

The Impact of Public Contract Awards on Stock Price Movements

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Summary

This study examines the relationship between public contract award announcements and the stock returns of firms comprising the FTSE 350 Index using a comprehensive dataset of public contract awards in relation to contract award announcements. This is based on the Tenders Electronic Daily (TED) database and matched with the daily stock returns of the FTSE 350 companies over the period 2006–2022.

The study employs an event study methodology to analyse market reactions around announcement dates. The analysis is conducted at a daily level, thereby enabling the identification of the precise timing of stock price adjustments. The research explores how contract characteristics (e.g., award criteria, awarding authority, contract size, type, structure, and procedure) and firm fundamentals (e.g., size, leverage, profitability, and growth) shape investor reactions. By analysing the interaction between these dimensions, the study demonstrates that procurement announcements do not operate as uniform signals; rather, they are interpreted through a combined lens of contractual features and firm attributes, thereby generating different market responses.

The findings indicate that public contract award announcements act as informational triggers in financial markets. Their impact varies across contract criteria, firm fundamentals, the political environment, and their interactions. A consistent pattern emerges, with significantly positive returns on day three. This delayed reaction suggests that procurement-related information is not fully incorporated into stock prices at the time of disclosure. This may be attributed to the limited accessibility and complex presentation of TED announcements, as well as the specialised expertise required to effectively interpret contract-specific information.

Abstract

Government procurement represents a significant component of public expenditure and is widely acknowledged as a key driver of productivity and economic development. However, to date there has been insufficient examination of the specific impact of procurement announcements on financial markets, thereby suggesting the need for a deeper empirical investigation. Although the existing research has explored the relationship between contract awards and firm performance in specific countries and industries, the evidence is limited in scope, lacks generalisability to broader contexts, and is outdated. This study addresses these gaps by examining how public procurement contract awards influence the stock market performance of firms comprising the FTSE 350 Index in the United Kingdom (U.K.), with particular emphasis on the speed of investors' reactions and the heterogeneous effects observed across contract types, firms, and industries.

The U.K. provides a distinctive and important context for this inquiry. As one of the largest procurement markets in Europe, it has long operated under European procurement regulations and more recent post-Brexit reforms have introduced additional layers of complexity. This dual regulatory structure creates a setting in which procurement announcements may elicit market responses that differ from those observed elsewhere. Moreover, this context enables differences in FTSE 350 market reactions between the periods of European Union (E.U.) membership and post-Brexit to be investigated. However, this study restricts its dataset to the year 2022. Following Brexit, contract announcements that pertain to the U.K. have significantly decreased in number. The Tenders Electronic Daily (TED) database has generally stopped publishing or advertising contract announcements relating to the U.K. As a result, the number of post-Brexit public award announcements included in the dataset declined markedly in 2021 and 2022. Changes in regulations and practices implemented following Brexit are likely to have contributed to this reduction. This decline may also be attributed to the uncertainty surrounding trade relations between the U.K. and the E.U. in the early post-Brexit period.

This study adopts a quantitative research design based on an event study methodology. Abnormal returns are assessed in relation to contract award announcements documented in the TED database which are correlated with the daily stock returns of FTSE 350 companies from 2006 to 2022. The analysis focuses on abnormal return patterns in the days surrounding the announcement date. The research investigates three sets of characteristics that may influence investors' reactions. First, it examines contract-specific attributes, including award criteria, the awarding authority, contract size, type, structure, and procedure. Second, it considers firm-level fundamentals such as size, leverage, profitability, and growth. Third, investigating the extent to which investor reactions are shaped by the prevailing political context, including variations across different political environments and changes in leadership, such as changes in prime minister or the governing party. It assesses how these political factors influence market responses to public contract award announcements. In addition, this study analyses the interactions between the contract features and firm-level characteristics. It hypothesises that contract award announcements do not operate as uniform signals but are instead interpreted through a combined lens of contractual features and firm attributes, thereby generating different market responses.

This study indicates that procurement announcements are not merely administrative disclosures but also vital informational signals in capital markets. The impact of these factors depends on both the contract structure and the fundamental characteristics of the firm. In addition to its primary role of securing goods and services for public service delivery, procurement also serves as a financial market indicator. Accordingly, procurement announcements function as informational triggers for financial markets. Their impact, however, is not immediate because statistically significant abnormal returns predominantly emerge on the third trading day following an announcement. This delay indicates that public contract award information is not fully absorbed at the time of disclosure owing to restricted accessibility, the ambiguous presentation of TED announcements, and the specialised expertise required to effectively interpret contract-related information.

Variations in key criteria elicit distinct market reactions following contract announcements. For example, the type of contract significantly influences the response

of investors. For instance, service contracts, although the most prevalent, do not elicit significant abnormal returns and are typically perceived to be routine. In contrast, supply contracts are associated with modest, delayed positive returns, thereby indicating some perceived value. Works contracts, however, tend to generate the most pronounced and often delayed negative abnormal returns, possibly due to investor concerns regarding project complexity and execution risks. Industry effects further illustrate these variations in market responses. Certain sectors, such as telecommunications, utilities, and technology, exhibit negative abnormal returns at varying intervals following an announcement. In contrast, the real estate and construction sectors experience immediate positive market reactions. Additionally, the electronic and electrical equipment and industrial transportation subsectors experience positive abnormal returns on the first and third days following an announcement, respectively.

Firm characteristics also shape market responses, with small firms typically exhibiting more pronounced and volatile abnormal returns, particularly on the third day following an announcement, whereas medium-sized firms are more likely to experience negative abnormal returns during the event window. Additionally, firms operating with low levels of leverage benefit from significant positive abnormal returns on the third day, whereas those with medium and high levels of leverage experience a minimal reaction. These patterns underscore the nature and terms of the contract itself, the characteristics and dynamics of the industrial sector, and the unique attributes of the firm, such as its size, leverage, and financial health, all of which interact to shape investor perceptions and responses. This evidence indicates that the effect of contract awards on stock performance is shaped by a combination of contract-specific, industry-specific, and firm-specific factors, thereby highlighting the need for a precise, context-aware approach to analyse such occurrences.

This study makes several important contributions. It provides the first systematic evidence from the U.K. of the stock market reaction to public contract award announcements. Theoretically, it contributes to discussions concerning market efficiency, signalling theory, and information asymmetry by demonstrating that market reactions to public contract award announcements occur gradually. The findings indicate that

procurement awards do not universally enhance firm value; their effects vary with contract specifics, industry settings, and individual firm attributes. For companies, such data illustrate the value of selecting which contracts to pursue and managing them carefully because both opportunities and risks are closely linked to contract design. Investors regard contract award announcements as conditional signals, their significance contingent upon factors such as contract size, award criteria, and the firm's fundamentals. Investors often interpret procurement awards as signals of a firm's capacity for sustainable growth because securing such contracts typically demonstrate strong operational management, effective leadership, and competitive positioning within an industry. These attributes are closely tied to the firm's ability to efficiently manage its operations and deliver on contractual obligations. Investors tend to view larger or more selective awards even more favourably because they suggest a higher level of competence and reliability. The research also underscores that the particular contract structure profoundly affects the market's response to these announcements.

In a methodological sense, the study highlights the importance of addressing data inconsistencies and disclosure delays when examining procurement announcements. Weak reporting standards or delays in public disclosure can skew the findings and lead to inaccurate conclusions about market reactions or their effectiveness. The findings indicate several important considerations. Issuers should take great care when writing the communication for contract awards to ensure clarity and accuracy. Investors are advised to assess such announcements within the broader context of the firm's operations and market conditions, rather than interpreting them as uniform signals of growth. Furthermore, policymakers ought to strengthen the reporting requirements for contract awards and enforce the immediate publication of these announcements. Such measures would help to enhance transparency and reduce the risk of information asymmetry in the market.

Dedication

I dedicate this work to my beloved father, whose continual encouragement and firm belief in the value of pursuing a PhD have been a source of inspiration throughout this journey. His unwavering support and guidance have been fundamental to this achievement.

I also dedicate this work to my dearest children, Haifa and Ali. Thank you both for being part of this journey with me. Your patience, love, and understanding have meant more to me than words can express. I sincerely apologise for the times I was mentally preoccupied during your early years, when you deserved my full attention. I hope that the efforts behind this work will reflect positively in your life.

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List of abbreviations

BE/ME – Book-to-market equity

CAPM – Capital Asset Pricing Model

CAR – Cumulative abnormal return

CMA – Conservative minus aggressive

CPV – Common Procurement Vocabulary

E.U. – European Union

EMH – Efficient market hypothesis

FTSE – Financial Times Stock Exchange

GDP – Gross domestic product

HML – High minus low

ICB – Industry classification benchmark

LSE – London Stock Exchange

MEAT – Most economically advantageous tender

OJEU – Official Journal of the European Union

RMW – Robust minus weak

ROA – Return on assets

SMB – Small minus big

SMEs – Small and medium-sized enterprises

TED – Tenders Electronic Daily

TME – Total managed expenditure

U.K. – United Kingdom

U.S. – United States

1. Introduction

1.1 Introduction

Public contractual agreements have attracted growing interest from both academic researchers and industry professionals. As instruments that regulate the exchange of products, services, and works between private entities and the public sector, these contracts serve a crucial function in shaping the environment of business transactions. Their function is not limited to simple operational implementation because public contracts can also affect market perceptions, investor confidence, and the overall pattern of stock price movements. While acknowledging the significance of public contracts, there remains a substantial knowledge gap regarding the specific ways in which contract characteristics (e.g., contract size, type, and procurement procedures) affect price volatility and market behaviour. The current research focuses on firms' fundamentals, including their size, leverage, growth, and profitability as well as how these factors interact with contract characteristics. The objective of this research is to clarify these relationships for investors seeking to enhance their ability to predict market responses to public contract awards. This thesis aims to bridge this knowledge gap by systematically analysing the effects of various contract features on stock price movements. The research adopts a comprehensive approach, examining these factors and their impact on stock prices.

The introduction chapter is structured to provide an overview of the role of public contract awards, discuss the inherent risks and potential opportunities for businesses engaging with the public sector, and state the study's aims and objectives. Additionally, it summarises the findings and highlights the unique contribution that this research makes to the existing body of knowledge.

1.2 Role of public procurement

Public procurement represents a foundation of government activity and a driver of economic and social outcomes. It includes the acquisition of goods, services, and infrastructure by public authorities and, in many advanced economies, accounts for a

substantial share of gross domestic product (GDP). Procurement is not merely a mechanism for delivering essential public services but also a strategic policy instrument that is capable of driving economic growth (Bugri et al. 2019), stimulating regional innovation and development (Zabala-Iturriagagoitia 2022), promoting sustainability (Bag 2016), and enhancing industrial competitiveness (Issah and Eric 2024; Peter 2025). Furthermore, it enables the implementation of policies aimed at delivering inclusive growth, socio-economic development, and broader societal transformation (Ambe 2019). In this respect, it performs an essential role, fulfilling immediate public needs while simultaneously shaping broader economic trajectories.

1.3 Opportunities and risks of public procurement

The importance of public procurement extends beyond the public sector into the corporate sector, particularly for firms seeking predictable cash flows, sustained work, and opportunities to build experience and enhance their reputation. Government contracts are generally regarded as being highly reliable, thereby reducing cash flow risk and enhancing financial resilience compared to private sector transactions (Huang et al. 2016; Dhaliwal et al. 2016). Empirical evidence suggests that firms with significant government clients benefit from lower borrowing costs, less onerous covenant restrictions, and improved access to external finance (Cohen et al. 2016; Esqueda et al. 2019). During periods of economic recession, procurement contracts can serve as stabilising instruments, protecting firms against adverse shocks and maintaining performance when market conditions deteriorate (Goldman 2020). Moreover, participation in public contracting can enhance a firm's reputation, expand its networks, and provide experiential learning, thereby supporting both immediate operations and long-term growth opportunities (Erridge and Fee 1998; Loader 2005; Flynn 2019).

Consequently, firms are often motivated to pursue public contracts to stabilise their revenues and strengthen their financial position. Such contracts may reduce cash flow volatility and facilitate access to external finance (Hebous and Zimmermann 2021; Schäfer et al. 2024), as well as enhancing their reputation (Doni 2006; Kachour et al.

2016). Nonetheless, these benefits are neither uniform nor guaranteed; they are contingent upon contract characteristics, regulatory constraints, and firm-specific fundamentals. Significant risks counterbalance the perceived advantages of public contracts. Strictly regulated frameworks designed to ensure equality and transparency govern public contracting. Although these frameworks promote policy objectives, they also enforce strict procedures, inflate compliance costs, and limit managerial flexibility compared with private contracting (Tadelis 2012).

Highly competitive bidding increases these pressures, leaving firms subject to the ‘winner’s curse,’ whereby any overestimation of project value or underestimation of costs can erode returns, despite the acquisition of the contract (Capen et al. 1971; Thaler 1988). Bidders may misestimate the cost of delivering a contract and subsequently experience cost overruns and delays. For example, the U.K.’s Type 26 frigate programme is a recent case of a major defence project that has faced both delivery delays and cost overruns. According to Naval Technology (2024), BAE Systems was awarded a £3.7 billion contract by the U.K. Ministry of Defence in July 2017 to build the first three Type 26 ships. BAE Systems secured a £4.2 billion contract in 2022 to build an additional five Type 26 frigates. Despite the programme’s substantial economic impact, supporting thousands of jobs across Scotland and elsewhere in the U.K., it has encountered significant challenges in meeting its schedule and budget targets (West 2025). Another notable example within the infrastructure sector is the Jubilee Line Extension which, as reported by the Institution of Civil Engineers (2019), incurred an initial cost of £3.6 billion, resulting in a cost overrun of £1.5 billion relative to the original budget.

Another risk is that investors may be unable to accurately assess the effects of public contract awards due to information asymmetry because insiders possess extensive knowledge, whereas investors rely on disclosures. This imbalance may cause the market to react in different ways and often with a delay. Investors may view contract awards as a sign of lower risk and the possibility of future growth. Despite the crucial role of procurement awards in influencing firm performance and market valuations, the previous literature has not sufficiently explored their effects.

1.4 Limitations of the existing research

The existing evidence is geographically constrained and overly concentrated in specific industries, thereby presenting unresolved issues regarding the impact of public contracting on firms' financial performance in other contexts. A notable constraint of the current literature is its significant regional focus. The majority of the empirical research regarding the capital market effects of procurement awards has been undertaken in the U.S., with particular emphasis on federal contracting (Alexander 1993; Diltz 1990; Boyle et al. 1997; Larson and Picou 2002; Palkar et al. 2012; Choi 2015; Abdurakhmonov et al. 2021; Samunderu and Yordanova 2024). The concentration of attention on the U.S. stems from data availability and the economic significance of federal procurement, although this constrains the generalisability of the findings.

Insight derived from the U.S. context is not necessarily applicable to other institutional environments where procurement regimes, disclosure practices, and market structures differ considerably. A small number of studies have examined procurement and market responses in several countries beyond the U.S., including Norway (Buene and Volnes 2018), Thailand (Lonkani et al. 2012), Korea (Kim and Kwon 2015; Choi 2014), and China (Yang et al. 2014). However, these studies primarily focus on individual national contexts, neglecting the E.U. and the U.K. As a result, they offer only a fragmented understanding of the broader relationship between procurement and capital markets within specific regions. This indicates a need for further investigation of this relationship in a wider context, particularly within the U.K.

Another drawback is that the literature predominantly concentrates on a single sector, such as defence (Czech 1989; Diltz 1990; Mayer-Sommer and Roshwalb 1996; Boyle et al. 1997; Larson and Picou 2002; Palkar et al. 2012), with only a limited number of studies addressing alternative industries, including maritime (Buene and Volnes 2018), technology (Kim and Kwon 2015), and construction (Choi 2014). These industries have fundamentally different characteristics because defence contracts are politically sensitive, capital-intensive, and, in many countries, not open to international competition. Both international and national maritime laws govern maritime contracts and they are also influenced by the cyclical dynamics of global trade. Similarly, technology contracts are

driven by innovation but are highly susceptible to rapid obsolescence, whilst construction projects are large, complex, and subject to delivery risks. Such variation alters investors' interpretations of awards, demonstrating why industry-specific findings cannot be generalised to other industries. Prioritising a narrow range of industries limits the development of more comprehensive, systematic knowledge of capital market movements.

The relationship between public contract awards and stock market behaviour remains insufficiently explored and empirically contested. Numerous studies report evidence of abnormal positive returns shortly after procurement announcements (Diltz 1990; Lonkani et al. 2012; Palkar et al. 2012; Larson and Picou 2002), thereby indicating that investors perceive these contracts to be credible indicators of revenue stability, reduced risk, and potential growth opportunities. From this viewpoint, government contracts enhance value and boost a firm's financial prospects. However, recent research indicates that the market can respond adversely (Wang et al. 2025), with this negative impact particularly pronounced in high-value contracts where government involvement is typically greater. In such cases, large contract awards require extensive oversight and input from several stakeholders, thereby complicating the process and increasing the risk of delivery and execution failures.

It is notable that the effects of contract design and firm-level fundamentals on investors' responses to contract awards have not been fully explored, particularly in the U.K. context. The market impact of public contract awards is arguably not uniform but jointly shaped by contract features and firm fundamentals. Contract characteristics such as size, award criteria, awarding authority, type, and procedure convey information about potential revenue streams, institutional credibility, and execution risk, thereby shaping expectations of value creation or erosion. Elayan et al. (2004b) demonstrated that domestic contracts tend to generate abnormal returns, thereby illustrating the importance of the nature of a contract. It seems responsible to assume that firm fundamentals, including size, leverage, profitability, and growth, mediate these signals by indicating a firm's financial resilience and operational capacity to deliver a project. Notably, the interaction between contract design and firm fundamentals plays an essential role in

shaping the interpretation of awards in capital markets. Nevertheless, the previous research has largely treated these dimensions in isolation, overlooking their joint influence.

1.5 Research aims and objectives

The current study extends the existing literature (Mayer-Sommer and Bedingfield 1989; Czech 1989; Diltz 1990; Alexander 1993; Karpoff et al. 1999; Elayan et al. 2004a; Elayan et al. 2004b; Elayan et al. 2006; Howe and Howe 2006; Kaen 2011; Lonkani et al. 2012; Palkar et al. 2012; Yang et al. 2014; Deshpande and Jog 2014; Choi 2014, 2015; Kim and Kwon 2015; Larson and Picou 2002; Karakuş 2017; Yao et al. 2018; Buene and Volnes 2018; Ciccone et al. 2018; Barros et al. 2020; Abdurakhmonov et al. 2021; Samunderu and Yordanova 2024) by providing new empirical evidence regarding the financial market implications of public contract awards within the U.K. context. Through a systematic analysis of the relationship between public contract awards and stock market responses, this study offers valuable insight into how such awards influence the behaviour of financial markets. The objective of this analysis is to investigate the influence of contract awards on the stock price movements of firms. By analysing stock price data around the announcement dates of contract awards, the study aims to determine whether such announcements typically result in positive, negative, or neutral stock price reactions and how immediate these effects are. In addition to assessing the overall impact, the analysis examines specific characteristics of individual contracts such as contract size, type, and contracting procedure.

Furthermore, the study evaluates the role of firm-specific fundamentals, including financial health, market capitalisation, profitability, leverage, and industry classifications. The aim is to determine whether firms with stronger fundamentals experience different stock price impacts from contract awards compared to firms with weaker fundamentals. The analysis also explores the interaction between contract characteristics and firm fundamentals, examining whether the combination of certain contract features and firm attributes amplifies or dampens the market's response to contract awards. Instead of

treating these dimensions separately, the study evaluates both their independent effects and their interaction. The study uses a comprehensive sample of firms comprising the FTSE 350 Index, accounting for periodic index reviews that add or remove firms over time. A total of 154 unique companies from the FTSE 350 received public contracts during the 2006-2022 period, with varying numbers of contracts awarded to each firm. The current study investigates whether procurement announcements generate abnormal returns, how quickly investors react to such information, and the extent to which disclosure practices influence market responses within the U.K.'s distinctive regulatory context.

1.6 Research question

The primary research question regarding financial market efficiency is whether public contract award announcements generate abnormal returns for companies comprising the FTSE 350 Index. Abnormal returns denote stock price movements that differ from anticipated market performance, indicating that new information has been integrated into share valuations. The current research extends the existing literature by examining the impact of public contract award disclosures on the stock performance of companies comprising the FTSE 350 Index. The study investigates the impact of public contracts on stock price performance, which leads to the main research question:

To what extent do public contract award announcements influence the stock price performance of FTSE 350 firms?

The study aims to determine whether public contract award announcements yield statistically significant abnormal stock returns for the firms comprising the FTSE 350 Index, thereby assessing how rapidly stock prices absorb this information, in accordance with semi-strong form market efficiency. The study aims to investigate the degree to which various underlying contract characteristics, including contract size, contract type, awarding authority, and evaluation criteria, affect abnormal stock returns. Likewise, the

study assesses whether abnormal stock returns vary with firm-specific characteristics such as firm size, leverage, profitability, and growth. In addition, an attempt is made to verify whether the interaction between contract factors and firm fundamentals jointly affects the extent or direction of abnormal stock returns. Furthermore, it seeks to determine whether the combination of contract factors and business fundamentals influences the magnitude or direction of abnormal stock returns. Finally, these award announcements are examined over a range of time periods.

1.7 Methodological approach

The initial analysis applied a standard event study approach, estimating cumulative abnormal returns (CARs) over the event window. While this approach has been widely applied in the previous literature, the aggregated CARs did not provide statistically significant evidence of systematic effects. The analysis was extended using a dummy variable regression in which each day within the event window was represented by a separate indicator variable. This specification enabled abnormal returns to be tested on a day-by-day basis rather than being masked in cumulative measures. Furthermore, investor response was measured using excess returns, defined as the difference between the daily stock return and the risk-free return.

1.8 Study findings

The findings indicate that procurement announcements carry informational value. However, market responses are neither immediate nor consistent. Instead, abnormal returns are primarily observed on the third day following disclosure, thereby indicating a systematic lag in investor reaction. This delay may be attributable to the complexity of TED disclosures and the time that investors require to interpret procurement-related data, thereby challenging the foundation of the efficient market hypothesis (EMH). Although the semi-strong form asserts that public information should be immediately and accurately reflected in prices, the persistence of abnormal returns on day three following

public contract award announcements highlights the role of disclosure complexity and inaccessibility immediately. Nevertheless, a small number of studies report immediate market impacts. In the construction industry, contract awards attract prompt investor responses, underscoring their economic significance. These contracts are typically large, capital-intensive, and tied to long-term projects, thereby providing clearer indications of the expected revenues and organisational capacity. A similar pattern is observed for contracts divided into multiple lots which often generate immediate effects as awards are distributed among several firms. Lot splitting increases visibility by leveraging broader disclosure channels and multiple announcements, thereby accelerating information dissemination. Overall, these findings indicate that both industry-specific characteristics and contract structures significantly influence the speed with which procurement information is incorporated into market prices.

The findings further highlight the importance of the timing of disclosures because abnormal returns peak several days after the announcement rather than immediately. This systematic delay indicates that procurement information is not fully transparent or easily interpretable at the time of release, due in part to the complexity of TED disclosures and limited access to contract details. Investors may require additional time to process and contextualise this information before adjusting valuations. Such evidence challenges the assumption of immediate market efficiency, suggesting that procurement announcements act as gradual rather than instantaneous signals. Taken together, these results expand the empirical base, refine theoretical perspectives, and provide practical insights for managers, investors, and policymakers.

1.9 Contribution of the study

Beyond its contributions to the event study methodology and financial literature, the current study advances the literature concerning procurement and organisational performance in several important ways. It represents the first systematic analysis of public contract awards in the U.K., a major market shaped by a distinctive regulatory framework that has historically been influenced by E.U. legislation and has since been reshaped by

post-Brexit reforms. Unlike the previous research, which often relied on old data, non-U.K. contexts, or narrow industry samples, the current study employs a comprehensive, up-to-date dataset that more accurately reflects current market dynamics. Therefore, this study's primary contribution lies in advancing the theoretical understanding of market efficiency by examining how the U.K. financial market processes public information concerning government contracts. It assesses how efficiently information related to government contracts is processed. By determining a consistent stock price response three days following contract award announcements, the research reveals potential delays in the market's reaction. This discovery indicates that investors may encounter difficulties interpreting or obtaining information about the accurate dates of contract awards, suggesting challenges in accessing information from the TED database. The research offers insight into market efficiency, emphasising the intricacies of information and the challenges in terms of accessing government contracting disclosures. These findings are valuable for researchers, policymakers, and practitioners seeking to enhance market transparency and the effectiveness of public information dissemination.

The current study also demonstrates that public contract awards significantly influence investors' reactions. This influence encourages firms to develop new competencies, improve operational standards, and enhance their reputation in the public sector. Successful experience with government contracts often prompts firms to focus more on government contracting opportunities. Additionally, the efficient execution of government contracts can enhance investor confidence. Investors' perceptions of such contract awards are shaped by various factors including contract characteristics, the firm's fundamentals, its past performance in handling government contracts, and prevailing market conditions. Consequently, government contracts may be regarded as either potential risks or indicators of long-term growth, depending on the situation. Accordingly, this study contributes to the knowledge base regarding the factors that moderate investor responses to public contract awards. The current study examines how contract characteristics, firm fundamentals, and their interactions influence variations in market reactions. For example, various contract criteria, such as the awarding procedure and evaluation method, can elicit distinct market reactions. Most economically advantageous tenders (MEAT) and restricted awards are generally interpreted positively by the stock

market. MEAT awards are perceived as being more profitable because they incorporate quality considerations alongside cost, thereby indicating greater value. Due to their selective nature, investors perceive restricted awards as being less risky. Consequently, both types of awards tend to elicit favourable responses from investors. In contrast, open procedures and lowest-price awards often elicit weaker or more cautious reactions from investors. Contract size also carries informational value, with small awards typically being perceived as being feasible and manageable for certain firm sizes, whereas large awards convey reliability and established capacity. However, high-growth firms may perceive small contracts negatively, implying a misalignment with their expansion objectives.

1.10 Thesis structure

This thesis starts with a literature review that critically examines the existing research concerning public procurement, focusing on both the attractions and downsides of government contracting. It synthesises insights from academic sources, identifies established knowledge, and highlights gaps in the literature, particularly regarding market reactions to public procurement events. The methodology chapter follows this review, detailing the research design and methods used to answer the research questions. This section describes the data sources, collection processes, and procedures implemented to ensure data accuracy and reliability. The chapter also examines the strengths and limitations of the methodology, promoting transparency and reproducibility.

Subsequently, the data analysis chapter provides a comprehensive overview of the dataset and explores descriptive statistics and patterns, establishing a solid foundation for the empirical analysis. The results chapter reports the main empirical findings, analysing how the stock market responds to public contract award announcements and examining the effects of both contract characteristics and firm characteristics. Finally, the discussion chapter interprets the results and highlights the study's contributions, addresses the associated limitations, and proposes policy recommendations and directions for future research.

2. Literature review

2.1 Introduction

This chapter provides an expanded review of the relationship between public contracts and stock price dynamics. It begins by establishing key concepts, including the definition and economic significance of public procurement and underscores its critical role within the national economy. Building upon this foundation, this chapter examines the previous research concerning both the advantages and challenges of government contracting for firms. The review then shifts to the stock market perspective, analysing how share prices respond to different forms of corporate announcements to position procurement awards within this broader body of literature. The evidence demonstrates that financial markets do not respond uniformly to information releases. Rather, the nature of the announcement influences how investors interpret it.

Dividend and earnings announcements are typically regarded as indicators of financial performance, whereas stock splits are often interpreted as signals of managerial confidence and efforts to enhance market liquidity. In contrast, cyberattack disclosures tend to expose organisational vulnerabilities, CEO changes reshape expectations about leadership and governance, and supply chain disruptions reveal weaknesses in operational resilience. Public contract announcements differ from the above in that they operate as signals of stability, growth potential, and credibility. Examining these features of the literature is therefore essential because they situate public contract award announcements within the broader event study practice. To interpret these dynamics, the chapter turns to the theoretical foundations of market efficiency, paying particular attention to the EMH, before concluding by developing the study's hypotheses which guide the subsequent empirical analysis.

2.2 Overview of public procurement in the U.K.

Public procurement represents a substantial component of global economic activity, accounting for a sizeable share of both government expenditure and national output. Bosio and Djankov (2020) reported that more than \$11 trillion, equivalent to

approximately 12% of global GDP, was allocated to public procurement in 2018. This indicates that public procurement consistently accounts for a significant share of GDP across nations with diverse income levels. On average, countries with low incomes allocate 13% of GDP to procurement, whereas middle-income countries allocate 13.2% and high-income countries allocate 14%. There is considerable variation in public procurement as a share of GDP across income groups, with countries such as Botswana and Kenya dedicating higher shares than their peers such as Sri Lanka and Madagascar. European countries and major emerging economies often demonstrate markedly elevated procurement-to-GDP ratios. This underscores the essential role of procurement in meeting core public needs. Despite differences in economic size or growth rates, governments maintain a substantial share of spending on procurement, reflecting the universal need to provide essential goods, services, and infrastructure.

Within the U.K., the scale of procurement expenditure, relative to total public spending, reflects its global significance. According to HM Treasury (2024), total managed expenditure (TME) amounted to £1,157.4 billion in 2022/23, representing 45.3% of GDP (see Figure 1). The share of TME relative to GDP illustrates the substantial size and influence of the public sector within the national economy. This ratio peaked at 53.1% in 2020/21, reflecting the combined impact of emergency fiscal interventions and the contraction in GDP during the COVID-19 pandemic. Procurement spending has consistently accounted for approximately 28-33% of TME, underscoring its stable and structural role within the government's fiscal framework (Booth 2025).

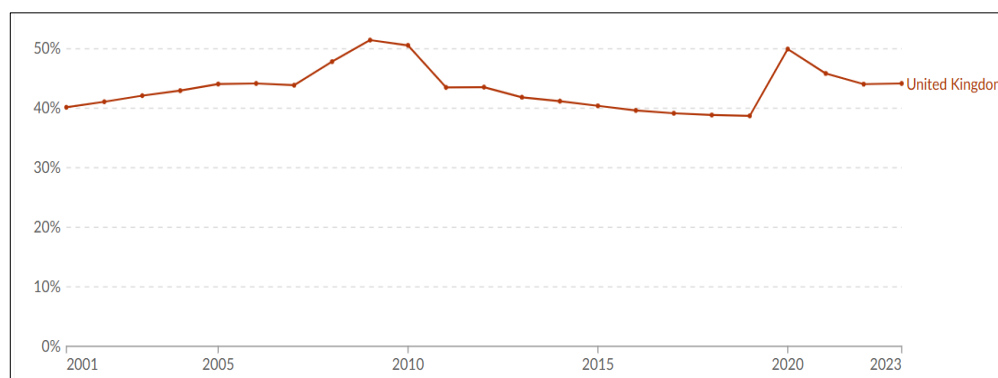


Figure 1: Government spending as a share of GDP (2001 to 2023)

Source: International Monetary Fund (2025)

According to the OECD (2025), government procurement in the U.K. has shown modest cyclical fluctuations over the period 2007 to 2024, ranging between approximately 12.9% and 15.7% of GDP. The share of procurement expenditure relative to national output rose markedly following the 2008 global financial crisis, peaking at 15.4% in 2009, before gradually declining and stabilising at around 13% throughout much of the subsequent decade. A sustained increase was observed during the COVID-19 pandemic, with procurement expenditure expanding to 15.7% in 2020 and 2021, reflecting heightened public sector demand and emergency spending. Thereafter, the share moderated to 14.7% in 2022 and 14.5% in 2023, indicating a partial return to pre-pandemic levels.

Booth (2025) observes a comparable trend, indicating that U.K. public sector procurement from the private sector has consistently accounted for approximately one-third of overall government expenditure, highlighting the U.K. public sector's reliance on private enterprises to procure products, services, and infrastructure. The modest declines observed in 2020/2021 and 2022/2023 are attributable to unusual public expenditure during the COVID-19 pandemic and the resulting fiscal adjustments, rather than reflecting a fundamental decline in procurement activity over the past decade.

In fact, the U.K.'s public procurement expenditure grew from £250.2 billion in 2016/17 to £340.9 billion in 2023/24, reflecting an increase of almost 36%. Overall, the percentage of total procurement spending from the private sector has remained relatively stable, ranging from 33% in 2014/2015 to 32% in 2023/2024, with notable dips to 28% in 2020/2021 and 29% in 2022/2023. Meanwhile, the value of public procurement in the U.K. has continued to expand as a component of government expenditure. This pattern demonstrates the government's capacity to increase spending during recessions to maintain stable economic conditions and meet public demand.

2.3 Public procurement

Government procurement plays a vital role, accounting for a significant share of the nation's demand for goods and services. Increasingly recognised as a key driver of both

national and societal progress, it serves as a strategic tool to achieve various political objectives, including regional economic growth, industrial development, innovation, and sustainability (McCrudden 2007; Arrowsmith 2012; Ambe 2019; Manta et al. 2022). Public procurement fundamentally involves the acquisition of goods, services, and labour from the private sector on behalf of a public entity. This process enables governments and public institutions to meet their operational needs, implement public policies, and deliver essential services to the community. Public procurement encompasses a wide range of activities, from purchasing everyday supplies and professional services to undertaking large-scale infrastructure projects.

According to the European Commission (2021), contracts can be classified based on their activities: works contracts involve designing and executing projects such as constructing buildings or developing infrastructure including roads and sewage plants; service contracts cover the provision of services including consultancy, training, or cleaning; and supply contracts relate to the acquisition, leasing, or rental of products such as office supplies, vehicles, or computers. Each type of contract plays a unique role in the public procurement ecosystem. Collectively, they enable governments to address diverse needs, ranging from building infrastructure and maintaining public services to equipping agencies with the necessary goods and tools to operate efficiently. The classification of contracts by activity helps to streamline the procurement process, ensuring that each contract type is managed according to its specific requirements and objectives.

