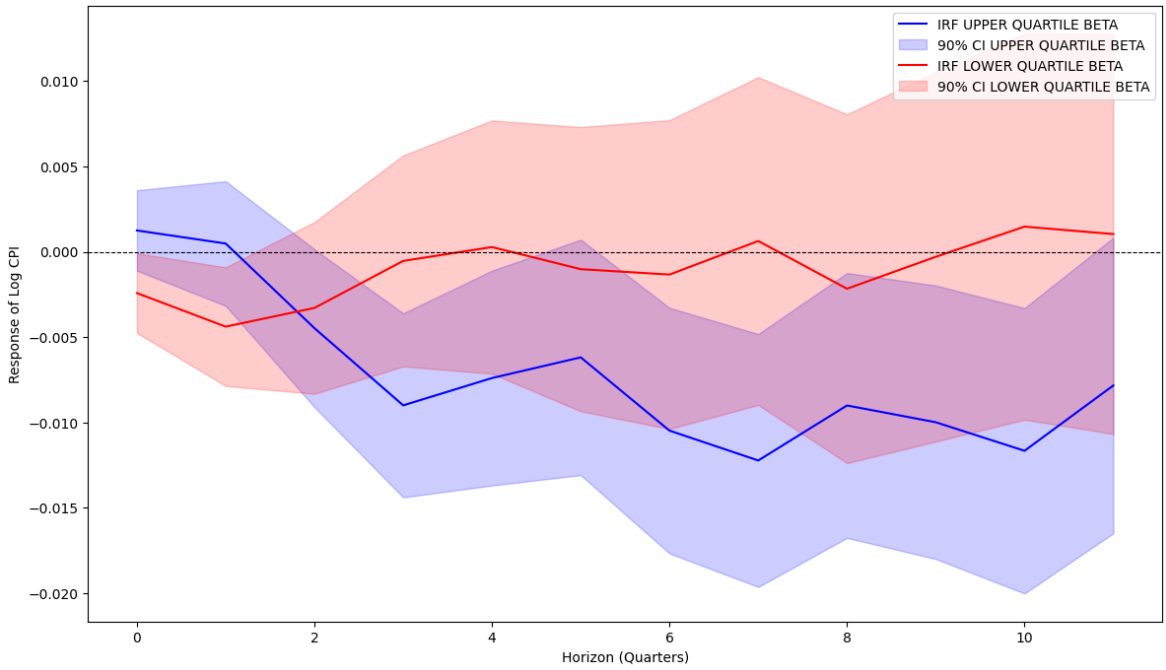
Notes: This figure shows the interaction effect between ARC levels and monetary policy shocks on the natural logarithm of private consumption, estimated using local projections (Equation 2), with a 5-year lag. The control variables include GDP and CPI. The solid line represents the estimated interaction coefficient at each horizon, while the shaded area depicts the 90% confidence interval. A negative interaction effect indicates that higher ARC levels amplify the impact of contractionary monetary policy on private consumption. Each point represents the estimated interaction coefficient at that horizon, while the vertical lines depict the 90% confidence intervals. A negative interaction effect indicates that higher ARC levels amplify the impact of contractionary monetary policy on private consumption. The sample includes all OECD countries, except Turkey and Chile that were excluded from the sample due to their significantly higher inflation rates and interest rate volatility during the sample period, which could potentially distort the results. The horizontal axis shows quarters after the shock.

larly the prevalence of adjustable-rate credit, significantly influences the transmission of monetary policy to private consumption. Economies with higher ARC levels demonstrate a more pronounced and immediate consumption response to interest rate shocks, implying a potentially higher sensitivity of household spending to monetary policy changes. This heightened sensitivity has important implications for the efficacy and potential side effects of monetary policy across different economic contexts.

5.5 Price level

Figure 6 illustrates the impulse response functions for the natural logarithm of the Consumer Price Index (CPI) following a 100 basis point monetary policy shock, comparing high-ARC and low-ARC countries.

Figure 6: **Effect of 100 Basis Points Interest Rate Shock on (log) CPI**



Notes: This figure shows Impulse Response Functions (IRFs) for log CPI to a 100 basis point monetary policy shock, estimated using local projections (Equation 2), using a 5-year lag. The control variables include energy inflation, and GDP. Countries are grouped based on their interest rate sensitivity (β_j) from Equation (1). Blue line/area: IRF and 90% CI for high-ARC countries. Red line/area: low-ARC countries. Horizontal axis: quarters post-shock; vertical axis: percentage change in CPI from pre-shock level. Dashed line at zero indicates no change in CPI. Turkey and Chile were excluded from the sample due to their significantly higher inflation rates and interest rate volatility during the sample period, which could potentially distort the results.

