PROFIT AND DEMAND: A CROSS-COUNTRY ANALYSIS OF FUNCTIONAL INCOME DISTRIBUTION AND ITS MACROECONOMIC EFFECTS

10. SEMESTER CAND. OECON

Written by Jonas Buskov Sørensen & Celina Heiden

Student number: 20204268 & 20203933

Date: 03-06-2025

Abstract

This thesis examines how changes in functional income distribution specifically, shifts in the profit share affect aggregate demand across ten advanced economies. Rooted in post-Kaleckian macroeconomic theory, the analysis explores whether rising profit shares stimulate or dampen demand, and whether this relationship varies across components such as private consumption, private investment, and net exports. The theoretical distinction between wage-led and profit-led regimes serves as the guiding framework, wherein demand responses depend on the relative strength of consumption versus investment and export channels. The empirical analysis uses quarterly data covering the periods 1995–2006 and 2010–2019, split to capture potential structural shifts following the global financial crisis. A local projection framework is applied to estimate the dynamic response of each demand component to a one percentage point increase in the profit share. The macroeconomic variables are processed to account for seasonal variation and medium-run cycles, ensuring that the estimated responses reflect cyclical dynamics rather than long-term trends or seasonal noise. Models are estimated separately for each country and time period to capture structural differences and allow for meaningful temporal comparisons. The results reveal clear cross-country variation and a mixture of demand regimes. In most cases, higher profit shares reduce private consumption, reflecting the lower marginal propensity to consume from capital income. Private investment responses are more variable with some countries exhibiting stronger profit-led investment dynamics, particularly in the post-crisis period, while others show muted or slight negative effects. Net exports play a modest role overall, although small open economies exhibit some improvements in trade balances following distributional shifts. Regime classification based on aggregate demand effects shows that some countries are consistently wage-led or profit-led, while others transition or fall into ambiguous territory. These findings underscore the importance of country-specific institutional structures such as labor market institutions, financial systems, and openness in shaping macroeconomic outcomes. The study contributes to the literature on functional income distribution by offering a comparative and time-sensitive assessment of how distributional changes influence demand formation. It also provides relevant insights for macroeconomic policy, suggesting that growth strategies should be tailored to the structural features of each economy rather than relying on uniform prescriptions.

Contents

1 Introduction

In recent decades, the distribution of national income between wages and profits, referred to as functional income distribution, has re-emerged as a central topic in macroeconomic research. The post-Keynesian tradition, particularly the Kaleckian and post-Kaleckian schools, has emphasized how shifts in this distribution can influence the dynamics of aggregate demand and shape national growth regimes. Within this framework, the distinction between wage-led and profit-led economies serves as a central organizing principle: whether a rising wage share stimulates demand via household consumption, or whether a higher profit share boosts output through private investment and improved net exports (Bhaduri & Marglin 1990). This thesis investigates how changes in the profit share affect key components of aggregate demand, private consumption, private investment, and net exports across a sample of ten advanced economies. The analysis is conducted using quarterly data spanning the periods 1995–2006 and 2010–2019, allowing for a comparative assessment of macroeconomic behavior before and after the global financial crisis. To identify the short- and medium-run effects of distributional changes, the study applies a local projection framework, which estimates impulse responses to a one percent increase in the profit share, separately for each country and time period. Rather than focusing on any single regime or outcome, the project is structured around a decomposition of demand effects: how does a rising profit share influence private consumption, to what extent does it affect private investment behavior, and whether it improves or worsens the external balance through changes in exports and imports. By calculating the cumulative contribution of each channel, the analysis also classifies the overall regime type of profit-led, wage-led, or ambiguous and tracks how this classification evolves across time and institutional context. The findings offer insights into how income distribution shapes demand formation in advanced capitalist economies. They also provide a foundation for discussing the broader policy implications of wage and profit dynamics in a post-Keynesian framework, especially considering the shifts in labor markets, financial systems, and international trade that have marked the past three decades.

Before turning to the empirical design of this study, it is useful to review how previous research has approached the wage-led versus profit-led distinction and how these approaches have evolved over time. Building on this framework, previous research has examined how different economies respond to shifts in income distribution and whether they exhibit wage-led or profit-led characteristics. A substantial body of empirical work has emerged around this question, offering theoretical insights and comparative evidence across countries and time periods. The following review outlines some of the key findings from this literature, while also identifying limitations that the present study seeks to address through a more disaggregated and dynamic approach. Empirical work has explored the prevalence of these regimes across countries and time periods. Stockhammer, Onaran, and Ederer (2009) found that the Eurozone displays wage-led characteristics, although some individual countries exhibited profit-led features due to trade openness. Onaran and Galanis (2014) developed a global model showing that large economies such as the United States, the Euro Area, and Japan are generally wage-led. They also emphasized that coordinated wage increases could yield mutually reinforcing positive effects on global demand. More recent studies have challenged this binary classification by emphasizing the role of structural and institutional factors. Financialization, labor market reforms, and globalization have all reshaped the relationship between income distribution and aggregate demand. Stockhammer (2017) argues that financialization, through increased household indebtedness and a focus on shareholder value, has weakened the traditional wage-consumption link. Hein et al. (2017) further note that financialization increases the profit share while suppressing wage growth and productive investment, exacerbating macroeconomic instability. Other studies have drawn attention to the context-dependent nature of demand regimes. Onaran and Obst (2016) find that most EU-15 countries exhibit wage-led dynamics, but these effects vary depending on factors such as openness, fiscal policy, and labor market institutions. Carvalho and Rezai (2016) add that personal and functional income distribution must be considered jointly to understand consumption dynamics in financialized economies. Despite these advancements, three main limitations persist in the literature. First, many empirical studies rely on static or linear models that do not account for how the effects of distributional changes unfold over time. The macroeconomic impact of a rising profit share may evolve gradually, with delayed or compounding effects that are not captured in single-equation or short-horizon estimates. Second, most analyses are conducted over long, pooled timeframes that risk averaging out important temporal variation. By estimating local projections separately for two distinct periods pre- and post-global financial crisis this study allows for a clearer view of how the relationship between income distribution and aggregate demand may have shifted over time. Third, while cross-country studies often seek general patterns, substantial institutional and structural differences across economies remain a challenge. This project addresses that by estimating country-specific models, thus preserving heterogeneity in macroeconomic behavior and policy context.

This thesis revisits the question of whether modern economies are wage-led or profit-led. Using data from ten advanced economies across two time periods, 1995 to 2006 and 2010 to 2019, it investigates the dynamic effects of profit share fluctuations on private consumption, private investment, and net exports. The analysis builds on the Post-Kaleckian model, extending the standard empirical framework by applying Local Projections to estimate the dynamic effects of changes in the profit share on key components of aggregate demand. By focusing on ten advanced economies and dividing the sample into two distinct periods 1995–2006 and 2010–2019 the study allows for a comparative perspective on how macroeconomic responses to income distribution have evolved before and after the global financial crisis. This approach makes it possible to capture the unfolding of demand effects over time, rather than relying on static estimates. The findings have direct implications for economic policy. If wage-led dynamics dominate, policies that strengthen labor incomes such as collective bargaining, minimum wage laws, and redistributive fiscal measures can enhance both equity and demand. If profit-led mechanisms prevail, growth strategies may need to emphasize investment incentives and external competitiveness. In either case, the results underscore the importance of tailoring macroeconomic strategies to country-specific institutional and structural conditions. By tracing how distributional changes affect demand components over time, this research contributes to a more nuanced understanding of functional income distribution as a driver of macroeconomic performance.

1.1 Problem Statement

This thesis seeks to answer the following central question:

- To what extent are modern economies wage-led or profit-led, and how do changes in the Profit share affect macroeconomic performance across countries and over time?

More specifically, the analysis investigates whether increases in the profit share stimulate or dampen private consumption, private investment, and net exports across a set of advanced economies. Rather than assuming static effects, the use of Local Projections allows the study to trace the dynamic response of each demand component over a three-year horizon. By estimating these effects separately for the periods 1995–2006 and 2010–2019, the analysis also examines whether the relationship between functional income distribution and aggregate demand has shifted over time particularly in the aftermath of the global financial crisis and amid broader structural changes such as financialization and globalization. The thesis contributes empirically and methodologically to the literature on functional income distribution and macroeconomic growth regimes by addressing these questions.

1.2 Theoretical Framework

This thesis is grounded in the Post-Keynesian and Kaleckian traditions, which reject the neoclassical assumption of distributional neutrality. Instead, these heterodox approaches argue that functional income distribution is not only an outcome of macroeconomic processes but also a determinant of aggregate demand and long-run growth (Lavoie, 2014; Hein, 2014). Empirical studies based on this framework, including Onaran and Galanis (2014) and Stockhammer et al. (2009), demonstrate that a declining wage share negatively affects growth in most advanced economies, challenging the mainstream justification for wage moderation as a competitiveness strategy. Central to this approach is the Bhaduri–Marglin (1990) model, which formalizes Kalecki's insight that the composition of income between wages and profits has demand-side consequences due to class-based differences in marginal propensities to consume. Since workers tend to spend a larger portion of their income than capitalists, a redistribution from wages to profits typically suppresses consumption. However, the same shift may stimulate private investment and improve net exports through lower unit labor costs. The net effect of such a redistribution determines whether an economy is wage-led or profit-led. In wage-led regimes, an increase in the wage share raises aggregate demand because the consumption channel dominates. In profit-led regimes, the investment and net export channels are stronger, rendering higher profit shares expansionary (Stockhammer, 2011).

Empirical estimations using this framework reveal considerable heterogeneity across countries. Onaran and Galanis (2014), using a global multi-country model, show that a decline in the wage share leads to lower growth in the euro area, the United States, Japan, and South Korea, while only a few countries such as China, India, and Mexico exhibit profit-led characteristics. Moreover, the authors find that a simultaneous decline in the wage share across all countries reduces global growth, as relative price advantages are neutralized when all trading partners engage in wage suppression policies. Building on this foundational model, subsequent theoretical developments have incorporated additional mechanisms. One major extension involves financialisation, understood as the growing dominance of financial motives, financial markets, and financial actors in the economy. Stockhammer (2009, 2017) and Hein (2014) argue that financialisation weakens the traditional wage–consumption link by encouraging debt-financed consumption and increasing the influence of shareholder value orientation. For instance, Onaran et al. (2011) show that while rising financial wealth and rentier income can temporarily sustain consumption, the accompanying decline in wage shares and increase in household debt ultimately undermine macroeconomic stability. These dynamics were particularly evident in the United States prior to the 2007–2008 financial crisis. A second important extension concerns the open economy dimension. Blecker (1989) and Hein and Vogel (2008) argue that in small and highly open economies, an increase in the wage share may reduce net exports due to higher unit labor costs and reduced price competitiveness. However, Onaran and Obst (2016) show that many EU15 countries remain wage-led even when openness is taken into account. Their results indicate that the effects of changes in the wage share depend on trade structures, import propensities, and the exchange rate regime, which can offset or reinforce competitiveness effects (Onaran and Obst).

Institutional and policy variables also influence the demand regime. Labor market institutions such as collective bargaining coverage, union density, and minimum wage legislation can strengthen the consumption channel by securing real wage growth (Hein and Tarassow, 2010; Storm and Naastepad, 2012). Furthermore, Onaran and Galanis (2014) emphasize the role of fiscal policy in shaping aggregate demand. Public expenditure and redistribution mechanisms can counteract private sector imbalances and shift an economy toward a wage-led demand regime, even if it is initially profit-led in the private sector alone (Onaran, O. and Galanis). Recent contributions have also examined the interaction between functional and personal income distribution. Carvalho and Rezai (2016) argue that even if the aggregate wage share remains stable, a rise in top income shares can dampen consumption because the ultra-rich exhibit a lower marginal propensity to consume. This finding suggests that rising personal income inequality may exacerbate the contractionary effects of a declining wage share, reinforcing the need to address both dimensions of inequality within a unified macroeconomic framework. The Post-Kaleckian model, particularly in its augmented form that includes financialisation, open economy effects, and institutional variation, provides a robust theoretical framework for analyzing the relationship between income distribution and growth. The empirical literature increasingly supports the conclusion that wage-led regimes are both theoretically sound and empirically relevant across a wide range of advanced economies. From a policy perspective, these insights challenge the dominant emphasis on wage restraint and internal devaluation. Instead, they support a strategy based on strengthening labor institutions, raising wage floors, and implementing redistributive fiscal policies to foster stable and inclusive economic growth (Hein, 2015; Stockhammer, 2015).

1.3 Methodology

To investigate these questions empirically, the study adopts a macroeconometric approach grounded in post-Kaleckian theory designed to capture the dynamic effects of functional income distribution on key macroeconomic aggregates private consumption, private investment, and net exports across time, countries, and institutional contexts. The methodology applies local projection techniques to estimate the effects of changes in the profit share over a multi-period horizon. By estimating country-specific models separately for the pre- and post-crisis periods, the analysis allows for temporal variation in the relationship between income distribution and aggregate demand, without imposing overly restrictive assumptions about the underlying data-generating process.

The analysis is based on quarterly panel data for ten advanced economies over two distinct periods: 1995–2006 and 2010–2019. Dividing the sample into pre- and post-crisis periods allows for an examination of structural shifts in the relationship between income distribution and aggregate demand, particularly in the wake of the global financial crisis and subsequent policy responses. Countries are selected based on data availability and the comparability of national accounts and labor cost statistics. Core variables include private consumption, private investment, exports, imports, adjusted wages and profits, interest rates, household debt, and price indices. The empirical approach relies on the Local Projections (LP) method introduced by Jordà (2005), which allows for the direct estimation of impulse response functions without requiring strong assumptions about the joint dynamics of all variables. This method is particularly well-suited for macroeconomic data with moderate time dimensions and possible structural breaks. For each country and time period, a series of regressions is estimated to trace how private consumption, private investment, and net exports respond to a one percentage point increase in the profit share over a twelve-quarter horizon. Each regression includes a set of control variables such as GDP, interest rates, and household debt to account for broader macroeconomic conditions. By estimating the models separately for each country and subperiod, the analysis captures both temporal shifts and cross-country heterogeneity in the macroeconomic effects of distributional changes. The cumulative responses are used to assess whether each economy exhibits wage-led, profit-led, or ambiguous demand regimes and how these classifications may have evolved between the two periods. This design highlights the dynamic nature of functional income distribution and its role in shaping aggregate demand across different institutional and historical contexts.

The dataset undergoes extensive preprocessing to ensure comparability and robustness. All nominal series are converted to real terms using series-specific deflators. Seasonal adjustment is conducted using a four-quarter differencing method and testing for stationarity using the Augmented Dickey-Fuller and KPSS tests. The Hodrick-Prescott filter removes low-frequency trends to preserve medium-run variation and avoid over-differencing, enabling meaningful interpretation of cyclical fluctuations. The transformed data are then tested again to confirm the absence of residual seasonality or unit roots. To validate the empirical strategy, several robustness checks are conducted. These include varying lag structures, using alternative deflators, adjusting the filtering approach, and estimating impulse responses using structural VAR models with recursive identification. In addition, the analysis examines the sensitivity of results to different shock definitions and to the inclusion or exclusion of the global financial crisis years (2007–2009). Particular attention is paid to the stability of impulse responses across subperiods and to the consistency between the LP estimates. Finally, the estimation results are used to construct marginal effects of changes in income distribution on aggregate demand components. These effects are scaled by historical income and expenditure shares, yielding interpretable measures of the extent to which higher profit shares raise or lower consumption, private investment, and net exports. These country-specific marginal effects are then aggregated and compared across the two periods, allowing for empirical classification of economies as wage-led or profit-led and for assessing whether these classifications have changed over time. The empirical strategy of this thesis combines theory-consistent modeling with flexible and robust estimation tools. By applying Local Projections across countries and time periods, the methodology captures the dynamic and country-specific effects of changes in functional income distribution on macroeconomic performance, offering a flexible framework for tracing how these relationships evolve over time.

2 Theory

2.1 Post-Keynesian Theory of Functional Income Distribution and Growth Regimes or The Augmented Post-Kaleckian Model

The post-Keynesian approach to functional income distribution and growth regimes analyzes how shifts in the distribution between wages and profits influence aggregate demand and economic growth. Central to this framework is the post-Kaleckian model, which determines whether growth is wage-led or profit-led. Economic and political factors shape functional income distribution and affect private investments and public fiscal initiatives. Higher wages boost private consumption and drive demand in a wage-led economy, whereas a profit-led economy relies on private investments and exports for growth. Small, open economies tend to be profit-led due to the significance of net exports. The post-Kaleckian model evaluates this dynamic by estimating private consumption based on wage and profit shares while considering public spending as a stabilizing factor. Fiscal policies, such as public investments and social benefits, can mitigate structural constraints in both wage- and profit-led economies. Empirical studies do not definitively conclude whether economies are predominantly wage- or profit-led, as methodological differences and complex interactions affect the results. Hein (2014) highlights that modern capitalist systems incorporate unemployment, and firms set prices based on markups, which can make the economy less sensitive to demand fluctuations. The Bhaduri-Marglin model emphasizes the role of profit rates in investment decisions.

The augmented post-Kaleckian model integrates financialization, globalization, technological change, and public spending. Financialization has reduced the wage share and increased household debt, while international trade and capital mobility have exerted downward pressure on wages. Technological change can support demand through productivity-driven wage growth or reduce the wage share via automation. Public investments in technology and infrastructure thus play a crucial role in ensuring sustainable growth. From a policy perspective, wage-led economies require stronger labor rights, higher minimum wages, and active fiscal policies, while profit-led economies can promote balanced growth through strategic industrial policies and managed exchange rates. Financialized economies need stricter financial market regulations to ensure macroeconomic stability. Overall, the post-Keynesian perspective emphasizes the importance of demand-side factors in shaping macroeconomic outcomes, while the augmented model incorporates financialization, globalization, and technological change to address contemporary economic challenges.

The model examines how changes in the share of profits in total income impact the overall economy by influencing different components of private demand. It does this by breaking down GDP (Y) into its key demand-side elements: private consumption (C), private investment (I), and net exports (NX), where net exports are the difference between exports (X) and imports (M).

Mathematically, this relationship is expressed as:

$$\frac{\partial Y}{\partial ps} = \frac{\partial C}{\partial ps} + \frac{\partial I}{\partial ps} + \frac{\partial NX}{\partial ps} \qquad (1)$$

$\frac{\partial Y}{\partial ps}$ Represents the total effect of a change in profit share on GDP. $\frac{\partial C}{\partial ps}$ Captures how changes in the profit share affect private consumption. For instance, if wages decrease while profits rise, private consumption may decline because workers tend to spend a larger proportion of their income than capital owners. $\frac{\partial I}{\partial ps}$ Reflects the effect of profit share changes on private investment, as businesses may respond to higher profits by increasing or decreasing their investments depending on demand expectations. $\frac{\partial NX}{\partial ps}$ Shows how profit share changes affect net exports (exports minus imports). A shift in wages and profits can influence competitiveness, production costs, and international trade balances.

If the economy is wage-led, A higher profit share means a lower wage share, which reduces private consumption significantly (since wages drive household spending). Even if private investment and net exports improve, the decline in consumption may outweigh these gains, leading to lower overall GDP growth. If the economy is profit-led, a higher profit share may increase private investment if firms reinvest profits into productive capacity. It can also boost net exports if lower wages reduce production costs, making exports more competitive. If these positive effects on private investment and net exports exceed the drop in consumption, GDP can increase. Net exports (NX) may increase if higher profit shares reduce wages, making exports more competitive. Lower wages could enhance international competitiveness, but the extent of this impact depends on how sensitive global demand is to price changes (i.e., price elasticities of exports and imports). If exports do not respond strongly to lower wages (inelastic demand), the benefit to net exports may be minimal. The classification of an economy as wage-led or profit-led depends on how changes in the profit share impact total demand. If an increase in the profit share reduces total demand (GDP declines), the economy is wage-led. The economy is profit-led if a higher profit share boosts total demand (GDP rises).

Since the wage share is simply the inverse of the profit share, analyzing wage changes follows the same logic but in reverse.

$$\frac{\partial Y}{\partial ps} =?, \ \frac{\partial C}{\partial ps} < 0, \ \frac{\partial I}{\partial ps} > 0, \ \frac{\partial NX}{\partial ps}? \qquad (1a)$$

When private consumption decreases $\frac{\partial C}{\partial ps} < 0$ A higher profit share means a lower wage share, reducing household disposable income. Since workers tend to have a higher marginal propensity to consume than capital owners, overall private consumption declines.

When private investment increases $\frac{\partial I}{\partial ps} > 0$ private investment may rise if firms reinvest their profits rather than distribute them as dividends. This depends on business expectations about future demand.

Net exports are uncertain $\frac{\partial NX}{\partial ps}$? Which means that exports could increase if lower wages make domestic production more competitive internationally. Imports might fall if lower wages reduce demand for imported consumer goods, improving the trade balance. Exchange rate effects and the price elasticity of exports/imports also play a role in determining the final impact.

The net effect depends on which factor dominates. If the decline in private consumption outweighs the gains in private investment and net exports, the economy is wage-led. If private investment and exports respond strongly to higher profits, the economy is profit-led. Since the relationship between wages, profits, and demand is complex, modern econometric techniques like Local Projection models are useful for estimating how these factors interact over time. These models offer an alternative to traditional macroeconomic approaches and help refine our understanding of the long-term effects of changes in income distribution.

2.1.1 Consumption

Understanding private consumption is fundamental to analyzing how changes in income distribution impact aggregate demand. private consumption is the largest component of GDP in most economies, making it a key driver of economic growth. In Post-Keynesian and Post-Kaleckian economic frameworks, private consumption is influenced by the functional distribution of income, meaning how national income is divided between wages and profits.

Traditional economic models often treat private consumption as a function of overall income, but our approach distinguishes between wage income and profit income, recognizing that these two sources of income affect consumption differently. Workers tend to spend a larger proportion of their income, while capital owners allocate more toward savings and investment. Therefore, changes in the profit share (ps) versus the wage share can significantly influence consumption patterns and economic growth.

This model estimates private consumption (C) as a function of:

1. Profit income (R) – earnings from capital ownership.
2. Wage income (W) – compensation received by workers.
3. Interest rate (r) – influencing borrowing and saving behavior.
4. Household Debt (D) - A negative and statistically significant effect on private consumption, indicating that rising indebtedness constrains demand.

Using a log-log functional form, we assess how these factors determine private consumption and examine whether an economy is more likely to be wage-led or profit-led. This approach allows us to quantify the elasticities of private consumption for income distribution, providing valuable insights into the broader macroeconomic dynamics of demand formation. By applying this model, we aim to determine how shifts in income distribution, such as an increase in the profit share, impact private consumption and overall economic growth. This analysis helps inform discussions on whether policies that promote higher wages or higher profits are more effective in sustaining economic expansion.

In the context of financialized capitalism, the traditional Post-Kaleckian consumption model must be extended to account for the growing role of household debt. As wage shares have declined and income inequality widened, households have increasingly relied on credit to sustain their consumption, particularly in the lower and middle segments of the income distribution. This dynamic has led to the emergence of debt-led consumption regimes, where private consumption is not solely a function of current income but is also influenced by access to credit and the accumulation of debt (Stockhammer, 2016; Onaran & Obst, 2014). While household debt can temporarily offset the negative demand effects of falling wage shares, such expansion is inherently unsustainable and introduces macroeconomic instability, as observed during the global financial crisis. To reflect this mechanism, we augment the conventional Post-Kaleckian consumption function by incorporating household debt as an additional explanatory variable:

$$\log(C) = c_0 + c_R \log(R) + c_W \log(W) + \mathrm{c_D} \log(D) + c_r \log(r) \qquad (2)$$

Each term in this formulation represents the logarithm of a key determinant of consumption. The dependent variable, $log(C)$ denotes private consumption in logarithmic form, while c_0 Is a constant. The coefficients $c_R, c_W, c_D and\ c_r$ capture the elasticity of consumption for profit income, wage income, household debt and the interest rate, respectively. Since the model follows a logarithmic structure, these coefficients indicate the percentage change in consumption resulting from a one percent change in each corresponding variable. Wage income is expected to positively affect consumption, as workers generally spend a larger share of their earnings. Profit income may also contribute to consumption, but to a lesser extent, given that capital owners tend to save more. The interest rate is anticipated to have a negative impact by discouraging borrowing and incentivizing saving. This model provides a framework for understanding how changes in income distribution shape aggregate demand and whether an economy exhibits wage-led or profit-led growth characteristics.

To assess the impact of profit share changes on private consumption, the analysis applies the estimated coefficients, $c_R, c_W\ and\ c_r$, to the corresponding average consumption-to-income ratios $\frac{C}{R}, \frac{C}{W}, and\ \frac{C}{r}$ derived from the dataset. This approach allows for the calculation of the marginal effect of an increase in the profit share on consumption, reflecting the relative contributions of wage and profit income to overall demand.

$$\frac{\Delta\left(\frac{C}{Y}\right)}{\Delta(ps)} = c_R \frac{C}{R} - c_W \frac{C}{W} \qquad (3)$$

This equation describes how changes in the functional distribution of income between wages and profits influence aggregate consumption. The term $\frac{\Delta\left(\frac{C}{Y}\right)}{\Delta(ps)}$ represents the change in the consumption-to-GDP ratio due to a shift in the profit share. The coefficients c_R *and* c_W measure the elasticities of consumption concerning profit income (R) and wage income (W), respectively. The ratios $\frac{C}{R}$ and $\frac{C}{W}$ indicate the share of consumption financed by profit and wage income, respectively. The terms $c_R\frac{C}{R}$ and $c_W\frac{C}{W}$ reflect the contributions of each income source to overall consumption. Since workers generally have a higher marginal propensity to consume (MPC) than capital owners, we typically expect $c_W > c_R$. If $c_W\frac{C}{W} > c_R\frac{C}{R}$ an increase in the profit share reduces aggregate consumption, indicating a wage-led economy. Conversely, if $c_W\frac{C}{W} < c_R\frac{C}{R}$ A higher profit share leads to increased consumption, suggesting a profit-led regime. Given that wage earners tend to allocate more of their income to consumption, a rising profit share often results in lower overall consumption, making wage-led growth more likely.

Kalecki's models propose that workers spend all their income, while capital owners divide theirs between consumption, savings, and investments (Lopez & Assous, 2010). This supports the idea that the propensity to consume is higher for wages than for profits, leading to an expected negative relationship between the profit share and consumption. Empirical research reinforces this view, with multiple studies confirming that wage income is more likely to drive consumption than profit income (Bhaduri & Marglin, 1990; Onaran & Obst, 2014).

2.1.2 Investment

Private investment is influenced by multiple factors, including the accelerator effect of output and the profit share in total income. Both of these factors shape firms' expectations of profitability and determine the availability of internal financial reserves. Bhaduri and Marglin's framework highlights the dual role of profits as both a source of internal financing and a signal of expected returns, making them a key driver of investment decisions.

Private investment is modeled as a function of Gross Domestic Product (Y) and the profit share (ps), reflecting its positive correlation with these variables. This approach extends beyond the neo-Kaleckian framework by incorporating profit expectations and internal capital availability, which enhance investment's responsiveness to economic conditions. The assumption is that higher GDP and profit margins encourage investment by providing firms with greater resources and incentives.

The long-term real interest rate (r) is also included as a control variable, representing the cost of borrowing and the opportunity cost of capital expenditures. A higher interest rate is expected to negatively impact private investment by increasing financing costs and reducing firms' willingness to undertake new capital projects. The investment function is expressed as:

$$\log(I) = i_A + i_Y \log(Y) + i_{ps} \log(ps) + i_r \log(r) \qquad (4)$$

Where i_A, represents autonomous investment, i_Y represents real output and i_{ps} Capture the effects of output and profit share on private investment, and i_r accounts for the impact of interest rates. While GDP and profit share are expected to influence private investment positively, the interest rate is anticipated to have a negative effect.

To determine the marginal effect of profit share (ps) on the investment-to-output ratio $\frac{I}{Y}$, we use:

$$\frac{\Delta\left(\frac{I}{Y}\right)}{\Delta(ps)} = i_{ps}\frac{I}{R} \qquad (5)$$

A rise in the profit share is expected to drive private investment as firms reinvest a portion of their increased earnings. This effect is closely tied to the structure of private demand, whether predominantly wage-driven or profit-driven within a closed economy, as analyzed by Bhaduri and Marglin (1990).

2.1.3 Net exports

Understanding the role of net exports is crucial as the global economy expands and international trade grows. Studies by Stockhammer et al. (2008) and Onaran and Galanis (2012) have examined this relationship using structured methodologies that assess domestic and export price levels before estimating export and import demand through regression models.

The model assumes an imperfectly competitive market, where nominal unit labor costs (ulc) and import prices (P_M) influence both domestic (P) and export (P_X) price levels. Since labor costs affect firms' pricing strategies, they also shape functional income distribution (Harcourt, 2006). Import prices serve as a proxy for non-labor input costs, meaning both unit labor costs and import prices are expected to positively affect price levels (Hein & Vogel, 2008). This pricing mechanism is captured using the following mark-up pricing equations:

$$\log(P) = p_0 + p_{ulc}\log(ulc) + p_M\log(P_M) \qquad (6)$$

$$\log(P_X) = px_0 + p_{ulc}\log(ulc) + p_M\log(P_M) \qquad (7)$$

Next, the export function is estimated based on relative export prices, global GDP, and exchange rates. The framework follows Bhaduri and Marglin (1990), where the exchange rate (E) is a control variable. The export function is given by:

$$\log(X) = x_0 + x_{pxm}\log\left(\frac{P_X}{P_M}\right) + x_{Yrw}\log(Y_{rw}) + x_e\log(E) \qquad (8)$$

Here, the ratio of export prices to import prices ($\frac{P_X}{P_M}$) and the GDP of the rest of the world (Y_{rw}) play key roles. A higher export price relative to import prices can reduce export demand, as domestic goods become less competitive. Conversely, rising global GDP generally boosts exports, as increased international income translates into higher demand for imports.

Similarly, the import function accounts for the effect of relative price levels and domestic GDP, where higher relative domestic prices make imports more attractive. The function is:

$$\log(M) = m_0 + m_{ppm}\log\left(\frac{P}{P_M}\right) + m_Y\log(Y) + m_e\log(E) \qquad (9)$$

In this case, a higher domestic price relative to imports $\frac{P}{P_M}$, is expected to increase imports, as domestic consumers opt for cheaper foreign goods. Likewise, higher domestic GDP tends to raise imports due to increased household and business spending. The exchange rate (E) remains a control variable in both functions.

Using the estimated coefficients from equations (8) and (9), we determine how changes in profit share (ps) affect net exports. The marginal impact on exports is derived from:

$$\frac{\Delta\left(\frac{X}{Y}\right)}{\Delta ps} = (-)\left(\frac{\partial \log X}{\partial \log P_X}\ \frac{\partial \log P_X}{\partial \log(ulc)}\ \frac{\partial \log(ulc)}{\partial \log(rulc)}\ \frac{\partial \log(rulc)}{\partial \log(ws)}\right)\ \frac{\frac{X}{Y}}{rulc}$$

$$= (-)\left(e_{XP}e_{ulc}\ \frac{1}{1-e_p}\ \frac{Y_f}{Y}\right)\ \frac{\frac{X}{Y}}{rulc} \qquad (10)$$

The e_{XP} ratio captures how relative export prices $\frac{P_X}{P_M}$ affect export volume, while e_{ulc} measures how nominal unit labor costs (ulc) influence export prices. Elasticity (e_P) represents the effect of ulc on domestic prices. Furthermore ($\frac{Y_f}{Y}$) adjusts GDP from factor costs to market prices. Real unit labor cost (rulc), shown in $\frac{\frac{X}{Y}}{rulc}$, which transforms the elasticities into marginal effects.

Similarly, the marginal effect of profit share on imports follows the same structure:

$$\frac{\Delta\left(\frac{M}{Y}\right)}{\Delta(ps)} = (-)\left(\frac{\partial \log M}{\partial \log P}\ \frac{\partial \log P}{\partial \log(ulc)}\ \frac{\partial \log(ulc)}{\partial \log(rulc)}\ \frac{\partial \log(rulc)}{\partial \log(ws)}\right)\ \frac{\frac{M}{Y}}{rulc}$$

$$= (-)\left(e_{MP}e_P\ \frac{1}{1-e_P}\ \frac{Y_f}{Y}\right)\ \frac{\frac{M}{Y}}{rulc} \qquad (11)$$

where e_{MP} represents how relative domestic prices ($\frac{P}{P_M}$) influence imports. Since imports and exports are interrelated, changes in relative price structures result in adjustments to net exports. To assess the overall impact of profit share (ps) on private demand, we combine the effects on private consumption, private investment, and net exports. Studies such as Onaran & Obst (2016) estimate these effects using the Post-Kaleckian Model and regression analysis. However, our approach employs Local Projections, which provide a dynamic response over an 8-year period, offering a more nuanced perspective. The method calculates impulse response values, creating a time-series vector reflecting how profit share changes evolve.

2.2 Local Projections

Local Projections (LP) represent a widely used econometric technique for estimating impulse responses, particularly in applied macroeconomics and time series analysis. Originally introduced by Jordà (2005), the method provides an alternative to vector autoregressions (VARs) by directly estimating the dynamic effects of economic shocks at different forecasting horizons. Unlike VARs, which impose a recursive structure on the data, LPs estimate impulse responses through a sequence of independent regressions, allowing for greater flexibility in modeling economic relationships over time.

Impulse response estimation seeks to trace the effect of a shock on an endogenous variable over time. Traditional approaches, such as VARs, assume a joint data-generating process that governs the evolution of all variables in the system. However, LPs offer an alternative by focusing on the direct estimation of impulse responses at each forecast horizon. The general specification for LP is:

$$y_{t+h} = \alpha^h + \beta_{h,1} X_t + \beta_{h,2} X_{t-1} + \cdots + \beta_{h,j} X_{t-p} + \varepsilon_{t+h}$$

y_{t+h} is the response variable at horixon h. α^h is a horizon-specific intercept. $X_t, X_{t-1}, \dots, X_{t-p}$ are the explanatory variables, often including past values of y_t or an external shock. $\beta_{h,j}$ are the horizon-specific regression coefficients, which change with h.
ε_{t+h} is the error term.

Rather than deriving impulse responses recursively, as in VAR models, local projections estimate them separately for each time horizon. This method aligns with theoretical perspectives on dynamic treatment effects while reducing reliance on the restrictive assumptions typical of multivariate time series models. By running distinct regressions for each forecast horizon h, LPs provide greater flexibility in modeling impulse responses. In contrast to VARs, they do not enforce a fixed structure on variable dynamics, making them more resilient when the data-generating process is uncertain or nonlinear. Additionally, LPs allow for incorporating control variables or structural shocks without affecting estimations at other horizons. Unlike traditional VAR approaches, which depend on matrix inversion and can be unstable in small samples, LPs use direct regression techniques, improving computational reliability.