Public procurement regulations are inherently intricate and frequently impose limitations on contracting and awarding procedures, in contrast to the more streamlined and adaptable processes observed in private sector procurement. Tadelis (2012) stated that regulations concerning public procurement place various restrictions on awarding procedures and often mandate specific criteria for awarding contracts, such as cost-effectiveness, environmental compliance, and timely delivery, which are embedded within detailed legal frameworks. These regulations limit flexibility and require extensive documentation and justification for procurement decisions. The complexity also extends to contract enforcement, where public entities must strictly adhere to contract terms, with limited scope to renegotiate or address unforeseen challenges. While these regulations are

crucial for the responsible and ethical management of public funds, they introduce significant rigidity into the procurement process.

The E.U.'s procurement directives have been transposed into domestic law and have historically governed public procurement in the U.K. Following the U.K.'s withdrawal from the E.U., the government began developing an independent procurement framework to modernise and simplify the existing regulations. The enactment of the Procurement Act 2023 represented a major milestone in this reform process (Sanchez-Graells 2024). According to Linklaters (2025) and GOV.UK (2025) the Act, originally derived from E.U. directives by consolidating multiple regulations while retaining fundamental principles, was intended to increase efficiency and flexibility whilst maintaining the principles of transparency, fairness, and non-discrimination with respect to equal opportunity.

Therefore, the process of bidding for government contracts is governed by a regulated framework, as outlined by the Cabinet Office (2020). Potential suppliers receive tender invitations to submit bids for the provision of goods or services to government entities. For contracts valued in excess of £12,000, relevant information is available on the Contracts Finder platform. Prior to Brexit, U.K. suppliers and issuers could access a wider range of opportunities across E.U. member countries through the TED platform. However, following Brexit, U.K. contracts are no longer advertised on TED, which primarily features E.U. contracts.

The contracting authority typically issues a contract notice publicly, highlighting the importance of transparency in public procurement. This notice typically includes a detailed description of the organisational requirements and applications of the Common Procurement Vocabulary (CPV) which was developed by the E.U. as a standardised classification system to avoid misunderstandings. Each CPV code is paired with a precise description, providing clear, comprehensive, and accurate information regarding the specific types of work, supplies, or services required by the contract. The use of CPV codes enhances the identification of potential supplier opportunities, thereby increasing efficiency and transparency within the procurement process. Additionally, CPV codes help to overcome the language barriers across the E.U., thereby facilitating cross-border trade.

These tenders are conducted through various standard tendering procedures. According to the European Commission (2021) and the Cabinet Office (2020), tendering procedures are primarily categorised as open or restricted. Open procedures permit any interested party to submit a tender and prohibit negotiations with bidders, making them ideal for straightforward procurements in which all of the received tenders must be evaluated. In contrast, restricted procedures limit submissions to candidates that have been invited to tender, starting with an initial expression of interest from suppliers. Although negotiations are not permitted under this procedure, the clarification of bids and finalisation of terms are allowed, thereby making them suitable for markets characterised by high competition and instability. Other procedures, such as competitive dialogue, are employed when standard solutions are inadequate, innovative approaches are necessary, or technical complexities require a more flexible process.

The importance of transparency in public procurement is emphasised by the European Commission (2021), which notes that the majority of procurement processes follow the open procedure to ensure fairness and openness, thereby providing equal access for suppliers. Supporting this view, Rimmer (1998) finds that broader bidder participation tends to produce significant cost savings, suggesting that open competition enhances efficiency. Similarly, Onur and Taş (2019) provide empirical evidence that procurement costs decline as competition intensity increases. However, Njiro (2023) challenges the notion that value for money is ensured solely by competition, stating that fairness, transparency, and a solid legal framework are required to translate competitive pressure into genuine public benefit. Consequently, robust regulatory frameworks remain essential to ensure that competition results in sustainable and equitable outcomes. Thus, this competitive pressure not only reduces expenses for the contracting authority but also encourages innovation and improvements in the quality of services provided. Competition increases the diversity of service providers and delivery methods, thereby improving end users' satisfaction and community wellbeing.

However, the selection process does not always prioritise the lowest bid as its sole measure of value. According to Lupi (2017), the 2004 Directives allowed contracting authorities to award contracts based either on the lowest price or the MEAT. The latter is

assessed based on a combination of cost and qualitative factors, including service quality and delivery, technical merit, quality standards, environmental characteristics, running costs, after-sales service, and delivery timeframes. According to Directive 2014/24/EU (2014), contracting authorities are encouraged to adopt MEAT criteria rather than relying solely on the lowest cost to promote more transparent, value-based, and sustainable procurement practices that integrate environmental protection and social benefits.

Recently, the U.K. Procurement Act 2023 replaced MEAT with the Most Advantageous Tender (MAT). The removal of the term ‘economic’ clarifies that contract awards are not required to consider the price factor. This change allows contracting authorities to place greater emphasis on quality, social value, and other project-specific outcomes, thereby enabling a more balanced and strategic assessment of tenders to achieve the best overall value and deliver sustainable public benefits. This evolution in award criteria also reshapes supplier behaviour because firms are no longer encouraged to compete solely on cost but rather on the overall value that they offer.

2.4 Attractions of government contracting

Engaging with government entities offers firms significant strategic and financial advantages including access to stable demand, transparent procedures, and opportunities for sustainable growth. Government contracts provide reliable revenue streams, thereby ensuring consistent income and long-term financial stability. According to Bovis (1996) and Loader (2005), governments are considered to be desirable and low-risk clients because their payment obligations are supported by secure public finances. This reliability enables firms to maintain steady cash flows, plan their investments more effectively, and remain resilient during periods of market stress. Arnold et al. (2008) find that government contractors benefit from predictable revenue streams that strengthen their internal financing capacity and enhance free cash flow. Similarly, Gabriel (2024) reports that procurement contracts improve liquidity and support ongoing operating cash flows, underscoring the stabilising role of public sector demand. Consistent with these findings, Esqueda et al. (2019) demonstrate that firms engaged in public procurement exhibit

greater financial stability and lower earnings volatility, reflecting the mitigating effect of government-backed revenues on business risk.

The guarantees and payment security provided by government clients reduce default risk and enhance firms' financial predictability. Based on this, government payment security is a notable benefit associated with public contracting. Unlike private transactions, where delayed or missed payments can impose liquidity pressures, public procurement operates under legally binding financial commitments and regulated payment frameworks. Penalties for late payments are imposed to ensure that suppliers are paid in full and on time. In the U.K. context, the adoption of project bank accounts in public works has further strengthened the financial management mechanism designed to enhance payment security and cash flow in the construction sector. By holding and distributing project funds in a dedicated, ring-fenced account, this helps to ensure that payments are made promptly to all parties in the supply chain. This arrangement promotes financial stability, transparency, and trust among contracting parties (Griffiths et al. 2017; Scott et al. 2022).

In addition to providing predictable income streams and payment security, public procurement enhances financial stability and credit strength because firms have the government as a customer. Government contracts strengthen firms' investment capacity and liquidity, thereby reinforcing overall financial stability. Fadic (2020) observes that securing a public contract encourages higher levels of capital investment by easing firms' liquidity pressures and reducing credit constraints. Similarly, Cohen et al. (2022) indicate that firms benefit from the monitoring and credibility associated with government clients because lenders perceive such relationships to be reliable and, therefore, offer more favourable loan terms. These effects underscore the stabilising role of government demand in reinforcing firms' financial foundations. Consistent with this, Dhaliwal et al. (2016) demonstrate that suppliers with a concentrated base of government customers face a lower cost of equity, reflecting investors' perception of reduced risk. Similarly, Yang and Li (2024) provide evidence that government procurement enhances firms' investment efficiency by alleviating financing constraints and reducing operational uncertainty.

Building upon this evidence, government contracting serves as an effective means of risk diversification, enabling firms to balance exposure between volatile private markets and

the more stable public sector. Given that government demand is less sensitive to economic cycles, firms engaged in public procurement are able to offset revenue declines in private markets during downturns. Goldman (2020) finds that federal procurement contracts help to protect contractors' performance against the adverse effects of financial crises, highlighting the stabilising influence of public sector demand during periods of economic uncertainty. Similarly, Pragidis et al. (2018) observe that government spending often rises during periods of financial stress, providing a countercyclical source of stability that supports firm performance when market conditions deteriorate. By spreading their client base across both the public and private sectors, firms are able to more effectively absorb economic changes because reductions in one sector can be partially offset by stability in the other.

Engagement in public procurement can also serve as an incentive for firm growth, professionalisation, and organisational development, particularly among small and medium-sized enterprises (SMEs). Participation in government projects often requires SMEs to meet higher standards of performance, financial management, and compliance, fostering organisational learning and enhancing competitiveness. Ferraz et al. (2015) and Fadic (2020) provide empirical evidence that demand shocks arising from the awarding of public contracts have a significant positive impact on firm growth. However, these effects tend to be most pronounced in the year of contract allocation, suggesting that the growth incentive may be short-lived for some firms.

In contrast, Lee (2021) finds that companies can experience sustained growth for up to four years following the completion of government contracts. Short-term contracts can also yield lasting growth effects, particularly for small, young, and financially constrained firms. This information indicates that the duration and magnitude of these effects depend on the prevailing economic environment, firm characteristics, and the scale of the contracts awarded. Similarly, public contracts often require additional expertise or an expanded workforce to ensure successful completion. Ferraz et al. (2015) and Srhoj (2024) demonstrate that receiving a government contract positively affects employment growth, typically leading firms to hire approximately four additional employees per contract. In addition, Ravenda et al. (2022) find that higher contract values are associated

with increases in average payroll per employee, suggesting that public procurement not only creates jobs but also enhances wage levels and labour quality among winning firms.

Firms are able to acquire valuable experience and enhance their reputation in both public and private markets by participating in public procurement. Lee (2021) highlights that by participating in government projects, firms are subjected to complex regulatory and managerial requirements which, in turn, enhance their operational proficiency and flexibility. By maintaining ongoing engagement, firms gain substantial experience, improve internal processes, and build transferable talent that may be applicable to other markets. This accumulated experience not only enhances productivity but also signals reliability and professionalism to external stakeholders. Emelianova et al. (2024) indicate that firms with greater reputational capital are more likely to perform effectively and secure future contracts. Similarly, Ning and Ling (2014) emphasise that building a solid reputation enables firms to sustain long-term influence and competitiveness within their industry.

Consequently, public procurement provides firms with financial advantages that enhance their stability, thereby explaining their strong incentive to compete for government contracts. Public sector demand is relatively stable, large, and less affected by economic cycles, thereby offering reliable revenues and secure payments that reduce default risk and liquidity pressures. Securing such contracts also improves financial flexibility, lowers financing costs, and strengthens credibility with lenders and investors. Beyond the associated financial benefits, public procurement promotes professionalisation, raises operational standards, and improves compliance discipline, all of which enhance organisational efficiency and reputation. Overall, government contracts are highly attractive because they combine financial security with reputational benefits and opportunities for sustainable growth.

2.5 Downsides of government contracting

The tendering process for public contracts is often complex and protracted, involving multiple stages that require extensive preparation and strict compliance with regulations. High-value contracts are typically limited to pre-qualified firms, thereby restricting opportunities for other potential bidders. According to Doloi (2009), project outcomes in the construction industry are often compromised by contractor failures resulting from financial constraints, managerial deficiencies, overcommitment, and project-related disputes. Consequently, contractor pre-qualification has become a standard risk mitigation practice. However, the tendering process itself can impose significant financial and administrative burdens. Dalrymple et al. (2006) note that tender preparation is widely regarded as a costly process for prospective suppliers, requiring substantial time, financial resources, and administrative effort. Similarly, Jin et al. (2014) emphasise the considerable costs associated with bid preparation and submission, particularly for large infrastructure projects.

Public procurement is characterised by a highly formalised and bureaucratic framework established to safeguard transparency, accountability, and fairness in public spending but it often results in complex administrative procedures and regulatory rigidity. These regulations create a high level of formalisation and bureaucracy within the procurement process because government spending is subject to extensive regulatory oversight and procedural control (Rainey and Bozeman 2000; Wang and Bunn 2004). Cordella and Willcocks (2010) argue that the bureaucratic setting has long formed the foundation of public sector organisation, shaping its strong emphasis on formal procedures, accountability, and regulatory control. The challenges that firms face in securing government contracts often stem from the need to maintain transparency and accountability to ensure that procurement processes are conducted ethically and fairly (Erridge and Greer 2002; Loader 2007).

Consequently, public procurement is governed by strict legal and procedural requirements. Extensive regulations and excessive documentation govern each phase, including tender preparation, bid assessment, and contract execution. While these measures increase transparency and mitigate corruption risks, they also lead to greater

administrative complexity, raise transaction costs, and extend project timelines. Although public procurement provides firms with stable revenue streams and reduced financial risk, overreliance on government demand may have unintended consequences. Cohen and Malloy (2016) state that strong dependence on government customers can distort firm behaviour and hinder long-term competitiveness. Firms that derive a large share of their revenue from public contracts tend to invest less in physical and intellectual capital and exhibit slower growth compared to their industry peers. These outcomes indicate that excessive reliance on government demand may reduce firms' incentives to innovate and expand, ultimately weakening their market dynamism despite the short-term financial security that such contracts provide.

A further drawback of public contracting is the intense competition that characterises tendering processes. High levels of competition can drive down bid prices, reduce the value of awarded contracts, and place firms under significant financial pressure to meet their obligations. Ahmed et al. (2016) state that unprofessional bidding practices in the construction industry have frequently led to winning contractors underestimating project costs. When actual expenses surpass the initial estimates, it can result in considerable financial strain. Similarly, Capen et al. (1971), in their study of competitive bidding in the oil industry, illustrate how firms often experience lower than expected returns due to challenges in estimating costs. In accordance with this, Gunduz and Karacan (2008) suggest that some companies may submit abnormally low tenders to secure contracts, a strategy often motivated by competitive pressure. While this approach may lead to immediate contract wins, it can hinder the firm's ability to fulfil its obligations and ultimately damage its reputation and financial stability. Thaler (1988) further defines the winner's curse as a situation in which the winning bid exceeds the contract's actual value, leading to financial losses or diminished profits. Even when a contract remains profitable, the outcome may still fall short of expectations, illustrating how aggressive bidding in public procurement can undermine financial performance and increase risk exposure for participating firms.

Practitioners often argue that engaging in business with government clients entails greater risk than working with private sector customers, primarily due to the independent powers

exercised by public authorities. Christidis (2024) highlights that government entities have the right to terminate contracts unilaterally in cases of noncompliance, thereby creating uncertainty and heightening contractual risk for suppliers. Another contributing factor is the intense media scrutiny that is often associated with government contracts, particularly when projects face challenges such as delays or cancellations. Such issues can generate substantial financial losses and lead to disputes and claims, ultimately undermining project feasibility and impeding the overall performance of the construction industry (Odeh and Battaineh 2002). Similarly, Carden et al. (2008) note that when companies fail to meet their contractual requirements, this raises concerns regarding their operational capacity and reliability, further exacerbating the perceived risks associated with public sector contracting.

Consequently, Purchase et al. (2009) state that firms generally prefer private sector clients, citing greater flexibility, broader scope for negotiation, faster decision-making, and lower administrative and compliance burdens compared with public contracting. However, this does not imply a general aversion to public contracting. Rather, firms' willingness to engage in public procurement largely depends on their capabilities and strategic objectives. Those with strong administrative and financial capacity, along with compliance expertise, are better positioned to manage regulatory complexity and succeed in government procurement. Conversely, firms seeking flexibility and innovation may find private sector contracting to be more closely aligned with their goals.

2.6 Market reaction

Financial markets are highly sensitive to new information, leading to rapid fluctuations in stock prices, often triggered by new information relating to the issuing firm or its industry. This information can be broadly categorised into macroeconomic factors which indirectly influence the firm by shaping the broader economic environment (e.g., changes in economic output, unemployment rates, and inflation) and microeconomic factors which directly affect the firm's operations or performance (e.g., earnings reports or product launches) (Al-Shubiri 2010; Meluzin and Zinecker 2014; Phelps 2014). Previous

research indicates that announcements related to both macroeconomic and microeconomic factors can induce short-term volatility as market participants adjust their strategies in response to new information. Market reactions vary depending on investors' interpretation, with unfavourable news often leading to selling pressure and stock price declines, whereas positive developments can bring about temporary price increases. However, these effects are typically short-lived because prices tend to return to their pre-event levels once the information has been fully incorporated and the market returns to equilibrium. This pattern is consistent with the EMH which posits that markets rapidly assimilate new information into asset prices. Extensive scholarly research has examined different market reactions, investigating the effects of various events on stock prices.

2.6.1 Dividend and earnings announcements

Extensive research demonstrates that events such as dividend and earnings announcements, which are directly related to a firm's financial performance, are well-documented triggers of substantial stock price fluctuations. Beaver (1968) was a pioneer in analysing stock market responses to earnings announcements, noting heightened trading volumes and significant price movements around announcement dates. Building upon this, Lamont and Frazzini (2007) further explored this phenomenon, finding that stock prices typically rise before and after scheduled earnings announcements, accompanied by increased trading activity. Theories concerning dividend signalling introduced by Lintner (1965) and further developed by Modigliani and Miller (1961) indicate that dividends convey information about a firm's prospects. Ross (1977) posited that an increase in dividends often signals strong financial health and optimistic future earnings, leading to an uptick in share prices. In contrast, research consistently indicates that dividend cuts or omissions typically lead to negative stock price reactions. Ryan et al. (2000) supported this view, demonstrating that dividend omissions are often met with adverse price movements. Thus, stock prices tend to move in the same direction as changes in dividends. Further research by Eades et al. (1985), Below and Johnson (1996), Ghosh and Woolridge (1988), Che et al. (2018), and Michałowski (2025) has examined differential market reactions to announcements of dividend increases and decreases.

These studies reveal that announcements of dividend increases generally result in positive stock price movements, whereas dividend decreases tend to produce negative reactions. Notably, Mehndiratta and Gupta (2010) found that dividend increases generate larger positive abnormal returns than dividend decreases.

Researchers have extensively examined the effects of dividend announcements on stock prices across various markets. Previous studies have documented market reactions in various international contexts including Norway (Capstaff et al. 2004), India (Kumar 2013; Prakash and Yogesh 2025), Thailand (Suwanna 2012), Greece (Dasilas and Leventis 2011), and Indonesia (Kurniasih 2011; Sapiri et al. 2026).

2.6.2 Stock split announcements

A substantial body of research indicates that the primary purpose of stock splits is to enhance liquidity by reducing share prices. Stock splits increase the number of shares outstanding while proportionally lowering the share price, leaving the total value of an investor's holdings unchanged. By dividing high-priced shares into several lower-priced ones, companies make their stock more accessible and tradable, thereby stimulating market activity. In the U.S., evidence shows that stock split announcements generally elicit positive price reactions, particularly when unaccompanied by other firm-specific news (Grinblatt et al., 1984). Furthermore, Conroy and Harris (1999) find that a firm's history of stock splits significantly influences the structuring of subsequent splits, with managers often aiming for post-split price levels that are comparable to those achieved following previous splits. When a split results in an even lower share price than in previous events, investors interpret this as a particularly strong positive signal. Ikenberry et al. (1996) observe that these positive abnormal returns are most pronounced among smaller firms and those with low book-to-market ratios. Similar patterns are evident internationally. Studies from markets such as the Toronto Stock Exchange (Elfakhani and Lung 2003), India (Mishra 2007), Turkey (Gumus and Gumus 2021), Germany (Wulff 2002), the U.K. (Tuominen 2023), and China (Titman et al. 2022) consistently report

positive investor reactions to stock split announcements, thereby suggesting that this phenomenon is robust across diverse market contexts.

2.6.3 Cyberattack announcements

The financial consequences of security breaches and cyberattacks have also been rigorously examined. These studies explain how unexpected corporate security incidents affect market dynamics. Such research emphasises that breaches in data accessibility, integrity, and confidentiality can have substantial explicit and implicit costs for firms. For example, Arcuri et al. (2018) found that significant negative stock returns frequently follow the public disclosure of cyberattacks. The findings suggested possible links between cybercrime and insider trading, with these incidents potentially leading to illicit financial gain. Similarly, Kammoun et al. (2019) identified a consistent pattern of negative abnormal returns across various financial markets immediately after cyberattacks. Furthermore, Arcuri et al. (2020) found that the adverse market reaction to cyberattacks leads to robust cybersecurity measures being taken that can help to mitigate financial losses and support sustainable growth. Additionally, Tosun (2021) reports declines in daily excess returns, increased trading volumes, and improved liquidity following a security breach, with lasting effects on corporate policies and market perceptions, thereby highlighting the significance of such events as serious shocks to a firm's reputation and financial stability.

2.6.4 CEO-related announcements

Chief executive officer (CEO) appointments, turnover, and certifications highlight a growing interest in how executive leadership affects firms' performance. Academics have explored the complex effects of top managerial changes, including new appointments, departures, and certifications, on stock market reactions and firm performance. For example, Suchard et al. (2001) found that CEO turnover is much more likely in firms with nonexecutive and independent boards when historical stock performance is poor. Clayton

et al. (2005) noted that CEO changes often disrupt market expectations, leading to increased stock price volatility and heightened shareholder risk associated with financial distress, information asymmetry, and agency problems. Dedman and Lin (2002) observed that firms which choose not to disclose CEO departures tend to suffer weaker performance and face a greater risk of future failure. Announcements of CEO departures generally provoke negative market reactions, especially when the CEO is dismissed or moves to another role. Rose (2019) analysed stock market responses to CEO succession in Denmark, Sweden, and Finland, showing that national legal and institutional frameworks play a significant role in shaping these responses. For instance, the Danish market favours external appointments, whereas internal appointments are perceived negatively in Sweden. Gondhalekar and Dalmia (2007) indicate that market perceptions and the performance of female CEOs are on par with those of male CEOs, indicating a positive shift towards gender diversity in leadership. Zhang and Wiersema (2009) emphasised that the market tends to respond favourably to CEO certifications, especially when the CEO is a significant shareholder. Finally, Quigley et al. (2017) demonstrated that the market impact of unexpected CEO deaths has recently become more significant, thereby highlighting the importance of comprehensive succession planning and support.

2.6.5 Supply chain management-related announcements

Market reactions also consider events in supply chain management such as product recalls. Hendricks and Singhal (2005) investigated supply chain disruptions using a sample of 827 announcements from 1989 to 2000. The study revealed that firms experiencing these disruptions typically faced an average decline of almost 40% in abnormal stock returns over the observed period. Moreover, the findings suggest that companies do not quickly recover from the adverse effects of disruptions. Similarly, Alora and Barua (2021) analysed the impact of supply chain disruptions on small companies, drawing upon data for 335 disruption events over the ten-year period from 2009 to 2019. The study's findings reveal that Indian SMEs experienced a significant decline in shareholder wealth as a result of these disruptions. In accordance with Baghersad and Zobel (2021) who explored the effects of supply chain disruptions on U.S. firms, analysis

was conducted on a sample of 300 companies from diverse industry sectors that encountered disruptions between 2005 and 2014. The study revealed that announcements of supply chain disruptions are associated with negative abnormal stock market returns.

Chu et al. (2005) examined non-automotive product recall announcements between 1984 and 2003, revealing evidence of significant negative abnormal returns on the day before the announcement. The study also indicates a subsequent decline in the firm's market performance. Unsal et al. (2017) analysed 1,460 product recalls announced by the U.S. official agencies between 1990 and 2014. Consistent with earlier studies, the analysis provides evidence of significant negative abnormal returns around the announcement dates. Furthermore, the study indicates that the impact of product recalls varies across industries depending on factors such as operational characteristics and the level of competition. Negative abnormal returns are commonly observed in firms following product recalls triggered by Food and Drug Administration announcements. For example, Dowdell et al. (1992) examined the 1982 Tylenol incident, which led to stricter packaging regulations for over-the-counter drugs, and found a sharp decline in Johnson and Johnson's stock value as a result. Additionally, 28 other pharmaceutical firms experienced a similar decline, primarily due to the subsequent regulatory proceedings, thereby indicating that the new regulations had a significant negative impact on stock prices across the pharmaceutical industry.

Similarly, Dranove and Olsen (1994) investigated the effects of drug recalls due to dangerous side effects. Their findings revealed that announcements led to significant declines in the share prices of affected manufacturers and the broader pharmaceutical sector. Furthermore, Seo et al. (2013) found that food safety inspections following an outbreak had a substantial impact on the value of firms linked to 40 food safety events in the U.S., emphasising the extent and duration of these impacts. In a different context, Zhao et al. (2013) investigated the effects of product recall announcements on the Chinese stock market, analysing 42 recall events between 2002 and 2011. The study found that product recalls generally result in negative abnormal returns, with Chinese companies suffering greater financial losses than Western firms. The research also highlighted that the Chinese food industry experiences more severe market reactions than the automobile

industry and that passive recall strategies elicit more negative stock market responses than proactive ones.

2.6.6 Public contract-related announcements

A substantial body of literature has examined the influence of contracting activity on firm performance and stock market reactions across both the public and private sectors. To capture these dynamics more effectively, the following review focuses on government contracting and analyses its impact across various industries. Early empirical work reinforces this trend. For example, Mayer-Sommer and Bedingfield (1989) demonstrate that firms with a strong defence orientation achieve market returns that are approximately 50% higher than those of commercially orientated firms. Similarly, Czech (1989) indicates that major defence contract announcements between 1980 and 1987 produced substantial abnormal returns and increased trading volumes. This is consistent with the findings of Diltz (1990) who reports that defence contract awards generate returns that are almost twice the size of those observed for other public contracts, thereby highlighting the market's strong sensitivity to defence-related procurement activity.

Palkar et al. (2012) examined the valuation effects of military contract awards following the attacks on 11th September 2001, analysing 621 military contracts awarded between 1996 and 2006. They found evidence of positive abnormal returns on the announcement day for both periods but no significant short-term difference between pre- and post-11th September contracts. Ciccone et al. (2018) found that U.S. aircraft manufacturers and defence contractors benefited from improved profitability and higher stock returns during the Korean War. This was a result of the U.S. government's significant increase in defence spending which generated substantial demand for military equipment, aircraft, and related technologies to enhance its own defence capabilities. Additionally, the U.S. emerged as the primary supplier of military resources, enabling allied countries to strengthen their defensive capabilities by providing them with advanced technologies and equipment. Beyond the defence sector, several studies have examined how public contract announcements affect firms in other industries and countries, providing evidence of

market reactions. Choi (2014) and Choi (2015) examined the market reaction to public contract announcements in the construction sector, albeit within different institutional contexts. Choi (2014) analysed 377 contracts awarded to Korean construction firms between 2000 and 2010, while the latter investigation (Choi 2015) studied 813 awards to publicly listed U.S. construction firms between 2000 and 2009. Despite differences in sample composition and market environment, both studies document consistently positive investor reactions, suggesting that public contract awards are perceived to be value-enhancing signals within the construction industry.

In Portugal, Barros et al. (2020) examined the stock market reaction to 19 highway concession awards issued between 1998 and 2009, focusing on the infrastructure and transport sectors. Their findings also revealed a positive investor response. Recent research has expanded beyond traditional sectors, such as defence and construction, to explore the effects of public contracting across diverse industries. For example, Buene and Volnes (2018) analysed 208 maritime contract announcements on the Oslo Stock Exchange between 2014 and 2017 and reported a positive market reaction, suggesting that investors perceive public contracts as value-enhancing signals, even in core maritime services including shipping operations, vessel chartering, and cargo management. Similarly, Samunderu and Yordanova (2024) examined U.S. federal contract announcements involving NASDAQ-listed pharmaceutical companies and found significant positive CARs, although the average abnormal returns were statistically insignificant. This indicates that although some contracts generate firm-specific gains, the broader market impact of public procurement differs across firms and industries, reflecting how industry structure and investor expectations shape the perceived value of government contracts.

2.6.7 Private contract-related announcements

While some studies focus exclusively on public contract announcements, others extend their analysis to include both government and private contracts, providing a broader understanding of how various types of contractual relationships influence market

reactions. For instance, Larson and Picou (2002) performed a comparative analysis of the market's response to four subsamples of contract awards, including military, federal, municipal, and foreign, using 329 announcements involving American firms. The results indicate that contracts awarded by foreign governments generated significantly higher returns than those granted by American firms or domestic government bodies. The analysis observes no evidence to suggest that the U.S. government contracts generate higher returns than those awarded by domestic private corporations. This variation may imply that investors view foreign contracts as allowing firms access to new markets, providing international visibility, and enabling expansion beyond their local client base. Furthermore, a foreign government contract can indicate a firm's competitiveness, credibility, and ability to meet international standards, thereby enhancing its global reputation. This aligns with Barros et al.'s (2020) assertions that government contracts awarded to foreign firms generate greater returns than those awarded to local firms.

In contrast, Elayan et al. (2004b) examined 984 corporate contract announcements in the U.S. between 1990 and 2001 and found that the stock market reacts positively to large domestic contracts, but international contracts do not generate greater excess returns. Larson and Picou (2002) and Elayan et al. (2004b) examined the same market and the observed variation in investor responses primarily reflects differences in sample structure rather than differences in the market environment alone.

2.6.8 Mixed public and private contract-related announcements

While the majority of the existing literature concerning contract announcements is centred on the U.S., there is a relative paucity of research in other economies that employs both public and private contract data. For example, Lonkani et al. (2012) investigated the effects of business contract announcements on stock prices in Thailand from 1994 to June 2010, analysing 284 business and 388 government contracts. Their findings indicate that corporate contract announcements produce relatively higher abnormal returns compared to government contracts, with both smaller and larger contracts generating significantly positive abnormal returns. Smaller firms may particularly benefit from information

shocks because they often lack the resources to effectively advertise or disseminate information. This limited ability to widely disseminate information can lead to larger positive abnormal returns for smaller firms. Similarly, Karakuş (2017) investigated 112 government and business contract awards involving firms listed on the Istanbul Stock Exchange between 2011 and 2016. The study found significantly positive abnormal returns prior to contract announcements, suggesting possible information leakage and market inefficiency.

2.6.9 Other contract-related announcements

Although a large portion of the literature focuses on the valuation effects of government contract awards, a distinct stream of research has examined broader market reactions to procurement-associated events that extend beyond contract award announcements. This body of work explores how markets respond to issues such as ethical conduct, information asymmetry, legal violations, and contract performance failures, offering a more comprehensive perspective on the influence of public contracting on firm value. For instance, Boyle et al. (1997) demonstrated that efforts to improve defence procurement practices are not always perceived favourably by the market. In highly regulated sectors, such as public procurement, initiatives aimed at strengthening transparency or ethical oversight may be interpreted by investors as signals of tighter control, higher compliance costs, and potential constraints on profitability. Boyle et al. (1997) examined investor responses to the Defence Industries Initiative (DII), a voluntary code of conduct established in 1986 by 32 U.S. defence contractors to promote ethical practices, and found uniformly negative market reactions for both signatories and non-signatories. The market appeared to view the DII not as a positive ethical signal but as an implicit acknowledgement of prior misconduct within the industry. Investors seemingly perceived the initiative as a sign of stricter regulation or increased scrutiny which reduced their expectations of future cash flows and profitability despite its stated aim of improving corporate responsibility.

Another strand of research has examined the risk of insider trading and information leakages surrounding government contract awards. Alexander (1993) analysed the stock price movements of U.S. defence contractors prior to announcement dates and found no consistent evidence of abnormal returns. While two firms exhibited temporary excess returns, these were attributed to unrelated factors such as unexpected earnings announcements. The findings suggest that the defence procurement process functions efficiently, with minimal evidence of information leakage or insider advantage, and that the U.S. Securities and Exchange Commission effectively maintains transparency and market integrity. Other studies have explored how illegal contracting activities influence stock market reactions. Davidson et al. (1994) examined 535 crime announcements related to contract awards and found that reports of bribery, tax evasion, and contract violations triggered significant negative market responses. Firms with prior allegations of misconduct experienced even sharper declines. Similarly, Karpoff et al. (1999) analysed 396 cases of military procurement fraud between 1983 and 1995 and observed that fraud investigation announcements resulted in significant negative abnormal returns, with smaller, unranked contractors facing greater losses. This result suggests that smaller contractors with less experience are more sensitive to the possibility of suffering financial and reputational damage.

Some studies have examined the impact of contract cancellations. Howe and Howe (2006) examined contract failures in the water services industry, focusing on the major contract cancellations in Cochabamba, Bolivia, in 2000 and in Atlanta, U.S., in 2003. Their analysis indicated that the financial consequences of these contract terminations were minimal and, in some cases, advantageous to rival firms. Neither the anticipation nor the announcement of these events produced significant effects on overall industry performance, indicating that the market perceived these failures to be firm-specific rather than sector-wide shocks. The findings suggest that the Atlanta collapse primarily exposed weaknesses within the affected firms, whereas competitors thrived following the Cochabamba incident, thereby indicating that such disruptions created opportunities for rivals to strengthen their market position. Table 1 summarises the most relevant contract-related studies.

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Table 1: Contract-related studies

Author	Type of announcement	Time span	Industry	Country	Methodology	Findings
Mayer-Sommer and Bedingfield (1989)	Government contracts	1968-1977	Defence	U.S.	Regression models	Firms with a strong defence orientation outperformed moderate firms by 50% in terms of market returns.
Czech (1989)	Government contracts	1979-1987	Defence	U.S.	Event study (-150, +15) market model	Trading volume experienced a significant increase during the event, yet no evidence of insider trading was detected in the defence industry.
Diltz (1990)	Government contracts	1981-1985	Defence	U.S.	Event study (-15, +15) market model	Fixed contract price awards generate positive market reactions because investors view them as signals of the firm's future performance and growth prospects.
Alexander (1993)	Government contracts	1993	Defence	U.S.	Event study (-30, 0) market model and CAPM	There were positive returns on the day of the event. Some firms showed positive reactions before the contract was awarded, driven by an unexpected earnings announcement.
Karpoff et al. (1999)	Government contracts	1983-1995	Defence	U.S.	Event study (-2, 2) market model	Procurement fraud investigations trigger significant negative abnormal returns, with losses concentrated among unranked contractors and not evident among the top 100 contractors.
Larson and Picou (2002)	Government and business contracts	1990-1998	Corporate, military, federal, and municipal	U.S.	Regression models and event study (-3, +5) market model	Foreign government contracts award higher yields; no evidence to suggest that contracts awarded by the U.S. government yield more profitable outcomes than those awarded by U.S. corporations.
Elayan et al. (2004a)	Government contracts	1990-2000	Defence and civil	U.S.	Event study (-1, +1), and regression	Government contract awards significantly enhance the market value of winning firms, although different contract types elicit varying market reactions.
Elayan et al. (2004b)	Business contracts	1990-2001	Construction, manufacturing, and others	U.S.	Event study (-10, +10) market model	The U.S. stock market responds significantly to large contract announcements, with abnormal returns more pronounced for domestic contracts than for international contracts.