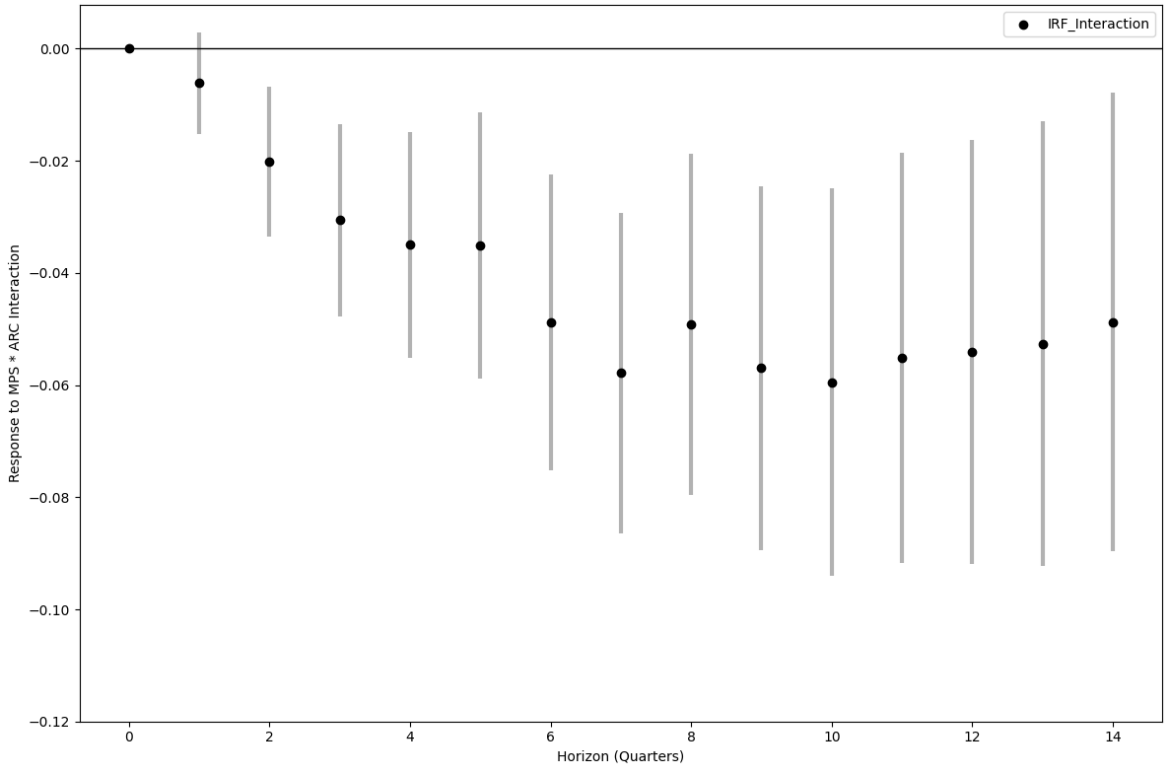
The analysis reveals a marked difference in the inflationary response between high-ARC and low-ARC countries. In economies with high ARC prevalence, a 100 basis point increase in interest rates leads to a substantial and statistically significant decrease of 1.1% in the log of the Consumer Price Index (CPI). This effect is persistent, maintaining statistical significance from the second quarter onwards throughout the entire observed period.

Conversely, low-ARC countries exhibit a more nuanced response. There is an initial negative effect of -0.48% on the CPI in the first two quarters following the shock. However, beyond this initial period, no statistically significant effect is observed. The absence of a trong and statistically effect in low-ARC countries does

not necessarily indicate ineffective monetary policy transmission to inflation. The subsequent discussion explores potential explanations for these finding.

The interaction effect is illustrated in Figure 7.

Figure 7: **Interaction Effect: ARC Levels and Monetary Policy Shocks on log CPI**



Notes: This figure shows the interaction effect between ARC levels and monetary policy shocks on the natural logarithm of the Consumer Price Index (CPI), estimated using local projections (Equation 2), with a 5-year lag. The control variables include GDP and interest rate level. Each point represents the estimated interaction coefficient at that horizon, while the vertical lines depict the 90% confidence intervals. A negative interaction effect indicates that higher ARC levels amplify the impact of contractionary monetary policy on log CPI. A negative interaction effect indicates that higher ARC levels amplify the disinflationary impact of contractionary monetary policy on the log CPI. The horizontal axis shows quarters after the shock; the vertical axis shows the magnitude of the interaction effect on log CPI. The sample includes all OECD countries, except Turkey and Chile that were excluded from the sample due to their significantly higher inflation rates and interest rate volatility during the sample period, which could potentially distort the results.

The interaction effect is negative, indicating that higher levels of ARC are associated with a stronger disinflationary impact of monetary policy tightening. The effect becomes statistically significant after about 4-6 quarters and remains so for most of the projection horizon. The peak of the interaction effect occurs around 8-10 quarters after the shock.

These results collectively demonstrate that the prevalence of ARC plays a crucial role in shaping the transmission of monetary policy to key macroeconomic variables. Economies with higher ARC levels generally exhibit stronger, faster, and more persistent responses to monetary policy shocks across GDP, consumption, and price levels.

The interaction effects further support this conclusion, showing that the impact of monetary policy becomes more pronounced as the level of ARC increases.

The results presented in a more detailed form in Tables 2 and 3.