In the context of this thesis, Local Projections are employed to estimate the dynamic effects of shocks to functional income distribution specifically, changes in the wage share on key macroeconomic components such as consumption, investment, and net exports. The method's flexibility makes it well-suited to investigating whether demand is wage-led or profit-led, particularly when comparing heterogeneous country responses over time. Moreover, LPs align with Post-Keynesian concerns about structural change, model uncertainty, and the importance of distributional variables in macroeconomic dynamics. Their ability to incorporate control variables and country-specific fixed effects without imposing a rigid system structure makes them a robust tool for analyzing distribution-driven demand regimes across diverse economic contexts.

3 Analysis

Building on the methodological foundation of Local Projections (LP), this chapter presents a comprehensive empirical assessment of how changes in functional income distribution, specifically increases in the profit share, affect key components of aggregate demand: private consumption, private investment, and net exports. These effects are estimated dynamically across different forecast horizons and are decomposed into pre-crisis (1995 to 2006) and post-crisis (2010 to 2019) periods to capture potential structural changes following the global financial crisis. The LP framework is well suited for this purpose, as it allows the response of each macroeconomic variable to be traced independently over time, thereby accommodating potential nonlinearities or asymmetries in adjustment dynamics. In line with Post-Keynesian distribution and growth theory, the analysis focuses in particular on the marginal consumption response to profit and wage income, which is essential for identifying whether demand regimes are wage-led or profit-led. This distinction carries important implications for policy, especially in the context of rising profit shares and growing income inequality in advanced economies.

3.1 Data and Preprocessing

This thesis investigates the macroeconomic effects of changes in the functional income distribution using quarterly macroeconomic data for ten advanced economies. The dataset covers the period from the first quarter of 1995 to the fourth quarter of 2019, yielding approximately 100 observations per country. The use of quarterly data represents a substantial methodological improvement in the empirical strategy of the thesis. A previous empirical study conducted during the 8th semester (Sørensen and Heiden, 2024) relied on annual data for a single country. While that analysis provided valuable insights into the relationship between profit share and macroeconomic aggregates, the low frequency of observations limited the ability to identify the timing and progression of economic responses. The present study instead utilises a higher-frequency dataset and expands the analysis to ten countries, while retaining a country-specific approach by estimating each model separately for each case. With four observations per year, the quarterly structure allows for a more detailed identification of short- and medium-run dynamics, which is particularly important when estimating local projections.

Countries were selected based on data availability and consistency in national accounts and labor cost reporting. Most data were obtained from the OECD.Stat database, which provides harmonised quarterly time series. In cases where the OECD data were incomplete or lacked sufficient sectoral breakdown, such as for the United States, Australia, and Canada, national statistical sources were used to fill in the missing observations. These included the Bureau of Economic Analysis, the Australian Bureau of Statistics, and Statistics Canada. All variables were obtained in current prices and then converted into real terms using deflators specific to each series. The deflators were selected to match the economic concept of the nominal variable in question, for example, using the GDP deflator for total output and consumption deflators for household spending. This ensured that the final dataset reflects changes in real volumes rather than in price levels, aligning the data treatment with the theoretical focus on real economic activity.

An important decision in the empirical design was to split the dataset into two periods: from 1995 to 2006 and from the third quarter of 2009 to 2019. The years 2007, 2008, and the first half of 2009 are excluded. This decision followed an initial consideration of using dummy variables to account for the financial crisis, but such an approach proved problematic. The effects of the global financial crisis unfolded gradually and continued into the early phases of recovery, making it difficult to represent this period with a single binary control variable. Estimating over the full period would have introduced substantial noise and instability into the model, while using a crisis dummy would have risked masking important variation before and after the crisis itself. The split sample approach offered a more robust and transparent solution. By excluding the most volatile crisis years and estimating the effects of functional income distribution separately in the pre- and post-crisis periods, the analysis avoids relying on arbitrary structural break assumptions. This setup also makes it possible to investigate whether the relationship between income distribution and aggregate demand has changed over time, a question made relevant by the substantial shifts in macroeconomic institutions, labor market conditions, and policy environments over the past twenty-five years.

In preparing the dataset for estimation, particular attention was given to ensuring that the time series satisfied the requirements of the local projection framework. Two issues were especially important to address: the presence of seasonal patterns and the potential for non-stationarity. All variables were originally obtained in non-calendar-adjusted form, as calendar-adjusted data was not consistently available across countries and variables. To ensure consistency and comparability, seasonality was addressed using the same method for all variables. Each series was first transformed by taking logarithms and then differenced. Tests were then applied to assess the presence of seasonality and unit roots. These tests revealed that strong seasonal effects remained in several variables, and that some still exhibited signs of non-stationarity.

To resolve the issue of non-stationarity, the Hodrick-Prescott (HP) filter was applied. This approach was chosen instead of performing a second round of differencing. While differencing is a common method for removing unit roots, differencing a series twice often leads to the loss of economically meaningful information (Canova, 2007). In particular, second differencing tends to eliminate not only long-term trends but also important medium-run dynamics, reducing the interpretability of the series. Since the local projection method relies on tracing the evolution of shocks over time, it is important to retain these features. The HP filter effectively removes persistent low-frequency trends while preserving short- and medium-term variation, making it more appropriate for the objectives of the analysis (Hodrick & Prescott 1997). To correct for seasonality, different approaches were explored and evaluated. Based on these investigations, the initial differencing step was modified to apply a four-quarter lag. This transformation removes regular seasonal patterns by differencing each value against its counterpart in the same quarter of the previous year. It should be emphasized that this is not a second round of differencing, but a targeted seasonal adjustment that replaces the original differencing step. This method proved effective in reducing seasonal variation without distorting the structure of the series. Following these adjustments, the transformed data were re-tested to confirm the absence of seasonality and non-stationarity. The Friedman and Kruskal-Wallis tests were used to evaluate seasonal patterns, while the Augmented Dickey-Fuller and KPSS tests were applied to assess stationarity (Dickey & Fuller, 1979; Kwiatkowski et al. 1992). As documented in Appendix A.1.1, the majority of variables no longer exhibited signs of seasonality or unit roots. In a few cases where borderline p-values were observed, further inspection was carried out visually. These variables were deemed stable and were retained in the sample.

The combination of HP filtering and adjusted seasonal differencing provided a consistent and robust basis for estimation. The approach avoided overcorrecting the series while preserving the structure necessary for identifying meaningful impulse responses in the local projection framework. With the data transformed and structured to ensure stationarity, consistency, and comparability across countries and time, the next step involves specifying the empirical model used to estimate the dynamic responses of key macroeconomic functions to distributional changes. The following section outlines the structure of the local projection framework, the rationale behind its specification, and the steps taken to ensure the robustness of the estimated responses. To ensure theoretical consistency with the post-Kaleckian framework, the empirical analysis focuses exclusively on private demand components. Specifically, the model includes private consumption and private investment, deliberately excluding government consumption, public investment, and inventories, which are not theorized as being directly influenced by functional income distribution. In cases where only aggregate consumption data were available, private consumption was calculated by subtracting government consumption from the total. This approach aligns the dataset with the theoretical assumptions underpinning wage-led and profit-led demand regimes, and ensures that the estimated effects capture only market-driven demand responses to changes in the profit share.

3.2 Model specification

The empirical strategy builds directly on the theoretical foundations of the post-Kaleckian framework, as outlined in the previous chapter. In line with this theory, a separate local projection is estimated for each key macroeconomic function, including private consumption, private investment, imports, exports, domestic prices, and export prices. These projections form the basis for identifying how changes in the profit share influence each channel of aggregate demand and relative prices. The specific estimation setup for each function is presented in the corresponding sections of the analysis.

Each local projection is estimated independently by country and subperiod. The specification includes two lags of all explanatory variables. This lag length was chosen based on model selection criteria, residual diagnostics. Preliminary testing with longer lag structures did not lead to improved model fit. The two-lag structure was found to be sufficient for capturing short-run dynamics without overfitting, and was therefore adopted as the standard across all specifications (Jordà, 2005, Adämmer 2019). Responses are estimated over twelve forecast horizons, corresponding to a period of three years. This horizon length was chosen to capture short-, medium-, and longer-run effects, allowing for an assessment of both immediate and persistent impacts of distributional changes. A shorter window would risk overlooking delayed responses, while a substantially longer one would increase uncertainty and reduce estimation precision.

Some unexpected results were observed in the estimation of the consumption function. In several countries, an increase in the profit share was associated with a rise in private consumption, a pattern that contradicts the theoretical predictions of the post-Kaleckian framework. This led to further investigation into whether the specification omitted important information or was structurally misspecified. To examine this, additional control variables were introduced into the consumption equation. One specification included a term capturing GDP net of consumption, intended to isolate broader movements in aggregate demand and better account for overlapping components. However, the inclusion of this control did not lead to improvements in the plausibility of the estimated impulse responses and had no significant impact on the direction of the results. Given that the inconsistency persisted, structural vector autoregressions were estimated as an alternative approach. These models were used to examine whether structural identification could clarify the response of private consumption to distributional shocks, and more specifically, to trace the effects of profits and wages on private consumption. The SVARs were identified using a Cholesky decomposition with recursive ordering, allowing for shocks to profits and wages to be separated and their contemporaneous effects on private consumption estimated. Despite this, the impulse responses remained broadly similar to those produced by the local projections, and the unexpected patterns could not be resolved by the alternative framework. These findings suggest that the observed effects are not a result of the empirical method but may instead reflect country-specific dynamics or features inherent in the data. As such, the local projection framework was retained as the preferred estimation strategy. Its flexibility, transparency, and minimal reliance on structural assumptions make it well suited for conducting separate estimations for each country and capturing the temporal profile of macroeconomic responses to changes in functional income distribution.

The local projections specified here serve as the foundation for calculating marginal effects across macroeconomic functions and periods, which are then used to assess the overall demand implications of shifts in the functional income distribution. In addition to the core local projection framework, an experimental hybrid modeling approach was explored using a transformer-based architecture. This model was designed to integrate information from the local projections by incorporating the residuals and estimated coefficients at each time point as features. The transformer was then trained to predict the full sequence of impulse responses up to twelve horizons ahead, effectively learning temporal dependencies across countries and macroeconomic functions from the underlying LP dynamics. The aim of this hybrid approach was to assess whether a machine learning model, informed by traditional econometric estimates, could improve the prediction of response paths and potentially uncover nonlinear patterns not easily captured by linear projections. While initial training indicated that the transformer was able to replicate many features of the impulse responses, the gains in predictive performance were marginal and did not translate into clearer economic interpretation. Furthermore, the complexity of the model and the lack of transparency in its internal weighting mechanisms made it less suitable for structural macroeconomic analysis, where interpretability is central. For these reasons, the hybrid model was not used in the final analysis. The local projection framework remained the preferred method due to its transparency, ease of interpretation, and direct alignment with the post-Kaleckian theoretical foundations of the study.

3.3 Consumption Effects of Rising Profit Share

This section marks the beginning of the empirical analysis and focuses on how changes in the functional distribution of income affect private consumption. In line with the post-Kaleckian framework, the analysis investigates whether shifts in the profit share lead to increases or reductions in household demand across countries and time periods. The consumption component is examined first, as it represents the largest share of aggregate demand in most economies and is theoretically expected to be highly sensitive to income distribution. By estimating country- and period-specific marginal consumption responses to wage and profit income, the analysis aims to uncover whether private demand is reinforced or dampened by redistribution.

This study examines private consumption behavior through the lens of functional income distribution, focusing on how households adjust their consumption in response to changes in wage and profit income. In macroeconomic analysis, such responses are captured by the marginal propensities to consume (MPC) out of different income sources. These indicate the share of an additional unit of income that is spent on consumption and play a central role in Post-Keynesian demand theory. According to this framework, the MPC out of wage income is expected to be higher than that out of profit income, since wage income typically accrues to lower- and middle-income households with higher consumption needs, while profit income is more likely to be received by wealthier households with a higher propensity to save (Bhaduri & Marglin, 1990; Hein & Vogel, 2008).

To empirically estimate the distributional effects on private consumption, we focus on how changes in the profit share affect the relative importance of profit and wage income in total output. The key empirical tool is a Local Projections (LP) framework that estimates the dynamic impulse responses of private consumption to exogenous changes in wage and profit income shares over a twelve-quarter horizon. From these LP estimates, we derive marginal propensities to consume for wage income c_w and profit income c_r,which represent the dynamic response of private consumption to a one-unit change in the respective income source. These are not coefficients from a static regression, but elasticities converted into interpretable MPC estimates using the average income shares observed in the data. This approach allows for a more realistic representation of how consumption adjusts over time in response to shifts in income composition.

The resulting dynamic MPCs serve as the basis for evaluating whether private consumption is more responsive to wage income than to profit income. To link these dynamics more explicitly to income distribution, we express the change in the consumption-to-income ratio $\frac{C}{Y}$ as a function of the underlying income shares and their associated MPCs. Assuming that national income Y is composed of wages W and profits R such thatY $=$ W $+$ R, and denoting the respective consumption propensities as c_w and c_r to a shift in income distribution and can be expressed as:

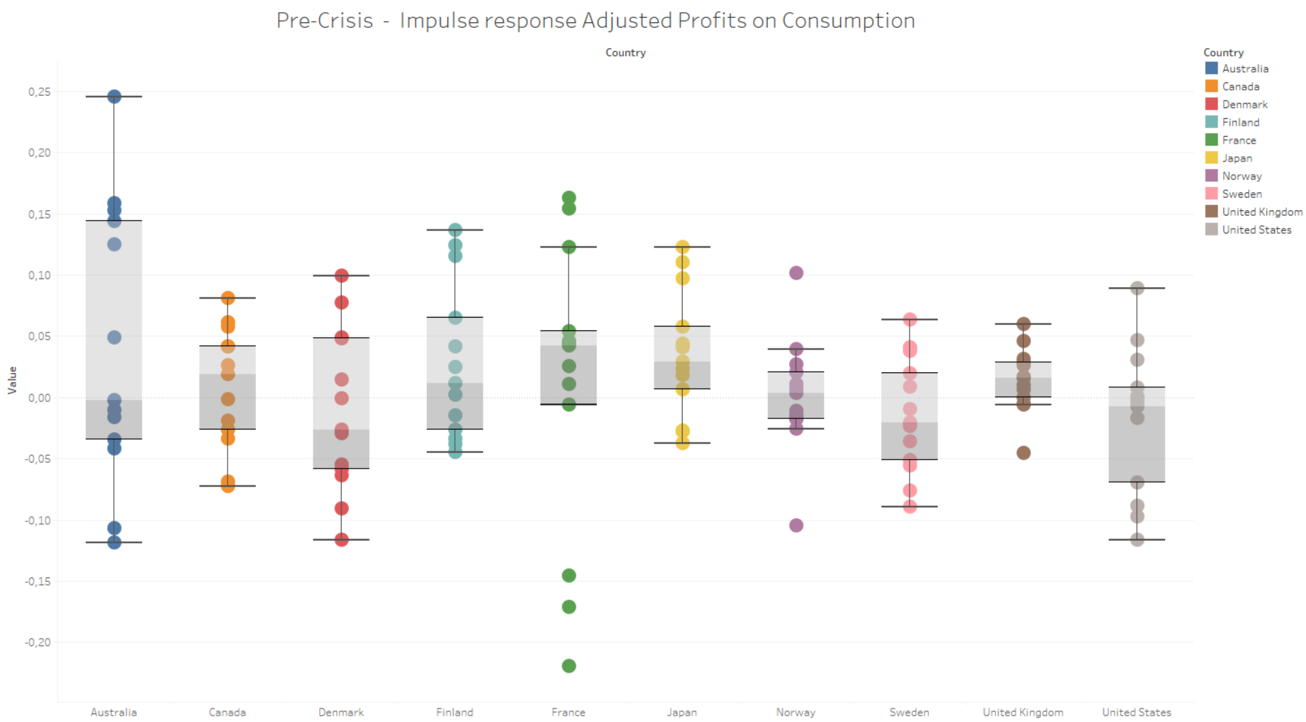
$$\frac{\Delta\left(\frac{C}{Y}\right)}{\Delta(ps)} = c_R\frac{C}{R} - c_W\frac{C}{W}$$

This identity highlights the fact that if $c_W\frac{C}{W} > c_R\frac{C}{R}$, then an increase in the profit share i.e., a redistribution from wages to profits will lead to a decline in the private consumption share of GDP. Conversely, if profit income becomes more consumption responsive, the overall effect may be neutral or even positive. This formulation captures the core mechanism through which functional income distribution influences household demand and thereby links individual-level consumption behavior to the broader structure of aggregate demand.

A fundamental mechanism underlying the observed consumption dynamics in the following sections is this difference in marginal propensities to consume. According to Post-Keynesian and Post-Kaleckian theory, individuals who earn wages typically spend a larger portion of their income on private consumption, while those who receive profits, often concentrated in higher income brackets, are more likely to save or invest a larger share. As a result, the distribution of income between wages and profits has a direct effect on the level of aggregate demand, even if total income remains constant (Hein & Vogel, 2008; Onaran & Galanis, 2014). When income shifts toward profits, private consumption is likely to fall not due to lower income, but because a greater share of that income is channeled to groups with lower consumption propensities (Lopez & Assous, 2010). Conversely, increasing the wage share redirects income to households more inclined to consume, thus stimulating private demand. The relationship between income distribution and consumption is therefore not neutral: while both wage and profit incomes contribute to output, they do not contribute equally to demand formation.

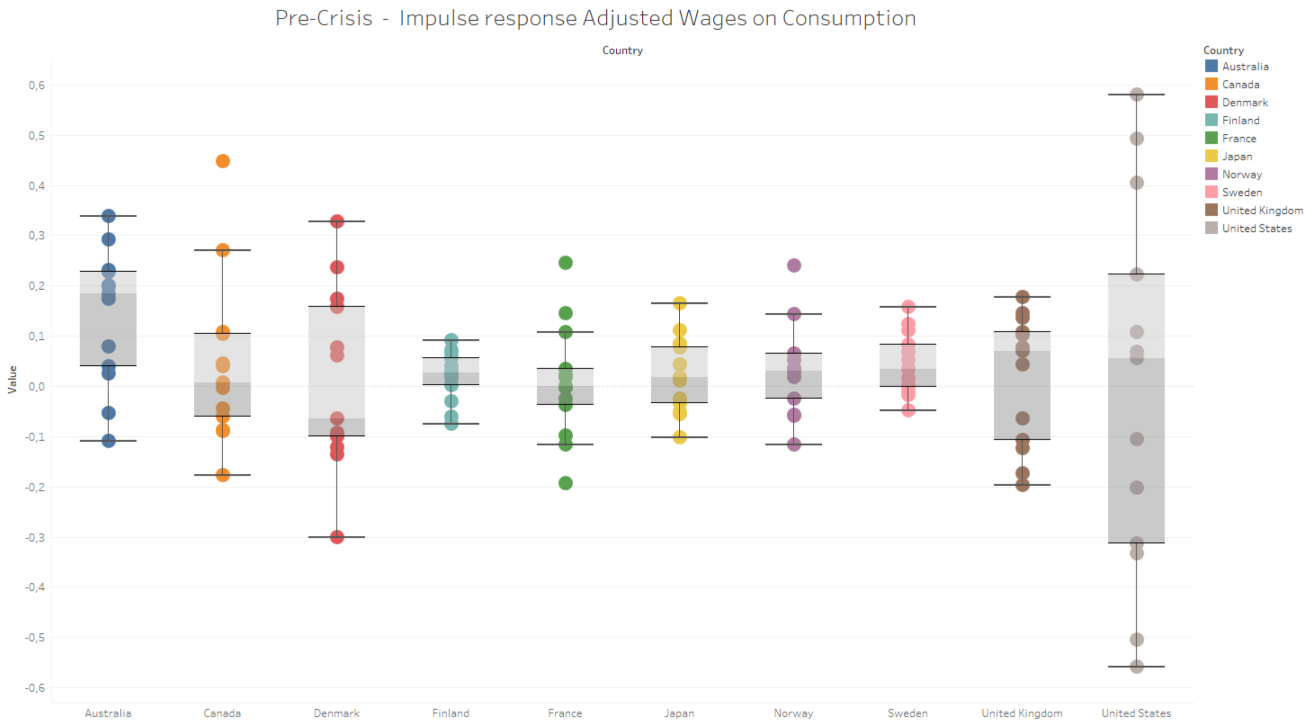
3.3.1 Consumption Effects in the Pre-Crisis Period (1995–2006)

This section investigates the relationship between income distribution and private consumption across ten advanced economies during the pre-crisis period from 1995 to 2006. Drawing on Post-Keynesian and Post-Kaleckian theoretical foundations, the analysis focuses on how changes in wage and profit shares affect household demand, with particular attention to the marginal propensity to consume out of each income component. In economies where demand is wage-led, increases in the wage share are expected to stimulate private consumption, whereas increases in the profit share are likely to exert weak or negative effects on household spending. The empirical analysis is based on impulse response functions and cumulative marginal effects derived from local projection methods. Three core figures are presented to assess the dynamic responses of consumption to distributional shocks. The first examines how private consumption reacts to shocks in adjusted profit income, while the second evaluates the response to wage income shocks. The third figure reports the cumulative consumption effect of a 1% increase in the profit share, thereby allowing for the classification of countries as wage-led or profit-led in terms of consumption behavior. The 1995–2006 period provides a valuable benchmark for understanding the structural characteristics of advanced economies prior to the global financial crisis. This was a period of relative macroeconomic stability, during which financialization intensified and global labor markets underwent significant transformations. The analysis highlights both common patterns and country-specific differences, offering insight into how institutional settings, financial structures, and policy regimes mediated the link between income distribution and aggregate demand. Taken together, the results presented in this section contribute to the broader understanding of demand regimes and the role of labor income in sustaining private consumption in the pre-crisis era. They serve as a point of comparison for the post-crisis period and provide an important context for evaluating whether the nature of consumption regimes shifted in response to the economic disruptions of the late 2000s.



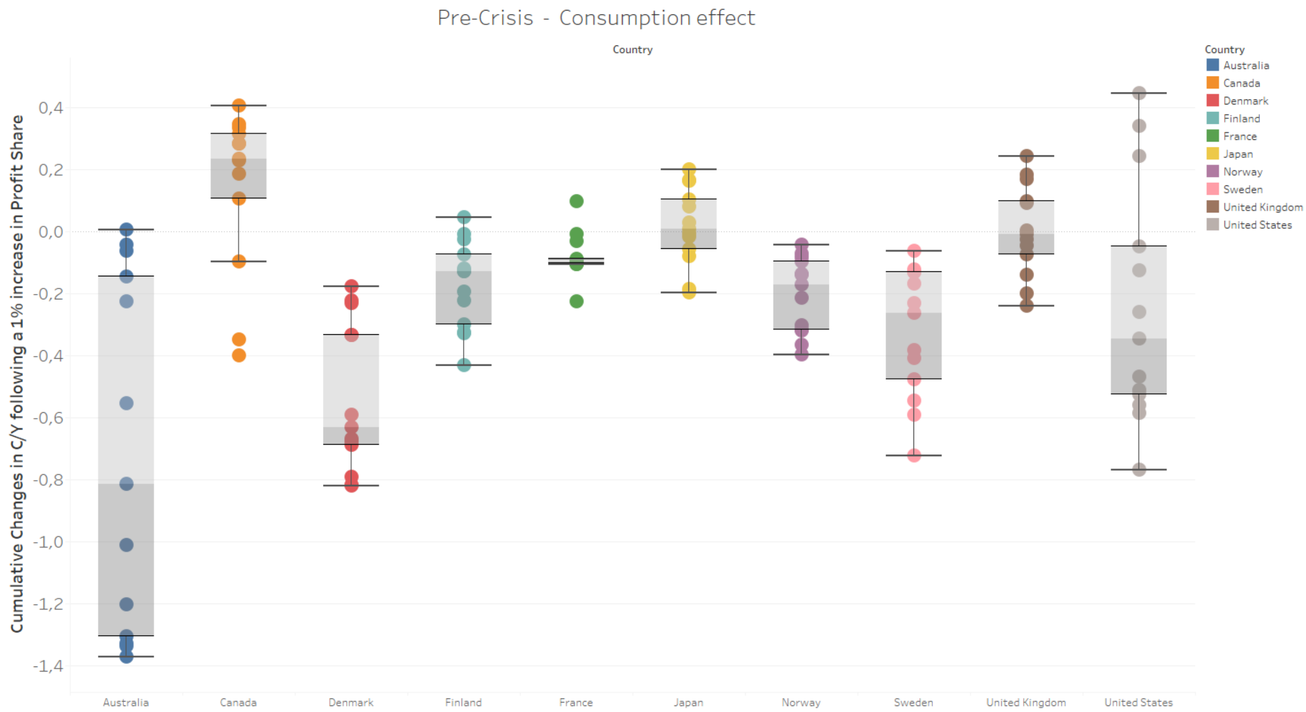
The first graph shows the impulse response of private consumption to changes in profit income across countries, measured from Horizon 0 to Horizon 12. The above figure shows a whisker plot each country representing the responses over the period for an overview. Each country is analyzed individually, with corresponding response graphs presented in the appendix. Given the substantial number of visualizations, direct references to the appendix will not be made for every country in the main text to avoid unnecessary repetition. However, it should be noted that graphical representations for all countries are available and can be found in the appendix. In the Post-Keynesian framework, particularly the Post-Kaleckian tradition, we expect that consumption should respond less strongly to changes in profit income compared to wage income, because profit recipients tend to have a lower marginal propensity to consume.

In the 1995–2006 period, the results generally show small and mixed effects across countries. For instance, Australia and Canada initially display positive responses at Horizon 0, indicating that an increase in profits slightly stimulates consumption in the very short run. However, over time (Horizon 6 to Horizon 12), the effects diminish and often turn negative, particularly for Australia, Norway, and the United States. France and the United Kingdom show moderate positive responses at later horizons, suggesting that in some economies, private consumption from profit income is slightly more persistent. Nevertheless, the overall pattern indicates that consumption growth tends to weaken or even turn negative over time following a positive profit shock in most countries. This dynamic response reflects the relatively low marginal propensity to consume (MPC) out of profit income, as captured by the estimated impulse responses to increases in the profit share. Specifically, the coefficients $\boldsymbol{c_R}$ from the log-linear consumption function can be interpreted as the elasticity of consumption with respect to profit income, and when scaled by the average profit-to-consumption ratio, they provide an estimate of the MPC out of profits. The Local Projection results for the period 1995 to 2006 indicate that these MPCs are low or even negative, suggesting that higher profit income does not translate into higher consumption over time. This is consistent with Post-Keynesian theory, which argues that wage income has a significantly higher propensity to be consumed than profit income. In this context, the weak consumption response to profit shocks should be interpreted in relative terms, especially when contrasted with the typically stronger and more persistent consumption response to increases in wage income. Thus, the impulse responses provide empirical support for the notion that a profit-led redistribution of income is unlikely to sustain private consumption in advanced, wage-led economies. The findings reinforce the theoretical expectation that economies relying more heavily on profit income may experience demand constraints, particularly if wage shares decline over time.



The second graph presents the impulse responses of private consumption to changes in wage income across countries from Horizon 0 to Horizon 12. In Post-Kaleckian theory, an increase in wage income is expected to have a strong and positive effect on private consumption, because workers are assumed to have a higher marginal propensity to consume compared to capital owners.

The results for the 1995–2006 period confirm this theoretical expectation quite clearly. In most countries, including Canada, Denmark, Finland, France, Norway, Sweden, and the United States, the effect of a wage increase on private consumption is positive across many horizons, particularly after the first few periods. For example, the United States shows a strong immediate positive response at Horizon 0 (around +0.58%), with sustained positive effects across multiple horizons. Canada and Denmark also demonstrate increasingly positive responses over time, particularly after Horizon 5. There are some exceptions, such as France and Finland at certain horizons, where the wage effect fluctuates between positive and slightly negative. However, the overall trend across the sample is that higher wages stimulate consumption growth, consistent with wage-led demand structures. Thus, the impulse responses C_W for the period 1995–2006 strongly align with Post-Keynesian theory, confirming that in most countries, private consumption is significantly and persistently boosted by increases in wage income.



The third graph shows the cumulative marginal effect of changes in the profit share on private consumption across countries. The data reveal notable cross-country variation in both the direction and magnitude of the response, reflecting the institutional, financial, and macroeconomic characteristics of each country. While most cases support a wage-led interpretation, where falling labor income suppresses consumption, a few countries exhibit more ambiguous or profit-led patterns over parts of the horizon. Each individual visualization for this part of the analysis is presented in Appendix A.2.1–A.2.4, showing the country-specific responses over the horizons.

Australia presents a pronounced wage-led trajectory. From the fourth quarter onward, cumulative consumption effects decline steadily, indicating a significant and persistent negative response to the wage share shock. This pattern is consistent with a strong dependence on labor income to support consumption, particularly in the context of elevated household debt, rising interest rate exposure, and a housing bubble during the early 2000s. These structural features made Australian households particularly vulnerable to negative income shocks, amplifying the effect of a falling wage share.

Denmark exhibits a relatively flat consumption response that hovers slightly above zero throughout most of the horizon. Although the response is likely statistically insignificant, the slight upward trend suggests some resilience to distributional shocks. This could be explained by Denmark's flexible labor market, high levels of social trust, and access to household credit, which together may have cushioned the impact of reduced wage shares. The country's robust public sector and income redistribution mechanisms likely played a stabilizing role in sustaining private consumption.

Sweden shows a similar flat but mildly negative consumption path, remaining just below zero over the twelve quarters. The absence of a significant effect may reflect a cautious consumption environment. Despite Sweden's recovery from the financial crisis of the early 1990s and a return to economic growth, households appear to have remained conservative in their spending behavior. The muted response suggests a degree of wage dependence, albeit one buffered by institutional stability and reforms that may have dampened the sensitivity of private consumption to distributional changes.

The United States initially shows a positive cumulative response, which then flattens and eventually turns negative toward the end of the horizon. This shift implies a more complex regime. In the earlier quarters, private consumption may have been propped up by access to credit, rising asset values, and optimistic expectations about future income, features typical of a highly financialized economy. However, the later downturn in the consumption path underscores the structural importance of labor income, suggesting that even in market-driven contexts, household consumption ultimately depends on stable wage dynamics.

France displays a near-zero cumulative response across the horizon, with minimal variation. The effect is likely insignificant, which can be attributed to the country's strong social safety nets, lower household indebtedness, and a generally stable macroeconomic environment. These factors may have insulated households from the adverse effects of falling labor shares, dampening the transmission from income distribution to consumption demand.

Norway's consumption response remains flat and close to zero over the full period. This is consistent with a scenario where distributional shocks are largely neutralized by broader macroeconomic buffers. In particular, Norway's oil wealth and sovereign wealth fund have allowed for proactive fiscal policies that stabilize household incomes and support domestic demand. The presence of automatic stabilizers and generous public spending likely helped shield private consumption from the effects of declining wage shares.

The United Kingdom exhibits a positive and gradually rising consumption trajectory, peaking around the tenth quarter. This suggests a significant short- to medium-term profit-led dynamic. Factors such as a liberalized financial sector, booming housing market, and widespread availability of consumer credit likely made UK households more responsive to profit-related stimuli, at least temporarily. However, this responsiveness may reflect increased exposure to asset-based consumption rather than a fundamental disconnect from wage-based income sources.

Canada shows a transitional response. Consumption rises between the second and ninth quarters, reaching a modest peak of around 0.3 to 0.4 percentage points, before reversing direction and ending slightly negative by Quarter 12. This hump-shaped pattern indicates that Canada may have temporarily exhibited profit-led features, possibly due to asset price appreciation, falling unemployment, and rising consumer confidence. Yet the eventual decline suggests that the underlying structure remains wage-led, with the earlier positive response driven more by financial market dynamics than by sustained demand-side strength.

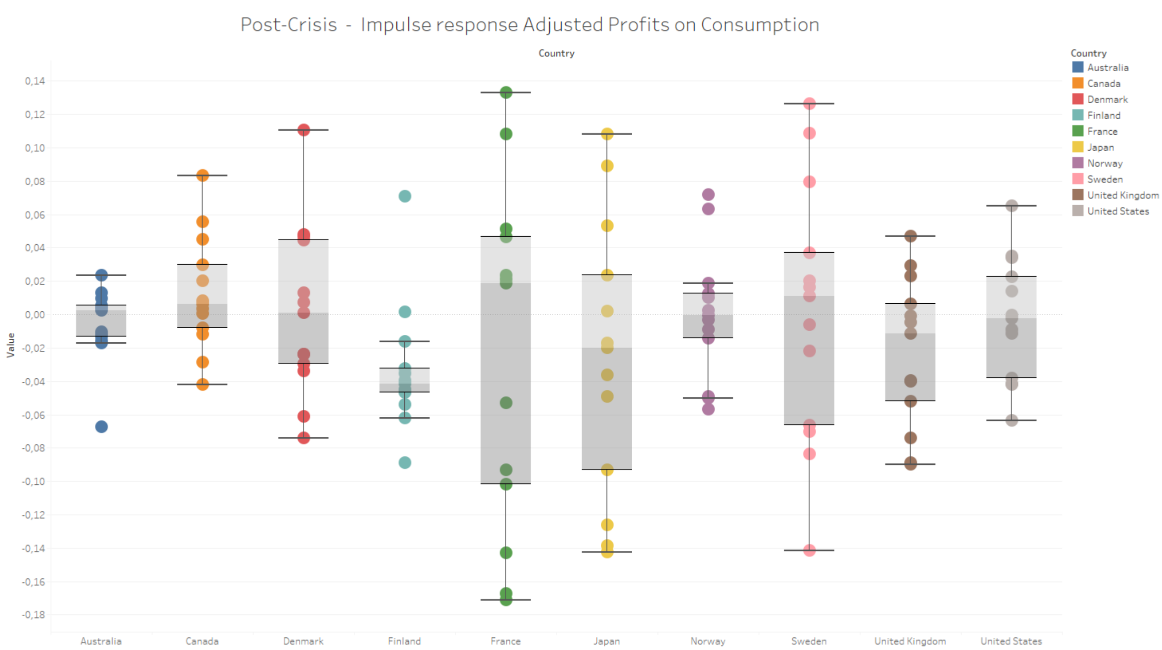
Japan shows that in the pre-crisis period (1995–2006), the cumulative response of private consumption in Japan to a 1% increase in the profit share is mildly negative and persistent, as indicated by the flat and slightly declining trajectory of the pre-crisis curve. This suggests that higher profit shares led to a sustained reduction in consumption, consistent with a wage-led demand regime, where shifts from wages to profits reduce overall demand due to the lower propensity to consume out of capital income.

Finland's consumption response declines sharply through the first ten quarters, remaining below zero before a modest recovery near the end of the horizon. Although the cumulative effect turns slightly positive by Quarter 12, the overall path points to a wage-led structure, characterized by an extended period of negative consumption adjustment. Lingering effects of the 1990s banking crisis, weak consumer confidence, and a cautious approach to household spending likely contributed to this delayed and fragile recovery. While the technical endpoint might suggest a profit-led outcome, the behavioral dynamics are more consistent with wage-led tendencies.

Taken together, the country-specific trajectories indicate that wage-led consumption regimes dominate in this period, particularly in Europe and Oceania. While countries like Japan and, to some extent, Canada and the United Kingdom display profit-led or mixed dynamics in the short term, the broader trend supports the hypothesis that labor income remains a critical driver of private consumption in advanced economies. These findings reinforce the Post-Keynesian view that distributive dynamics are central to macroeconomic stability and that maintaining or improving the wage share may be essential for supporting domestic demand.