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Elayan et al. (2006)	Business contracts	1990-2001	Intercompany contracting	U.S.	Event study (-5, +5); market model	Winning contractors experience significant abnormal stock price returns.
Howe and Howe (2006)	Government contracts	1999-2004	Water service	U.S.	Event study (-1, +1) market model	Contract failures and cancellations affect the firms themselves, with minimal impact on the wider water services industry. Rival companies strengthen their relative competitive position.
Kaen (2011)	Government contracts	1938-1950	Defence and war industries	U.S.	Regression models	Market reactions showed no significant outperformance for prime contractors compared to non-prime counterparts, suggesting that defence contracts yielded limited gains for investors.
Lonkani et al. (2012)	Government and business contracts	1994-2010	Unspecified	Thailand	Event study (-25, +25), (-3, +3), CAPM and market model	Corporate contracts generate higher abnormal returns than government contracts, while smaller contracts produce larger positive abnormal returns compared to larger ones.
Palkar et al. (2012)	Government contracts	1996-2006	Defence	U.S.	Event study (-1, +10), (-1, +40), (-1, +60), market model	Positive abnormal returns were observed on the announcement day both pre- and post-11 th September, but post-11 th September military contracts produced negative long-term returns, thereby suggesting possible underfunding.
Yang et al. (2014)	Government and business contracts	2001-2012	Construction, manufacturing, and other	China	Regression models and event study (-1,0); benchmarks	Sales contract announcements elicit larger stock price fluctuations than purchase contract announcements due to the concentration of manufacturing in the Chinese market.
Deshpande and Jog (2014)	Government contracts	1978-1988	Defence	U.S.	Event study (-30, +30), (-5,0), (0,0), market model	Significant stock market reactions around nondisclosed contract award announcements indicate possible insider trading.
Choi (2014)	Government contracts	2000-2010	Construction	Korea	Event study (-2, +2), market model	Contract announcements have positive stock market reactions, particularly during economic expansions. Domestic projects are viewed more favourably than foreign contracts.
Choi (2015)	Government and business contracts	2000-2009	Construction	U.S.	Event study (-1, +1), (-2, +2), and (-3, +3), market model	Public contract announcements generate positive market reactions. Public sector and civilian contracts outperform private or military ones and reactions vary by region and contract size.

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Kim and Kwon (2015)	Government and business contracts	2000-2011	Technology	Korea	Event study (-1, +1) and (-5, +5), market model	Contract award announcements have a significant positive effect on supplier firm value.
Karakuş (2017)	Government and business contracts	2011-2016	Unspecified	Turkey	Event study (-10, +10), CAPM, and market model	Positive abnormal returns occur before contract announcements, with a 1.6% spike on the event day. Larger contracts and higher contract-to-sales ratios generate stronger and more persistent market reactions.
Yao et al. (2018)	Government and business contracts	2013-2015	Construction	China	Regression models	Contract signing announcements send strong signals to investors, with larger contracts generating stronger market reactions.
Buene and Volnes (2018)	Business contracts	2014-2017	Maritime	Norway	Event study (-10, +10), CAPM, and market model	Significant positive event day returns (2.47–2.56%) were observed, with no effects before or after the event. Larger contracts, relative to firm size, signalled stronger expectations for future earnings.
Ciccone et al. (2018)	Government contracts	1946-1953	Aircraft manufacturers	U.S.	Regression model and event study	Defence contractors, especially aircraft manufacturers, generate larger profits and returns during wars, reacting positively to contract awards and wartime developments but negatively to signs of peace.
Barros et al. (2020)	Government contracts	1998-2009	Construction	Portugal	Regression model and event study (-10, +10), CAPM	A positive market reaction is only observed for firms with prior highway concession experience. Markets also respond more favourably to longer contracts and to awards given to foreign headquartered firms.
Abdurakhmonov et al. (2021)	Government contracts	2009-2014	Manufacturing	U.S.	Regression model	While government contracts can enhance firm performance, overreliance on government contracts increases vulnerability. Such dependence often leads firms to limit other investments, prompting negative market reactions due to perceived rigidity and heightened levels of risk.
Samunderu and Yordanova (2024)	Government contracts	2010-2021	Pharmaceutical	U.S.	Event study (-10, +10), CAPM	Government contracts have a limited short-term impact on pharmaceutical firms' stock prices.

2.7 Research gaps

The review of the existing literature regarding contract announcements and market reactions reveals that, although the body of evidence is extensive, it remains fragmented across industries and countries. As shown in Table 1, the majority of studies have concentrated on the defence and construction sectors in the U.S. and Asian markets, offering limited insight into how such announcements are interpreted in other institutional settings. Research in Europe is relatively scarce and empirical evidence from the U.K. remains largely unexplored. The key patterns of established knowledge and the principal research gaps are consolidated in Table 2 which collectively underscores the need for a more comprehensive and context-specific analysis of public contract award announcement-related market reactions.

The focus on a limited number of industries has left other industries (e.g., technology, healthcare, and utilities) unexplored, thereby constraining a broader understanding of how public contract announcements influence firm performance across different sectors. Moreover, much of the existing research relies on outdated datasets that may not adequately capture contemporary market dynamics, particularly considering recent global developments such as Brexit, the COVID-19 pandemic, and the war in Ukraine. Consequently, there is a pressing need for more recent studies that span multiple economic cycles to provide insight into the long-term effects of public contract awards.

In addition, previous studies have failed to sufficiently examine the effects of diverse contract characteristics, including contract size, type, awarding authority, and evaluation criteria, and how these dimensions shape market responses. A more detailed analysis of these factors could yield deeper insight into the mechanisms by which procurement announcements affect firm value. These gaps present an opportunity for the current study to explore the distinctive features of the U.K. market, its regulatory environment, and corporate behaviour surrounding contract awards. Addressing these research gaps will enhance understanding of how the U.K. stock market assimilates information from public procurement and the efficiency with which it reflects such information in stock prices.

Table 2: Established knowledge and research gaps in the literature

Dimensions	Established knowledge	Knowledge gaps
Industry effects	Most studies focus on single sectors, such as defence or construction, finding generally positive short-term market reactions to contract awards.	Limited cross-industry analysis and limited evidence regarding sectoral heterogeneity or variations in investor interpretations across industries.
Country setting	The research is dominated by the U.S., with only a few studies having been conducted in Asia and Europe.	There is a lack of U.K.-based evidence, particularly under the evolving post-Brexit procurement framework.
Contract characteristics	Some insights into how contract size, type (sales or purchase), and domestic versus foreign origin influence market reactions.	Limited attention has been paid to detailed contract structures such as awarding criteria (e.g., MEAT), as well as to awarding procedure, contract type, and contract structure.
Firm characteristics	Indications that firm-specific attributes such as size, experience, and ownership structure may influence investor reactions to contract announcements.	There is a lack of analysis concerning firm fundamentals and their interaction with contract characteristics in shaping market reactions.
Client characteristics	Indications that market responses depend on the nature of the awarding body (i.e., governmental or corporate bodies).	No previous study has differentiated between types of public authorities (e.g., central government, local councils, NHS bodies, or executive agencies) and how their distinct institutional roles influence market reactions.
Economic/political context	The evidence indicates that exogenous events such as the Korean War, the terrorist attacks of 11 th September, and the global financial crisis are linked to investor reactions.	Only a few studies have examined recent economic events (e.g., Brexit, the COVID-19 pandemic, and the war in Ukraine) in the context of investors' reactions to government contract awards.
Regulatory context	Procurement regulations, enforcement practices, and standards for contract award disclosure differ between jurisdictions.	Limited research has examined differences in procurement regulations, enforcement, and contract award disclosure standards across jurisdictions and their effect on stock reactions.

2.8 Theoretical underpinnings

The theory employed in the current study is the EMH. According to the core principle of the EMH, investors adjust their expectations in response to new information, resulting in observable changes in stock prices. The announcement of a government contract award acts as a type of new information, prompting investors to adjust their stock price estimates in response to the acquisition of public contracts.

The EMH is a fundamental theory in asset pricing that was developed by Malkiel (1962) and Fama (1965). According to Fama (1965), the theory stems from the random walk which suggests that price fluctuations are unpredictable and lack a precise pattern because new information is randomly released into the market and rapidly integrated into prices. This indicates that the fluctuations in stock prices reflect rational market behaviour. As articulated by Fama (1970), financial markets are efficient when they respond promptly to the flow of information and fully incorporate market-wide information and firm-specific announcements into stock prices. In accordance with this, Affleck-Graves and Mendenhall (1992) assert that stock prices respond promptly and accurately to new information such as corporate disclosures and public announcements. Malkiel (2003) indicates that, due to the rapid integration of information into prices, it would be impossible to outperform the market, even with the use of technical analysis (which relies on past stock prices to forecast future prices) or fundamental analysis (which utilises financial information such as firm earnings and asset values to help investors identify undervalued equities). Accordingly, the EMH suggests that it is impossible to generate excess returns using publicly available data (Ying et al. 2019).

However, Grossman and Stiglitz (1980) argued that markets cannot be perfectly efficient. If the market were entirely efficient, analysts, researchers, and professional investors would lack the motivation to gather and analyse information to generate abnormal returns. Consequently, a degree of inefficiency is necessary to reward informed investors for acquiring costly information because prices only partially incorporate private information, thereby enabling informed traders to profit while gradually transmitting this information to uninformed investors through their trading activity. Similarly, Arffa (2001) claims that the rapid market reaction to new information implies that all investors are

fully informed and respond in a similar manner, consistently analysing and following the latest news. Hence, the EMH theorises that investors analyse information rationally. Naseer and Bin Tariq (2015) argue that actual decision-making is influenced by behavioural and psychological biases. Investor perception may be influenced by these factors, thereby hindering markets from achieving perfect efficiency and leading to mispricing, anomalies, and transient deviations from rational market equilibrium. Wouters (2006) claimed that the overreaction and underreaction of the stock market stem from investors' psychological behaviours and intrinsic biases which encompass personal judgement.

Moreover, Gu and Hitt (2001) argue that lower transaction costs can attract more uninformed traders and this increased participation can undermine market efficiency by introducing noise, diluting the information content of prices, and making prices less reflective of fundamental value. Similarly, Bartram and Grinblatt (2021) emphasise that large transaction costs and insufficient liquidity hinder the rapid adjustment of prices to new information. These frictions obstruct the swift assimilation of new information into stock prices, resulting in a delayed reflection of fundamental values. Consequently, temporary mispricing can be observed and this contradicts the assumption of complete market efficiency.

This suggests that markets do not operate under conditions of perfect efficiency. Instead, analysis costs, transaction costs, behavioural biases, information incentives, and information flows influence the extent to which the available information is reflected in prices. Therefore, Fama (1970) categorises financial market efficiency into three forms: weak-form efficiency, semi-strong-form efficiency, and strong-form efficiency. Each of these represents a different degree to which information is incorporated into prices.

Weak market efficiency posits that stock prices reflect all historical market information, with prices moving randomly and independently, thereby making future changes based on past events unpredictable. The weak form's efficiency is characterised by its return independence which is typically evaluated using correlation. Allen et al. (2011) concluded that today's stock return does not affect tomorrow's stock return. Malkiel (2003) supports this with the random walk hypothesis, suggesting that information influencing share

prices is random and unpredictable, thereby making long-term stock price prediction ineffective and preventing the generation of excess returns. Similarly, Degutis and Novickytė (2014) note that technical analysis does not generate an excess return when the market is weakly efficient.

Semi-strong market efficiency asserts that stock prices reflect all historical information and rapidly adjust to all publicly available information such as dividend announcements, earnings reports, stock splits, changes in accounting policies, and political or economic events. In this form, Fama et al. (1969) state that due to the immediate adjustment of share prices to newly released, publicly available information, neither technical nor fundamental analysis can consistently yield abnormal profits because public information has already been incorporated. Fama et al. (1969) argue that investors cannot generate abnormal returns from publicly available stock split information because such information is already fully incorporated into firm prices at the time of the event. Degutis and Novickytė (2014) note that analyses of stock price movements around significant public announcements, known as event studies, have consistently provided evidence of semi-strong market efficiency by assessing how quickly prices adjust to new information. Arffa (2001) indicates that, under an efficient market, prices should respond immediately to the release of new public information. Brunnermeier (2005) and Rasoulilian et al. (2023) argue that abnormal returns occurring before the announcement suggest information leakage, while Hussin et al. (2010) and Elroukh (2024) maintain that abnormal returns arising after the event indicate a delayed market adjustment, thereby reflecting inefficiency. In contrast, Curran and Moran (2007) state that when markets react immediately and price adjustments occur on the event day, this behaviour is consistent with semi-strong market efficiency.

Strong market efficiency asserts that stock prices fully incorporate all available information, including historical, public and private information, thereby making it impossible for any investor to consistently earn abnormal returns, even based on insider information (Dimson and Mussavian 1998; Malkiel 2011). In other words, a market is deemed to be efficient when investors are unable to achieve returns that exceed the overall market return, suggesting that share prices accurately represent the firm's true value

(Allen et al. 2011). This is in accordance with Brealey et al.'s (1999) findings that prices consistently reflect fair value and, therefore, it is impossible for any investor, including insider traders, to outperform the market. Investors are unlikely to benefit from efforts to beat the market, particularly after accounting for transaction costs, management fees, and taxation (Arffa 2001). Alternatively, a passive investment approach that prioritises efficient asset allocation and diversification is recommended.

Building upon this, the efficiency with which markets incorporate information into pricing is demonstrated by observable stock price reactions to supply chain-related disclosures, particularly contract award announcements. Contract award announcements are considered to be significant public information that is expected to provoke a reaction from the stock market, as articulated by the EMH. This assimilation of information is a key tenet of the semi-strong form of the EMH which posits that all publicly available information, including contract awards, is rapidly incorporated into stock prices. Adjustments in stock prices in response to the arrival of new information are primarily dependent upon investors' interpretations of the implications associated with the contract award announcement.

Early research concerning stock market reactions to government contract announcements primarily sought to evaluate market efficiency and identify potential informational advantages in defence-related industries. Mayer-Sommer and Bedingfield (1989) focused on the profitability of defence contractors, while Czech (1989) examined insider trading activity, analysing abnormal returns around defence contract announcements to test the semi-strong form of the EMH. Similarly, Alexander (1993) investigated pre-award stock activity among government contractors to determine whether information asymmetries or insider advantages existed prior to public disclosure, thereby grounding the study within the informational efficiency paradigm.

As the literature evolved, research objectives broadened to explore the valuation effects of procurement announcements and the factors shaping market responses. Karpoff et al. (1999), for instance, analysed the impact of major American Department of Defence contracts and fraud investigations on firm value, maintaining the EMH as the central theoretical framework while incorporating considerations of market discipline and

reputational consequences. Limited research has focused on informational inconsistencies within public contracting contexts. Elayan et al. (2004a) emphasised the presence of information asymmetry between governments and contractors, arguing that the incomplete nature of contractual arrangements generates disparities in knowledge between public buyers and firms, thereby influencing both firm valuation and investor perceptions. This represented a significant theoretical shift from a purely efficiency-orientated perspective towards an information economics framework, recognising asymmetric information as a key determinant of the heterogeneity in market reactions to contract announcements.

Research has continued to examine the informational content and efficiency of contract announcements using event study approaches grounded in the EMH (Lonkani et al. 2012; Palkar et al. 2012; Choi 2014; Karakuş 2017). Meanwhile, a few scholars have adopted broader theoretical perspectives alongside the EMH. Choi (2015), for example, applied the corporate social responsibility concept to explore whether announcements of contract awards in the construction industry generated market reactions that are consistent with investors' perceptions of firms' social and ethical performance. This research indicates a progressive theoretical diversification, recognising that investor responses may be influenced not only by informational efficiency but also by nonfinancial dimensions such as reputation, corporate ethics, and stakeholder expectations.

Other studies have sought to evaluate the impact of signal clarity and distortion on investor responses, emphasising the role of signal strength and noise in shaping the reliability of market information. The assessment of signal clarity in public contract award announcements can be analysed through the lens of signalling theory. As articulated by Connelly et al. (2011), signalling theory focuses on the role of the party with greater knowledge, known as the sender, whose intentional actions aim to convey essential information to another party. This conceptual structure primarily examines the impact of information asymmetry and explores how insiders convey their knowledge through their actions. CEOs frequently communicate the intangible attributes of their companies to prospective investors via the various components of their financial statements (Zhang and Wiersema 2009). Furthermore, when CEOs engage in insider trading by trading their own

firm's stock, acquisitions by insiders are frequently regarded as indicators of confidence in the firm's growth prospects, and vice versa. On the other hand, the firm's prospects and management's assurances can be demonstrated through mergers and acquisitions, product launches, and market expansions.

Choices between debt and equity financing also reflect management's assessment of the firm's risk profile and potential. In these situations, CEOs act as carriers who strategically employ financial disclosures and corporate activities as indicators to reduce information asymmetry and influence investors' perceptions. While insiders can provide observable signals to outsiders, it is the responsibility of investors, as receivers, to interpret and assess those signals. This transition was illustrated by Yao et al. (2018), who prioritised the interpretive power and credibility of firms' contract signing disclosures over focusing exclusively on the market's reactions.

Beyond the reliance on the EMH, signalling theory, and information asymmetry, another branch of the literature has emerged which investigates resource dependence theory, providing further insight into the effects of contract awards. Abdurakhmonov et al. (2021) indicate that resource dependence theory posits that a firm's reliance on external parties for resources significantly influences its operational strategies. As a firm's dependence on a single revenue source grows, it may elicit negative reactions from the market. For example, increased dependence could force the firm to adjust its directions to align more closely with the preferences of its primary client. This alignment may restrict the firm's pursuit of alternative opportunities with private sector clients and reduce market expectations for its future performance. To alleviate the negative perceptions associated with reliance on a single government agency, firms could diversify their dependence across multiple government entities. This strategy is likely to yield a more favourable response from investors, particularly when resource configurations indicate potential future opportunities (Morrow et al. 2007).

Recent research studies have employed the EMH as the fundamental theoretical basis for their analysis of contract award announcements. For instance, Buene and Volnes (2018), Ciccone et al. (2018), and Samunderu and Yordanova (2024) employed the EMH within industry-specific sectors, including the maritime and pharmaceutical sectors, to examine

the resilience of market efficiency across diverse environments. Buene and Volnes (2018) illustrate that Oslo-listed maritime firms which frequently announce contracts have lower CARs. This may reflect the market having already incorporated anticipated information into its pricing from these frequent disclosures. Conversely, firms that infrequently disclose significant transactions experience higher abnormal stock returns. The semi-strong form of the EMH posits that the market immediately integrates information into stock prices. Ciccone et al. (2018) identified that periods of war correlate with rising stock prices for U.S. aircraft manufacturers, which generally outperform the overall market during such times. Stock price movements indicate that the market quickly incorporates new information about increased military spending. This posits that all publicly available information, including industry and macroeconomic events, is reflected in stock prices, in accordance with the semi-strong form of market efficiency. Samunderu and Yordanova (2024) examined government contract announcements in the U.S. pharmaceutical industry and their results indicated a semi-strong form of market efficiency.

Studies seeking to assess market efficiency typically adopt the EMH which provides a framework for analysing the speed and accuracy with which new information is incorporated into share prices. Research seeking to understand how firms communicate value-relevant information and how investors interpret these signals frequently draws upon signalling theory, focusing on the credibility, clarity, and strength of corporate disclosures. Conversely, studies investigating unequal access to information between contracting parties are grounded in information asymmetry theory which highlights how differences in information endowment influence firm valuations and investor perceptions. Consistent with these distinctions, the current study seeks to verify the informational efficiency of public contract announcements in the U.K. stock market, employing the EMH as its principal theoretical framework to explain how market participants assimilate new information (e.g., contract announcements) and translate it into observable price movements.

2.9 Development of study hypotheses

The release of new public information, such as announcements of government contract awards, is anticipated to result in stock prices adjusting swiftly based on the semi-strong form of the EMH. The current research indicates that public contract announcement awards generally have a positive effect on stock prices (Mayer-Sommer and Bedingfield 1989; Czech 1989; Diltz 1990; Alexander 1993; Larson and Picou 2002; Elayan et al. 2004a; Elayan et al. 2004b; Lonkani et al. 2012; Palkar et al. 2012; Yang et al. 2014; Kim and Kwon 2015; Yao et al. 2018; Barros et al. 2020; Samunderu and Yordanova 2024).

Nevertheless, the existing literature remains highly concentrated in the U.S. and Asian markets and is heavily concentrated in the defence sector (e.g., Mayer-Sommer and Bedingfield 1989; Czech 1989; Diltz 1990; Alexander 1993; Kaen 2011; and Palkar et al. 2012). In contrast, research based on other industries remains limited, with only a few studies having focused on construction firms (Choi 2014; Choi 2015), highway concessions (Barros et al. 2020), the maritime industry (Buene and Volnes 2018), and the pharmaceutical sector (Samunderu and Yordanova 2024). This sectoral concentration underscores a deficiency in the empirical evidence for industries beyond defence, as well as evidence from the U.K. context which is also scarce.

Chen et al. (2021) assert that engaging a government as a client improves the quality and transparency of information dissemination, with no information leakage prior to the award date. Meanwhile, Czech (1989) observed no indications of insider trading prior to public contract award announcements. However, the official announcement does not always have to cause a significant stock price adjustment on the award date if the market has already assimilated the contract's related information. Buene and Volnes (2018) assert that companies with a high frequency of contract awards tend to exhibit lower returns. Conversely, low-frequency firms typically experience a more significant market response. Consistent with this, Howe and Howe (2006) noted that contract cancellations in the water services sector had minimal financial consequences, primarily due to the industry's prior anticipation of such events.

Moreover, firms may react not only to the announcement of contract awards but also to broader events related to the potential for contract awards. Ciccone et al. (2018) observed that stock prices reacted favourably to news suggesting the persistence of military conflicts and ongoing aircraft orders, while responding unfavourably to news concerning the termination of hostilities that will impact future contracts. In specific instances, the market response is less pronounced than anticipated. Mayer-Sommer and Bedingfield (1989) noted that senior managers in defence contractors experienced much larger increases in compensation than their commercially orientated peers. Kaen (2011) similarly reported that the principal beneficiaries of defence contracts were employees and managers, rather than shareholders. This could conceivably contribute to lower shareholder returns due to higher executive payouts. Previous research has primarily focused on the U.S. market and the defence sector, resulting in limited exploration of other regions and industries. Given this concentration, the current study empirically examines whether contract award announcements in the U.K. convey value-relevant information and how they influence stock prices. This analysis aims to address a gap in the current literature by developing a comprehensive hypothesis regarding the impact of public contract award announcements on stock prices in the U.K. The primary hypothesis is divided into three specific sub-hypotheses to enable a more thorough analysis.

H0: There are no significant effects on the abnormal stock returns of FTSE 350 firms around public contract award announcements.

H1: There are significant effects on the abnormal stock returns of FTSE 350 firms around public contract award announcements.

Moreover, Elayan et al. (2004a) found that firms' expertise and advanced technological capabilities were more likely to achieve higher returns, thereby suggesting that specialisation can elicit stronger market reactions. Kim and Kwon (2015) assert that contracts with specialised, high-technology suppliers substantially increase the value of the supply firm. Publicly traded technology companies exhibit a notable improvement in operational performance after receiving a contract. Barros et al. (2020) noted that firms with prior bid experience received more favourable market reactions, thereby indicating

that effective bid experience boosts investor confidence. Furthermore, various contract characteristics elicit distinct reactions (Larson and Picou 2002; Elayan et al. 2004a; Elayan et al. 2004b).

This suggests that different types of contracts produce distinct market responses, leading to differing outcomes for domestic, foreign, and international agreements. Choi (2015) observed that geographical differences are evident. With regards to contract size (Karakuş 2017; Yao et al. 2018; Buene and Volnes 2018), the market perceives larger contracts to have greater future earnings potential. Lonkani et al. (2012) indicate that the smallest contract size exhibited significant positive returns, suggesting that small contracts and their restricted information dissemination can elicit more severe market reactions.

Attributes such as contract size, duration, and contract type have been shown to affect expectations regarding future revenue streams and operational commitments, thereby generating differential market responses (Larson and Picou 2002; Choi 2014; Karakuş 2017; Buene and Volnes 2018). Higher contract-to-sales ratios tend to elicit stronger positive abnormal returns (Karakuş 2017, and Yao et al. 2018). Conversely, some studies suggest that not all awards carry equal value (Elayan et al. 2004a). Therefore, contract award characteristics can serve as important signals to investors, but several dimensions remain insufficiently examined in the literature. Awarding criteria (e.g., MEAT versus lowest price), the nature of the awarding authority, and structural features (e.g., whether contracts are divided into lots or procured as single packages) remain largely unexplored. The current study highlights the need for more granular analysis of contract design elements to better understand how various attributes shape investor interpretations and market reactions.

H₀₁: Contract characteristics do not have a significant effect on the abnormal stock returns of FTSE 350 firms around public contract award announcements.

H₁₁: Contract characteristics have a significant effect on the abnormal stock returns of FTSE 350 firms around public contract award announcements.

Several academics argue that the valuation effect is conditional on firm-specific fundamentals. The firm's industry position affects the scale of stock price adjustments. Karpoff et al. (1999) demonstrate that, following fraud investigations, the top 100 defence contractors experienced significantly lower negative returns compared to unranked contractors, with the most substantial losses occurring among unranked firms. Thus, the firm's industry position and internal structures will influence the stock market's response. In this view, the economic significance of a contract cannot be assessed in isolation; rather, it depends on the growth, size, leverage, and profitability of the firm receiving the award. Firms' stock prices that have distinct financial profiles may therefore react differently to the same contract announcement. For example, large, highly diversified firms may exhibit relatively muted valuation effects, whereas smaller firms may experience more pronounced reactions. Likewise, highly leveraged or highly profitable firms may respond more positively if the awarded contract is perceived to strengthen future cash flow prospects. Accordingly, firm size, leverage, profitability, and growth may influence the magnitude of the market reaction to public contract awards.

H₀₂: Firm-specific characteristics do not have a significant effect on the abnormal stock returns of FTSE 350 firms around public contract award announcements.

H₁₂: Firm-specific characteristics have a significant effect on the abnormal stock returns of FTSE 350 firms around public contract award announcements.

Beyond the independent effects of contract attributes and firm fundamentals, these dimensions are likely to interact to shape market reactions. The valuation relevance of a contract may depend not only on its characteristics but also on how these align with the financial profile of the recipient firm. For instance, Choi (2015) found that major contracts awarded to large-sized firms typically yield significant returns, whereas smaller contracts have minimal impact on these firms. This suggests that a large contract can be highly significant for a small firm, whereas it may be relatively insignificant for a large, diversified firm. Meanwhile, certain contract types may be viewed more positively when awarded to highly leveraged firms if the expected cash flows help to ease their financing constraints.

Accordingly, the joint influence of contract characteristics and firm fundamentals warrants explicit examination because their combined effect may yield valuation outcomes that are not captured when considering each dimension independently.

Market reactions to contract announcements are shaped by both macroeconomic and microeconomic conditions, often showing more favourable responses during periods of economic expansion (Choi 2014). The relationship between public contract award announcements and abnormal stock returns may vary significantly across time periods, affected by existing macroeconomic and political factors. The COVID-19 pandemic in early 2020 caused significant uncertainty and volatility in international financial markets. Investor sentiment and market dynamics were highly sensitive to news and announcements during that period and this may have influenced stock price reactions to contract awards. Political considerations, such as changes in governmental authority or ruling parties, may also influence market responses to the announcement of public contracts. Changes in political leadership frequently result in alterations to policy direction, government expenditure objectives, and regulatory frameworks. The priority of infrastructure investment by a newly elected administration may elicit a more positive market response to contract awards in that sector. Conversely, instances of political instability or transition may diminish the reliability and predictability of market responses to such disclosures.

It is essential to analyse multiple time periods to ensure a thorough assessment of how external events, political settings, firm characteristics, and contract characteristics influence investor behaviour and abnormal stock returns related to public contract award announcements. This motivates the development of a third hypothesis which tests whether different time periods explain the variation in market reactions to award announcements.

H₀₃: Different time periods do not have a significant effect on the abnormal stock returns of FTSE 350 firms around public contract award announcements.

H₁₃: Different time periods have a significant effect on the abnormal stock returns of FTSE 350 firms around public contract award announcements.

2.10 Conclusion

This chapter has examined the significant role that government procurement plays in the U.K. economy, highlighting its considerable contribution to GDP. It has also reviewed the economic rationale underpinning public contracting. While public contracts offer firms reputational advantages and stable revenue streams, they simultaneously entail strict regulatory oversight, substantial compliance costs, and potential termination risks which can deter some firms from pursuing these opportunities.

In addition, the chapter has conducted a comprehensive review of the existing literature concerning stock market reactions to public contract awards, revealing that the majority of previous studies were conducted in the U.S. and primarily focused on the defence and construction sectors. This pattern indicates the need for a more comprehensive investigation across various industries. Moreover, the previous research has largely neglected the impact of recent macroeconomic disturbances such as the COVID-19 pandemic and the conflict in Ukraine.

The current study aims to enhance our understanding of the effects of public contract announcements on stock prices within the U.K. market, specifically the FTSE 350 Index. The theoretical framework is rooted in the EMH. The study empirically examines the extent to which information from contract announcements is effectively integrated into market valuations. Moreover, it is essential to explore how specific contract characteristics (e.g., contract size, type, and awarding criteria) influence the magnitude and direction of market responses. The following chapter outlines the research structure, data collection, and event study methodology employed to empirically test these hypotheses and evaluate the effectiveness of the U.K. stock market in terms of its response to contract announcements.

3. Data

3.1 Introduction

This chapter systematically examines the selection and use of public contract data sources for empirical analysis. It starts by critically evaluating the available public contract sources such as TED, Contracts Finder, and NEXIS. The chapter focuses on the breadth, diversity, and accessibility of their datasets. A comparative analysis identifies TED as the optimal source given its superior coverage, data variety, and efficiency in data extraction compared to both Contracts Finder and NEXIS.

The chapter then outlines the systematic process for data collection and sample selection. The process involves extracting public contract records from TED, identifying relevant FTSE 350 firms, and executing the necessary procedures for dataset integration. The data matching technique highlights automated similarity scoring through the fuzzy lookup tool, using firm names and postcodes as primary identifiers. Subsequently, manual verification is undertaken.

The chapter also explains the techniques used to ensure that the data are accurate, consistent, and valid, highlighting that reliable data are essential to ensure the strength and trustworthiness of the findings. The chapter concludes with a critical reflection on the strengths and limitations inherent in the adopted data-matching approach, thereby framing the empirical analysis that follows.

3.2 Data sources

This section provides a comprehensive overview of the various sources of contract award data. It analyses the primary differences and similarities among the various data formats, emphasising their distinctive characteristics. Furthermore, the section assesses the strengths and weaknesses of each type, providing details of their practical application and the associated constraints. Following this examination, the section concludes by providing the stock data sources.

3.2.1 Government contracts

The current study investigates the effect that being awarded public contracts has on firms' financial outcomes, especially their share prices. Consequently, data concerning public contracts are the primary focus of this investigation and serve as the main independent variable in the model. There are several sources of data relating to public contract awards, including TED, Contracts Finder, and Nexis, and these are addressed below.

3.2.1.1 TED

The TED database is an electronic version of the Supplement to the Official Journal of the European Union (OJEU) which is dedicated to European public procurement (La Cour and Milhøj 2013) and contains live contract notices from government authorities across the E.U. Scholars investigating various aspects of public procurement have used the TED database as a resource. Kutlina-Dimitrova and Lakatos (2016), for example, employed TED data to examine cross-border contracting. Their findings indicated that elevated contract values and specific country attributes correlate with an increased probability of cross-border awards, whereas a larger number of bids diminishes this possibility. Džupka et al. (2020) emphasise the effectiveness of public resource allocation and sustainable procurement techniques such as MEAT, finding that service contracts developed under MEAT yield greater cost savings than works contracts. Tátrai et al. (2024) investigate competition intensity, demonstrating that longer contract durations, lowest price award criteria, lot split, and the possibility of negotiations all significantly increase bidder participation. Finally, Cernăzanu-Glăvan and Bulzan (2025) present an interpretable AI framework utilising TED data to examine market fairness dynamics, offering policymakers valuable insight to promote a more transparent and equitable European public procurement setting.

Procuring authorities in E.U. countries are legally required to advertise contracts that exceed specific financial thresholds on TED. According to the European Commission (2023), these thresholds start at €143,000. The thresholds are based on various directives,

including defence (Directive 2009/81/EC), concessions (Directive 2014/23/EU), and general procurement and utilities (Directive 2014/25/EU), which cover different types of procurement. The financial thresholds vary across authority types and contract categories, as summarised in Table 3. These variations reflect the different procurement requirements and scales of operation. Central government and sub-central authorities generally share similar thresholds, whereas utilities and defence-related contracts operate under higher or more stringent thresholds. These distinctions help to tailor procurement regulations to the specific needs of each sector.

In general, the financial threshold for European contracts changes periodically and depends on the nature of the contract. Hundreds of thousands of government contracts are listed on the TED subsets database, but the figure varies from year to year and has been known to exceed 1 million. TED data can be accessed for the period 2006-2022. Generally, older data are of lower quality and have a narrower scope because the data collection structure was not fully developed at that time, leading to incomplete or inconsistent records that may affect analysis.