Table 2: Impact of Monetary Policy Shocks on Macroeconomic Variables

	Consumption				CPI				GDP			
Horizon	High ARC		Low ARC		High ARC		Low ARC		High ARC		Low ARC	
(Quarters)	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
0	-0.002	0.004	0.000	0.002	0.001	0.001	-0.002	0.002	-0.004	0.003	-0.002	0.003
1	-0.011*	0.006	0.000	0.003	0.000	0.002	-0.005**	0.002	-0.008**	0.004	-0.004	0.004
2	-0.017**	0.007	-0.002	0.003	-0.005*	0.003	-0.003	0.004	-0.010**	0.005	-0.002	0.005
3	-0.019**	0.008	-0.006	0.004	-0.009**	0.004	0.001	0.004	-0.013**	0.006	-0.003	0.006
4	-0.019*	0.010	-0.010**	0.004	-0.008**	0.004	0.002	0.005	-0.012*	0.007	0.001	0.007
5	-0.021*	0.011	-0.014***	0.005	-0.007	0.005	0.002	0.006	-0.012	0.008	0.002	0.008
6	-0.024**	0.012	-0.015***	0.005	-0.011**	0.005	0.003	0.006	-0.010	0.009	0.003	0.009
7	-0.027**	0.013	-0.013***	0.005	-0.012**	0.005	0.005	0.007	-0.010	0.009	0.005	0.010
8	-0.029**	0.014	-0.012**	0.006	-0.009*	0.005	0.003	0.007	-0.010	0.010	0.004	0.011
9	-0.033**	0.014	-0.015**	0.006	-0.010**	0.005	0.007	0.008	-0.011	0.010	0.002	0.012
10	-0.031**	0.015	-0.012**	0.006	-0.011**	0.005	0.010	0.008	-0.010	0.010	0.004	0.012
11	-0.031**	0.015	-0.012*	0.007	-0.007	0.006	0.010	0.008	-0.009	0.010	-0.000	0.013

Notes: This table presents the effects of a 100 basis point monetary policy shock on consumption, CPI, and GDP for high-ARC and low-ARC country groups. Coefficients represent the percentage change in the respective variable from its pre-shock level. Standard errors (SE) are reported alongside each coefficient. The horizon is measured in quarters after the shock. Asterisks denote statistical significance: * p < 0.1, p < 0.05, * p < 0.01.

Table 3: Interaction Effects of ARC and Monetary Policy Shocks

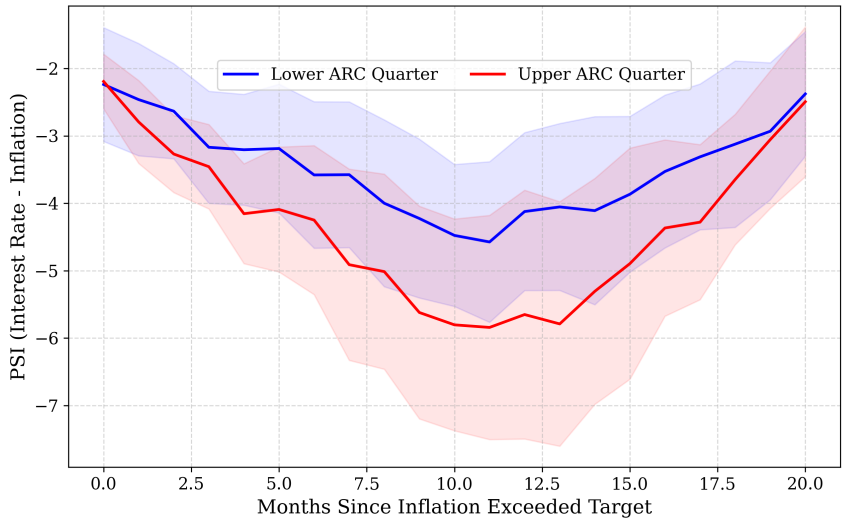
	Consumption				GDP				CPI			
Horizon	Interaction		MPS		Interaction		MPS		Interaction		MPS	
(Quarters)	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
1	-0.016	0.015	0.003	0.004	-0.031**	0.015	0.009**	0.004	-0.006	0.006	0.002	0.002
2	-0.039*	0.020	0.009	0.006	-0.042**	0.020	0.009	0.006	-0.020**	0.008	0.005**	0.002
3	-0.044*	0.025	0.013*	0.007	-0.039*	0.023	0.007	0.007	-0.031***	0.011	0.009***	0.003
4	-0.035	0.029	0.010	0.009	-0.052*	0.027	0.009	0.008	-0.035***	0.013	0.010**	0.004
5	-0.048	0.032	0.012	0.010	-0.063**	0.031	0.011	0.009	-0.035**	0.015	0.011***	0.004
6	-0.053	0.036	0.012	0.011	-0.062*	0.034	0.012	0.010	-0.049***	0.017	0.016***	0.005
7	-0.061	0.039	0.013	0.012	-0.069*	0.038	0.015	0.011	-0.058***	0.018	0.020***	0.005
8	-0.066	0.041	0.016	0.012	-0.056	0.040	0.011	0.012	-0.049**	0.019	0.018***	0.006
9	-0.066	0.043	0.014	0.013	-0.051	0.042	0.009	0.013	-0.057***	0.020	0.020***	0.006
10	-0.059	0.045	0.012	0.013	-0.049	0.044	0.007	0.013	-0.059***	0.022	0.020***	0.006
11	-0.065	0.047	0.015	0.014	-0.038	0.047	0.005	0.014	-0.055**	0.023	0.021***	0.007
12	-0.071	0.048	0.016	0.014	-0.055	0.048	0.012	0.015	-0.054**	0.024	0.021***	0.007
13	-0.065	0.049	0.015	0.015	-0.056	0.050	0.014	0.015	-0.053**	0.025	0.020***	0.007
14	-0.069	0.049	0.016	0.015	-0.044	0.052	0.010	0.016	-0.049*	0.026	0.019**	0.008

