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Contents

Contents

Macroeconomic Drivers of Corporate Investment in the United Kingdom: A Multivariate Analysis

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Abstract

This study examines the macroeconomic drivers of corporate investment in the United Kingdom using a multivariate time-series framework. Focusing on five key variables—interest rates, inflation, GDP growth, exchange rates, and corporate profits—the analysis investigates their combined effects on aggregate corporate investment using annual data from 1990 to 2022. By concentrating on macroeconomic determinants rather than firm-level factors, the study provides evidence on how monetary and real-sector conditions shape investment behavior in a mature, market-based economy. The contribution of this study lies in integrating long-run macroeconomic trends within a multivariate econometric framework that captures interactions between corporate profits, inflation, and exchange-rate movements in the UK over three decades of evolving policy regimes. Given the mixed order of integration among the variables, the study employs an Autoregressive Distributed Lag (ARDL) bounds testing approach to examine long-run relationships and short-run adjustment dynamics. OLS and Two-Stage Least Squares (2SLS) estimates are retained as benchmark and robustness check**s.** The results indicate that higher interest rates exert a significant positive effect on corporate investment, consistent with the endogenous and pro-cyclical nature of UK monetary policy. Corporate profits have a strong positive influence, highlighting the importance of internal finance. Inflation exhibits a negative and significant impact, while GDP growth shows a weak accelerator effect and exchange-rate movements are statistically insignificant. These findings underscore the dominance of profitability and policy credibility in driving UK investment and offer relevant insights for sustaining long-term capital formation.

Keywords: corporate investment; United Kingdom; monetary policy; interest rates; inflation; exchange rate; corporate profits; ARDL bounds testing; 2SLS.

JEL Classification: E22, E52, G31

1 Introduction

In an era marked by persistent economic uncertainty and the imperative for sustainable growth, corporate investment stands as a critical pillar for national prosperity, productivity enhancement, and structural transformation. For the United Kingdom, a highly developed financial system and a strong reliance on private sector activity underscore the profound importance of firms' investment decisions in shaping overall economic performance. Recent policy debates, particularly in the wake of post-Brexit economic adjustments and the global inflationary surge, have intensified scrutiny on the drivers of capital formation, with policymakers actively seeking levers to stimulate long-term investment and bolster the UK's competitive edge. Understanding the intricate macroeconomic forces that influence aggregate corporate investment in this dynamic environment is therefore not merely an academic exercise but an essential endeavor for policymakers and researchers committed to fostering resilient growth and macroeconomic stability.

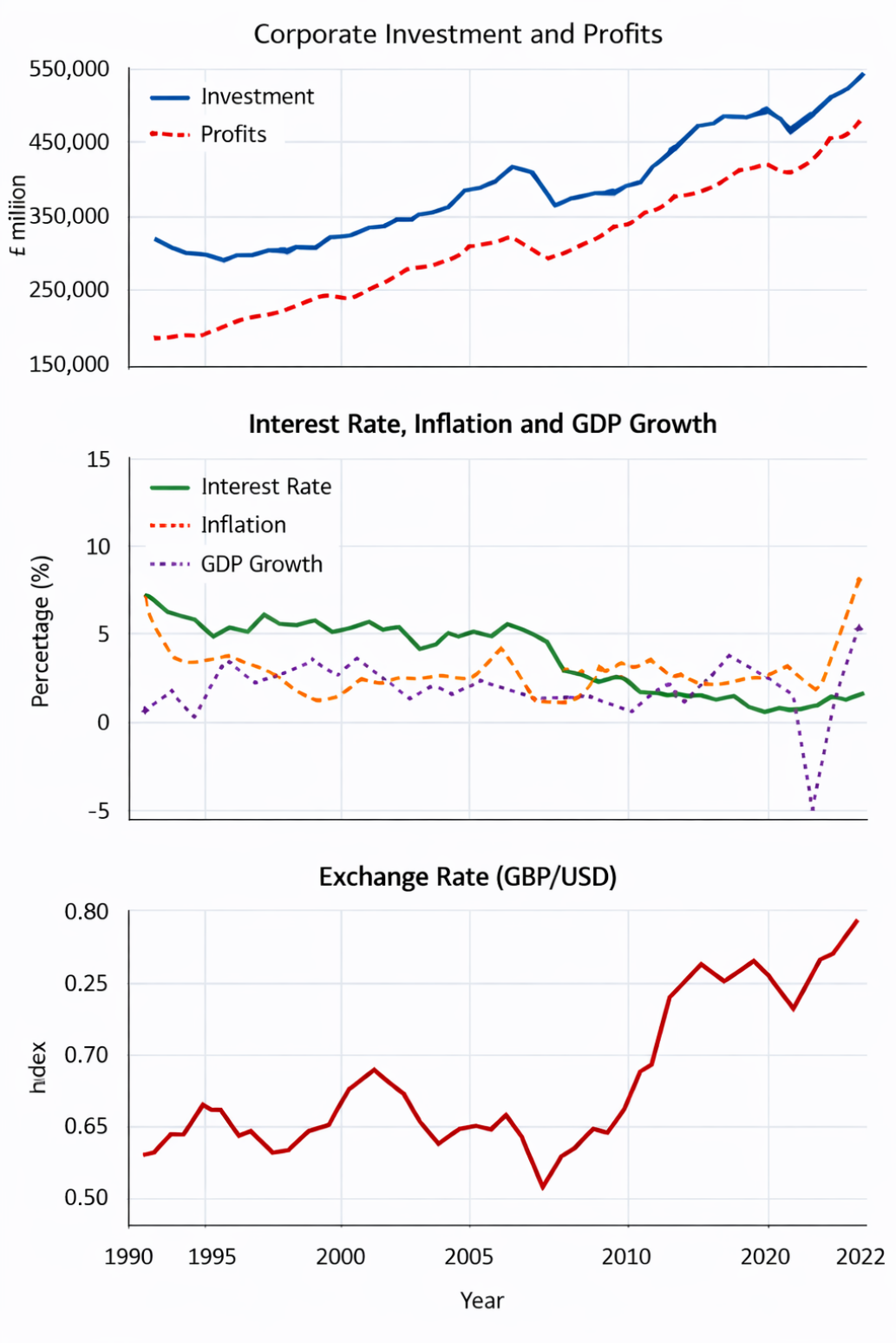
From a theoretical perspective, corporate investment is closely linked to macroeconomic conditions through the cost of capital, profitability, and expectations about future economic activity. The Neoclassical Investment Model (Jorgenson, 1963) predicts that higher interest rates increase the user cost of capital, thereby discouraging investment. Tobin’s q theory (Tobin, 1969) further suggests that firms expand investment when market valuations exceed the replacement cost of capital, reflecting favourable expectations about future returns. Complementing these frameworks, the monetary transmission literature highlights how changes in policy interest rates affect investment not only through borrowing costs but also through credit conditions and balance-sheet channels (Bernanke and Gertler, 1995).

Despite this strong theoretical foundation, empirical evidence on the macroeconomic drivers of investment in the UK remains fragmented. Existing studies have predominantly focused on firm-level determinants or short-term monetary policy effects, leaving a notable gap in understanding how key macroeconomic variables—interest rates, inflation, GDP growth, exchange rates, and corporate profits—interact to shape aggregate investment

dynamics over the long run. This study aims to address this gap by providing a comprehensive, macroeconomic-level analysis spanning more than three decades of UK economic history.

The UK provides a uniquely relevant context for such an investigation. The period from 1990 to 2022 encompasses pivotal economic transformations: the exit from the European Exchange Rate Mechanism (ERM) and the subsequent adoption of inflation targeting in the early 1990s, prolonged low interest rates following the Global Financial Crisis, the economic uncertainty surrounding the Brexit referendum, and the unprecedented monetary and fiscal responses to the COVID-19 pandemic and its inflationary aftermath. Over this period, corporate investment has exhibited substantial volatility, raising critical questions about the relative roles of monetary policy, inflation, economic growth, exchange-rate movements, and corporate profitability in shaping aggregate investment outcomes.

Figure 1: Trends in UK Corporate Investment and Key Macroeconomic Variables (1990–2022)



As shown in Figure 1, corporate investment (INV) and corporate profits (PROF) in the United Kingdom display broadly upward trends from the early 1990s onward, punctuated by

pronounced cyclical fluctuations during major economic downturns. Policy interest rates (IR) declined persistently following the global financial crisis, while inflation (INF) remained relatively subdued for much of the sample period before rising sharply in the post-pandemic years. Real GDP growth (GDPG) exhibits the characteristic volatility associated with business-cycle dynamics, whereas movements in the exchange rate (EXR) reflect a combination of long-run trends and shorter-term market adjustments. Together, these stylised facts provide descriptive motivation for the empirical analysis that follows.

This study analyses the macroeconomic determinants of corporate investment in the United Kingdom using annual data from 1990 to 2022. The empirical framework incorporates the key variables outlined above and employs a multivariate econometric approach, using an ARDL bounds testing model as the main empirical framework, with OLS and Two-Stage Least Squares (2SLS) estimates retained as benchmark and robustness checks.

The findings contribute to the literature by providing robust, long-term empirical evidence on the macroeconomic drivers of corporate investment in the UK. By focusing on aggregate investment rather than firm-level behaviour, the analysis highlights how monetary conditions, profitability, and broader economic dynamics jointly shape investment decisions at the national level. These insights are particularly relevant for policymakers aiming to stabilise investment cycles and support long-term growth in an environment characterised by heightened economic uncertainty and evolving monetary policy challenges.

2 Literature and Theoretical Framework

Understanding the determinants of corporate investment in the United Kingdom requires grounding in established macroeconomic and financial theories that link investment decisions to broader economic conditions. In an advanced, open economy with a market-based financial system and an independent central bank, corporate investment is shaped by interactions between monetary policy, profitability, aggregate demand, and external conditions. This section integrates theoretical foundations with empirical evidence—particularly focusing on findings relevant to the UK context—to establish a comprehensive framework for the subsequent analysis.

2.1 Neoclassical Investment Theory and the Role of Interest Rates

2.1.1 Theoretical Foundation

The Neoclassical Investment Theory, formalized by Jorgenson (1963), posits that firms choose their optimal capital stock by comparing the marginal productivity of capital with its user cost. In this framework, the user cost of capital depends on real interest rates, depreciation, and tax considerations. An increase in policy interest rates raises borrowing costs and the opportunity cost of capital, thereby discouraging investment. This mechanism is particularly relevant in market-based financial systems such as the UK, where firms rely heavily on external finance.

2.1.2 Empirical Evidence

Empirical evidence for advanced economies generally supports the importance of monetary policy in shaping investment decisions. Bernanke and Gertler (1995) highlight that interest-rate changes affect investment not only through borrowing costs but also via credit market conditions and balance-sheet effects. In the UK context, these channels are reinforced by a well-developed banking sector and capital markets, making corporate investment sensitive to monetary tightening and easing cycles.

Firm-level evidence from the UK shows that investment responses to monetary policy are heterogeneous and depend critically on corporate financial conditions. Cloyne et al. (2019) demonstrate that younger firms and those with weaker balance sheets reduce investment more strongly in response to interest rate increases, while larger, more established firms with stronger internal financing are less affected.

Recent UK evidence from the Bank of England's Decision Maker Panel further confirms the importance of the credit channel in UK monetary transmission. Shah, Bunn and Haskel (2025) show that during the 2022–2023 tightening cycle, financially constrained firms and firms relying more heavily on external finance experienced larger increases in borrowing costs and reduced investment more than internally financed firms. This highlights the greater sensitivity of financially constrained firms to monetary policy shocks and supports the view that monetary policy affects corporate investment partly through financing conditions and credit access.