Table 3: Public procurement thresholds

Authority Type	Works contracts	Service contracts	Other service contracts	Subsidised services	Supplies contracts
Central government authorities	€5,538,000	€750,000	€143,000	€221,000	€143,000
Sub-central contracting authorities	€5,538,000	€750,000	€221,000	—	€221,000
Contracting authorities in the defence field	€5,538,000	—	—	—	€143,000
Utilities	€5,538,000	€1,000,000	€443,000	—	€443,000

Source: The European Commission (2023)

The TED dataset includes information about specific tenders, such as the project name, title, description, contract type, CPV code, and additional CPV codes. It also provides information about the contracts awarded, including the name of the contracting authority, the contract title, a description of the work to be performed or the products to be delivered, the contract value, the award date, and the name of the successful bidder. The database

also contains details of the procurement procedure used, including whether it was open, restricted, or negotiated, and whether the award was based on the lowest price or MEAT.

The data are divided into two files for each year: one containing notice of future procurement competitions and another containing the results of contract award notices. The data concerning awarded notices serve as the primary source of information for the current research. This distinction was made to enable data segments to be analysed without excessive hardware demands. Cross-year analysis requires both files to be merged using the notice ID. Each file is available for download as a comma-delimited value (CSV) file. TED subset CSV files save time and are easily accessible. CSV files enhance a researcher's ability to identify patterns and derive conclusions from data manipulation and analysis. However, analysts may require time to become familiar with the CSV file format and they may find the range of data distracting.

3.2.1.2 Contracts Finder

Contracts Finder includes both active contract notices from U.K. public authorities and information about the contracts awarded. Contracts exceeding £10,000 for central government and £25,000 for non-central government contracting authorities must be advertised on Contracts Finder. The TED database has been available since 2000, but because of insufficient coverage, only 12 notices were issued between 2000 and 2010, thereby indicating inadequate data quality for that decade. Since 2000, there have been 409,695 awarded notices, including 52,355 contracts valued in excess of £1,000,000 and 12,321 contracts of more than £10,000,000. The information provided concerning contract awards include the value of the contract, published date, contract start and end dates, contract type, procedure type, supplier and buyer names, and whether the contract is suitable for SMEs.

The Contracts Finder database is rarely used as a primary data source in research; rather, it is typically employed as a supplementary resource. Geoghegan and Scott (2020) used the database to demonstrate that Serco was selected as one of five providers for a £1.5

billion framework agreement, underscoring concerns about the government's allocation of major contracts to private sector companies, often without undertaking adequate capacity assessments, considering public sector alternatives, or ensuring transparent disclosure of contractual information. Henty and Ashmore (2019) conducted robustness checks using the U.K. government's Contracts Finder website to determine whether secondary care organisations held new contracts for alternative provider medical services. Gurgula and McDonagh (2023) investigated the acquisition of COVID-19 vaccines, highlighting a lack of transparency due to the limited availability of crucial vaccine supply agreements on the Contracts Finder website which were only provided in redacted form. Damm et al. (2023) examined contracts awarded to women using various data sources, including Contracts Finder.

One of the constraints associated with the Contracts Finder database is that awarded contract records can only be downloaded in batches of approximately 1,000 entries, thereby restricting large-scale extraction and increasing the time required to undertake comprehensive data collection. In addition, there are limitations in the variation of detail relative to the TED database. Furthermore, TED is a comprehensive, pan-European database for public procurement, whereas Contracts Finder is specific to the U.K. Due to its country-specific nature, Contracts Finder is more limited in scope compared to TED. Prior to Brexit, U.K. procuring authorities were required to advertise contracts on TED and U.K.-based firms had full access to public contracts from procurement authorities across the E.U. Following Brexit, however, significant changes have occurred for both U.K. procuring authorities and contractors. U.K. authorities are no longer required to advertise on TED and now primarily use Contracts Finder. Consequently, the data obtained from the TED dataset was collected in 2022.

The implications of Brexit for trade, procurement, and supply chain functioning remain contested in the literature. Ataei and Taherkhani (2019) argue that the reestablishment of borders between the U.K. and the E.U. restricts the movement of materials and equipment, thereby increasing procurement costs, particularly if accompanied by higher taxes or new tariffs on U.K. imports and exports. In accordance with these concerns, Kren and Lawless (2024) report that Brexit led to an estimated 20% reduction in E.U.–U.K.

trade flows, based on data up until December 2021 and adjusted for the discontinuation of U.K. participation in the Intrastat reporting system since January 2021. The Intrastat system applies to those engaged in internal E.U. trade. These concerns strengthen the argument for the need to secure an agreement that preserves market access and reduces additional frictions.

These concerns collectively highlight the need for a formal agreement to manage post-Brexit economic relations. In this context, both Telles and Graells (2019) highlight that the E.U. and the U.K. share a mutual interest in maintaining cooperation and safeguarding access to each other's procurement markets. This position was later operationalised through the E.U.–U.K. Trade and Cooperation Agreement which came into effect in May 2021. This agreement provides for zero tariffs and zero quotas on goods that comply with rules of origin and commits both parties to maintaining high standards in areas such as labour protections, environmental regulation, tax transparency, and state aid, supported by enforcement and dispute settlement mechanisms.

Overall, while both Contracts Finder and TED provide core information such as industry, location, award dates, awarded value, contract type, and procedure type, TED offers considerably more detailed procurement metadata. TED includes unique identifiers such as CPV codes, comprehensive contracting authority descriptors such as authority type, address, country, award criteria, contract duration, renewal status, and detailed lot-level information. In addition, TED covers award notices from all E.U. member countries, whereas Contracts Finder only reports U.K. public sector awards, thereby making TED substantially broader in terms of geographic scope. Contracts Finder is therefore more limited in coverage and functionality. Although it remains valuable for U.K.-specific procurement data, it lacks numerous procedural and classification variables found in TED. Furthermore, Contracts Finder restricts downloads to batches of approximately 1,000, whereas TED enables full-year extractions, facilitating more efficient, large-scale data collection. The key differences between the two platforms are summarised in Table 4.

Table 4: Analysis of information quality and detail in Contracts Finder and TED

Category	Information	Contracts Finder	TED
Contract characteristics	ID code indicating sector/industry	No	Yes
	Industry	Yes	Yes
	CPV	Yes	Yes
	Contract type	Yes	Yes
	Procedure type	Yes	Yes
	Awarding procedure	Yes	Yes
	Award criteria	No	Yes
	Estimated value	No	Yes
	Awarded value	Yes	Yes
	Duration	No	Yes
	Location of contract	Yes	Yes
	Framework agreement	No	Yes
	Number of lots	No	Yes
	ID lot	No	Yes
	Procurement reference	Yes	Yes
	Unique contract identifier	No	Yes
	Webpage of notice	No	Yes
Dates	Year	Yes	Yes
	Closing date	Yes	No
	Closing time	Yes	No
	Award date	Yes	Yes
	Dispatch date	Yes	Yes
	Contract start date	Yes	Yes
	Contract end date	Yes	Yes
Contracting authority	Contracting authority name	Yes	Yes
	Type of contracting authority	No	Yes
	Authority address	Yes	Yes
	Authority postcode	Yes	Yes
	Multiple authorities involved	No	Yes
	Country of the contracting authority	No	Yes
	Country of the first listed authority	No	Yes
	EU institution/type	No	Yes
	Main activity	No	Yes
	Central purchasing body/joint buyers	No	Yes
	Joint procurement	No	Yes
	Awarded by the central body	No	Yes
Awarded firm	Winning firm	Yes	Yes
	Winning firm address	No	Yes
	Winning firm postcode	No	Yes
Participation	Number of offers	No	Yes
	Number of SME offers	No	Yes
	Suitable for SMEs	Yes	Yes

	Suitable for voluntary/community enterprises	Yes	No
Regulatory / Status	Government procurement agreement coverage	No	Yes
	Contract subject to cancellation	No	Yes
	Contract subject to corrections	No	Yes
	Contract subject to renewal	No	Yes
	Directive	No	Yes
Download features	Download limit (1,000 notices at a time)	Yes	No
	Bulk download by year	No	Yes

3.2.1.3 NEXIS database

The NEXIS database contains 60 major daily newspapers from the U.S. and U.K. The business and markets sections of broadsheet newspapers carry announcements of public contract awards. This system constitutes an indirect method for gathering data relating to contract awards. The Nexis database enables data retrieval across various subjects using a custom search phrase, offering considerable scope for academic research compared to alternative databases. Numerous previous studies demonstrate the applications, including Flynn and Harris (2022) who examined U.K. newspaper coverage of public procurement. This analysis revealed patterns in media focus and highlighted governance failures such as corruption, cronyism, and supplier malpractice in construction. Bishop-Monroe and Wingender (2023) examined the effect of chief diversity officer announcements on firm value using press release data to demonstrate positive short-term stock price reactions. Huh and Park (2024) examined the relationship between social media and news sentiment using the 2016 US election as a case study to investigate public moods. The findings indicate that both public objectives and media influence public opinion, highlighting sentiment as a crucial element of comprehension. Meanwhile, Anand et al. (2025) employed Nexis to analyse business announcements concerning the metaverse, revealing positive impacts on firm value influenced by factors such as product type and branding strategy.

However, there are several drawbacks associated with relying on this database. Unlike TED or Contracts Finder, government contract awards are not always reported in

newspapers. Indeed, it is typically the case that only major awards involving well-known or high-profile firms are covered by the media. Moreover, obtaining data through keyword queries is more time-consuming than downloading data from TED or Contracts Finder. Additionally, various details regarding contract awards, such as the contract value or duration, may be incomplete and unlikely to be presented or gathered in a standard format, as is the case in TED and Contracts Finder. Given the above characteristics of the various databases, TED is considered to offer a better data source than Contracts Finder in terms of the quantity, range, and variety of its content. It is also preferred to the Nexis database due to its superior data extraction efficiency.

3.2.2 Firm-specific data

Firm-specific variables are used by researchers to highlight variations between firms and to enhance the accuracy of their findings. These variables facilitate the isolation of the effects of other factors by accounting for differences between various firms' characteristics. The selection of these variables is based on theoretical expectations and is commonly acknowledged as firm-specific controls in the literature, such as firm size, leverage, growth, and profitability (Farooq et al. 2022; Mubeen et al. 2022; Habibniya et al. 2022; Gaio et al. 2022; Alarussi and Gao 2023; Suteja et al. 2023). Firm size is commonly used as a firm-specific control variable (Ramelli and Wagner 2020) because it affects market power, economies of scale, financial performance, resource accessibility, capital acquisition, and negotiation strength. Large firms often benefit from economies of scale, but they may face greater bureaucracy (Putra 2024). Larger firms also demonstrate greater effectiveness in terms of diversification and a reduced probability of bankruptcy (Titman and Wessels 1988). Greater leverage enhances returns whilst simultaneously elevating the risk of financial loss or bankruptcy; thus, adjusting for leverage affords a more accurate assessment of its impact on performance (Putra 2024).

Growth indicates the firm's expansion, whereas profitability reflects its financial stability, both of which are critical indicators. Profitability evaluates a firm's efficiency in transforming revenue into earnings. Better profitability indicates effective resource

allocation and strict cost management, thereby enabling reinvestment, growth, and improved competitiveness. These controls enable the accurate identification of numerous firm-level variables that indicate a firm's health and internal structure and help to clarify how these factors may influence market reactions. All firm-level and market-based variables are obtained from Refinitiv and the Investing website is used to generate the risk-free rate. In addition, the current study employs the Fama-French five-factor model to compute expected returns. However, due to the absence of U.K. factors beyond 2018, all factor series (SMB, HML, RMW, CMA) were independently constructed by the researcher, thereby providing an original data contribution.

3.3 Data sources and description

Table 5 summarises the key variables used in this study and their corresponding data sources. Contract-level variables are primarily extracted from TED, including the award date, final contract value, contract type (i.e., works, supplies, services), CPV classification, awarded firm details, contract duration, renewal status, awarding authority type, contracting authority country, procedure type, number of offers received, and the award criteria (lowest price or MEAT). These variables enable a detailed description of each public contract award. It should be noted that TED contains a substantially broader set of fields, as documented in the [TED Codebook](#).

Table 5: Data sources and description

Data	Source	Description
Award date	TED	The contract award date specifies the date that the contract was signed and the conclusion date. Each award notice should be posted separately on the TED website.
Final value		The total final contract award value is expressed in euros, excluding VAT. If the value is not specified, the lowest bid is included.
Contract type		Contract types are classified into works, supplies, and services.

CPV code		The common procurement vocabulary code for the main object of the contract.
Awarded firm		Official name.
Awarded firm's postcode		Postcode.
Duration		Duration of the contract and framework agreement.
Renewal status		This contract is subject to renewal.
Type of contracting authority		Authority type classifications are described as ministries or other national or federal authorities and their regional or local subdivisions; regional and local authorities; utility sector entities; E.U. institutions or agencies; other international organisations; bodies governed by public law; and other unspecified public bodies. Further codes indicate whether the procuring body is a national federal agency, a regional local agency, or unspecified.
Contracting authority's country		Country for the first listed authority.
Procedure type		These procedure classifications include open and restricted procedures, as well as more specialised forms such as competitive dialogue, negotiated procedures with prior publication, and innovative partnerships.
Number of offers		Number of tenders received.
Award criteria		Award criteria: either the lowest price or the MEAT.
Daily stock price	Refinitiv	Daily closing price.
Firm industry		Industry classification benchmark (ICB).
Firm size		Firm size measured by total assets.
Firm leverage		The firm's leverage ratio calculated as total debt divided by total assets.
Firm growth		Growth is measured using a specific growth measure.
Firm profitability		Profitability is measured using return on assets (ROA).
Risk-free rate	Investing	3-month bond yield.
Fama-French five-factor	Constructed independently by the researcher (see Appendix 1)	SMB measures the size effect, HML captures the value effect, RMW represents profitability, and CMA reflects the investment intensity effect.

3.4 Data collection process

This section details the procedures undertaken to assemble and integrate the datasets required for the empirical analysis. The study combines procurement award data from TED with firm-level information for the FTSE 350 Index constituents in order to identify contract award events attributable to publicly listed U.K. firms. Given that these two datasets originate from different sources and have distinct structures, a structured matching approach was necessary. The data collection process consisted of three sequential stages, starting with the extraction of TED contract award notices, then the construction of quarterly FTSE 350 constituent lists, and matching the two datasets using firm identifiers and names within a quarterly alignment framework. The following subsections outline each component in detail.

3.4.1 TED

Contract data are available in the CSV file format from 2006 to 2022. In TED, there are two different types of files: ‘contract award notices’ and ‘contract notice’ files. The difference hinges on contract award notices, which outline previously awarded contracts and include crucial details such as the name of the awarded firm, contract value, date, and procedural information. In contrast, the contract notices files clarify contracts designated for future awards, offering insight into forthcoming opportunities and the companies that could potentially secure them. The two datasets can be integrated using the ‘FUTURE_CAN_ID’ identifier. The future files are used to import variables not present in the contract award notices, such as contract duration and renewal information.

Initially, only the contract award notices and CSV files were imported from TED. These files were then filtered to identify contract awards won by U.K. registered firms using the ‘Win Country Code’ field as the primary identifier. Following this filtering stage, TED award records were segmented into quarterly periods according to the award date. Because the constituents of the FTSE 350 Index are updated on a quarterly basis, with firms entering or exiting the index at each review, quarterly alignment was necessary.

Firm names from the TED records were therefore matched against the list of FTSE 350 constituents for the corresponding quarter in the relevant year. This quarterly alignment procedure was intended to reduce the risk of misclassification and ensure that contract award observations were only linked to firms that were constituents of the FTSE 350 at the time of the award announcement.

3.4.2 FTSE 350 constituent list

This investigation focuses on the FTSE 350, an index comprising the 350 largest companies listed on the London Stock Exchange (LSE), which combines both the FTSE 100 and FTSE 250 indices. According to Barclays (2023), the FTSE 100 Index comprises of the 100 most valuable companies listed on the LSE, yet it represents almost 80% of the market's total value. Approximately 15% of the U.K. market's total capitalisation is represented by the FTSE 250 Index which includes mid-capitalised companies not featured in the FTSE 100 Index. It is also important to acknowledge that many FTSE 350 firms operate predominantly in business-to-consumer markets and, therefore, may have limited direct engagement with public procurement. Accordingly, only a portion of the FTSE 350 constituents are realistically expected to bid for or be awarded government contracts. In addition, the subsidiaries of FTSE 350 firms are included because information affecting a subsidiary can influence the listed parent firm's valuation and vice versa.

The FTSE 350 serves as a benchmark for the U.K. stock market's performance because it includes the largest companies across various industries. The current research exclusively examines the companies that comprise the FTSE 350 Index. The FTSE 350 Index is subject to periodic quarterly reviews in March, June, September, and December. According to the FTSE Russell (2022) report, for each review there are multiple dates, including the announcement date, the cut-off date, and free float dates. This means that certain days are subject to a free float which restricts the number of shares that can be traded before the review's outcomes are implemented. In addition, there are rebalancing and effective dates, all of which are crucial for implementing the changes to the FTSE

350 resulting from the review. However, the precise dates that influence decisions regarding the inclusion or exclusion of companies are uncertain and may vary from one review to another.

The FTSE 350 Index undergoes quarterly reviews, necessitating a sequence of events to implement the review changes. According to FTSE Russell (2022), key dates in the review process include the indicative review market capitalisation cutoff date, the notification of indicative index membership changes to the FTSE 100 and FTSE 250 date, the index rebalance market capitalisation data cutoff date, the ICB review cutoff date, the quarterly free float and share changes cutoff date, the query period, the lockdown period, the new issues cutoff to meet the 20-day minimum trading requirement, the market capitalisation cutoff date, the ICB review cutoff date, and the quarterly share and free float changes cutoff date. Additionally, there's a nationality screen cutoff date, a notification of index membership changes, and a review effective date, although these dates are subject to change.

The cutoff date for market capitalisation, which is used to rank and determine rebalancing during index reviews, is the Tuesday before the first Friday in March, June, September, and December. The cutoff date for the ICB review is the second Friday of February, May, August, and November. Normal quarterly share and free float changes have a cut-off date set as the Friday five weeks before the effective date. Finally, the review is finalised based on the rebalancing's effective date. Constituent changes become effective at the close of business on the third Friday of the review month and are reflected on the following Monday. Therefore, FTSE 350 data are collected monthly to ensure the accurate capture of firms traded each quarter. Subsequently, these data are aggregated every three months to create a quarterly list. Monthly datasets are consolidated into quarterly lists to include unique companies, with duplicates removed for each quarter. The FTSE 350 constituent list names, along with their postcodes, were obtained monthly from Refinitiv throughout each year. Each monthly list typically includes 350 firms from the FTSE 350. However, combining three months of data for each quarter sometimes results in a list of slightly more than 350 firms, typically due to minor changes during the quarterly reviews.

3.4.3 Merging TED with the FTSE 350 dataset

The quarterly matching process undertaken to integrate the TED contract award records with the corresponding FTSE 350 constituent lists is illustrated in Figure 2. For each quarter from 2006 to 2022, the total volume of TED notices in terms of U.K. related awards, the number of FTSE 350 firms trading in each quarter, and the number of successfully matched contracts with firms were recorded. This matching procedure resulted in a total of 9,913 observations which were subsequently verified and manually cross-checked to ensure accuracy prior to empirical analysis. For instance, TED contract data consisting of 3,112 contracts for the first quarter of 2006 was matched with FTSE 350 firms for the same timeframe, yielding 63 matches. In the second quarter of 2006, 3,701 contracts were matched to 363 companies, yielding 47 matches.

The matching process yielded 9,913 records for the years 2006–2022 which required verification and confirmation. This matching process is discussed next. The integration of the TED data with the FTSE 350 was carried out using a dual criterion approach, focusing on firm names and postcodes. The matching process was conducted using Excel software and a fuzzy lookup algorithm. The similarity criterion used by this function ranged from 0 to 1, where 1 indicated a perfect match and 0 indicated no match. In the current research, matching was based on a similarity threshold of 0.5 or higher; values below this threshold were excluded.

Fuzzy lookup is an effective tool that greatly enhances the precision and efficiency of data matching. Through the automation of the record-matching process, researchers can save time, avoid errors, and improve the overall quality of the data (Smriti et al. 2022). Fuzzy retrieval assumes particular significance when dealing with large databases which are characterised by extensive data variability, including inconsistent text, misspellings, and typographical errors. It deploys a similarity algorithm to identify records that either mirror one another or exhibit close affinity, albeit with minor variations in data values. In this context, the algorithm computes a similarity by evaluating both the firm's name and postcode. This dual criterion ensures a more accurate matching process, thereby reducing the likelihood of false matches.



Figure 2: Quarterly matching of TED contract awards with FTSE 350 firms (2006–2022)

3.4.4 Fuzzy lookup output

Fuzzy lookup tools are retrieval algorithms that have the potential to generate erroneous matches. When similarity percentages are low, it is imperative to exercise greater caution and perform manual verification to ensure the accuracy of the identified matches. Manual verification helps to ensure the accuracy of the information provided. For example, instances may arise whereby exact matches occur between postcodes but with different name matches. Such an event could be attributed to a subsidiary firm operating under a distinct name, a firm that has undergone an official name change, or an error in matching. The outcomes of the fuzzy lookup process are presented in the Excel sheet outputs shown in the following figure. These results were generated by matching the firm names and postcodes of the awarded contracts between the two databases. The 'name' and 'postcode' columns were extracted from the FTSE 350 database, whereas the 'Win name' and 'Win postcode' columns were sourced from TED. The 'similarity' column quantifies the degree of similarity observed between these datasets. The results exhibit a high degree of similarity, presenting an intuitive and straightforward comparison whereby most of the results are almost identical. Conversely, low similarity signifies a more intricate matching process that necessitates more time and careful thought before making decisions.

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Ticker_Symbol	Refinitiv_Company_Name	TED_Company_Name	Refinitiv_PostCode	TED_PostCode	Similarity~e
SRP	SERCO GROUP	Serco	RG27 9UY	RG27 9UY	.98
RKT	RECKITT BENCKISER GROUP	Reckitt Benckiser	SL1 3UH	SL1 3UH	.98461538
SVS	SAVILLS	Savills	W1G 0JD	W1G0JD	.98654709
BT.A	BT GROUP	Bt	EC1A 7AJ	EC1A 7AJ	.98823529
VOD	VODAFONE GROUP	Vodafone	RG14 2FN	RG14 2FN	.98888889
BT.A	BT GROUP	BT	EC1A 7AJ	EC1A 7AJ	.98888889
SRP	SERCO GROUP	Serco	RG27 9UY	RG27 9UY	.98947368
QQ.	QINETIQ GROUP	Qinetiq	GU14 0LX	GU14 0LX	.98947368
OXIG	OXFORD INSTRUMENTS	Oxford Instruments	OX13 5QX	OX135QX	.99071207
MKS	MARKS & SPENCER GROUP	Marks & Spencer	W2 1NW	W2 1NW	.99130435
RSW	RENISHAW	Renishaw	GL12 8JR	GL12 8JR	1
AV.	AVIVA	Aviva	EC3P 3DQ	EC3P 3DQ	1
SVS	SAVILLS	Savills	W1G 0JD	W1G 0JD	1
MSLH	MARSHALLS	Marshall's	HX5 9HT	HX5 9HT	1
SN.	SMITH & NEPHEW	Smith & Nephew	WD18 8YE	Wd18 8YE	1
BT.A	BT GROUP	BT Group	EC1A 7AJ	EC1A 7AJ	1
CNA	CENTRICA	Centrica	SL4 5GD	SL4 5GD	1
SRP	SERCO GROUP	Serco Group	RG27 9UY	RG27 9UY	1
CPI	CAPITA	Capita	EC2V 7NQ	EC2V 7NQ	1
GSK	GLAXOSMITHKLINE	GlaxoSmithKline	TW8 9GS	TW8 9GS	1
PAY	PAYPOINT	Paypoint	AL7 1EL	AL7 1EL	1
GFRD	GALLIFORD TRY	Galliford Try	UB8 2AL	UB8 2AL	1
OXIG	OXFORD INSTRUMENTS	Oxford Instruments	OX13 5QX	OX13 5QX	1
RTO	RENTOKIL INITIAL	Rentokil Initial	GU17 9AB	GU17 9AB	1
BEZ	BEAZLEY	Beazley	EC3R 5AD	EC3R 5AD	1
AZN	ASTRAZENECA	AstraZeneca	CB2 0AA	CB2 0AA	1

Figure 3: Fuzzy lookup output (matched records with a high percentage of similarity)

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Ticker_Symbol	Refinitiv_Company_Name	TED_Company_Name	Refinitiv_PostCode	TED_PostCode	Similarity~e
BA.	BAE SYSTEMS	BAE Systems Global Combat System...	SW1Y 5AD	LA14 1AF	.50077922
GFS	G4S DEAD - DELIST.05/05/21	G4S Forensic Medical Services (...)	SW1E 6QT	SW1E 6QT	.50104822
BA.	BAE SYSTEMS	BAE Systems Australia	SW1Y 5AD	GU14 6YU	.50111111
BBY	BALFOUR BEATTY	Balfour Beatty Living Places Li...	E14 5HU		.5012285
BBY	BALFOUR BEATTY	Balfour Beatty Construction	E14 5HU	B15 1NU	.5012285
BBY	BALFOUR BEATTY	Balfour Beatty Workplace	E14 5HU	EC1V 1SX	.5012285
BBY	BALFOUR BEATTY	Balfour Beatty Workplace	E14 5HU	BS32 4JA	.5012285
BBY	BALFOUR BEATTY	Balfour Beatty WorkPlace	E14 5HU	ST4 4DB	.5012285
HWDN	HOWDEN JOINERY GP.	Howden Joinery	W1H 6LT	ML3 9SN	.5012285
BBY	BALFOUR BEATTY	Balfour Beatty plc	E14 5HU	SW1V 1LQ	.5012285
BA.	BAE SYSTEMS	BAE Systems Global Combat System...	SW1Y 5AD	LA14 1AF	.5015873
CPG	COMPASS GROUP	Axis Europe plc---Bell Decorati...	KT16 9BQ	SE11 5RH---ML6 9BG...	.5015876
ADN	ABERDEEN ASSET MAN. DEAD - 1...	Aberdeen Asset Management	AB10 1XL	AB101YG	.50167224
JLT	JARDINE LLOYD THOMPSON DEAD ...	Jardine Lloyd Thompson RSL Divi...	EC3A 7AW	SL67AA	.50181818
MGNS	MORGAN SINDALL GROUP	Morgan Sindall Investments Ltd	W1W 8AJ		.50209895
GFS	G4S DEAD - DELIST.05/05/21	G4S Forensic & Medical Services...	SW1E 6QT	SW1E 6QT	.50213675
GFS	G4S DEAD - DELIST.05/05/21	G4S Care & Justice Services (UK...	SW1E 6QT	SW1E 6QT	.50213675
GFS	G4S DEAD - DELIST.05/05/21	G4s Government And Outsourcing ...	SW1E 6QT	SW1E 6QT	.50213675
BA.	BAE SYSTEMS	BAE Systems Integrated System T...	SW1Y 5AD	PO31 8PF	.50242588
BA.	BAE SYSTEMS	BAE Systems Information and El...	SW1Y 5AD		.50242588
BA.	BAE SYSTEMS	BAE Systems Global Combat System...	SW1Y 5AD	LA14 1AF	.50242588
BA.	BAE SYSTEMS	BAE Systems Global Combat System...	SW1Y 5AD	TF1 6QW	.50242588
HAS	HAYS	Accountants In Demand t/a The F...	NW1 3BF	M12 6JH---SW1Y 6RJ...	.50268702
BA.	BAE SYSTEMS	BAE Systems Applied Intelligenc...	SW1Y 5AD		.50285714
BA.	BAE SYSTEMS	BAE Systems Surface Ships Ltd	SW1Y 5AD		.50285714
BA.	BAE SYSTEMS	BAE Systems Surface Ships Limit...	SW1Y 5AD		.50285714

Figure 4: Fuzzy lookup output (matched records with a low percentage of similarity)

3.4.5 Analysing the similarity distribution

The fuzzy lookup algorithm generates a similarity score between 0 and 1. Higher values indicate stronger textual similarity between firm names and postcodes in TED and those in the FTSE 350 list. To minimise the risk of misclassification and preserve the internal validity of the sample, a minimum threshold of 0.50 was set. Only matches with a similarity score of 0.50 or higher were retained for further analysis, while those below this cutoff were discarded as probable false matches.

Table 6 presents the distribution of similarity scores across all outcomes. The table shows that the largest proportion of matched observations (53.57%) falls within the 50–60% similarity range. This pattern highlights that, although the fuzzy matching algorithm provides automated first-stage alignment, the majority of the matches still sit in a range where textual similarity is imperfect. Records within this lower similarity band require more intensive manual verification to ensure that the contract-winning entity in TED genuinely corresponds to the correct listed FTSE 350 firm. By contrast, matches falling within higher similarity bands, such as above 75% and especially above 90%, are more likely to represent accurate, direct matches and therefore require substantially less manual intervention.

Table 6: Distribution of the percentage of similarity

Similarity range	Percentage
90 to 100	9.81%
75 to 90	15.20%
60 to 75	21.41%
50 to 60	53.57%

3.4.6 Manual data verification procedure

A total of 9,913 cases required manual verification due to overlapping matches between the two datasets. Consequently, the review process was conducted in several structured stages. The primary objective of the manual verification process was to correct errors arising from the fuzzy lookup results and reduce researcher subjectivity by employing a systematic approach that combined firm name and postcode matching. The FTSE 350 firm names were first arranged alphabetically to streamline verification, thereby enabling efficient cross-referencing with corresponding entities in the TED dataset. This procedure afforded comprehensive access to firm-level information through the Financial Analysis Made Easy (FAME) database which provides up to ten years of financial statements for more than three million U.K. businesses. The database includes details of corporate group structures, subsidiaries, shareholder composition, and records of legal name changes, as well as monthly updates (Alkaraan and Northcott 2006). This integration significantly enhanced both the accuracy and efficiency of the matching process. As shown in Figure 5, the manual verification procedure involved several stages to ensure the accuracy of the matching process.

1. **Exact name matches:** In the first category, cases are encountered where firm names are identical in both datasets. When the postcode also aligns, these results are included in the analysis. However, if the postcode differs, additional investigations are necessary.
2. **Partial name matches:** The second category deals with cases where firm names partially align. Inclusion depends on an exact postcode match, with any variation requiring further scrutiny.
3. **Mismatched names:** The third category occurs when firm names differ while the postcodes remain consistent. Additional research is necessary to determine if the name differences indicate the presence of subsidiary entities. Results are excluded if neither the name nor the postcode aligns.

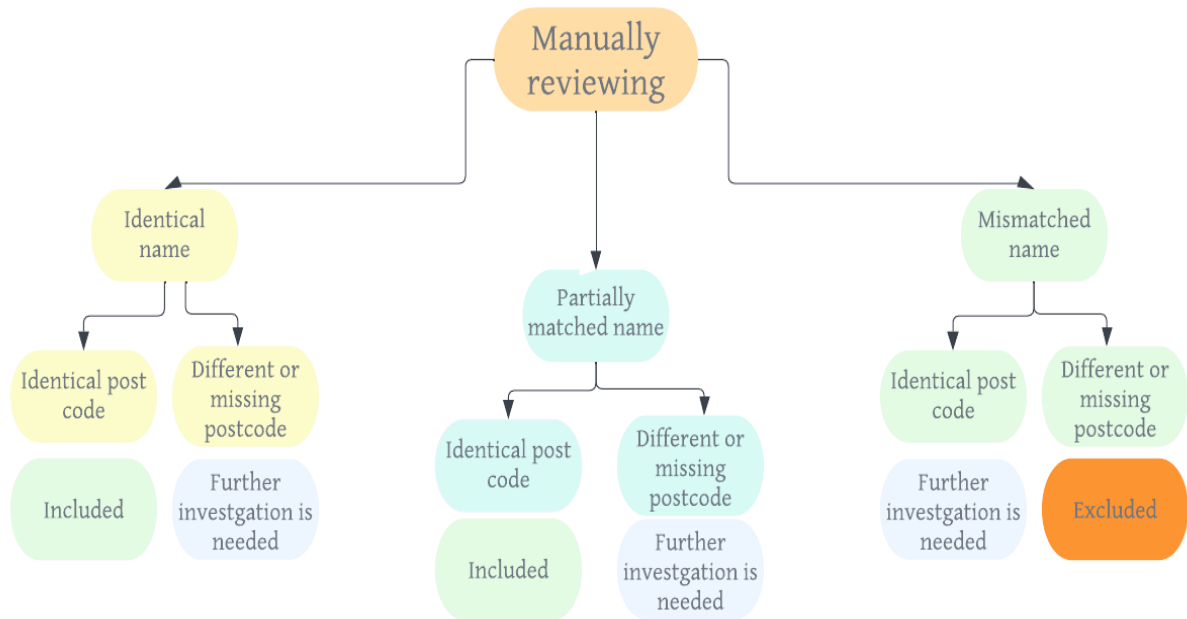


Figure 5: Manual data verification procedure

In situations that require further inspection, a comprehensive review of a firm's records in the FAME database is initiated. This examination is conducted to investigate the distinctions in firm names that may arise due to relationships with subsidiaries or alterations in the firm's legal name or to determine whether this matching indicates a complete lack of relationship.

For example, Chartwells is regarded as having matched results as a subsidiary of the Compass Group. While Chartwells has a distinct corporate name, it shares the same postcode as its parent entity, resulting in a high similarity score in the matching results. Figure 6 provides another illustrative example and refers to ViiV Healthcare U.K. Ltd. which is aligned with GlaxoSmithKline (GSK). The current study considers ViiV Healthcare, an entity operating under GSK PLC, to be a match. GlaxoSmithKline underwent an official name change to become GSK. Additionally, the FAME database is able to indicate instances of 'name risk,' whereby a firm's name is not unique and may be similar to that of another entity.

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In certain scenarios where name matches are identical but postcodes differ and there is no indication of name risk, this may suggest that a firm has relocated its official premises. Each matching result with a name variation or a different name match that had an identical postcode underwent these review steps to verify the firm name, any related subsidiaries, or name changes. This procedure was undertaken to ensure the accuracy of the matching results and identify any inaccuracies or errors in the name match.