Notes: This table presents the interaction effects between ARC (Adjustable-Rate Credit) prevalence and monetary policy shocks on consumption, GDP, and CPI. The 'Interaction' columns show the coefficient and standard error for the interaction term (ARC * MPS), while the 'MPS' columns show the coefficient and standard error for the monetary policy shock alone. Coefficients represent the percentage change in the respective variable from its pre-shock level. The horizon is measured in quarters after the shock. Asterisks denote statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.

5.6 Monetary Policy Stance: High vs. Low ARC Countries

Figure 8 illustrates that central banks in high-ARC countries tend to maintain a more accommodative stance (lower $\overline{PSI}$) compared to their low-ARC counterparts, potentially reflecting a more cautious approach to monetary tightening due to the heightened sensitivity of their economies to interest rate changes. It's crucial to note that this analysis employs a simplified measure of monetary policy stance and does not account for various factors that central banks consider.

Figure 8: **Degree of Central Bank Policy Stance: High vs. Low ARC Countries**



*_Notes_: This figure presents the average central bank policy stance index for high-ARC and low-ARC countries over a 20-month period following an inflation deviation from the target. The policy stance index is calculated as the difference between the central bank interest rate and the actual inflation rate for each country. The shaded areas around each line depict the 90% confidence intervals. The classification into high-ARC and low-ARC groups is based on the estimated interest rate sensitivity coefficients (β_j) from Equation (1). The sample excludes Eurozone countries which are part of the ECB.

The results also presented in the appendix. Tables 5.

5.7 Robustness Tests

To ensure the reliability and stability my findings, I conducted several robustness tests for both stages of the analysis.

5.7.1 ARC Prevalence Estimation

For the first stage of my analysis, estimating ARC prevalence, I performed the following additional specifications: Inclusion of lagged interest rate changes as a control variable; Variation in the trimming of extreme values and Alternative sample period.

Across all these specifications, I find that the ordinal ranking of countries based on their estimated ARC prevalence remains largely consistent. This stability lends credence the baseline results and suggests that the measure of ARC prevalence is robust to various methodological choices.

5.7.2 Local Projections Analysis

For the second stage, involving local projections, I conducted two main sets of robustness checks: Variation in lag structure: I re-estimated the regression using different lag specifications (16,18,22 and 24 lags) to assess the sensitivity of my results to the choice of lag length; Alternative ARC prevalence groupings: I tested the sensitivity of the results to different classifications of ARC levels, including: Upper quartile versus lower quartile; Upper third versus lower third; Upper fifth versus lower fifth.

All results of the robustness tests are presented in the Appendix.

Overall, these robustness checks reinforce the validity of the main results and provide confidence in the stability of my findings.

6 Discussion

The results of this study provide compelling evidence for the significant impact of adjustable-rate credit prevalence on monetary policy transmission across OECD countries. The novel methodology employed to estimate ARC prevalence reveals substantial heterogeneity in credit market structures, with implications that resonate throughout the monetary policy transmission mechanism and central bank behavior.

The findings indicate substantial similarities to previous studies while offering new insights due to the methodology employed. Notably, the results align closely with those of Campbell [2013] and International Monetary Fund [2024]. For instance,

Campbell [2013] highlight that countries such as Germany, the USA, the Netherlands, and Denmark exhibit lower ARC prevalence, while countries like Finland, Australia, Greece, Spain and Italy have higher ARC levels. Similarly, International Monetary Fund [2024] and the ECB database they rely on, identifies similar patterns in countries like the United States, Switzerland, and New Zealand, Netherlands, Germany Ireland (low ARC) versus Finland, Latvia, Israel, Luxembourg, Mexico, and Norway (high ARC). It should be noted that between the above two studies there are also differences, for example in Ireland and Sweden.

The monetary policy transmission analysis substantiates the importance of credit market structures across key macroeconomic variables: consumption, CPI, and GDP. High-ARC countries consistently demonstrate a stronger, more rapid, and more persistent response to interest rate shocks compared to their low-ARC counterparts. This pattern is evident in both the group comparison and the interaction analysis. In the group comparison, high-ARC economies exhibit larger and more statistically significant decreases in consumption and GDP following a contractionary monetary policy shock, with effects emerging more quickly and lasting longer than in low-ARC countries. The inflation response, while more nuanced, still shows a more pronounced disinflationary effect in high-ARC economies. However, the muted inflation response in low-ARC countries warrants careful interpretation. As Bernanke and Gertler [1995] noted in their work on the "black box" of monetary policy transmission, identifying the impact of interest rates on inflation can be challenging. The difficulty in observing significant effects in low-ARC countries does not necessarily imply that interest rates have no impact on inflation; rather, it suggests that the transmission mechanisms in these economies may differ, potentially operating through more indirect channels and necessitating alternative estimation methods for their identification.