2.1.3 UK Context

Since the early 1990s, the Bank of England's interest-rate increases have typically occurred during periods of strong demand, improved business confidence, and tightening labour markets. This endogenous nature of monetary policy—where policy rates respond to economic conditions rather than acting as purely exogenous shocks—means that higher interest rates often coincide with expansionary phases rather than causing contractions in investment. This pattern is consistent with the "information effect" literature (Romer and Romer, 2000; Nakamura and Steinsson, 2018), which demonstrates that monetary policy actions convey information about the central bank's outlook on economic conditions. When rate increases signal favourable macroeconomic prospects, firms may interpret tightening episodes as confirmation of strong demand and profitability expectations.

2.2 Tobin's q Theory and Corporate Profitability

2.2.1 Theoretical Foundation

Tobin's q Theory (Tobin, 1969) suggests that firms invest when the market value of existing capital exceeds its replacement cost. A higher value of q reflects favourable expectations about future profitability and growth, making new investment attractive. Although originally formulated in a firm-level context, Tobin's q also has implications at the aggregate level through financial market valuations and business confidence. Given the UK's deep and highly developed capital markets, fluctuations in equity prices and financial conditions play an important role in shaping investment incentives.

2.2.2 Empirical Evidence

Corporate profits play a central role in financing investment, especially when firms face borrowing constraints or uncertainty in external capital markets. Blanchard, Rhee, and Summers (1993) find a strong positive relationship between profits and investment at the aggregate level, suggesting that retained earnings are a key driver of capital formation. This aligns with Tobin's q, as higher profitability can lead to higher market valuations and increased internal funds for investment.

However, firm-level evidence suggests that profitability does not always translate into efficient investment. Titman, Wei, and Xie (2004) highlight that agency problems and

overinvestment can weaken the link between profits and productive investment. At the macro level, nevertheless, higher profitability generally supports stronger investment activity by easing internal financing constraints.

2.2.3 UK-Specific Evidence

UK-specific evidence confirms that firms rely heavily on internal funds due to information asymmetries and adjustment costs associated with external finance. Bond, Elston, Mairesse, and Mulkay (2003) find that in the UK's market-based financial system, profitability not only relaxes financing constraints but also serves as a key signal of expected future returns. Their comparative study of European countries shows that UK firms exhibit stronger sensitivity of investment to cash flow than their continental European counterparts, reflecting the greater role of internal finance in Anglo-Saxon financial systems.

2.3 Monetary Transmission Mechanism and Inflation

2.3.1 Theoretical Foundation

The Monetary Transmission Mechanism emphasizes how changes in monetary policy affect real economic activity, including investment, through multiple channels (Bernanke and Gertler, 1995). In addition to the traditional interest rate channel, monetary policy influences investment via credit conditions, balance-sheet effects, and expectations. In the UK, where financial intermediation and capital markets are central to corporate financing, monetary policy actions by the Bank of England can affect investment both directly—by altering borrowing costs—and indirectly—by influencing firms' balance sheets, credit availability, and risk premia.

2.3.2 Inflation and Investment

Inflation, often a target of monetary policy, also exerts a significant influence on investment decisions. Conventional macroeconomic theory argues that inflation increases uncertainty, distorts relative prices, and undermines long-term planning, thereby discouraging long-term investment commitments (Fischer, 1993; Barro, 1995). De Gregorio (1993) further demonstrates that inflation reduces investment efficiency by weakening price signals and increasing macroeconomic instability.

2.3.3 Empirical Evidence

Empirical studies reinforce these theoretical insights. Ghosh and Phillips (1998) find a robust negative relationship between inflation and economic growth across countries, even at moderate inflation levels. Ciżkowicz and Rzońca (2013), examining OECD economies, show that higher inflation significantly reduces investment growth, highlighting the importance of price stability in advanced economies.

2.3.4 UK Context

In the UK context, periods of elevated inflation—particularly during the 1970s, early 1990s, and post-pandemic period—have been associated with tighter financial conditions and heightened uncertainty, discouraging firms from committing to irreversible capital expenditures. Studies by Benati (2008) and Goodhart and Hofmann (2008) show that inflation volatility in advanced economies is particularly damaging to long-horizon investment decisions. In an economy with a well-established inflation-targeting regime such as the UK, deviations from price stability are likely to be interpreted as signals of macroeconomic imbalance rather than demand strength, thereby discouraging long-term capital commitments.

Recent UK firm-level evidence also highlights the importance of inflation dynamics after the COVID-19 shock. Bunn et al. (2022) use Decision Maker Panel data to show that UK firm price-setting became more dispersed and asymmetric during the post-pandemic inflationary period, with energy prices and labour and material shortages playing an important role. This reinforces the argument that inflation uncertainty can complicate firms' planning and investment decisions.

2.4 The Accelerator Model and GDP Growth

2.4.1 Theoretical Foundation

The Accelerator Model links investment to changes in aggregate demand and output, positing that firms increase investment when economic growth strengthens and expected demand rises (Clark, 1917; Samuelson, 1939). In this framework, GDP growth serves as a key determinant of investment by shaping firms' expectations about future sales and capacity utilization.

For the UK economy, which is highly sensitive to business cycles and external shocks, fluctuations in economic growth are likely to play an important role in driving investment dynamics. Periods of sustained growth encourage firms to expand productive capacity, while economic slowdowns or recessions reduce investment incentives due to weaker demand expectations.

2.4.2 Empirical Evidence

Empirical evidence often supports this relationship, with investment and output growth found to be mutually reinforcing. Investment contributes to future growth through capital accumulation, while growth itself stimulates further investment through demand expectations. This dynamic is particularly relevant for the UK, where cyclical fluctuations in GDP have historically been accompanied by pronounced investment cycles.

However, recent evidence suggests this relationship may be weakening. Bloom (2009) shows that uncertainty shocks induce firms to delay investment and adopt "wait-and-see" behaviour, thereby reducing the responsiveness of capital expenditure to short-term output fluctuations. The UK's increasing reliance on services, intangible assets, and knowledge-based capital—combined with major uncertainty shocks such as the Global Financial Crisis and Brexit—may further weaken the link between contemporaneous GDP growth and aggregate investment.

2.5 Exchange Rate Channel and International Competitiveness

2.5.1 Theoretical Foundation

In open economies, exchange rate movements can influence investment decisions by affecting export competitiveness, input costs, and profitability (Campa and Goldberg, 1999). Currency appreciation may reduce the competitiveness of exporters and dampen investment in tradable sectors, while depreciation can improve export competitiveness but increase the cost of imported capital goods. Exchange rate fluctuations also affect investment through their impact on inflation, uncertainty, and firms' balance sheets, particularly for companies with foreign currency exposure.

Given the UK's high degree of trade openness and its exposure to global financial markets, exchange rate dynamics are an important component of the macroeconomic environment influencing investment decisions.

2.5.2 Empirical Evidence

Empirical findings on the impact of exchange rates on investment are often mixed, reflecting offsetting mechanisms. Campa and Goldberg (1995) show that exchange-rate movements significantly affect investment in tradable-goods sectors, particularly in open economies. Exchange-rate volatility has also been found to discourage investment by increasing uncertainty surrounding future revenues and costs.

Using industry-level data, Campa and Goldberg (1999) show that for UK manufacturing industries, exchange-rate coefficients are generally small and statistically insignificant, with imported-input exposure exerting little measurable influence on investment. They further document that UK industries exhibit relatively stable external exposure compared with those in the United States and Japan, which contributes to the weak significance of exchange-rate effects.

2.5.3 UK Context

For the UK, exchange-rate fluctuations are especially relevant given the economy's openness and the international orientation of UK firms. However, the net effect of exchange rate movements on aggregate investment remains theoretically ambiguous. While depreciation may enhance export competitiveness and expected profitability in tradable sectors, it simultaneously raises the cost of imported capital goods and intermediate inputs. These opposing channels often neutralise each other at the aggregate level, resulting in a limited net impact of exchange-rate movements on corporate investment.

Recent evidence also highlights the importance of structural shocks in explaining UK investment weakness. Kaya et al. (2024) estimate the impact of Brexit on UK business investment and productivity using the National Institute’s Global Macroeconometric Model. They model Brexit as a combination of lower trade openness, weaker productivity and a

permanent increase in uncertainty, providing important context for understanding investment dynamics after 2016.

2.6 Summary and Research Gap

The literature reviewed above highlights the theoretical and empirical importance of five key macroeconomic variables in shaping corporate investment, as summarised in Table 1.

Table 1: Summary of Macroeconomic Determinants of Corporate Investment

Variable	Transmission Channel	Expected Effect	Evidence for the UK
Interest Rates	User cost of capital; credit channel	Negative	Heterogeneous firm responses
Inflation	Uncertainty; price distortions	Negative	Inflation volatility discourages investment
GDP Growth	Accelerator mechanism	Positive	Evidence weakening due to structural change
Exchange Rate	Competitiveness versus import costs	Ambiguous	Limited aggregate effect
Corporate Profits	Internal finance; Tobin's q	Positive	Strong determinant of investment

Source: Author's compilation based on the literature reviewed.

Notes: IR = policy interest rate; INF = inflation (CPI); PROF = corporate profits; GDPG = GDP growth; EXR = exchange rate. Expected signs are derived from standard theoretical frameworks.

Despite this rich theoretical and empirical foundation, existing UK-focused studies exhibit two important limitations:

First, they often concentrate on firm-level behavior or short-term monetary policy effects, providing limited insight into long-run aggregate investment dynamics. While firm-level studies (such as Cloyne et al., 2019; Bond et al., 2003) offer valuable evidence on heterogeneity and microeconomic mechanisms, they do not directly reveal how macroeconomic conditions jointly shape national investment outcomes over extended periods.

Second, few studies jointly examine all five variables within a unified multivariate framework that accounts for potential interactions and endogeneity among them. Existing research tends to focus on individual channels in isolation—for example, the interest rate channel or the exchange rate channel—without considering how monetary conditions, profitability, price stability, demand conditions, and external competitiveness interact to influence aggregate investment.

This study addresses these gaps by providing a comprehensive, long-run macroeconomic analysis of corporate investment in the United Kingdom over the period 1990–2022. By integrating monetary, financial, and real-sector variables within a unified econometric framework that explicitly addresses endogeneity concerns, the analysis offers a more complete understanding of the macroeconomic forces shaping UK corporate investment over three decades of evolving policy regimes and structural change.

3 Research Hypotheses

Drawing on the theoretical framework in Section 2 and the UK-focused empirical literature reviewed in Section 2, the study formulates the following hypotheses:

H1: Increases in the policy interest rate have a negative effect on corporate investment in the United Kingdom.

H2: Higher inflation is associated with lower levels of corporate investment in the United Kingdom.

H3: Higher corporate profits positively influence corporate investment in the United Kingdom.

H4: Higher GDP growth leads to increased corporate investment through the accelerator effect.

H5: Movements in the exchange rate have a significant but ambiguous effect on corporate investment in the United Kingdom.

4 Research Methodology

4.1 Research Design

This study adopts a quantitative, explanatory research design to examine the macroeconomic determinants of corporate investment in the United Kingdom. In contrast to firm-level or panel-based analyses, the study relies on annual national time-series data covering the period 1990–2022, allowing for a long-run assessment of aggregate investment dynamics under evolving monetary regimes, financial conditions, and structural changes in the UK economy.

The empirical strategy adopts the ARDL bounds testing approach as the main econometric framework, following the mixed order of integration identified in the unit-root tests. OLS and Two-Stage Least Squares (2SLS) estimates are retained as benchmark and robustness checks. The 2SLS framework is used specifically to address potential endogeneity between corporate investment and GDP growth.

4.2 Data Sources

All macroeconomic variables used in this study are obtained from official and internationally recognised data sources to ensure consistency, transparency, and replicability. Corporate investment, measured as business investment (gross fixed capital formation), and corporate profits, proxied by the gross operating surplus of private non-financial corporations, are sourced from the Office for National Statistics (ONS). Corporate investment is measured using UK business investment/GFCF data expressed in real terms using constant-price or chained-volume measures, rather than current prices. This ensures that the analysis captures real changes in investment activity rather than nominal increases caused by price changes.