The screenshot shows the FAME interface with the 'fame' logo at the top left. A vertical sidebar on the left contains icons for a building, search, list, document, and bell. The main content area displays information for 'ViiV Healthcare Trading Services UK Limited' in Brentford, England. It includes a 'ViiV Healthcare' logo, the company name, and location. Below this, it states 'Active' and 'Registered n° is 06982415'. To the right, it says 'Private company' and 'The Global Ultimate Owner of this controlled subsidiary is GSK PLC'. A 'Key information' section follows, showing the address 'G S K House, 980 Great West Road, Brentford TW8 9GS, England', legal form 'Private Limited', activity 'Wholesale', and date of incorporation '05/08/2009'. Buttons for 'Actions' and 'Explore' are visible at the top right.

Key information		
G S K House, 980 Great West Road Brentford TW8 9GS England	Legal form: Activity: Date of incorporation:	Private Limited Wholesale 05/08/2009

Figure 6: ViiV Healthcare's information on FAME

The screenshot shows the FAME interface with the 'fame' logo at the top left. A vertical sidebar on the left contains icons for a building, search, list, document, and bell. The main content area displays information for 'GSK PLC', previously known as GLAXOSMITHKLINE PLC, located in England - Brentford. It lists the industry as 'Chemicals, Petroleum, Rubber & Plastic' and provides financial data: '29.3 bn GBP turnover (2022), 90,422 employees'. A search bar at the top of the main area contains the text 'GlaxoSmithKline'.

GSK PLC	
previously known as GLAXOSMITHKLINE PLC	ENGLAND - Brentford
Chemicals, Petroleum, Rubber & Plastic	29.3 bn GBP turnover (2022), 90,422 employees

Figure 7: GlaxoSmithKline's information on FAME

3.4.7 TED-FTSE 350 matching results

The TED dataset comprises contract notices organised into thematic sections and it is noteworthy that a single notice often encompasses information concerning multiple lots and contract awards. Conversely, multiple contract award notices can sometimes be linked to a single lot. This interconnection among various data elements can result in the duplication of specific data segments. To address this complexity in the current dataset, a systematic approach was employed which used each firm's award date to detect duplicate contract information. In cases where a firm participated in several lots of the same contract. These cases were meticulously identified using firm-specific International Securities Identification Numbers (ISIN), award dates, contract identification numbers,¹ and the contract issuer's authority name. As a result, 1,259 observations were deleted and consolidated as duplicates, as detailed in Table 7. However, different contracts were awarded to the same firm by various authorities on the same award date and these were also combined into a single case, resulting in an additional 243 observations being consolidated as duplicates.

After reviewing cases related to the financial industry, 364 observations were deleted. Fama and French (1992) exclude financial firms from their analysis because high leverage is characteristic of the financial sector and may not signal financial distress as it does for non-financial firms. Academic researchers typically follow this approach (Foerster and Sapp 2005; Barber and Lyon 1997; Alves 2013; Adrian Friedman and Muir 2015; Abeysekera 2016). Additionally, Firth et al. (2008) suggest that excluding financial sector firms improves sample homogeneity. Additionally, 69 cases with missing award dates were excluded because the current study applies an event study methodology and dates are crucial for the analysis. Event dates that fell on non-trading dates were evaluated on the next available trading date, with some dates shifting by one or two days to align with

¹ The contract identifier serves as the primary identifier for all variables at the contract notices level. Some identifiers are duplicated, indicating that the same contract has been awarded to multiple companies or divided into lots. In rare cases, a contract divided into lots may be awarded to the same company at different times. In such cases, the contract keeps the same ID and ISIN but has a different award date. The prevailing trend in the U.K. suggests that the allocation of contracts to multiple companies is rare. There appears to be a preference for awarding contracts to a single company.

the nearest trading day, particularly when contracts were awarded on bank holidays or weekends or when bank holidays differed between the E.U. and the U.K. The final usable sample was 2,294 individual events spanning 2006–2022, representing 154 unique firms that were constituents of the FTSE 350 Index. This method made it possible to efficiently manage and unify the data, ensuring that distinct award notices for each firm received appropriate representation and consideration.

Table 7: Results of matching FTSE 350 firms with the TED database results

Description	Number of records
Initial matched sample	9,913
Manually excluded irrelevant matches	(5,703)
Total matched data	4,210
Consolidated duplicates	(1,259)
Consolidated award date ISIN duplicates	(243)
Removing the financial industry	(364)
Removing missing award dates	(69)
Final sample ²	2,294

² Note: Sample sizes reported in this section are based on procurement contracts successfully matched to FTSE 350 firms. The final estimation sample is smaller because some matched firms had missing or unavailable financial market data. The reduction in sample size primarily reflects the unavailability of daily stock return data required for the event study (e.g., insufficient trading history, delisted firms, or trading suspensions), rather than unsuccessful matching of procurement records. For variables with missing values, the sample size is further reduced according to data availability.

3.4.8. Strengths and weaknesses of the matching method

The matching approach employed in the current study combines automated fuzzy matching with manual verification, a hybrid approach that balances efficiency with accuracy. This integration strengthens the reliability of the linkage between TED contract award announcements and their corresponding FTSE 350 firms. The fuzzy matching technique is particularly effective in handling complex data inconsistencies such as variations in spelling, letter casing, formatting errors, missing values, and typographical mistakes. By accommodating these irregularities, the method ensures a broader and more inclusive identification of potential matches that may otherwise be overlooked by exact matching algorithms.

However, this approach is not without its limitations. Despite its adaptability, fuzzy matching can sometimes generate false positives, whereby unrelated entities are incorrectly identified as matches due to superficial textual similarities. Such instances necessitate additional manual validation, increasing the time and resources required to ensure data accuracy. Thus, while the hybrid method substantially enhances matching precision and dataset completeness, it also introduces trade-offs between automation efficiency and the need for manual review. The manual review component is susceptible to human error, even with meticulous oversight, particularly when handling extensive datasets. Additionally, subjectivity in the manual review process can introduce inconsistencies between researchers, thereby affecting the reliability and reproducibility of the results. The researcher and the supervisory team collaboratively examined complex cases and reached a consensus regarding how to manage them. The procedure involves matching companies with different names due to name changes, variations, or subsidiaries and verifying these matches through the FAME database to ensure accurate relationships. Additionally, changes in firm addresses or postcodes pose further challenges in terms of maintaining accurate data alignment. To reduce subjectivity in the manual checking stage, multiple checks were conducted at different time intervals. The researcher reviewed the matching results several months after the first assessment and identified minor errors.

3.5 Conclusion

This chapter offered a thorough overview of the data sources used. Specifically, government contract data and financial market information were analysed, along with a detailed account of the procedure for assembling the final analytical dataset. The data integration process comprised several key steps: acquiring contract records from the TED database, identifying FTSE 350 companies, merging the two datasets, assessing similarities using automated tools, and subsequently applying manual verification to ensure the highest possible accuracy of matches. To ensure transparency and clarity in the research process, the matching procedure has been described in detail. Each phase of the procedure has been systematically outlined to illustrate how the matching between datasets was conducted. In addition, the advantages and limitations associated with each stage have been discussed.

This chapter adopted a matching approach which illustrates a rigorous, systematic, and transparent procedure, thereby improving the validity and reliability of the research. This thorough approach establishes a robust foundation for the subsequent chapters. The following chapter outlines the data description, analysis, and methodology, before presenting the empirical results and conclusions from the event investigation.

4. Data analysis

4.1 Introduction

This chapter presents a detailed description and analysis of the dataset used in the current study, focusing primarily on the characteristics of the public contracts awarded to firms comprising the FTSE 350 Index. The purpose of this chapter is to provide a clear understanding of the data's structure and the patterns underlying public procurement activities which form the foundation for the subsequent empirical analysis of stock market reactions. The chapter starts by outlining the key descriptive statistics of the contract-level dataset, including information concerning contract identifiers, duration, lot numbers, the number of awards, and contract award values. This part is followed by analysis of event frequency and timing, examining the temporal distribution of contract announcements and the relevance of event dates for market evaluation. Subsequent sections explore the industrial and sectoral composition of awarded contracts using industry classifications and the CPV framework. The chapter also identifies the distribution of contracting authorities across national, regional, and local levels, as well as across countries. Finally, the chapter reviews the awarding procedures, criteria, and contract types to highlight the diversity and complexity of procurement practices represented in the dataset.

4.2 Descriptive statistics of contract characteristics data

Table 8 presents summary statistics for key variables related to public contract awards. These variables include the lot number, number of awards, number of offers, contract duration, award value, and final value. The details of each variable are discussed in the subsections that follow.

Table 8: Descriptive statistics of contract characteristics data

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Lot number	2,261	3.807	15.642	0	431
Number of awards	2,294	13.433	32.723	1	473
Number of offers	2,086	13.335	40.678	1	999
Duration	1,069	47.104	35.925	1	360
Award value (£ million)	2,018	111.386	402.857	0	2,825.785
Final value (£ million)	2,002	13.915	52.553	0	392.498

4.2.1 Lot number

The lot number indicates whether the contract was awarded as part of a lot, indicating whether multiple contracts are awarded to a single firm on different occasions, separated to be awarded to one firm, or if a single contract is awarded to several firms. The number of lots reported in each contract award notice ranges from zero to 431. Approximately 34 cases of missing data were replaced with a value of zero. The majority of cases are recorded with zero lots, appearing 1,138 times and representing 50.3% of the dataset. Contracts with one lot occur frequently, with 453 contracts representing 20%. Approximately 125 awarded contracts were divided into two lots, accounting for 5.5% of the dataset. Meanwhile, 104 cases were divided into three lots (4.6%) and 85 cases were divided into four lots (3.7%). As the number of contracts lots increases, the percentage of contracts decreases gradually, with fewer contracts having five or more lots. Contracts with five lots account for 1.9% of the dataset, while those with six lots account for 2.6%. The percentage further declines for contracts with seven lots, dropping to 1.6%, and for contracts with eight lots, dropping to 1.1%. As the number of contracts lots increases, the percentage continues to decrease, with contracts having nine or more lots comprising less than 1% of the dataset (see Appendix 2 for further details). Contracts for ten lots are particularly rare. Overall, this analysis indicates that the frequency of contracts by number of lots decreases as the number of contracts lots increases, with a significant proportion of contracts having fewer lots.

4.2.2 Number of awards

The number of awards indicates whether a contract was granted to one or more firms, reflecting the total number of contract awards associated with a given contract award notice. This may involve either a single contract distributed among multiple suppliers or distinct contracts, often divided into lots awarded to one or more suppliers. This varies between 1 and 473. Contracts with a single award predominate, accounting for 1,022 instances or 44.55% of the total. This group is followed by 162 instances (representing 7.1%) involving two awards for the same contract and 137 instances (representing 6%) involving three awards. The frequency of occurrences declines significantly as the number of awards per contract increases, particularly for contracts with a high number of awards, which are increasingly rare.

4.2.3 Number of offers

The number of offers indicates the total bids or tenders received for the contract. The number of offers ranged from 1 to 999, with higher values indicating greater competency. The most frequent outcome was a single offer, representing 14.03% of the sample, followed by three offers (12.97%) and two offers (11.39%). As the number of offers increases, both the frequency and the percentage decrease, thereby indicating that the majority of contracts received fewer offers.

4.2.4 Contract duration

The contract duration variable is measured in months, ranging from 0 to 360. An outlier in 2008 reported a negative duration which was identified as a data-entry error and subsequently corrected to 1 month. The mean duration is 47 months, while the standard deviation of 35.93 indicates substantial variability in the data, thereby suggesting that the values vary widely. This variable had substantial missing data, with only 1,069 observations available.

4.2.5 Contract award value

The awarded contract value is documented in millions, excluding value-added tax (VAT). TED is regulated by the Supplement to the OJEU, concentrating on European public procurement and, therefore, all contracts are denominated in euros. The award value variable denotes the total contract award amount in euros, excluding VAT. If this value is missing, the lowest bid is used instead. While the final value represents the award amount, if these values are missing, all relevant data fields are reviewed to determine the accurate figure. As a result, this analysis primarily relies on the award value, with the final value serving as an alternative when needed. Moreover, if a firm receives multiple contracts awarded on the same day, the values are summed and treated as a single case. Moreover, some of the reported values are artificially low because they reflect only unit prices or because contracting authorities choose not to disclose the actual contract value, sometimes citing confidentiality. Subsequently, the aggregated contract value is winsorised to reduce the impact of extreme values and outliers.

Lonkani et al. (2012) categorised contracts into five budget ranges labelled as XS (extra small), S (small), M (medium), L (large), and XL (extra-large), offering a structured approach to analyse contracts based on monetary value. Similarly, Yang et al. (2014) analysed contracts by focusing on firm size, examining how the characteristics and scale of contracting firms influenced outcomes. In contrast, Elayan et al. (2004) adopted a financial perspective, using the ratio of contract size to total assets to assess the relative financial impact of contracts on firms. In the current study, contract award values are initially divided into terciles, which are the three equal segments of a dataset. This segmentation facilitates subsequent analysis based on contract size, thereby affording a more detailed exploration of its effects which is presented and discussed later.

Of the 2,294 contract awards in the sample, contract award values were available for 2,018 of these observations. Contract values in the dataset range from €1,120 to €2.83 billion, reflecting substantial variation in how they are recorded rather than genuine differences in contract scale. The available values in the TED database are highly right skewed, showing a median award value of €3.1 million, whereas the mean is €141 million and the maximum is €18.3 billion, with a skewness of 12.9 and a kurtosis of 243.

Inspection of the extreme observations shows that they do not represent genuinely large contracts won by the listed firm but rather reflect the way in which contract values are recorded in TED. In particular, these values do not necessarily correspond to a single, discrete contract. In some cases, they represent the combined value of multiple lots within a single contract or the aggregated value of several contracts awarded on the same day. The largest values are, in most cases, framework agreements, for which TED records the total estimated value of the entire framework rather than the value of any individual contract award.

TED records the estimated maximum value of the entire framework over its full duration and across all suppliers admitted to it, rather than the value awarded to the individual firm (European Commission, 2020). As a result, identical values of several billion euros can appear against different firms admitted to the same framework. In addition, awards above €100 million were made to a group of economic operators, in which case the recorded value relates to the consortium as a whole rather than to any single firm.

At the lower end of the distribution, low award values are where the contracting authority did not disclose the value, and values below €4,500 are frequently reported as unit prices rather than as total contract values. The notes accompanying the TED open data acknowledge that the quality of the information supplied by contracting authorities is often low and that the values of large contracts that appeared to be incorrect have since been replaced by manual estimates (European Commission, 2020). Following Aguinis et al. (2013), such observations are treated as error outliers arising from measurement rather than as genuinely extreme values and are therefore addressed through exclusion rather than statistical trimming or winsorisation. Accordingly, contract award values below €4,500 and above €100 million were excluded. The final sample consists of 1,656 contract announcements.

Following this, the IQR method (Tukey, 1977) was applied to verify that no outliers remain in the retained sample. Values are classified as outliers if they fall below the first quartile minus 1.5 times the interquartile range, or above the third quartile plus 1.5 times the interquartile range, where the interquartile range is the difference between the third and first quartiles. Because this criterion assumes an approximately symmetric

distribution (Hubert and Vandervieren, 2008), it was applied to the natural logarithm of the award value rather than to the value in euros. On the logarithmic scale, the retained sample is approximately normally distributed, with a skewness of -0.18 and a kurtosis of 2.35 , and no observation falls outside the fences defined by the first quartile minus 1.5 times the interquartile range and the third quartile plus 1.5 times the interquartile range. Winsorisation at the 1st and 99th percentiles were also considered but leaves the distribution essentially unchanged, since the 1st and 99th percentiles of the raw values are €1 and €2.8 billion respectively.

Table 9 presents the terciles of the final sample. In addition to the mean and standard deviation, the table reports the median and the mean and standard deviation of the logarithm of the award value. The three groups are evenly spaced on the logarithmic scale, with mean log values of 12.08, 14.53, and 16.95, and show similar within-group dispersion, with standard deviations of 1.06, 0.67, and 0.78. The large differences between the group means in euros are therefore a consequence of the log-normal distribution of contract values rather than of heterogeneity within the groups.

Table 9: Dividing the data into terciles based on contract award value

Contract size	N	Mean (€)	SD (€)	Median (€)	Min (€)	Max (€)	Mean ln(value)	SD ln(value)
Small contract size	552	257,812	175,840	229,311	4,794	656,292	12.08	1.06
Medium contract size	552	2,535,062	1,632,448	2,045,886	658,172	6,576,063	14.53	0.67
Large contract size	552	31,173,961	24,872,267	21,849,608	6,600,854	99,589,856	16.95	0.78

Note: This table divides the final sample of 1,656 contract announcements into three groups of equal size based on the contract award value in euros. Award values below €4,500 and above €100 million are excluded.

4.3 Analysis of event frequency over time

The dataset reveals a clear trend of increasing event volume over time, as shown in Figure 8. Between 2006 and 2007, a slight but noticeable increase in events was observed. The year 2008 saw a slight drop which is attributed to the onset of the financial crisis and the prevailing economic atmosphere. Subsequently, the years 2009 and 2010 saw a greater number of notices, peaking in 2016 with 201 events. The number of original and deduplicated events notably declined in the years 2021 and 2022 and this can be attributed to the effects of the COVID-19 pandemic and Brexit which led to U.K. public contracts not being listed on TED from 2022 onwards and to U.K. contractors no longer enjoying full access to public contracts in E.U. countries. Figure 8 illustrates the trends in contract award notices over time. Increases in award notices can be attributed to new countries joining the E.U., such as Bulgaria and Romania in 2007 and Slovenia and Croatia in 2013. Additionally, procuring authorities have become more compliant with obligations to upload data to TED, further contributing to the increase in award notices.

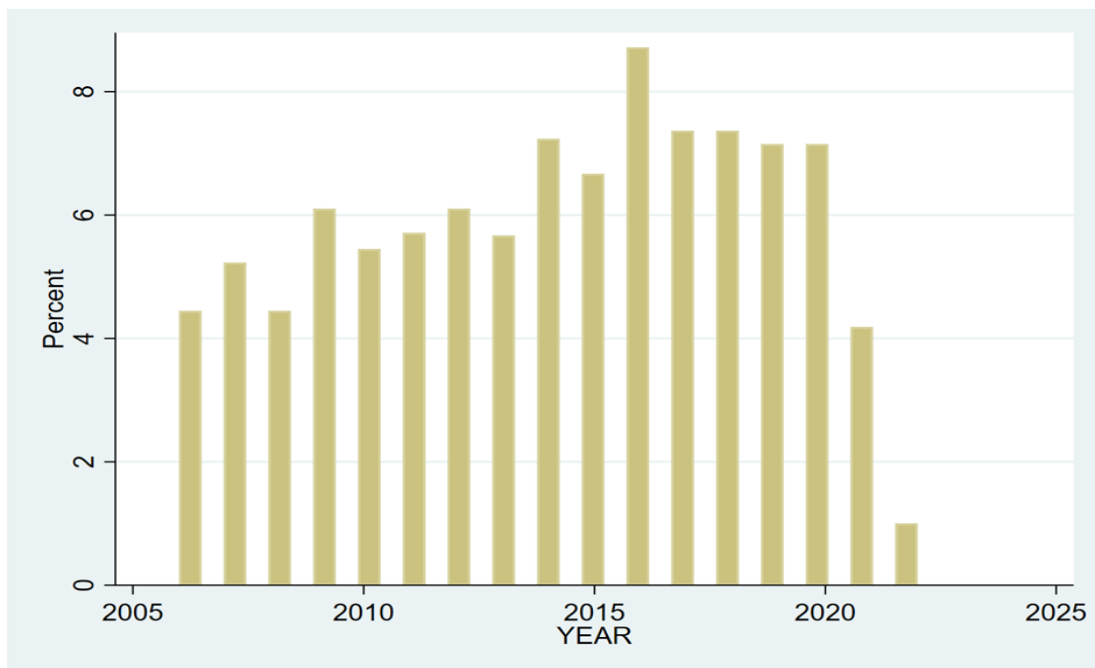


Figure 8: Events across all years

4.4 Industry classification analysis

In this dataset, the industry classification is determined using the ICB. The ICB classification is an internationally recognised standard overseen by FTSE Russell. Phillips and Ormsby (2016) state that the ICB was established through a merger of the Dow Jones and the Financial Times Stock Exchange (FTSE) Group classifications in 2004. The classification system plays a pivotal role in categorising companies and securities at four hierarchical levels, facilitating the segmentation of markets into distinct sectors within the macroeconomy. The ICB system comprises 11 industries, 20 super sectors, 45 sectors, and 173 subsectors, forming a hierarchical framework with varying levels of detail. Industry and super sector categories are ideal for sector-oriented investment strategies, offering a broader view. On the other hand, sector and subsector levels provide greater granularity, enabling precise classification and in-depth analysis of the global equity market.

Table 10 presents the yearly distribution of the data by ICB classification, with financial sector observations excluded due to their capital structures. Industrials account for 53.55% of the sample, as evidenced by the significant frequency of 1,225 in the table below. Significant fluctuations are observed in the healthcare sector, with a peak of 46 in 2018 and moderate event numbers in other years. Meanwhile, the telecommunications and utility services have periodic phases of increased activity or investment, potentially attributable to regulatory modifications. These are indicated by the occasional increases in both sectors, as demonstrated by telecommunications in 2013 and utilities in both 2016 and 2020. The frequency of consumer discretionary events has remained relatively consistent, with a slight increase towards the end of the study period. Finally, the basic materials, energy, consumer staples, and real estate sectors have particularly low event counts during the period, thereby suggesting a scarcity of qualifying events.

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Table 10: Yearly distribution of data based on ICB

Year	Industry										
	Industrials	Telecom	Utilities	Consumer discretionary	Technology	Healthcare	Real estate	Consumer staples	Energy	Basic materials	Total
2006	53	17	8	9	3	2	3	2	4	1	102
2007	77	6	17	6	3	1	1	4	4	1	120
2008	71	7	6	4	3	2	3	5	1	0	102
2009	79	10	10	11	6	7	5	11	1	0	140
2010	68	5	9	12	11	7	6	6	1	0	125
2011	75	9	5	15	8	3	6	9	1	0	131
2012	73	17	15	6	8	5	11	5	0	0	140
2013	68	21	10	13	1	5	5	5	2	0	130
2014	104	14	14	10	4	1	9	5	4	1	166
2015	79	21	12	11	7	3	11	3	6	0	153
2016	116	12	18	13	11	13	6	1	8	2	200
2017	72	15	9	19	10	30	7	3	4	0	169
2018	58	15	13	15	8	46	9	3	2	0	169
2019	92	14	10	16	11	14	6	0	1	0	164
2020	81	10	22	10	17	14	7	2	0	1	164
2021	49	5	8	11	6	7	7	0	1	2	96
2022	10	2	1	3	4	1	1	0	0	1	23
Total	1,225	200	187	184	121	161	103	64	40	9	2,294

4.5 Subsector classification analysis

This dataset comprises of ten ICB industries and various subsectors, presenting frequency counts and percentage shares. The sample consists of 2,294 contracts divided into ten main ICB industries, excluding the finance industry. Table 11 illustrates the distribution of data across the various industries and subsectors. A considerable percentage of the sample comprises industrial subsectors. Consequently, it is essential to focus on the analysis of these subsectors to enhance comprehension of the overall industry structure and the fundamental trends within the dataset. There are 728 occurrences of industrial support services, 173 occurrences of aerospace and defence, and 176 occurrences of construction and materials. This statistic indicates a strong focus on services designed to streamline industrial operations.

The telecommunications industry, consisting of 200 contracts, exhibits significant engagement, with electricity and telecommunications service providers being the primary sectors. The next notable industry is technology, mainly focused on software and computer services, featuring 121 contracts. Among the 161 instances, healthcare, pharmaceuticals and biotechnology stand out as the most prevalent, accounting for 113. This illustrates the importance of pharmaceutical and biotech companies. Consumer discretionary encompasses various sectors, including consumer services, retail, and travel and leisure, showcasing a wide range of activities focused on consumers.

Minor industries, such as basic materials and energy, represent small segments of the overall total. The energy sector is solely represented by contracts in oil, gas, and coal. The real estate sector is primarily characterised by real estate investments, with services being represented by 101 contracts, highlighting an emphasis on service-oriented real estate operations and investments. While consumer staples are balanced across beverages, food producers, personal care, drugs, and grocery stores, their occurrence is notably lower than in other sectors.

Table 11: Data distribution by industry and subsector

ICB industry	Freq.	ICB sector	Freq.	Percentage
Basic materials	9	Chemicals	3	0.39
		Industrial metals and mining	6	
Energy	40	Oil, gas, and coal	40	1.74
Consumer staples	64	Beverages	7	2.79
		Food producers	28	
		Personal care, drug and grocery stores	29	
Real estate	103	Real estate investment trusts	2	4.49
		Real estate investment and services	101	
Technology	121	Technology hardware and equipment	1	5.27
		Software and computer services	120	
Healthcare	161	Healthcare providers	21	7.02
		Medical equipment and services	27	
		Pharmaceuticals and biotechnology	113	
Consumer discretionary	184	Personal goods	3	8.02
		Automobiles and parts	10	
		Media	24	
		Household goods and home construction	30	
		Retailers	33	
		Travel and leisure	40	
		Consumer services	44	
Utilities	187	Waste and disposal services	12	8.15
		Gas, water, and multi-utilities	84	
		Electricity	91	
Telecommunications	200	Telecommunications equipment	2	8.72
		Telecommunications service providers	198	
Industrials	1,225	Industrial engineering	5	53.4
		Industrial transportation	25	
		General industrials	51	
		Electronic and electrical equipment	67	
		Aerospace and defence	173	
		Construction and materials	176	
		Industrial support services	728	
Total	2,294		2,294	100

4.6 Common procurement vocabulary

Building on the need for standardised classification systems in procurement, CPV serves as a pivotal framework within the E.U. Designed to ensure consistency and transparency, CPV is widely used by contracting authorities to standardise and unify procurement contracts' descriptions. The European Commission approved a proposal from the European Parliament and the European Council to establish the CPV as the primary classification system for public procurement in the E.U. The initial CPV Regulation was adopted in 2002 and has since been used by contracting authorities and entities to create uniform references for describing procurement contracts (Gavurova and Kubák 2021). According to Paredes et al. (2008), CPV codes were introduced by the E.U. to streamline the classification of goods, services, and works across diverse procurement-related tasks.

The CPV division system follows a hierarchical structure, similar to a tree. Any classification code could theoretically be used for a call for tenders. However, it is strongly advised to avoid using codes at the top of the tree structure because they may mislead potential suppliers (European Commission 2008). Each classification code in this system can be used when issuing calls for tenders, with the first three digits of each code serving as unique division identifiers. The CPV system significantly enhances transparency in public procurement by simplifying the identification of business opportunities in the OJEU. It also reduces the risk of translation errors due to the availability of CPV codes in 22 official languages, facilitating the establishment of a public procurement information system and streamlining the drafting of procurement notices, ultimately benefiting contracting authorities and entities (European Commission 2008). These 15 divisions offer a comprehensive framework for classifying a wide range of procurement-related goods and services, thereby facilitating efficient procurement practices across diverse industries and sectors.

The distribution of the dataset across CPV divisions is presented in Table 12. The sample comprises of 2,288 distinct CPV codes. The construction and real estate sector recorded the largest number of records, followed by technology and equipment and computers and related services. These sectors appear to be focal points for procurement activities in the U.K. Conversely, the finance and related services sector registered the fewest records.

This analysis offers insight into the distribution of records across various CPV sectors within the sample. On the other hand, divisions such as computer and related services, printing and publishing, mining and ores, transport and related services, and energy and related services recorded moderate levels of involvement. The variation in contract distribution demonstrates the diversity of procurement activities and the extensive range of industries and services represented in the dataset.

In this study, the first three digits of the CPV codes frequently overlap across multiple divisions, leading to ambiguity and making it difficult to assign contracts to a single, definitive category for analysis. By examining only the first three digits of a CPV code, it can be associated with multiple CPV divisions. However, when additional digits are considered, it is possible to gain a more specific description. For instance, the dataset contains more than 881 distinct CPV codes, each providing a unique and detailed description of the individual contracts. The CPV system consists of eight-digit codes. The first two digits (XX000000) denote the divisions, whilst each additional digit offers a more detailed classification. The groups are represented by the first three digits (XXX00000) and the classes by the first four digits (XXXX0000). Furthermore, the first five digits (XXXXX000) specify the categories, thereby providing more specific information, whereas the final three digits offer greater accuracy within each CPV.

This hierarchical structure allows for a progressively detailed classification of procurement activities, enabling precise categorisation and organisation of procurement-related information. These codes can span multiple divisions, resulting in potential overlaps. The first three digits of CPV codes often denote the CPV group. For example, ‘training services in defence and security materials’ is categorised as a CPV sector based on the first three digits, yet it can be associated with two CPV divisions: ‘education’ and ‘defence and security.’ It is important to note that certain descriptions may relate to more than one CPV classification. Moreover, it is common practice for businesses to use multiple CPV codes, suggesting that a single firm can manage diverse contract activities, works, or services (see Appendix 3 for further clarification).

Table 12: Distribution of data across CPV divisions

CPV divisions	Freq.	Percentage
Finance and related services	27	1.18
Materials and products	37	1.62
Research and development	54	2.36
Defence and security	59	2.58
Education	61	2.67
Agriculture and food	68	2.97
Energy and related services	93	4.06
Transport and related services	114	4.98
Mining and ores	167	7.3
Printing and publishing	200	8.74
Computer and related services	227	9.92
Other services	248	10.84
Technology and equipment	408	17.83
Construction and real estate	525	22.95
Total	2,288	100

4.7 Contracting authorities

The dataset reveals a diverse array of contracting authority types. As shown in Table 13, the dataset is distributed across various types of contracting authorities. Directive 2014/24/EU (2014) defined the contracting authorities as the state, regional or local authorities, bodies governed by public law, or associations formed by one or more of these authorities or bodies governed by public law. In cases where the contracting authority's

initial country was not the U.K., the data were adjusted and categorised as international and European organisations. This classification is determined by the geographical location of the contracting authority, specifically based on its address and city. This results in a total of 180 records for international and European organisations, which constitute 7.8% of the dataset. The utilities sector category comprises of 138 instances, the ‘not specified’ category accounts for 9 instances, and the ‘other’ category includes 178 instances. Following the consolidation of the U.K. utilities sector and the ‘other’ category, a total of 325 instances are represented, constituting 14.17% of the overall dataset.

The U.K. ministry or any other national or federal authority or agency, represented by 412 instances, collectively constitutes 17.9% of the dataset. This category comprises two subcategories: the U.K. ministry or any other national or federal authority, represented by 334 instances, and regional or local subdivisions and national or federal agencies or offices, represented by 78 instances. The dataset offers a diverse representation of national and federal entities at different administrative levels. The U.K. regional and local authorities or agencies collectively account for 604 instances, representing 26.3% of the total. This category includes two subcategories: regional or local authority, with 586 cases, and regional or local agency or office, with 18 occurrences.

According to Directive 2014/24/EU (2014), public authorities include state, regional, or local authorities. This term encompasses not only the state’s executive authority but also all state entities, such as state administrations and regional or local authorities. In general, authorities create laws and regulations, whereas agencies implement them and operate in specialised fields. Consequently, authority is the official permission or right to act. Typically, agencies or offices have more limited purchasing capacity compared to their governing authority. Regional and local authorities or agencies exhibit a higher procurement volume when compared with the ministry or any other national or federal authority or agency. The remaining unspecified, other, and utility sectors were merged due to their limited observations with the aim of simplifying the dataset and facilitating clearer analysis. Authorities considered to be unspecified include the Secretary of State for the Home Department, Saffron Housing Trust Ltd, the Northwestern Universities Purchasing Consortium Ltd, Ordnance Survey Ltd, NHS Shared Business Services, Jisc

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Services Ltd, and Energy Coast West Cumbria Ltd. The term ‘other’ signifies that the contracting authority’s type does not fit into the available categories from the standard form. On the other hand, the unspecified category indicates that the user has not provided a value; it represents unknown, null, or missing data.

Table 13 presents the distribution of awarding authorities by institutional type. The U.K. body governed by public law has the highest count, with 773 instances, representing 33.8% of the total. Bodies governed by public law include organisations such as the Common Services Agency, the NHS Northwest Collaborative Procurement Hub, the Olympic Delivery Authority, the Southern Universities Purchasing Consortium, the Welsh Procurement Alliance, and the London and Quadrant Housing Trust. Bodies governed by public law, as defined by Directive 2014/24/EU (2014), serve the general interest as their primary purpose and have legal personality which confers them rights and obligations. They are typically funded by the state, local or regional authorities, or are under their management supervision. Alternatively, they may have an administrative, managerial, or supervisory board appointed by these authorities or other bodies governed by public law.

Table 13: Data distribution across different types of contract authorities

Contract authority type	Freq.	Percentage
International and European organisations	180	7.85
Utilities sectors and others	325	14.17
Ministry or any other national or federal authority or agency	412	17.96
Regional and local authorities or agencies	604	26.33
Body governed by public law	773	33.70
Total	2,294	100.00

4.7.1 Contracting authorities per country

The dataset reveals that 92.3% of contracting authorities are based in the U.K., as shown in Table 14, underscoring a strong preference for awarding public sector contracts to local companies. This trend supports domestic industries, fosters regional development, and drives economic growth. There is notably less representation from other European countries. Poland has 67 instances, which represent 2.92%. Ireland has 21 instances, accounting for 0.92%. Both France and Belgium have 16 instances each, representing 0.70%. The purpose of identifying foreign awarding authorities is to assess whether contracts issued by international public sector bodies elicit different levels of market reaction. Foreign contracts may signal expansion into new markets, enhanced international credibility, cross-border capabilities, or stronger competitive positioning beyond the U.K. By isolating foreign authorities, the analysis can therefore determine whether the stock market responds differently when firms secure government contracts abroad relative to those awarded domestically.

