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Assessing Private Consumption Sensitivity to Price Shocks using Structural Vector Autoregression Approach ^{*}

Thum Chiean Tien, Mohd Taufiq [†]

September 24, 2026

Abstract

Understanding how price shocks transmit to private consumption (PC) is critical for macroeconomic surveillance, particularly in an environment of elevated and uncertain inflation dynamics. This paper examines the impact of headline and component-level inflation shocks on real PC in Malaysia using a Structural Vector Autoregression (SVAR) framework. The results indicate that a positive headline inflation shock exerts an immediate contractionary effect on real PC, reflecting the erosion of household purchasing power. On average, a 1 percentage point (ppt) increase in headline inflation reduces real PC by around 0.57 ppt over the first four quarters. In line with the literature, the result from Threshold SVAR shows that the contraction is more pronounced and persistent during periods of high inflation pervasiveness. At the disaggregated level, the transmission of inflation to real PC is heterogeneous across spending categories. Expenditure on essential goods exhibits relative rigidity, with households adjusting mainly through reductions in other categories, while discretionary spending shows stronger own-price sensitivity. These findings provide important insights into the channels through which inflation affects household spending and underscore the need to account for both income and substitution effects when assessing the macroeconomic impact of price shocks.

Keywords: Private Consumption, Inflation Shocks, Inflation Pervasiveness, Structural Vector Autoregression, Threshold SVAR

JEL classification: E21, E31, C32

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1 Introduction

Households and their spending patterns are exposed and affected by macroeconomic shocks, with price movements representing one of the most immediate and pervasive channels affecting real economic activity (Mustre-del-Río et al., 2025, Afonso et al., 2011). The significant increase in global fuel and commodity prices recently has renewed the focus on the transmission of inflation shocks to private consumption (PC) activity.¹ While standard consumption theories suggest that households would attempt to smooth consumption over time, persistent or broad-based inflation shocks may impose constraints on real income, leading to adjustments in spending behaviour. Assessing the aggregate implications of such shocks therefore requires an understanding not only of the overall response of consumption, but also of how this response evolves over time, and varies across inflation regimes and consumption components. This is particularly relevant in the current environment, where inflation shocks could potentially differ in both breadth and persistence.

This is a very important question given the share of PC to overall economic activities is more than 50% in many advanced and emerging economies, including Malaysia. As a small open economy with trade activity represents close to 200%, of its GDP, Malaysia is also subject to external price pressures, especially through energy and food prices. Significant shocks on energy and food prices affect households both directly by higher inflation of these two items, and indirectly, through their impact on firms' profit and operating costs, and broader economic conditions, which in turn, will have a subsequent impact on households' income and price dynamics of other goods and services as well (Bhattarai et al., 2025).

In assessing the impact of inflation on PC in Malaysia, this paper relies on a Structural Vector Autoregression (SVAR) framework. By identifying exogenous inflation shocks and analysing their associated impulse responses, the study evaluates the timing, magnitude, and persistence of their effects on household spending. The baseline analysis is extended along two key dimensions. First, a Threshold SVAR framework is employed to capture state-dependent, non-linear effects, distinguishing between periods of low and high inflation pervasiveness. This is important given that many past studies that used data from other countries have shown that the impact of a broad-based increase in prices to household consumption is larger compared to a period of when the increase in prices is concentrated only in few categories (Ball and Mankiw, 1995). Second, the analysis incorporates component-level inflation,

¹Brent spot prices remained elevated at above USD100 per barrel between March and May 2026. Although prices moderated from June 2026 onwards, they remained above USD80 per barrel through August 2026. This was considerably higher than the average price of USD69 per barrel recorded in 2025.

assessing how price increases in specific consumption categories affect spending both within the affected component and across other categories, capturing the interplay of substitution and income effects. The results of this component-level analysis are important to supplement and contextualise the non-linear findings, providing essential explanations on how households react differently when faced with different sources of inflation shocks.

Building on the existing literature, the present study contributes in three main ways. First, it applies an SVAR framework to examine the dynamic impact of inflation shocks on real PC in Malaysia. Second, it incorporates a Threshold SVAR approach to capture regime-dependent effects based on inflation pervasiveness, thereby accounting for potential non-linearities in the transmission mechanism. Third, it extends the analysis to the component level to investigate how households reallocate spending across different consumption categories, providing a more granular understanding of the underlying transmission channels.

The results indicate that inflation shocks exert a significant and persistent negative impact on real PC. On average, based on the baseline SVAR model, a 1 percentage point (ppt) increase in headline inflation reduces real PC by around 0.57 ppt over the first four quarters. However, the Threshold SVAR suggests that the impact is more pronounced and persistent during periods of high inflation pervasiveness, where the impact is 0.1ppt and 0.3ppt larger over the first four and eight quarters respectively, compared during the time when inflation pervasiveness is more muted. In addition, the findings reveal substantial heterogeneity across consumption categories, reflecting differences in necessity, substitutability, and household adjustment behaviour. For example, higher inflation in the food and beverage category leads to larger reductions in non-food and beverage consumption, underscoring the importance of this category to households. However, households are very responsive to higher clothing prices, in which they are willing to reduce their spending substantially on clothing when prices are high.

The remainder of this paper is structured as follows. Section 2 reviews the relevant literature. Section 3 outlines the empirical methodology. Section 4 describes the data employed. Section 5 presents diagnostic tests, followed by the empirical findings in Section 6. Section 7 discusses limitations and scope for future research. The final section concludes.

2 Literature Review

2.1 Literature on the Impact of Inflation on PC

A substantial body of literature documents that inflation shocks have contractionary effects on PC, primarily through the erosion of real purchasing power.

From a theoretical perspective, Friedman, 1957, and Deaton, 1992, argue that consumption decisions depend on expectations of lifetime income, implying that unexpected increases in prices reduce real income and prompt households to adjust their consumption downward. Empirical evidence broadly supports this prediction. Early studies such as Blinder, 1982, and Deaton, 1987, find that inflation reduces real purchasing power and leads to declines in consumption, particularly when price increases are persistent.

Empirical studies employing SVAR frameworks further corroborate these findings, showing that inflation shocks dampen real economic activity and PC, with effects that tend to build over time rather than materialise solely on impact. For instance, Peersman and Straub, 2009, using an SVAR approach, find that inflation shocks lead to a sustained decline in PC, with effects persisting for several quarters.

More recent literature emphasises that the impact of inflation on consumption depends not only on its magnitude but also on its breadth across the consumption basket. When inflation is broad-based, households face more limited opportunities to substitute towards relatively cheaper goods and services, resulting in larger welfare losses. In this regard, IMF, 2022, and IMF, 2023, document that broad-based inflation leads to more pronounced and persistent reductions in real household consumption compared with narrow price shocks. Similarly, Bobasu et al., 2023, find that consumption responses to inflation shocks are amplified when a higher share of CPI components records price increases, highlighting the importance of inflation pervasiveness in shaping household behaviour.

Recent studies further suggest that the impact of inflation is heterogeneous across expenditure categories. Households are exposed differently to inflation shocks depending on the composition of their consumption basket, with increases in food and energy prices often exerting disproportionately larger effects on household welfare and spending decisions. Altig et al., 2024, show that the effects of inflation vary across households according to their expenditure patterns, while Bhattarai et al., 2025, highlight the important role of food and fuel price shocks in shaping household consumption outcomes. These findings suggest that aggregate consumption responses may mask substantial variation across expenditure categories, reflecting differences in necessity, substitutability, and households' ability to adjust

spending behaviour.

Taken together, the literature suggests that the impact of inflation on household consumption depends not only on the magnitude and persistence of price shocks, but also on their breadth across the consumption basket and the nature of the expenditure categories affected. While recent studies have advanced our understanding of these transmission channels, evidence remains relatively limited for Malaysia, particularly regarding how inflation pervasiveness and component-specific price shocks affect household spending behaviour.

2.2 Empirical Approaches to Identifying Macroeconomic Shocks: SVAR and Threshold SVAR

A large body of empirical macroeconomic literature employs SVAR models to analyse the transmission of shocks to economic activity.

Since Sims, 1980, SVAR has become a standard tool in applied macroeconomics, allowing researchers to identify structural shocks and trace their dynamic effects through impulse response functions. In practice, SVAR models have been widely used to assess the effects of domestic policy shocks, particularly monetary and fiscal policy, on key economic variables such as output, inflation, and consumption. For example, Uhlig, 2005, and Canova and De Nicoló, 2002, employ SVAR frameworks with sign restrictions to study the effects of monetary policy shocks, highlighting the flexibility of the approach in identifying structural disturbances under relatively weak theoretical assumptions.

Beyond domestic applications, the SVAR framework has also been extensively used to analyse the transmission of foreign shocks to small open economies. Kronborg, 2021, for instance, use an SVAR model with both foreign and domestic blocks to estimate the impact of global shocks on the Danish economy, finding that external demand and price shocks have significant spillover effects on domestic consumption and wage dynamics. Similarly, Shariff Abd. Kadir and Tsen, 2023, show that external shocks, particularly oil price and foreign income shocks, generate inflationary pressures in Malaysia, underscoring the importance of external transmission channels for small open economies.