The interaction analysis further corroborates the overall findings, revealing that higher levels of ARC amplify the impact of monetary policy shocks across all three variables. This amplification effect is particularly strong for consumption and inflation, underlining how the prevalence of adjustable-rate credit enhances the interest rate channel of monetary policy. These results collectively suggest that in economies with higher ARC prevalence, changes in policy rates more swiftly and substantially affect borrowers' cash flows, leading to quicker adjustments in spending patterns,

aggregate demand, and ultimately, price levels. This heightened sensitivity in high-ARC countries underscores the critical role that credit market structure plays in determining the efficacy of monetary policy, while also highlighting the complexity of these relationships in diverse economic contexts.

The examination of central bank responses to inflationary pressures provides further insight into how ARC prevalence might influence policy decisions. Using a simplified measure of monetary policy stance, I observe that central banks in high-ARC countries tend to maintain a more accommodative stance compared to their low-ARC counterparts. This pattern could reflect a more cautious approach to monetary tightening in economies where interest rate changes have a more immediate and pronounced impact on borrowers and the broader economy. However, it's crucial to interpret these findings on central bank behavior with caution. The simplified policy stance index used in this analysis doesn't account for the myriad complex factors that influence central bank decision-making, such as inflation expectations, output gaps, and structural economic differences. Therefore, while these results provide intriguing preliminary insights, they should not be viewed as definitive evidence of a causal relationship between ARC prevalence and central bank behavior.

7 Summary

In conclusion, this study demonstrates that the structure of credit markets, particularly the prevalence of adjustable-rate credit, plays a crucial role in shaping the transmission of monetary policy to key macroeconomic variables. The stronger, faster, and more persistent responses to monetary policy shocks in high-ARC economies underscore the importance of considering credit market structures when designing and implementing monetary policy. These findings offer valuable guidance for policymakers navigating diverse economic environments, suggesting that monetary strategies should be tailored to the specific characteristics of national credit markets to optimize policy effectiveness.

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A Appendix

A.1 Results - Interest Rate Sensitivity

Table 4: Country-specific Interest Rate Sensitivity Coefficients

Country	Beta	Std Err	P-Value
BELGIUM	1.0506***	0.2066	0.0000
FRANCE	0.9264***	0.1257	0.0000
AUSTRALIA	0.6734***	0.0887	0.0000
LUXEMBOURG	0.4934***	0.1380	0.0004
JAPAN	0.4847***	0.0651	0.0000
LITHUANIA	0.4705***	0.0782	0.0000
ISRAEL	0.4038***	0.0408	0.0000
ITALY	0.4094***	0.0351	0.0000
ESTONIA	0.3984***	0.0717	0.0000
LATVIA	0.3355***	0.0678	0.0000
FINLAND	0.3317***	0.0350	0.0000
SLOVENIA	0.3228*	0.1706	0.0608
SPAIN	0.3183***	0.0216	0.0000
DENMARK	0.2880***	0.0352	0.0000
UNITED KINGDOM	0.2979***	0.0534	0.0000
MEXICO	0.3013***	0.0207	0.0000
SWEDEN	0.2819***	0.0257	0.0000
GERMANY	0.2762***	0.0505	0.0000
NEW ZEALAND	0.2585***	0.0483	0.0000
CANADA	0.2614***	0.0167	0.0000
COLOMBIA	0.2262***	0.0212	0.0000
PORTUGAL	0.2206***	0.0385	0.0000
HUNGARY	0.2279***	0.0523	0.0000
NORWAY	0.2171***	0.0098	0.0000
ICELAND	0.2106***	0.0458	0.0000
CZECH REPUBLIC	0.2105***	0.0233	0.0000
POLAND	0.2116***	0.0282	0.0000
GREECE	0.2453**	0.0997	0.0145
AUSTRIA	0.1189**	0.0482	0.0139
SLOVAKIA	0.1902***	0.0654	0.0039
UNITED STATES	0.0825***	0.0007	0.0000
CHILE	0.0630***	0.0111	0.0000
TURKIYE	0.0592***	0.0066	0.0000
NETHERLANDS	0.0754	0.1298	0.5618
IRELAND	-0.0315	0.1582	0.8423

Notes: This table presents country-specific interest rate sensitivity coefficients (β_j) estimated from Equation (1). These coefficients represent the sensitivity of banks' interest income to changes in short-term interest rates. Asterisks denote statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.