Table 14: Distribution of contracting authorities by country

Contracting authorities by country	Freq.	Percentage
Greece (GR)	1	0.04
Estonia (EE)	1	0.04
Malta (MT)	1	0.04
Romania (RO)	2	0.09
Czech Republic (CZ)	2	0.09
Hungary (HU)	3	0.13
Germany (DE)	3	0.13
Italy (IT)	3	0.13
Latvia (LT)	3	0.13
Denmark (DK)	4	0.17
Finland (FI)	4	0.17
Norway (NO)	6	0.26
Sweden (SE)	7	0.31
Spain (ES)	7	0.31
Netherlands (NL)	9	0.39
Belgium (BE)	16	0.70
France (FR)	16	0.70
Ireland (IE)	21	0.92
Poland (PL)	67	2.92
United Kingdom (U.K.)	2118	92.33
Total	2,294	100.00

4.8 Awarding procedure

The awarding procedure in public procurement refers to the formal process by which a contracting authority selects a supplier for a specific contract. According to Tikkanen and Kaleva (2011), the open procedure involves the contracting authority publishing a contract notice which grants all interested suppliers the opportunity to submit tenders. Additionally, the contracting authority retains the prerogative to invite suppliers to tender as deemed suitable. Conversely, the restricted procedure is a procurement process in which the contracting authority issues a contract notice, allowing any supplier to request participation.

However, only those suppliers specifically invited by the contracting authority are eligible to submit tenders. The negotiated procedure begins with the contracting authority's initiation of a published contract notice, offering suppliers the opportunity to express interest in participating, thereby promoting inclusivity and flexibility. Subsequently, the contracting entity conducts negotiations with the selected parties to determine the contractual terms. A direct award is a streamlined procurement process whereby the contracting authority can engage one or more suppliers without issuing a formal contract notice. This approach facilitates direct negotiations of the contract terms with the chosen supplier. Competitive dialogue is a procurement procedure initiated by the contracting authority through a published contract notice which provides an opportunity for any supplier to express an interest in participating. The contracting authority engages in dialogue with the eligible candidates throughout the procedure.

As shown in Table 15, two primary contract award procedures are identified in the dataset: the open procedure and the restricted procedure. This is in accordance with the research by Tikkanen and Kaleva (2011), reaffirming the prominence of these procedures in public procurement. More specifically, open procedure accounts for 44.5% of the total, while the restricted procedure follows closely, constituting approximately 34.7% of all procurement procedures.

Table 15: Data distribution by awarding procedure

Awarding procedure	Definition	Freq.	Percentage
Innovative partnership	Procedures are used to encourage the development of innovative solutions.	3	0.13
Award without prior publication of a contract notice	Contracting authorities negotiate directly with selected suppliers without issuing a prior contract notice.	43	1.88
Competitive dialogue	A notice is published and suppliers may request to participate. Terms are then negotiated with the shortlisted candidates.	99	4.33
Negotiated without a call for competition	Negotiations occur directly with selected suppliers without publishing prior notice.	105	4.59
Negotiated with a call for competition	A contract notice is published prior to negotiations to invite interest from suppliers.	224	9.79
Restricted	A contract notice is issued, but only preselected suppliers are invited to submit full tenders.	795	34.73
Open	All interested suppliers are able to submit tenders in response to a published contract notice.	1,020	44.56
Total		2,289	100.00

To facilitate analysis and categorisation, these less common procedures have been grouped together with the restricted procedure. As shown in Table 16, this resulted in two final categories: open procedures and restricted and other procedures. This classification structure enables a clearer understanding of the diverse procurement practices observed in the dataset. Thus, the analysis of awarding procedures shows that 44.5% of contracts were awarded through open procedures, while 55.4% were awarded through restricted procedures and others. Overall, this analysis suggests that a significant portion of the contracts were awarded through procedures involving pre-qualification of suppliers or limited invitations to bid, which may be due to the complexity or specific requirements of the contracts.

Table 16: Clustered data distribution by awarding procedure

Awarding procedure	Freq.	Percentage
Open procedures	1,020	44.56
Restricted procedures	1,269	55.44
Total	2,289	100.00

4.9 Awarding criteria

The dataset incorporates two primary contract award criteria: the lowest price and the MEAT. Ahsan and Rahman (2017) and Sönnichsen and Clement (2020) state that the MEAT criterion seeks to achieve an optimal balance between price and quality. It involves a comprehensive evaluation of various aspects, including quality, quantity, risk, timeliness, and cost considerations across the entire lifecycle of a product or service. The E.U. and the U.K. governments have advocated that public contracting authorities adopt the MEAT criteria. MEAT emphasises not only the lowest price but also other qualitative factors, thereby ensuring that the chosen tender offers the best overall value for money. Promoting fair competition encourages suppliers to compete on various aspects rather than solely on price. As shown in Table 17, the MEAT procedure is the dominant criterion, accounting for 85.01% of the total.

In contrast, the lowest price accounts for just 14.99% of the criteria used in contract awards. This distribution highlights the prevalence of economic considerations when awarding contracts, with a significant focus on selecting tenders that offer the best overall value rather than solely considering the lowest cost. Sebastian et al. (2020) state that the conventional lowest price criterion, while significant, may not consistently lead to the selection of MEAT for the awarding entity. However, it remains pertinent, particularly when cost efficiency is of paramount concern. Conversely, the criterion for MEAT, originally grounded in cost considerations, incorporates a more comprehensive perspective. This approach empowers the awarding organisation to consider a broader range of factors that go beyond costs, such as quality, environmental considerations, and socioeconomic factors to ensure that public funds are spent wisely and that suppliers contribute not only economically but also in terms of quality.

Table 17: Data distribution by awarding criteria

Awarding criteria	Freq.	Percentage
Lowest price	307	14.55
MEAT	1,803	85.45
Total	2,110	100.00

4.10 Contract type

In the dataset, there are three types of contracts: services, supplies, and works. Public service contracts entail delivering services that directly benefit the public interest, spanning sectors such as healthcare, education, transportation, and waste management. These contracts play a significant role in enhancing community well-being, with service contracts representing 53.1% of the total, supplies contracts accounting for approximately 35.7%, and works contracts constituting approximately 11.1%. While supply contracts cater to the specific needs of public entities by providing a wide range of goods, including office supplies, machinery, and vehicles, they ensure the efficient and cost-effective procurement of these items for government agencies, educational institutions, healthcare facilities, and public organisations. Work contracts primarily focus on the construction, repair, renovation, or maintenance of public infrastructure and facilities. These encompass various projects such as roads, bridges, public buildings, utilities, and parks. Public works contracts adhere to stringent public procurement regulations, ensuring the efficient use of public funds, high-quality work standards, and compliance with safety regulations. They usually involve a competitive bidding process whereby contracts are awarded to the most capable and cost-effective bidder. The primary goals of public works contracts are to improve and sustain public infrastructure, drive economic growth, create job opportunities, and uphold financial transparency and accountability.

Table 18: Data distribution contract type

Contract type	Freq.	Percentage
Services	1,219	53.14
Supplies	820	35.75
Works	255	11.12
Total	2,294	100.00

The various contract types are also analysed based on the industries they serve in Table 19. Services contracts are the most common, followed by supply contracts and works contracts. The industrial sector has the highest number of contracts across the various

contract types, with 649 for services, 395 for supplies, and 181 for works. This highlights the sector's notable reliance upon service-based arrangements. Additionally, the telecommunications, consumer discretionary, and real estate sectors also account for a notable presence of service contracts, with 163, 126, and 102 contracts, respectively. A total of 820 supply contracts is identified, with the healthcare sector having the second highest number of supply contracts at 143, followed by utilities with 99 contracts. In general, work contracts have a relatively low representation in the dataset. However, the industrials sector stands out regarding works contracts, accounting for 181 contracts. The evidence points to a significant emphasis on construction, maintenance, or infrastructure renovation within this contract type. In contrast, the consumer discretionary sector strikes a balance between services and work contracts. Meanwhile, the utilities and healthcare sectors place considerable emphasis on supply contracts, underscoring their demand for a range of materials and products in their operations. Overall, the distribution of contract types mirrors the distinct requirements and operational needs of each industry, illustrating the adaptability and diversity of public procurement activities across various sectors.

Table 19: Distribution of data by contract type based on industry classification

Industry	Contract type			
	Services	Supplies	Works	Total
Basic materials	3	6	0	9
Consumer discretionary	126	27	31	184
Consumer staples	2	61	1	64
Energy	22	7	11	40
Healthcare	18	143	0	161
Industrials	649	395	181	1,225
Real estate	102	1	0	103
Technology	66	50	5	121
Telecommunications	163	31	6	200
Utilities	68	99	20	187
Total	1,219	820	255	2,294

4.10 Descriptive statistics for financial data

The initial sample comprised 2,294 public procurement award events matched to FTSE 350 firms. Following the data matching and validation process, the final analytical sample consisted of 2,155 contract awards after excluding observations with incomplete or unavailable financial data, including firms with insufficient trading data, delisted firms, firms subject to trading suspensions, and other observations for which the required market data were unavailable. The financial variables summarised in Table 20 are based on the daily observations used in the event study analysis. The FTSE 350 index has a mean value of 5,580.41 and a standard deviation of 1,671.39, reflecting variation in U.K. market conditions over the sample period. The average daily market return is 0.0266%, with a standard deviation of 1.14%, indicating the relatively low volatility typical of a broad market index. In comparison, the average daily stock return is 0.0265%, with a higher standard deviation of 2.19%, reflecting greater firm-specific volatility. The mean stock price is £7.93, while the median is £4.25. The average daily risk-free rate is 0.0930%, derived by converting the prevailing three-month U.K. bond yield into an equivalent daily rate over the sample period. Both stock and market excess returns have means close to zero, while the Fama–French factors (SMB, HML, RMW, and CMA) also exhibit means and medians near zero, suggesting no persistent factor bias over the sample period. Overall, the summary statistics are consistent with the characteristics of daily financial data and provide a suitable basis for the subsequent event study analysis.

Table 20: Descriptive statistics of financial data

Variable	Mean	S.D.	p25	Median	p75
FTSE 350	5580.4074	1671.3932	4015.97	5524.27	7067.26
Market return	0.000266	0.011386	-0.004762	0.00046	0.005652
Stock Price	7.930397	12.005444	2.04	4.25	8.29
Stock return	0.000265	0.021947	-0.007042	0	0.007451
Risk-free rate	0.000930	0.001354	0.000308	0.000402	0.000609
Stock excess return	-0.000666	0.022007	-0.008017	-0.000392	0.006578
Market excess return	-0.000665	0.011497	-0.005682	-0.000241	0.004795
SMB	0.000065	0.007516	-0.004041	0	0.003931
HML	-0.000135	0.008893	-0.004519	-0.000451	0.004027
RMW	0.001874	0.010733	-0.004108	0.00141	0.007562
CMA	0.000649	0.009411	-0.004136	0.000463	0.005408

4.11 Conclusion

This chapter has provided a detailed examination of the data underpinning the current research, with a particular focus on the characteristics of public contracts awarded to FTSE 350 firms. Each section explored a specific dimension of the dataset, including contract identifiers, duration, lot structure, award value, and the number of awards, offering a comprehensive understanding of the composition and diversity of procurement activities across sectors and time.

The analysis of event frequency and event dates revealed significant temporal variation in contract awards, reflecting broader trends in government spending and procurement cycles. The industry classification and CPV analysis highlighted the dominance of the construction, technology, and professional services sectors, while also illustrating the wide scope of contract types captured in the dataset. The examination of contracting authorities across national, regional, and local levels demonstrated the complex and decentralised nature of the U.K. public procurement landscape. The descriptive statistics of the financial data complemented the contract-level analysis by outlining the financial data necessary to assess market reactions.

Overall, this chapter established a clear description of the data for the subsequent analysis by presenting a coherent and structured overview of both the contract and financial data. The patterns identified in contract attributes and procurement behaviour provide the context to interpret the stock market responses examined in the following chapter.

5. Methodology

5.1 Introduction

This chapter outlines the methodological framework employed in this study, clarifying the overarching research approach and justifying the methodological choices made to address the stated research objectives. An event study methodology is adopted because it provides a suitable approach for examining stock market reactions to public announcements, specifically government contract awards. This chapter is structured to provide a logical and transparent explanation of how the methodology was developed and implemented. It starts with a section that explains the research design and then Section 5.3 discusses the philosophical position that supports the study. The main analysis method, called the event study, is introduced in Section 5.4 and then it explains in detail how to calculate expected returns, abnormal returns, and CARs, as well as how these results are tested statistically. Initially, the CARs method was applied to assess the impact of such events. However, this approach did not produce satisfactory or reliable results in the context of this study. As a result, a daily event study was implemented as an alternative methodology. This method was found to be more appropriate for the dataset and research aims, enabling a more robust analysis of event-driven effects. This chapter is structured to provide a logical and transparent explanation of how the methodology was developed and implemented.

5.2 Research design

This study examines the impact of public contract awards on stock price performance using a quantitative research design. An event study methodology is applied to capture how the market responds to these announcements. Event studies are widely used in the finance literature to evaluate the valuation effects of specific events such as IPOs, mergers, or stock splits and have also been applied in operations and supply chain research to assess disruptions and product recalls (Hoffer et al. 1988; Hendricks and Singhal 1997; Zhao et al. 2013; Martins and Pires 2024). This study uses secondary data and calculates expected returns using the Fama-French five-factor model. The study

concentrates on firms comprising the FTSE 350 Index that received contracts between 2006 and 2022.

5.3 Research philosophy

This study primarily adopts a positivist philosophy and a deductive approach. The research examines how stock prices react to public contract award announcements and evaluates the causal relationship between the announcements and stock prices. O’Gorman and MacIntosh (2015) assert that positivists are committed to employing empirical research to objectively analyse causal effects in social contexts. The study is grounded in objective, measurable data; stock prices and public contract announcements are public facts and their effects can be quantified using transparent, statistical methods, making the research well-suited to a positivist approach.

This research employs quantitative methods, particularly an event study analysis. Positivist philosophy posits that phenomena require assessment and justification grounded in evidence. Positivists utilise methodologies and approaches to analyse the social domain, deliberately minimising human interpretations to yield objective truths. In this research, the data collection process aligns with positivism. Automated matching through the fuzzy lookup tool depends on objective algorithms, systematic standards, and reproducible procedures, but it remains susceptible to error. This step requires human intervention. The process of manual approval or correction by the researcher includes an interpretivist dimension. This procedure introduces variability because different researchers may reach slightly different conclusions.

Giddens (1974) asserts that the philosophy of positivism defines knowledge as originating from scientific experimentation and empirical validation. Positivism in the social sciences seeks to determine common logical concepts and principles. Empirical research suggests that the findings of positivist scholars may demonstrate significant validity and reliability, facilitating generalisations for a wider community (Johnson and Onwuegbuzie 2004; Cohen 2007). This study aims to employ a positivist approach, using objective,

quantifiable data to analyse the correlation between contract award announcements and fluctuations in stock prices. The outcomes are ascertained using statistical analysis, enabling a deductive assessment of market efficiency. The current research employs event study analysis to provide empirical, widely applicable, and reproducible results (Saunders et al. 2009).

5.4 Event study

Event studies are the predominant methodology for capturing immediate market reactions and assessing the impact of corporate events on stock returns, thereby providing more profound insights into the relationship between contract announcements and stock performance. Employing a variety of measures helps to ensure a more comprehensive assessment of market reactions. This diversity enhances understanding of the dynamics that shape market responses to contract announcements across contexts and industries. According to Fama (1991), event studies have received considerable attention as an empirical tool for testing market efficiency. The event study method is a statistical analysis that examines a firm's stock prices in relation to specific events by estimating expected returns from historical performance and comparing them with the abnormal returns observed during the event window (Kothari and Warner 2007). This may help to predict future stock movements. Dolley (1933) introduced the event research methodology by investigating the impact of stock splits on stock price patterns. Fama et al. (1969) pioneered Dolley's methodology and Brown and Warner (1985) subsequently refined it. This methodology was further developed by MacKinlay (1997) who incorporated details on event selection, estimation windows, event windows, and measures for abnormal returns to determine study outcomes. These contributions indicate that the event study methodology has evolved over time, leading to the development of multiple approaches for measuring market reactions. In general, implementing an event study involves several standardised key steps. Although these steps may vary across studies in terms of the measures employed and the length of the event window, the core procedure typically includes the identification of the event of interest, the determination

of the event window, the specification of the estimation window, and the estimation of expected returns, followed by the aggregation of abnormal returns and statistical testing.

5.4.1 Identification of the event

The first step in the event study methodology is to identify the event of interest. The previous literature has examined various corporate events, including dividend and earnings announcements, stock splits, cybersecurity incidents, CEO-related events, supply chain disruptions, and public contract announcements, as discussed in Section 2.6. This study defines the event of interest as the public announcement of a government contract award through an official disclosure channel.³ The event date is the first point at which this information becomes publicly accessible to investors and, as such, marks the moment of informational shock. Investors are expected to update their expectations regarding the awarded firm's future cash flows and operating performance. To evaluate this effect, historical stock return data are employed to estimate expected returns during a pre-event estimation window. In some cases, a short gap is inserted between the end of the estimation window and the commencement of the event window to mitigate potential information leakage and to ensure that expected return estimates are not contaminated by pre-announcement trading behaviour.

5.4.2 Event window length

The event window is the period over which market reactions are examined and may span multiple days surrounding the event or, in some cases, a single event day. The event window varies across studies, reflecting differences in research design and the expected speed at which information is incorporated into stock prices. While some studies focus on short event windows, such as $(-1, +1)$, to capture immediate market responses (Elayan

³ data.europa.eu

et al. 2004a; Howe and Howe 2006; Choi 2015; Kim and Kwon 2015), others adopt longer windows, such as $(-1, +10)$, $(-1, +40)$, or $(-1, +60)$, to account for delayed market adjustments (Palkar et al. 2012). The majority of studies focus on short-term effects around the announcement date, although some extend their analysis to longer post-event horizons.

For instance, Boyle et al. (1997) assessed post-event reactions at intervals ranging from 6 to 18 months, whilst Larson and Picou (2002) analysed market reactions occurring between 41 and 240 days after the event. An event study with a long time horizon following an event can provide valuable information about market efficiency (Brown and Warne 1980; Fama 1991). The appropriate event window depends on its nature and timing. Ferris et al. (2025) found that market reactions to federal procurement contracts are concentrated around the announcement period, with CARs stabilising shortly after the event. In contrast, Singh et al. (2024) document prolonged negative returns following the COVID-19 announcement, lasting up to 58 days. These findings suggest that both the intensity and duration of market reactions vary depending on the characteristics of the event and prevailing economic conditions. Some studies analyse individual event days to identify specific periods of market reaction.

5.4.3 Estimation of abnormal returns

A number of expected return models have been developed to estimate returns in the absence of an event, thereby enabling the detection of abnormal returns. Abnormal returns are the difference between the actual observed return and the expected return.

5.4.3.1 Market-adjusted model

The market-adjusted model measures abnormal return as the difference between a security's actual return and the market return. The market-adjusted model is primarily adopted for its simplicity because it does not require parameter estimation and has been

widely used throughout the literature (Hsu and Huang 2024; Hafeez and Tosun 2025; Hafeez et al. 2026; Sarker 2026; Wang et al. 2026).

$$AR_{i,t} = R_{i,t} - R_{M,t}$$

5.4.3.2 Market model

The market model is widely used in empirical analysis to examine how individual assets behave relative to overall market movements. It is particularly useful for evaluating short-term market reactions and assessing firm performance. Previous studies have extensively applied market model-based event study approaches to assess the effects of contract awards (e.g., Czech 1989; Diltz 1990; Alexander 1993; Elayan et al. 2004b; Howe and Howe 2006; Palkar et al. 2012; Choi 2014; Choi 2015). According to Armitage (1995), the market model is commonly employed in event studies to estimate expected stock returns and calculate abnormal returns during the event window. The model is based on a simple linear regression framework that captures the relationship between a stock's return and the return of a market index. Abnormal returns can be calculated using the market model, in which the expected return is derived from market returns and the difference between actual and expected returns is the abnormal return, as follows:

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_1 R_{M,t})$$

5.4.3.3 Capital Asset Pricing Model

The Capital Asset Pricing Model (CAPM) was initially developed by Sharpe (1964) and Lintner (1965). The CAPM measures the expected return of an asset relative to its exposure to market risk. It posits that the expected return on a security is linearly related to its systematic risk, represented by beta, which measures the sensitivity of the asset's returns to fluctuations in the overall market. A beta of greater than one indicates that the asset is more volatile than the market portfolio and therefore produces a higher expected

return as compensation for the increased risk. The CAPM expresses the expected return of an investment as a function of the risk-free rate, the asset's systematic risk (beta), and the market risk premium. Abnormal returns can be estimated using the CAPM model, as follows:

$$E(R_{i,t}) = R_{f,t} + \beta_1(R_{M,t} - R_{f,t})$$

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

where $E(R_i)$ denotes the expected return on investment, at which investors are compensated only for bearing systematic (non-diversifiable) risk, because unsystematic risk can be eliminated through diversification. Several scholars have identified empirical shortcomings in the CAPM (e.g., Basu 1977; Ball 1978; Ross 1978; Banz 1981; Reinganum 1981). It demonstrates that while the market factor accounts for a portion of the variation in asset returns, a significant share remains unexplained, thereby suggesting the influence of additional factors beyond the market component.

5.4.3.4 Fama-French three/five factor model

Fama and French (1992, 1993) extended the CAPM into a three-factor model by introducing additional factors that capture firm size and value effects. The size factor called small minus big (SMB) reflects the tendency of small-cap firms to outperform large-cap firms, thereby indicating a premium associated with higher risk or potential market inefficiencies. The value factor (HML) reflects the observation that firms with high book-to-market ratios (value stocks) tend to generate higher average returns than those with low book-to-market ratios (growth stocks). The coefficients of SMB and HML indicate how returns across the sample of firms are influenced by systematic risk factors. A positive and significant SMB coefficient suggests that, on average, the sample firms exhibit return patterns like small-cap firms, earning higher returns when small firms outperform large ones. Likewise, a positive HML coefficient implies that the sample firms' returns are more closely aligned with value stocks, which tend to yield higher

average returns. Conversely, negative coefficients would suggest that the firms in the sample behave more like large-cap or growth-oriented firms, with lower sensitivity to these risk premia. The following model illustrates the Fama-French three-factor framework which extends the traditional CAPM by incorporating two additional factors:

$$E(R_{i,t} - R_{f,t}) = \beta_1(R_{M,t} - R_{f,t}) + \beta_2\text{SMB} + \beta_3\text{HML}$$

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

This model was later improved by Carhart (1997) who incorporated a momentum factor as a fourth systematic risk factor, reflecting the tendency of assets to continue their historical price trends, whether upwards or downwards. Building upon this, Fama and French (2015) introduced the five-factor model by adding two explanatory variables to their earlier three factors: profitability and investment. The Robust minus Weak (RMW) factor quantifies the return differential between firms exhibiting high operating profitability (robust firms) and those with low operating profitability (weak firms). It quantifies the premium that investors receive for holding equities from more profitable firms.

Likewise, Conservative minus Aggressive (CMA) denotes the differential in returns between firms holding conservative investment strategies and those adopting aggressive ones, thereby illustrating a tendency for conservatively managed firms to achieve superior average returns. Therefore, the RMW and CMA indicate the sensitivity of returns to risks associated with profitability and investment.

$$E(R_{i,t} - R_{f,t}) = \beta_1(R_{M,t} - R_{f,t}) + \beta_2\text{SMB} + \beta_3\text{HML} + \beta_4\text{RMW} + \beta_5\text{CMA}$$

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

5.4.4 Calculation and testing of CARs

CARs are calculated by aggregating abnormal returns over the specified event window, thereby capturing the overall market reaction to the event. These CARs are subsequently subjected to statistical testing to determine whether they are significantly different from zero. Statistically significant CARs indicate that the event has a measurable impact on stock prices.

5.5 Event study method

The measures used to conduct the event study are presented in the following section.

5.5.1 Abnormal returns

In this study, abnormal returns are calculated using the market-adjusted model by subtracting the market return from the observed stock return during the event window. This method is used because it is simple and clear, requiring no additional parameter estimation. It provides a straightforward benchmark for isolating the event's effect on stock performance, particularly in short-term event studies.

$$AR_{i,t} = R_{i,t} - R_{M,t}$$

Where:

$AR_{i,t}$ = The abnormal returns.

$R_{i,t}$ = Stock return.

$R_{M,t}$ = Market return.

5.5.2 CARs and statistical significance testing

CARs represent the accumulation of abnormal returns over a specified event window. It is a key financial metric used to assess the performance of a stock or portfolio relative to its expected return. Calculating CARs involves summing the abnormal returns that are recorded during the specified timeframe.

$$CAR_{i,(t_0,t_1)} = \sum_{t=t_0}^{t_1} AR_{i,t}$$

The significance of the results was tested using an intercept-only regression:

$$CAR_i = \alpha + \varepsilon_i, i = 1, \dots, N,$$

where:

- CAR_i is the cumulative abnormal return for firm i ,
- α is the intercept, representing the average CAR across all firms,
- ε_i is the error term.

The hypothesis being tested is:

$$H_0: \alpha = 0$$

against

$$H_1: \alpha \neq 0.$$

The corresponding test statistic is:

$$t = \frac{\hat{\alpha}}{SE_{\text{robust}}(\hat{\alpha})},$$

where $SE_{\text{robust}}(\hat{\alpha})$ is the robust standard error.

5.5.3 Event date

The TED database provides two relevant dates: the award date, which is the date on which the contract was officially signed between the contracting authority and the supplier, and the dispatch date, which indicates when the notice was submitted for publication in the OJEU. While both dates hold procedural significance, the award date more precisely captures the timing of the underlying economic transaction (see Appendix 4). According to Directive 2014/24/EU (2014), Article 50(1), contracting authorities are required to send a contract award notice detailing the results of the procurement procedure no later than 30 days following the decision to award or conclude the contract. The recorded TED data reveal substantial gaps between award dates and dispatch dates, with numerous instances surpassing the period of thirty days allowed under Directive 2014/24/EU. Typically, the award date precedes the dispatch date, which is consistent with the anticipated procedural order. In certain instances, the dispatch date may come before the award date, potentially indicating prior exposure to the results or established supplier connections, including current suppliers or framework agreements.

To evaluate the implications of this variation, empirical testing was carried out (see Appendix 4 for additional clarification) to determine which date more precisely reflects the valuation effect. The findings suggest that models centred on the award date yield more robust and uniform market responses, whereas those centred on the dispatch date yield weaker and more inconsistent impacts. Furthermore, the TED team confirmed that the award date is public information, allowing firms to announce awarded contracts before the OJEU publication. There are no regulatory constraints that require delays in disclosure; any delay is primarily attributed to administrative factors. Consequently, the award date has been selected as the event date in this study because it more precisely reflects when economically relevant information is accessible to investors, serving as a more suitable reference point for assessing abnormal returns.

5.6 CARs analysis

The results reflect the overall market response to public contract award announcements across the full sample. As shown in Table 21, the CAR analysis reveals inconsistent patterns across the examined event windows, with the (-1, +1) event window indicating a marginally negative return of -0.003%, suggesting a minor initial decline in market value. Across broader event windows, CARs exhibit fluctuations between positive and negative values. For example, the CAR associated with the (-2, +2) window is -0.001%, thereby indicating a negligible effect. In contrast, slightly more pronounced positive CARs are observed over the (-1, +3) and (-1, +5) windows, at 0.055% and 0.050%, respectively. Across broader windows, CARs alternate between positive and negative values. For instance, the CARs for the (-2, +2) window are -0.001%, close to zero. Slightly more pronounced positive values are observed over the (-1, +3) and (-1, +5) windows, 0.055% and 0.050% when more post-announcement days are taken into consideration, although these remain modest and statistically insignificant. All estimates are statistically insignificant, indicating no strong or persistent reaction to the announcements. This absence of significance should be interpreted with caution. The findings do not necessarily imply that investors disregard public contract awards but may instead reflect methodological limitations inherent in the CAR framework. By aggregating returns over fixed multiday periods, CARs can dilute or obscure short-lived or delayed effects that do not persist across the entire window.

Table 21: CARs across the whole sample

Event Window	CARs
-1 to +1	-0.0000302
	(0.0004177)
-2 to +2	-0.0001297
	(0.0003945)
-1 to +2	-0.0003356
	(0.0004025)
-1 to +3	0.0005581
	(0.0004014)
-1 to +5	0.0005003
	(0.0003971)

Notes: This table presents CARs across multiple event windows, where abnormal returns are the difference between stock returns and the market return. Standard errors are clustered at the firm level and are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

5.7 Daily-level analysis

To address potential limitations associated with the CAR approach, particularly its tendency to obscure daily fluctuations and capture more precise temporal patterns, daily abnormal return regression was used to provide a more granular assessment of investor behaviour around announcement dates. Masulis (1980), Brown and Warner (1980), and Brown and Warner (1985) demonstrated that the daily event study model effectively detects abnormal daily returns and performs comparably to more sophisticated econometric techniques. Accordingly, this study employs daily-level analysis to capture more precise variations in market behaviour surrounding the event within a ten-day event window spanning from five days prior to five days following the announcement. By focusing on day-specific fluctuations, this approach improves the robustness of the analysis and facilitates a more precise assessment of short-term market responsiveness to public contract award announcements.

The primary analysis focuses on short event windows to capture the immediate market response. However, the event study literature also recognises the value of wider event windows for capturing potential information leakage and delayed market adjustment. Consistent with this approach, MacKinlay (1997), Leemakdej (2007), and Khanthavit (2020) employ 20-day event windows to examine market reactions beyond the immediate announcement period. Following this established practice, this study incorporates a (-20, +20) trading-day event window, representing approximately one calendar month centred on the announcement date, as a robustness check to examine whether market reactions persist beyond the immediate announcement period and to account for potential information leakage and gradual price adjustment. Investor reactions are measured using excess stock returns as a proxy. In the regression model, the Fama-French factors SMB, HML, RMW, and CMA are also controlled. However, the available data for these factors in the U.K., as provided by Gregory et al. (2013), are only available up to 2018. Accordingly, the U.K. Fama-French factors were independently calculated to address this limitation in data availability (see Appendix 1).

5.7.1 Excess returns

$$R_{i,t} - R_{f,t} = \alpha_i + \sum_{t=-5}^{+5} \delta_T(D_{i,t}) + \beta_1 MKT + \beta_2 SMB + \beta_3 HML + \beta_4 RMW + \beta_5 CMA + \mu_i + \varepsilon_{i,t} \quad t$$

$$= \tau - 60, \dots, \tau + 60$$

Where:

$R_{i,t} - R_{f,t}$ = The daily excess stock return minus the risk-free rate of firm (i) at time (t).

$\sum_{t=-5}^{+5} \delta_T(D_{i,t})$ = Dummy variables for each day in the event window from five days before to five days after the announcement. Each dummy equals one for that day relative to the event and zero otherwise.

MKT = The excess market return, which is the difference between the return of the market and the risk-free rate at time (t), where β_1 represents its coefficient.

SMB = The size premium, with β_2 representing its coefficient.

HML = The value premium, with β_3 as its coefficient.

RMW = The profitability factor, with β_4 as its coefficient.

CMA = The investment factor, with β_5 as its coefficient.

$\varepsilon_{i,t}$ = The error term of stock i at time t.

5.8 Conclusion

This chapter details the methodologies that form the foundation of the study. This research design is grounded in the principles of positivism, supported by event study analysis. Empirical evidence stands as the foundation of positivist philosophy which is essential to assess and validate the nature of reality. Positivists analyse society by focusing solely on objective truths while minimising the influence of human perspectives.

This research aims to explore how investors and the stock market respond to statements related to a firm's ability to secure a public contract. These events are frequently perceived as indicators of future revenue, enhanced reputation, and prospective competitive advantage, which may affect investor sentiment and stock prices. The study employs the event study methodology to assess and analyse the impact of contract award announcements on stock prices. The analysis begins with CARs calculated as the difference between stock returns and the market return. This is the preliminary benchmark. However, CARs across multiple event windows produced largely insignificant results and did not yield the anticipated results. Such results may be due to their inability to capture short-term daily fluctuations in returns and their tendency to overlook variation in market responses driven by firm- or contract-specific characteristics.

To address these limitations, the analysis adopts a regression-based event study approach using day-specific dummy variables over ± 5 trading-day windows. This method enables a more accurate assessment of daily abnormal returns around the event date. Consequently, the event study was modified to identify daily abnormal returns around the event window. This methodological adjustment highlights the importance of analysing daily patterns to better capture the complexities of market responses to contract award announcements.

6. Results

6.1 Introduction

This chapter examines the short-term stock market response to public contract award announcements using an event study methodology. The analyses are expanded by introducing excess returns to measure investor reactions in the market, employing day-specific dummy variables across ± 5 and ± 20 trading day windows. This method enables a more accurate assessment of daily abnormal returns around the event date. The results consistently reveal a statistically significant positive excess return on the third trading day after the announcement, suggesting a delayed market reaction. This delay may reflect information frictions, investor processing lags, or the gradual dissemination of procurement details.

Building upon the initial results, this chapter extends the analysis through interaction regression models to examine whether the stock market's response to public contract announcements is conditioned by firm-specific and contract-level attributes. By incorporating interaction terms between event time indicators and variables such as firm size, financial leverage, growth potential, and profitability alongside key contract characteristics, including award value, procurement method, and evaluation criteria, the analysis uncovers how differences in firm characteristics and contract design influence investor reactions. Inter alia, the findings reveal that smaller, low-leverage firms experience stronger positive returns when competition is not based solely on price and that high-growth firms experience positive returns when they are awarded large contracts. These interaction effects underscore that market responses are not uniform but depend on the strategic fit between firm profiles and contract types.

6.2 Daily level analysis

An examination of daily data in Table 22 reveals that the coefficients for the five days leading up to the event are predominantly statistically insignificant, indicating a lack of substantial market anticipation prior to the announcement. Likewise, the return on the event day itself shows no significant market reaction, suggesting that contract

announcements elicit no immediate market response. In the post-event period, covering the five days following the announcement, the results are generally mixed and mostly insignificant, except for a delayed market reaction observed on the third day after the event. The results from various windows reveal a consistent pattern: by the third day following the contract award announcement, the abnormal returns remain positive and statistically significant across all model variations. The excess returns and abnormal returns for six months, three months, and one month are 0.087%, 0.084%, and 0.080%, respectively. Every figure is significant at the 5% level, with standard errors of 0.038%. The analysis indicates a robust, positive market reaction on the third day following the contract award announcement.