While linear SVAR models provide valuable insights, recent literature emphasises that macroeconomic relationships are often non-linear and state-dependent. In particular, the impact of shocks may vary depending on prevailing economic conditions, such as inflation levels or financial stress. To address these limitations, researchers have extended the SVAR framework to incorporate non-linearities, notably through Threshold SVAR models. Balke, 2000, and Afonso et al., 2011, demonstrate that Threshold

SVAR models allow for regime-dependent dynamics by conditioning the responses of variables on whether a threshold variable exceeds a certain level.

Importantly, Threshold SVAR models do not exclude observations from the sample. Instead, observations are allocated to different regimes according to the value of the threshold variable, and regime-specific parameters are estimated using the observations belonging to each regime. This allows the model to capture state-dependent behaviour while retaining all observations in the dataset and avoiding the need to pre-select subsamples based on arbitrary economic episodes (Balke, 2000; Afonso et al., 2011). This approach enables the identification of asymmetric transmission mechanisms, where shocks may have stronger or more persistent effects under specific economic regimes. More recently, Christopoulos et al., 2023, show that ignoring such non-linearities can lead to biased estimates and misinterpretation of macroeconomic dynamics, reinforcing the importance of modelling state dependence explicitly.

Recent applications of these approaches have increasingly focused on understanding how inflation and price shocks are transmitted to household spending behaviour. For instance, Peersman and Straub, 2009, utilise an SVAR framework to trace the dynamic effects of macroeconomic shocks on consumption, while more recent studies by the IMF, 2022, IMF, 2023, and Bobasu et al., 2023, highlight that household consumption responses to inflation are heterogeneous and depend on factors such as the composition of household expenditures and the nature of the inflation shock. Taken together, these studies suggest that both the identification of inflation shocks and the economic environment in which they occur are important for understanding consumption responses.

Collectively, the literature points to three areas that warrant further examination. First, while the impact of inflation shocks on household consumption has been widely studied, evidence for Malaysia remains relatively limited. Second, although recent studies highlight the importance of inflation breadth and state dependence, less attention has been devoted to understanding whether consumption responses differ across periods of low and high inflation pervasiveness. Third, while a growing body of research recognises that inflation may affect expenditure categories differently, evidence on how households reallocate spending across consumption components following inflation shocks remains comparatively scarce. These considerations motivate the present study, which applies an SVAR framework to examine the impact of inflation shocks on private consumption in Malaysia, extends the analysis using a Threshold SVAR approach based on inflation pervasiveness, and further investigates the effects of component-level inflation shocks on household spending behaviour.

3 Methodology

The study employs an SVAR model to examine how exogenous inflation shock propagate through key macroeconomic variables and affect real PC over time. The SVAR approach is well suited for this analysis as it allows for the identification of structural shocks based on economically meaningful restrictions, and facilitates the tracing of their dynamic effects using impulse response analysis. In particular, the framework enables an assessment of the timing, magnitude, and persistence of consumption responses to inflation shocks, which are central to the objectives of this study.

3.1 Specification 1: Baseline SVAR

The baseline specification focuses on estimating the impact of headline inflation shocks on real PC.

To identify structural shocks, the model adopts a short-run recursive (Cholesky) identification scheme, which imposes contemporaneous restrictions on the interaction among variables. The ordering of variables is specified as follows: nominal exports, headline inflation, nominal compensation of employees (COE), and real PC. Nominal exports are ordered first to capture external demand conditions, reflecting the assumption that a small open economy is contemporaneously influenced by global developments but does not instantaneously affect them. Headline inflation is placed next and constitutes the primary structural shock of interest, representing broad-based price pressures faced by households. Nominal COE follows, reflecting the role of labour income as a key transmission channel through which price developments may influence household purchasing power. Real PC is ordered last, allowing it to respond contemporaneously to all preceding variables, consistent with the view that household spending adjusts immediately to changes in both prices and income.

Additional restrictions are imposed to ensure economic plausibility. In particular, the model constrains the contemporaneous effects of lagged domestic variables, specifically PC and COE, on nominal exports, consistent with the assumption that domestic household and labour market conditions do not directly influence external demand. However, no such restriction is applied to headline inflation, as domestic price developments may affect export competitiveness through relative price channels.

All variables are expressed in year-on-year growth rates to mitigate issues related to non-stationarity. The baseline estimation uses quarterly data spanning from 1Q 2006 to 4Q 2025. Inference is conducted using 90% confidence intervals, reflecting the inherent uncertainty surrounding estimated impulse responses. Exogenous dummy variables are included to account for crisis periods and extraordinary events,

thereby preventing such episodes from biasing the estimated relationships.

The empirical framework begins with a standard reduced-form VAR, specified as:

$$Y_t = \sum_{i=1}^p A_i Y_{t-i} + \psi D_t + u_t \quad (1)$$

where:

- Y_t is an $n \times 1$ vector of endogenous variables in the model.
- A_i are $n \times n$ coefficient matrices that capture how past values of the variables influence their current movements.
- D_t is a vector of deterministic and exogenous variables, including crisis dummy variables and the stringency index, which control for extraordinary events that are not generated endogenously within the system.
- u_t is an $n \times 1$ vector of reduced-form residuals with covariance matrix Σ_u , representing unexpected movements or shocks not explained by past dynamics or exogenous controls.
- p denotes the lag length, selected using the Schwarz Bayesian Information Criterion (SBIC).

While this reduced-form specification captures the dynamic interactions among variables, the residuals u_t are generally contemporaneously correlated and therefore cannot be interpreted as economically meaningful structural shocks.

To obtain economically interpretable shocks, the reduced-form VAR is mapped into an SVAR:

$$BY_t = \sum_{i=1}^p \Gamma_i Y_{t-i} + \Psi D_t + \varepsilon_t \quad (2)$$

where:

- B is an $n \times n$ contemporaneous coefficient matrix that captures instantaneous (within-period) interactions among variables.
- Γ_i are $n \times n$ matrices describing lagged relationships in the structural system. For $i = 1$, $B^{-1}\Gamma = A$.
- Ψ is a matrix of coefficients on the exogenous variables. For $i = 1$, $B^{-1}\Psi = \psi$.

- ε_t is a vector of structural shocks satisfying:

$$E[\varepsilon_t \varepsilon_t'] = I_n \quad (3)$$

implying that structural shocks are uncorrelated and have unit variance.

Reduced-form residuals are linear combinations of underlying structural shocks. The relationship between reduced-form and structural shocks is given by:

$$u_t = B^{-1} \varepsilon_t \quad (4)$$

which implies the covariance structure:

$$\Sigma_u = B^{-1} (B^{-1})' \quad (5)$$

In essence, the model explains current economic outcomes as a function of past economic conditions (captured by lagged endogenous variables), external factors (captured by the exogenous variables), and unanticipated shocks (captured by the residuals). By imposing appropriate identifying restrictions (See: Appendix 1: Specifications), these reduced-form shocks can be transformed into structural shocks, enabling analysis of the timing, magnitude, and persistence of their effects on PC and other related variables.

The lag length is determined using the SBIC with a maximum of eight lags considered. The criterion selects two lags, striking a balance between model parsimony and the need to adequately capture the dynamic interactions among the variables.

Post-estimation diagnostics confirm that the system satisfies the stability condition, with all eigenvalues lying within the unit circle (See: Appendix 2: Diagnostic Tests). This ensures that shocks dissipate over time and that impulse response functions can be interpreted meaningfully.

3.2 Extension of Specification 1: Threshold SVAR

While the baseline SVAR captures the average response of consumption to inflation shocks, it does not account for potential non-linearities in the transmission mechanism. To address this, the analysis is extended using a Threshold SVAR framework, which allows for regime-dependent dynamics based on the degree of inflation pervasiveness.

Inflation pervasiveness is defined as the share of items in the consumption basket experiencing price increases, capturing the extent to which inflation is broad-based rather than concentrated in specific components. The core hypothesis is that the impact of inflation on consumption may depend on the breadth of price increases. When inflation is more pervasive, households face fewer opportunities to substitute across goods and services, potentially leading to larger and more persistent consumption adjustments.

This is particularly relevant in the current environment of elevated global oil prices. In Malaysia, these inputs account for a non-trivial share of intermediate consumption across multiple sectors, raising the likelihood that cost pressures will transmit more broadly through production chains and translate into more widespread price increases across final goods and services.

Table 1: Share of oil and gas related intermediate inputs across sectors in Malaysia

% share	Agriculture	Mining	Manufacturing	Services	Construction
Crude Oil and Natural Gas	0.00	36.28	6.78	0.46	0.57
Petroleum Refinery	7.50	8.86	7.46	8.53	10.08
Electricity and Gas	1.43	0.70	2.77	3.56	0.43

Note: See Appendix 3 for more information

To formally capture regime dependence, the baseline VAR is extended into a threshold VAR system in which coefficients vary across regimes defined by inflation pervasiveness:

$$Y_t = \begin{cases} \sum_{i=1}^p A_i Y_{t-i}^{(L)} + \psi D_t^{(L)} + u_t^{(L)}, & \text{if } q_t \leq \gamma \\ \sum_{i=1}^p A_i Y_{t-i}^{(H)} + \psi D_t^{(H)} + u_t^{(H)}, & \text{if } q_t > \gamma \end{cases} \quad (6)$$

where q_t denotes the inflation pervasiveness index, and γ is the threshold value corresponding to the sample median (44.32%). The superscripts L and H refer to low- and high-pervasiveness regimes, respectively.