The policy interest rate (Bank Rate) and supplementary monetary indicators are obtained from the Bank of England. Inflation is measured using the Consumer Price Index (CPI), sourced from both the ONS and the Organisation for Economic Co-operation and Development (OECD). Real GDP growth is obtained from the ONS and cross-validated using World Bank data to ensure robustness.

The nominal exchange rate (GBP/USD) is sourced from the Bank of England and the International Monetary Fund (IMF). Finally, global GDP growth (excluding the United Kingdom) is obtained from the World Bank's World Development Indicators (WDI), using the "GDP growth (annual %)" indicator for the "World (excluding United Kingdom)" aggregate. This variable is employed as an instrumental variable in the empirical analysis.

Where necessary, higher-frequency series were converted to annual frequency to ensure consistency with the time-series framework covering the period 1990–2022. Prior to estimation, the data were inspected for missing observations, cleaned for consistency, and tested for stationarity using the Augmented Dickey–Fuller (ADF) test to ensure valid econometric inference. These data sources are widely used in empirical macroeconomic research and provide reliable and high-quality data suitable for time-series econometric analysis.

4.3 Variable Definitions

A detailed summary of variable definitions, measurement, and data sources is provided in Appendix Table A1.

The dependent variable in this study is corporate investment (INV_t), measured as aggregate business investment, defined as the gross fixed capital formation of private non-financial corporations. The series is expressed in real terms and serves as a macro-level proxy for national corporate investment activity in the United Kingdom.

The key independent variables are defined as follows. The policy interest rate (IR_t) is proxied by the Bank of England's Bank Rate, capturing the stance of monetary policy and the cost of borrowing faced by firms. Inflation (INF_t) is measured as the annual percentage change in the Consumer Price Index (CPI), reflecting price stability, real financing costs, and macroeconomic uncertainty affecting investment decisions.

Corporate profits ($PROF_t$) are measured using the gross operating surplus of private non-financial corporations, representing internal financing capacity and expected returns on

capital, consistent with Tobin's q and cash-flow theories of investment. GDP growth ($GDPG_t$) is defined as the annual real GDP growth rate and captures aggregate demand conditions and the accelerator effect on corporate investment.

The exchange rate (EXR_t) is measured using the nominal GBP/USD exchange rate, where an increase denotes a depreciation of sterling. This measure is selected due to the strong trade and financial linkages between the United Kingdom and the United States, making it a suitable proxy for international competitiveness and external economic conditions. The exchange rate affects investment through multiple channels, including export competitiveness, the cost of imported capital goods, and uncertainty.

To address potential endogeneity between monetary policy, economic activity, and corporate investment, a two-stage least squares (2SLS) framework is employed. Two instrumental variables are used. First, global GDP growth (excluding the United Kingdom) captures external demand conditions and global economic shocks that influence domestic monetary conditions while remaining exogenous to UK corporate investment. Second, the lagged terms of trade (TOT_{t-1}) capture international price dynamics affecting the UK economy with a temporal lag and are plausibly exogenous to contemporaneous investment decisions. These instruments satisfy the relevance and exogeneity conditions commonly required in empirical macroeconomic studies.

Descriptive statistics for all variables are reported in Appendix Table A2 and illustrated in Figure 2, providing insights into the distribution, variability, and scale of the data used in the empirical analysis. Over the sample period, corporate investment (INV) averaged £368.4 billion, while corporate profits (PROF) averaged £272.7 billion. The macroeconomic variables exhibit patterns consistent with business cycle dynamics: the policy interest rate (IR) averaged 3.56%, inflation (INF) 2.49%, and GDP growth (GDPG) 1.94%, with the latter displaying relatively high volatility, reflecting recessionary episodes.

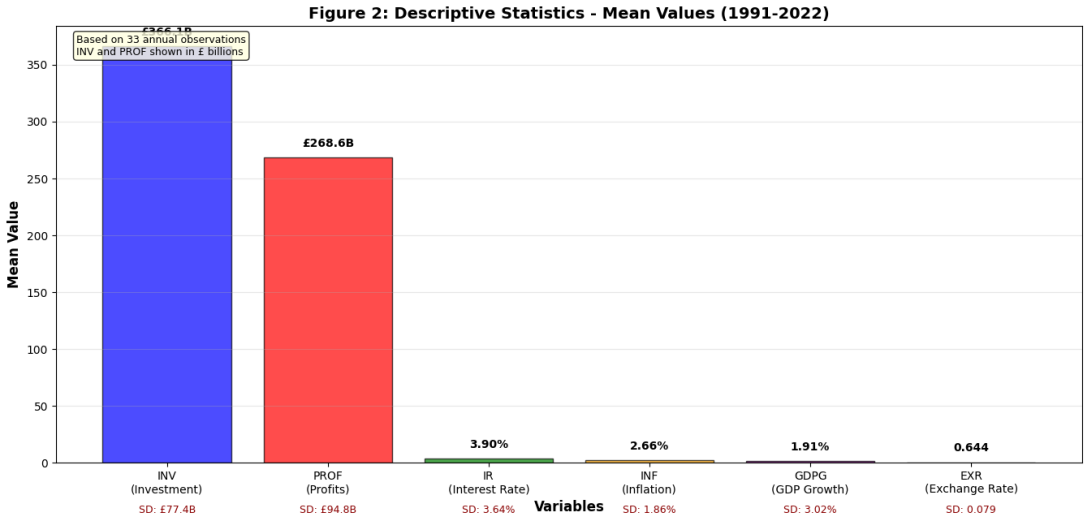


Figure 2 displays the mean values of all variables used in the analysis. Corporate investment (INV) and corporate profits (PROF) are measured in billions of pounds, reflecting their dominant scale in the UK economy. Interest rates (IR), inflation (INF), and GDP growth (GDPG) are shown as percentages, while the exchange rate (EXR) is expressed as GBP/USD. These mean values confirm the relative magnitudes of the variables and establish a baseline for understanding UK macroeconomic conditions over the sample period.

The descriptive statistics reported in Appendix Table A2 provide additional insights into variability and range that inform key methodological choices. The substantial dispersion in key variables—particularly GDP growth (standard deviation of 3.07 percentage points) and corporate profits (standard deviation of £93,284 million)—justifies the use of heteroskedasticity-robust standard errors in the regression analysis. Furthermore, the wide ranges observed, with GDP growth spanning from -10.3% during recessions to 8.6% during expansionary periods, underscore the importance of controlling for business cycle effects to avoid biased estimates. Notably, the exchange rate exhibits relatively low variability (coefficient of variation of 12.2%), consistent with periods of managed exchange rate regimes during parts of the sample period.

Table 2 summarises the definitions, measurement, and expected signs of the variables used in the empirical analysis, including the instrumental variables employed in the 2SLS estimation.

Table 2: Summary of Variables and Instrumental Variables

Variable	Symbol	Definition	Expected Sign
Corporate investment	INV	Aggregate business investment (GFCF, PNFCs)	—
Policy interest rate	IR	Bank of England Bank Rate	–
Inflation	INF	CPI inflation rate	–
Corporate profits	PROF	Gross operating surplus (PNFCs)	+
GDP growth	GDPG	Annual real GDP growth	+
Exchange rate	EXR	GBP/USD (↑ = depreciation)	±
Instrumental Variables (2SLS)			
Global GDP growth excluding the UK	GlobalGDP_exUK	External macroeconomic shock	—
Lagged terms of trade	TOT_{t-1}	External price movements	—

Source: Office for National Statistics (ONS), Bank of England (BoE) and author's calculations.
Notes: GFCF denotes Gross Fixed Capital Formation. PNFCs refer to Private Non-Financial Corporations. CPI is the Consumer Price Index. The exchange rate is expressed as GBP/USD, where an increase denotes a depreciation of sterling. The instrumental variables—global GDP growth excluding the UK and lagged terms of trade—are employed to address potential endogeneity in the 2SLS estimation.

4.4 Model Specification (United Kingdom)

The empirical model is grounded in established investment theories and examines how monetary conditions, price stability, profitability, demand conditions, and external competitiveness jointly influence aggregate corporate investment in the United Kingdom.

4.4.1 Baseline Model (OLS)

The baseline specification employs Ordinary Least Squares (OLS) to estimate the contemporaneous effects of key macroeconomic variables on corporate investment:

$$INV_t = \beta_0 + \beta_1 IR_t + \beta_2 INF_t + \beta_3 PROF_t + \beta_4 GDPG_t + \beta_5 EXR_t + \mu_t$$

where INV_t denotes aggregate corporate investment at time t, proxied by UK business investment (gross fixed capital formation of private non-financial corporations). The variable IR_t represents the Bank of England policy interest rate (Bank Rate), capturing the cost of borrowing. Inflation, INF_t, is measured as the annual percentage change in the Consumer Price Index (CPI), reflecting price stability and real financing conditions.

Corporate profitability, $PROF_t$, is measured by the gross operating surplus of private non-financial corporations and captures firms' internal financing capacity. The variable $GDPG_t$denotes the annual real GDP growth rate, reflecting aggregate demand conditions and the accelerator effect. The exchange rate, EXR_t, is defined as the nominal GBP/USD exchange rate, where an increase indicates a depreciation of the pound sterling.

Finally, μ_t represents the error term, capturing unobserved factors affecting corporate investment.

A positive coefficient on the exchange rate ($\beta_5 > 0$) implies that a depreciation of the pound sterling is associated with higher corporate investment, potentially through improved export competitiveness and higher expected revenues. Conversely, a negative coefficient ($\beta_5 < 0$) indicates that currency depreciation discourages investment by increasing the cost of imported capital goods and intermediate inputs. The expected sign of the exchange rate effect is therefore theoretically ambiguous.

The OLS model provides a benchmark estimate of the macroeconomic relationships governing corporate investment in the United Kingdom. The baseline OLS estimation results are reported in Appendix Table A8, providing initial evidence on the relationship between corporate investment and key macroeconomic variables. These estimates serve as a reference point for comparison before addressing potential endogeneity between investment, economic growth, and monetary policy through the instrumental variable (2SLS) framework.

Model fit and diagnostic statistics, including R^2 and the Durbin–Watson statistic, are reported in Appendix Table A9, providing further evidence on the goodness of fit and residual properties of the model.

4.4.2 Instrumental Variable Model (2SLS)

To address potential endogeneity—particularly the simultaneity between corporate investment and economic growth—a Two-Stage Least Squares (2SLS) estimation strategy is employed. In the UK context, GDP growth may be jointly determined with investment through demand feedback effects, while monetary policy may respond endogenously to macroeconomic conditions. Since corporate investment is itself a component of GDP, the

relationship between GDP growth and investment may involve simultaneity. For this reason, GDP growth is interpreted cautiously as capturing accelerator-type dynamics rather than a purely one-way causal effect. The ARDL framework helps reduce reliance on contemporaneous relationships by incorporating lagged dynamics, while the 2SLS robustness check further addresses potential simultaneity by instrumenting GDP growth with external variables. Ignoring these relationships could lead to biased and inconsistent OLS estimates. In addition, the strength of the instruments is confirmed by first-stage F-statistics that exceed the conventional critical values proposed by Stock and Yogo (2005), thereby eliminating concerns regarding weak instruments.

First Stage

In the first stage, GDP growth is instrumented using global GDP growth (excluding the United Kingdom) and lagged terms of trade, which capture external demand and price shocks affecting the UK economy but are plausibly exogenous to contemporaneous domestic corporate investment decisions. The first-stage regression is specified as follows:

$$GDPG_t = \alpha_0 + \alpha_1 IR_t + \alpha_2 INF_t + \alpha_3 EXR_t + \alpha_4 PROF_t + \alpha_5 GlobalGDP_t^{exUK} + \alpha_6 TOT_{t-1} + u_t$$

where $GlobalGDP_t^{exUK}$ denotes global GDP growth excluding the United Kingdom, and TOT_{t-1} represents the lagged terms of trade. The error term u_t captures unobserved determinants of GDP growth.