This behaviour can be attributed to the perceived financial benefits associated with government contracting. Governments are perceived to be desirable clients because awarded contracts offer reliable revenue streams and long-term financial stability (Bovis 1996; Loader 2005). As noted by Huang et al. (2016), these contracts generate dependable cash flows that help to reduce liquidity risk for suppliers. Supporting this, Dhaliwal et al. (2016) and Esqueda et al. (2019) conclude that firms supplying government agencies tend to exhibit lower overall risk profiles. Such characteristics enhance investor confidence and can lead to a favourable reassessment of the firm's value in the days following the announcement. The positive reaction observed in the post-event window may therefore reflect the market's recognition of these benefits once the contract information becomes more widely disseminated and priced in.

Yunianti et al. (2024) provide evidence that government contract awards have a significant and partially predictable impact on firm stock prices. Their analysis reveals a sustained upwards trend in CARs for U.S. and Canadian-listed firms within five days following the contract date. This gradual increase likely reflects the delayed assimilation of information into market prices, particularly in contexts with limited media coverage. Although public procurement announcements are financially material, they tend to attract less investor attention than high-profile events such as mergers and acquisitions, which may contribute to the observed lag in market response.

The positive abnormal return recorded on the third day post-announcement may exemplify this delayed reaction because investors require time to evaluate the contract's potential impact on the firm's financial outlook. Such lagged adjustments are often attributed to informational frictions. Lee and Wang (2023) argue that excessive transparency can overwhelm investors' cognitive processing capacity, thereby reducing market efficiency. When the quantity or complexity of available information exceeds what investors can effectively process, it may lead to information overload, thereby hindering their ability to filter, interpret, and prioritise relevant signals. This view is in accordance with that of Peng (2004) who attributes delays in incorporating new information into prices to investors' cognitive limitations. Delayed reactions may also stem from the timing of media coverage or analyst reports, which affect the speed and breadth of information dissemination.

Moreover, uncertainty surrounding the execution of public contracts may cause investors to withhold immediate judgement until further clarity emerges regarding implementation plans. Concerns related to operational challenges, resource allocation, or regulatory compliance can further discourage prompt trading decisions. In accordance with this, Hou and Moskowitz (2005) emphasise that illiquidity in a firm's shares can restrict timely price adjustments, compounding the effects of informational frictions. The availability and accessibility of contract-related information also influence the timing of market adjustments. When award details are disclosed through TED databases, investors may require additional time to interpret and assess the contract's financial implications. In semi-strong efficient markets, new information is not always immediately reflected in stock prices, particularly when transparency is limited or when key details are not widely circulated.

Although the abnormal return on day three of 0.0873% is statistically significant, its magnitude appears modest in percentage terms. However, the sample comprises FTSE 350 firms, which are among the largest publicly listed companies in the U.K. Consequently, even relatively small abnormal returns can translate into substantial changes in shareholder wealth. For clarity, the monetary value effect is estimated by multiplying the firm's market capitalisation by the abnormal return, providing an estimate

of the change in shareholder wealth associated with the announcement. For illustration, applying an abnormal return of 0.000873 to BAE Systems, with a market capitalisation of approximately £25 billion in 2022 (CompaniesMarketCap 2026a), results in an estimated increase in shareholder wealth of approximately £21.83 million in a single trading day. Applying the same abnormal return to GSK plc, with a market capitalisation of approximately £90 billion (CompaniesMarketCap 2026b), results in an estimated increase in shareholder wealth of approximately £78.57 million in a single trading day, while for AstraZeneca, with a market capitalisation of approximately £173 billion (CompaniesMarketCap 2026c), the estimated increase is approximately £151.03 million in a single trading day. These illustrative examples demonstrate that, although the abnormal return appears modest in percentage terms, it can generate economically meaningful changes in shareholder wealth for large FTSE 350 firms.

Table 22: Entire sample analysis

Event Window:	Excess return		
	6 months	3 months	1 month
	(1)	(2)	(3)
T-5	0.000351 (0.000400)	0.000311 (0.000403)	0.000276 (0.000412)
T-4	0.000353 (0.000373)	0.000314 (0.000373)	0.000280 (0.000377)
T-3	0.000226 (0.000412)	0.000189 (0.000410)	0.000155 (0.000415)
T-2	0.000176 (0.000409)	0.000141 (0.000410)	0.000109 (0.000412)
T-1	-0.000416 (0.000384)	-0.000454 (0.000385)	-0.000489 (0.000392)
T 0	0.000061 (0.000434)	0.000024 (0.000435)	-0.000009 (0.000439)
T+1	0.000194 (0.000400)	0.000156 (0.000403)	0.000122 (0.000409)
T+2	-0.000283 (0.000403)	-0.000323 (0.000406)	-0.000359 (0.000409)
T+3	0.000873** (0.000376)	0.000836** (0.000378)	0.000803** (0.000385)
T+4	-0.000389 (0.000391)	-0.000431 (0.000392)	-0.000468 (0.000397)
T+5	0.000239 (0.000401)	0.000198 (0.000404)	0.000161 (0.000408)
Market excess return	0.940481*** (0.010290)	0.947424*** (0.012555)	0.949746*** (0.017620)
SMB	0.186741*** (0.011297)	0.194496*** (0.014623)	0.196931*** (0.022395)
HML	-0.003364 (0.007805)	-0.008181 (0.008999)	-0.009010 (0.011404)
RMW	-0.062443*** (0.006495)	-0.069072*** (0.008864)	-0.074822*** (0.014630)
CMA	-0.042413*** (0.005359)	-0.044931*** (0.006682)	-0.044232*** (0.009613)
Constant	0.000099*** (0.000017)	0.000150*** (0.000024)	0.000195*** (0.000049)
Observations	517,148	260,450	88,339
R-squared	0.221	0.221	0.218
Number of contracts	2,155	2,155	2,155

Note: The dependent variable is the stock excess return, defined as the difference between the stock's daily return and the daily risk-free rate. This measure is examined across event windows of 121 days (six months), 61 days (three months), and 21 days (one month). Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, while the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

6.4 20-Day analysis

To complement the short-term five-day analysis, a 20-day event window was examined to capture broader market dynamics around public contract announcements. The extended window confirms that while returns decline prior to the event turning negative, suggesting anticipatory trading, the announcement day shows no significant reaction. The strongest response emerges on day three after the awarding, thereby indicating delayed investor adjustment. Although the five-day window highlights this short-term reaction more distinctly, the 20-day analysis demonstrates that the effect is brief and does not persist over time.

Table 23: Entire sample analysis over a 20-trading day window

Event Window:	Excess return		
	6 months	3 months	1 month
	(1)	(2)	(3)
T-20	0.000369 (0.000389)	0.000336 (0.000392)	0.000001 (0.000473)
T-19	-0.000518 (0.000373)	-0.000553 (0.000373)	-0.000892** (0.000449)
T-18	0.000090 (0.000425)	0.000056 (0.000427)	-0.000278 (0.000508)
T-17	-0.000616 (0.000389)	-0.000649* (0.000393)	-0.000984** (0.000469)
T-16	-0.000368 (0.000383)	-0.000401 (0.000382)	-0.000737 (0.000479)
T-15	0.000446 (0.000423)	0.000414 (0.000423)	0.000080 (0.000488)
T-14	0.000597 (0.000389)	0.000562 (0.000391)	0.000229 (0.000465)
T-13	0.000194 (0.000416)	0.000163 (0.000417)	-0.000174 (0.000498)
T-12	-0.000164 (0.000410)	-0.000196 (0.000412)	-0.000534 (0.000494)
T-11	-0.000601 (0.000441)	-0.000633 (0.000442)	-0.000967* (0.000520)
T-10	0.000204 (0.000416)	0.000170 (0.000415)	-0.000166 (0.000488)
T-9	0.000314 (0.000406)	0.000281 (0.000407)	-0.000055 (0.000477)
T-8	0.000516 (0.000421)	0.000484 (0.000423)	0.000146 (0.000505)
T-7	0.000746* (0.000416)	0.000708* (0.000418)	0.000368 (0.000497)
T-6	-0.000524 (0.000359)	-0.000562 (0.000361)	-0.000900** (0.000451)
T-5	0.000361 (0.000399)	0.000323 (0.000402)	-0.000016 (0.000479)
T-4	0.000363 (0.000373)	0.000326 (0.000374)	-0.000012 (0.000462)
T-3	0.000237 (0.000412)	0.000201 (0.000410)	-0.000137 (0.000486)
T-2	0.000186 (0.000410)	0.000153 (0.000412)	-0.000184 (0.000486)
T-1	-0.000406 (0.000384)	-0.000442 (0.000385)	-0.000782* (0.000463)
T 0	0.000072 (0.000434)	0.000036 (0.000435)	-0.000302 (0.000510)
T+1	0.000205 (0.000400)	0.000168 (0.000403)	-0.000172 (0.000472)
T+2	-0.000273 (0.000403)	-0.000311 (0.000406)	-0.000653 (0.000475)
T+3	0.000883** (0.000376)	0.000848** (0.000378)	0.000510 (0.000467)
T+4	-0.000379 (0.000391)	-0.000419 (0.000393)	-0.000760 (0.000467)
T+5	0.000250 (0.000401)	0.000211 (0.000404)	-0.000132 (0.000485)

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T+6	0.000076 (0.000379)	0.000043 (0.000381)	-0.000296 (0.000468)
T+7	0.000007 (0.000408)	-0.000028 (0.000411)	-0.000367 (0.000478)
T+8	0.000209 (0.000372)	0.000176 (0.000373)	-0.000162 (0.000460)
T+9	0.000624 (0.000535)	0.000588 (0.000534)	0.000248 (0.000597)
T+10	0.000230 (0.000355)	0.000194 (0.000357)	-0.000144 (0.000447)
T+11	0.000067 (0.000400)	0.000034 (0.000401)	-0.000302 (0.000469)
T+12	-0.000151 (0.000380)	-0.000184 (0.000382)	-0.000520 (0.000464)
T+13	-0.000340 (0.000367)	-0.000376 (0.000368)	-0.000716 (0.000461)
T+14	0.000029 (0.000393)	-0.000006 (0.000394)	-0.000343 (0.000476)
T+15	-0.000066 (0.000521)	-0.000099 (0.000522)	-0.000437 (0.000585)
T+16	0.000509 (0.000368)	0.000474 (0.000367)	0.000137 (0.000454)
T+17	0.000052 (0.000424)	0.000021 (0.000425)	-0.000316 (0.000494)
T+18	0.000247 (0.000401)	0.000212 (0.000404)	-0.000128 (0.000483)
T+19	0.000392 (0.000403)	0.000357 (0.000403)	0.000020 (0.000482)
T+20	-0.000216 (0.000504)	-0.000252 (0.000504)	-0.000590 (0.000581)
Market excess return	0.940461*** (0.010288)	0.947387*** (0.012550)	0.948450*** (0.017048)
SMB	0.186733*** (0.011298)	0.194499*** (0.014624)	0.194069*** (0.021648)
HML	-0.003373 (0.007806)	-0.008198 (0.009001)	-0.007570 (0.011496)
RMW	-0.062452*** (0.006493)	-0.069094*** (0.008860)	-0.076002*** (0.014150)
CMA	-0.042429*** (0.005360)	-0.044975*** (0.006685)	-0.043859*** (0.009434)
Constant	0.000089*** (0.000020)	0.000138*** (0.000032)	0.000490* (0.000262)
Observations	517,148	260,450	92,647
R-squared	0.221	0.221	0.219
Number of contracts	2,155	2,155	2,155

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined across three event windows: 121 days (six months), 61 days (three months), and 21 days (one month). Event time is defined relative to the event day, denoted as T0. The pre-event period spans from T-20 to T-1, while the post-event period extends from T+1 to T+20. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.5 Contract characteristics analysis

This section examines how variation in the attributes of public procurement contracts influences capital market reactions to award announcements. While aggregate event study estimates provide an overall assessment, the systematic differences stem from specific contract-level characteristics. This objective is achieved by examining a variety of structural and procedural factors. The analysis begins with contract divisions, which involve segmenting contracts into smaller lots to foster competition and enhance accessibility for suppliers. The level of competition for each contract is assessed using the number of applicants, providing a measure of competitive intensity within the tendering process. Contract duration, specified in months, is also examined to clarify the time commitments required from both contracting authorities and suppliers.

Additionally, the study considers the overall size of each contract, reflecting the scale and potential economic impact. The characteristics of contract authorities are analysed to account for the influence of organisational structure and administrative capacity on procurement practices. The contracting procedure, distinguishing between open and restricted procedures, highlights the varying degrees of transparency and inclusiveness in supplier selection. Award criteria are examined, with a focus on whether contracts are granted on the basis of MEAT or the lowest price. Finally, contracts are classified into categories such as services, supplies, and works. The analysis provides a framework for how contract design influences investor perceptions. Offering evidence underscores the strategic importance of contract-specific attributes in determining stock market reaction.

6.5.1 Contract divisions

Contract divisions were considered based on lot numbers in the data. A value of zero or one represents cases where a single supplier has been awarded the contract. Single contract awards allocate the entire procurement to a single supplier, typically reflecting centralised execution and a broader operational scope. In contrast, multiple contract awards divide the procurement into smaller components or lots which are tendered and

awarded as separate contracts. These lots may be distributed among various suppliers or, in some instances, awarded to the same supplier. This structural distinction influences investor perceptions by shaping expectations regarding risk distribution, execution complexity, and the strategic significance of the procurement.

As shown in Table 24, the analysis is conducted by contract divisions. The findings indicate that for single contract awards, the excess return observed on the third day after the event is 0.142%, achieving statistical significance at the 1% level. This result demonstrates a pronounced and statistically significant positive abnormal return following the event, thereby indicating a measured market response as investors consider the strategic value of these awards. Other event days show largely neutral or mildly negative but statistically insignificant reactions.

In contrast, contracts awarded through multiple lots exhibit a statistically significant positive return on the event date, with a statistically significant excess return of 0.181% at the 5% significance level. This positive abnormal return remains evident on the subsequent day, with a return of 0.129% that is significant at the 10% level, reflecting immediate investor recognition, an effect rarely observed across other sub-samples in this analysis. This prompt response may stem from more structured disclosure, heightened transparency, and wider media attention due to the involvement of multiple firms. The diversified execution model reduces reliance on a single supplier, thereby mitigating financial and operational risks. However, this trend reverses on the second day following the event, as evidenced by a significant negative adjustment of -0.140% at the 5% significance level, which is potentially driven by investor concerns about coordination and execution risks across multiple suppliers.

Table 24: Analysis by contract division

Category	Excess return	
	Single contract awards (not divided contracts into lots)	Multiple contracts (divided into lots)
	(1)	(2)
T-5	0.000359 (0.000473)	0.000104 (0.000760)
T-4	0.000386 (0.000443)	0.000064 (0.000690)
T-3	-0.000024 (0.000532)	0.000590 (0.000585)
T-2	-0.000087 (0.000514)	0.000592 (0.000660)
T-1	-0.000488 (0.000496)	-0.000366 (0.000565)
T 0	-0.000749 (0.000517)	0.001812** (0.000798)
T+1	-0.000328 (0.000483)	0.001295* (0.000723)
T+2	0.000144 (0.000502)	-0.001402** (0.000675)
T+3	0.001429*** (0.000470)	-0.000427 (0.000632)
T+4	-0.000647 (0.000492)	0.000103 (0.000630)
T+5	0.000190 (0.000496)	0.000222 (0.000686)
Market excess return	0.916096*** (0.013829)	1.037041*** (0.025681)
SMB	0.191057*** (0.016507)	0.195803*** (0.029809)
HML	0.012662 (0.011080)	-0.064038*** (0.011600)
RMW	-0.069194*** (0.009870)	-0.066210*** (0.019028)
CMA	-0.048965*** (0.008552)	-0.043914*** (0.011072)
Constant	0.000145*** (0.000030)	0.000123*** (0.000038)
Observations	180,717	79,733
R-squared	0.222875	0.219881
Number of contracts	1,495	660

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, whereas the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.5.2 Competition for contracts

The number of proposals submitted for a contract is a significant indicator of the competitive dynamics of the bidding process. Table 25 presents the analysis of contract competitiveness. This study categorises the data into three groups based on bid distribution: low, moderate, and high levels of competition. Most contracts receive between one and eight offers, with only a limited number of instances exceeding this range. ‘High bidding’ denotes contracts that attract more than eight offers, occasionally reaching 999, with an average of 33 offers and considerable variability. As the number of offers increases, their frequency in the dataset decreases. Contracts that receive a significant number of offers are relatively rare. This heightened competition generally exerts downward pressure. The significant variation in the number of offers suggests that some tenders may attract substantial interest, possibly due to reduced barriers to participation.

Table 25: Competition for contracts analysis

Level of competition	N	Mean	S.D.	Min.	Max.
Low bidding	696	1.812	.792	1	3
Moderate bidding	696	4.864	1.351	3	8
High bidding	697	33.294	65.942	8	999

Table 26 shows that contracts awarded through low bidding demonstrate a statistically significant negative excess return of -0.146% on the event day. The adverse effect is counterbalanced by a significant positive adjustment of 0.118% on the third day after the event. This pattern could indicate the distinct characteristics of firms participating in low-competition contracts which enable them to establish crucial terms and conditions necessary for contract fulfilment. In comparison, both moderate and high bidding contracts show notable negative excess returns following the event. Contracts with greater competition tend to drive prices down and increase risk, leading to investors’ concerns and adverse reactions.

Table 26: Analysis of the level of competition for contracts

Category	Excess return		
	Low bidding	Moderate bidding	High bidding
	(1)	(1)	(1)
T-5	0.000189 (0.000632)	0.000427 (0.000625)	0.000061 (0.000890)
T-4	0.000651 (0.000611)	0.000024 (0.000631)	0.000409 (0.000771)
T-3	-0.000497 (0.000700)	-0.000701 (0.000698)	0.000395 (0.000873)
T-2	-0.001091 (0.000751)	0.000624 (0.000664)	0.000744 (0.000821)
T-1	-0.000560 (0.000833)	-0.000597 (0.000596)	-0.000028 (0.000669)
T 0	-0.001462* (0.000762)	0.000357 (0.000741)	0.000755 (0.000884)
T+1	0.000323 (0.000647)	0.001069 (0.000748)	0.000180 (0.000863)
T+2	0.000178 (0.000605)	-0.000158 (0.000775)	-0.001429* (0.000819)
T+3	0.001184* (0.000612)	0.000030 (0.000665)	0.000454 (0.000749)
T+4	-0.000625 (0.000651)	-0.001611** (0.000652)	0.000267 (0.000771)
T+5	-0.000375 (0.000689)	0.000164 (0.000754)	0.001255 (0.000788)
Market excess return	0.915277*** (0.021187)	0.929383*** (0.021837)	0.997946*** (0.024089)
SMB	0.114421*** (0.023788)	0.220041*** (0.026193)	0.246284*** (0.029270)
HML	-0.048593*** (0.014005)	-0.007924 (0.016293)	0.025002 (0.016613)
RMW	-0.027659* (0.014671)	-0.064723*** (0.015658)	-0.103764*** (0.017581)
CMA	-0.030140*** (0.010058)	-0.050116*** (0.012968)	-0.064778*** (0.012882)
Constant	0.000065* (0.000037)	0.000189*** (0.000046)	0.000230*** (0.000046)
Observations	80,265	78,572	78,706
R-squared	0.206392	0.229801	0.226273
Number of contracts	664	650	651

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, while the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.5.3 Contract duration

Table 27 presents the contract duration groups, measured in months. This variable has considerable missing data, with only 1,069 observations available for analysis. The dataset is systematically categorised into three groups by duration: short-term, medium-term, and long-term contracts.

Table 27: Contract duration analysis

Contract duration	Obs.	Mean	Std. Dev.	Min.	Max.
Short-term contracts	356	21.666	9.087	1	36
Medium-term contracts	356	43.702	5.687	36	48
Long-term contracts	357	75.862	47.637	48	360

As shown in Table 28, the market reaction to contract announcements varies with contract length. Short-term contracts show a brief period of mild negative abnormal returns prior to the announcement, followed by a significantly positive excess return of 0.243% on the third trading day after the announcement which is significant at the 5% level. Furthermore, a positive excess return of 0.190% is observed on the fifth day which is significant at the 10% level. Short-term contracts are commonly perceived to be less risky and more flexible, allowing firms to promptly respond to changing market conditions without incurring long-term obligations.

For medium-term contracts, a significantly positive excess return of 0.263% is observed two days prior to the announcement at a 5% significance level, thereby indicating early positive market anticipation. The absence of a significant response on the day of the announcement suggests that the market may have already accounted for details concerning the contract duration. Long-term contracts, on the other hand, exhibit a delayed positive response, yielding a notable excess return of 0.153% on the third day following the announcement which is significant at the 10% level. Extended contracts guarantee revenue stability and provide visibility over a longer period, thus enhancing investor confidence in the firm's long-term prospects.

Table 28: Analysis of contract duration

Category	Excess return		
	Short-term contracts	Medium-term contracts	Long-term contracts
	(1)	(2)	(3)
T-5	0.001367 (0.000851)	-0.000571 (0.001009)	0.000813 (0.001104)
T-4	-0.000022 (0.000915)	-0.000486 (0.000941)	0.000520 (0.001023)
T-3	0.000215 (0.000829)	-0.000761 (0.001038)	0.000262 (0.001142)
T-2	-0.000481 (0.000973)	0.002637** (0.001097)	0.000964 (0.001004)
T-1	-0.001507* (0.000848)	-0.000752 (0.000839)	-0.002118 (0.001325)
T 0	-0.000610 (0.001274)	0.000845 (0.000903)	-0.001720 (0.001134)
T+1	-0.000393 (0.000987)	0.000781 (0.000837)	-0.000373 (0.000954)
T+2	0.000768 (0.001022)	-0.001135 (0.001115)	-0.000860 (0.001112)
T+3	0.002430** (0.001041)	0.001089 (0.000928)	0.001539* (0.000930)
T+4	-0.001531 (0.001095)	0.001145 (0.000928)	0.000273 (0.000859)
T+5	0.001901* (0.001027)	0.001488 (0.001071)	-0.000107 (0.001088)
Market excess return	0.951929*** (0.033532)	0.965500*** (0.029933)	0.927323*** (0.031507)
SMB	0.249880*** (0.040417)	0.178170*** (0.029829)	0.171438*** (0.033691)
HML	0.061164** (0.027018)	0.003956 (0.022226)	0.014298 (0.019647)
RMW	-0.094889*** (0.023301)	-0.086292*** (0.019578)	-0.065386*** (0.019636)
CMA	-0.081420*** (0.017875)	-0.044663*** (0.016299)	-0.013464 (0.015908)
Constant	0.000267*** (0.000066)	0.000088 (0.000055)	0.000038 (0.000060)
Observations	41,522	41,929	41,503
R-squared	0.202617	0.212351	0.218828
Number of contracts	344	347	343

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, whereas the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.5.4 Contract size

This section explores the extent to which stock market reactions to public procurement announcements are moderated by the size of the awarded contract. Contract size may influence how investors interpret the significance of an award because larger contracts could be perceived as more financially impactful or as being indicative of a firm's ability to secure major public sector opportunities. Moreover, such contracts may attract greater investor attention due to their potential implications for future revenue.

To evaluate whether market responses differ by contract size, public procurement contracts were categorised into three equal-sized groups based on their award values. As shown in Table 9, these terciles are formed from the 1,656 awards remaining after applying the substantive screen of €4,500 to €100 million. Of these, 1,547 awards fall on a trading day and are therefore included in the subsequent regressions. Small contracts have a mean value of €257,812 and range from €4,794 to €656,292; the relatively high standard deviation compared to the mean indicates some fluctuation within the group, although aggregate contract amounts remain low throughout. Medium contracts range from €658,172 to €6,576,063, with a mean value of €2,535,062 and a standard deviation of €1,632,448, indicating wider variation in contract amounts within this category. Large contracts range from €6,600,854 to €99,589,856, with a mean value of €31,173,961 and a standard deviation of €24,872,267, reflecting substantial variability driven by a small number of large awards within the group.

As shown in Table 29, the analysis of market reactions by contract size reveals differentiated investor responses across small, medium, and large public contract awards. For small contracts, the excess returns vary between positive and negative across the event window, showing no clear or consistent pattern in the pre-event days. A significantly positive excess return of 0.138% is observed at the 10% significance level, before reversing into a significantly negative excess return of 0.144%, also at the 10% level, on the fourth day post-announcement. Large contracts show a similar pattern on day three, with a comparable significantly positive excess return of 0.138% at the 10% significance level, suggesting that both small and large contracts share a delayed, modestly positive market reaction around the same point in the event window.

Table 29: Analysis by contract size

Category	Excess return		
	Small contract size (1)	Medium contract size (2)	Large contract size (3)
T-5	-0.000005 (0.000617)	0.001258 (0.000952)	0.000351 (0.000893)
T-4	-0.000892 (0.000718)	0.000510 (0.000710)	0.000296 (0.000791)
T-3	0.001128 (0.000780)	0.000882 (0.000836)	0.000490 (0.000986)
T-2	0.000029 (0.000666)	-0.001112 (0.000774)	-0.000490 (0.001024)
T-1	-0.000336 (0.000681)	-0.001009 (0.000786)	-0.000361 (0.000760)
T 0	-0.000231 (0.001052)	0.000347 (0.000803)	-0.000677 (0.000855)
T+1	0.000639 (0.000694)	0.000174 (0.000832)	-0.001114 (0.000772)
T+2	0.000440 (0.000724)	-0.000743 (0.000888)	-0.000814 (0.000869)
T+3	0.001381* (0.000725)	-0.000155 (0.000812)	0.001383* (0.000793)
T+4	-0.001441* (0.000829)	-0.000807 (0.000770)	-0.000805 (0.000782)
T+5	0.000988 (0.000760)	0.000822 (0.000938)	-0.000075 (0.000843)
Market excess return	0.925412*** (0.023203)	0.955139*** (0.022908)	0.991461*** (0.028512)
SMB	0.172608*** (0.030066)	0.154309*** (0.028763)	0.253488*** (0.031363)
HML	0.012078 (0.020209)	0.012508 (0.019962)	-0.015796 (0.016056)
RMW	-0.050993*** (0.017966)	-0.054525*** (0.017515)	-0.093058*** (0.019455)
CMA	-0.076856*** (0.014352)	-0.036365*** (0.013511)	-0.050292*** (0.014154)
Constant	0.000247*** (0.000044)	0.000044 (0.000045)	0.000147*** (0.000052)
Observations	62,365	61,085	63,525
R-squared	0.226	0.219	0.214
Number of contracts	516	506	525

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, while the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

As a robustness check, an alternative procedure was applied using Tukey's (1977) interquartile range (IQR) criterion, rather than the fixed €4,500–€100 million thresholds used in the main analysis. Because Tukey's fences are designed for approximately symmetric data, and raw contract values are highly right skewed, the criterion was applied to the natural logarithm of the award value, on which scale the distribution is approximately symmetric. This approach is consistent with Hubert and Vandervieren (2008), who show that applying Tukey's rule directly to skewed data erroneously flags many valid observations as outliers, and with the wider empirical procurement literature, which routinely analyses contract values in logarithms (Coviello et al., 2018). Table 30, Robustness analysis of contract size effects, presents the contract-size subgroup results obtained under this alternative outlier-screening method.

This pattern is consistent with a delayed market reaction that partially corrects shortly afterward, rather than with a single, sustained repricing at the time of the award. This result is consistent with the findings of Lonkani et al. (2012), with significant positive abnormal returns for extra-small contract sizes three days after the announcement. Their results similarly indicate a delayed investor response to the disclosure of small contract awards. This is also in accordance with Choi's (2014) findings that smaller contracts are associated with stronger market reactions because investors interpret them as being more manageable, less risky, and offering greater potential for profitability. A correction quickly follows this pattern, with a return of 0.118% on the fifth day after the announcement, significant at the 10% level. In contrast, medium-sized contracts exhibit a significantly negative excess return of -0.139%, significant at the 5% level, on the fourth day post-announcement. Meanwhile, large contracts yield a statistically significant positive excess return of 0.147% observed three days after the announcement, significant at the 5% level. This data indicates that investors react favourably to large contracts, but the market response is delayed, suggesting that they may require additional time to fully assess the implications of a high-value contract. This pattern is consistent with the findings of Lonkani et al. (2012) significantly positive abnormal returns on the day following the announcement for extra-large contract sizes indicate that investor recognition of value may not be instantaneous for high-value contracts.

Table 30: Robustness analysis of contract size effects

Category	Excess return		
	Small contract size (1)	Medium contract size (2)	Large contract size (3)
T-5	0.000435 (0.000593)	0.000196 (0.000820)	0.000463 (0.000850)
T-4	-0.000850 (0.000653)	0.000355 (0.000681)	0.000735 (0.000749)
T-3	0.001331* (0.000713)	0.000720 (0.000744)	-0.000663 (0.000873)
T-2	-0.000355 (0.000622)	0.000025 (0.000769)	0.000304 (0.000902)
T-1	-0.000545 (0.000650)	-0.000531 (0.000706)	-0.000399 (0.000858)
T 0	-0.000481 (0.000948)	0.000292 (0.000719)	0.000454 (0.000853)
T+1	0.000802 (0.000650)	0.000382 (0.000744)	-0.001218 (0.000820)
T+2	0.000688 (0.000684)	-0.001186 (0.000784)	-0.000290 (0.000825)
T+3	0.001514** (0.000688)	0.000025 (0.000758)	0.001467** (0.000695)
T+4	-0.001156 (0.000771)	-0.001385** (0.000696)	-0.000051 (0.000706)
T+5	0.001182* (0.000685)	-0.000059 (0.000898)	-0.000428 (0.000714)
Market excess return	0.923129*** (0.020969)	0.962213*** (0.022671)	0.995007*** (0.025106)
SMB	0.158277*** (0.026414)	0.191172*** (0.027209)	0.237345*** (0.028499)
HML	0.014080 (0.018684)	-0.000407 (0.016322)	-0.019957 (0.015309)
RMW	-0.047283*** (0.016085)	-0.071274*** (0.016636)	-0.081921*** (0.017108)
CMA	-0.072026*** (0.012963)	-0.038021*** (0.012544)	-0.046826*** (0.012168)
Constant	0.000253*** (0.000038)	0.000076* (0.000045)	0.000166*** (0.000046)
Observations	72,862	73,578	75,290
R-squared	0.227	0.213	0.229
Number of contracts	603	609	623

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, while the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.5.5 Contracting authorities

Public contracting authorities vary in terms of their institutional capacity and financial resources, factors that may influence investor perceptions and shape market reactions. Table 31 presents the analysis on the basis of different contracting authorities. The sample identifies five main categories of contracting authorities. The largest share of contracts (33.65%) was awarded by bodies governed by public law, such as universities, regulatory agencies, and health service providers, which primarily serve the general interest, operate under public sector oversight, and are subject to specific legal obligations. Regional and local authorities or agencies account for 26.29% of awards and include county councils, borough councils, and city councils which are responsible for delivering essential public services such as education, transport, housing, and social care. Combined, these two categories represent almost 60% of all awards. National or federal ministries and agencies issued 17.96% of contracts, often concentrated on infrastructure development, IT systems, consultancy, and service provision to support national programmes. Utilities and other sectors account for 14.21% of awards, delivering essential infrastructure and public services such as energy, water, and transport within regulated markets. International and European organisations represent the smallest category (7.89%) and comprise of supranational institutions and public bodies operating across borders, often within jurisdictions that have close economic and regulatory ties to the U.K.

This classification forms the basis for analysing how the type of contracting authority affects firm-level stock market performance following contract announcements. Market responses differ across contracting authority types. Bodies governed by public law show delayed and mixed post-announcement effects; the day preceding the announcement exhibits a significantly negative abnormal return of -0.183% at the 5% significance level. This could potentially signify a negative expectation or the possibility of information leakage. On days three and five, shortly after the award date, significantly positive abnormal returns of 0.170% and 0.155% are observed, both significant at the 5% level, indicating a delayed yet robust positive market response following the announcement.

Ministries and regional and local authorities generate positive abnormal returns in the pre-announcement period, consistent with signalling theory, because awards from large

organisations with larger budgets convey credible information about future revenue and operational stability. Regarding regional and local authorities or agencies, a notable rise occurs four days prior to the award date, with a significantly positive abnormal return of 0.213% that is statistically significant at the 1% level. Such an increase may indicate early market expectations or possible information disclosures preceding the announcement. Such an increase could imply that there are preliminary market expectations; by undertaking public consultations, engaging stakeholders, and using local media, contract award details can be disclosed prior to the official announcement. The preliminary indicators may prompt responses from market participants, leading to unusual returns ahead of the event. Responses were muted both on the event date and during the subsequent event window.

It is probable that national media and investors will exhibit diminished interest because the official announcement date is less surprising owing to the fact that the market has already anticipated the information. The unusual returns seen in the five and two days before the announcement date are statistically significant and positive, measured at 0.150% at the 10% significance level and 0.193% at the 5% significance level. This finding indicates positive initial reactions because major contracts with national organisations often elicit considerable interest before their official announcement. Market participants may anticipate the economic implications of these contracts, potentially leading to an increase in share prices prior to the event. The share price is likely to be influenced by the substantial value generation that investors anticipate from the acquisition of significant national contracts. Following the announcement on day five, a significantly negative abnormal return of -0.233% is observed, which is statistically significant at the 5% level. Initial optimism may diminish as analysts' and investors' understanding of the contract's specifics becomes clearer, including profit margins, project risks, and implementation challenges. While utilities and international or European authorities elicit no significant reaction, domestic awards generate stronger responses, consistent with the findings of Choi et al. (2014), due to proximity, institutional familiarity, and lower perceived risk.