Consistent with the earlier definition, the sample is partitioned into two regimes based on this threshold. Periods in which inflation pervasiveness exceeds the median are classified as high-pervasiveness regimes, while the remaining periods are classified as low-pervasiveness regimes. It should be noted that observations are not excluded from the estimation. Rather, each observation is assigned to either the

high- or low-pervasiveness regime based on the value of the threshold variable, such that the full sample is retained while allowing regime-specific dynamics to be estimated.

Each regime is estimated separately, while maintaining the same variable ordering and identification strategy as in the baseline specification. This ensures that differences in estimated dynamics across regimes can be attributed to changes in the inflation environment rather than model structure.

Within each regime $s \in \{L, H\}$, the system admits a structural representation:

$$u_t^{(s)} = B^{(s)-1} \varepsilon_t^{(s)}, \quad E \left[\varepsilon_t^{(s)} \varepsilon_t^{(s)'} \right] = I \quad (7)$$

implying that reduced-form shocks are linear combinations of regime-specific structural shocks. This allows the identification of economically meaningful shocks separately for low- and high-pervasiveness environments.

Importantly, the contemporaneous relationships (captured by) and the transmission of shocks may differ across regimes, allowing for asymmetries in both the magnitude and persistence of responses. For instance, inflation shocks may have a stronger and more persistent dampening effect on consumption during high-pervasiveness periods, when price increases are widespread and substitution possibilities are limited.

To extend the sample period and estimate the true coefficient and impulse response functions, nominal COE is excluded in this specification due to data limitations. This allows the estimation to cover a longer time horizon, from 1Q 1994 to 4Q 2025. Aside from this adjustment, all other modelling assumptions, including lag structure, identification strategy, and estimation procedures, remain consistent with the baseline framework.

This approach enables a comparison of the dynamic responses of consumption across different inflation regimes, thereby capturing potential non-linear effects.

3.3 Specification 2: SVAR on Component Inflation Shock

In addition to aggregate inflation dynamics, the study also examines how shocks to component-specific inflation affect consumption behaviour across different categories. This specification aims to assess both the direct impact on spending within the affected category and the spillover effects on other consumption components, thereby capturing the interplay of income and substitution effects.

The analysis adopts the same SVAR framework and identification approach as in the baseline model,

but extends the system to include component-specific inflation and spending components following DOSM’s standard COICOP-based classification to facilitate a more granular examination analysis of component-level dynamics. The SVAR model is estimated separately for each COICOP component to capture potential heterogeneity in the transmission of inflation shocks across expenditure categories.

The full list of components includes:

1. Food and non-alcoholic beverages;
2. Alcoholic beverages and tobacco;
3. Clothing and footwear;
4. Housing, water, electricity, gas and other fuels;
5. Furnishings, household equipment and routine household maintenance;
6. Health;
7. Transport;
8. Communication;
9. Recreation services and culture;
10. Education;
11. Restaurants and hotels; and
12. Miscellaneous goods and services.

The ordering of variables is specified as follows: nominal exports, component-specific inflation, headline inflation, nominal COE, component-level spending, and real PC excluding the affected component. In this specification, component-specific inflation is treated as the main source of exogenous shock, capturing price changes within a particular consumption category. Headline inflation is included to control for broader price dynamics, while nominal COE continues to represent the income channel. Component-specific spending is ordered after these variables, allowing households to adjust expenditure within the affected category contemporaneously. Finally, real PC excluding the affected component is placed last, permitting an evaluation of spillover effects to the rest of the consumption basket.

Consistent with the baseline specification, nominal exports are assumed to be contemporaneously exogenous, and restrictions are imposed to prevent domestic disaggregated consumption variables from influencing external demand. However, no restrictions are placed on the interaction between inflation variables, as both component-level and aggregate price changes may influence each other through cost and pricing channels.

An additional robustness check is conducted by altering the Cholesky ordering of headline inflation

and component-specific inflation. This alternative specification assesses whether the results are sensitive to the assumption regarding the direction of causality between aggregate and component-level price pressures. The objective of this exercise is to assess whether the results are sensitive to the assumption that certain component inflation is driven by headline inflation, for example in sectors such as restaurants and hotels, where prices may respond to higher economy-wide cost pressures.

Overall, this specification provides a more detailed understanding of how households adjust consumption in response to price shocks at the component level, highlighting differences in behaviour across essential and discretionary spending categories.

A detailed description and full breakdown of the specifications used in this study are provided in Appendix 1: Specifications.

4 Data

This study utilises quarterly macroeconomic data sourced from the Department of Statistics Malaysia (DOSM). Quarterly nominal COE data are extrapolated from annual nominal COE figures based on the trend in quarterly Gross Domestic Product (GDP) .

For the baseline SVAR and component-level specifications, the dataset spans the period from 1Q 2006 to 4Q 2025. All variables are expressed in year-on-year (yoy) growth rates to mitigate issues related to non-stationarity and to facilitate the interpretation of impulse responses in percentage point terms. An exception is the inflation pervasiveness measure, which is expressed as the percentage share of items in the CPI basket experiencing price increases.

For the threshold SVAR analysis, the dataset is extended to cover a longer sample period from 1Q 1994 to 4Q 2025 in order to better capture variation across inflation regimes. Due to data limitations, nominal COE is excluded from this specification, while the remaining variables and their definitions remain unchanged.

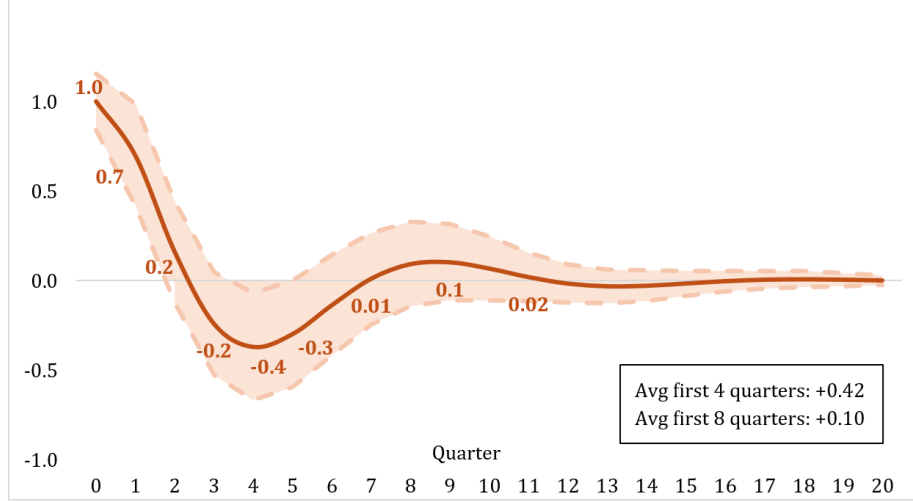
A detailed description and full breakdown of the data used in this study are provided in Appendix 5: Data Description.

5 Results

5.1 Specification 1: Baseline SVAR

The impulse response of headline inflation to an identified inflation shock is illustrated in Figure 1. Specifically, the figure presents the impulse response function of headline inflation following a +1 ppt positive shock to headline inflation, expressed in ppt changes over a 20-quarter horizon.

Figure 1: Impulse response of headline inflation to +1 ppt in headline inflation, % point change



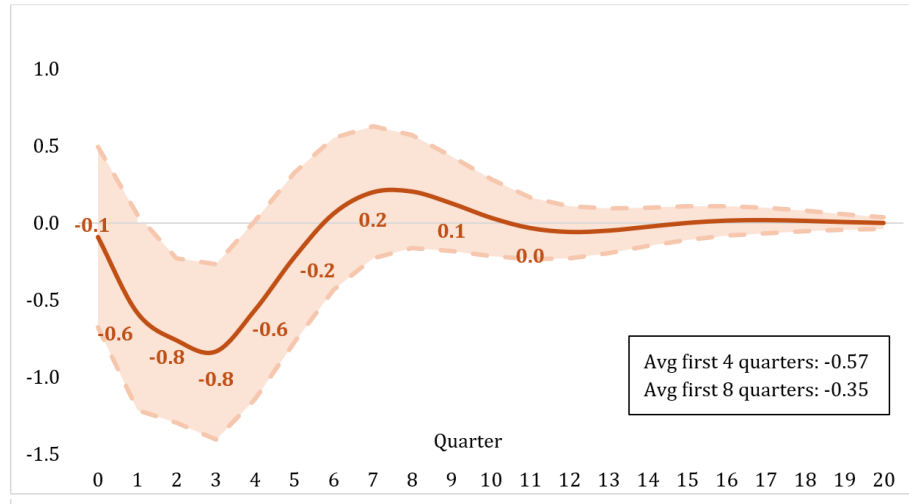
Note: The solid line represents the estimated response, while the shaded bands denote confidence intervals. The box on the right reports average responses over selected horizons.