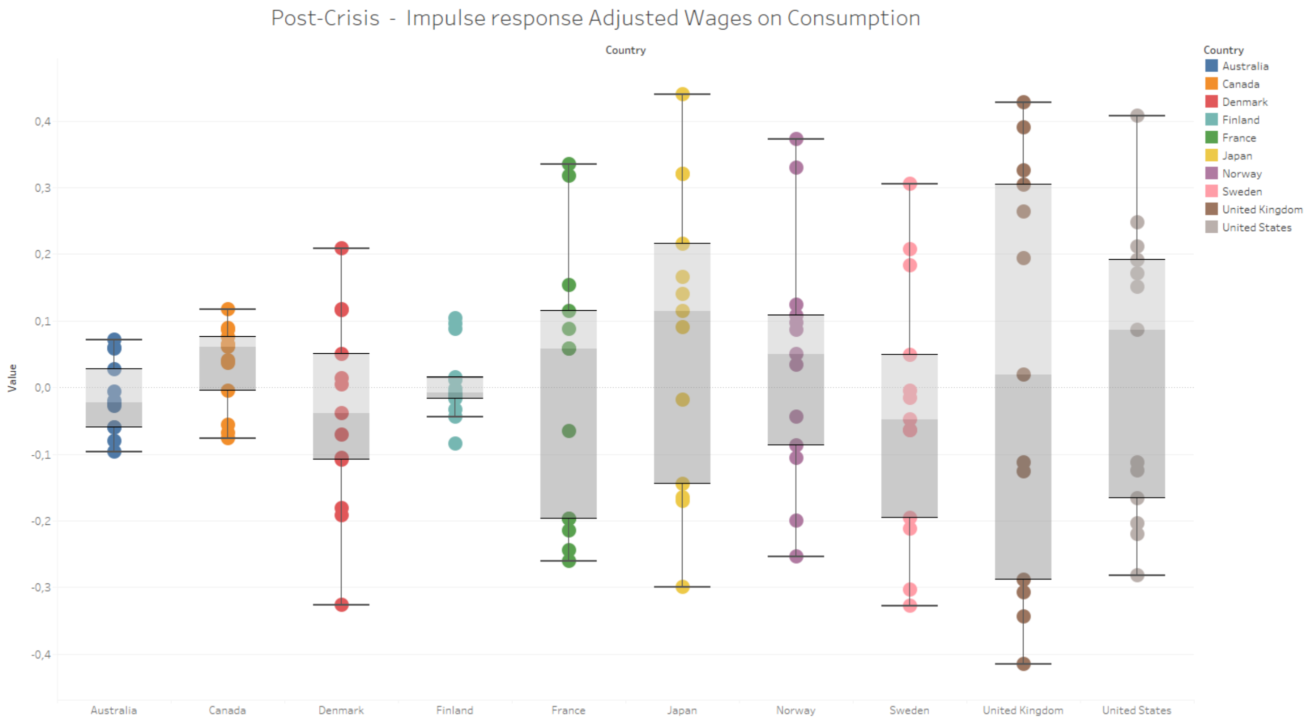
3.3.2 Consumption Effects in the Post-Crisis Period (2010-2019)

This section analyzes how private consumption responded to changes in functional income distribution across ten advanced economies during the post-crisis period (2010–2019). In the wake of the global financial crisis, structural shifts including evolving labor markets, fiscal adjustments, and intensified financialization reshaped the link between wage and profit income and household demand. Drawing on Post-Keynesian theory, the analysis uses impulse response functions and cumulative marginal effects to examine the impact of adjusted profit and wage income shocks on consumption. Three key figures guide the interpretation: the first shows responses to profit income shocks, the second to wage income shocks, and the third presents the cumulative effect of a 1% increase in the profit share. These results reveal both cross-country variation and broader trends, reflecting differences in institutional settings and policy regimes. Overall, the findings contribute to ongoing debates on income distribution and demand regimes, offering insight into whether labor income remained a stable driver of consumption in the post-crisis era (Stockhammer, 2012).



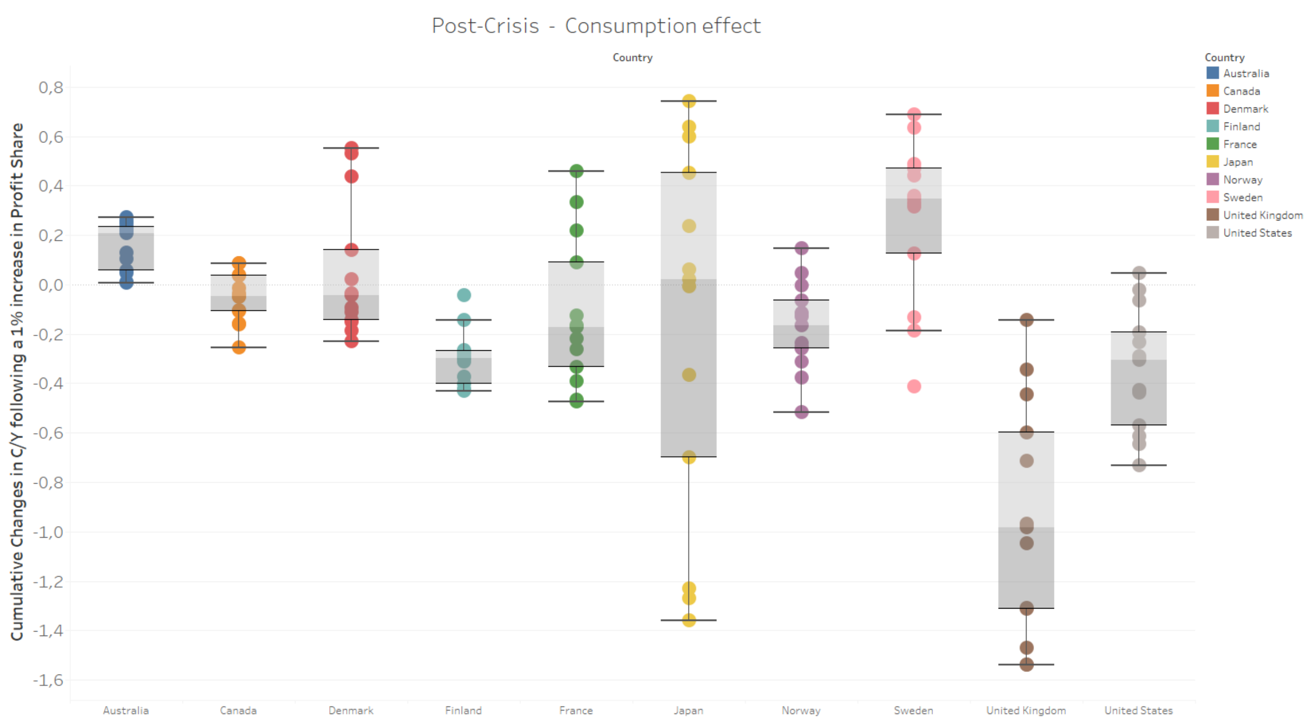
The figure titled “Post-Crisis – Impulse response Adjusted Profits on Consumption” presents the response of private consumption to shocks in adjusted profit income across ten advanced economies during the period from 2010 to 2019. The horizontal axis lists the countries included in the analysis, and the vertical axis captures the magnitude of the impulse responses over a twelve-quarter horizon following an increase in the profit share. Each dot represents a quarterly estimate, while the boxplots summarize the distribution of responses by country, including median values, interquartile ranges, and potential outliers.

Post-Keynesian and Post-Kaleckian theory holds that profit income is associated with a lower marginal propensity to consume compared to wage income, and as a result, increases in the profit share are not expected to contribute meaningfully to household consumption. The empirical evidence in the figure generally supports this theoretical expectation. Across much of the sample, the impulse responses are clustered around zero or fall into negative territory, suggesting that rising profit income have limited or even adverse effects on consumption. In many cases, the median responses are negative, with distributions that imply either weak stimulation or contraction of consumer demand. Although some countries exhibit wider variation in their responses, including instances of positive effects in specific quarters, these are not sustained over time. This heterogeneity likely reflects differences in institutional frameworks, financial systems, and macroeconomic environments that mediate the consumption response to changes in income distribution. In particular, factors such as financial market access, consumer credit conditions, corporate dividend policies, and the role of asset-based wealth may influence whether profit gains reach households in a way that affects their spending behavior (Onaran et al. 2011). Overall, the figure reinforces the view that private consumption in advanced economies is largely unresponsive to increases in the profit share. The results align with the Post-Keynesian proposition that household spending depends more heavily on labor income and that efforts to raise the wage share are more effective in supporting aggregate demand. At the same time, the cross-country differences highlight the importance of domestic institutions and policy regimes in shaping the macroeconomic effects of functional income distribution.



The figure titled "Post-Crisis – Impulse response Adjusted Wages on Consumption" presents how private consumption in ten advanced economies responded to shocks in adjusted wage income during the period 2010 to 2019. The horizontal axis identifies the countries included in the sample, while the vertical axis captures the magnitude of the impulse responses over a twelve-quarter horizon. Individual data points represent quarterly estimates, and the boxplots summarize the distribution of these responses, indicating medians, interquartile ranges, and potential outliers.

According to Post-Keynesian and Post-Kaleckian theory, an increase in the wage share is expected to stimulate private consumption, since wage earners tend to consume a larger proportion of their income than capital owners. The visual evidence generally supports this theoretical prediction. In several countries, the responses cluster in positive territory, suggesting that wage income shocks tend to boost household spending in a consistent and sustained manner. These findings indicate the presence of wage-led demand regimes, where labor income plays a central role in driving consumption growth. However, the figure also reveals a notable degree of heterogeneity across the sample. Some countries display more muted or variable responses, with distributions that include both positive and negative values and medians that hover near zero. These mixed patterns point to weaker or less stable wage-led dynamics and suggest that the transmission of income distribution shocks into consumption depends on a range of structural and institutional factors. Such factors may include the configuration of labor markets, the degree of household indebtedness, the nature of fiscal policy, and the role of financial markets in supporting or substituting consumption. While the overall pattern confirms that increases in the wage share tend to enhance private consumption in many advanced economies, the strength and stability of this relationship vary considerably across national contexts. Importantly, when juxtaposing the wage-led responses with those from the corresponding figure on profit share shocks, it becomes evident that the marginal propensity to consume out of wages is systematically higher than that out of profits. This supports a core Post-Keynesian assumption: wage earners consume a larger share of their income than capital owners, thereby making wage-led growth strategies more effective in stimulating aggregate demand. Consequently, the results not only affirm the theoretical expectation that functional income distribution shapes macroeconomic demand patterns, but they also underscore the critical role of labor income in driving consumption dynamics, especially in the post-crisis decade.



The figure titled "Post-Crisis – Consumption effect" displays the cumulative change in private consumption as a percentage of GDP following a 1% increase in the profit share across ten advanced economies from 2010 to 2019. Consistent with Post-Keynesian and Post-Kaleckian theory, economies where consumption is wage-led are expected to exhibit a negative cumulative response to an increase in the profit share, reflecting the lower marginal propensity to consume out of capital income. The boxplots illustrate the median and interquartile range for each country across a twelve-quarter horizon, while individual dots mark the responses at specific horizons. The overall pattern suggests that most countries remain wage-led in their consumption dynamics.

Australia displays a modestly positive cumulative consumption response following an increase in the profit share. This suggests a mild short-term profit-led tendency. Possible explanations include Australia's resilience during the global financial crisis, driven by strong commodity exports, conservative banking practices, and relatively stable wage growth. In addition, asset price appreciation and a buoyant housing market may have supported wealth effects and household confidence. Nonetheless, the overall effect remains limited, implying that private consumption in Australia continued to rely primarily on wage income in the medium to long term.

Canada registers a weakly positive but stable response, indicating a marginal profit-led tendency. This can be attributed to favorable macroeconomic conditions throughout much of the 2010s, including low interest rates, a robust labor market, and a booming housing sector, which may have helped households maintain consumption despite a rising profit share. However, the small magnitude of the response suggests that while profits may have played a role in supporting short-run consumption, the Canadian economy remained fundamentally anchored in wage-led demand structures.

Denmark's cumulative response is close to neutral, with some positive outliers but no consistent pattern. This mixed signal may reflect the country's strong social safety net, high public sector employment, and generous automatic stabilizers, which can insulate consumption from distributional shifts. At the same time, Denmark's conservative fiscal policies and moderate household debt levels may have limited the positive transmission of profits into broader consumption, especially if profits were retained rather than distributed. The fixed exchange rate regime may have also constrained policy space, leading to a relatively muted response overall.

Finland demonstrates a clear negative consumption response, consistent with a wage-led regime. This pattern likely reflects the country's weak post-crisis recovery, high structural unemployment, and subdued wage growth. The Eurozone crisis had a lasting impact on Finland's export competitiveness and domestic demand, while limited fiscal flexibility further constrained private consumption. Additionally, Finland's high degree of openness and industrial restructuring reduced the capacity of profit increases to translate into domestic spending, reinforcing the importance of labor income as the driver of household demand.

France exhibits a mildly negative and stable response, in line with its traditional classification as a wage-led economy. The relatively limited decline can be explained by France's institutional framework: a large and redistributive welfare state, robust labor protections, and comparatively low household debt may have softened the consumption drag from a rising profit share. Nonetheless, the persistent negative trend suggests that despite these buffers, labor income remains the dominant force underpinning private consumption, and shifts in the wage share continue to shape macroeconomic dynamics.

Japan presents one of the most volatile profiles. While the initial quarters show slightly positive cumulative responses possibly reflecting the impact of Abenomics, including monetary expansion and fiscal stimulus this effect reverses sharply in the medium term. Several structural factors likely contributed to the eventual downturn: demographic aging, persistent deflation, weak productivity growth, and entrenched wage stagnation. The combination of a declining labor force and limited wage bargaining power weakened household income and consumption capacity, reinforcing a shift away from profit-led dynamics and toward a renewed dependence on wage growth.

Norway displays a negative median consumption response, albeit with some dispersion across horizons. Initially, consumption appears resilient, possibly due to expansive fiscal policies supported by the country's sovereign wealth fund. However, the cumulative trajectory turns negative, which may reflect falling oil prices after 2014, a slowdown in real income growth, and increased uncertainty in the broader macroeconomic environment. Despite early cushioning from fiscal buffers, Norway's household consumption appears ultimately sensitive to changes in the wage share, reaffirming the wage-led character of domestic demand.

Sweden stands out as the clearest profit-led case in the sample. The cumulative response is moderately and consistently positive, suggesting that rising profit shares supported consumption. This could be explained by strong asset price inflation, a booming housing market, and accommodative monetary policy, all of which may have amplified wealth effects. Furthermore, Sweden's corporate sector retained high levels of profitability during the post-crisis period, possibly enabling increased dividend payments or investment-driven income spillovers. Nevertheless, it is worth noting that the persistence of this pattern remains uncertain, and the Swedish case may reflect short-term conditions rather than a fundamental regime shift.

The United Kingdom exhibits the steepest and most persistent negative response, with consumption falling by as much as 1.5% of GDP following a rise in the profit share. This strongly supports the wage-led hypothesis. Several country-specific factors underpin this result: prolonged austerity policies, stagnant real wages, high and rising household debt, and pervasive uncertainty linked to Brexit all constrained household income and spending. In this context, increases in the profit share failed to compensate for weak wage dynamics, and may have further exacerbated income inequality and consumption fragility.

The United States also shows a negative median cumulative response, though slightly less severe than the UK. While some quarters exhibit muted or marginally positive effects potentially linked to rising asset prices, corporate earnings, and consumer credit expansion these do not offset the broader pattern of weak wage growth, high inequality, and subdued labor market recovery. The structural legacy of the 2008 financial crisis, including household deleveraging and underemployment, likely reinforced the importance of labor income as a driver of consumption, even within a highly financialized economy.

The cumulative consumption effects of a 1 percent increase in the profit share during the post-crisis period (2010–2019) indicate that most advanced economies remained wage-led in their demand structures. While a few countries such as Sweden, Australia, and Canada showed modest or temporary profit-led tendencies, these were generally short-lived and driven by financial conditions rather than structural changes. In contrast, countries like the United Kingdom, United States, Finland, France, and Norway exhibited negative or neutral consumption responses, consistent with the Post-Keynesian expectation that profit-led income distribution weakens household demand. Overall, the findings underscore the continued dependence of private consumption on labor income and suggest that shifts toward profit income do not provide a stable foundation for sustained consumption growth.

A comparative analysis of the pre-crisis period (1995–2006) and the post-crisis period (2010–2019) reveals both continuity and variation in the relationship between income distribution and private consumption in advanced economies. In line with Post-Keynesian and Post-Kaleckian theory, the marginal propensity to consume out of wages remained consistently higher than out of profits, but the strength and expression of wage-led dynamics varied across time and national context. During the pre-crisis period, most countries displayed clear wage-led characteristics. Wage shocks led to persistent increases in consumption, particularly in the United States, Canada, Denmark, and Sweden. In contrast, profit shocks had weak or negative effects on household demand, and cumulative responses to rising profit shares often showed declining consumption. These patterns support the view that labor income is a more reliable driver of demand, while shifts toward capital income undermine private spending capacity. In the post-crisis period, the overall wage-led pattern persisted, but with greater heterogeneity. Sweden and Australia showed modest short-term profit-led tendencies, likely driven by asset price growth, credit expansion, and monetary accommodation rather than a structural shift in demand regimes. Meanwhile, countries such as the United Kingdom and the United States exhibited even stronger wage-led dynamics, with pronounced negative consumption responses to profit share increases, reflecting stagnant real wages and rising inequality. Wage-led structures remained stable in France, Finland, and Norway, supported by public sector institutions and redistributive mechanisms.

In conclusion, the comparison across the two periods confirms the continued relevance of wage-led demand regimes. Although the post-crisis environment introduced new financial and policy dynamics, consumption in most economies remained dependent on labor income. The evidence supports the Post-Keynesian proposition that increasing the wage share is more effective than profit-led strategies for sustaining private demand and achieving macroeconomic stability.

3.4 Investment Effects of Rising Profit Share

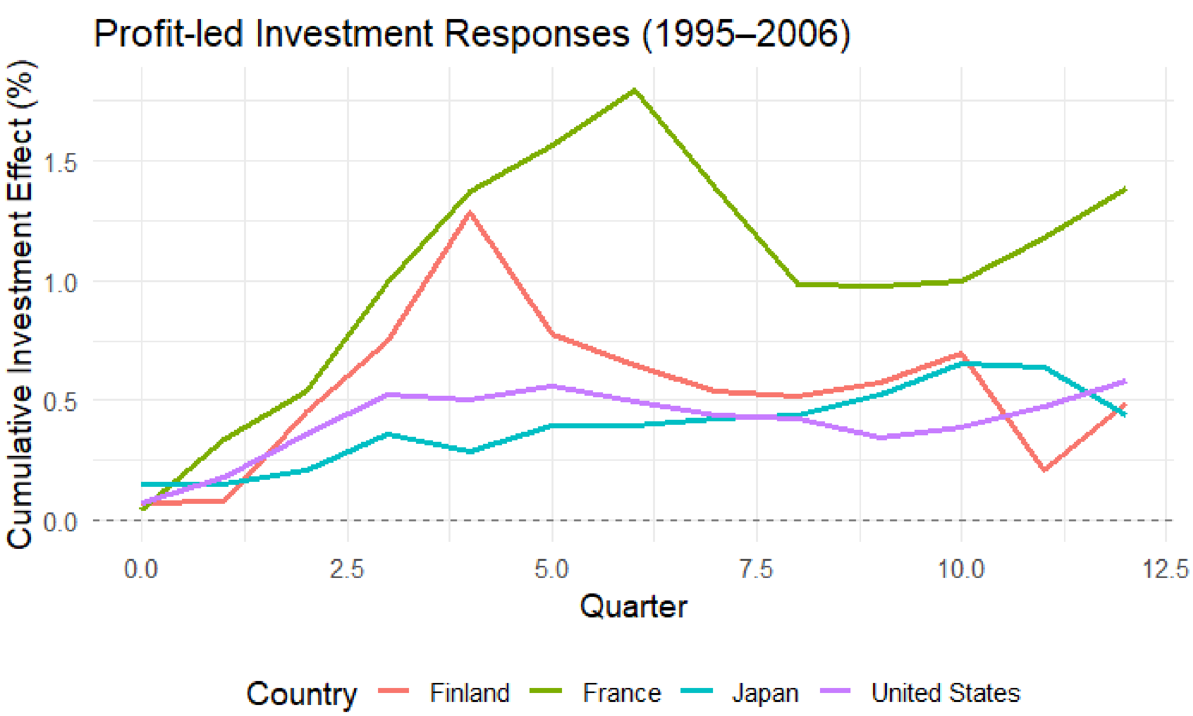
In line with the post-Kaleckian tradition, this section examines how a redistribution toward profits affects private investment across ten advanced economies. A central theoretical insight of the post-Kaleckian model is that the effects of changes in functional income distribution are fundamentally ambiguous, depending on the structural features of each economy. An increase in the profit share may support investment by improving internal financing conditions and boosting profitability expectations. However, this potential stimulus can be offset by adverse demand-side effects most notably, a reduction in household consumption that weakens firms' expectations of future sales. This tension gives rise to the possibility of both wage-led and profit-led investment regimes (Bhaduri & Marglin, 1990). Although rising profit shares are often assumed to stimulate private investment through enhanced profitability, empirical evidence suggests that this relationship is frequently weak or altogether absent. In financialized economies, firms tend to allocate a growing share of profits toward shareholder payouts, debt reduction, or financial speculation rather than productive investment (Stockhammer, 2004; Orhangazi, 2008). Furthermore, as emphasized by Hein (2015) and Onaran et al. (2011), investment decisions are strongly influenced by expected demand and capacity utilization both of which may remain subdued even in the presence of rising profits, particularly in the aftermath of economic crises. These considerations complicate the presumed link between profitability and private investment and underscore the importance of institutional and macroeconomic context.

This tension is particularly relevant for private investment, which is shaped by supply-side considerations such as retained earnings and business confidence and demand-side expectations of future sales. In profit-led regimes, the positive effects of increased profit share on expected returns and financing conditions dominate. In contrast, in wage-led regimes, the demand drag from falling wage income outweighs any profitability gains, leading to lower investment. While this theoretical ambiguity calls for empirical resolution, the methodological approach departs from the cross-sectional regression analysis used by Onaran and Obst (2016) and instead employs local projections to estimate the dynamic effect of a one percentage point increase in the profit share on private investment. This method yields a sequence of impulse responses over a twelve-quarter horizon, capturing not only the magnitude but also the temporal profile of the investment response. The estimated impulse responses are then translated into marginal effects, following the procedure outlined by Bhaduri and Marglin (1990) and adopted empirically by Onaran and Obst. Specifically, the average impulse response of investment at each horizon is multiplied by the ratio of private investment to adjusted profits for the corresponding country. This transformation expresses the result as the cumulative marginal change in investment, in percentage terms, resulting from a one percent increase in the profit share. These dynamic, marginal effects provide a clear interpretation of the strength and direction of the investment response across countries and over time.

The analysis proceeds in two steps. First, the effects are assessed for the pre-crisis period from 1995 to 2006, drawing on a context of robust global growth and relatively stable financial conditions. Next, the analysis turns to the post-crisis period from 2010 to 2019, which was characterized by elevated financial fragility, persistent underemployment, and shifting corporate investment strategies. Throughout, differences across countries will be explored, not only to identify regime type, but to understand the institutional and structural underpinnings of investment dynamics.

3.4.1 Investment Effects in the Pre-Crisis Period (1995–2006)

The analysis of marginal private investment effects prior to the global financial crisis reveals a diverse range of responses across the ten advanced economies under consideration. Based on local projections, the estimated impulse responses of private investment to a one percent increase in the profit share are scaled by the country-specific ratio of private investment to adjusted profits. The result is a sequence of cumulative marginal investment effects that reflect the percentage change in private investment over time in response to changes in functional income distribution. While some countries exhibit clear and sustained investment responses to rising profits, others display muted, negative, or unstable dynamics. Given that these estimates reflect average coefficients over each horizon, particular caution is warranted in interpreting countries with marginal values close to zero, where statistical significance and direction may be unclear.



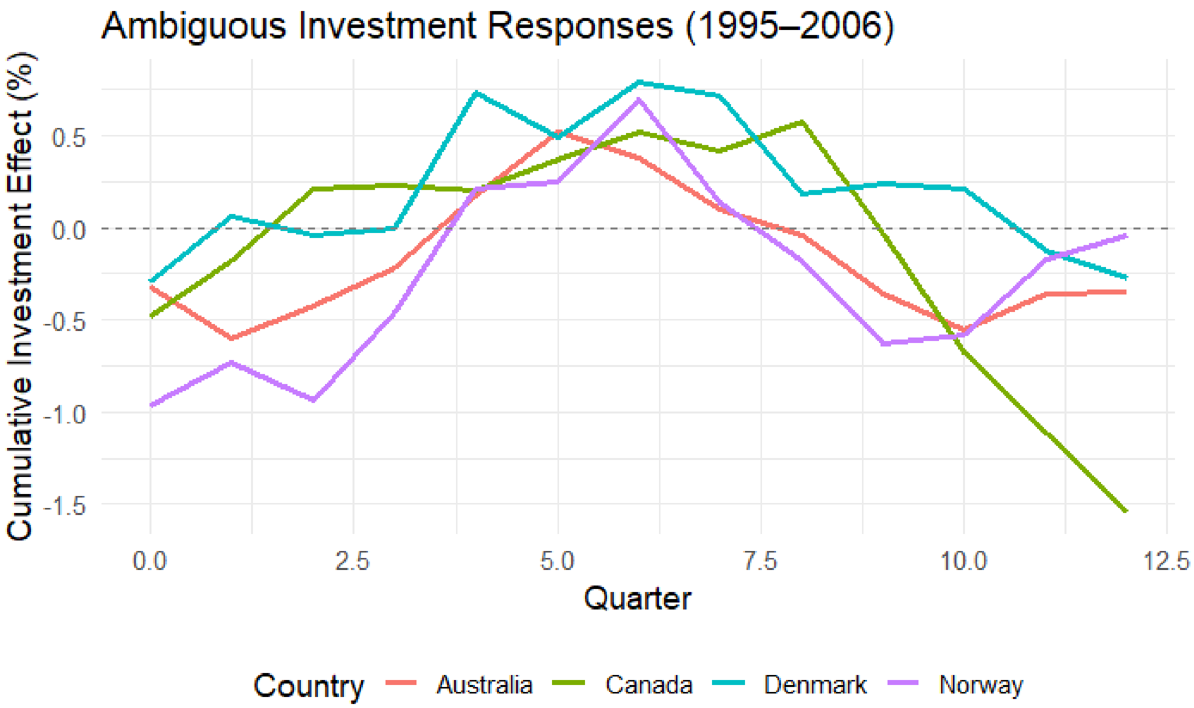
The graph illustrates the cumulative private investment responses to a profit-led impulse over the period 1995–2006 for four countries: Finland, France, Japan, and the United States. The vertical axis represents the percentage change in private investment, while the horizontal axis shows the number of quarters following the shock. A positive effect implies that private investment increases in response to a rise in the profit rate, which is indicative of profit-led accumulation dynamics.

France stands out as the most clear-cut case of a profit-led investment regime. The response is not only positive but also persistently rising across the twelve-quarter horizon, with a cumulative effect of approximately 1.38 percent by the end of the period. This strong and stable trajectory indicates that firms in France responded to higher profit shares with increased investment, likely facilitated by internal financing conditions and confidence in demand prospects (Stockhammer, Onaran & Ederer, 2009). The results reflect a structural environment in which private investment is closely tied to profitability signals, consistent with the expectations of post-Kaleckian theory. This sustained upward movement is clearly illustrated in the figure above.

Finland follows a similar, if slightly more moderate, trajectory. Cumulative investment responses reach just under 0.5 percent by the end of the twelfth quarter, with a relatively steady progression and few signs of reversal. The Finnish economy during this period was characterized by high-performing capital-intensive sectors, particularly in technology and manufacturing, which may explain the responsiveness of private investment to shifts in profitability. Like France, Finland exhibits a regime where rising profit shares seem to operate effectively as a financing signal and incentive for capital expansion.

The United States also shows a broadly consistent profit-led response. Cumulative investment increases reach around 0.58 percent by the end of the horizon, following a stable and upward trend with no major reversals. The macroeconomic environment in the US during this period, marked by low interest rates, increasing corporate earnings, and a supportive financial infrastructure, likely reinforced the profitability-investment link. Despite the rise of financialization and growing emphasis on shareholder returns, internal profits still appear to have influenced firms' capital accumulation decisions.

Japan offers a more modest but equally consistent case of a profit-led investment response. Private investment increases steadily from the outset, peaking at 0.65 percent by the tenth quarter and tapering slightly to 0.44 percent by the end. Importantly, the cumulative response remains positive across all horizons and does not exhibit the reversals or volatility seen in other economies. While Japan's macroeconomic context, marked by deflationary pressures and cautious corporate investment, might have suggested a weaker response, the data indicate that rising profits still played a meaningful role in shaping investment behavior. Given this consistent upward pattern, Japan can reasonably be classified as weakly profit-led, standing apart from the more ambiguous or demand-constrained cases.



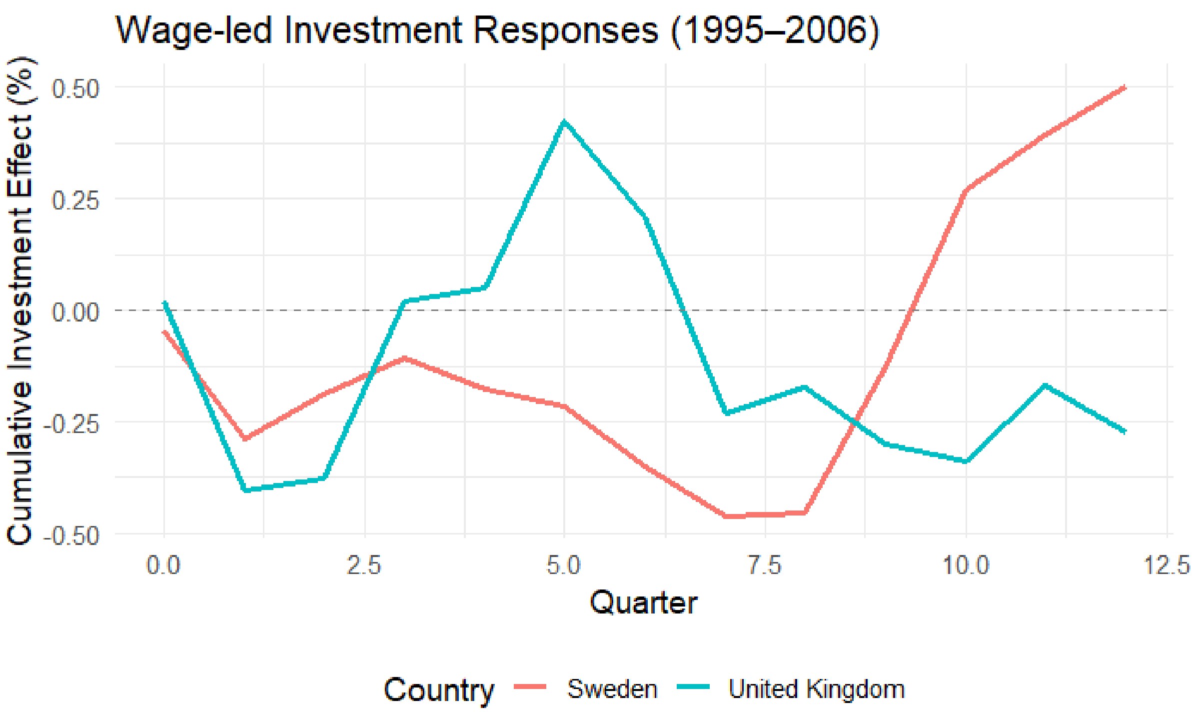
Australia follows a more mixed trajectory. In the first six quarters, private investment responses steadily increase, peaking around 0.4 percent, but are not sustained. From quarter 7 onwards, private investment steadily declines, ending the period at –0.35 percent. The path shown in the figure above suggests that while firms may initially respond positively to rising profits, demand or confidence fades over time. The modest magnitude and the fact that the cumulative effect never rises far above zero support an ambiguous classification. The result may reflect Australia's dependence on commodity exports, particularly to China, and sensitivity to global demand. Despite solid profitability in the mining sector during parts of the period, broader private investment may have been constrained by monetary tightening or cautious corporate sentiment in the face of global volatility.

Canada's pattern is similar in shape but more extreme in scale. The response is clearly positive until about quarter 8, peaking around 0.6 percent, after which private investment falls sharply and ends at – 1.55 percent. This sharp decline dominates the overall impression, but the initial rise is significant and suggests that firms may initially interpret profit share increases as supportive of investment. Yet the volatility of the response and the reversal in the second half of the period suggest that this effect is unlikely to be robust. The overall profile is unstable, and the effect although numerically strong may lack statistical significance when viewed in its entirety. Canada's economy during this time was influenced by structural shifts in manufacturing, NAFTA-related trade dynamics, and fluctuating energy prices, all of which may have disrupted stable investment behavior in response to profitability.

Denmark is another case of temporal reversal. Private investment responses are strong and rising in the early quarters, peaking at 0.74 percent by quarter 4. However, this momentum proves unsustainable, and the trajectory reverses from mid-horizon onward, ending at –0.28 percent. The shift from positive to negative in the figure above is visually sharp and indicative of investment regimes that are not profit-led in any sustained way. Like the others in this group, the magnitude of responses fluctuates around a narrow range for several quarters, suggesting the possibility of noise rather than signal, and reinforcing the classification as ambiguous. Denmark's fixed exchange rate policy under the ERM II mechanism limited the room for monetary stimulus, while tight fiscal discipline may have kept domestic demand and private investment expectations subdued despite any improvement in corporate profits.

Norway shows a volatile pattern. While the cumulative effect starts negative and swings into positive territory by quarter 6, the second half of the horizon is marked by another reversal, and the response ends near zero. This fluctuation between directions, without establishing a sustained trend, supports its inclusion in the ambiguous category, as seen in the instability of the figure above. The overall effect is small and inconsistent, and may not reflect a statistically meaningful reaction to profit share changes. Norway's private investment dynamics are heavily shaped by oil prices and fiscal policy related to petroleum revenues. The volatility in oil markets during this period likely contributed to uncertain profit expectations, which could explain the short-lived nature of the initial response.

Taken together, the ambiguous and mostly non-significant investment effects across these countries likely reflect a mix of macroeconomic uncertainty, structural constraints, and sectoral imbalances that moderated the responsiveness of private investment to profitability over the medium term.