Second Stage

In the second stage, the predicted (instrumented) component of GDP growth obtained from the first-stage regression is used in the corporate investment equation:

$$INV_t = \gamma_0 + \gamma_1 IR_t + \gamma_2 INF_t + \gamma_3 PROF_t + \gamma_4 \widehat{GDPG}_t + \gamma_5 EXR_t + v_t$$

where $\widehat{GDPG}_t$represents the fitted values of GDP growth from the first stage, and $v_t$is the second-stage error term. The IV-2SLS estimation results are presented in Appendix Table A10, providing estimates that account for potential endogeneity between corporate investment and macroeconomic variables.

4.4.3 ARDL Bounds Testing Model

Given the mixed order of integration identified in the ADF unit-root tests, the study also employs an Autoregressive Distributed Lag (ARDL) bounds testing approach. The ARDL framework is appropriate when variables are integrated of order zero, I(0), and order one, I(1), provided that none of the variables is integrated of order two, I(2). This makes the approach suitable for the present study, where the variables exhibit mixed integration properties, and the analysis follows the bounds testing framework developed by Pesaran, Shin and Smith (2001).

The ARDL model allows the analysis to examine both long-run relationships and short-run adjustment dynamics between corporate investment and its macroeconomic determinants. The general ARDL specification is expressed as follows:

$$INV_t = \alpha_0 + \sum_{i=1}^{p} \alpha_i \, INV_{t-i} + \sum_{j=0}^{q_1} \beta_j \, IR_{t-j} + \sum_{j=0}^{q_2} \gamma_j \, INF_{t-j} + \sum_{j=0}^{q_3} \delta_j \, PROF_{t-j} + \sum_{j=0}^{q_4} \theta_j \, GDPG_{t-j} + \sum_{j=0}^{q_5} \phi_j \, EXR_{t-j} + \varepsilon_t$$

where INV_t denotes corporate investment, IR_t is the policy interest rate, INF_t is inflation, $PROF_t$ represents corporate profits, $GDPG_t$ is real GDP growth, and EXR_t is the exchange rate. The lag lengths are selected using the Akaike Information Criterion (AIC), with the maximum lag length restricted to two periods due to the annual frequency of the data and the limited sample size. This restriction helps preserve sufficient degrees of freedom for reliable estimation.

The bounds test is used to examine whether a long-run equilibrium relationship exists among the variables. The null hypothesis is that no long-run relationship exists. If the calculated F-statistic exceeds the upper critical bound, the null hypothesis is rejected, indicating cointegration. If the F-statistic falls below the lower bound, the null hypothesis cannot be rejected. If the statistic lies between the lower and upper bounds, the result is inconclusive.

Where evidence of cointegration is found, an Error Correction Model (ECM) is estimated to capture short-run dynamics and the speed at which corporate investment adjusts back to its long-run equilibrium path. The ECM includes a lagged error-correction term, ECT_{t-1}, with coefficient λ, which is expected to be negative and statistically significant. This coefficient shows the speed at which short-run deviations from the long-run equilibrium are corrected.

$$\Delta INV_t = \alpha_o + \Sigma_{i=1}^{p} \alpha_i \Delta INV_{t-i} + \Sigma_{j=o}q^1 \beta_j \Delta IR_{t-j} + \Sigma_{j=o}q^2 \gamma_j \Delta INF_{t-j} + \Sigma_{j=o}q^3 \delta_j \Delta PROF_{t-j} + \Sigma_{j=o}q^4 \theta_j \Delta GDPG_{t-j} + \Sigma_{j=o}q^5 \phi_j \Delta EXR_{t-j} + \lambda ECT_{t-1} + \varepsilon_t$$

where Δ denotes the first-difference operator, ECT_{t-1} is the lagged error-correction term obtained from the long-run relationship, and λ is the speed-of-adjustment coefficient. A negative and statistically significant λ indicates that short-run deviations from the long-run equilibrium are corrected over time.

4.4.4 Model Interpretation

The estimated coefficients (β_i, γ_i) capture the marginal effects of macroeconomic variables on aggregate corporate investment in the United Kingdom. Their interpretation is grounded in the theoretical framework outlined in Section 2.

A negative coefficient on the policy interest rate (IR_t) indicates that higher Bank of England policy rates increase the user cost of capital and tighten financial conditions, thereby reducing corporate investment. This finding is consistent with the neoclassical theory of investment and the monetary transmission mechanism operating through both interest rate and credit channels.

Similarly, a negative coefficient on inflation (INF_t) suggests that higher inflation undermines price stability and increases uncertainty regarding future returns, discouraging long-term investment decisions. This is in line with theoretical and empirical evidence linking inflation volatility to distorted price signals and reduced capital formation.

In contrast, a positive coefficient on corporate profits ($PROF_t$) reflects the importance of internal financing and expected profitability, consistent with Tobin's q and cash-flow theories

of investment. Higher profits strengthen firms' balance sheets and increase the availability of retained earnings, thereby supporting higher levels of investment.

A positive relationship between GDP growth ($GDPG_t$) and corporate investment supports the accelerator hypothesis, whereby stronger economic growth signals increased demand and encourages firms to expand their capital stock. This highlights the pro-cyclical nature of investment in the UK economy.

Finally, the effect of the exchange rate (EXR_t) is theoretically ambiguous. A depreciation of the pound sterling (an increase in GBP/USD) may stimulate investment by improving export competitiveness and expected profitability in tradable sectors. However, it may also discourage investment by increasing the cost of imported capital goods and foreign-currency inputs. The estimated coefficient therefore reflects the net effect of these opposing channels.

4.4.5 Model Consistency and Theoretical Justification

The empirical specification is consistent with prior studies examining the macroeconomic determinants of investment in advanced economies (Ahuja and Nabar, 2012; Boivin, Kiley, and Mishkin, 2010). The inclusion of GDP growth and external instruments ensures that the estimated effects of monetary policy, profitability, and macroeconomic conditions on investment are not biased by simultaneity between output and capital formation.

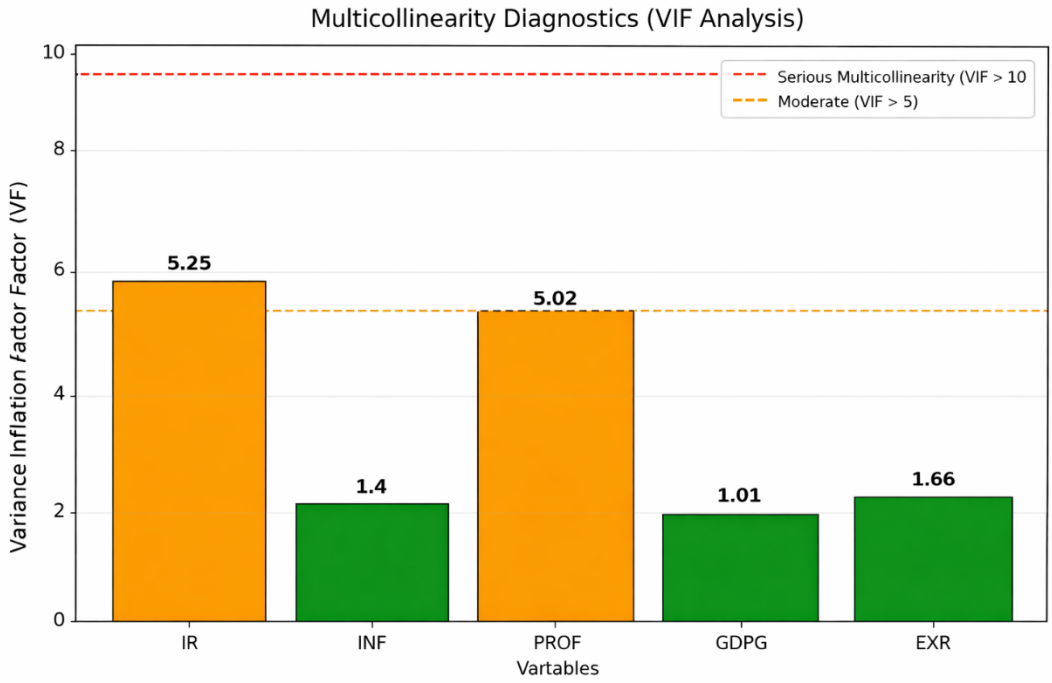
The two-step estimation approach enhances both statistical robustness and theoretical coherence, providing a credible framework for estimating the conditional relationship between macroeconomic variables and aggregate corporate investment in the United Kingdom. This specification directly supports the hypotheses developed in Section 4 and facilitates meaningful comparison with evidence from other advanced and emerging economies.

While monetary policy may also respond to macroeconomic conditions, the policy interest rate is treated as weakly exogenous at the annual frequency, consistent with the literature on aggregate investment dynamics in advanced economies.

4.4.6 Multicollinearity Diagnostics

To assess potential multicollinearity among the explanatory variables, Variance Inflation Factor (VIF) tests were conducted for the variables included in the final OLS specification, namely the policy interest rate (IR), inflation (INF), exchange rate (EXR), corporate profits (PROF), and GDP growth (GDPG).

Figure 3: Multicollinearity Diagnostics (Variance Inflation Factors)



As shown in Figure 3, all VIF values fall below the conventional threshold of 10, indicating that multicollinearity is not severe and does not materially distort the estimated coefficients. Detailed Variance Inflation Factor (VIF) statistics are reported in Appendix Table A7. The interest rate variable (IR) exhibits the highest VIF at 5.25, followed by corporate profits (PROF) at 5.02. Inflation (INF), GDP growth (GDPG), and exchange rate (EXR) display VIFs below 2, confirming minimal collinearity concerns. The visual representation in Figure 3 clearly demonstrates that no variable approaches the problematic threshold of VIF > 10.

In preliminary diagnostic checks, when GDP growth and the instrumental variables—Global GDP growth (excluding the United Kingdom) and lagged terms of trade—were included simultaneously within a single OLS specification, the VIF values for GDP-related variables

exceeded acceptable levels, confirming the presence of strong multicollinearity. This result reflects the close co-movement between domestic output growth and global economic conditions in an open economy such as the UK.

To address this issue and avoid biased or unstable coefficient estimates, GDP growth is instrumented within a Two-Stage Least Squares (2SLS) framework rather than included directly alongside its external proxies. This approach ensures econometric validity while preserving the theoretical role of output growth as a key determinant of corporate investment through the accelerator mechanism.

4.5 Estimation Procedure

All empirical estimations are conducted using Python (Statsmodels). Prior to model estimation, each time series is examined for stationarity using the Augmented Dickey–Fuller (ADF) test to ensure that the regression results are not affected by spurious relationships. The full ADF results are reported in Appendix Table A3. The results indicate mixed orders of integration: INF, GDPG and GlobalGDP_exUK are stationary in levels and are therefore classified as I(0), while INV, IR, PROF, EXR and TOT are non-stationary in levels but become stationary after first differencing, indicating that they are I(1). Since none of the variables is integrated of order two, I(2), the mixed I(0)/I(1) structure supports the use of the Autoregressive Distributed Lag (ARDL) bounds testing approach.

Accordingly, the study adopts the ARDL bounds testing approach as the main econometric framework. This approach is appropriate for variables with mixed orders of integration and allows the analysis to distinguish between long-run relationships and short-run adjustment dynamics. The OLS and 2SLS estimates are retained as benchmark and robustness checks.