As shown, the response following +1 ppt positive shock to headline inflation is immediate and pronounced, with the results statistically significant up to the second quarter. This initial impact is followed by a gradual moderation, with the response declining sharply over the subsequent quarters. Over the medium term, the response converges back towards zero, suggesting that the impact of the shock is transitory rather than permanent.

On average, headline inflation increases by approximately 0.41 ppt over the first four quarters and 0.10 ppt over the first eight quarters following the shock. These results indicate that while inflationary shocks dissipate over time, they can exert meaningful short-run effects on price dynamics.

The transmission of a headline inflation shock to PC can be seen in Figure 2.

Figure 2: Impulse response of real PC to +1 ppt in headline inflation, % point change



The impulse response functions indicate that a positive shock to headline inflation exerts a contractionary effect on household consumption, reflecting the erosion of real purchasing power following broad-based price increases.

In terms of timing, the impact on real PC is immediate, with consumption declining instantaneously to higher inflationary pressure. The contraction deepens over the first half of the year, reaching its trough around the third quarter following the initial shock. This pattern suggests that households initially attempt to absorb higher prices but subsequently adjust spending more meaningfully as real incomes come under pressure.

With regards to persistence, the negative impact on real PC is persistent, with the impact lasting for approximately one year before gradually dissipating. This highlights the medium-term drag imposed by inflation shocks on household demand. The results of the impulse response function are statistically significant up to the fourth quarter.

In terms of magnitude, the results show that a 1-ppt increase in headline inflation reduces real PC by an average of about 0.57 ppt over the first four quarters, and 0.35 ppt over the first eight quarters. These findings underscore the economically meaningful impact of inflation on consumption, particularly during periods of broad-based inflation pressures.

5.2 Extension of Specification 1: Threshold SVAR

The impact of a headline inflation shock on real PC varies significantly depending on the degree of inflation pervasiveness², as illustrated in Figures 3 and 4.

Figure 3: Impulse response of real PC to +1 ppt in headline inflation (high pervasiveness), % point change

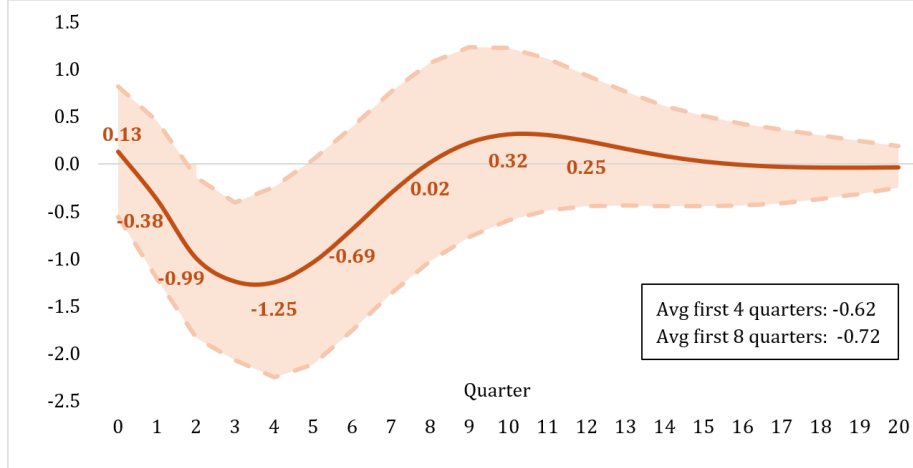
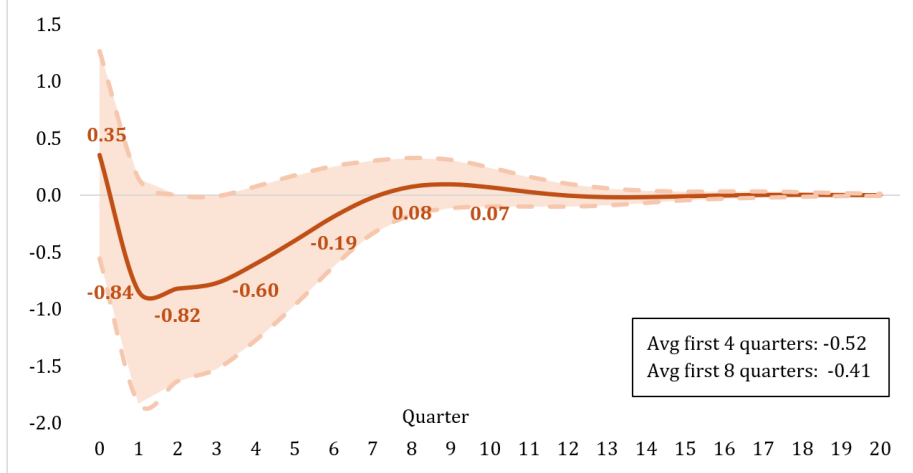


Figure 4: Impulse response of real PC to +1 ppt in headline inflation (low pervasiveness), % point change



The results indicate that the contractionary effects of headline inflation on real PC are more pronounced during episodes of high inflation pervasiveness, compared with periods when inflation pressures are more narrowly concentrated.

In terms of timing, real PC declines immediately in both regimes following a positive inflation shock. However, the initial decline is larger during periods of low inflation pervasiveness, with consumption

²As mentioned in Section D, high pervasiveness regimes are determined by above-median quarterly pervasiveness score (>44.32%) from a sample of 1Q 1994 – 4Q 2025.

falling by 0.84 ppt in the first quarter compared with 0.38 ppt under high pervasiveness. Nevertheless, under high pervasiveness, the negative effects deepen over time, reaching a trough of around 1.25 ppt after four quarters, compared with a shallower trough of 0.82 ppt after two quarters under low pervasiveness.

The degree of persistence of the inflation shock to household spending also differs across regimes. Under high pervasiveness, the negative impact on consumption is more prolonged and only gradually dissipates, reflecting the limited scope for substitution when price increases are widespread. By contrast, when inflation is concentrated in a narrower set of expenditure categories, households appear better able to adjust their spending patterns, resulting in a faster recovery and less persistent decline in consumption.

In terms of magnitude, the results further highlight the importance of inflation breadth. During high pervasiveness episodes, a 1-ppt increase in headline inflation leads to an average decline in real PC of approximately 0.62 ppt over the first four quarters and 0.72 ppt over the first eight quarters. By comparison, under low pervasiveness, the corresponding declines are smaller, at around 0.52 ppt and 0.41 ppt, respectively.

Overall, these findings suggest that the macroeconomic impact of inflation depends not only on the size of the shock but also on how broadly it is distributed across the consumption basket, with more pervasive inflation generating larger and more persistent reductions in household spending.

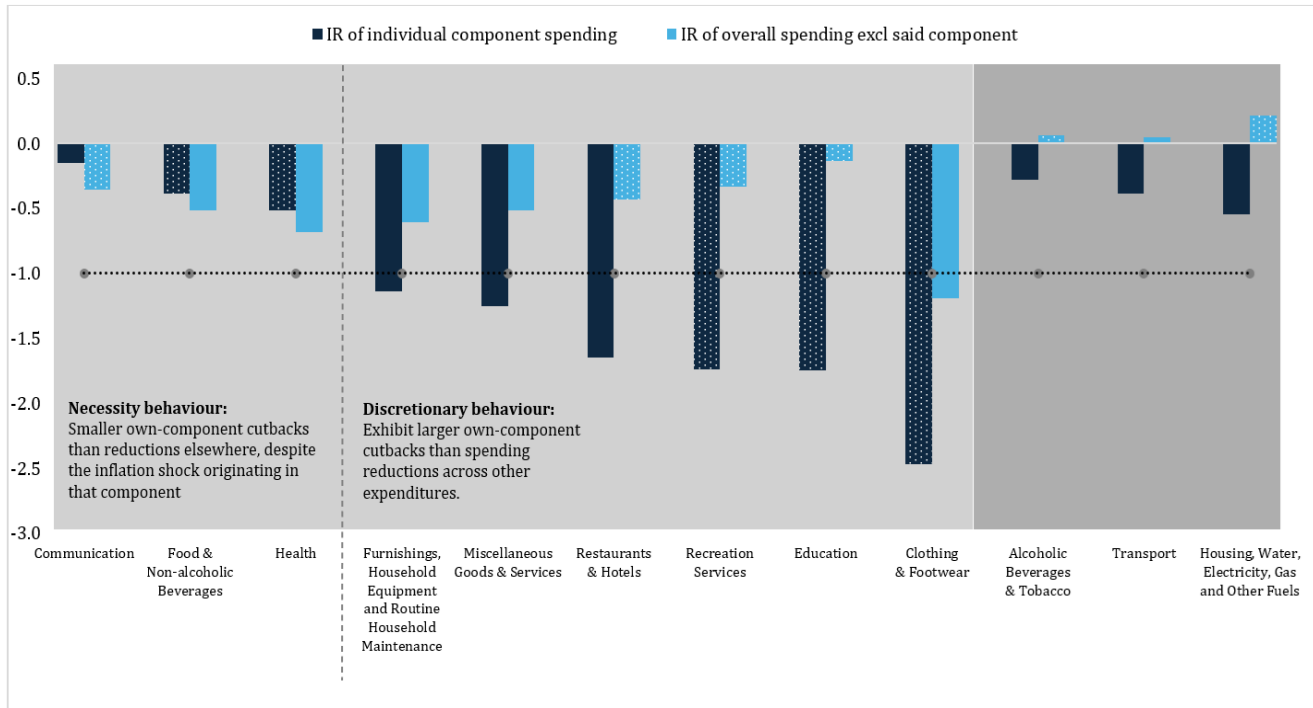
5.3 Specification 2: Impact of component inflation shock

Figure 5 presents the impulse responses of both component-level spending and overall consumption (excluding the affected component) to a 1-ppt increase in component-specific inflation. The results highlight that the transmission of inflation to household spending is heterogeneous across components and depends critically on the role of each component in the household consumption basket.