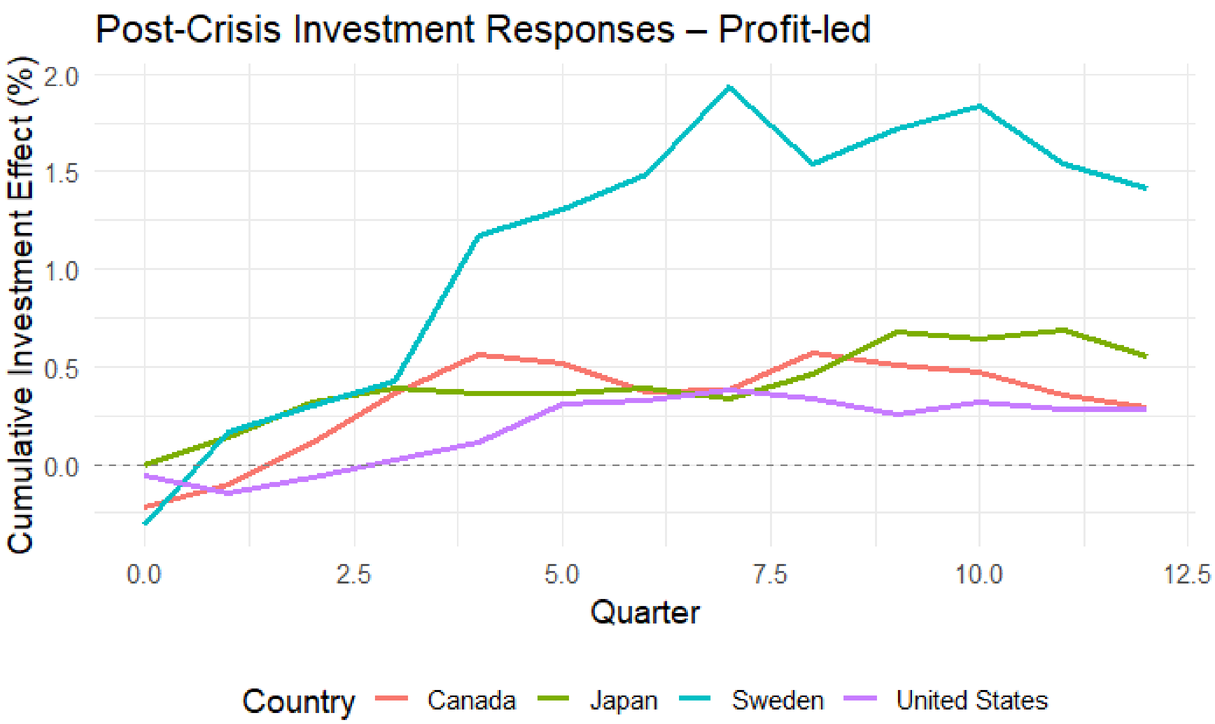


The United Kingdom presents a different profile. The private investment response is flat across nearly all horizons, with only small and short-lived upticks, and the path ends modestly negative at -0.27 percent. There is no identifiable period of sustained gain, and investment appears largely unresponsive to changes in profit share. This flatness is evident in the figure above and supports classification as a wage-led investment regime. The initial rise might be driven by increased consumer spending, especially in the context of liberal credit markets. However, the subsequent decline implies that the effect was short-lived, possibly due to business concerns about rising labor costs or profit margins. During this period, the UK economy was increasingly financialized, with private investment more sensitive to asset prices and global capital flows than to domestic wage dynamics.

Sweden displays more movement than the UK, with its response dipping into negative territory in the early quarters, recovering briefly, and ending slightly positive at 0.5 percent. However, this positive endpoint is not accompanied by a consistent upward trend, and the investment trajectory remains jagged and directionally unstable across the horizon. The variation in Sweden's path, as seen in the figure above, suggests that profitability may play a role but is not dominant, and the effects are likely mediated by other factors. This supports its classification as wage-led, not because of deep contraction but because of the lack of a coherent or sustained investment expansion. Sweden ran a post-crisis macroeconomic strategy, which included strong social protections, coordinated wage bargaining, and solid domestic demand.

3.4.2 Investment Effects in the Post-Crisis Period (2010–2019)

The post-crisis period from 2010 to 2019 presents a markedly different investment environment. Local projections continue to track the cumulative marginal response of private investment to a one percent increase in the profit share, scaled by each country's investment-to-profit ratio. The results, shown in the figures below reflect dynamic investment patterns in a global context shaped by slow recovery, heightened financialization, low inflation, and shifting corporate strategies. As before, the classification refers strictly to investment regimes and not broader demand regimes, which also depend on private consumption and net exports.

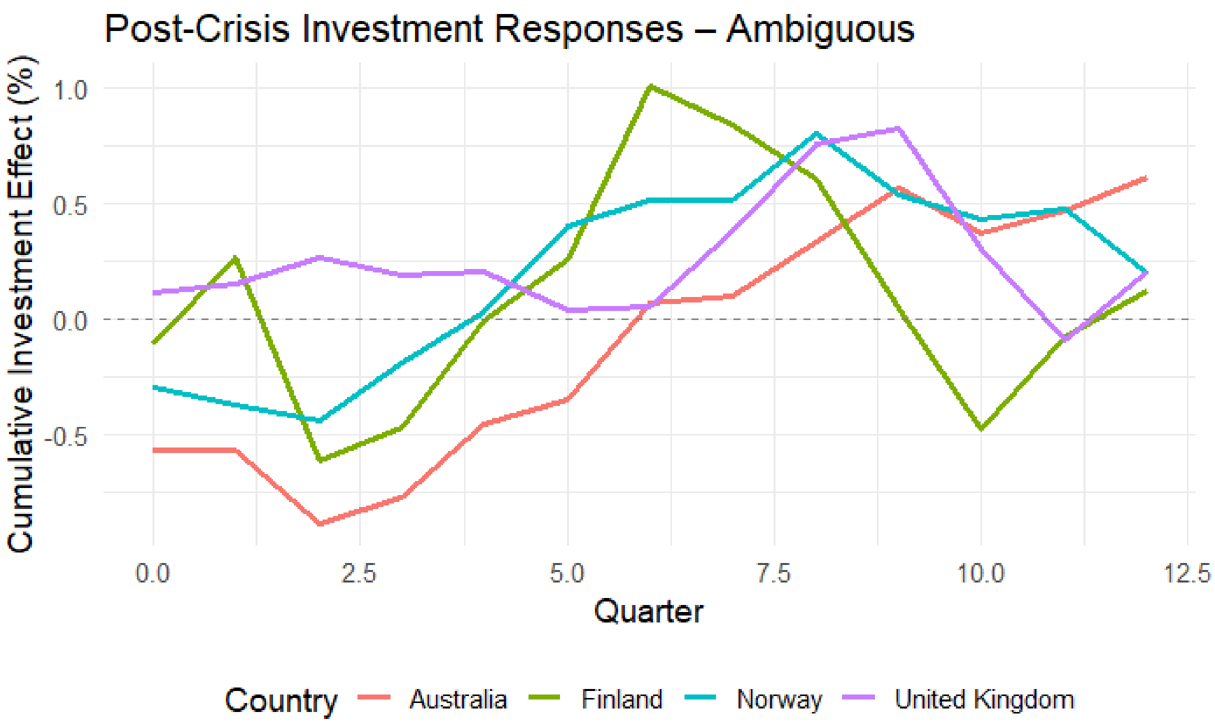


Japan continues to exhibit a stable profit-led investment response. The cumulative path rises smoothly throughout the horizon, reaching around 0.55 percent at quarter 12. This behavior is consistent with the pre-crisis period, though slightly stronger in magnitude. Private investment appears to respond reliably to profit share increases, suggesting that Japan’s internal financing and profitability conditions remained influential despite deflationary pressures. The clarity and persistence of this upward trajectory, seen in the figure above, support Japan’s continued classification as profit-led. The pattern may reflect the impact of Abenomics, which aimed to restore profitability through monetary easing, fiscal stimulus, and structural reforms. Firms likely responded to improved margins with investment, though demographic and structural headwinds kept the effect moderate.

The United States also retains its profit-led position. The post-crisis response is slightly weaker than pre-crisis, peaking around 0.28 percent by quarter 12. While the effect is modest, it is consistent, with no reversal or prolonged flattening. Private investment builds gradually after a slow start, indicating that profitability still informs capital formation, even if other channels such as shareholder returns may have diluted the effect. The figure above reflects a stable, if conservative, private investment response in line with profit-led behavior. Despite rising corporate profits and favorable credit conditions, private investment in the US may have been held back by firms prioritizing share buybacks and financial investments over physical capital expenditures. This aligns with the broader trend of financialization in the US economy during the post-crisis decade (Stockhammer, 2017).

Sweden, by contrast, undergoes a notable shift from its previously ambiguous or wage-led status. The post-crisis trajectory is steadily upward, culminating in a cumulative gain of approximately 1.41 percent by the end of the horizon. The rise is persistent and smooth across all quarters, indicating a significant change in the way private investment responds to profitability. Whether this is the result of structural reforms, greater corporate responsiveness, or improved macroeconomic coordination is beyond the scope of this analysis, but the regime change is unambiguous and clearly visible in the figure above. Sweden experienced a strong recovery after the global financial crisis, with robust exports, low interest rates, and a favorable investment climate.

Canada, which had previously exhibited a reversal pattern during the pre-crisis period, now displays a more stable and upward trajectory. The cumulative effect becomes positive by quarter two and continues to increase until quarter six, peaking above 0.5 percent, before stabilizing just under 0.3 percent by the end of the horizon. The shape of the curve, shown in the figure below, suggests that the private investment response is more coherent and sustained in this period. While the effect is not large, the consistency and direction support Canada's reclassification as profit-led. Canada's post-crisis recovery was driven in part by a stable banking sector and fiscal stimulus, but private investment remained cautious due to global uncertainty and fluctuations in commodity prices, particularly in the oil sector.

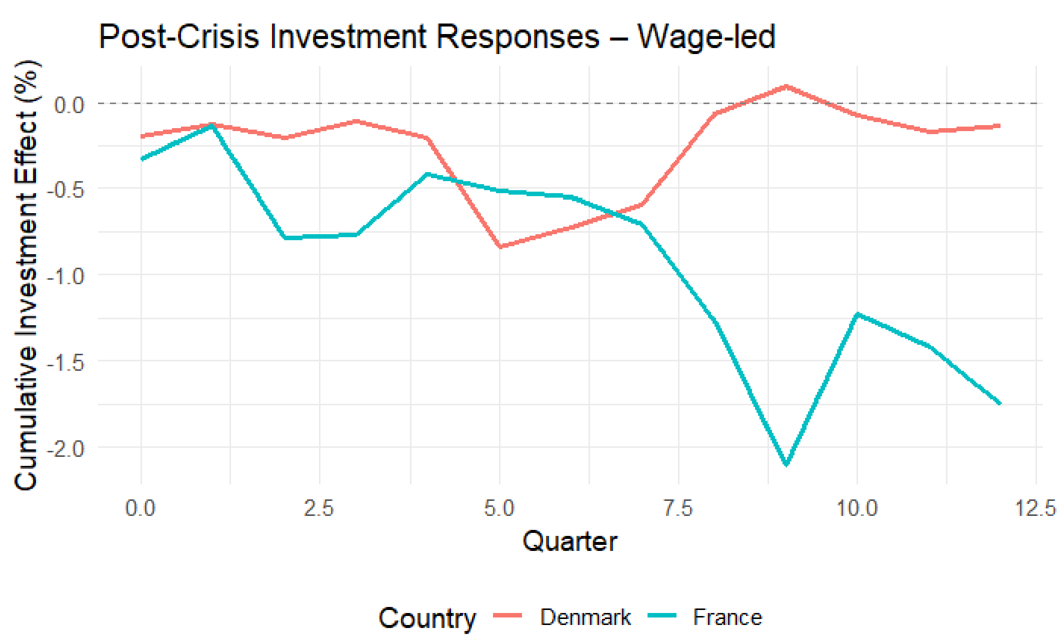


In contrast, several countries fall into an ambiguous category. These include Australia, Finland, Norway, and the United Kingdom. Each of these shows signs of responsiveness, but the magnitude of the effect remains small, the trajectory unstable, or the direction unclear. Australia, for example, remains in negative territory for several quarters before eventually recovering and ending slightly above 0.6 percent. The late recovery is sharp but not built on steady momentum, making the reliability of the effect questionable. Australia avoided a deep recession in 2008–2009 but faced slowing growth in China and commodity price fluctuations during the 2010s, which affected corporate investment decisions despite profitability.

Finland's private investment response peaks early, fluctuates around zero in the mid-horizon, and shows no strong cumulative direction. The final gain is marginal and possibly insignificant. Finland displays high volatility, with investment falling sharply after quarter two, then rising quickly to a peak at quarter seven, followed by a sharp decline. This highly unstable pattern indicates a non-significant or ambiguous effect. Finland's investment climate in this period was influenced by the Eurozone crisis, a shrinking electronics sector, and weak external demand, all of which introduced uncertainty despite temporary improvements in profit margins.

Norway exhibits substantial volatility, with sharp reversals before and after quarter 6. The response ends slightly positive but lacks a clear trend and could easily reflect noise. Norway shows a steady increase in investment from quarter one to quarter eight, peaking around 0.75 percent, before flattening or slightly declining. While the pattern suggests a possible short-term profit-led response, the lack of a consistent upward trend limits its significance. Norway's response is shaped by its oil-dependent economy, where private investment decisions are closely tied to global energy prices. Post-crisis oil price volatility likely created hesitation among firms, despite high profitability in certain periods.

The United Kingdom shows more upward movement than in the pre-crisis period, peaking near 0.82 percent in quarter 9. However, this momentum does not last, and the response begins to decline toward the end. While the result is now more positive, the instability and mid-horizon flattening suggest that investment behavior in the UK remains inconsistent. The UK's post-crisis environment was marked by austerity, Brexit uncertainty, and financial market priorities, which may have tempered private investment reactions to rising profits. As illustrated in the figure below, none of these countries display the persistent and monotonic growth characteristic of profit-led regimes, and their effects hover around thresholds where statistical significance is uncertain



France undergoes a sharp transition, moving from a clearly profit-led regime to a wage-led investment pattern. The cumulative effect starts negative and continues to decline, reaching –1.76 percent by the end of the horizon. The reversal is steep and sustained, with no sign of recovery. This pattern likely reflects a changed macroeconomic environment in which profits no longer stimulate private investment possibly due to weakened demand expectations, a shift toward financialized corporate behavior, or tighter fiscal constraints. As seen in the figure above, the fall is large enough to suggest a meaningful shift in regime. One explanation could be that rising wage shares were perceived by firms as a cost shock, especially in a period marked by sluggish demand and elevated unemployment. During the post-crisis years, France also faced structural rigidities in the labor market and weak business confidence, which could have dampened private investment in response to higher labor costs rather than encouraged it through stronger demand.

Denmark's path is similarly negative. Private investment starts below zero, never builds upward momentum, and ends at –0.14 percent. Although the final value is modest in absolute terms, the majority of the path remains in negative territory, and there is no persistent positive trend. Given the consistent weakness of the response and its proximity to zero, the result likely reflects statistical insignificance rather than a meaningful behavioral pattern. Nevertheless, the lack of any positive buildup across the horizon justifies classifying Denmark as wage-led during this period. The result may reflect Denmark's macroeconomic stability and strong institutional frameworks during the post-crisis years, including a conservative fiscal stance and subdued private investment. Although rising wages could have supported private consumption, firms may not have perceived enough demand expansion to justify increased investment.

In summary, the post-crisis period brings both continuity and change to private investment regime classifications. Japan, the United States, and now Canada and Sweden fall into the profit-led group, showing either stable or strengthening responsiveness to profit share increases. Countries such as Australia, Finland, Norway, and the United Kingdom show mixed or unstable dynamics with magnitudes close to zero or marked by reversals, justifying an ambiguous label. France and Denmark display persistent and meaningful declines in private investment following profit share gains, suggesting that profitability no longer drives capital accumulation. These are better understood as wage-led in their investment behavior.

As before, these classifications refer only to investment regimes, and not to total demand regimes. Nevertheless, the evolution of investment responsiveness post-crisis offers insight into how firm behavior, financial conditions, and macroeconomic context have reshaped the link between profitability and accumulation. These findings also complement and extend earlier results from Onaran and Obst (2016), by revealing not just static patterns but dynamic transitions across time, including the weakening of previously profit-led investment dynamics in some countries, alongside the emergence of clearer profit responsiveness in others, such as Sweden.

3.5 Net Exports Effects of Rising Profit Share

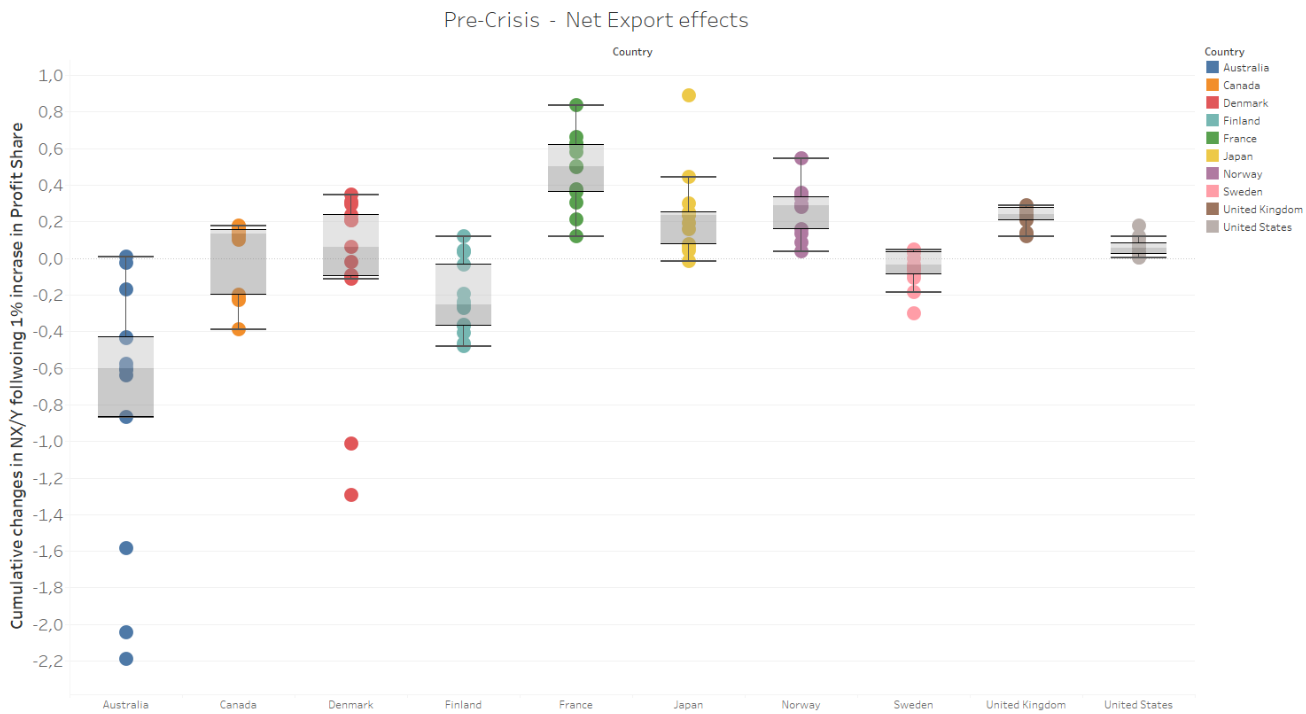
This section presents an empirical analysis of the external sector, focusing on the effects of changes in the functional income distribution specifically the wage share on net exports, exports, and imports. Within the Post-Keynesian and Post-Kaleckian tradition, the wage share is not merely a cost variable but also a determinant of demand. Accordingly, fluctuations in the wage share can influence relative prices and, through them, international competitiveness, thereby affecting trade balances. Following Onaran and Galanis (2014) and Onaran and Obst (2016), exports are modeled as a function of relative export prices and foreign GDP, while imports respond to domestic prices, relative import prices, and domestic GDP. Since unit labor costs (ULC) are closely tied to the wage share, a shift in income distribution alters both domestic and export prices, which in turn influences external trade flows. To trace these linkages, we adopt a stepwise approach in which changes in the wage share are first transmitted into unit labor costs, then into prices, and finally into trade volumes.

To quantify the strength and direction of these effects, we compute marginal effects defined as the percentage change in a trade variable (as a share of GDP) in response to a one-percentage-point change in the wage or profit share. These are derived by multiplying estimated elasticities with the respective sample means, such as $\frac{\frac{X}{Y}}{ULC}$ for exports. This allows for a consistent assessment of the contribution of distributional shifts to changes in the external sector. By summing the marginal effects on exports and imports, we estimate the net trade effect. Moreover, these effects are subsequently incorporated into the broader demand model, feeding into the calculation of private excess demand and ultimately affecting GDP through multiplier mechanisms. This analytical strategy enables us to distinguish between wage-led and profit-led regimes in the external sector and to identify the structural conditions under which redistribution either enhances or impairs macroeconomic performance.

3.5.1 Net Exports Effects in the Pre-Crisis Period (1995-2006)

The analysis of marginal net export effects prior to the global financial crisis reveals heterogeneous patterns across the ten advanced economies in the sample. In some countries, a rising profit share appears to improve the external balance, consistent with post-Kaleckian expectations. However, in several cases, the effect is weak, delayed, or even negative. Although increases in the profit share are theoretically expected to lower unit labor costs and strengthen international competitiveness, the realized impact on net exports is highly dependent on structural characteristics such as trade openness, industrial specialization, and the prevailing exchange rate regime. Additionally, the effectiveness of wage moderation may be diminished if trading partners simultaneously pursue similar strategies, eroding relative gains. Empirical research has highlighted why these expected gains often fail to materialize. Stockhammer and Onaran (2004) and Hein and Vogel (2008) find that external improvements are frequently offset by domestic inflation, mark-up expansion, or limited exchange rate flexibility. Imports may also remain high or even increase due to structural openness, investment-led demand for foreign inputs, or persistent consumption by higher-income households (Onaran & Galanis, 2014; Carvalho & Rezai, 2016). These factors suggest that distributional shifts do not automatically enhance trade balances, particularly in financialized and globally integrated economies. To quantify the dynamic effects of distributional changes on trade performance, the analysis employs Local Projections to estimate the cumulative response of net exports to a one percentage-point increase in the profit share. These marginal effects are scaled by the average ratio of net exports to real unit labour costs for each country, and the resulting estimates trace the cumulative percentage change in net exports over a twelve-quarter horizon.

The pre-crisis period of 1995–2006 was marked by accelerating globalization, stable growth in international trade, and the consolidation of export-oriented growth strategies in several advanced economies. This era also saw widespread labour market reforms and competitive wage setting, often leading to downward pressure on unit labour costs. Within this context, some economies leveraged rising profit shares to boost exports and gain global market share, while others experienced offsetting effects due to strong domestic demand, currency appreciation, or limited external exposure. The following analysis captures these divergent responses, providing insight into the extent to which changes in income distribution shaped external adjustment paths during a period of relative macroeconomic stability and open trade dynamics.



The figure above illustrates the cumulative net export responses of ten economies to an increase in profit share over the period 1995 to 2006. This is simply a Whisker plot that shows the general distribution of the 12 horizons for each country, with each individual effect being plotted and visualized in the appendix. A positive cumulative effect indicates an improvement in net exports (either through increased exports or reduced imports), while a negative effect implies a worsening of the trade balance. The curves represent each country's dynamic response to the shock. The shape and direction of each line provide insights into the sign and persistence of the net export adjustment over a three-year period (12 quarters). Countries with upward-sloping curves experienced rising net exports over time, suggesting external competitiveness or suppressed domestic demand, while downward-sloping curves reflect rising imports or weak export performance relative to domestic absorption. The graph highlights substantial cross-country variation.

Australia shows a decline in net exports, not because of surging imports, but possibly due to a collapse in exports. Cumulative exports fell by around 2.5 percentage points, while imports declined slightly to around -0,3, resulting in a net export deterioration of roughly two percentage points. This contradicts the conventional expectation that profit-led regimes stimulate domestic demand primarily through higher imports. Instead, the deterioration in net exports appears to stem from declining export performance, which may reflect a reallocation of resources toward non-tradable sectors and a loss of external competitiveness.

Canada's trade response to a 1% increase in the profit share was mild and showed no clear cumulative trend. Imports rose modestly and steadily, ending just below 0.2 percentage points, indicating a limited boost to domestic demand. Exports initially increased but gradually declined to around -0.2 percentage points, likely due to short-lived competitiveness gains and external demand conditions. As a result, the net export response remained broadly stable throughout the horizon until a decline to around -0,4 on horizon 12.

Denmark showed that imports declined to -0,2, likely reflecting the country's institutional wage coordination and limited profit-led domestic stimulus, before rising to -0,05. Exports were slowly declining until a volatile decline at horizon 10 to 12 endning at almost -1,5. The resulting net export path turned negative in the second half of the horizon, ending at about -1.5 percentage points. This decline illustrates how an inability to adjust competitiveness under a fixed exchange rate regime can amplify negative external effects of distributional shifts.

Finland experienced a deterioration in net exports during the pre-crisis period, driven by declines in both imports and exports. Imports fell steadily from just below 0 at horizon 0 to approximately –0.5 by horizon 12, indicating that the increase in profit share did not translate into stronger domestic demand via imports. Exports declined even more sharply, ending around –0.9, suggesting a loss of external competitiveness or weakened foreign demand. As a result, the net export response shows a brief rise at horizon 1 driven by a temporary export increase followed by a steady decline, reaching about –0.4 at the end of the horizon.

France displays a positive net export response to rising profit shares, ending at around +0.8 by horizon 12. This improvement is driven by a steady decline in imports and a moderate increase in exports, which rose until quarter 7, dipped slightly through horizon 10, and then recovered to about +0.3. The positive net export outcome may reflect the effects of wage moderation and competitiveness-oriented policies that strengthened the external balance while containing domestic demand leakage.

Japan shows a notable increase in net exports during the pre-crisis period, reaching a cumulative gain of over +0.7 percentage points. Imports declined steadily, likely reflecting structurally weak domestic demand. Exports remained relatively flat until horizon 7, then dipped briefly before rising sharply to over +0.4 by horizon 12. The improvement in net exports appears to be driven more by import compression than strong export expansion, consistent with Japan's broader pattern of external-surplus-led growth amid subdued internal demand.

Norway experienced a clear positive net export response, likely driven by strong external demand for oil and gas. Imports remained mostly flat until horizon 11, where a modest increase appears. In contrast, exports rose steadily, reaching around +0.6 by horizon 12. Norway's fiscal framework, which restricts the domestic use of resource revenues, may have supported this outcome by channeling external demand into trade surplus gains without fueling domestic overheating.

Sweden, shows a steady downward trend in net exports ending around -0,2. Imports declined slightly, but exports fell more significantly, resulting in a net loss of about −0.3 percentage points. The decline in exports may reflect structural shifts or competitiveness issues, while the import response suggests that rising profits did not stimulate strong domestic demand.

The United Kingdom recorded an increase in net exports ending at +0,18. Imports remained flat, while exports rose slowly. This resulted in a modest net export gain of around +0.3 percentage points. The UK's flexible exchange rate and service-led export structure likely helped maintain external competitiveness without stimulating import growth.

Finally, the United States showed a modest improvement in net exports. Imports declined slightly but appeared more volatile, while exports rose gradually before dipping below zero and then recovering to around +0.15 by the end of the horizon. Overall, the cumulative net export effect reached approximately +0.18 percentage points.

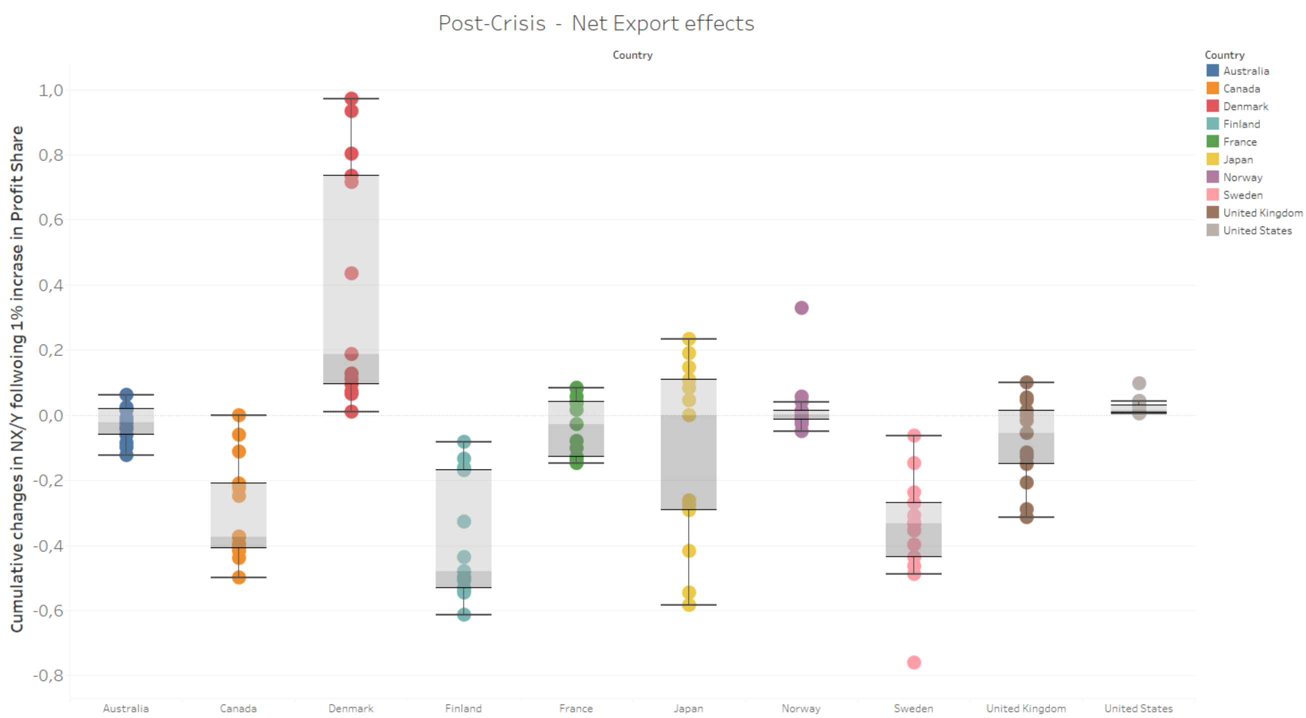
The figure above reveals significant cross-country variation in net export responses to rising profit shares during the pre-crisis period (1995–2006). While some countries experienced clear improvements in net exports, others showed neutral or negative adjustments, reflecting structural differences in competitiveness, demand conditions, and policy frameworks. France, Japan, Norway, and to a lesser extent the United Kingdom and United States, recorded positive net export responses. In these cases, gains were driven by a combination of steady export performance and limited import growth. For example, France's improvement appears linked to wage moderation and competitiveness policies, while Japan's surplus seems to result more from import compression than strong export expansion. Norway benefited from robust global demand for oil and gas, supported by a fiscal framework that limited domestic absorption of resource revenues (Hein, 2015). In contrast, Australia, Denmark, Finland, and Sweden experienced deteriorations in net exports. In Australia, the decline was driven primarily by falling exports, challenging the conventional view that profit-led regimes stimulate demand through imports. Denmark and Finland, constrained by fixed exchange rates, showed declining exports and only modest import adjustments, likely reflecting reduced competitiveness. Sweden's export performance also weakened, leading to a mild net export loss. Canada displayed a relatively neutral pattern, with minimal cumulative changes in imports and exports. The United Kingdom and United States both saw modest net export gains, supported by stable imports and gradually rising exports.

These outcomes suggest that rising profit shares do not consistently lead to improved net exports. In some economies, particularly those with strong external demand or policies that suppress domestic absorption, profit-led shifts supported external balances. In others, particularly where competitiveness eroded or external demand was weak, the result was negative or negligible. The findings underscore the role of country-specific institutions, macroeconomic structures, and external conditions in shaping trade outcomes in response to distributional changes.

3.5.2 Net Exports Effects in the Post-Crisis Period (2010–2019)

The post-crisis period of 2010–2019 presents a markedly different landscape for net exports across advanced economies compared to the pre-crisis decade. Utilizing Local Projections, this analysis estimates the cumulative marginal effects of a one percentage-point increase in the profit share on exports, imports, and ultimately net exports. These effects, scaled by each country's average net exports-to-output ratio, provide a dynamic representation of external demand responses to distributional shifts. While classical Post-Keynesian theory suggests that rising profit shares via reduced unit labour costs should improve net exports, the results for this period illustrate a more fragmented and at times counterintuitive picture.

The decade following the global financial crisis was shaped by sluggish global trade, shifts in industrial structure, and diverging macroeconomic strategies (Stockhammer, 2017). Many countries pursued internal devaluation or fiscal consolidation, while others relied on monetary easing and exchange rate depreciation to stimulate growth. Against this backdrop, the net export channel responded differently depending on the composition of external demand, the strength of domestic absorption, and the role of commodity prices and exchange rate regimes. For some economies, increased profit shares coincided with rising imports driven by domestic recovery, while others experienced modest export-led gains. The empirical analysis that follows disentangles these effects, highlighting the complex and country-specific nature of the net export response to changes in income distribution during the post-crisis recovery.



The figure above presents the cumulative net export responses of ten advanced economies from 2010 to 2019 following a macroeconomic shock, likely linked to shifts in income distribution or domestic demand. The horizontal axis shows the number of quarters, while the vertical axis measures the percentage change in cumulative net exports. In the post-crisis period from 2010 to 2019, countries displayed a range of external trade responses to a 1% increase in the profit share, shaped by both domestic conditions and the broader global environment.

Australia, which had previously experienced a sharp trade balance deterioration, now showed a largely neutral response. Imports remained flat and there is no significant cumulative increase or decrease, indicating that higher profit shares did not meaningfully stimulate domestic demand via imports in the post-crisis period. Exports also stay relatively flat, with values hovering just below zero. This suggests that a rise in the profit share did not improve export performance, and may even have had a slightly negative effect, though the change is minor. The net export curve for the post-crisis period is flat and slightly negative, ending just below –0.2. This means that, overall, the impact of a profit share increase on Australia's external balance was minimal, with no strong improvement or deterioration.

Canada presented a volatile and mixed pattern. Imports initially rise, peaking at over +0.3 by quarter 2, before fluctuating and then declining in quarter 8. This suggests that higher profit shares initially stimulated some import-driven domestic demand, but the effect was short-lived and unstable. Exports display a negative trend, falling gradually from around 0 to around –0.3 by horizon 9, followed by a brief recovery. This implies no sustained export gains, possibly due to competitiveness challenges or weak external demand. The cumulative net export response is negative overall, reaching nearly –0.5 by horizon 9 before a modest rebound and ending around -0,2.

Denmark ahows that imports declined steadily while exports rose and persistently with a small decline in the end. The net exports improved by nearly +0.8 percentage points. This result likely stems from Denmark's industrial structure, competitiveness in key export sectors, and wage-disciplining institutions, combined with a macroeconomic environment that restrained domestic demand while supporting trade.

Finland shows that both imports and exports declined, with the export fall more severe. The net exports has a small rise followed by a downward trend ending just above -0,6. The post-crisis weakness in Finland's high-tech sector, coupled with a rigid monetary policy framework under the euro, appears to have undermined both competitiveness and external demand. Profit increases did not stimulate internal expansion, and the external sector suffered as a result.