A.2 Results - Monetary Restraint by ARC

Table 5: Monetary Restraint by ARC Quarters

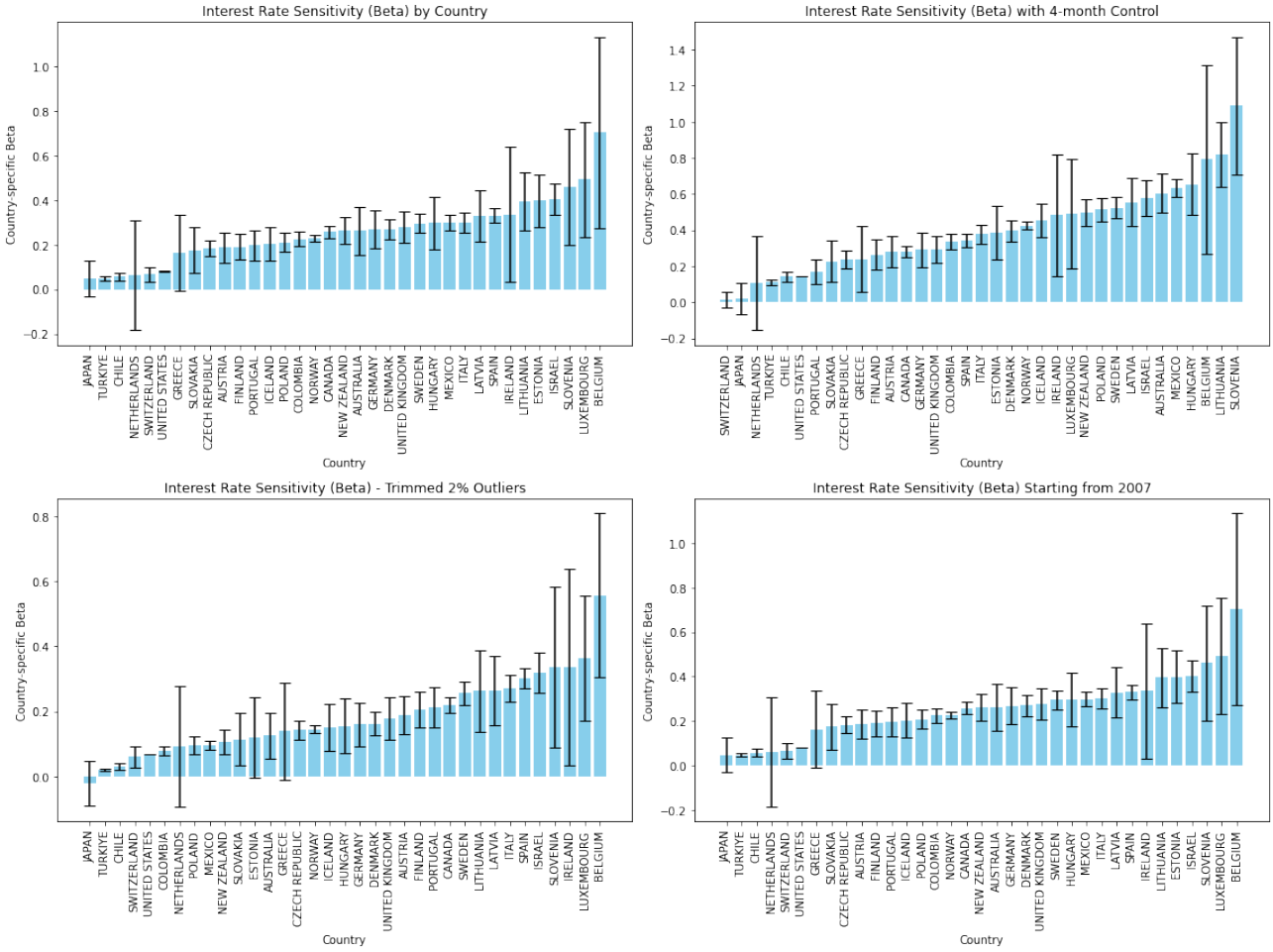
Month	Lower ARC Quarter		Upper ARC Quarter	
	Mean	90% CI	Mean	90% CI
0	-2.24	[-3.08, -1.39]	-2.19	[-2.60, -1.79]
1	-2.46	[-3.30, -1.63]	-2.79	[-3.41, -2.18]
2	-2.63	[-3.34, -1.93]	-3.27	[-3.84, -2.70]
3	-3.17	[-4.00, -2.34]	-3.46	[-4.08, -2.83]
4	-3.21	[-4.03, -2.38]	-4.15	[-4.90, -3.41]
5	-3.19	[-4.14, -2.23]	-4.09	[-5.02, -3.17]
6	-3.58	[-4.67, -2.49]	-4.25	[-5.35, -3.14]
7	-3.58	[-4.66, -2.50]	-4.91	[-6.33, -3.49]
8	-4.00	[-5.24, -2.76]	-5.01	[-6.46, -3.57]
9	-4.23	[-5.40, -3.05]	-5.62	[-7.20, -4.04]
10	-4.48	[-5.53, -3.42]	-5.80	[-7.37, -4.23]
11	-4.57	[-5.77, -3.38]	-5.84	[-7.51, -4.18]
12	-4.12	[-5.29, -2.95]	-5.65	[-7.50, -3.81]
13	-4.05	[-5.29, -2.82]	-5.79	[-7.60, -3.98]
14	-4.11	[-5.50, -2.71]	-5.31	[-6.98, -3.63]
15	-3.87	[-5.02, -2.71]	-4.90	[-6.61, -3.18]
16	-3.53	[-4.66, -2.39]	-4.37	[-5.67, -3.06]
17	-3.31	[-4.39, -2.23]	-4.28	[-5.43, -3.13]
18	-3.12	[-4.36, -1.89]	-3.65	[-4.62, -2.68]
19	-2.93	[-3.95, -1.92]	-3.06	[-4.08, -2.04]
20	-2.38	[-3.30, -1.45]	-2.49	[-3.60, -1.38]

**Notes*: This table presents the average central bank policy stance index (PSI) for high-ARC and low-ARC countries over a 20-month period following an inflation target deviation. Classification is based on estimated interest rate sensitivity coefficients (β_j) from Equation (1). ECB countries are excluded. Columns show months since inflation exceeded target (1), and mean PSI with 90% confidence intervals for Lower (2-3) and Upper (4-5) ARC Quarters.