For necessity items, such as food and non-alcoholic beverages, communications, and health, higher component-specific inflation leads to relatively modest reductions in own-category spending. This suggests that households prioritise these essential expenditures despite higher prices. Instead, adjustments occur primarily through reductions in spending on other categories, as reflected by the larger decline in overall PC relative to own-component spending. This pattern indicates the dominance of income effects, whereby households accommodate higher prices for necessities by compressing discretionary consumption elsewhere.

In contrast, discretionary categories, including furnishings and household equipment, miscellaneous goods and services, restaurants and hotels, recreation services, and clothing and footwear, exhibit larger

Figure 5: Impulse response to +1 ppt in component inflation, 4Q average, % point change



Note: Solid bars denote series for which at least one quarter within the 4Q average exhibits statistically significant results, while dotted bars indicate otherwise.

own-category spending contractions following a price shock. For these components, spending declines within the affected category are more pronounced than the reduction in overall PC, indicating strong own-price sensitivity. This reflects households' willingness to cut back directly on discretionary purchases when prices rise, using these categories as a buffer to protect essential spending.

An exception to this pattern is education, which is typically classified as a necessity. Despite its essential nature, education spending exhibits relatively larger cutbacks, which may appear counter-intuitive. However, this relationship may primarily capture the impact of higher prices charged by private education providers on the demand for private education. Based on the Household Income and Expenditure Survey (HIES) 2024, which captures both private and public education expenditure, the average share of spending on education is less than 2%³, suggesting that most Malaysians continue to benefit from the subsidised public schools and public higher learning institutions. As such, the results may reflect adjustments in households' private education-related expenditures rather than the complete elimination of spending on overall education. These adjustments may include switching from private to public education, enrolling children in less expensive kindergartens, postponing further studies, or

³See Appendix 6: Education Spending Behaviours in Malaysia for more information

reducing spending on supplementary education such as tuition classes.

For certain categories, such as transportation and housing, the responses suggest a stronger role for substitution effects. While these items are important for households, spending reductions within the affected category are evident, implying that households adjust how they consume, by switching modes, delaying expenditure, or opting for lower-cost alternatives, rather than fully offsetting price increases through cuts elsewhere. As a result, the contraction in own-component spending is sizeable, while the spillover to other consumption categories is comparatively more limited.

Overall, the results highlight that the response of household consumption to inflation is not uniform across categories. Instead, it reflects a combination of income, substitution, and own-price effects, with the relative importance of each channel depending on the nature of the goods and services affected. Notably, the analysis focuses exclusively on the average impulse response over the first four quarters.

In an additional robustness check where the Cholesky ordering of component inflation and headline inflation is reversed, the results are generally consistent with those from the original exercise. Overall, a similar sensitivity to +1 ppt in component inflation is observed for individual components spending and PC spending excluding the said component. The only notable deviation arises in the case of education, where the alternative specification suggests a stronger role for substitution effects, with declines in education spending accompanied by increases in expenditure in other categories. This pattern is consistent with households postponing education-related expenditure or switching to lower-cost alternatives, and reallocating the resources saved towards other consumption categories.

The full SVAR Impulse Responses for Specification 2 is included in Appendix 7.

6 Limitations and Scope for Further Research

While this study provides useful insights into the transmission of inflation shocks to real PC in Malaysia, several limitations remain, suggesting avenues for further research.

First, the identification of inflation shocks relies on a recursive (Cholesky) ordering in the SVAR framework. While this approach is widely used in the literature, the results may be sensitive to the imposed ordering assumptions. Although robustness checks are conducted by altering variable ordering, alternative identification strategies, such as sign restrictions, could enhance the credibility of the estimated structural shocks.

Second, the analysis is conducted using aggregate PC data, which may mask heterogeneity across households. Previous literature highlights that consumption responses differ significantly across income groups, reflecting differences in liquidity constraints, savings behaviour, and exposure to price shocks. Incorporating household-level data would allow for a more granular assessment of how inflation affects different segments of the population.

Third, the model does not explicitly account for expectations of inflation, which may play an important role in shaping consumption decisions. Forward-looking households may adjust spending behaviour not only in response to realised price changes but also to anticipated inflation dynamics. Including measures of inflation expectations could improve the analysis of consumption responses.

Fourth, while the paper examines the role of inflation pervasiveness, the measure is based on a threshold defined by the sample median. Future research could explore more refined measures of price dispersion or employ alternative approaches to capturing the breadth of inflation pressures.

Fifth, the analysis does not focus on within-category substitution effects. A better understanding of this aspect is also important, as it would provide more insight into how households reallocate their spending within a category. For example, it could shed light on how households respond to higher retail fuel prices, either by switching to public transport or by reducing their driving.

Finally, the analysis focuses on short- to medium-term dynamic responses. Extending the framework to incorporate longer-term structural relationships, including labour market adjustments or fiscal policy responses, would provide a more comprehensive understanding of the macroeconomic impact of inflation shocks.

7 Conclusion

This paper examines how inflation shocks affect PC in Malaysia using an SVAR framework. The findings show that a positive inflation shock leads to an immediate and persistent decline in real PC. The contractionary effects are economically meaningful, with a 1 ppt increase in headline inflation reducing consumption by around 0.57 ppt over the first year.

Importantly, the results highlight the role of inflation pervasiveness in shaping consumption responses. When price increases are broad-based across the consumption basket, households face limited opportunities to substitute spending, resulting in sharper and more persistent declines in consumption.

The analysis at the component level further reveals heterogeneity in consumption adjustments. Households tend to maintain spending on essential goods, while reducing expenditure on discretionary categories, reflecting the interaction of income and substitution effects.

Overall, these findings have important policy implications. The results show that the macroeconomic impact of inflation depends not only on its magnitude but also on its breadth and composition. In particular, broad-based inflation episodes are more likely to have a pronounced dampening effect on domestic demand.

By providing empirical evidence on the transmission of inflation shocks to PC, this paper contributes to a deeper understanding of household behaviour in Malaysia and offers useful insights for policymakers in assessing the implications of price movements on economic activity.

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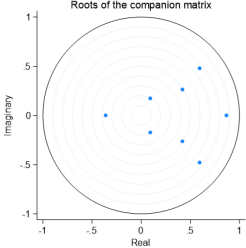
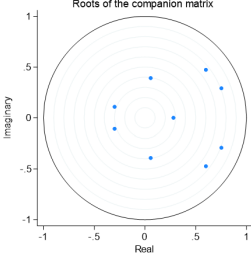
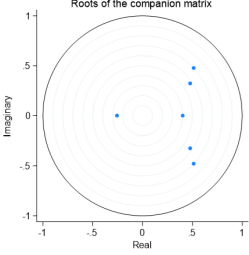
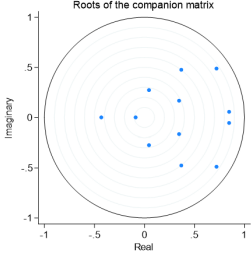
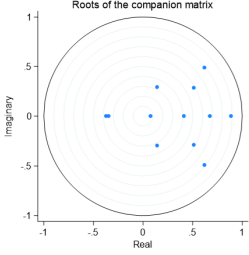
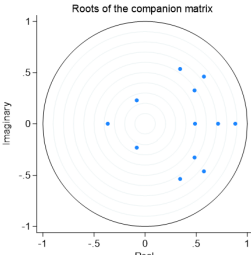
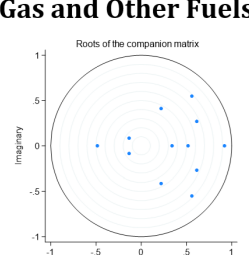
Appendix 1: Specifications