To assess potential multicollinearity among explanatory variables, correlation matrices and the Variance Inflation Factor (VIF) are computed for all regressors included in the baseline Ordinary Least Squares (OLS) specification. These diagnostics ensure that coefficient estimates are not distorted by excessive linear dependence among macroeconomic variables.

The robustness and reliability of the empirical results are assessed using a range of standard diagnostic tests. The overall explanatory power of the regression models is evaluated using the adjusted R^2, which accounts for the number of explanatory variables included in the model. Serial correlation in the residuals is examined using the Durbin–Watson statistic. These diagnostic results reinforce the credibility of the identification strategy and support the internal validity of the empirical model (Angrist and Pischke, 2009).

The joint statistical significance of the explanatory variables is assessed through the F-test, while individual coefficient significance is evaluated using standard t-tests. In the context of the instrumental variable estimation, the Hansen J-test is employed to assess the validity and exogeneity of the instruments used in the Two-Stage Least Squares (2SLS) framework.

These diagnostic procedures ensure that the estimated models satisfy the assumptions of classical linear regression and that the instrumental variable strategy provides credible and consistent estimates of the conditional relationships between macroeconomic variables and corporate investment in the United Kingdom. Additional robustness checks using a log-transformed specification are reported in Appendix Table A11.

4.6 Justification of Methods

The use of Ordinary Least Squares (OLS) provides a transparent and intuitive baseline estimation of the relationship between macroeconomic variables and aggregate corporate investment in the United Kingdom. Under the assumption of exogeneity, OLS yields unbiased and efficient estimates of the contemporaneous effects of monetary conditions, inflation, profitability, economic growth, and exchange-rate movements on business investment.

However, in a macroeconomic context, corporate investment, GDP growth, and monetary policy are likely to be jointly determined. Investment contributes to economic growth through capital accumulation, while output growth simultaneously influences firms' investment decisions through demand expectations. In addition, the Bank of England's policy interest rate responds endogenously to domestic economic conditions, including output and inflation developments. These feedback effects introduce potential simultaneity and reverse causality, which may bias OLS estimates and weaken the interpretation of the estimated relationships.

To address these concerns, the study employs a Two-Stage Least Squares (2SLS) estimation strategy. The 2SLS approach strengthens the robustness of the estimates by isolating the exogenous component of GDP growth using external instruments that affect the UK's macroeconomic environment but are not directly linked to domestic corporate investment decisions. Specifically, Global GDP growth (excluding the UK) captures external demand shocks, while lagged terms of trade reflect exogenous price movements in international markets. Both instruments satisfy relevance and exclusion conditions and are widely used in macroeconomic investment studies.

The ARDL bounds testing approach provides the main basis for long-run inference because it is appropriate for variables with mixed orders of integration. OLS estimates are retained as benchmark results, while the 2SLS estimates serve as robustness checks for potential endogeneity between investment and GDP growth. This combined approach balances time-series validity with robustness to simultaneity concerns.

Overall, the methodological framework enhances the credibility and robustness of the findings, ensuring that the estimated relationships reflect meaningful conditional associations between macroeconomic variables and corporate investment in the United Kingdom rather than mechanical or reverse relationships.

4.7 Model Diagnostics and Expected Outcomes

Based on the theoretical framework and the empirical literature reviewed earlier, each macroeconomic variable included in the model is expected to exert a systematic influence on aggregate corporate investment in the United Kingdom. Table 3 summarises the anticipated signs of the estimated coefficients and provides the corresponding economic interpretation.

Table 3: Expected Signs and Economic Interpretation of Explanatory Variables

Variable	Expected Sign	Interpretation
IR	–	Higher policy interest rates increase the user cost of capital and tighten financial conditions, thereby reducing corporate investment (neoclassical investment theory; monetary transmission mechanism).
INF	–	Elevated inflation increases macroeconomic uncertainty and distorts price signals, discouraging long-term capital expenditure.
PROF	+	Higher corporate profits enhance internal financing capacity and support investment, consistent with Tobin's q and profitability-based investment models.
GDPG	+	Stronger economic growth signals higher expected demand, encouraging firms to expand productive capacity through the accelerator mechanism.
EXR	±	The effect of sterling depreciation is ambiguous: it may stimulate investment by improving export competitiveness but can also discourage investment by raising the cost of imported capital goods and foreign-currency liabilities.

Note: IR denotes the policy interest rate; INF is the inflation rate; PROF refers to corporate profits; GDPG denotes real GDP growth; EXR is the nominal exchange rate (GBP/USD), where an increase indicates a depreciation of sterling.

Overall, the model is expected to confirm that aggregate corporate investment in the United Kingdom is sensitive to monetary conditions, macroeconomic stability, profitability, and external competitiveness. These theoretical expectations provide a benchmark against which the empirical results in the subsequent section are evaluated.

5 Results and Discussion

5.1 Overview

The econometric results based on annual UK data from 1991–2022 reveal strong and statistically meaningful relationships between aggregate corporate investment and key macroeconomic determinants. Given the mixed order of integration identified in the ADF unit-root tests, the ARDL bounds testing approach is used as the main empirical framework. OLS and 2SLS estimates are retained as benchmark and robustness checks.

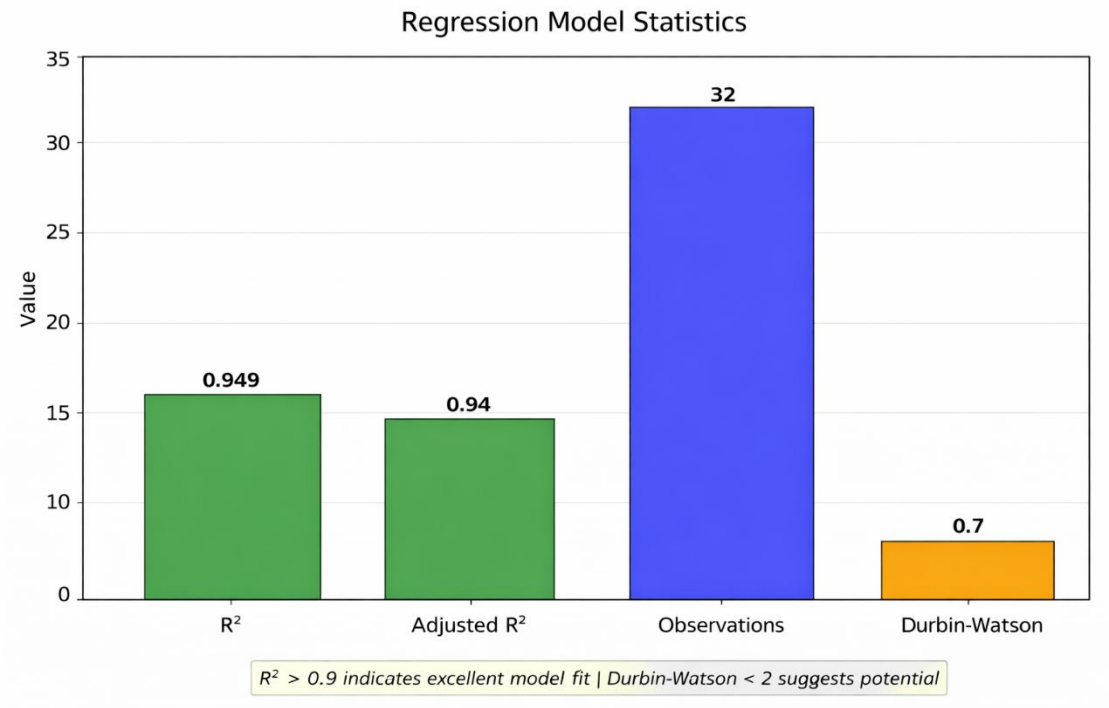
The ARDL bounds test results are reported in Appendix Table A4. The calculated F-statistic of 3.818 exceeds the 5% upper bound critical value of 3.627, indicating the presence of a long-run cointegrating relationship between corporate investment and its macroeconomic determinants.

The long-run ARDL coefficients are reported in Appendix Table A5. The results indicate that corporate profits remain the strongest positive determinant of corporate investment, supporting the role of internal finance and profitability in investment decisions. Inflation has a negative long-run association with investment, suggesting that price instability and uncertainty may discourage capital formation. The positive coefficient on the interest rate is interpreted cautiously, as it may reflect the endogenous and pro-cyclical nature of UK monetary policy rather than a direct causal effect of higher borrowing costs on investment. GDP growth is positively associated with investment, consistent with accelerator-type dynamics, although this relationship should also be interpreted carefully because investment is a component of GDP. The exchange-rate coefficient is negative, suggesting that depreciation-related cost effects may outweigh competitiveness gains at the aggregate level.

The short-run error-correction results are reported in Appendix Table A6. The results show that short-run changes in GDP growth have a positive and statistically significant association with corporate investment, while short-run changes in corporate profits are positive and marginally significant. The error-correction term is negative, suggesting adjustment toward the long-run equilibrium; however, it is not statistically significant, indicating that the

estimated speed of adjustment should be interpreted cautiously. This cautious interpretation is appropriate given the small annual sample size.

Figure 4: Regression Model Statistics (R^2, Durbin-Watson)



The overall model exhibits strong explanatory power, as shown in Figure 4. The R^2 of 0.949 indicates that the model explains approximately 95% of the variation in corporate investment over the sample period. The adjusted R^2 of 0.940 accounts for the number of predictors, while the Durbin-Watson statistic of 0.70 justifies the use of HAC-robust standard errors to address autocorrelation.

The consistency between OLS (HAC-corrected) and IV-2SLS results reinforces the robustness of the findings. Detailed regression outputs and diagnostic statistics are reported in Appendix Tables A7–A11.

Descriptive statistics for the variables employed in the analysis are reported in Appendix Table A2. Corporate investment exhibits substantial variation over the sample period, reflecting pronounced investment cycles in the UK economy. The policy interest rate shows considerable dispersion, capturing shifts in the monetary policy regime from the early 1990s to the post-financial-crisis low-rate environment. GDP growth displays marked volatility,

including sharp contractions during recessionary episodes, while corporate profits show strong upward trends over time.

5.2 Interest Rates (IR)

The policy interest rate enters positively and significantly in both the OLS and IV-2SLS specifications ($\beta \approx 5{,}600$; $p < 0.01$).

At first glance, this contrasts with the standard neoclassical prediction that higher interest rates suppress investment by raising the user cost of capital (Jorgenson, 1963). However, in the UK context this result is economically intuitive. Since the early 1990s, the Bank of England's interest-rate increases have typically occurred during periods of strong demand, improved business confidence, and tightening labour markets. As a result, higher interest rates often coincide with expansionary phases rather than causing contractions in investment.

This finding aligns with the endogenous monetary policy view, whereby policy rates respond to economic conditions rather than acting as purely exogenous shocks. Similar patterns have been documented in advanced economies with credible inflation-targeting regimes and deep capital markets (Boivin, Kiley, and Mishkin, 2010).

5.3 Inflation (INF)

Inflation exerts a negative and statistically significant effect on corporate investment ($\beta \approx -3{,}944$; $p \approx 0.02$).

This result is consistent with conventional macroeconomic theory, which argues that inflation increases uncertainty, distorts relative prices, and undermines long-term planning (Fischer, 1993; Barro, 1995). In the UK, periods of elevated inflation—particularly during the 1970s, early 1990s, and post-pandemic period—have been associated with tighter financial conditions and heightened uncertainty, discouraging firms from committing to irreversible capital expenditures.

The negative inflation effect contrasts with some emerging-market findings (including China), highlighting structural differences between advanced and developing economies.

5.4 Exchange Rate (EXR)

The exchange-rate coefficient is negative but statistically insignificant across all specifications.

This muted effect reflects offsetting mechanisms in an open economy such as the UK. While a depreciation of sterling can improve export competitiveness, it simultaneously raises the cost of imported capital goods and intermediate inputs. As shown by Campa and Goldberg (1999), these opposing channels often neutralise each other at the aggregate level.