France import increased, reaching just above +0.2 by horizon 5 and then leveling off. This suggests that profit gains stimulated domestic demand, leading to higher import consumption. Exports initially rose, peaking around +0.35 at horizon 8, but then declined sharply afterward, ending closer to 0,1. This pattern indicates some short-term export gains, possibly due to competitiveness effects, followed by a loss of momentum or external demand constraints. The net export curve shows a small decline, followed by an increase just above 0 and then moving to nearly –0.2 by horizon 12. This deterioration reflects the mismatch between rising imports and weakening export performance in the later quarters.

Japan shows that Imports increased significantly, rising to +0.4 by quarter 8 before gradually declining. This suggests that higher profit shares stimulated domestic demand, leading to a surge in imports during the early part of the period. Exports rise rapidly until horizon 5 at almost 0,5, but then drop sharply before recovering again toward the end of horizon 12. This volatility points to external demand fluctuations or exchange rate movements, making export performance less stable. The net export curve declines from quarter 5 to 8, bottoming out at almost –0.6, but then recovers, ending at around 0,25. This indicates a temporary deterioration in the net exports, followed by a late reversal.

Norway shows that imports remain flat but slightly negative for most of the horizon, ending around -0,2. This indicates little to no import-driven domestic demand response, possibly due to restrained private consumption or private investment effects following profit increases. Exports stays around zero but has an increase at hoizon 12, ending around +0.3. Net export response stays around zero but ends just over +0.3 by horizon 12. This reflects a combination of stable imports and gradually rising exports, supporting an improved trade balance.

Sweden’s import response shows a sharp decline in the first horizons, reaching around –0.8 by horizon 5, followed by a slight rebound and stabilization ending at -0,6. This pattern suggests a significant weakening of domestic demand in response to rising profit shares. Exports also decline steeply, falling below –1.4 by quarter 10 and remaining low for the hole of the period, with only a minor recovery toward the end. This points to a substantial loss in external competitiveness or subdued foreign demand, which appears to outweigh any potential benefits from cost-side improvements. As a result, the net export path trends consistently downward, reaching nearly –0.8 by horizon 10 before recovering slightly. The worsening trade balance reflects the combined effect of declining imports and even larger export losses.

The United Kingdom experienced a gradually decline in imports over the horizon, falling to about –0.3 by quarter 12. This indicates that domestic demand remained weak, and rising profits did not trigger higher import activity. Exports initially rise slightly but then decline steadily after quarter 3, reaching just below –0.4 by horizon 12. This trend suggests a significant loss in external competitiveness or weak global demand, which undermined any short-term gains. The net export response mirrors these developments, showing a rise through the early horizons, followed by a steady fall and a dip below –0.3 at horizon 7 but recovers slightly and ends around -0,15.

The United States showed that Imports remain relatively flat with slight fluctuations, has an increase to over zero but decline ending near zero at -0,025. This suggests that rising profit shares had little impact on domestic demand via imports, and did not trigger significant import growth. Exports increase gradually, especially after horizon 8, ending around +0.07. While the initial response is muted, the export performance strengthens in the second half, suggesting a delayed but positive external adjustment. Net exports follow a moderately upward trend, ending at almost +0,1.

In the post-crisis period (2010–2019), advanced economies displayed diverse net export responses to a 1% increase in the profit share, reflecting differences in domestic demand dynamics, competitiveness, and external conditions. Some countries, such as Denmark, Japan, Norway, and the United States, recorded positive or improving net export paths, either through export expansion, import restraint, or a combination of both. Notably, Japan and the U.S. showed late recoveries after initial deterioration. Conversely, countries like Sweden, Finland, France, and the United Kingdom experienced net export declines, typically due to export weakness outweighing any import moderation. France and Canada showed mixed and volatile patterns, with initial gains offset by later downturns. Australia stood out with a largely neutral response, marking a shift from its sharper pre-crisis trade deterioration. Overall, the results highlight that in the post-crisis decade, profit-led distribution did not systematically improve trade balances, and its effects were shaped by country-specific structures, global demand conditions, and the capacity to maintain or regain external competitiveness.

3.6 Aggregate Demand Effects of Rising Profit Share

This section brings together the marginal effects of functional income distribution on the three core components of aggregate demand: private consumption, private investment, and net exports. The aim is to assess the total demand impact of a one percent increase in the profit share. While the earlier sections examined each channel separately, the focus now shifts to how these responses interact and ultimately determine whether an economy is profit-led or wage-led overall.

In the post-Kaleckian framework, consumption is typically wage-led, since wages make up the bulk of household income. A redistribution towards profits is therefore expected to reduce consumption demand. The effects on private investment and net exports, however, are more context dependent. In theory, private investment may rise with profitability due to improved internal finance and stronger profit expectations, but the actual response depends on firm behavior, financial constraints, and demand outlook. Similarly, net exports may improve if lower wage shares reduce domestic costs and improve competitiveness, but this depends on trade structures, exchange rate regimes, and external demand conditions (Onaran & Galanis, 2014).

As a result, the total demand effect of a rising profit share is theoretically ambiguous and must be assessed empirically. In some cases, the combined gains from private investment and net exports may clearly outweigh the decline in consumption, leading to a profit-led outcome. In others, the contraction in consumption is larger and not sufficiently offset, resulting in a wage-led pattern. However, not all countries fit neatly into either category. Some exhibit small or fluctuating aggregate effects, where no component is strongly dominant, or where the direction of the response changes over time. These cases may reflect structural uncertainty, transitional dynamics, or simply effects too close to zero to interpret with confidence. For this reason, the classification also considers the consistency and size of the total response, as well as which component appears to exert the greatest influence.

To evaluate this empirically, the analysis proceeds country by country, comparing the pre-crisis and post-crisis periods side by side. This approach makes it possible to assess whether the regime type is stable across time or if shifts have occurred. For each case, we examine the full twelve-quarter horizon to understand the direction, magnitude, and timing of the total demand effect. Particular attention is given to which components plays the dominant role in shaping the outcome, and whether the overall effect appears large and persistent or marginal and possibly insignificant. The corresponding visualizations that illustrate the cumulative demand responses for each country are provided in Appendix A.5.1–A.5.10. These figures display the full twelve-quarter horizon, allowing for a clear comparison of pre- and post-crisis effects and the relative contribution of each demand component to the total outcome.

3.6.1 Australia

In the pre-crisis period, Australia shows a clear contraction in aggregate demand following an increase in the profit share. The total cumulative effect reaches –3.60 percent by quarter twelve, with a decline that sets in early and continues throughout the horizon. This outcome is primarily driven by a strong and persistent fall in private consumption, which accounts for most of the overall contraction. Private investment contributes negatively in the early quarters, and although it turns slightly positive mid-horizon, the recovery is modest and short-lived. Net exports fluctuate and are generally negative, offering no meaningful offset to the domestic weakness.

Post-crisis, the dynamics shift. The total demand response still begins with a decline, but the path gradually turns upward from around quarter six. By the end of the horizon, the cumulative effect is slightly positive at 0.68 percent. This mild recovery is almost entirely the result of a turnaround in private investment, which moves from negative to steadily positive in the second half of the horizon. Consumption remains subdued and contributes negatively throughout, although less severely than in the earlier period. Net exports continue to provide no meaningful boost, with small and inconsistent contributions that hover near zero.

Overall, Australia exhibits a wage-led demand regime in the pre-crisis period, where the contraction in consumption is dominant and not offset by other components. In the post-crisis period, the picture is more mixed. The private investment recovery plays a central role in pulling the aggregate effect above zero, but the result is relatively small and develops late in the horizon. Given the weakness in consumption and the marginal role of net exports, the post-crisis outcome appears more ambiguous and reflects a delicate balance rather than a strong shift in regime.

3.6.2 Canada

Canada's pre-crisis response to a one percent increase in the profit share shows a clear mid-horizon expansion in aggregate demand. The cumulative effect turns positive early, rising from quarter 1 onward and reaching a peak of just over 1.01 percent by quarter 8. This gain is the result of steadily increasing investment and initially supportive consumption, with net exports also contributing positively in the early quarters. However, from quarter 9 onward, the trend reverses. Private investment deteriorates sharply, consumption turns negative, and net exports begin to weaken. By quarter twelve, the cumulative effect falls to –2.34 percent. This late-stage contraction wipes out the earlier expansion, and the aggregate demand regime ultimately ends wage-led, despite the mid-horizon profit-led appearance.

Post-crisis, the overall demand response is weaker and more volatile. The effect starts negative, moves close to zero by quarter 4, and briefly turns slightly positive around quarter 5, but never builds momentum. The response then fades again, ending at –0.17 percent. Private investment contributes positively and consistently throughout the horizon, but the gains are modest. Consumption acts as a consistent drag, and net exports also reduce demand, particularly in the early quarters.

Across the two periods, Canada displays two different profiles. In the pre-crisis years, the economy shows a profit-led regime over much of the horizon, particularly from quarter 1 through 8, where aggregate demand rises steadily. However, this pattern does not persist. In the final quarters, the expansion fades and turns into a sharp contraction, leading to an overall wage-led outcome. The post-crisis period, by contrast, does not reveal any clear regime. The aggregate response fluctuates around zero, with small and unstable movements in both directions. None of the components dominate strongly enough to determine the overall path, and the total effect remains marginal. Given this, the post-crisis regime should be seen as ambiguous and likely insignificant.

3.6.3 Denmark

In the pre-crisis period, Denmark displays a relatively flat and unstable aggregate demand response to a one percent increase in the profit share. The cumulative effect hovers near zero for much of the horizon, moving slightly positive around quarter 4 before deteriorating steadily thereafter. By quarter twelve, the total effect reaches –1.80 percent. The largest positive contribution comes from private investment, which rises temporarily around mid-horizon but is neither large nor sustained. Consumption remains negative for nearly the entire period and dominates the overall pattern. Net exports fluctuate but never generate a meaningful offset. The limited size and durability of the investment response, combined with the persistent weakness in consumption, result in a wage-led aggregate demand regime, where the overall decline is moderate but unambiguous.

In the post-crisis period, the response becomes more volatile. The total effect starts in negative territory, improves slightly mid-horizon, and turns briefly positive between quarters 8 and 10. However, the gain is not sustained. From quarter 11 onward, the path weakens again, ending at 1.13 percent. The apparent rise late in the horizon is driven by net exports, which show a strong positive contribution from quarters 7 through 10. Private investment, by contrast, is consistently negative throughout most of the horizon, especially in the early quarters. Consumption remains a drag for the majority of the period but turns positive toward the end.

The aggregate response post-crisis appears driven more by erratic swings in net exports than by a stable or coordinated reaction across components. While the cumulative effect at quarter 12 is positive, the instability over time and shifting direction of the path make regime classification difficult. The overall demand response is not consistently profit-led nor clearly sustained, and the short period of expansion appears too narrow to suggest a reliable regime shift.

Taken together, Denmark shows a wage-led regime in the pre-crisis period, with a modest but persistent decline in aggregate demand. Post-crisis, the regime is best viewed as ambiguous. Although the demand response ends in positive territory, the path is unstable, the components do not reinforce each other, and the net effect likely lacks significance.

3.6.4 Finland

In the pre-crisis period, Finland shows an initially positive aggregate demand response to a one percent increase in the profit share. The cumulative effect rises steadily through the first few quarters, peaking at 0.88 percent by quarter four. This early expansion is driven primarily by private investment, which contributes positively and consistently in the first half of the horizon. However, from mid-horizon onward, the overall response loses momentum. Net exports begin to deteriorate, consumption remains slightly negative, and investment ceases to grow further. By quarter twelve, the cumulative effect drops back to 0.17 percent. While the early pattern resembles a profit-led response, the effect is not sustained, and the final magnitude is small. The regime in this period is best described as ambiguous, with no component dominating clearly across the full horizon.

In the post-crisis period, the response is more clearly wage-led. The aggregate demand effect starts negative and declines through the early quarters, reaching –0.60 percent by quarter five. Around quarters 6 and 7, the path stabilizes briefly, hovering near zero, but does not generate a meaningful recovery. From quarter 8 onward, the effect resumes its decline, ending at –0.91 percent. Consumption is the most persistent drag throughout the period, while net exports contribute negatively in nearly every quarter.

Private investment shows some mid-horizon improvement but lacks the strength or duration to shift the overall trajectory.

Taken together, Finland exhibits an ambiguous aggregate demand regime in the pre-crisis period, shaped by a short-lived investment-led expansion that eventually fades. In the post-crisis years, the economy becomes more clearly wage-led, with broad-based weakness across all components and no sustained support from investment or trade. The flattening in the middle of the horizon post-crisis does not alter the broader conclusion of a wage-led regime.

3.6.5 France

In the pre-crisis period, France shows a steadily expanding aggregate demand response to a one percent increase in the profit share. The cumulative effect begins positive and continues to rise throughout the horizon, reaching 2.21 percent by quarter twelve. Private investment is the main driver, contributing increasingly from quarter 2 onward, while net exports add a consistent and growing positive effect. Consumption, although negative across the horizon, declines only modestly and does not outweigh the gains from the other two components. The overall pattern is clear and sustained. France displays a profit-led aggregate demand regime in the pre-crisis period, with rising profitability translating into higher investment and a significant net export improvement.

Post-crisis, the situation reverses sharply. The aggregate demand response starts negative and continues to deteriorate across most of the horizon. From quarter 0 to 9, the cumulative effect declines steadily, reaching –2.57 percent. This contraction is driven by several factors. Private investment remains negative for nearly all horizons, contributing little or pulling demand downward. Net exports, which had been supportive before the crisis, fluctuate slightly but mostly provide only minor gains or losses. The most dominant force, however, is private consumption, which becomes increasingly negative and exerts the strongest drag. There is a small recovery in investment and consumption in the final quarters, but it is not enough to offset the overall contraction. By quarter twelve, the cumulative effect stands at –2.03 percent.

Taken together, France shifts from a profit-led regime in the pre-crisis period supported by strong and sustained investment and net export gains to a clearly wage-led regime after the crisis. In the second period, rising profit shares reduce consumption significantly, while private investment no longer plays a stabilizing role. The demand response remains negative for nearly the entire horizon, with no extended recovery. This shift suggests a breakdown in the earlier transmission from profitability to demand and highlights the growing weight of demand-side constraints in the post-crisis context.

3.6.6 Japan

In the pre-crisis period, Japan shows a moderately positive aggregate demand response to a one percent increase in the profit share. The cumulative effect begins at 0.15 percent and rises steadily through the first six quarters, reaching 0.73 percent. After that, the path continues upward at a slower pace and ends at 1.50 percent by quarter twelve. The expansion is driven primarily by private investment, which contributes positively and consistently across the horizon. Net exports also provide support, particularly in the latter half of the period. Consumption contributes negatively throughout but does not dominate the outcome. The overall pattern is stable and sustained, indicating a profit-led aggregate demand regime during the pre-crisis years.

Post-crisis, the response is more complex. The aggregate demand effect rises rapidly in the early quarters, peaking at 1.19 percent by quarter four. This initial expansion is once again driven by private investment, with net exports contributing positively as well. However, from quarter 6 onward, the trajectory weakens. By quarter 7 the gain has nearly disappeared, and by quarter 8 the effect turns negative. The response continues to deteriorate in the final quarters, ending at –0.98 percent by quarter twelve. The reversal is driven by a combination of falling net exports and increasingly negative consumption, while investment flattens and loses its earlier momentum.

Taken together, Japan exhibits a profit-led regime in the pre-crisis period, supported by strong and persistent investment and external demand. In the post-crisis period, however, the economy initially behaves as profit-led, but the effect proves short-lived. The reversal in the second half of the horizon results in a negative overall impact, and the regime must be viewed as ambiguous, reflecting a mid-horizon transition from expansion to contraction. The post-crisis response lacks consistency and ends too weakly to support a profit-led classification.

3.6.7 Norway

In the pre-crisis period, Norway exhibits a mixed and highly unstable aggregate demand response to a one percent increase in the profit share. The cumulative effect begins sharply negative at –1.07 percent, but then improves steadily and turns positive by quarter 4, reaching a mid-horizon peak of 0.85 percent at quarter 6. This temporary expansion is driven primarily by net exports and a rebound in investment, which shifts from deeply negative to mildly supportive between quarters 4 and 6. However, the improvement does not last. From quarter 7 onward, the response deteriorates again, driven by renewed weakness in both private consumption and private investment. By quarter 9, demand has fallen back into negative territory, and although the path rises slightly again near the end, the total effect at quarter twelve is only 0.10 percent. Given the mid-horizon profit-led expansion and late reversal, the regime is best described as ambiguous for this period, with no consistent direction across the horizon.

In the post-crisis period, the pattern remains unstable. The total demand effect starts negative and continues to decline through quarter 2, reaching –0.53 percent. From that point, the trajectory improves steadily, peaking at 0.68 percent by quarter 8. This gain is driven by private investment, which contributes positively and increasingly from quarter 4 onward. Net exports also support demand modestly in the second half of the period. However, consumption remains negative across most quarters, limiting the strength of the expansion. After quarter 8, the path flattens, and the cumulative effect settles at just 0.01 percent by quarter twelve.

Taken together, Norway displays ambiguous regimes in both periods. In the pre-crisis years, the economy shifts from early contraction to mid-horizon expansion before falling back, with no single phase dominating fully. Post-crisis, a similar mid-horizon investment-driven expansion emerges but again proves temporary. In both cases, the aggregate effect fluctuates across the horizon and ends with a result too close to zero to support a strong regime classification. The combination of volatility and low magnitude suggests a weak and inconclusive response to distributional shifts.

3.6.8 Sweden

In the pre-crisis period, Sweden shows an overall negative response to a one percent increase in the profit share. The cumulative effect begins near zero and remains slightly negative through the early horizons, hovering around –0.07 to –0.38 percent from quarters 0 to 4. The path deteriorates more noticeably after mid-horizon, reaching –0.95 percent by quarter 8. Although there is a partial recovery afterward, with the cumulative effect rising to –0.40 percent by quarter twelve, the result remains clearly negative overall. The weak performance is shaped by consistently negative consumption throughout the horizon, which contributes the largest drag. Private investment fluctuates, turning briefly positive around quarter 5 but failing to establish a sustained upward trend. Net exports also swing between small gains and losses, but never provide enough support to shift the overall path. With no dominant positive component and consistent downward pressure from consumption, the pre-crisis regime is wage-led.

In the post-crisis period, the demand response looks significantly different. The cumulative effect begins at –0.51 percent and remains negative through quarter 2. From quarter 3 onward, however, the response rises steadily. Private investment becomes the primary driver of this turnaround, contributing increasingly from quarter 5 and peaking around quarters 8 to 10. Net exports fluctuate but begin to contribute positively around mid-horizon. Consumption, by contrast, remains negative in most quarters, though it does show slight improvement toward the end. The cumulative aggregate demand effect reaches 1.59 percent by quarter twelve. The shape of the response reflects a transition from early contraction to sustained recovery, with the final result clearly in profit-led territory.

Taken together, Sweden exhibits a shift in regime across the two periods. Pre-crisis, the economy is wage-led, with weak and unstable investment and consumption losses dominating the overall result. Post-crisis, the pattern reverses. A strong and persistent investment expansion, supported to a lesser degree by net exports, leads to a clear profit-led outcome despite ongoing weaknesses in consumption. The post-crisis result is not only positive but also consistent across the second half of the horizon, suggesting a genuine change in how profit share increases affect demand in Sweden.

3.6.9 The United Kingdom

In the pre-crisis period, the United Kingdom displays an ambiguous and weak aggregate demand response to a one percent increase in the profit share. The cumulative effect fluctuates narrowly around zero across the twelve-quarter horizon. After a slight dip into negative territory early in the horizon, demand recovers modestly and peaks near 0.75 percent by quarter 5. However, this gain is not sustained. From quarter 6 onward, the path declines gradually, and the cumulative effect ends just below zero at –0.007 percent. None of the demand components dominate clearly. Private consumption remains negative, private investment becomes mildly supportive mid-horizon, and net exports offer only small contributions. The overall effect is marginal and lacks consistency, suggesting an ambiguous regime with no statistically meaningful directional response.

In the post-crisis period, the demand response is more clearly contractionary. The cumulative effect is negative at every point in the horizon, starting at –0.03 percent and falling to –1.70 percent by quarter 6. Although the contraction becomes less severe in the final quarters, the response never turns positive and ends at –0.39 percent by quarter twelve. Consumption acts as the dominant drag throughout the period, while investment contributes positively in some quarters but never strongly enough to reverse the broader pattern. Net exports vary slightly but do not shift the trajectory in a meaningful way.

Taken together, the United Kingdom exhibits an ambiguous and statistically insignificant aggregate demand regime in the pre-crisis period and a wage-led regime after the crisis. Before the crisis, the effects fluctuate around zero with no sustained directional trend. After the crisis, the response is consistently negative across the entire horizon, reflecting a clearer pattern. Although the degree of contraction varies over time, the direction remains unchanged. The results indicate that increases in the profit share have not supported aggregate demand in either period, and in the post-crisis years, the decline is persistent enough to classify the regime as wage-led with confidence.

3.6.10 The United States

In the pre-crisis period, the United States shows a mixed but eventually positive aggregate demand response to a one percent increase in the profit share. The cumulative effect starts in negative territory and remains below zero through the first three quarters. From quarter 4 onward, the response gradually improves, turning positive and eventually peaking at 0.94 percent in quarters 10 and 11 before ending at 0.71 percent by quarter twelve. The pattern is not consistently upward; there are reversals and periods of stagnation mid-horizon, particularly around quarter 7. Private investment is the main contributor to the recovery, while consumption acts as a steady drag and net exports play a small but positive role. Although the response gains strength in the second half of the horizon, the inconsistent path suggests that the regime is only mildly profit-led, and not robust across the full period.

In the post-crisis period, the response begins with a clear contraction. Demand declines through quarter 3 and only starts to recover modestly from quarter 4 onward. The path turns slightly positive by quarter 7 and ends at 0.07 percent by quarter twelve. Private investment provides the most consistent support, particularly in the mid-to-late horizon. However, the gains are not strong enough to drive a clear expansion. Consumption contributes negatively throughout the period, while net exports fluctuate around zero without adding clear support. The overall profile is weak and lacks a sustained trend in either direction.

Taken together, the United States shows a modestly profit-led regime in the pre-crisis period, driven by a delayed but ultimately positive investment response. In the post-crisis period, the outcome is best described as ambiguous. The early contraction is followed by a partial recovery, but the final result remains near zero, with no component strong enough to define the regime. The post-crisis profile reflects a weaker and more uncertain relationship between functional income distribution and aggregate demand than in the earlier period.

3.7 Concluding Remarks on the Aggregate Demand Effects

The results presented in this section bring together the component-level responses of private consumption, private investment, and net exports to assess the total demand implications of a one percent increase in the profit share across ten advanced economies. By tracing the full twelve-quarter response for each country and separating the analysis into pre- and post-crisis periods, the findings provide a detailed picture of how functional income distribution shapes short- to medium-run demand dynamics under varying macroeconomic conditions.

Across the ten countries examined, the distribution of regime types varies over time. In the pre-crisis period, several countries exhibit profit-led aggregate demand responses, often driven by strong investment effects that offset moderate losses in consumption. France and Japan fall into this category, along with Sweden in the later part of the horizon. Others, like the United Kingdom, Denmark, and Canada, show more ambiguous patterns, where aggregate effects hover near zero or shift direction mid-horizon. Australia and Norway display clearer wage-led outcomes, with consumption contractions dominating weak or unstable responses from investment and trade.

Post-crisis, the landscape changes markedly. Fewer countries maintain a profit-led profile, and many shift toward either ambiguous or clearly wage-led regimes. France, which was strongly profit-led before the crisis, transitions into a persistent contraction in demand. The United Kingdom, Denmark, and Finland also move decisively into wage-led territory. Meanwhile, countries like Canada, Norway, and the United States display volatile or marginal effects that lack a consistent directional signal and are best described as ambiguous. Only Sweden shows a clear transition in the opposite direction, from a wage-led to a profit-led regime, driven by a sustained investment recovery in the post-crisis period.

Several broader themes emerge from these findings. First, the effects of rising profit shares on demand are highly sensitive to context. While the post-Kaleckian model provides theoretical guidance, the empirical responses vary depending on the strength of the investment channel, the responsiveness of net exports, and the resilience of consumption. Second, the results suggest a weakening of the profit-led investment channel in the post-crisis years, consistent with structural shifts such as financialization, weaker demand expectations, and heightened uncertainty. Third, in many cases, the overall effect of redistribution appears small or fluctuates over time, highlighting the importance of interpreting regime classifications with care and resisting overly rigid typologies.

Taken together, the analysis suggests that few countries display a stable and unambiguous relationship between profit share changes and aggregate demand across time. While rising profits can support demand under certain conditions, the evidence across countries and periods points to a more fragile and heterogeneous set of responses than static classifications might imply. Understanding the drivers behind these outcomes and the institutional, policy, or structural features that reinforce or weaken them remain essential for designing effective macroeconomic strategies that take distributional dynamics seriously.

4 Discussion: Functional Income Distribution and Growth Regimes in a Post-Keynesian Framework

The Post-Keynesian theory of functional income distribution and growth regimes provides a demand-driven perspective on economic expansion, distinguishing itself from neoclassical models prioritizing supply-side determinants (Lavoie, 2014; Hein, 2014). Post-Keynesian macroeconomics, based on the work of Kalecki, Bhaduri, and Marglin, contends that income distribution affects aggregate demand and economic growth. In wage-led regimes, a higher wage share raises household consumption due to the higher marginal propensity to consume among wage earners. In profit-led regimes, higher profit shares spur private investment and improve net exports, potentially offsetting lower consumption (Bhaduri & Marglin, 1990). The Augmented Post-Kaleckian Model extends this framework by incorporating structural changes such as financialization, globalization, and technological advancement (Hein, 2023;

Stockhammer, 2017). Financialization redirects income flows toward capital owners and speculative private investment (Stockhammer, 2004; 2009; 2017), globalization intensifies competitive pressures and weakens labor's bargaining power (Hein, 2014), and technological change reshapes labor demand and income distribution (Naastepad & Storm, 2019). These factors complicate the classical dichotomy and introduce hybrid or transitional regimes (Hein, 2023). Traditional models focus on functional distribution between wages and profits. However, recent research integrates personal income inequality to reflect how financialization and deregulation intensify household income disparities (Carvalho & Rezai, 2016). Rising profit shares and declining labor shares, particularly in financialized economies, fuel personal income inequality (Hein et al., 2017). This, in turn, undermines consumption and demand, even in contexts where profit-led mechanisms might otherwise dominate. Studies show that cross-country differences in labor institutions and welfare systems mediate these effects (Storm & Naastepad, 2012; Hein & Tarassow, 2010). Economies cannot be classified as strictly wage- or profit-led without accounting for the broader institutional context. Welfare spending, labor regulations, and taxation significantly influence how distributional shifts translate into macroeconomic outcomes (Onaran & Galanis, 2014; Onaran & Obst, 2016).

During the pre-2008 crisis period, several countries exhibited characteristics of profit-led regimes. France and Japan, for instance, demonstrated positive investment responses to increases in the profit share (Stockhammer, Onaran & Ederer, 2009). In these cases, retained earnings supported capital accumulation, reflecting classical Post-Kaleckian investment functions. France's centralized corporate structure and moderate wage growth likely facilitated internal financing, while Japan's post-deflation recovery enabled cautious reinvestment despite ongoing deleveraging. Other countries, including Sweden and Finland, showed modest but positive aggregate demand effects from rising profit shares, although less consistently. These findings suggest that stable corporate governance, low external debt, and moderate export competitiveness allow profit-led dynamics to persist under specific institutional configurations (Onaran & Galanis, 2014). However, many economies already showed wage-led tendencies. The United States, Australia, Denmark, and Norway experienced negative consumption responses to profit share increases (Onaran & Obst, 2016). Private investment responses in these countries were either weak or volatile, failing to offset the decline in consumption. Initial investment gains were reversed in Canada and the United Kingdom, producing net neutral or negative effects (Onaran, Stockhammer & Grafl, 2011).

The global financial crisis marked a structural shift. The traditional investment channel weakened in many economies, and wage-led consumption became more pronounced (Hein, 2014). France and the UK, which were profit-led or ambiguous before the crisis, transitioned to wage-led regimes (Onaran & Galanis, 2014). In these countries, higher profit shares no longer translated into private investment gains, while consumption continued to decline. Denmark and Finland followed similar paths. Institutional changes may explain this shift. Declining unionization, shareholder value orientation, and fiscal austerity eroded wage bargaining power and weakened public investment (Stockhammer, 2012; Hein & Detzer, 2016). Simultaneously, heightened uncertainty and private sector deleveraging undermined firms' willingness to invest, even when profits rose (Onaran, Stockhammer & Grafl, 2011). The United States and Canada exhibited volatile impulse responses, oscillating between profit- and wage-led tendencies. This instability likely reflects macroeconomic fragility: despite rising profits in sectors like tech and finance, household consumption remained constrained by stagnant real wages and high debt (Hein et al., 2017). In such contexts, financialization has decoupled profitability from demand (Stockhammer, 2009). In contrast, Sweden stands out for reinforcing profit-led behavior post-crisis. Both private investment and private consumption responded positively to higher profit shares. This may be attributed to labor market flexibilization, robust financial systems, and a strong export orientation (Stockhammer, 2017). Sweden's fiscal prudence and institutional reforms have enabled a more balanced or profit-led structure (Onaran & Galanis, 2014). Net exports, theorized to be a compensatory channel in profit-led regimes, proved weak in most cases. Even in open economies, wage moderation failed to improve trade balances consistently. Global value chains and low trade elasticity to cost competitiveness constrained this effect (Blecker, 1989; 2016). Additionally, synchronized wage suppression across major economies neutralized relative gains (Onaran & Galanis, 2014; Stockhammer, Onaran & Ederer, 2009). Private investment responses were highly sensitive to macroeconomic conditions. While profit-led logic assumes that rising profits stimulate reinvestment, post-crisis evidence shows a decoupling. Firms increasingly prioritized financial returns over capital expenditure, reflecting the dominance of shareholder value and financial asset accumulation (Onaran, Stockhammer & Grafl, 2011; Stockhammer, 2017). Wage-led consumption effects, by contrast, remained robust. Countries with stronger labor protections and social safety nets sustained demand through wage growth, even amid global downturns (Storm & Naastepad, 2012; Onaran & Obst, 2016). This underscores the centrality of labor income in driving stable aggregate demand.

Empirical findings point to clear policy recommendations. Policies that increase the wage share in wage-led economies can simultaneously promote equity and macroeconomic stability. These include strengthening collective bargaining rights and union coverage, raising minimum wages and wage floors, investing in public services that support disposable incomes, and implementing progressive taxation to redistribute income (Lavoie & Stockhammer, 2013; Hein, 2023). In open economies, wage-led policies may face competitiveness constraints. International coordination of wage policies can reduce the race to the bottom and amplify global demand (Blecker, 2016; Onaran & Galanis, 2014). Regional agreements on minimum wage standards or collective bargaining protections could mitigate external pressures (Storm & Naastepad, 2012). In profit-led or hybrid economies, investment-led strategies must address financialization. Tax incentives, public investment, and targeted credit mechanisms can support capital formation. However, regulatory reforms are essential to ensure that rising profits are reinvested productively rather than distributed through dividends or stock buybacks (Stockhammer, 2004; Hein & Detzer, 2016). Potential tools include financial transaction taxes to discourage speculation, stricter corporate governance standards, and capital controls to stabilize volatile financial flows (Stockhammer, 2017). Technological change has reshaped income distribution and labor markets. Automation and digitalization displace mid-skill jobs and polarize income structures (Naastepad & Storm, 2019). Without institutional buffers, these trends reinforce profit-led dynamics and wage stagnation. Public investments in retraining, education, and universal social protection are crucial to sustaining demand (Hein, 2021). Furthermore, aligning macroeconomic strategy with environmental sustainability adds complexity. Export-led and profit-led strategies based on resource extraction or carbon-intensive production may conflict with climate goals. Wage-led strategies, which rely on stable domestic demand, may better support sustainable growth if paired with green investment initiatives. Transitioning to a green economy offers a pathway for wage-led growth through investment in energy-efficient infrastructure, public transportation, and renewable energy (Hein, 2021). These sectors are often labor-intensive and domestically oriented, enhancing employment and demand effects of environmental investments. Green wage-led strategies could thus address both environmental sustainability and income inequality, provided they are supported by coordinated public policy (Lavoie & Stockhammer, 2013).

This study employs Local Projections to estimate impulse response functions across countries and time periods. Local Projections offer flexibility over traditional VAR models by avoiding system-wide assumptions and allowing time-varying effects (Jordà, 2005). This method is particularly suited for identifying structural shifts, such as those before and after 2008 (Plagborg-Møller & Wolf, 2021; Montiel Olea & Plagborg-Møller, 2021). However, several limitations apply. Small sample sizes per country and period can reduce precision. Functional forms are standardized, possibly masking country-specific dynamics. The decomposition of income shares relies on national account adjustments that introduce uncertainty. Key institutional variables such as union density and bargaining coverage are discussed qualitatively but not explicitly modeled. While Local Projections improve interpretability, they remain essentially linear. Future research could apply regime-switching models, threshold effects, or nonlinear estimators to capture complex transitions better. Observed wage-led consumption effects may reflect behavioral factors like precautionary savings or deteriorating expectations under falling wage shares. Similarly, muted investment responses may result from policy uncertainty, global competition, or the rise of intangible assets. The possibility of reverse causality must also be acknowledged. Declining demand may contribute to falling wage shares, especially if weak consumption lowers labor demand. Fiscal policy can further confound results; austerity may depress wages and demand, reinforcing wage-led effects. These factors suggest caution in interpreting marginal effects and call for more granular modeling of political economy dynamics and institutional structures. Beyond wage and profit shares, several structural factors shape demand regimes. Higher personal income inequality reduces aggregate consumption, reinforcing wage-led effects (Carvalho & Rezai, 2016). Household debt can sustain demand temporarily, but it increases fragility. Sectoral composition also matters. Economies with large public and service sectors tend to be more wage-led, while manufacturing-intensive economies may be more profit-responsive. Countries with strong labor market institutions, welfare states, and progressive tax systems exhibit more stable wage-led growth (Storm & Naastepad, 2012). These institutional foundations provide a buffer against external shocks and support domestic consumption. The interaction between income distribution, financial structures, and macroeconomic stability warrants deeper investigation. For example, in highly financialized contexts, even a nominally wage-led regime may become unstable if household debt accumulation drives consumption unsustainably. Global interdependence introduces further complexity. Wage suppression in one country can have spillover effects by depressing imports from trading partners, thereby weakening external demand in otherwise wage-led economies. When many economies pursue profit-led strategies simultaneously, global demand weakens overall, increasing the risk of synchronized stagnation (Onaran & Galanis, 2014). Conversely, coordinated wage growth could amplify positive demand spillovers across borders. This underscores the need for internationally aligned labor standards and fiscal coordination to avoid demand deflation through competitive wage restraint. Institutions such as the EU and IMF could play a role in facilitating these efforts through multilateral agreements that prioritize both domestic demand and trade balance sustainability.