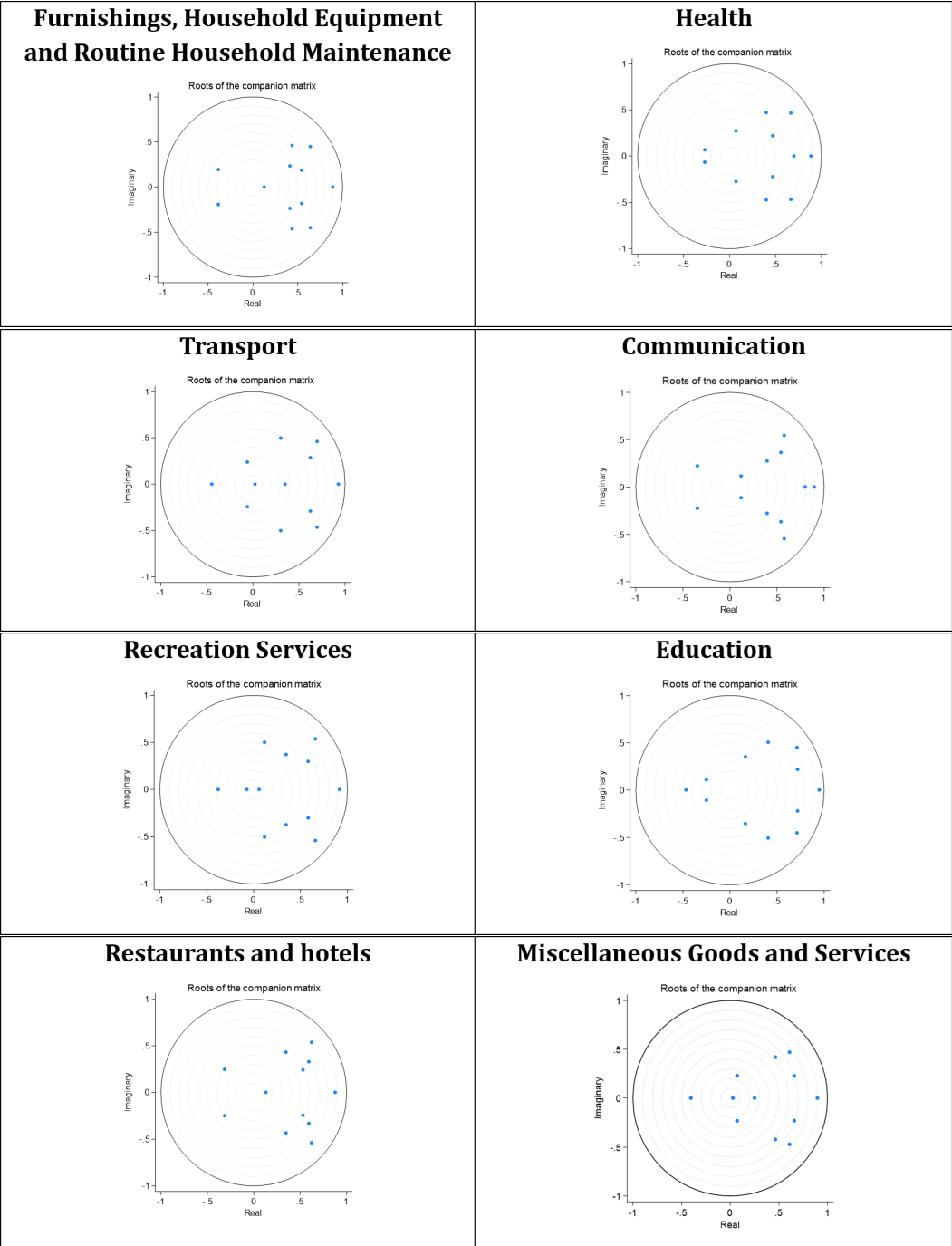
Table 2: Details on SVAR Specifications

Aspects	Specification 1: Baseline SVAR	Specification 2: SVAR on Component Inflation Shock
Objectives	To examine how headline inflation affects PC	To assess how inflation in specific categories affect spending both within the affected component and across other consumption categories, reflecting substitution and income effects
Variables	4 variables (Nominal Exports, Headline Inflation, Nominal COE, Real PC)	6 variables (Nominal Exports, Component-specific Inflation, Headline Inflation, Nominal COE, Component Spending, Real PC excluding said Component)
Periods trained	1Q 2006 – 4Q 2025	1Q 2006 – 4Q 2025
Restrictions, β	$\beta x_t = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \beta_1 & 1 & 0 & 0 \\ \beta_2 & \beta_4 & 1 & 0 \\ \beta_3 & \beta_5 & \beta_6 & 1 \end{bmatrix} \begin{bmatrix} \text{Nominal Exports} \\ \text{Headline Inflation} \\ \text{Nominal COE} \\ \text{Real PC} \end{bmatrix}$ • Headline inflation affects all variables contemporaneously except for nominal exports. • PC responses immediately to shocks to all listed variables.	$\beta x_t = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 \\ \beta_1 & 1 & 0 & 0 & 0 & 0 \\ \beta_2 & \beta_6 & 1 & 0 & 0 & 0 \\ \beta_3 & \beta_7 & \beta_{10} & 1 & 0 & 0 \\ \beta_4 & \beta_8 & \beta_{11} & \beta_{13} & 1 & 0 \\ \beta_5 & \beta_9 & \beta_{12} & \beta_{14} & \beta_{15} & 1 \end{bmatrix} \begin{bmatrix} \text{Nominal Exports} \\ \text{Component Inflation} \\ \text{Headline Inflation} \\ \text{Nominal COE} \\ \text{Component Spending} \\ \text{Real PC excl. Component} \end{bmatrix}$ • Component-specific inflation affects all variables contemporaneously except for nominal exports. • Component spending is affected contemporaneously by exports, component inflation, headline inflation and nominal COE, while imposing contemporaneous impact on PC. • PC responds immediately to all listed variables.

Appendix 2: Diagnostic Test

Table 3: VAR Stability Test Results

Specification 1: Baseline SVAR	
Results: Stable. All eigenvalues lie inside the unit circle	
	
Extension of Specification 1: Threshold SVAR	
Results: Stable. All eigenvalues lie inside the unit circle	
High Pervasiveness 	Low Pervasiveness 
Specification 2: SVAR on Component Inflation Shock	
Results: Stable. All eigenvalues lie inside the unit circle	
Food and Non-alcoholic Beverages 	Alcoholic Beverages and Tobacco 
Clothing and Footwear 	Housing, Water, Electricity, Gas and Other Fuels 



Appendix 3: Share of Intermediate Inputs Across Sectors

The sectoral shares of intermediate inputs were derived using Malaysia’s Input–Output (IO) tables published by DOSM. The analysis draws on the inter-industry transactions matrix, which records the flow of goods and services across sectors as inputs into production.

Specifically, the framework assesses how downstream sectors (agriculture, mining, manufacturing, services, and construction) are exposed, both directly and indirectly, to global oil and commodity price movements. This includes transmission through energy-intensive industries, oil feedstock-dependent sectors, and segments with high cost pass-through.

Exposure is quantified by extracting the value of intermediate inputs sourced from the identified upstream sectors, accounting for both domestic production and import content. These inputs are then normalised by total sectoral output to derive input cost shares.

The resulting estimates provide an indication of how cost pressures propagate through Malaysia’s production structure. They capture not only the immediate impact on energy-intensive sectors but also the broader transmission across supply chains, which may contribute to more persistent and generalised inflationary pressures.

See Table 4 for the full list of sectors in Malaysia with exposure to global oil and commodity prices.

Table 4: Share of intermediate inputs across sectors in Malaysia with exposure to oil and commodity prices (%)

		Agriculture	Mining	Manufacturing	Services	Construction
Oil-related Sectors	Crude Oil and Natural Gas	0.00	36.28	6.78	0.46	0.57
	Petroleum Refinery	7.50	8.86	7.46	8.53	10.08
	Electricity and Gas	1.43	0.70	2.77	3.56	0.43
Energy-intensive Production	Basic Chemicals	1.63	1.26	3.82	0.20	1.55
	Fertilizers	0.48	0.00	0.04	0.13	0.00
	Tyres	0.00	0.01	0.35	0.61	0.00
	Rubber Processing	0.00	0.04	0.40	0.00	0.00
	Rubber Products	0.00	0.00	0.60	0.02	0.00
	Plastics Products	0.56	0.12	0.70	1.65	1.19
	Cement, Lime and Plaster	0.00	0.02	0.30	0.01	4.28
	Concrete & Other Non-Metallic	0.00	0.07	0.44	0.02	9.86
	Mineral Products	0.00	0.07	0.44	0.02	9.86
	Iron and Steel Products	0.00	0.06	1.97	0.05	8.26
	Basic Precious and Non-Ferrous Metals	0.00	0.01	2.71	0.07	1.65
	Land Transport	0.62	0.05	0.84	0.67	1.48
Transport Sectors	Water Transport	0.35	0.00	0.42	0.24	0.39
	Air Transport	0.08	0.10	0.12	0.21	0.22
	Other Transport Services	0.11	2.99	0.16	0.33	0.16
Agriculture and Food	Paddy	0.02	0.00	0.21	0.00	0.00
	Food Crops	0.01	0.00	0.27	0.20	0.00
	Vegetables	0.01	0.00	0.02	0.15	0.00
	Fruits	0.10	0.00	0.04	0.09	0.00
	Rubber	0.00	0.00	0.46	0.08	0.00
	Oil Palm	0.00	0.00	5.83	0.63	0.00
	Fishing	0.07	0.00	0.15	0.24	0.00
	Dairy Production	0.00	0.00	0.19	0.07	0.00
	Grain Mills	0.00	0.00	0.45	0.12	0.00
	Bakery Products	0.00	0.00	0.02	0.16	0.00
	Other Food Processing	0.00	0.00	0.26	0.14	0.00
	Residential	0.00	0.00	0.00	0.00	0.00
Construction and Heavy Industry	Non-Residential	0.00	0.00	0.00	0.00	0.00
	Civil Engineering	0.00	0.06	0.00	0.49	0.85
	Special Trade Works	0.32	2.98	0.12	5.26	6.02
	Wholesale & Retail Trade and Motor Vehicle	10.22	12.24	11.24	6.95	12.63
Logistics and Trade	Port and Airport Operation Services	0.01	0.35	0.00	0.85	0.00
	Highway, Bridge and Tunnel Operation Services	0.00	0.00	0.00	0.60	0.00