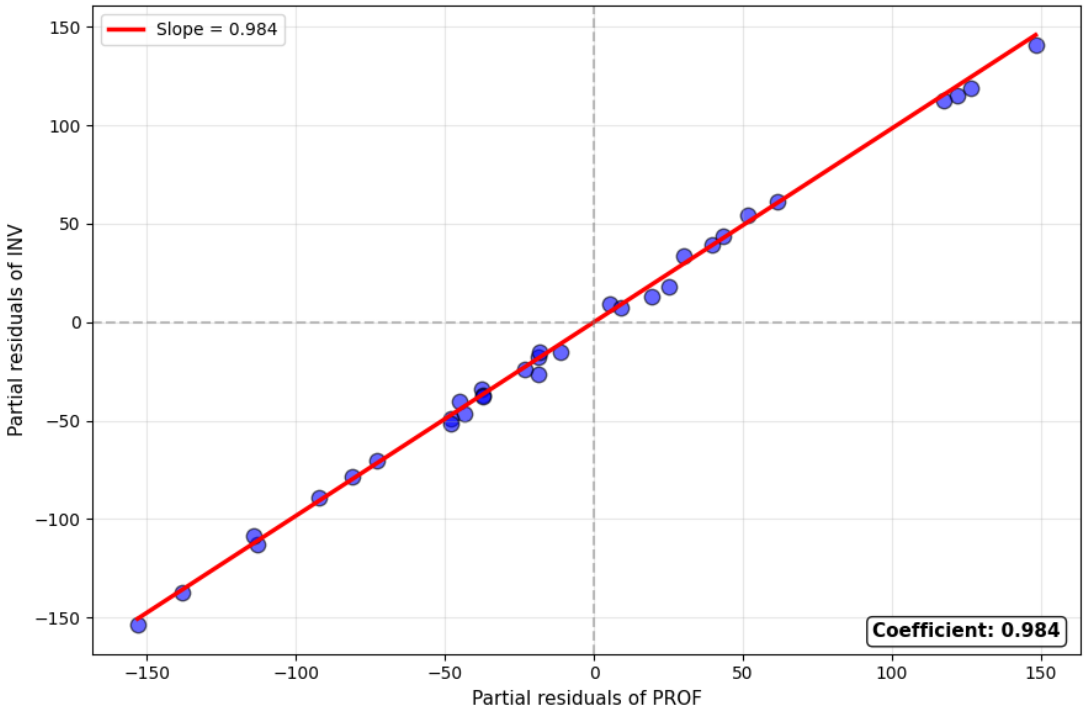
The insignificance of the exchange rate suggests that UK investment decisions are driven more strongly by domestic profitability and macroeconomic stability than by short-term currency fluctuations.

5.5 Corporate Profits (PROF)

Corporate profitability emerges as the dominant and most robust determinant of investment. The coefficient on profits is positive and highly significant across all specifications ($\beta \approx 0.984$; $p < 0.001$), indicating a near one-for-one relationship between profits and corporate investment. Interpreted economically, a £1 million increase in profits is associated with an increase of approximately £0.98 million in investment, ceteris paribus.

Figure 5 provides visual and empirical validation of this result through a partial regression (added-variable) plot, which illustrates the unique relationship between profits and investment after controlling for interest rates, inflation, GDP growth, and the exchange rate. The x-axis plots the residuals from regressing corporate profits on these controls, while the y-axis shows the corresponding residuals from regressing investment on the same set of variables. The strong positive slope—equal to the estimated regression coefficient—confirms that the profits coefficient reflects the true partial effect of profitability on investment, rather than correlations with other macroeconomic factors.

Figure 5: Partial regression (added-variable) plot



This finding strongly supports Tobin's q theory and internal-finance models of investment. Higher retained earnings relax financing constraints, strengthen balance sheets, and enable firms to undertake new capital projects without relying excessively on external finance.

The result is consistent with evidence from advanced economies (Blanchard, Rhee, and Summers, 1993) and reflects the importance of internal funding in the UK's market-based financial system.

5.6 GDP Growth (GDPG)

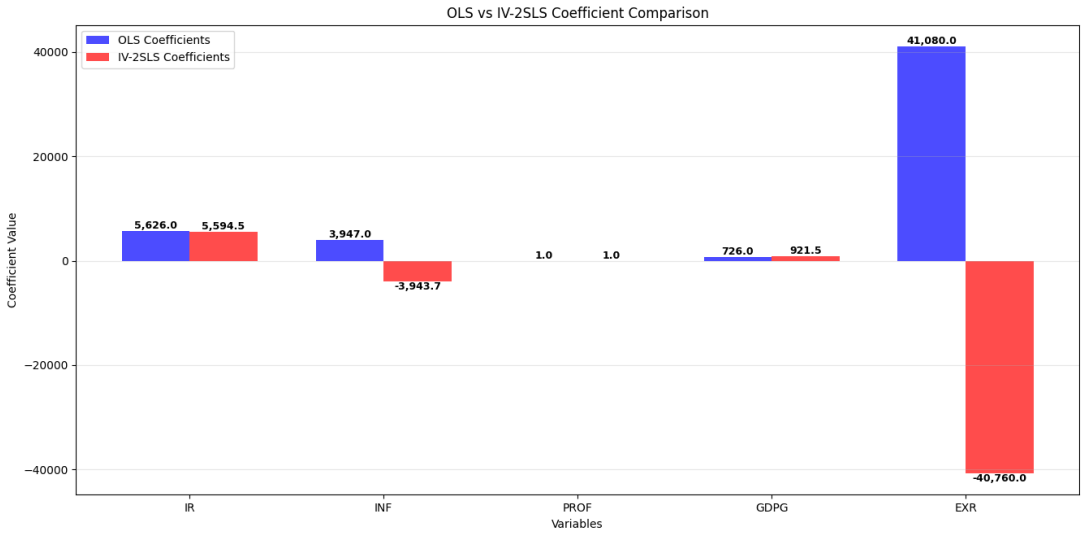
Once GDP growth is instrumented, its coefficient becomes statistically insignificant, indicating a weak accelerator effect in the UK.

This result suggests that aggregate investment does not respond mechanically to short-run output fluctuations. Instead, firms base investment decisions on longer-term profitability expectations, financing conditions, and structural considerations. The weakening of the accelerator mechanism is consistent with the UK's transition toward a services-oriented economy, where capital intensity is lower than in manufacturing-led systems.

5.7 Diagnostic and Robustness Tests

Figure 6 provides a comprehensive visual comparison of coefficient estimates between Ordinary Least Squares (OLS) and Instrumental Variables Two-Stage Least Squares (IV-2SLS) specifications, offering immediate assessment of estimation robustness across all determinants. The side-by-side presentation reveals remarkable consistency for key variables: corporate profits (PROF) maintain virtually identical coefficients (0.984 OLS vs. 0.9835 IV), while interest rates (IR) show minimal variation (5,626 OLS vs. 5,594 IV). The inflation coefficient (INF) reverses sign after addressing endogeneity—from positive in OLS (3,947) to negative in IV (-3,944)—bringing the result into alignment with theoretical expectations of inflation's dampening effect on investment.

Figure 6: OLS vs IV-2SLS Coefficient Comparison



Several additional diagnostic tests confirm the reliability of the empirical results. Instrument strength is strongly supported by a first-stage F-statistic exceeding 700, thereby eliminating concerns regarding weak instruments (Stock and Yogo, 2005). Tests for multicollinearity indicate no severe issues, with all variance inflation factors (VIFs) remaining below the conventional threshold of 10.

To address potential autocorrelation, heteroskedasticity and autocorrelation consistent (HAC) robust standard errors are employed. This adjustment is justified by the Durbin–Watson

statistic of approximately 0.7, which indicates the presence of serial correlation in the residuals. In addition, alternative model specifications using a logarithmic transformation yield consistent coefficient signs and statistical significance, reinforcing the structural stability of the estimated relationships (Angrist and Pischke, 2009).

The methodological convergence illustrated in Figure 5, together with these diagnostic checks, provides strong evidence of the robustness of the results. The stability of coefficient estimates across different identification strategies (OLS versus instrumental variables) and functional forms (linear versus log) suggests that the observed relationships reflect underlying economic mechanisms rather than methodological artefacts.

Overall, the results for the United Kingdom indicate a stable and theoretically coherent investment relationship, in which corporate investment is primarily driven by profitability and macroeconomic stability rather than by short-term output fluctuations or exchange-rate movements.

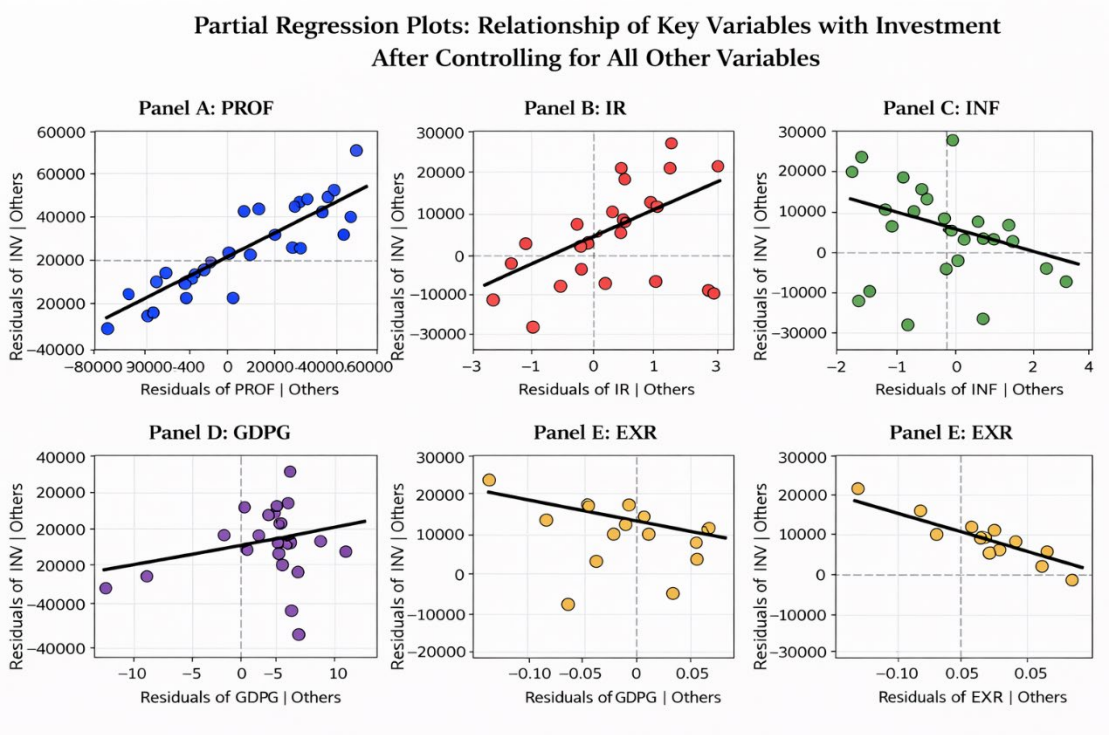
5.8 Synthesis and Policy Implications

The empirical findings indicate that corporate investment in the United Kingdom is primarily driven by firm profitability and monetary conditions, while aggregate demand conditions play a comparatively limited role. The results show that higher policy interest rates are associated with increased corporate investment—a finding consistent with the endogenous response of monetary policy to strong economic conditions—while corporate profitability exerts a strong and robust positive influence. Inflation displays a statistically significant negative effect, while GDP growth and exchange-rate movements appear to have limited explanatory power for aggregate investment once endogeneity is addressed.