A.3 Robustness tests

A.3.1 Robustness tests - First stage: OLS - Various specifications

Figure 9: Description of the third illustration



A.3.2 Robustness tests - Local projections - Different Lags

Figure 10: Private consumption with different lags

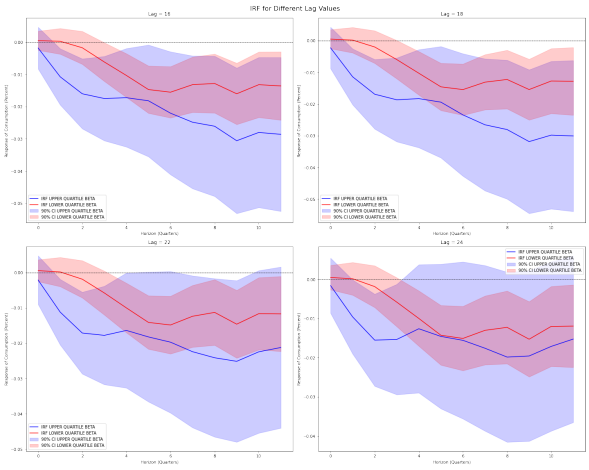
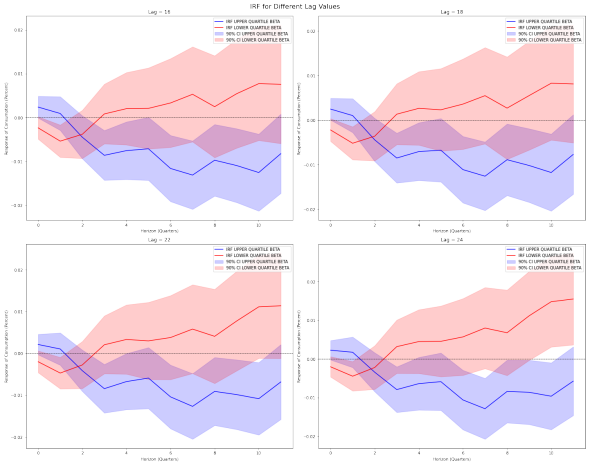