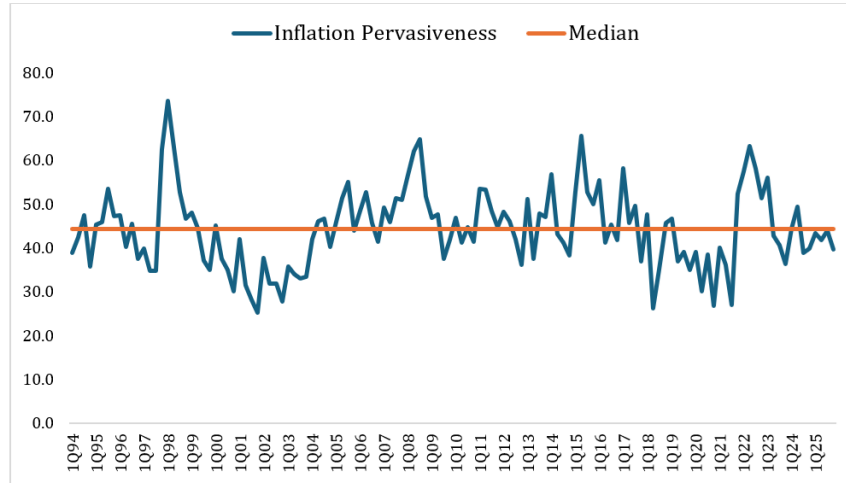
Appendix 4: Inflation Pervasiveness

Inflation pervasiveness refers to the breadth of price increases across the consumption basket, capturing the extent to which inflation is concentrated in a limited number of items or broadly distributed across goods and services.

It is represented by the share of items in the CPI basket that experiences month-on-month increase in prices for a particular month, providing a useful indicator of whether inflationary pressures are narrow-based or widespread, with important implications for household real income and consumption behaviour.

The figure below shows inflation pervasiveness in Malaysia from 1994 to 2025:

Figure 6: Inflation Pervasiveness, % share of items in CPI basket



To examine potential non-linearities and state-dependent effects, regimes are classified based on the distribution of the pervasiveness measure. Specifically, periods of high inflation pervasiveness are defined as those in which the quarterly average pervasiveness exceeds the sample median threshold of 44.32%, based on data spanning from the first quarter of 1994 to the fourth quarter of 2025. Periods below this threshold are correspondingly classified as low pervasiveness regimes.

This classification allows the analysis to distinguish between episodes where inflation is broad-based and more likely to exert widespread pressure on household purchasing power, and those where price increases remain relatively contained within specific sectors.

Appendix 5: Data Description

Table 5: Data Description and Sources

Variables (%yoy)	Description	Data Source
Specification 1: Baseline SVAR		
Nominal Exports	Total value of a country’s goods sold to other countries, at purchasers’ price.	DOSM
Headline Inflation	The annual change in prices across constant, representative ‘basket’ of goods and services faced by households.	DOSM
Nominal COE	More comprehensive coverage of remuneration paid to employees (include all sectors and non-monetary benefits). Note: given quarterly nominal COE is unavailable, it is extrapolated from annual data based on quarterly GDP movements.	DOSM
Real PC	Total expenditure of households on goods and services for their personal consumption.	DOSM
Extension of Specification 1: Threshold SVAR		
Inflation Pervasiveness (%)	Inflation pervasiveness measures the share of goods and services experiencing price increases compared to the previous month at a given time, indicating whether inflation is narrow or broad-based.	DOSM
Specification 2: SVAR on Component Inflation Shock		
Component Inflation	Measures price changes within specific categories of households’ consumption.	DOSM
Component Spending	Expenditure of households on goods and services within a specific spending category.	DOSM
Real PC excluding Component	Real PC minus Component Spending.	

Note: [1] All variables used are the year-on-year growth, except for inflation pervasiveness, which is the share of items in the Consumer Price Index (CPI) basket that experiences price increase in month-on-month growth for a particular month. High pervasiveness regimes are determined by above-median quarterly pervasiveness score (44.32%) from a sample of 1Q 1994 – 4Q 2025.

[2] Spending categories include: (1) Food and Non-alcoholic Beverages, (2) Alcoholic Beverages and Tobacco, (3) Clothing and Footwear, (4) Housing, Water, Electricity, Gas and Other Fuels, (5) Furnishings, Household Equipment and Routine Maintenance, (6) Health, (7) Transport, (8) Communication, (9) Recreation Services, (10) Education, (11) Restaurants and Hotels, and (12) Miscellaneous Goods and Services.

Appendix 6: Education Spending Behaviour in Malaysia

This appendix provides additional context for interpreting the relatively strong response of education spending to component-specific inflation shocks observed in Section 6.3. While education is typically classified as an essential expenditure, the impulse response results suggest comparatively larger cutbacks in education spending following price increases. This section discusses institutional and compositional factors that help reconcile this finding.

According to the HIES 2024, education accounts for only about 1.4% of total household expenditure on average. This share is persistently low and has remained broadly stable over time, with education spending recorded at 1.5% in HIES 2022. By comparison, healthcare expenditure, which is also considered an essential service, accounts for a substantially larger share of household spending, at around 2.6% in HIES 2024 (2.8% in HIES 2022). The relatively small expenditure share of education suggests that most Malaysian households continue to rely predominantly on subsidised public education services.

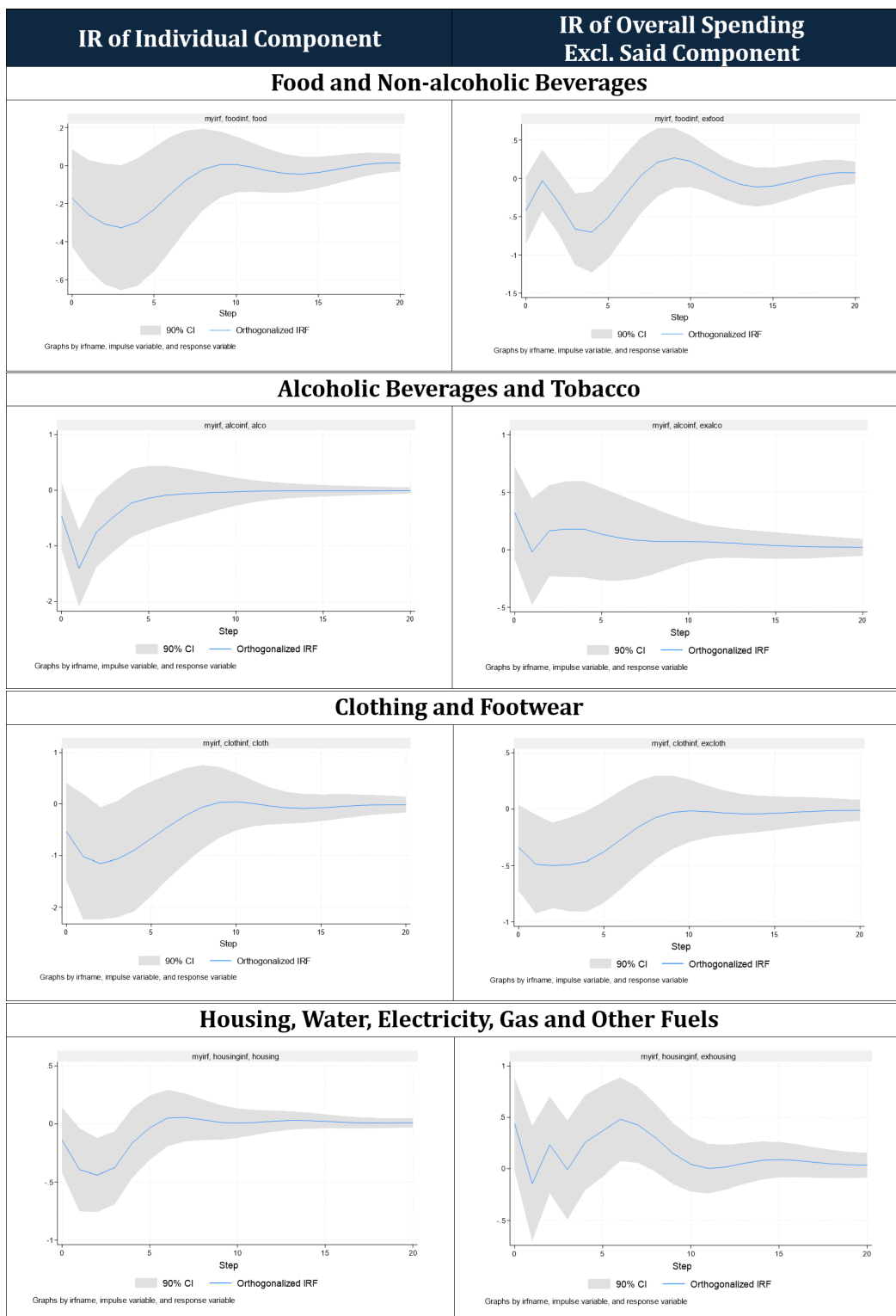
The low average share of education spending is further explained by its composition. Household education expenditure in Malaysia is concentrated mainly in pre-primary and primary education, segments where private provision is more prevalent. Spending in these areas is therefore more price-sensitive, as households can adjust participation relatively easily in response to higher fees. Such adjustments may include switching from private to public education, delaying enrolment, reducing expenditure on supplementary services such as tuition classes, or opting for informal childcare arrangements.