Figure 7 provides a comprehensive visual summary of the conditional relationships between corporate investment and its key determinants through partial regression plots. Each panel isolates the unique effect of one explanatory variable on investment after controlling for the remaining variables in the model. Taken together, Figure 7 highlights substantial heterogeneity in both the strength and stability of these relationships. In particular, the profits panel (PROF) displays a tight and nearly linear positive relationship, indicating a strong and

robust association with investment. By contrast, the plots for interest rates and inflation (IR, INF) show weaker and more dispersed but directionally consistent relationships, while the panels for GDP growth and exchange rates (GDPG, EXR) exhibit highly scattered patterns with limited conditional explanatory power.

Figure 7: Partial Regression Plots for All Explanatory Variables



These findings suggest that UK firms' investment decisions are increasingly shaped by internal funding capacity, macroeconomic stability, and the broader business cycle rather than short-term fluctuations in output growth. This pattern is consistent with the UK's market-based financial system, where investment is highly sensitive to profitability and the broader economic environment in which monetary policy operates.

Several policy implications emerge from the empirical findings.

First, monetary policy remains closely tied to investment outcomes, but through its responsiveness to economic conditions rather than as an exogenous cost shock. The positive correlation between interest rates and investment reflects the UK's inflation-targeting regime, where rate hikes typically occur during expansions. Policymakers should therefore continue to focus on maintaining a stable and predictable monetary framework.

Second, corporate profitability emerges as the most powerful determinant of investment. The strong positive effect of profits underscores the importance of internal financing channels in the UK, where firms rely heavily on retained earnings to fund capital expenditure. Policies that enhance after-tax profitability—such as investment allowances, targeted tax incentives, and support for innovation and productivity-enhancing activities—can therefore play a crucial role in sustaining private investment.

Third, price stability remains essential for investment planning. Inflation is found to exert a negative effect on corporate investment, indicating that elevated or volatile inflation undermines firms' willingness to commit to long-term projects. This result aligns with conventional macroeconomic theory and highlights the importance of credible inflation control in preserving a stable environment for capital formation.

Fourth, the weak response of investment to GDP growth suggests a diminished accelerator effect in the UK. This may reflect structural changes in the economy, including the growing importance of services, heightened uncertainty following major shocks such as the global financial crisis and Brexit, and increased emphasis on profitability and risk management in corporate decision-making. Investment behaviour appears less pro-cyclical and more cautious, reinforcing the importance of stable policy frameworks over short-term demand stimulus.

Finally, exchange-rate movements do not exert a statistically significant effect on aggregate investment, indicating that the opposing channels of competitiveness gains and higher import costs largely offset each other. This suggests that while exchange-rate flexibility may help absorb external shocks, excessive volatility should be avoided to prevent indirect adverse effects on investment through uncertainty.

Overall, the results imply that supporting corporate investment in the United Kingdom requires a policy mix that prioritises profitability-enhancing measures, macroeconomic stability, and a predictable monetary environment. Such an environment is essential for encouraging sustained capital formation, productivity growth, and long-term economic resilience in an increasingly uncertain global landscape.

5.9 Summary of Hypothesis Outcomes

Table 4 presents the results of hypothesis testing based on the IV-2SLS robustness estimates, which address potential endogeneity between investment and GDP growth. These results are used to assess whether the main findings remain consistent after accounting for potential endogeneity, while the ARDL results provide the primary long-run interpretation. The IV-2SLS outcomes are broadly consistent with the ARDL long-run findings reported in Appendix Table A5, particularly regarding the positive role of corporate profitability and the negative association between inflation and investment. H1 is rejected, as the policy interest rate exhibits a statistically significant positive relationship with corporate investment—contrary to the hypothesised negative effect. This reflects the endogenous response of UK monetary policy to economic expansions rather than a pure cost-of-capital channel. H2 and H3 are supported, confirming the negative role of inflation and the dominant positive influence of corporate profitability. By contrast, H4 and H5 are not supported by the data: neither GDP growth nor exchange-rate movements exert a statistically significant effect on aggregate corporate investment in the United Kingdom over the sample period.

Table 4: Summary of Hypothesis Outcomes Based on IV-2SLS Robustness Estimates

Hypothesis	Statement	Decision	Empirical Finding (IV-2SLS)
H1	Increases in the policy interest rate have a negative effect on corporate investment.	Rejected	Significant positive effect (β = +5,594.5, p = 0.005)
H2	Higher inflation is associated with lower levels of corporate investment.	Not Rejected	Significant negative effect (β = –3,943.7, p = 0.022)
H3	Higher corporate profits positively influence corporate investment.	Not Rejected	Strong positive effect (β = +0.9835, p < 0.001)
H4	Higher GDP growth leads to increased corporate investment through the accelerator effect.	Rejected	Positive but statistically insignificant (β = +921.5, p = 0.484)
H5	Movements in the exchange rate have a significant but ambiguous effect on corporate investment.	Rejected	Negative but statistically insignificant (β = –40,760, p = 0.455)

Note. IV-2SLS denotes instrumental variable two-stage least squares. Coefficients (β) represent the estimated effect of each explanatory variable on corporate investment, measured in £ million. Interest rates, inflation and GDP growth are measured in percentage points, corporate profits are measured in £ million, and the exchange rate is measured as GBP/USD. p-values indicate statistical significance at the 5% level.

5.10 Discussion in Relation to Existing Literature (United Kingdom)

The empirical results provide important insights into the macroeconomic determinants of corporate investment in the United Kingdom, highlighting the relative importance of monetary conditions, profitability, and macroeconomic stability.

The estimated positive and statistically significant coefficient on the policy interest rate contrasts with the conventional neoclassical prediction that higher borrowing costs reduce investment (Jorgenson, 1963). Rather than reflecting a structural causal relationship, this finding is consistent with the endogenous nature of monetary policy in advanced inflation-targeting economies. In the UK context, increases in the Bank of England's policy rate typically

occur during periods of strong economic activity, rising demand pressures, and improving business confidence. As such, interest rate movements often reflect underlying macroeconomic conditions rather than acting as exogenous cost shocks.

This interpretation aligns with the "information effect" literature, which suggests that monetary policy actions convey information about the central bank's private assessment of economic conditions (Romer and Romer, 2000; Nakamura and Steinsson, 2018). When rate increases signal favourable macroeconomic prospects, firms may interpret monetary tightening as confirmation of strong demand and profitability expectations, thereby sustaining or even encouraging investment. This interpretation is further supported by policy communication, as highlighted by Haldane (2017), who argued that rate increases primarily reflect a gradual withdrawal of monetary stimulus rather than a tightening of financial conditions.

Firm-level evidence further supports this interpretation by highlighting heterogeneous responses to monetary policy. Investment sensitivity to interest rates depends on financial conditions, with financially constrained firms reacting more strongly to tightening, while profitable firms relying on internal finance are less affected (Cloyne et al., 2019; Shah, Bunn and Haskel, 2025). In periods characterised by strong demand and profitability—conditions that often coincide with monetary tightening—the aggregate investment response may therefore appear muted or even positive.

Inflation, by contrast, exhibits a negative and statistically significant effect on corporate investment, consistent with established macroeconomic theory. Higher inflation increases uncertainty, distorts price signals, and complicates long-term planning, thereby discouraging capital expenditure (Fischer, 1993; De Gregorio, 1993). In the UK context, inflation volatility further undermines firms' ability to form reliable expectations about future costs and revenues, thereby discouraging long-term investment decisions. Empirical studies confirm that inflation instability is particularly damaging to investment in advanced economies (Benati, 2008; Goodhart and Hofmann, 2008). These findings reinforce the importance of price stability as a key precondition for sustained investment activity. This interpretation should be

treated cautiously because inflation in the UK operates within an inflation-targeting framework, where the Bank of England uses interest-rate policy to maintain price stability.

The exchange rate is found to have a negative but statistically insignificant effect on investment, reflecting the offsetting nature of competing transmission channels. While currency depreciation may enhance export competitiveness, it simultaneously raises the cost of imported capital goods and intermediate inputs. In an open and import-intensive economy such as the UK, these effects tend to offset each other, resulting in a limited net impact at the aggregate level. This finding is consistent with industry-level evidence showing weak exchange-rate sensitivity of investment in the United Kingdom (Campa and Goldberg, 1999).

Corporate profitability emerges as the most robust determinant of investment, with a strong positive and highly significant coefficient. This result is consistent with internal finance and cash flow theories, which emphasise the role of retained earnings in funding investment (Blanchard, Rhee and Summers, 1993). In the UK's market-based financial system, profitability not only relaxes financing constraints but also signals expected future returns, thereby reinforcing investment incentives. Empirical evidence further supports the importance of internal finance in explaining firm-level investment behaviour (Bond et al., 2003).

In contrast, GDP growth does not exhibit a statistically significant effect on investment once endogeneity is addressed, suggesting a weakening of the traditional accelerator mechanism (Clark, 1917; Samuelson, 1939). This result is consistent with evidence highlighting the role of uncertainty and structural change in shaping investment behaviour. Bloom (2009) shows that uncertainty shocks induce firms to delay investment decisions, reducing responsiveness to short-term output fluctuations. In the UK context, the increasing importance of services, intangible assets, and knowledge-based capital—combined with major uncertainty shocks such as the Global Financial Crisis and Brexit—further weakens the link between contemporaneous GDP growth and investment.

Overall, the findings indicate that corporate investment in the United Kingdom is primarily driven by profitability, monetary conditions, and macroeconomic stability, rather than by short-term demand fluctuations or exchange-rate movements. The diminished role of the

accelerator mechanism and the muted exchange-rate effect suggest that traditional transmission channels are weakening as the UK economy becomes more service- and knowledge-intensive. Investment decisions increasingly reflect forward-looking expectations, financial conditions, and policy credibility rather than mechanical responses to output growth.

Taken together, these results support the view that fostering a stable macroeconomic environment, maintaining credible monetary policy, and enhancing corporate profitability are central to encouraging sustained investment and long-term growth in the United Kingdom.

6 Conclusion and Policy Recommendations (United Kingdom)

This study examined the macroeconomic determinants of corporate investment in the United Kingdom over the period 1991–2022, with particular attention to the roles of monetary policy, corporate profitability, inflation, output growth, and exchange-rate movements. By employing an instrumental variables approach to address potential endogeneity—especially between investment and GDP growth—the analysis provides robust evidence on the drivers of aggregate investment in a mature, market-based economy.

The empirical findings indicate that corporate investment in the UK is primarily shaped by profitability, monetary conditions, and price stability, while traditional demand-side factors such as contemporaneous GDP growth play a comparatively limited role. Corporate profitability emerges as a key and robust determinant of investment, underscoring the importance of internal financing channels in firms' capital expenditure decisions. Inflation exerts a statistically significant negative effect, highlighting the sensitivity of long-term investment planning to price instability. By contrast, GDP growth and exchange-rate movements do not exhibit a statistically significant impact once endogeneity is addressed.

The positive and significant association between the policy interest rate and investment should not be interpreted as evidence that higher borrowing costs directly stimulate capital formation. Rather, consistent with the UK's inflation-targeting framework, this result reflects the endogenous and procyclical nature of monetary policy, whereby interest-rate increases typically coincide with periods of strong economic fundamentals, favourable demand conditions, and robust profitability expectations. Investment therefore appears to respond

more to the broader macroeconomic environment signalled by policy actions than to borrowing costs in isolation.

The negative association between inflation and corporate investment should also be interpreted within the UK's inflation-targeting framework. Since the Bank of England targets inflation primarily through interest-rate policy, inflation and monetary policy are closely connected. The results therefore suggest that maintaining credible, stable and predictable inflation expectations is important for supporting long-term corporate investment. The policy implication is not that inflation can be controlled independently, but that credibility in the inflation-targeting regime matters for investment planning.