Monetary policy and central banking also influence the transmission of distributional changes into macroeconomic outcomes. Central banks focusing narrowly on inflation targeting may inadvertently suppress wage growth through interest rate policies prioritizing price stability over full employment (Hein, 2014). Additionally, unconventional monetary policy measures like quantitative easing can exacerbate inequality by inflating asset prices, thereby increasing capital income relative to labor income (Stockhammer, 2012). A more distribution-sensitive approach to monetary policy would involve central banks coordinating with fiscal authorities to support wage growth and full employment objectives. There is also growing discussion around central bank roles in promoting green investment through climate-related asset purchasing or dual mandates that include employment and environmental targets. These developments suggest a more integrated macroeconomic policy framework is needed to align distributional, monetary, and sustainability goals. This discussion confirms the central role of income distribution in shaping demand regimes. The dominance of wage-led consumption effects, especially post-crisis, validates key Post-Keynesian insights (Lavoie, 2014; Onaran & Galanis, 2014). While some countries exhibited profit-led traits before 2008, most have shifted toward wage-led structures in response to structural and institutional changes. The weakening of investment responsiveness and the fragility of the net export channel raise doubts about the efficacy of supply-side growth models in advanced economies. Instead, policies that bolster wage income, redistribute resources, and regulate speculative finance appear more effective for promoting stable and inclusive growth. Demand regimes are not fixed; they evolve with institutions, shocks, and policy choices. Understanding this fluidity requires empirically grounded, context-sensitive models integrating political economy, behavioral dynamics, and structural transformation. As economies face continued inequality, climate risks, and technological disruption, the relevance of distributional macroeconomics is greater than ever. Future research should expand the empirical framework to explicitly model regime shifts and explore machine learning approaches to detect nonlinearities and structural breaks. Incorporating richer institutional data and sectoral decomposition will further enhance the explanatory power of Post-Kaleckian models in a rapidly changing global economy.

5 Conclusion

This thesis examined how changes in functional income distribution specifically, increases in the profit share affect aggregate demand across ten advanced economies. Drawing on post-Kaleckian theory, the analysis disaggregated aggregate demand into three components: private consumption, private investment, and net exports. The primary objective was to assess the dynamic effects of distributional shifts on these demand channels and to evaluate whether national economies display wage-led, profit-led, or ambiguous demand regimes. In addition, the thesis investigated whether these relationships differ between the pre- and post-crisis periods, capturing potential structural shifts in macroeconomic behavior. Using Jordà's local projection method, the study estimated the cumulative impact of a one percentage-point increase in the profit share over a twelve-quarter horizon. The models were estimated separately for each country and time period, preserving structural heterogeneity and allowing for comparative assessment across institutional and historical contexts.

The results indicate a high degree of cross-country and intertemporal variation in how profit share increases affect demand components. For private consumption, the findings are broadly consistent with theoretical expectations. In nearly all countries and both periods, a rise in the profit share leads to a decline in household consumption, reflecting the lower marginal propensity to consume out of capital income compared to wage income. This pattern aligns closely with post-Kaleckian predictions and suggests that consumption remains strongly wage-led across most advanced economies. The strength and duration of the consumption contraction vary across countries, but the direction of the effect is robust.

Private investment displays more variation in its response to distributional shifts. In several countries, particularly in the post-crisis period, an increase in the profit share is followed by a sustained rise in private investment, suggesting a profit-led investment dynamic. This is consistent with the idea that higher profits improve internal financing capacity and investor expectations, particularly in contexts where business confidence and credit conditions support expansion. However, this pattern is not universal. In a number of countries, private investment shows little or no response to rising profits, even over a twelve-quarter horizon. These muted responses are consistent with findings in the literature that investment is highly sensitive to expected demand and capacity utilization, and may remain unresponsive in environments characterized by weak domestic markets or financialization. In such cases, firms may direct profits toward shareholder payouts, speculative assets, or balance sheet consolidation rather than productive investment. This variation reflects the complex relationship between profitability and investment, which remains highly dependent on national context and institutional structure.

Net exports also respond heterogeneously to increases in the profit share. Post-Kaleckian theory posits that a redistribution toward profits should improve international competitiveness by lowering unit labour costs, thus supporting export growth and moderating import demand. In practice, this mechanism appears conditional on several structural factors. In some countries, especially smaller open economies, higher profit shares are associated with modest improvements in net exports, suggesting a profit-led trade response. In others, the external effect is weak or even negative. A number of mechanisms may account for this. If rising profits result from mark-up expansion rather than cost reductions, export prices may rise, limiting competitiveness gains. Exchange rate appreciation or rigidity may further weaken the export response. On the import side, demand may remain elevated if higher-income households sustain spending on foreign goods, or if increased investment triggers demand for imported capital and intermediate goods. These findings suggest that net exports are shaped not only by distributional shifts but also by broader structural and institutional features.

When considered together, the findings suggest that no single demand regime applies uniformly across countries or periods. Some economies exhibit wage-led demand regimes, where the negative effect of a profit share increase on consumption outweighs any gains from investment or net exports. Others display profit-led dynamics, where trade and investment effects offset consumption losses. In many cases, regimes are ambiguous, with mixed or offsetting responses across components. The classification of countries also changes over time. For example, in certain economies, investment and trade responses become stronger in the post-crisis period, while consumption remains consistently wage-led. These temporal changes highlight the importance of accounting for institutional evolution, policy shifts, and external shocks when analyzing the relationship between income distribution and aggregate demand.

The findings contribute to the post-Kaleckian literature by confirming key theoretical insights while also complicating others. The consistent decline in private consumption following increases in the profit share reinforces the central role of wage income in sustaining demand. At the same time, the variation in investment and trade responses indicates that component-level dynamics cannot be assumed to follow a single pattern. The results support the view that demand formation is deeply shaped by structural factors, including financialization, openness, and sectoral specialization. While the post-Kaleckian framework remains useful for organizing expectations about the distribution–demand relationship, empirical analysis must be attentive to national and historical specificity.

The policy implications of this study are twofold. First, in economies with wage-led demand regimes, policies that increase the wage share such as collective bargaining, minimum wage legislation, or progressive taxation are likely to support both equity and macroeconomic performance. These policies strengthen household consumption, which remains the largest and most stable component of demand. Second, even in countries where investment or trade responds positively to a higher profit share, the long-run effectiveness of profit-led strategies is uncertain. Financialized corporate behavior, global supply chain dependencies, and competitive wage suppression across trading partners can all limit the effectiveness of profit-led growth models. Moreover, the finding that some countries shift regimes over time suggests that policies should be adaptable to changing macroeconomic conditions. Uniform strategies such as wage restraint in the name of competitiveness may be counterproductive in contexts where domestic demand plays a central role. Coordinated international wage policies, by contrast, could enhance demand simultaneously across countries, reducing reliance on beggar-thy-neighbor strategies.

Several limitations of the study should be acknowledged. First, the analysis focuses exclusively on private demand components consumption, investment, and net exports excluding government spending, inventories, and financial variables. While this choice reflects the focus of post-Kaleckian models, it may omit important channels of adjustment. Second, although the local projection method provides a flexible way to estimate dynamic responses, it does not identify structural shocks or establish causal mechanisms with precision. Third, the estimation relies on pre-processed data that are seasonally differenced and HP-filtered, which may affect the interpretation of trends and cycles. Finally, while splitting the sample into two periods allows for temporal comparison, it does not capture more gradual shifts or regime transitions that may have occurred within each period.

These limitations point to several promising directions for future research. A first step would be to incorporate non-linearities and state-dependent effects explicitly, examining whether responses differ depending on business cycle phases, interest rates, or financial conditions. Second, extending the analysis to include emerging and developing economies could reveal whether distribution–demand dynamics differ systematically across income levels and development stages. Third, integrating indicators of inequality, labor market institutions, or financialization could help explain variation in regime types and response patterns. Finally, a synthesis of structural models with empirically estimated local projections could bridge the gap between theoretical consistency and empirical flexibility, offering a richer account of macroeconomic behavior under different distributional configurations.

In conclusion, this thesis provides a comparative and time-sensitive analysis of how changes in the profit share affect the components of aggregate demand in advanced economies. By disaggregating demand into private consumption, private investment, and net exports, and estimating their dynamic responses across countries and time periods, the study offers a nuanced understanding of distributional macroeconomics. The results confirm that distributional changes do not exert uniform effects and that aggregate demand regimes depend on a complex interplay of domestic institutions, structural characteristics, and global conditions. As global economies continue to face structural shifts and external shocks, understanding how changes in functional income distribution affect demand remains essential for both macroeconomic theory and policymaking.

References

Adämmer, P. 2019. Estimating impulse response functions by local projections: An overview. Journal of Economic Surveys, 33.

Bhaduri, A. & Marglin, S.A., 1990. Unemployment and the real wage: The economic basis for contesting political ideologies.

Blecker, R.A., 1989. International competition, income distribution and economic growth.

Blecker, R.A., 2016. Wage-led versus profit-led demand regimes: The long and the short of it.

Carvalho, L. & Rezai, A., 2016. Personal income inequality and aggregate demand.

Canova, F. 2007. Methods for Applied Macroeconomic Research. Princeton University Press.

Dickey, D.A. and Fuller, W.A. 1979. Distribution of the estimators for autoregressive time series with a unit root.

Ederer, S. & Rehm, M., 2021. Wealth inequality and aggregate demand.

Goodfellow, I., Bengio, Y. & Courville, A., 2016. Deep learning. Cambridge, MA: MIT Press.

Heiden, C & Sørensen, J.B, 2024. Asymmetric Effects Caused by Changes within the Functional Income Distribution.

Hein, E., 2014. Distribution and growth after Keynes: A Post-Keynesian guide. Cheltenham.

Hein, E. 2015. The macroeconomic implications of financialisation and the crisis: The case for a wage-led recovery.

Hein, E., 2023. Varieties of demand and growth regimes – Post-Keynesian foundations. European Journal of Economics and Economic Policies.

Hein, E. & Tarassow, A., 2010. Distribution, aggregate demand and productivity growth: Theory and empirical results for six OECD countries based on a post-Kaleckian model.

Hein, E. & Vogel, L., 2008. Distribution and growth reconsidered: Empirical results for six OECD countries.

Hein, E. & Vogel, L., 2008. Distribution and growth in open economies: The role of international trade and investment.

Hein, E., Detzer, D. & Dodig, N., 2017. Financialisation and distribution from a Kaleckian perspective: Concepts, empirical results and policy implications. In E. Hein, D. Detzer & N. Dodig, eds. Financialisation and the financial and economic crises: Country studies.

Hein, E., Detzer, D. & Dodig, N. eds., 2017. Financialisation and the financial and economic crises: Country studies. Cheltenham: Edward Elgar Publishing.

Hein, E., Paternesi Meloni, W. & Tridico, P., 2021. Welfare models and demand-led growth regimes before and after the financial and economic crisis.

Hodrick, R.J. and Prescott, E.C. (1997). Postwar U.S. business cycles: An empirical investigation.

Hyndman, R.J. & Athanasopoulos, G., 2018. Forecasting: Principles and practice. 2nd ed. Melbourne: OTexts.

Jordà, Ò., 2005. Estimation and inference of impulse responses by local projections.

Lavoie, M., 2014. Post-Keynesian economics: New foundations. Cheltenham: Edward Elgar Publishing.

Lavoie, M. & Stockhammer, E., 2013. Wage-led growth: Concept, theories and policies. In M. Lavoie & E. Stockhammer, eds.

Lopez, J. and Assous, M. (2010). Kalecki: The Political Economy of the Full Employment Capitalism.

Montiel Olea, J.L. & Plagborg-Møller, M., 2021. Local projection inference is simpler and more robust than you think.

Naastepad, C.W.M. & Storm, S., 2012. Wage-led or profit-led supply: Wages, productivity and investment.

Nishi, H., 2020. Income distribution, technical change, and economic growth: A two-sector Kalecki–Kaldor approach.

Onaran, Ö. & Galanis, G., 2012. Is aggregate demand wage-led or profit-led? National and global effects.

Onaran, Ö. & Galanis, G., 2014. Income distribution and growth: A global model. Environment and Planning A:

Onaran, Ö. & Obst, T., 2016. Wage-led growth in the EU15 member states: The effects of income distribution on growth, investment, trade balance and inflation.

Onaran, Ö., Stockhammer, E. & Grafl, L., 2011. Financialisation, income distribution and aggregate demand in the USA.

Plagborg-Møller, M. & Wolf, C.K., 2021. Local projections and vector autoregressions.

Stockhammer, E., 2004. Financialisation and the slowdown of accumulation.

Stockhammer, E., 2009. Determinants of functional income distribution in OECD countries.

Stockhammer, E., 2012. Financialization, income distribution and the crisis.

Stockhammer, E., 2016. Neoliberal growth models, monetary union and the Euro crisis: A post-Keynesian perspective.

Stockhammer, E., 2017. Determinants of the wage share: A panel analysis of advanced and developing economies.

Stockhammer, E., Onaran, Ö. & Ederer, S., 2009. Functional income distribution and aggregate demand in the Euro area.

Author’s note

We would like to thank our thesis supervisor Thibault Laurentjoye for valuable guidance, feedback, and support throughout the research process. We are also grateful for the academic environment and resources provided by Aalborg University.

Parts of this thesis, including phrasing suggestions and editing assistance, were assisted by OpenAI’s ChatGPT. All analysis, argumentation, and final conclusions are the sole responsibility of the authors.

Appendix

A.1.1 Preprocessing Diagnostics – Pre crisis

Pre crisis period - Stationarity Testing: ADF Test Results (P-Value)

Variable	Australia	Canada	Denmark	Finland	France	Japan	Norway	Sweden	United Kingdom	United States
R	0.01	0.01	0.04	0.01	0.01	0.05	0.01	0.04	0.01	0.12
W	0.01	0.01	0.17	0.05	0.05	0.03	0.01	0.25	0.02	0.06
C	0.09	0.01	0.19	0.20	0.07	0.02	0.01	0.01	0.01	0.08
Y	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01
PS	0.01	0.01	0.05	0.06	0.01	0.04	0.01	0.08	0.01	0.09
r	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.01	0.01	0.01
I	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
ulc	0.01	0.01	0.06	0.05	0.01	0.05	0.01	0.09	0.01	0.08
Pm	0.01	0.01	0.01	0.01	0.01	0.21	0.02	0.01	0.12	0.45
P	0.01	0.04	0.25	0.02	0.03	0.01	0.01	0.01	0.01	0.43
Pxm	0.27	0.01	0.01	0.01	0.01	0.03	0.04	0.01	0.01	0.04
Yrw	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
X	0.06	0.03	0.01	0.01	0.04	0.04	0.01	0.01	0.01	0.02
dpm	0.01	0.01	0.01	0.01	0.01	0.15	0.03	0.01	0.08	0.39
M	0.08	0.06	0.01	0.01	0.03	0.04	0.01	0.04	0.01	0.01
Px	0.10	0.02	0.16	0.01	0.01	0.01	0.06	0.02	0.01	0.07
D	0.05	0.02	0.25	0.11	0.01	0.01	0.05	0.01	0.01	0.10

Pre crisis period - Stationarity Testing: KPSS Test Results (P-Value)

Variable	Australia	Canada	Denmark	Finland	France	Japan	Norway	Sweden	United Kingdom	United States
R	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
W	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
C	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Y	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
PS	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
r	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
I	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ulc	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Pm	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
P	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Pxm	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Yrw	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
X	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
dpm	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
M	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Px	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
D	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

Pre crisis period - Seasonality Testing: Friedman Test Results (P-Value)

Variable	Australia	Canada	Denmark	Finland	France	Japan	Norway	Sweden	United Kingdom	United States
R	0.77	0.97	0.79	0.44	0.41	0.82	0.82	0.87	0.61	0.82
W	0.92	0.69	0.71	0.69	0.92	0.52	0.97	0.82	0.66	0.50
C	0.77	0.87	0.92	0.92	0.22	0.90	0.97	0.29	0.34	0.82
Y	0.79	0.29	0.97	0.87	0.79	0.26	0.97	1.00	0.90	0.92
PS	0.87	0.97	0.77	0.41	0.52	0.41	0.87	0.77	0.52	0.90
r	0.97	0.92	0.97	0.87	0.82	0.90	0.90	0.90	0.69	0.87
I	0.90	0.59	0.77	0.66	0.77	0.92	0.97	0.82	0.77	1.00
ulc	0.77	0.90	0.79	0.59	0.52	0.52	0.87	0.69	0.61	0.90
Pm	0.87	1.00	0.90	0.77	0.77	0.87	0.41	0.87	0.87	0.98
P	0.79	0.71	0.38	0.77	1.00	0.79	0.97	0.97	0.90	0.98
Pxm	1.00	0.69	0.92	0.87	1.00	0.92	0.87	0.90	0.98	0.82
Yrw	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
X	0.77	0.98	0.82	0.97	0.92	0.98	0.82	0.87	0.79	0.92
dpm	0.52	0.97	0.87	0.92	0.71	0.52	0.90	0.41	0.97	0.77
M	0.48	0.57	0.71	0.66	0.71	0.92	0.97	0.82	0.59	0.66
Px	0.71	0.92	0.43	0.71	0.77	0.92	0.92	0.77	0.66	0.69
D	0.48	0.90	0.92	0.82	0.57	0.87	0.97	0.52	0.87	0.61

Pre crisis period - Seasonality Testing: Kruskal-Wallis Test Results (P-Value)

Variable	Australia	Canada	Denmark	Finland	France	Japan	Norway	Sweden	United Kingdom	United States
R	0.86	0.99	0.71	0.98	0.60	0.60	1.00	0.91	0.84	0.44
W	0.98	0.87	0.92	0.95	0.76	0.73	1.00	0.75	0.90	0.84
C	0.96	0.48	0.99	0.96	0.99	0.66	0.79	0.59	0.81	0.91
Y	0.97	0.95	0.84	0.99	0.96	0.86	1.00	0.94	0.99	0.98
PS	0.96	1.00	0.83	0.96	0.72	0.52	0.98	0.90	0.83	0.60
r	0.93	0.92	0.91	0.79	0.96	0.98	0.93	0.93	0.94	0.95
I	0.98	0.97	0.78	0.85	0.88	0.83	0.98	1.00	0.81	1.00
ulc	0.96	0.99	0.82	0.97	0.71	0.64	1.00	0.86	0.83	0.52
Pm	0.96	0.99	0.99	0.98	0.97	0.97	0.93	0.99	0.81	0.96
P	0.89	0.99	0.86	0.98	0.99	0.97	0.98	1.00	1.00	1.00
Pxm	1.00	0.97	0.91	0.90	0.99	1.00	0.98	0.99	0.98	0.89
Yrw	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
X	0.99	0.96	1.00	0.96	0.88	0.99	1.00	0.98	0.98	1.00
dpm	0.95	1.00	0.99	0.99	0.96	0.96	0.97	0.99	0.74	0.93
M	1.00	0.45	1.00	0.99	0.98	0.99	0.98	0.99	0.93	1.00
Px	0.89	0.97	0.88	0.92	0.99	0.99	0.95	0.99	0.95	0.92
D	0.94	1.00	0.90	0.74	0.89	0.98	1.00	0.85	1.00	0.92

A.1.2 Preprocessing Diagnostics – Post crisis

Post crisis period - Stationarity Testing: ADF Test Results (P-Value)

Variable	Australia	Canada	Denmark	Finland	France	Japan	Norway	Sweden	United Kingdom	United States
R	0.02	0.01	0.01	0.01	0.32	0.04	0.08	0.17	0.03	0.27
W	0.01	0.06	0.01	0.02	0.04	0.01	0.59	0.13	0.01	0.01
C	0.56	0.11	0.02	0.60	0.17	0.02	0.06	0.06	0.04	0.03
Y	0.02	0.01	0.01	0.01	0.13	0.33	0.25	0.35	0.10	0.02
PS	0.02	0.01	0.01	0.02	0.25	0.01	0.15	0.16	0.01	0.08
r	0.02	0.02	0.01	0.01	0.05	0.10	0.05	0.02	0.02	0.25
I	0.02	0.08	0.01	0.01	0.05	0.09	0.03	0.47	0.13	0.01
ulc	0.02	0.01	0.01	0.01	0.25	0.01	0.12	0.13	0.01	0.11
Pm	0.22	0.02	0.01	0.07	0.05	0.02	0.01	0.15	0.03	0.43
P	0.01	0.03	0.01	0.05	0.02	0.10	0.01	0.05	0.03	0.01
Pxm	0.08	0.04	0.01	0.02	0.07	0.21	0.01	0.03	0.06	0.17
Yrw	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
X	0.06	0.02	0.01	0.12	0.02	0.09	0.09	0.05	0.32	0.06
dpm	0.25	0.01	0.01	0.01	0.08	0.01	0.01	0.04	0.01	0.65
M	0.05	0.03	0.01	0.35	0.22	0.20	0.10	0.07	0.43	0.03
Px	0.01	0.18	0.01	0.06	0.17	0.23	0.01	0.12	0.17	0.01
D	0.13	0.25	0.01	0.02	0.28	0.02	0.01	0.33	0.01	0.25

Post crisis period - Stationarity Testing: KPSS Test Results (P-Value)

Variable	Australia	Canada	Denmark	Finland	France	Japan	Norway	Sweden	United Kingdom	United States
R	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
W	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
C	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Y	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
PS	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
r	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
I	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ulc	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Pm	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
P	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Pxm	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Yrw	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
X	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
dpm	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
M	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Px	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
D	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

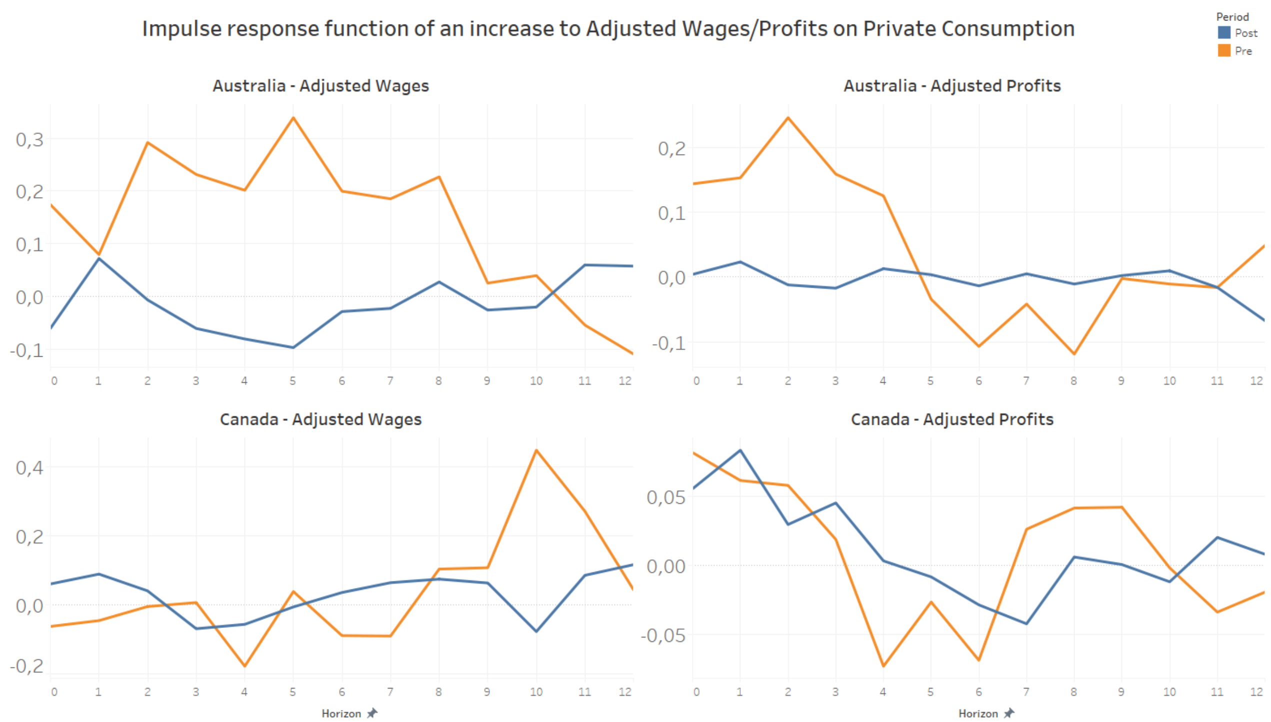
Post crisis period - Seasonality Testing: Friedman Test Results (P-Value)

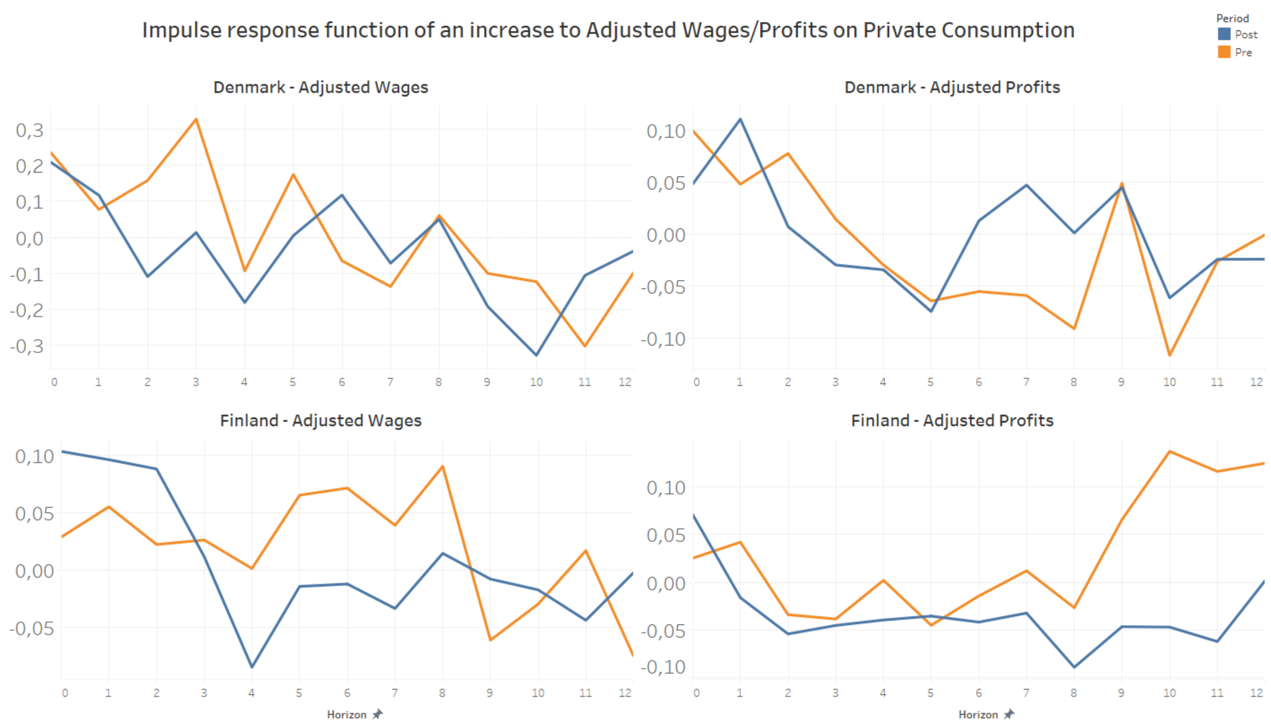
Variable	Australia	Canada	Denmark	Finland	France	Japan	Norway	Sweden	United Kingdom	United States
R	0.72	0.37	0.56	0.78	0.61	0.34	0.92	0.90	0.75	0.56
W	0.70	0.87	0.78	0.52	0.95	0.78	0.95	0.95	0.84	0.92
C	0.87	0.61	0.52	0.17	0.90	0.75	0.78	0.67	0.92	0.90
Y	0.99	0.43	0.67	0.72	0.52	0.90	0.67	0.92	0.27	0.54
PS	0.61	0.39	0.67	0.99	0.56	0.84	0.90	0.95	0.75	0.84
r	0.84	0.92	0.99	0.97	0.90	0.84	0.97	0.95	0.95	0.95
I	0.67	0.36	0.95	0.97	0.72	0.99	0.90	0.72	0.84	0.67
ulc	0.67	0.52	0.67	0.99	0.72	0.81	0.84	0.90	0.75	0.84
Pm	0.54	0.90	0.97	0.95	0.47	0.90	0.90	0.97	0.67	0.97
P	0.87	0.95	0.84	0.61	0.78	0.90	0.47	0.84	0.84	0.95
Pxm	0.87	0.67	0.90	0.47	0.39	0.47	0.75	0.75	0.84	0.84
Yrw	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
X	0.90	0.95	0.99	0.95	0.34	0.84	0.84	0.97	0.90	0.52
dpm	0.67	0.95	0.84	0.54	0.27	0.95	0.87	0.78	0.32	0.95
M	0.67	0.95	0.84	0.99	0.75	0.78	0.92	0.99	0.67	0.95
Px	0.95	0.67	0.56	0.47	0.72	0.61	0.78	0.61	0.61	0.78
D	0.39	0.84	0.61	0.87	0.61	0.78	0.99	0.84	0.13	0.84

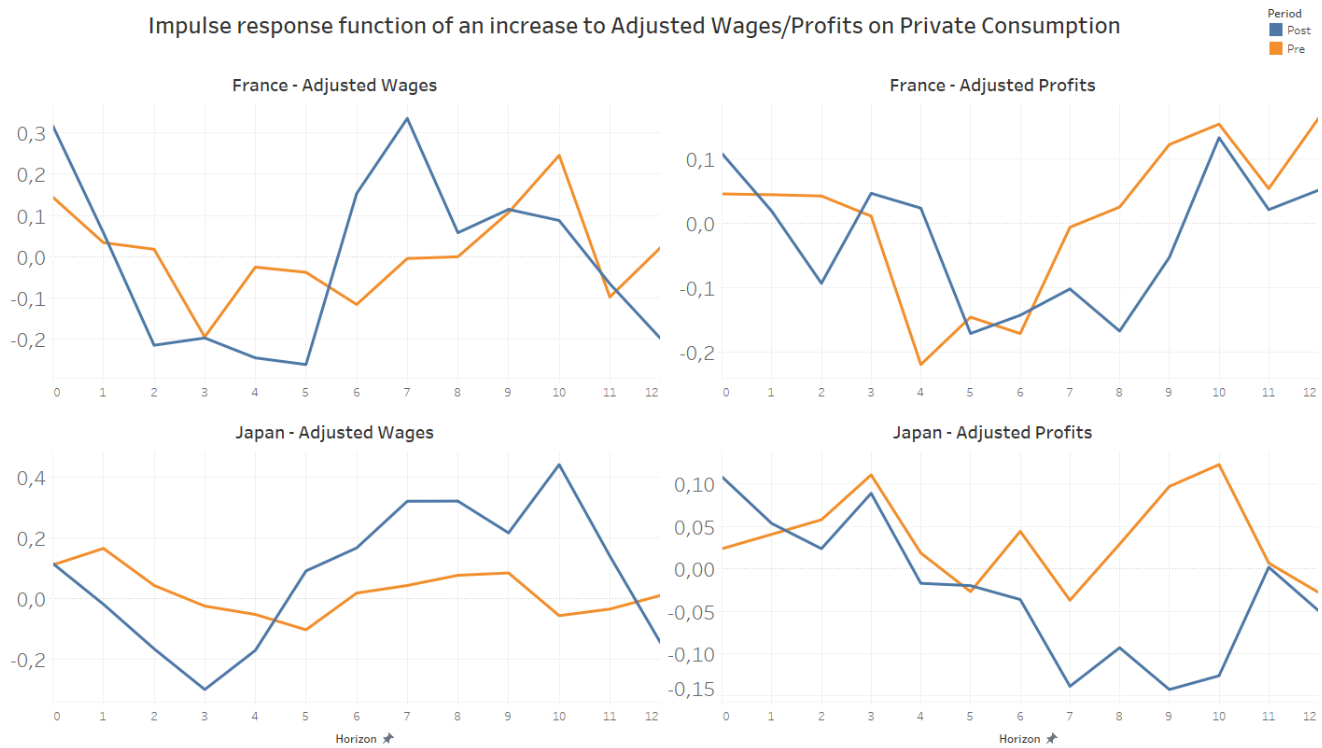
Post crisis period - Seasonality Testing: Kruskal-Wallis Test Results (P-Value)

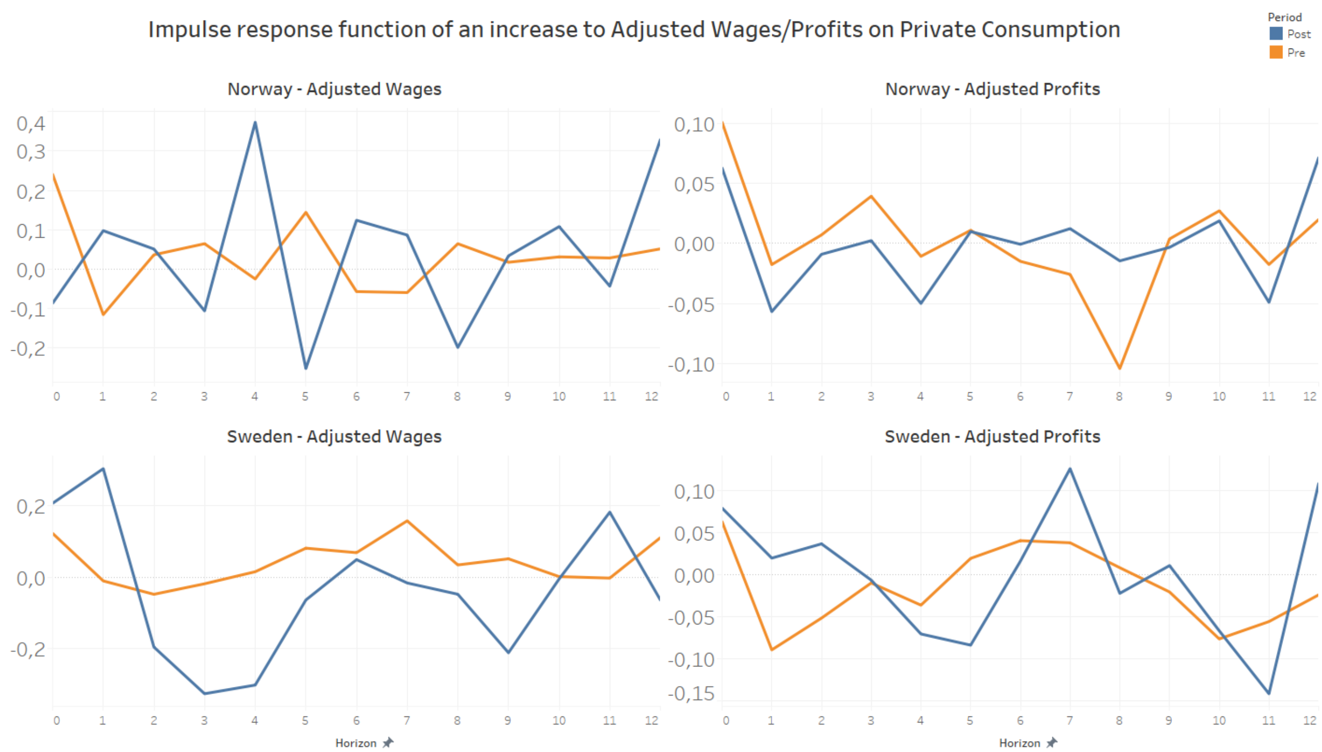
Variable	Australia	Canada	Denmark	Finland	France	Japan	Norway	Sweden	United Kingdom	United States
R	0.98	0.90	0.99	0.84	0.99	0.99	0.85	0.97	0.45	0.58
W	0.89	1.00	0.83	0.80	1.00	0.97	0.64	0.86	0.82	0.74
C	0.94	0.97	0.69	0.91	0.93	0.80	0.91	0.92	0.92	0.91
Y	0.98	0.95	0.85	0.74	0.99	0.97	0.91	0.92	0.49	0.75
PS	0.92	0.95	0.96	0.89	0.99	0.99	0.80	0.96	0.49	0.79
r	0.99	1.00	0.94	0.96	0.97	0.99	0.84	0.89	0.99	0.99
I	0.93	0.90	0.85	0.72	0.87	0.97	0.94	0.84	0.53	0.89
ulc	0.90	0.97	0.96	0.88	0.99	1.00	0.84	0.98	0.50	0.82
Pm	0.96	0.94	0.94	0.97	0.93	0.91	0.95	0.96	0.76	0.99
P	0.97	0.91	0.99	0.99	0.93	0.99	0.81	1.00	0.98	0.88
Pxm	1.00	0.98	0.94	0.88	0.98	0.94	0.78	0.98	0.99	0.99
Yrw	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
X	0.97	0.98	0.92	0.97	0.69	0.99	0.99	0.96	1.00	1.00
dpm	0.97	0.89	0.92	0.97	0.93	0.88	0.82	0.96	0.83	0.99
M	0.94	0.97	0.93	0.99	0.90	1.00	0.97	0.99	0.99	0.99
Px	0.99	0.99	0.94	0.69	0.96	0.99	0.99	0.94	0.85	0.97
D	0.99	0.99	1.00	0.62	0.86	0.70	0.73	0.78	0.68	0.96