Figure 11: Inflation with different lags



A.3.3 Robustness tests - Local projections - Different percentiles

Figure 12: GDP with different lags

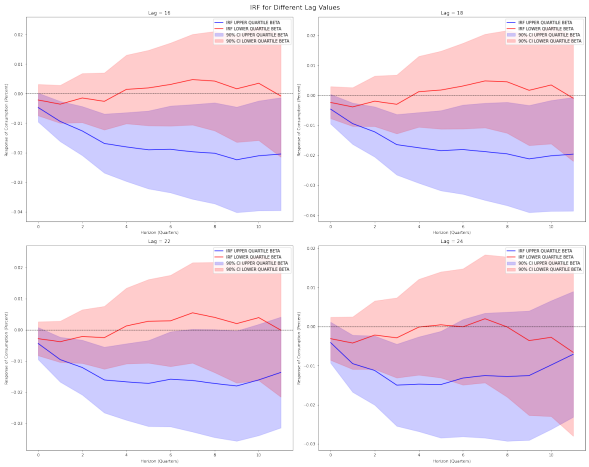


Figure 13: Private consumption with different percentiles

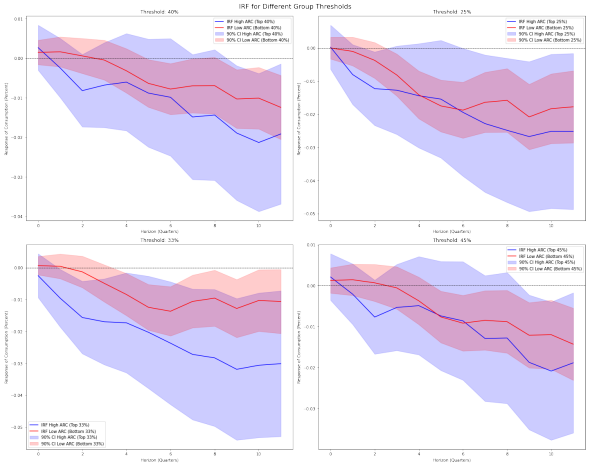


Figure 14: Inflation with different percentiles

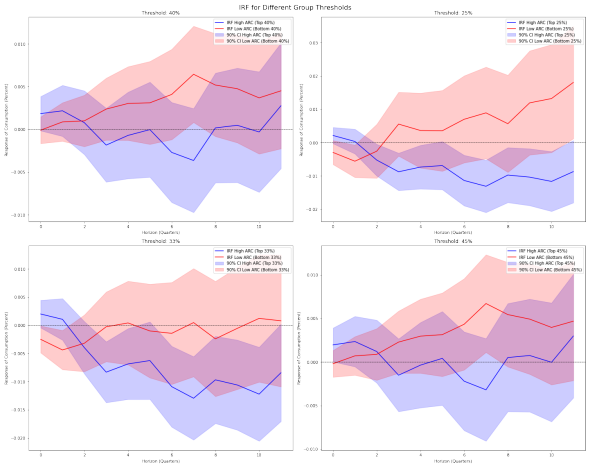
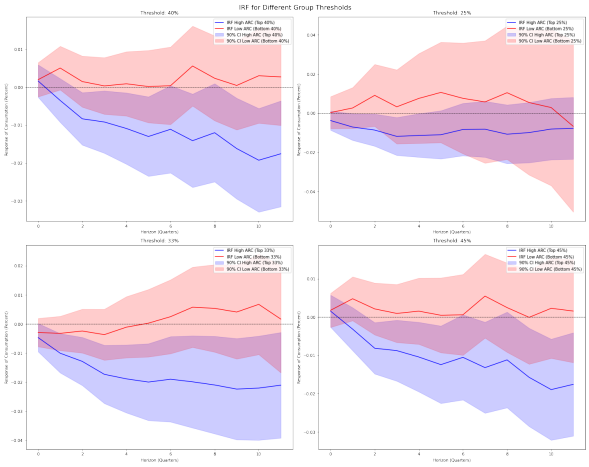


Figure 15: GDP with different percentiles



A.3.4 Robustness tests - Interaction at different lags

Figure 16: Private consumption with different lags

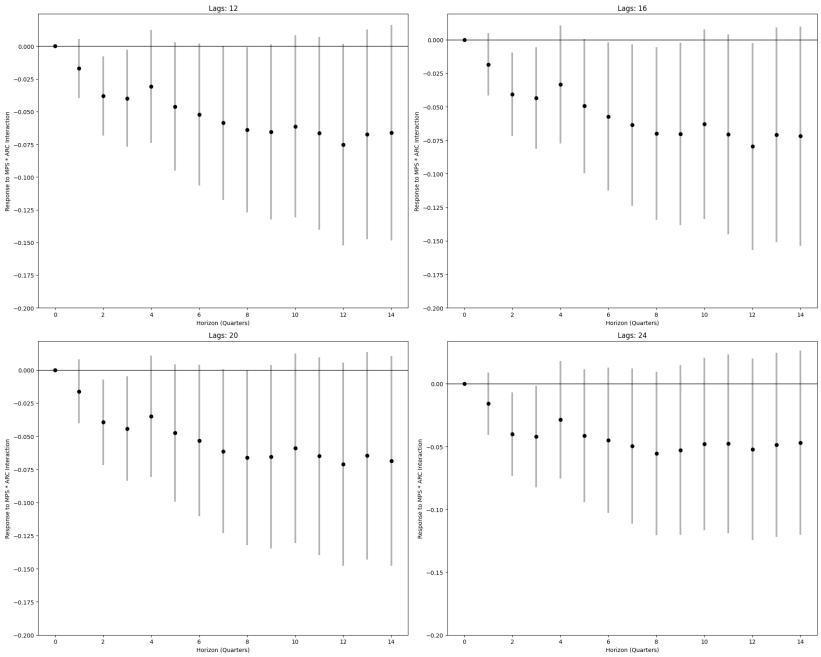


Figure 17: CPI with different lags

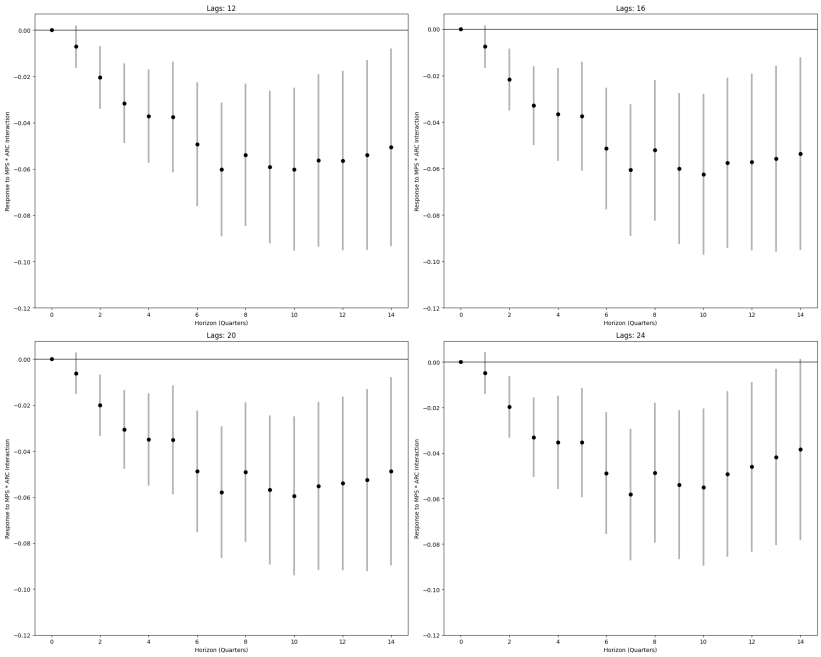


Figure 18: GDP with different lags