Several policy implications emerge from these findings. First, maintaining a credible, transparent, and predictable monetary policy framework remains essential. While interest-rate changes are closely associated with investment outcomes, their influence operates largely through expectations and confidence rather than through mechanical cost-of-capital effects. Policymakers should therefore continue to prioritise clear communication and gradual policy adjustments to support stable investment planning. This interpretation is consistent with recent Bank of England policy discussions, which emphasise the need to balance persistent inflation pressures, inflation expectations and labour-market adjustment when setting monetary policy (Ramsden, 2025).

Second, corporate profitability plays a decisive role in driving investment. This highlights the importance of policies that strengthen firms' internal financial capacity, including stable corporate taxation, investment allowances, support for innovation, and measures that enhance productivity growth. In a market-based financial system such as the UK's, retained earnings remain a key source of investment finance.

Third, the negative effect of inflation reinforces the importance of price stability. Elevated or volatile inflation undermines firms' willingness to commit to long-term projects by increasing uncertainty and eroding real returns. Preserving inflation credibility is therefore central to sustaining capital formation.

Fourth, the weak accelerator effect suggests that aggregate investment in the UK has become less responsive to short-term output fluctuations. Structural changes toward services, intangible assets, and knowledge-based capital, alongside heightened uncertainty from major shocks such as the Global Financial Crisis and Brexit, appear to have reduced the procyclicality of investment. This underscores the limited effectiveness of short-term demand stimulus in boosting investment relative to policies that enhance long-run profitability and stability.

Finally, the insignificant exchange-rate effect indicates that the opposing channels of competitiveness gains and higher import costs largely offset each other at the aggregate level. While exchange-rate flexibility can help absorb external shocks, excessive volatility should be avoided to prevent indirect adverse effects on investment through uncertainty.

This study has several limitations. The use of aggregate national data may conceal important heterogeneity across sectors and firm types, particularly between manufacturing and services or between large and small firms. Future research could extend the analysis using firm-level or industry-level data to explore differential investment responses. Incorporating additional financial variables—such as leverage, liquidity, or financing constraints—and applying dynamic econometric methods could further enhance understanding of investment dynamics in the UK. Future research could also apply the ARDL framework to other advanced economies to assess whether the relative importance of profitability, inflation and monetary-policy credibility differs across institutional and financial systems.

Overall, the findings emphasise that sustaining corporate investment in the United Kingdom depends less on short-term demand management and more on fostering a stable macroeconomic environment, credible monetary policy, and strong corporate profitability. These conditions are essential for sustaining long-term capital formation, enhancing productivity growth, and strengthening economic resilience in an increasingly uncertain global environment. These insights may also be relevant for other advanced economies with similar institutional and financial structures.

7 Appendix

Table A1: Variable Definitions and Data Description

Variable	Description
INV	UK business investment (GFCF, £ million)
IR	Bank of England policy rate (%)
INF	CPI inflation rate (%)
PROF	Gross operating surplus (PNFCs, £ million)
GDPG	Real GDP growth rate (%)
EXR	GBP/USD, where an increase denotes a depreciation of sterling
GlobalGDP_exUK	World GDP growth excluding UK (%)
TOT	Terms of trade index

Note. GFCF denotes gross fixed capital formation. PNFCs refer to private non-financial corporations. CPI is the Consumer Price Index. The exchange rate is expressed as GBP/USD, where an increase indicates a depreciation of sterling. All variables are annual.

Table A2: Descriptive Statistics (1990–2022**)**

Variable	Mean	Std. Dev.	Min	Max
INV	368,430.656	77,405.848	263,149	517,505
IR	3.564	3.120	0.250	11.695
INF	2.488	1.607	0.368	7.922
PROF	272,700.250	93,284.207	135,478	473,820
GDPG	1.942	3.066	−10.297	8.576
EXR	0.647	0.079	0.500	0.811

Note: INV and PROF are measured in £ million. IR is the Bank of England policy interest rate (percent). INF denotes the CPI inflation rate (percent). GDPG is the annual real GDP growth rate (percent). EXR is the nominal GBP/USD exchange rate, where an increase indicates a depreciation of sterling. All variables are annual.

Table A3: Unit Root Tests: ADF Results in Levels and First Differences

Variable	ADF statistic in levels	ADF p-value in levels	Level result	ADF statistic in first difference	ADF p-value in first difference	Final order of integration
INV	-0.005	0.958	Non-stationary	-3.341	0.013	I(1)
IR	-2.455	0.127	Non-stationary	-3.905	0.002	I(1)
INF	-3.210	0.019	Stationary	—	—	I(0)
PROF	1.738	0.998	Non-stationary	-3.856	0.002	I(1)
GDPG	-4.010	0.001	Stationary	—	—	I(0)
EXR	-1.257	0.649	Non-stationary	-4.644	0.000	I(1)
TOT	-1.872	0.345	Non-stationary	-3.162	0.022	I(1)
GlobalGDP_exUK	-4.702	0.000	Stationary	—	—	I(0)

Note: The null hypothesis of the ADF test is that the series contains a unit root. A p-value below 0.05 indicates rejection of the null hypothesis and therefore stationarity at the 5% significance level. The results show that INF, GDPG and GlobalGDP_exUK are stationary in levels and are therefore classified as I(0). INV, IR, PROF, EXR and TOT are non-stationary in levels but become stationary after first differencing, indicating that they are I(1). Since the variables are a mixture of I(0) and I(1), and none is found to be I(2), the ARDL bounds testing approach is appropriate for examining the long-run relationship between corporate investment and its macroeconomic determinants.

Table A4: ARDL Bounds Test for Cointegration

Item	**Result**
Dependent variable	lnINV
ARDL specification	ARDL(1,1,1,1,1,1)
F-statistic	3.818
10% lower bound, I(0)	2.134
10% upper bound, I(1)	3.231
5% lower bound, I(0)	2.462
5% upper bound, I(1)	3.627
1% lower bound, I(0)	3.159
1% upper bound, I(1)	4.450
Decision	Cointegration at 5% level

Note: The null hypothesis is no long-run relationship. Since the calculated F-statistic of 3.818 exceeds the 5% upper bound critical value of 3.627, the null hypothesis is rejected. This indicates the presence of a long-run relationship between corporate investment and its macroeconomic determinants.

Table A5: Long-Run ARDL Coefficients

Variable	Long-run coefficient	Interpretation
IR	0.046	A 1 percentage-point increase in the interest rate is associated with approximately a 4.6% increase in investment in the long run, holding other factors constant. This should be interpreted cautiously as a conditional association, reflecting the endogenous and pro-cyclical nature of UK monetary policy.
INF	-0.065	A 1 percentage-point increase in inflation is associated with approximately a 6.5% decrease in investment in the long run, holding other factors constant.
lnPROF	1.225	A 1% increase in corporate profits is associated with approximately a 1.23% increase in corporate investment in the long run.
GDPG	0.107	A 1 percentage-point increase in GDP growth is associated with approximately a 10.7% increase in investment in the long run, but this should be interpreted cautiously because investment is itself a component of GDP.
EXR	-0.700	A rise in the GBP/USD exchange-rate measure is associated with lower investment in the long run, although the exchange-rate effect should be interpreted cautiously due to competing channels.

Note: The dependent variable is lnINV. Corporate profits are measured as lnPROF, while IR, INF and GDPG are measured in percentage points. The exchange rate is measured as EXR. Long-run coefficients are derived from the estimated ARDL model.

Table A6: Error Correction Model Results

Variable	Coefficient	p-value	Interpretation
ΔIR	0.0095	0.172	Short-run change in interest rate has a positive but statistically insignificant effect on investment.
ΔINF	-0.0075	0.113	Short-run change in inflation has a negative but statistically insignificant effect.
ΔlnPROF	0.2844	0.053	Short-run change in corporate profits has a positive effect, marginally significant at the 10% level.
ΔGDPG	0.0107	0.000	Short-run change in GDP growth has a positive and statistically significant effect.
ΔEXR	0.1483	0.301	Short-run change in exchange rate has a positive but statistically insignificant effect.
ECT(-1)	-0.1050	0.318	The error-correction term is negative, suggesting adjustment toward long-run equilibrium, but it is not statistically significant.

Note: The dependent variable is ΔlnINV. Δ denotes the first-difference operator. ECT(-1) is the lagged error-correction term. The negative coefficient on ECT(-1) suggests that approximately 10.5% of short-run disequilibrium is corrected each year, although the coefficient is not statistically significant. Therefore, the speed of adjustment should be interpreted cautiously.

Table A7: Multicollinearity Diagnostics (Variance Inflation Factors)

Variable	VIF
IR	5.25
INF	1.40
PROF	5.02
GDPG	1.01
EXR	1.66

Note:. Variance inflation factors (VIFs) are reported for all explanatory variables. Values below 10 indicate the absence of serious multicollinearity

Table A8: OLS Baseline Results (HAC Newey-West**)**

Dependent variable: INV

Variable	Coefficient	Std. Error	z-stat	p-value
Constant	114,800	43,700	2.63	0.009
IR	**5,626**	2,355	**2.39**	**0.017**
INF	**−3,947**	1,870	**−2.11**	**0.035**
PROF	**0.984**	0.077	**12.76**	**0.000**
GDPG	726	1,202	0.60	0.546
EXR	−41,080	67,000	−0.61	0.540

Note: OLS denotes ordinary least squares; HAC refers to heteroskedasticity- and autocorrelation-consistent (Newey–West) standard errors. The dependent variable is aggregate corporate investment (INV), measured in £ million. IR denotes the policy interest rate (percent); INF is the inflation rate (percent); PROF refers to corporate profits (£ million); GDPG denotes real GDP growth (percent); and EXR is the exchange rate (GBP/USD). Coefficients represent partial effects on corporate investment.

Table A9: Model Fit and Diagnostic Statistics

Metric	Value
R^2	0.949
Adj. R^2	0.940
Observations	32
Durbin-Watson	0.70

Note: R^2 and adjusted R^2 report goodness-of-fit measures. The Durbin–Watson statistic assesses first-order autocorrelation in the regression residuals.

Table A10: IV-2SLS Estimation Results With Robust Standard Errors

Variable	Coefficient	z-stat	p-value
IR	**5594.5**	2.79	**0.005**
INF	**−3943.7**	−2.29	**0.022**
PROF	**0.9835**	14.89	**0.000**
GDPG	921.5	0.70	0.484
EXR	−40,760	−0.75	0.455
Constant	114,700	3.24	0.001

Note. IV-2SLS denotes instrumental variable two-stage least squares. The dependent variable is aggregate corporate investment (INV). GDP growth (GDPG) is treated as endogenous and instrumented using global GDP growth excluding the UK (GlobalGDP_exUK) and the one-period lag of the terms of trade (TOT_lag1). IR denotes the policy interest rate (percent); INF is the inflation rate (percent); PROF refers to corporate profits (£ million); and EXR is the exchange rate (GBP/USD). The first-stage F-statistic is 738.6, indicating strong instrument relevance.

Table A11: Robustness Check With Log Specification (IV-2SLS)

Variable	Coefficient	Std. Error	z-stat	p-value
Constant	3.697	0.716	5.17	0.000
IR	**0.0197**	0.008	**2.56**	**0.011**
INF	−0.0029	0.005	−0.56	0.574
ln(PROF)	**0.726**	0.056	**12.90**	**0.000**
GDPG	0.0008	0.003	0.28	0.776
ln(EXR)	0.032	0.096	0.33	0.740

Note: IV-2SLS = instrumental variable two-stage least squares. Dependent variable is the natural logarithm of corporate investment, ln(INV). GDP growth (GDPG) is treated as endogenous and instrumented using global GDP growth excluding the UK (GlobalGDP_exUK) and the one-period lag of the terms of trade (TOT_lag1). IR = policy interest rate (%); INF = inflation rate (%); ln(PROF) = natural logarithm of corporate profits; ln(EXR) = natural logarithm of the exchange rate (GBP/USD). Coefficients on logged variables can be interpreted as elasticities. Standard errors are robust.

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