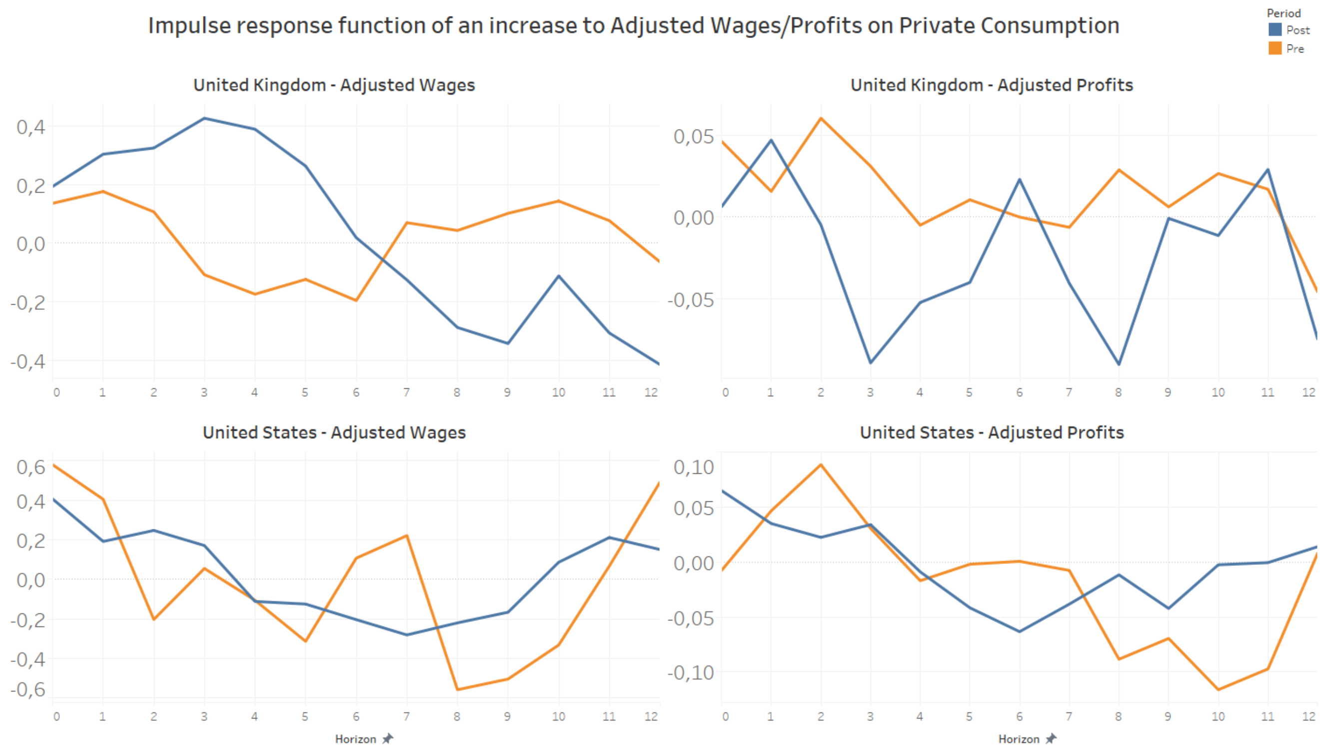
A.2.1 Impulse Responses of an increase to adjusted Wages/Profits on Private Consumption



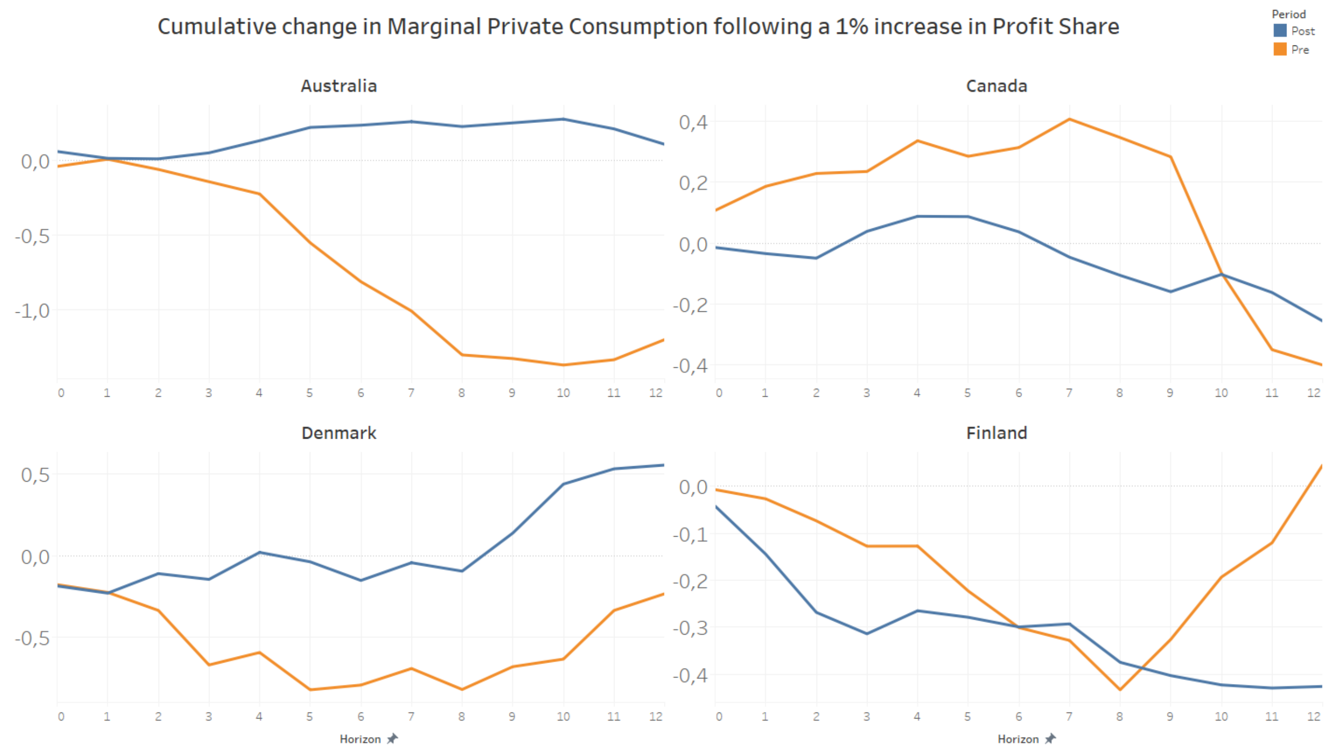


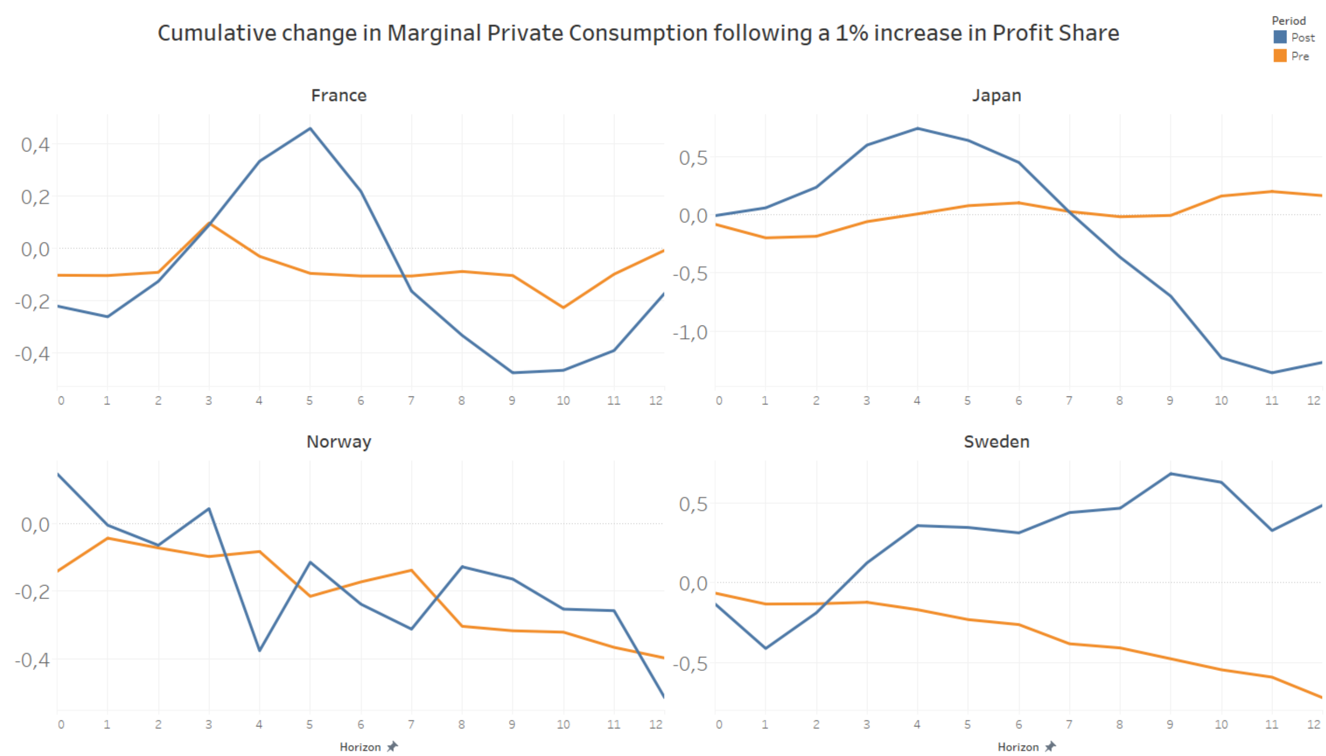

Impulse response function of an increase to Adjusted Wages/Profits on Private Consumption
Period
Post
Pre
France - Adjusted Wages
France - Adjusted Profits
Japan - Adjusted Wages
Japan - Adjusted Profits
Horizon
Horizon

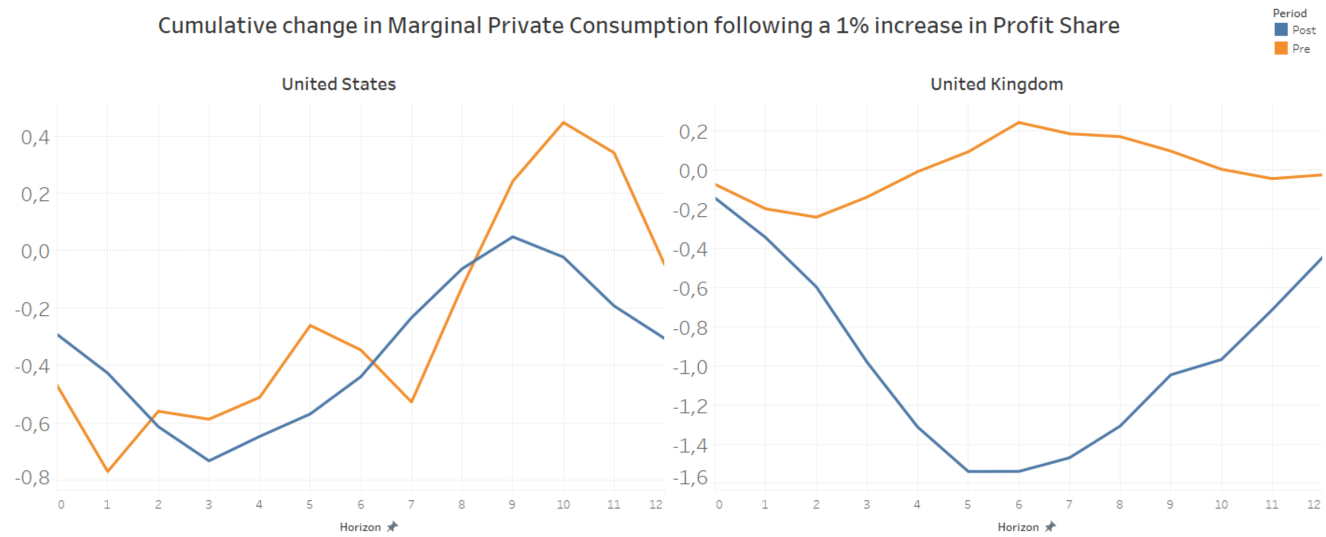

Impulse response function of an increase to Adjusted Wages/Profits on Private Consumption
Period
Post
Pre
Norway - Adjusted Wages
Norway - Adjusted Profits
Sweden - Adjusted Wages
Sweden - Adjusted Profits
Horizon
Horizon


Impulse response function of an increase to Adjusted Wages/Profits on Private Consumption
Period
Post
Pre
United Kingdom - Adjusted Wages
United Kingdom - Adjusted Profits
United States - Adjusted Wages
United States - Adjusted Profits
Horizon

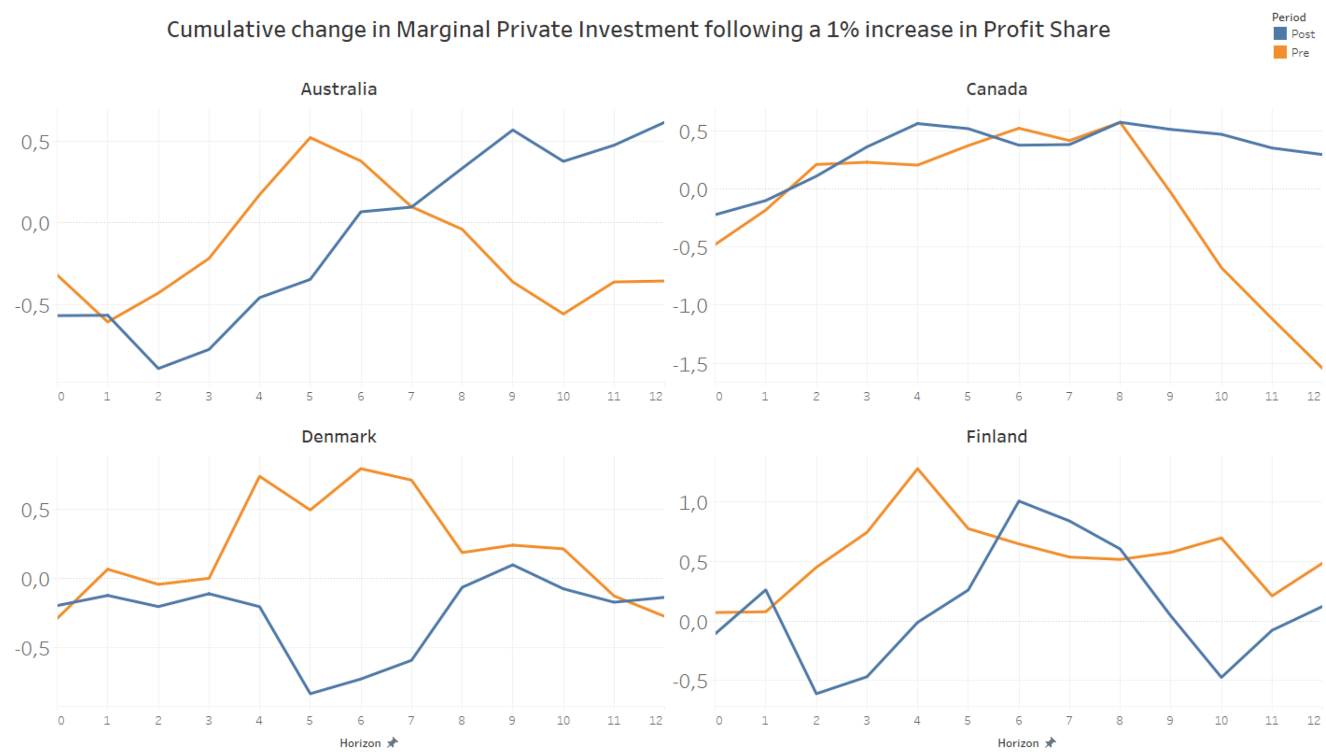
A.2.2 Cumulative Marginal Private Consumption following a 1% increase in Profit Share

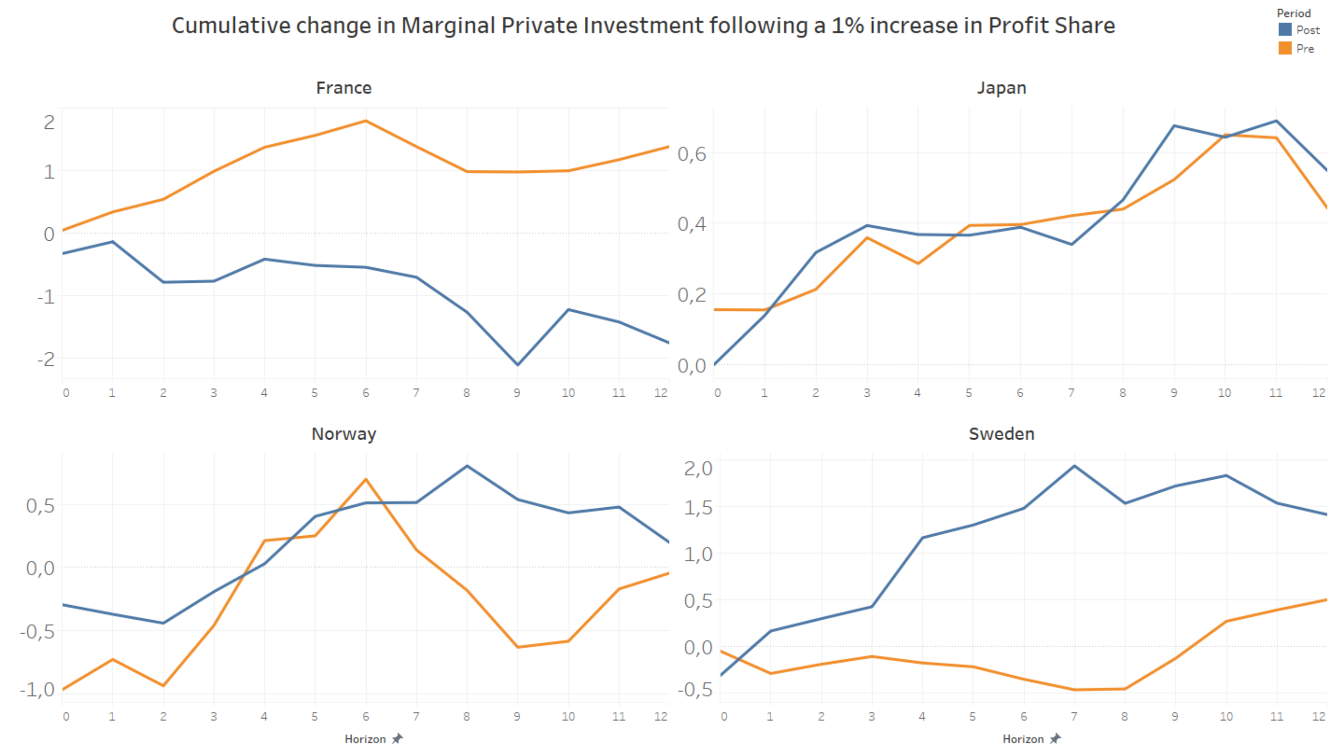


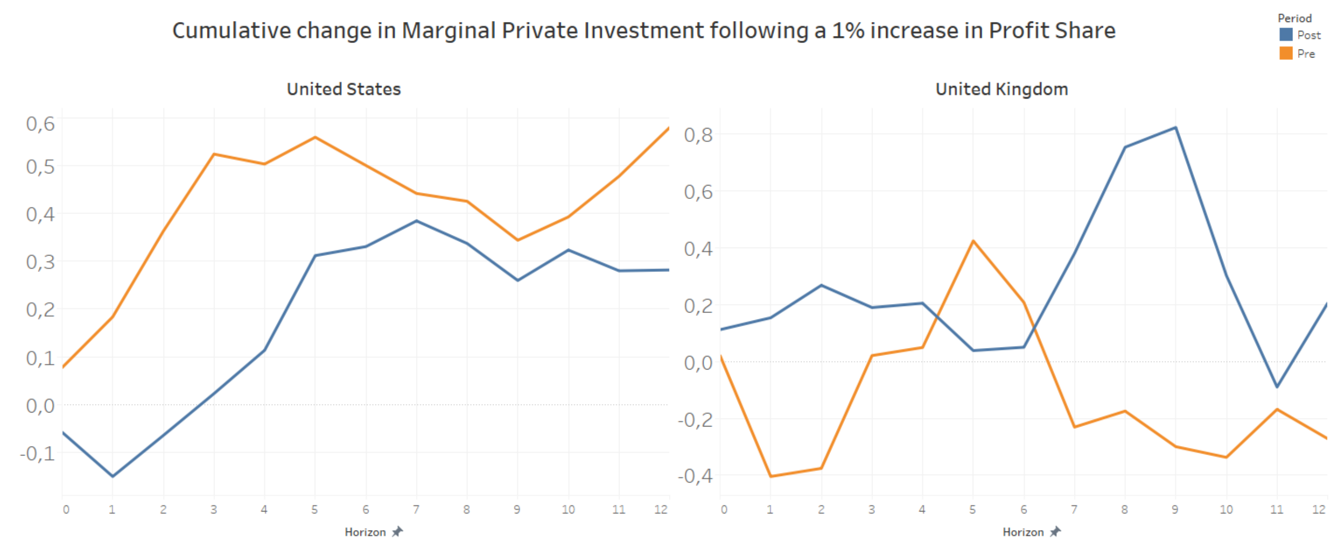




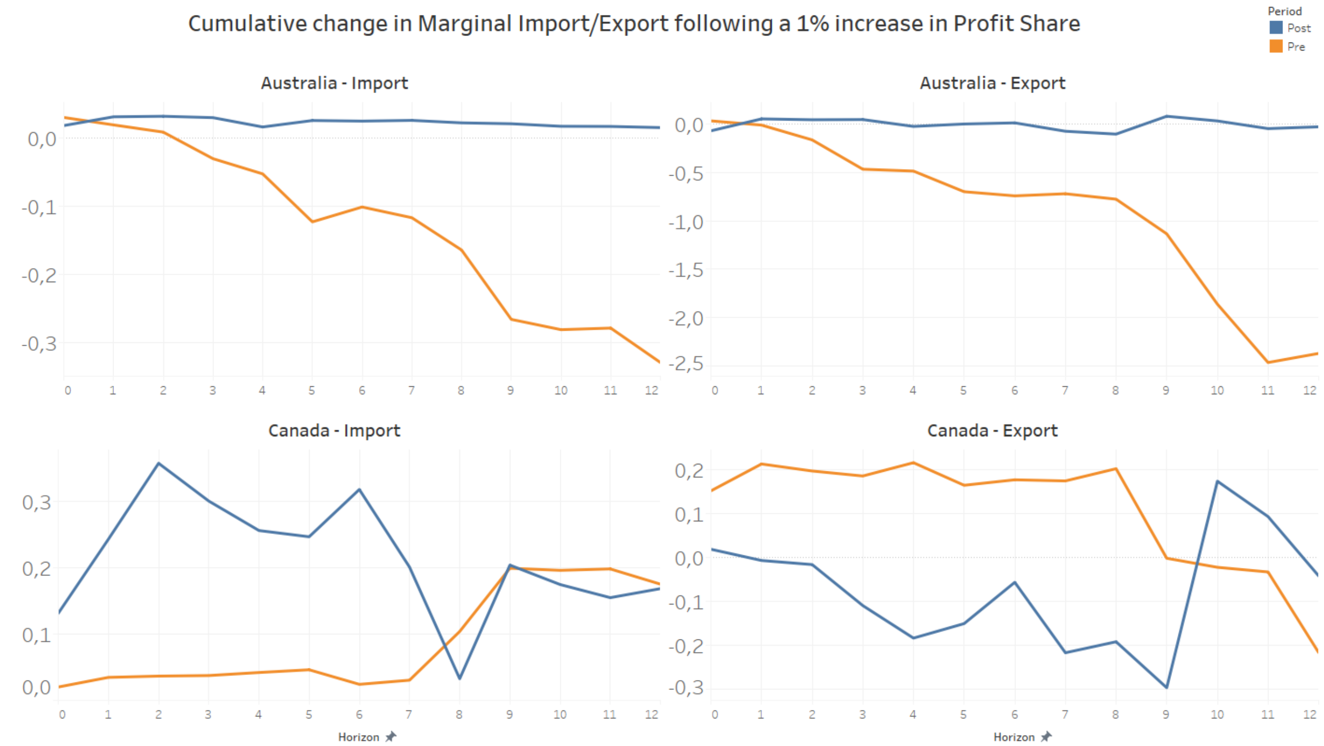
A.3 Cumulative Marginal Private Investment following a 1% increase in Profit Share

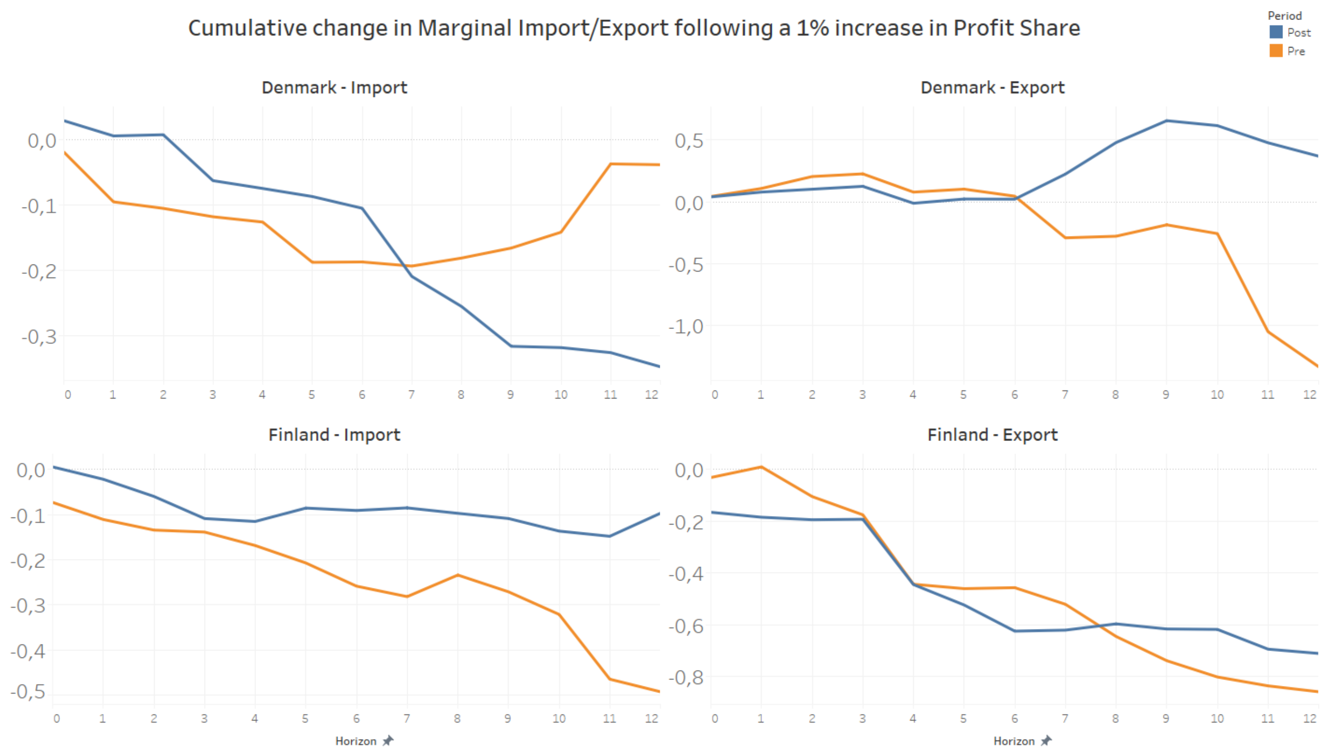


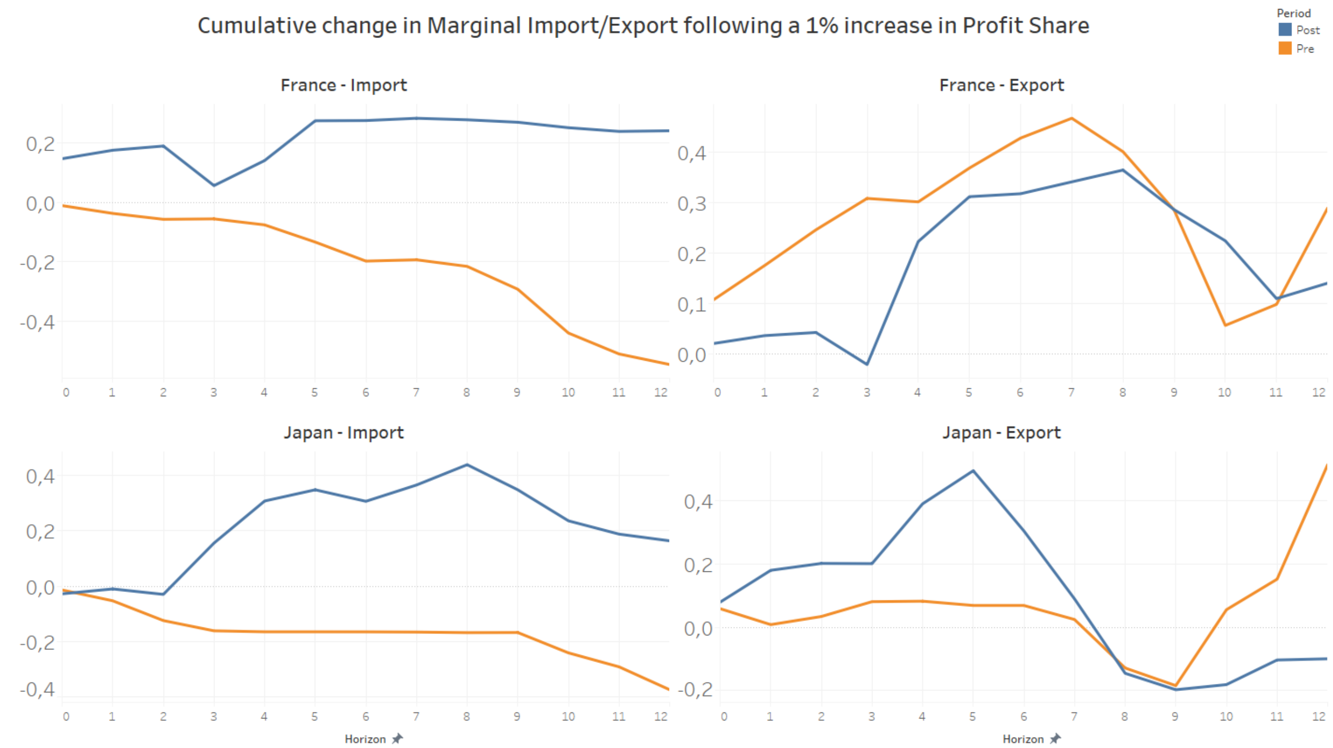

Cumulative change in Marginal Private Investment following a 1% increase in Profit Share
Period
Post
Pre
France
Japan
Norway
Sweden
Horizon
0 1 2 3 4 5 6 7 8 9 10 11 12
2
1
0
-1
-2
0,6
0,4
0,2
0,0
0,5
0,0
-0,5
-1,0
2,0
1,5
1,0
0,5
0,0
-0,5

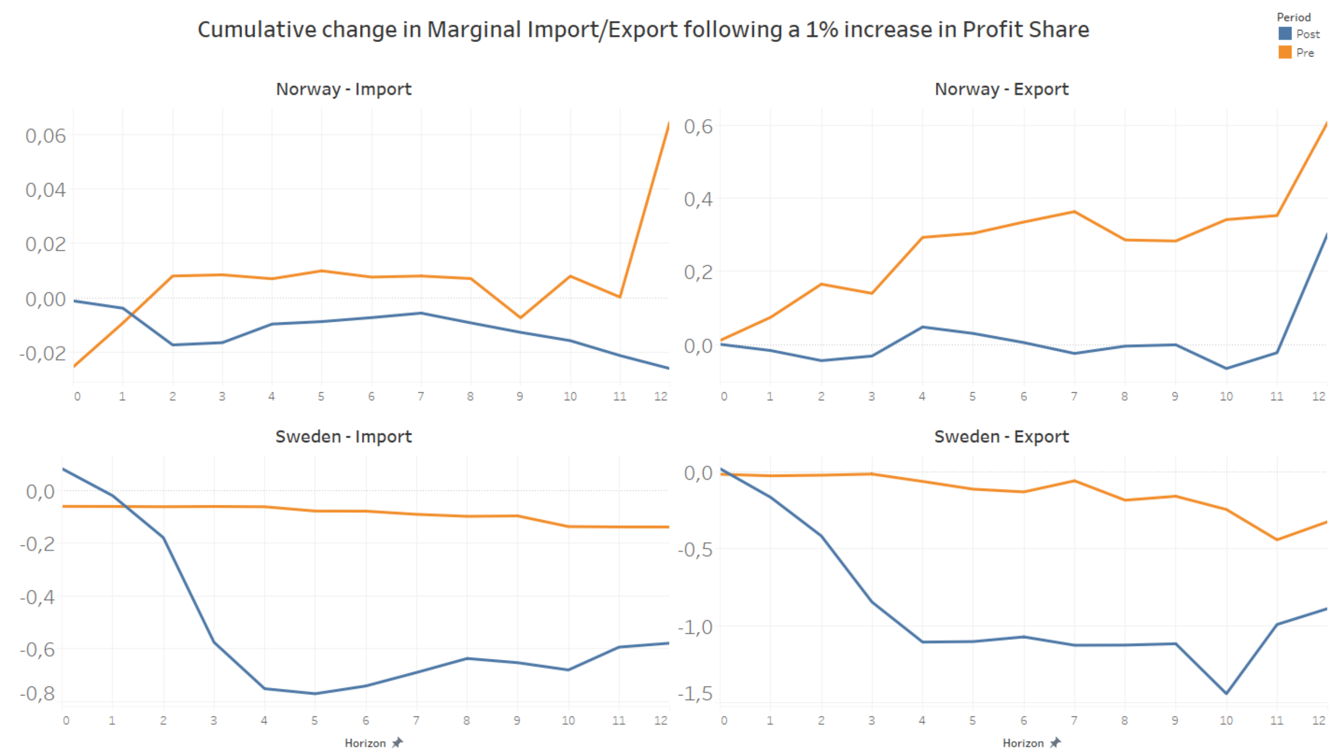

Cumulative change in Marginal Private Investment following a 1% increase in Profit Share
Period
Post
Pre
United States
United Kingdom
Horizon
0 1 2 3 4 5 6 7 8 9 10 11 12
0,6
0,5
0,4
0,3
0,2
0,1
0,0
-0,1
0,8
0,6
0,4
0,2
0,0
-0,2
-0,4