This institutional context implies that the impulse responses captured in the SVAR analysis primarily reflect adjustments in discretionary, privately financed education expenditure rather than reductions in access to education per se. In contrast to public education, which is largely subsidised and exhibits low price elasticity, private education spending is more responsive to price changes. As a result, increases in education-related prices are more likely to induce substitution behaviour, with households reallocating expenditure towards other consumption categories.

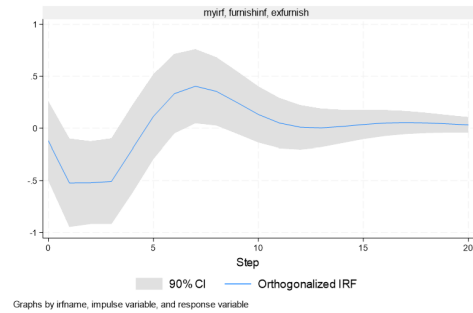
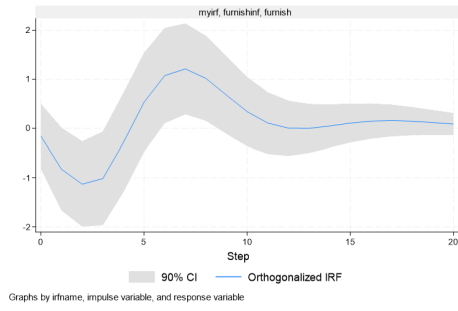
Overall, the evidence suggests that the relatively large contraction in education spending following component-specific inflation shocks should not be interpreted as households deprioritising education. Instead, it reflects the limited role of education in the average household consumption basket, the dominance of subsidised public provision, and the greater price elasticity of private education expenditure. These factors help explain why education behaves more like a discretionary category in the empirical results, despite its classification as a necessity.

Appendix 7: SVAR Impulses Responses for Specification 2

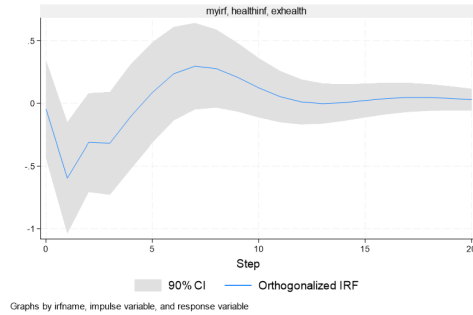
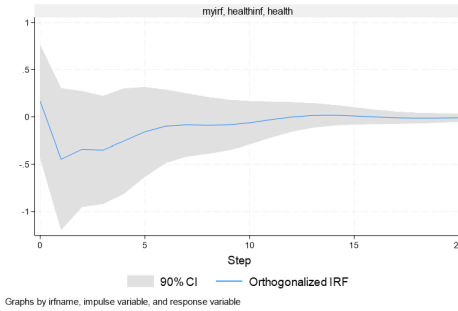
Table 6: Impulse response to +1 ppt in component inflation



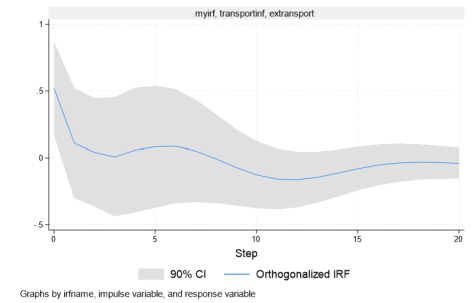
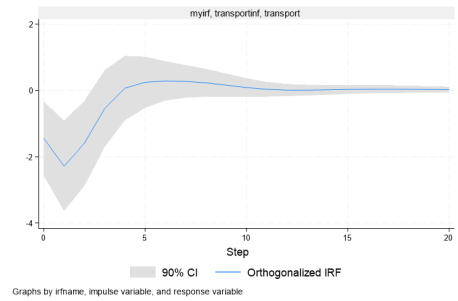
Furnishings, Household Equipment and Routine Household Maintenance



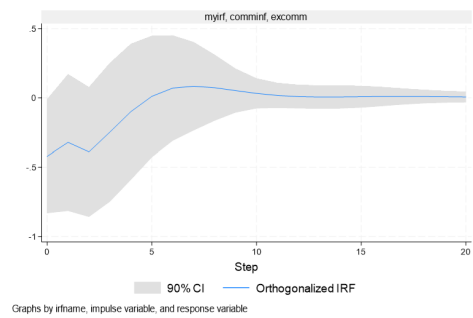
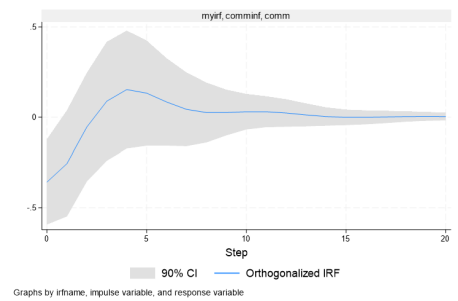
Health



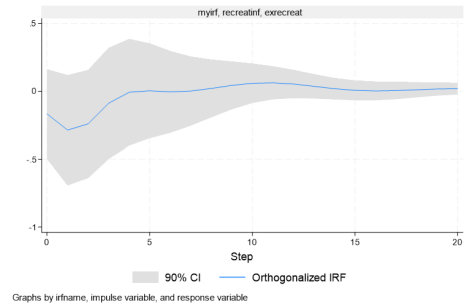
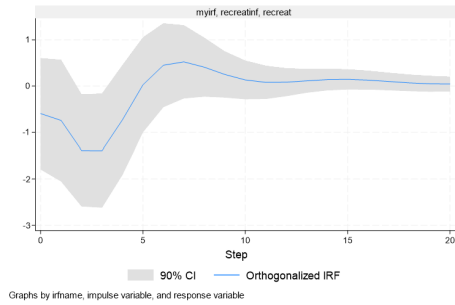
Transport



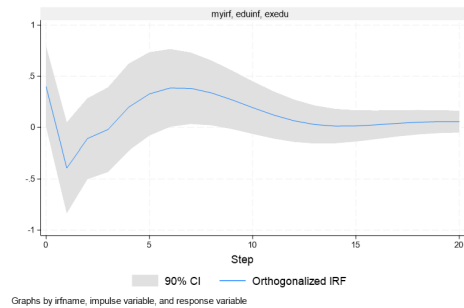
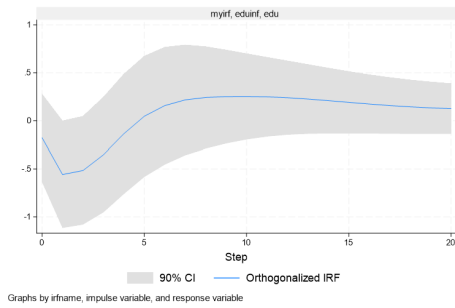
Communication



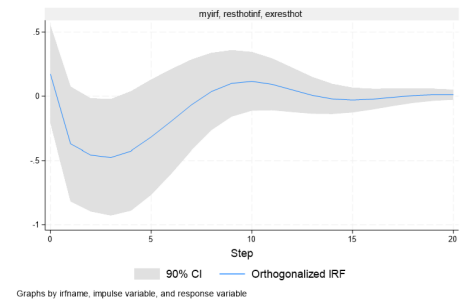
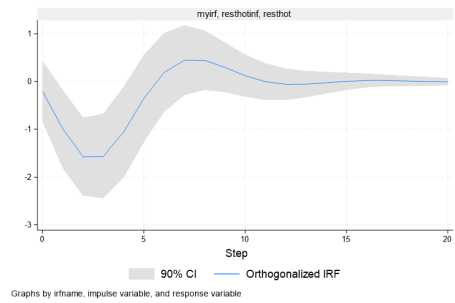
Recreation Services



Education



Restaurants and Hotels



Miscellaneous Goods and Services