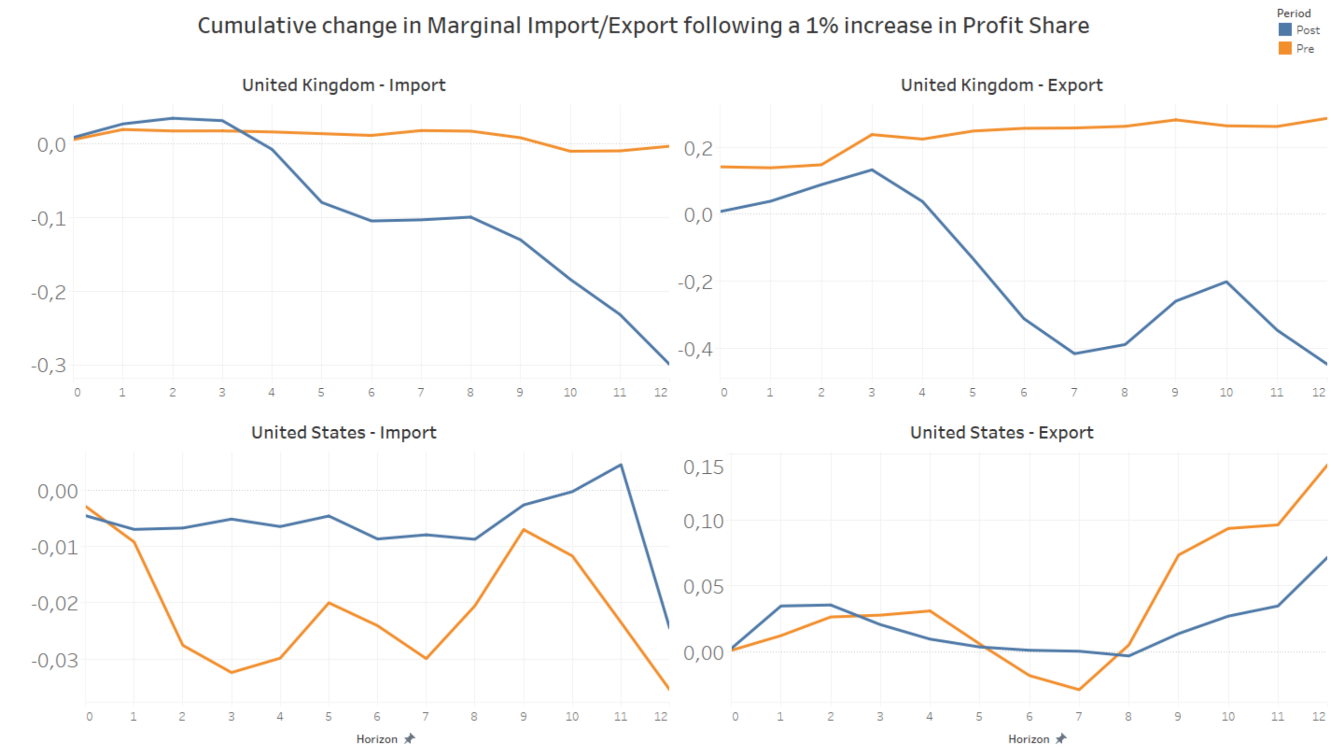
A.4.1 Cumulative Marginal Import/Export following a 1% increase in Profit Share



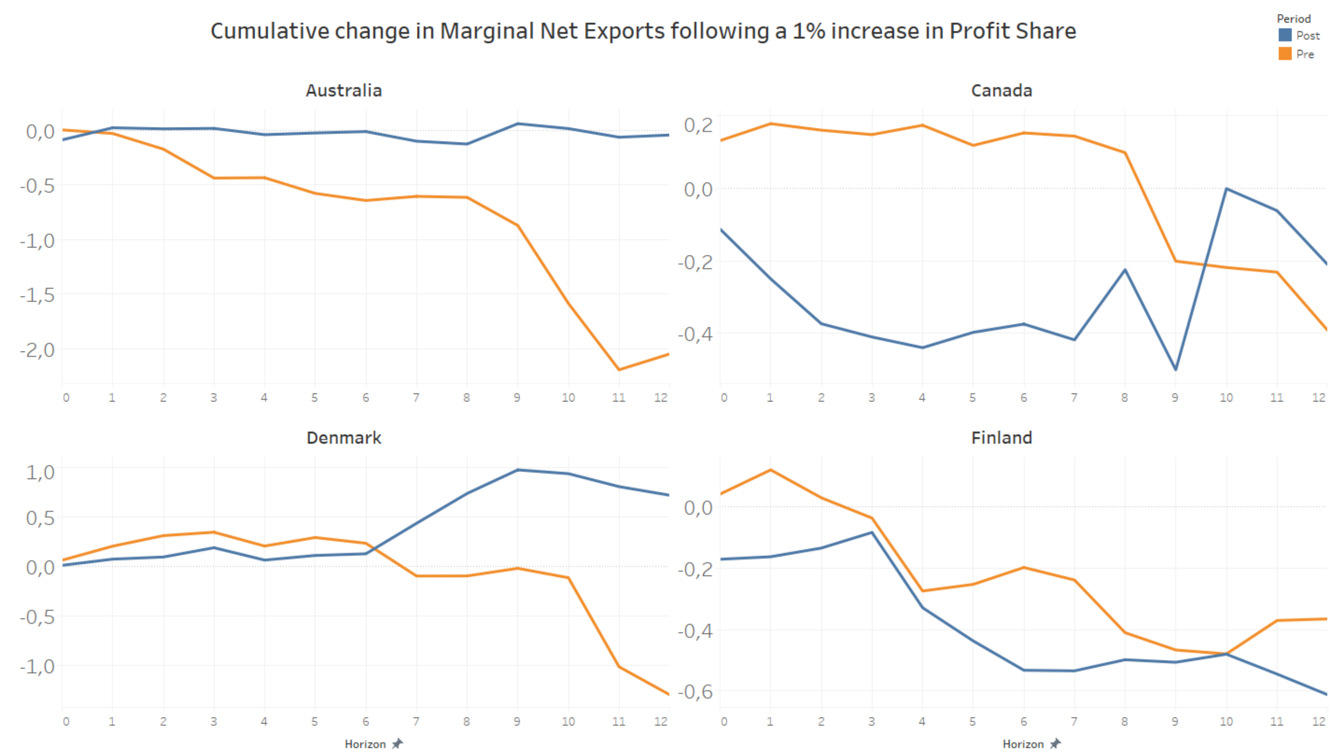


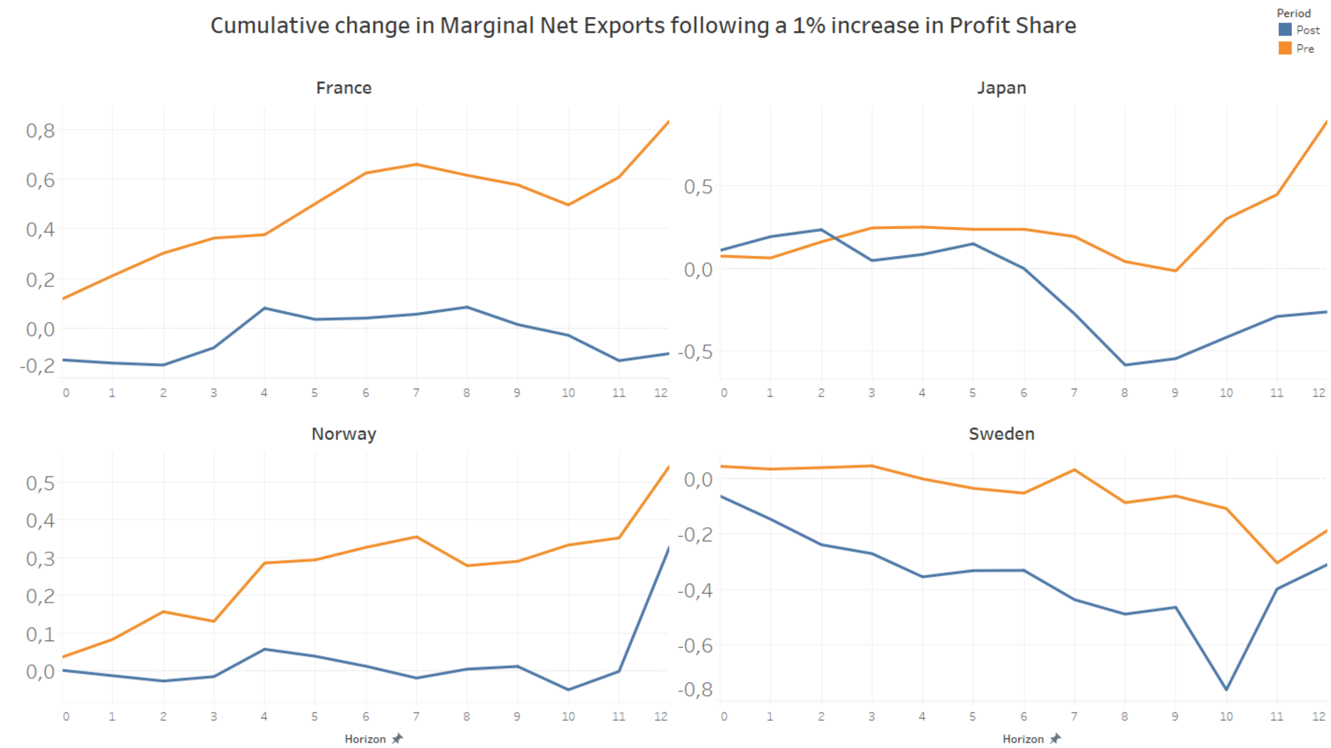

Cumulative change in Marginal Import/Export following a 1% increase in Profit Share
Period
Post
Pre
France - Import
France - Export
Japan - Import
Japan - Export
Horizon

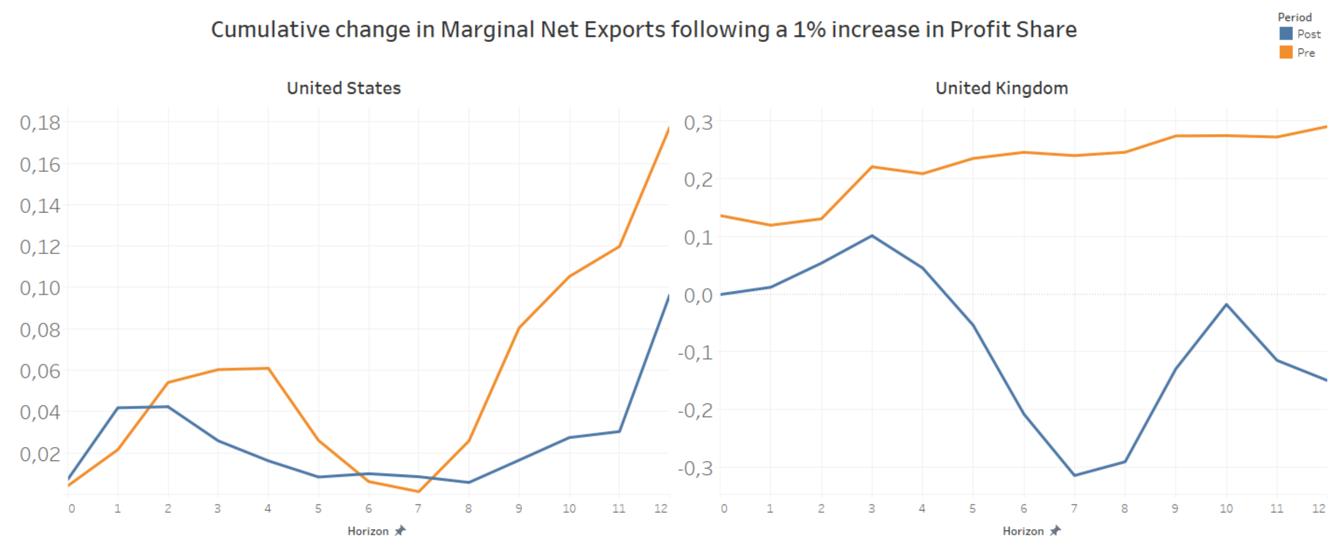

Cumulative change in Marginal Import/Export following a 1% increase in Profit Share
Period
Post
Pre
Norway - Import
Norway - Export
Sweden - Import
Sweden - Export
Horizon



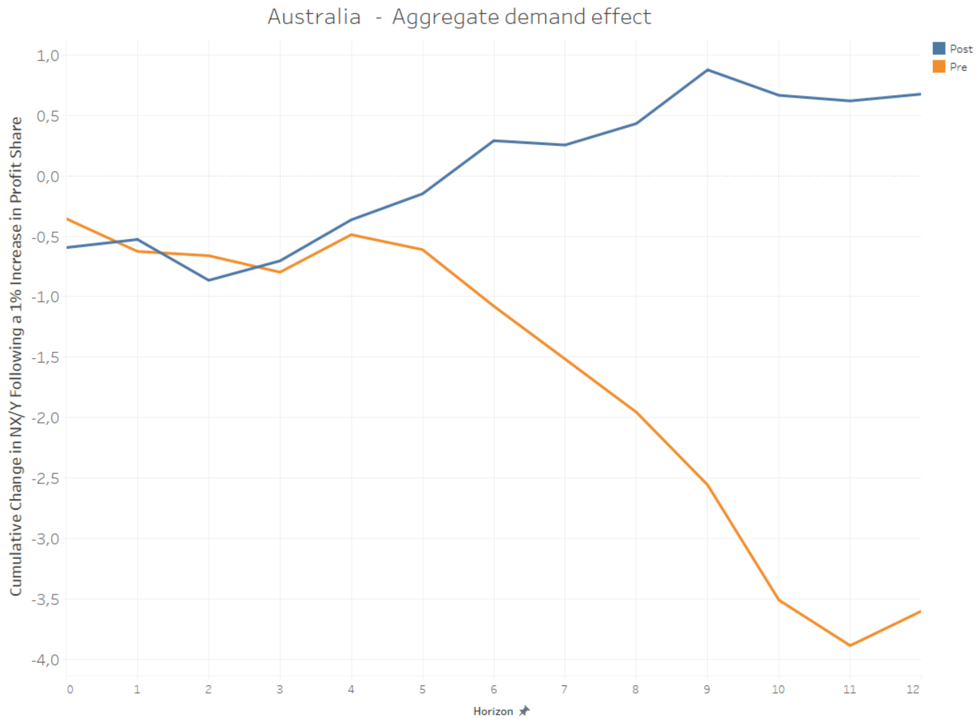
A.4.2 Cumulative Marginal Net Exports following a 1% increase in Profit Share



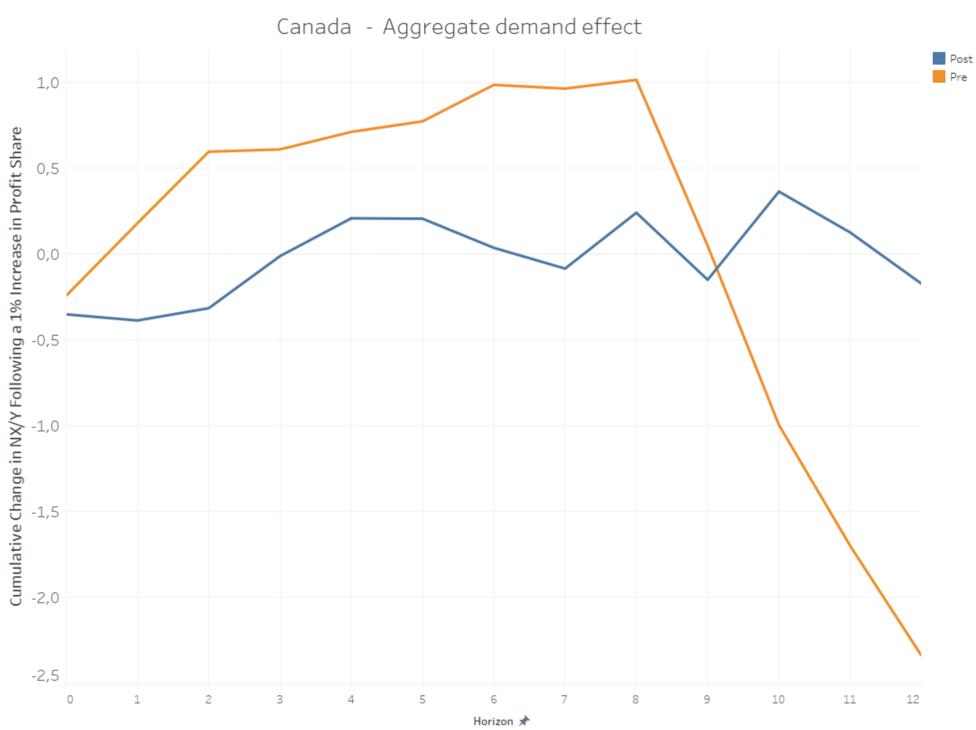

Cumulative change in Marginal Net Exports following a 1% increase in Profit Share
Period
Post
Pre
France
Japan
Norway
Sweden
0,8
0,6
0,4
0,2
0,0
-0,2
0,5
0,0
-0,5
0,5
0,4
0,3
0,2
0,1
0,0
0,0
-0,2
-0,4
-0,6
-0,8
0 1 2 3 4 5 6 7 8 9 10 11 12
Horizon


Cumulative change in Marginal Net Exports following a 1% increase in Profit Share
Period
Post
Pre
United States
United Kingdom
0,18
0,16
0,14
0,12
0,10
0,08
0,06
0,04
0,02
0,3
0,2
0,1
0,0
-0,1
-0,2
-0,3
0 1 2 3 4 5 6 7 8 9 10 11 12
Horizon

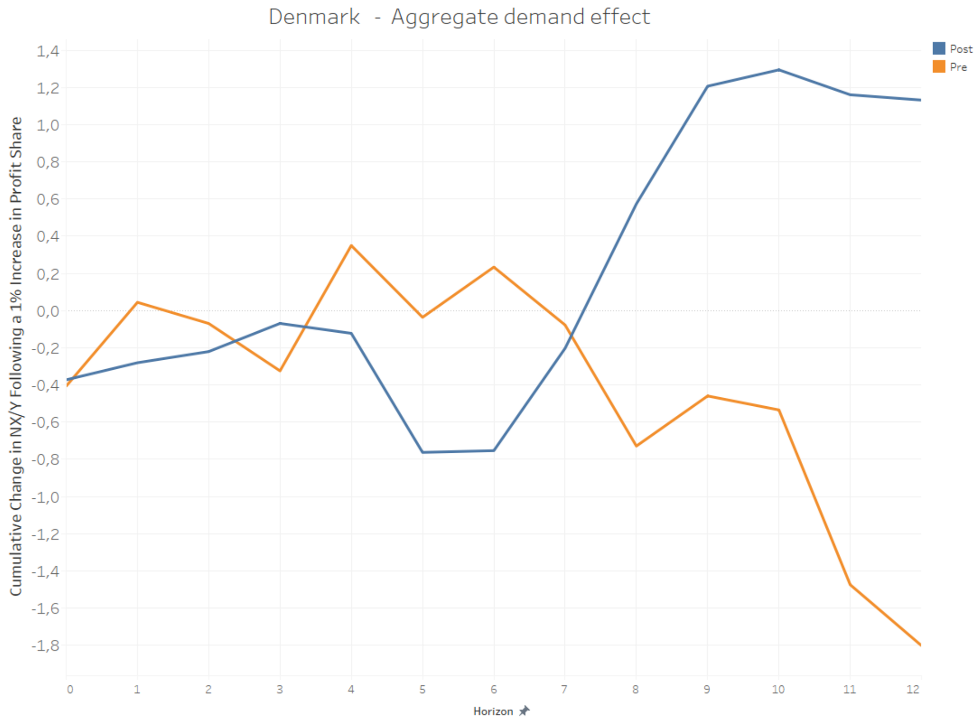
A.5.1 Aggregate demand effects – Australia



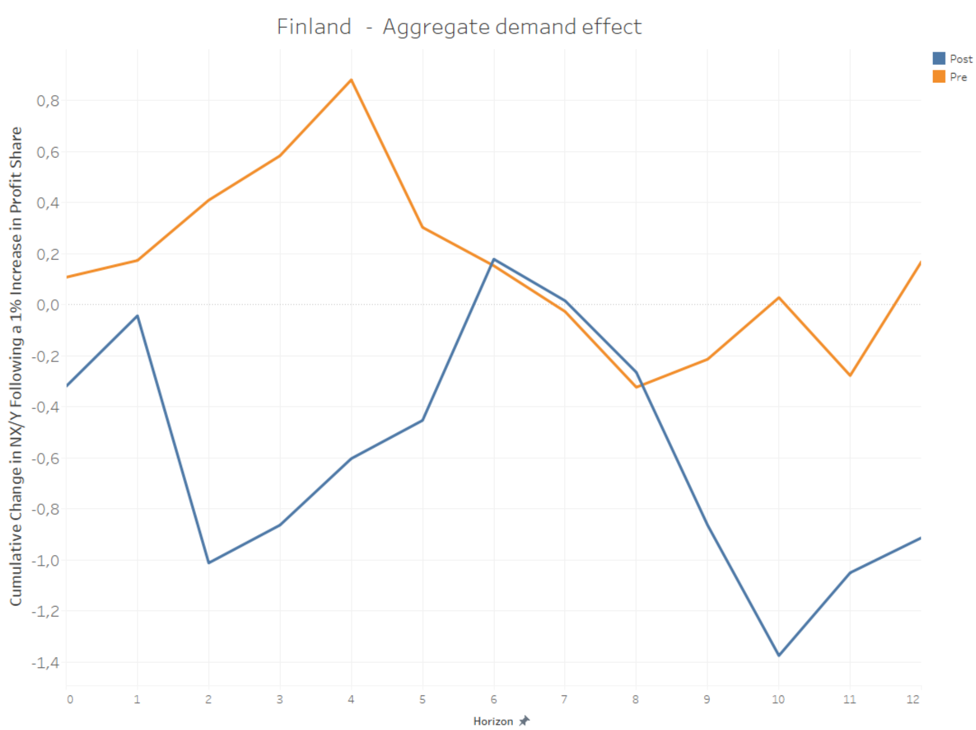
A.5.2 Aggregate demand effects – Canada



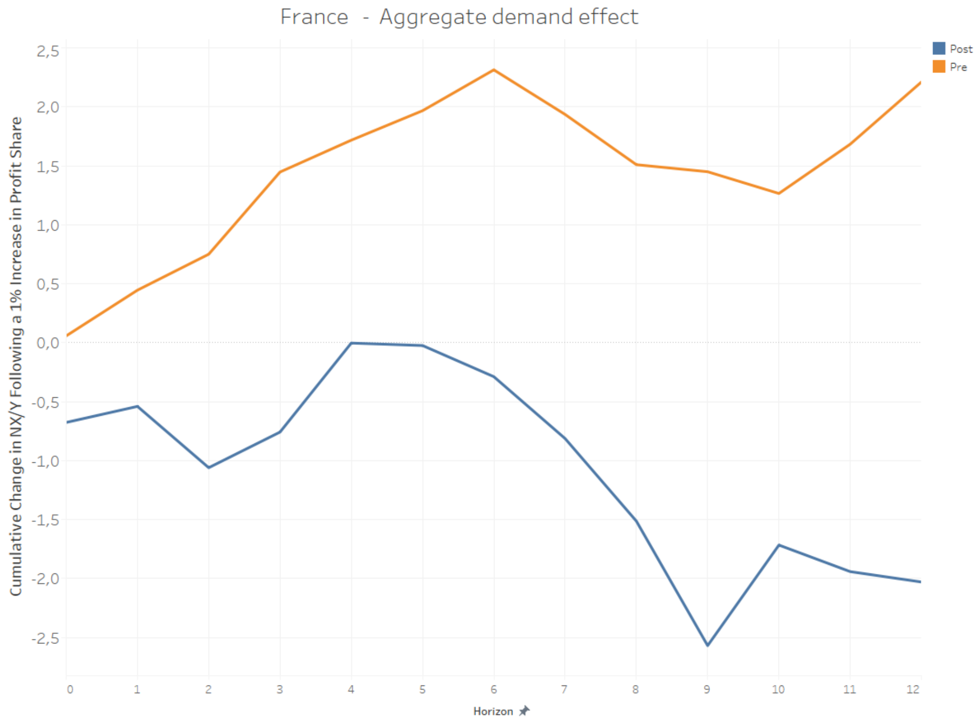
A.5.3 Aggregate demand effects – Denmark



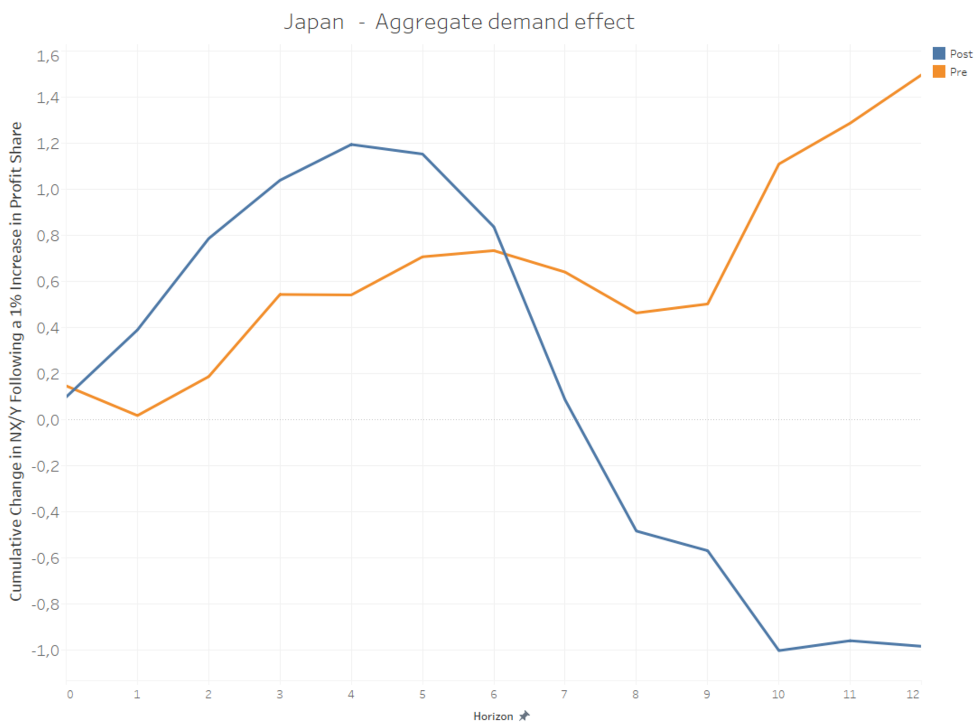
A.5.4 Aggregate demand effects – Finland



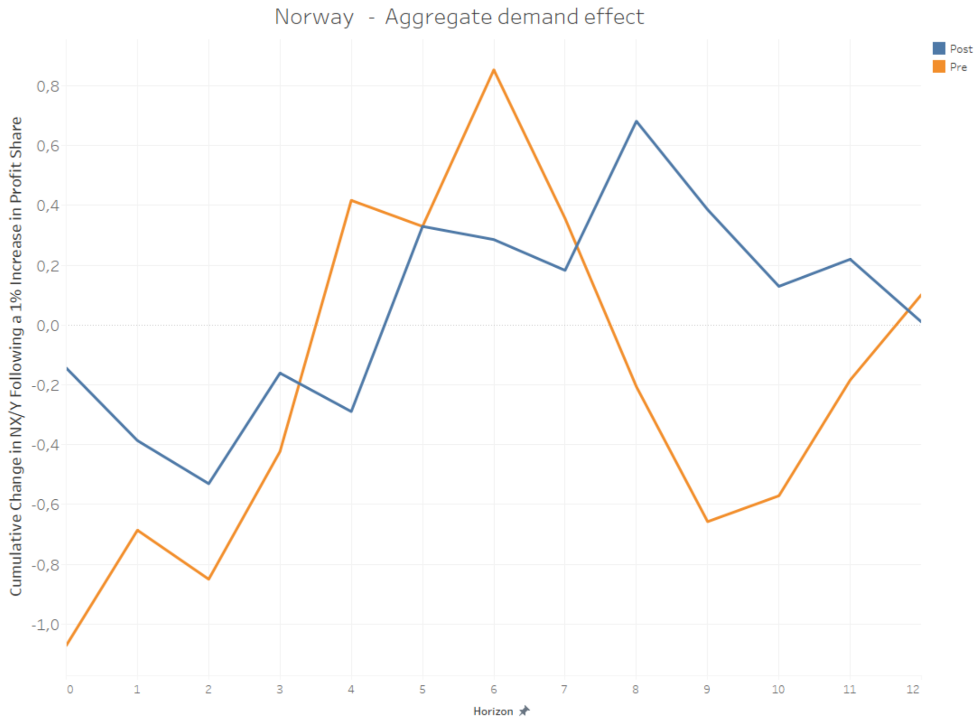
A.5.5 Aggregate demand effects – France



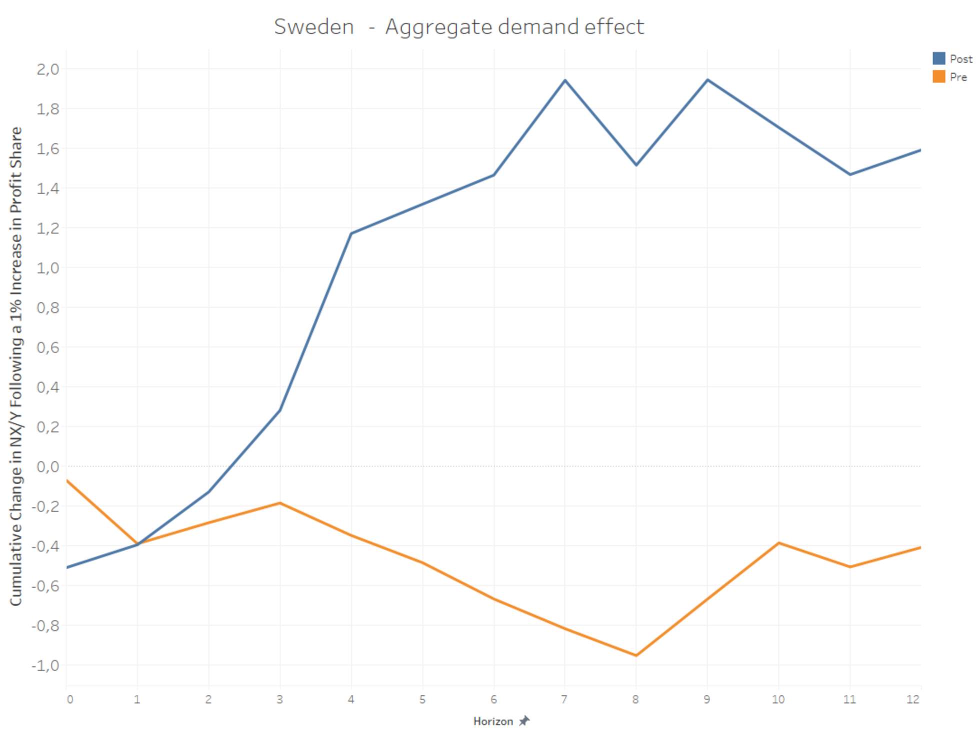
A.5.6 Aggregate demand effects – Japan



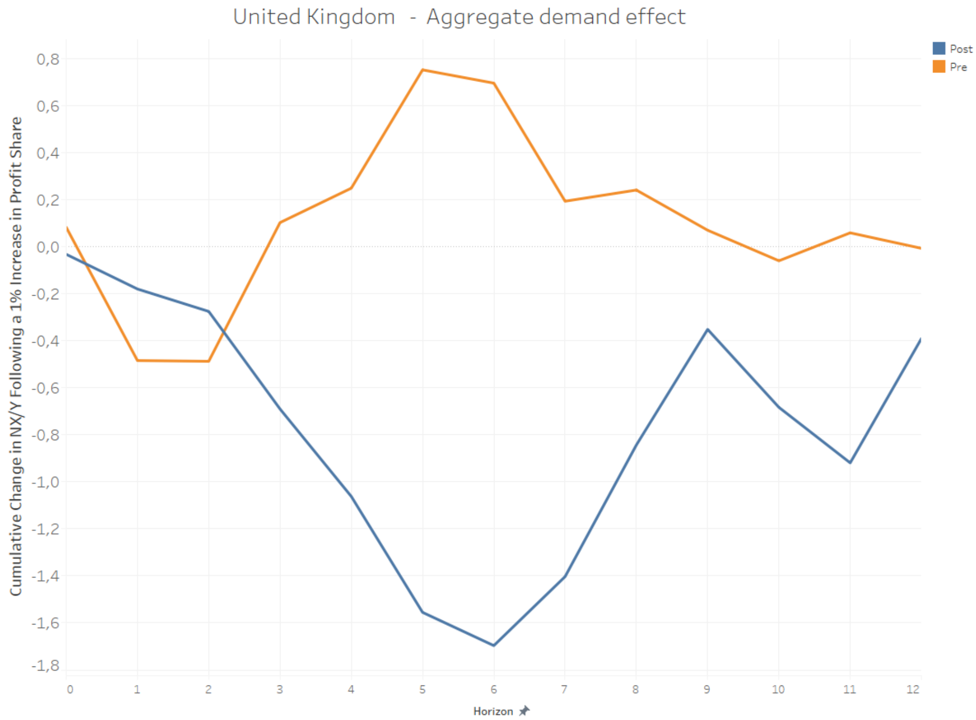
A.5.7 Aggregate demand effects – Norway



A.5.8 Aggregate demand effects – Sweden



A.5.9 Aggregate demand effects – The United Kingdom



A.5.10 Aggregate demand effects – The United States