Table 31: Analysis by contracting authority

Category	Excess return				
	Body governed by public law	Regional and local authorities or agencies	Ministry or any other national or federal authority or agency	Utilities sectors and others	International and European organisations
	(1)	(2)	(3)	(4)	(5)
T-5	0.000430 (0.000827)	0.000196 (0.000700)	0.001504* (0.000869)	-0.001132 (0.000921)	-0.000049 (0.001117)
T-4	-0.000852 (0.000670)	0.002132*** (0.000735)	0.000228 (0.000835)	0.000666 (0.001015)	-0.001057 (0.001045)
T-3	0.000524 (0.000758)	0.000685 (0.000792)	-0.000940 (0.000747)	-0.000513 (0.001025)	0.000701 (0.001745)
T-2	-0.000637 (0.000738)	-0.000721 (0.000811)	0.001932** (0.000924)	0.000766 (0.001116)	0.000828 (0.001168)
T-1	-0.001833** (0.000763)	-0.000809 (0.000662)	0.001036 (0.000834)	0.000502 (0.001003)	0.001049 (0.001153)
T 0	-0.000364 (0.000787)	0.000434 (0.000948)	-0.000644 (0.000898)	0.001288 (0.001120)	-0.000508 (0.000984)
T+1	0.000542 (0.000758)	-0.000685 (0.000749)	-0.000081 (0.000859)	0.001111 (0.001129)	0.000159 (0.001151)
T+2	-0.000408 (0.000723)	0.000568 (0.000849)	-0.000403 (0.000797)	-0.001763 (0.001156)	-0.000166 (0.001192)
T+3	0.001703** (0.000672)	0.000248 (0.000775)	0.000370 (0.000795)	0.000750 (0.000992)	0.000127 (0.001294)
T+4	-0.001392**	0.000345	-0.001157	0.001446	-0.000455

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	(0.000688)	(0.000791)	(0.000791)	(0.001100)	(0.001420)
T+5	0.001550**	-0.000406	-0.002331**	0.000518	0.001072
	(0.000729)	(0.000800)	(0.000964)	(0.000968)	(0.001186)
Market excess return	0.998665***	0.983147***	0.848924***	0.923194***	0.903226***
	(0.022858)	(0.027512)	(0.024648)	(0.026320)	(0.035774)
SMB	0.248785***	0.272290***	0.092845***	0.152159***	0.016667
	(0.028050)	(0.030243)	(0.029060)	(0.028951)	(0.047946)
HML	-0.003684	0.054103***	-0.055075***	-0.025449	-0.125626***
	(0.016197)	(0.018951)	(0.017097)	(0.021436)	(0.025715)
RMW	-0.092803***	-0.117200***	-0.024492	-0.046991***	0.016959
	(0.016688)	(0.018687)	(0.017148)	(0.018086)	(0.032890)
CMA	-0.073466***	-0.056272***	-0.007195	-0.023472	-0.026307
	(0.011983)	(0.014591)	(0.013383)	(0.016883)	(0.016623)
Constant	0.000184***	0.000236***	0.000043	0.000130**	0.000094
	(0.000039)	(0.000061)	(0.000053)	(0.000050)	(0.000078)
Observations	89,088	67,507	46,948	35,937	20,970
R-squared	0.225	0.211	0.229	0.241	0.209
Number of contracts	738	558	388	297	174

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, while the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.5.6 Contracting procedure type

Public procurement processes are governed by standardised tendering procedures designed to ensure transparency, competition, and value for money. According to the European Commission (2021) and the U.K. Cabinet Office (2020), these procedures are primarily classified as either open or restricted. Under the open procedure, any interested supplier may submit a tender and no negotiation is permitted with bidders. This approach is particularly suited to straightforward procurements because it entails evaluating all of the submitted tenders solely against predefined criteria. In contrast, the restricted procedure limits the bidding phase to pre-selected candidates who express an initial interest. While negotiations remain prohibited, the clarification and finalisation of bids are both allowed, making this method appropriate for complex, high-value contracts or markets with significant instability and competition.

Other less frequently employed procedures, such as competitive dialogue or negotiated procedures, are reserved for procurements that require tailored, innovative, or technically complex solutions. To facilitate a clearer empirical assessment, the original six procedure types in the dataset were consolidated into two main categories: open and restricted. Open procedures account for 44.56% of all contracts, whereas restricted procedures comprise 34.73%. The remaining 20.71% consists of various specialised procedures, including negotiated processes and competitive dialogues, each representing a small fraction of the total. Innovative partnerships, for example, appear in only 0.13% of cases. When classified into open and restricted categories, restricted procedures account for the majority of contracts, reflecting a strategic preference for controlled competition. This suggests that contracting authorities often prioritise supplier qualification and project-specific expertise over broad accessibility, particularly in complex or high-stakes procurements.

These procedural distinctions extend beyond administrative function, shaping investors' perceptions and market dynamics. Open procedures, while fostering transparency through broad competition, may be perceived as less selective and thus convey lower strategic significance. In contrast, restricted procedures are typically linked to high-value or more complex contracts, thereby enhancing their informational relevance. The structured

negotiation inherent in such procedures reflects a strategic procurement approach that prioritises risk mitigation and leverages supplier expertise. This indicates that contracting authorities place significant value on firms' specialised knowledge to ensure the successful delivery of complex projects which may, in turn, bolster investor confidence by reducing execution uncertainty and reinforcing alignment between project requirements and contractor capabilities.

As shown in Table 32, neither open nor restricted procurement procedures exhibit a statistically significant market reaction on the announcement day. However, the delayed effects of both open and restricted procedures diverge. Restricted procedures yield a significantly positive return on day three post announcement, with excess returns reaching 0.096%, which is statistically significant at the 5% level. This delayed optimism is likely to result from a structured selection of pre-qualified suppliers and the opportunity to negotiate more favourable terms. Such features signal reduced execution risk and greater alignment with project needs, thereby enhancing investor confidence

Conversely, open procedures exhibit a significantly negative excess return at the fourth day post announcement. The effect is quantified as -0.131%, which is statistically significant at the 5% level. This suggests a gradual reassessment of the market. This phenomenon may stem from execution risk concerns because firms participating in open tenders often adopt lowest bid strategies to win contracts. As noted by Luo (2021), such practices can introduce considerable risks to project delivery, hinder timely task completion, and result in cost overruns and even financial penalties for the contracting firm. These outcomes reinforce market uncertainty because procurement decisions made under open procedures, often driven by price competition, raise doubts about a firm's ability to deliver value, thereby diminishing investor confidence. While both procedures initially generate muted market responses, their delayed effects differ. Open procedures invite caution due to delivery risk, whereas restricted procedures offer reassurance through strategic supplier engagement.

Table 32: Analysis by contracting procedure type

Category	Excess return	
	Restricted procedures	Open procedures
	(1)	(2)
T-5	-0.000025 (0.000509)	0.000745 (0.000647)
T-4	0.000361 (0.000508)	0.000289 (0.000551)
T-3	-0.000001 (0.000585)	0.000384 (0.000567)
T-2	0.000171 (0.000582)	0.000127 (0.000577)
T-1	-0.000606 (0.000558)	-0.000259 (0.000520)
T 0	-0.000128 (0.000549)	0.000135 (0.000697)
T+1	0.000066 (0.000543)	0.000241 (0.000603)
T+2	-0.000078 (0.000545)	-0.000662 (0.000608)
T+3	0.000967** (0.000484)	0.000661 (0.000597)
T+4	0.000318 (0.000503)	-0.001308** (0.000616)
T+5	-0.000364 (0.000527)	0.000854 (0.000624)
Market excess return	0.909725*** (0.014149)	0.998412*** (0.021772)
SMB	0.185363*** (0.017534)	0.202781*** (0.024382)
HML	0.003352 (0.012231)	-0.019971 (0.013677)
RMW	-0.059689*** (0.010249)	-0.081998*** (0.015163)
CMA	-0.041085*** (0.009868)	-0.052818*** (0.009365)
Constant	0.000146*** (0.000033)	0.000143*** (0.000033)
Observations	141,668	118,177
R-squared	0.227	0.215
Number of contracts	1,172	978

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, whereas the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.5.7 Contract award criteria

MEAT emphasises cost, but also considers other qualitative factors, thereby ensuring that the chosen tender offers the best overall value for money (Ahsan and Rahman 2017; Sönnichsen and Clement 2020). Using MEAT encourages suppliers to compete on various aspects rather than solely on price. This approach represents flexible, value-driven public procurement practices aimed at ensuring that public funds are spent wisely and that suppliers contribute not only economically but also in terms of quality and innovation. MEAT contracts, as defined in the E.U.'s public procurement directives, adopt a multi-criteria approach that balances price with qualitative, technical, and sustainability considerations. These may include product quality, service reliability, environmental performance, and innovative features which enable awarding authorities to prioritise long-term value and strategic outcomes alongside cost efficiency (Parikka-Alhola and Nissinen 2012; Dotoli et al. 2020). The E.U. and the U.K. governments have advocated that public contracting authorities adopt the MEAT criteria. In this sample, the MEAT approach was applied in the awarding of 85.45% of the contracts, whereas the lowest price was the basis of just 14.55% of the awards.

As shown in Table 33, MEAT contracts are associated with greater profitability compared with price only contracts. The market reaction also varies depending on the award criteria used in the procurement process. On day three, MEAT contracts exhibit a significantly positive excess return of 0.086%, which is statistically significant at the 5% level, because they convey signals that lead investors to anticipate greater value creation and sustained operational efficiencies. The inclusion of qualitative, technical, sustainability, and innovation criteria in MEAT contracts provides information that may prompt expectations of reduced performance risk and enhanced long-term competitive positioning. These attributes are likely to be interpreted as being indicative of stable revenue streams, lower long-term costs, and the successful delivery of high-quality, sustainable projects, thereby strengthening corporate reputation. By contrast, the absence of a statistically significant reaction for lowest price contracts may be attributed to the procurement criteria's exclusive emphasis on cost minimisation without qualitative considerations.

Table 33: Analysis by different award criteria

Category	Excess return	
	MEAT	Lowest price
	(1)	(2)
T-5	0.0002492 (0.0004449)	0.000723 (0.000905)
T-4	0.0002544 (0.0004052)	0.000764 (0.000948)
T-3	0.0001447 (0.0004557)	0.000405 (0.000846)
T-2	0.0001755 (0.0004463)	-0.000147 (0.001037)
T-1	-0.0006186 (0.0004180)	0.000585 (0.000985)
T 0	0.0000256 (0.0004820)	-0.000078 (0.000918)
T+1	0.0001540 (0.0004297)	0.000126 (0.001145)
T+2	-0.0001113 (0.0004371)	-0.001637 (0.001075)
T+3	0.0008665** (0.0004148)	0.000583 (0.000895)
T+4	-0.0002180 (0.0004119)	-0.001794 (0.001213)
T+5	0.0003848 (0.0004280)	-0.000933 (0.001188)
Market excess return	0.9435553*** (0.0135889)	0.976714*** (0.031763)
SMB	0.2000269*** (0.0159004)	0.161840*** (0.036489)
HML	-0.0003746 (0.0097249)	-0.061680*** (0.023065)
RMW	-0.0703129*** (0.0096749)	-0.058863*** (0.021133)
CMA	-0.0494540*** (0.0073134)	-0.016509 (0.015560)
Constant	0.0001279*** (0.0000263)	0.000299*** (0.000060)
Observations	224,783	35,667
R-squared	0.219	0.232
Number of contracts	1,860	295

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, whereas the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.5.8 Contract type

In the dataset, there are three types of contracts: services, supplies, and works. Service contracts entail delivering services that directly benefit the public interest, spanning sectors such as healthcare, education, transportation, and waste management. Collectively, they represent 53.18% of the total awarded by volume. Supply contracts cater to the specific needs of public entities, providing a wide range of goods, including office supplies, machinery, and vehicles, and ensuring the efficient and cost-effective procurement of these items for government agencies, educational institutions, healthcare facilities, and public organisations. They represent 35.75% of the total. Works contracts primarily focus on the construction, repair, renovation, or maintenance of public infrastructure and facilities, accounting for 11.07% of the total.

As shown in Table 34, service contracts constitute the most common contract type, but no statistically significant abnormal returns are observed throughout the event window. This suggests that investors perceive such contracts as being routine and largely anticipated. Supply contracts exhibit a significantly negative excess return of -0.125%, which is statistically significant at the 10% level. This immediate adverse reaction suggests that investors may initially perceive the contract announcement to be unfavourable, possibly due to concerns about its terms, profitability, or broader implications. After the announcement, the excess return rises to 0.110% on day three, which is statistically significant at the 10% level. This positive adjustment may lead market participants to adopt a more optimistic view regarding the supply contract. Works contracts tend to elicit more pronounced market responses. A negative excess return of -0.291%, statistically significant at the 5% level, is observed on day four, potentially reflecting investor concerns regarding project complexity, execution risks, and long-term capital commitments.

Table 34: Analysis by contract type

Category	Excess return		
	Services contract (1)	Supplies contract (2)	Works contract (3)
T-5	0.000658 (0.000563)	0.000335 (0.000653)	-0.001181 (0.001234)
T-4	0.000594 (0.000495)	-0.000330 (0.000632)	0.000873 (0.001219)
T-3	-0.000137 (0.000573)	0.000709 (0.000681)	-0.000002 (0.001156)
T-2	-0.000103 (0.000522)	0.000771 (0.000672)	-0.000450 (0.001666)
T-1	-0.000031 (0.000494)	-0.001039 (0.000720)	-0.000928 (0.001042)
T 0	0.000270 (0.000561)	-0.001248* (0.000729)	0.002429 (0.001576)
T+1	0.000201 (0.000566)	0.000568 (0.000599)	-0.001382 (0.001400)
T+2	-0.000623 (0.000571)	0.000081 (0.000616)	0.000154 (0.001367)
T+3	0.000786 (0.000517)	0.001099* (0.000644)	0.000519 (0.001105)
T+4	0.000556 (0.000537)	-0.001066* (0.000612)	-0.002912** (0.001390)
T+5	-0.000243 (0.000562)	0.001021 (0.000673)	-0.000421 (0.001141)
Market excess return	0.899297*** (0.015940)	0.958491*** (0.022642)	1.161167*** (0.035432)
SMB	0.160079*** (0.017904)	0.166941*** (0.027207)	0.462722*** (0.044424)
HML	-0.022290** (0.009817)	-0.011131 (0.018194)	0.063903** (0.027454)
RMW	-0.043186*** (0.011465)	-0.053596*** (0.015450)	-0.251642*** (0.028247)
CMA	-0.033172*** (0.008410)	-0.048137*** (0.012125)	-0.094826*** (0.022402)
Constant	-0.000045 (0.000032)	0.000268*** (0.000039)	0.000774*** (0.000090)
Observations	139,171	91,876	29,403
R-squared	0.215	0.248	0.192
Number of contracts	1,151	761	243

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, whereas the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.7 Firm characteristics analysis

This section investigates how firm characteristics shape stock market reactions to public procurement awards, moving beyond aggregate estimates to reveal systematic differences between firms. Five dimensions are considered (industry, size, leverage, growth, and profitability), each offering distinct informational signals that frame investor interpretation. Industry and size capture the sectoral context and scale effects, indicating whether contracts are likely to be transformative for smaller firms or incremental for larger ones. Leverage reflects financial structure, with awards potentially perceived as being liquidity-enhancing for highly indebted firms, whereas growth profiles signal expansion potential and profitability highlights operational efficiency and value-creating capacity.

By disaggregating results along these dimensions, the analysis reveals that market responses are heterogeneous rather than uniform. Investor reactions extend beyond the announcement itself and are conditioned by underlying firm fundamentals. These findings indicate the importance of firm heterogeneity in shaping capital market outcomes, highlighting how investors weigh both event-specific information and firm attributes when assessing the financial significance of public contracts.

6.7.1 Industry

As shown in Table 35, the results are analysed across various industry sectors. The dataset reveals a notable concentration within the industrials sector. This sector includes 1,225 contracts, representing 53.40% of the overall sample. The telecommunications sector stands out as the second most prominent, featuring 200 contracts which account for 8.72% of the entire dataset. Utilities account for 187 contracts, representing 8.15% of the total dataset. Meanwhile, the consumer discretionary accounts for 184 contracts, representing 8.02% of the total. Both the healthcare and technology sectors have a relatively modest representation, with 161 contracts and 121 contracts, respectively, equating to percentages of 7.02% and 5.27%, respectively. The real estate sector includes 103

contracts, accounting for 4.49% of the total sample. However, the representation of the consumer staples, energy, and basic materials sectors is quite limited, with only 64, 40, and 9 contracts, respectively, each accounting for a small fraction of the overall dataset.

Stock returns on event days exhibit no statistically significant impact across various industries. Nevertheless, a more thorough examination of specific sectors reveals that market reactions are industry-specific, as evidenced by the precise effects observed at various points around the announcement date. Multiple industries exhibit considerable negative returns prior to the event. For instance, the consumer discretionary and technology industries exhibit a decline prior to the announcement at the 1% significance level, thereby indicating possible information leakage or anticipatory trading. This escalation indicates increasing market awareness or certainty about the approaching announcement's adverse effects on technology companies. The technology sector exhibits a negative impact four days post-announcement at the 10% significance level.

Real estate also exhibits negative returns five days prior at the 10% significance level. However, real estate has a positive impact on the fourth day post the announcement, significant at the 10% level. Other sectors respond unfavourably following the announcement. The telecommunications sector exhibits a negative return two days post-announcement at the 10% significance level, thereby indicating a possible delayed market reaction or a reconsideration of the announcement's effects on these companies.

In contrast, other sectors exhibit positive reactions prior to the event. The energy sector exhibits a notable positive stock price response four days prior to the announcement at the 1% significance level which continues one day before the awards announcements at the 5% significance level. The utilities and consumer discretionary sectors show comparable positive returns four days before the announcement, but consumer discretionary quickly corrects to negative returns one day prior to the announcement.

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Table 35: Analysis by industry

Category	Excess return								
	Industrials	Telecoms	Utilities	Consumer discretionary	Healthcare	Technology	Real estate	Consumer staples	Energy
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
T-5	0.000094 (0.000508)	-0.000498 (0.001093)	-0.001517 (0.001115)	0.002369 (0.002002)	0.001058 (0.001217)	0.005027* (0.002714)	-0.002900* (0.001676)	0.001889 (0.002596)	-0.000162 (0.002123)
T-4	-0.000158 (0.000517)	0.001084 (0.000973)	0.002268* (0.001190)	0.002709** (0.001330)	-0.000713 (0.001259)	-0.001944 (0.001929)	-0.001774 (0.001788)	0.001132 (0.002487)	0.009229*** (0.003189)
T-3	0.000409 (0.000590)	0.000521 (0.001075)	-0.000085 (0.000936)	-0.001020 (0.001242)	0.000767 (0.000951)	-0.005201*** (0.001809)	0.001370 (0.002076)	0.003833 (0.004552)	0.004491 (0.003680)
T-2	-0.000056 (0.000573)	-0.000335 (0.001149)	0.000246 (0.001377)	0.000389 (0.001656)	0.001147 (0.000980)	0.002212 (0.002462)	-0.000292 (0.001428)	0.001164 (0.002431)	-0.002233 (0.003092)
T-1	-0.000499 (0.000563)	0.000806 (0.001271)	-0.002000 (0.001348)	-0.003523*** (0.001131)	-0.000219 (0.001019)	0.001361 (0.001935)	-0.000503 (0.001609)	0.002243 (0.001957)	0.004916** (0.001947)
T 0	0.000079 (0.000660)	0.000206 (0.001090)	0.000061 (0.001060)	-0.000988 (0.001175)	-0.000362 (0.001200)	0.000728 (0.002629)	0.000186 (0.001587)	-0.002485 (0.001950)	0.002766 (0.003622)
T+1	-0.000577 (0.000571)	0.000604 (0.000920)	0.000666 (0.001384)	-0.000393 (0.001331)	0.000063 (0.000927)	0.003806 (0.002599)	0.002299 (0.001596)	0.000548 (0.002373)	0.001133 (0.003755)
T+2	-0.000270 (0.000560)	-0.002491* (0.001471)	-0.000824 (0.001091)	0.001277 (0.001598)	0.000248 (0.001094)	0.000390 (0.001819)	-0.001149 (0.002107)	0.000221 (0.002494)	-0.003352 (0.003603)
T+3	0.000762 (0.000514)	0.001672 (0.001118)	0.000851 (0.001442)	0.000609 (0.001525)	0.000099 (0.001055)	0.002083 (0.001715)	0.001291 (0.001984)	-0.001004 (0.002534)	0.002578 (0.002648)
T+4	-0.000157 (0.000549)	-0.000560 (0.001011)	-0.000773 (0.001131)	0.000163 (0.001715)	-0.001722 (0.001142)	-0.003592* (0.001826)	0.003197* (0.001878)	-0.003007 (0.002008)	-0.001103 (0.004212)
T+5	0.000461 (0.000524)	0.000804 (0.001088)	-0.000970 (0.001173)	-0.000248 (0.001826)	-0.002446 (0.001640)	0.001062 (0.002231)	-0.001202 (0.001615)	0.001067 (0.002432)	0.003565 (0.004223)
Market excess return	0.997509*** (0.016410)	0.838684*** (0.019510)	0.834674*** (0.033433)	1.097277*** (0.068373)	0.646323*** (0.037123)	0.959529*** (0.052375)	0.932115*** (0.046217)	0.633925*** (0.078969)	1.465970*** (0.095508)

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SMB	0.267401*** (0.019589)	-0.106574*** (0.031045)	0.060998** (0.023699)	0.378598*** (0.068633)	-0.209538*** (0.045140)	0.318540*** (0.063931)	0.328738*** (0.068194)	0.007880 (0.100706)	0.315452*** (0.111354)
HML	0.035961*** (0.012366)	-0.050147*** (0.014981)	-0.189330*** (0.021590)	0.043117 (0.033097)	-0.252649*** (0.029500)	-0.024485 (0.031754)	0.019393 (0.057122)	0.050042 (0.057131)	0.170130* (0.089738)
RMW	-0.102212*** (0.012246)	0.098475*** (0.018745)	0.058508*** (0.014225)	-0.193752*** (0.044161)	0.106624*** (0.030370)	-0.237945*** (0.038338)	-0.123476*** (0.033812)	0.028470 (0.052796)	-0.131003* (0.070472)
CMA	-0.082911*** (0.009216)	0.086648*** (0.018071)	0.054606*** (0.017648)	-0.042544* (0.022657)	0.001968 (0.022303)	-0.039138** (0.019133)	-0.168433*** (0.041082)	-0.036156 (0.055570)	-0.033534 (0.057165)
Constant	0.000229*** (0.000033)	-0.000624*** (0.000064)	-0.000602*** (0.000058)	0.000607*** (0.000100)	-0.000081 (0.000077)	0.001034*** (0.000083)	0.000675*** (0.000094)	-0.000261 (0.000190)	-0.000469*** (0.000150)
Observations	139,083	22,143	20,922	21,371	18,985	13,774	11,979	7,381	4,114
R-squared	0.223	0.308	0.298	0.217	0.228	0.157	0.217	0.139	0.305
Number of contracts	1,150	183	173	177	157	115	99	61	34

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, whereas the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

The remaining sectors exhibit relatively muted market reactions, but the industrials sector, which accounts for a substantial share of large contracts, encompasses a diverse range of subsectors with distinct characteristics and market dynamics, as illustrated in Table 36. A more detailed examination of these subsectors could yield valuable insight into their individual performance, particularly in terms of understanding how public contract awards shape investor responses within each industry segment.

Table 36: Tabulation of the industrial subsectors

Industrial subsector	Freq.	Percentage
Industrial support services	728	59.43
Construction and materials	176	14.37
Aerospace and defence	173	14.12
Electronic and electrical equipment	67	5.47
General industrials	51	4.16
Industrial transportation	25	2.04
Industrial engineering	5	0.41
Total	1,225	100.00

Industrial support services account for 59.43% of the industrial sector, but contract announcements in this category generally do not elicit substantial market reactions, as reported in Table 37. The absence of statistically significant excess returns suggests that these contracts are largely routine and anticipated by the market, thereby providing limited new information to investors. The construction and materials sector responds on the event day with an excess return of 0.498%, which is statistically significant at the 5% level, thereby indicating increased investor optimism. However, this initial enthusiasm is subsequently corrected by a similar magnitude reversal on the fourth day following the announcement.

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The aerospace and defence sectors did not exhibit significant abnormal returns around the announcement, probably due to the sensitive and confidential nature of contracts limiting public disclosure and reducing market reactions. Electronic and electrical equipment exhibits a positive excess return of 0.471% on the third day following the announcement which is significant at the 10% level. Similarly, industrial transportation records a positive excess return of 0.503% one day post-announcement, also significant at the 10% level.

Table 37: Analysis within the industrial sector

Category	Excess return					
	Industrial support services	Construction and materials	Aerospace and defence	Electronic and electrical equipment	General industrials	Industrial transportation
	(1)	(2)	(3)	(4)	(5)	(6)
T-5	0.000112 (0.000692)	-0.000065 (0.001402)	0.000405 (0.001034)	-0.001171 (0.002388)	-0.001808 (0.001930)	0.005338* (0.003028)
T-4	-0.000070 (0.000702)	0.000006 (0.001266)	0.000722 (0.001300)	-0.003651 (0.002233)	0.002004 (0.002065)	-0.002241 (0.002416)
T-3	0.000243 (0.000853)	0.001110 (0.001294)	0.000361 (0.001223)	0.000034 (0.002414)	0.001995 (0.001621)	-0.001970 (0.003442)
T-2	-0.000053 (0.000721)	-0.000926 (0.002175)	0.000954 (0.000958)	-0.000975 (0.002629)	-0.001575 (0.002365)	0.003193 (0.002316)
T-1	-0.000458 (0.000815)	0.000493 (0.001369)	-0.000569 (0.000897)	-0.003798 (0.002328)	0.003149* (0.001787)	-0.004985 (0.003552)
T 0	-0.000314 (0.000796)	0.004981** (0.002049)	0.000097 (0.000958)	-0.008958 (0.005467)	0.000923 (0.001856)	-0.000594 (0.002343)
T+1	-0.001092 (0.000761)	-0.001018 (0.001806)	-0.000767 (0.000966)	0.001935 (0.002984)	0.002654 (0.001596)	0.005027* (0.002860)
T+2	0.000121 (0.000770)	-0.001517 (0.001626)	0.000239 (0.001035)	-0.002653 (0.002442)	-0.001887 (0.001668)	0.004342 (0.003547)
T+3	0.000770 (0.000689)	0.000580 (0.001322)	-0.000030 (0.001040)	0.004712* (0.002609)	0.001542 (0.003156)	-0.003396 (0.003165)
T+4	0.000951 (0.000681)	-0.004233*** (0.001539)	-0.000235 (0.001154)	-0.001885 (0.003684)	0.002329 (0.003148)	-0.000620 (0.002467)
T+5	0.000104 (0.000679)	0.000512 (0.001341)	0.001419 (0.001461)	0.002551 (0.002461)	0.001575 (0.002003)	-0.006625* (0.003772)

Market excess return	1.007459*** (0.023116)	1.197921*** (0.043953)	0.849292*** (0.021489)	0.895143*** (0.048524)	0.855355*** (0.029295)	1.092374*** (0.074405)
SMB	0.292399*** (0.026586)	0.524437*** (0.054155)	0.076086*** (0.024038)	0.028492 (0.103423)	0.079266** (0.033319)	0.071397 (0.091232)
HML	0.061417*** (0.017539)	0.082938*** (0.021168)	-0.045353** (0.021033)	-0.099768 (0.083469)	-0.052388* (0.026554)	0.050780 (0.045379)
RMW	-0.104768*** (0.016019)	-0.316552*** (0.035703)	0.008191 (0.015297)	0.022267 (0.070711)	-0.039215 (0.033741)	0.000798 (0.074514)
CMA	-0.090174*** (0.013298)	-0.125937*** (0.024784)	-0.019051 (0.012899)	-0.227507*** (0.045309)	0.025631 (0.017650)	-0.002245 (0.040997)
Constant	0.000117** (0.000045)	0.000932*** (0.000109)	-0.000103** (0.000045)	0.000707*** (0.000132)	-0.000082 (0.000111)	0.000578*** (0.000113)
Observations	82,159	19,965	20,291	7,865	5,324	2,874
R-squared	0.231	0.189	0.282	0.169	0.365	0.223
Number of contracts	679	165	168	65	44	24

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, whereas the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.7.2 Firm size

Firm size was initially intended to be classified based on the number of employees, following standard thresholds which define small firms in the U.K. as those with 0 to 49 employees, medium-sized firms as those with 50 to 249, and large firms consisting of 250 or more. However, because the sample consists exclusively of FTSE 350 firms, the largest publicly listed companies in the U.K. fall into the large category under this classification, thereby limiting its usefulness for meaningful differentiation. Instead, firm size was measured using total assets, reported in millions of pounds sterling, and classified into terciles (small, medium, and large). As shown in Table 38, firms in the small asset-based group have an average total asset value of £820 million, whereas those in the medium group average approximately £3.35 billion. In contrast, firms in the large category exhibit a mean total asset value in excess of £30.21 billion, reflecting substantial variation in firm scale within the FTSE 350 sample. Small firms in the FTSE 350 sample between 2002 and 2006 include Halfords Group, Renishaw, Page Group, Oxford Instruments, and WS Atkins. Despite being constituents of the FTSE 350, these were the smaller-cap companies during that period. Medium-sized firms in the sample include Babcock International, Smiths Group, Logica, and G4S. The largest firms included in the sample are GlaxoSmithKline, Centrica, BT Group, BAE Systems, Shell, Vodafone Group, and AstraZeneca. Certain companies, such as Travis Perkins, Serco Group, Savills, and Computacenter, fluctuate between different group sizes depending on their total assets for each year.

Table 38: Summary statistics of firm size by total assets (£ million)

Firm size	N	Mean	S.D.	Min.	Max.
Small firm size	764	820	397	206	1628
Medium firm size	765	3351	1196	1648	5667
Large firm size	765	30213.2	26683	5675	113618

Although all firms in the sample are constituents of the FTSE 350 and thus classified as large by conventional standards, variation in relative firm size continues to generate distinct market responses, as shown in Table 39 which presents the analysis by firm-size groups. Smaller firms within the index exhibit a delayed but significantly positive return

at day three, thereby suggesting slower investor recognition of value. The market response is more pronounced for smaller firms. Three days after the announcement, small firms exhibit a significantly positive excess return of 0.159%, which is statistically significant at the 5% level and potentially reflects investor recognition of their growth prospects. Although this study focuses on firms comprising the FTSE 350, those classified as small in the sample represent the lower end of the size distribution and may therefore display characteristics typically associated with smaller firms. Elayan et al. (2004) state that markets respond more favourably to contract announcements involving smaller firms, consistent with earlier evidence of the firm size effect.

Medium-sized firms exhibit significantly negative excess returns of -0.161% and -0.152% on the second and fourth days following the announcement, both statistically significant at the 5% level. This may indicate that contract awards are not sufficiently substantial to alter their growth trajectory or strengthen their market position, leading to a negative investor response. These reactions may stem from a perceived mismatch between the complexity of awarded contracts and the firm's ability to deliver. Choi (2015) demonstrates that even large contract awards can generate negative market responses when firms lack relevant experience or operational readiness. Abdurakhmonov et al. (2021) argue that firms that are increasingly dependent upon government contracts may constrain their broader investment decisions. In this context, negative investor reactions may reflect uncertainty about firms' capacity to manage complex projects or concerns that such commitments may limit the pursuit of alternative investment opportunities. Large firms exhibit a relatively prompt market response, with a significantly positive excess return of 0.106% observed one day after the announcement, statistically significant at the 10% level. The earlier timing of this reaction likely reflects the greater visibility, credibility, and faster information dissemination typically associated with large-cap firms, leading to the new information being more rapidly incorporated into stock prices. These firms often have a high degree of institutional ownership and benefit from extensive analyst coverage. As a result, the comparatively muted market response may indicate lower investor sensitivity because large firms with diversified operations and substantial revenue bases are generally less impacted by individual contract announcements.

Table 39: Analysis by firm size

Category	Excess return		
	Small firm size	Medium firm size	Large firm size
	(1)	(2)	(3)
T-5	-0.000039 (0.000782)	0.000727 (0.000695)	0.000200 (0.000600)
T-4	-0.000693 (0.000679)	0.000721 (0.000729)	0.000849* (0.000498)
T-3	-0.001263* (0.000760)	0.001204 (0.000824)	0.000463 (0.000501)
T-2	0.000128 (0.000763)	-0.000438 (0.000812)	0.000688 (0.000531)
T-1	-0.001616* (0.000824)	0.000392 (0.000617)	-0.000083 (0.000528)
T 0	-0.000550 (0.000861)	0.000154 (0.000847)	0.000307 (0.000505)
T+1	-0.000630 (0.000768)	-0.000033 (0.000750)	0.001061* (0.000546)
T+2	0.000109 (0.000721)	-0.001614** (0.000795)	0.000461 (0.000559)
T+3	0.001599** (0.000691)	0.000277 (0.000713)	0.000671 (0.000550)
T+4	0.000037 (0.000776)	-0.001527** (0.000722)	0.000154 (0.000511)
T+5	0.000665 (0.000774)	-0.000063 (0.000752)	0.000051 (0.000546)
Market excess return	0.859629*** (0.018553)	1.063017*** (0.022184)	0.900582*** (0.023517)
SMB	0.284461*** (0.024203)	0.273362*** (0.024220)	0.015623 (0.025650)
HML	0.042371*** (0.014865)	0.051215*** (0.016245)	-0.131340*** (0.011097)
RMW	-0.128299*** (0.015614)	-0.098275*** (0.014414)	0.027384* (0.015585)
CMA	-0.096093*** (0.011474)	-0.075671*** (0.011641)	0.034201*** (0.010543)
Constant	0.000518*** (0.000044)	0.000177*** (0.000038)	-0.000295*** (0.000043)
Observations	84,567	87,955	87,928
R-squared	0.157	0.241	0.301
Number of contracts	701	727	727

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, whereas the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.7.3 Firm leverage

Financial leverage, commonly measured by the ratio of total debt to total assets, reflects the extent to which a firm relies on debt to finance its operations and is a widely accepted indicator of capital structure (Aivazian and Qiu 2005; Enekwe et al. 2014). Based on the ratio of total debt to total assets, the study sample was then equally divided into three groups on the basis of leverage levels: low, moderate, and high (see Table 40).

As shown in Table 40, low-leverage firms have leverage ratios ranging from 0% to 14.3%. This indicates that these firms generally rely very little on debt financing, maintain a conservative capital structure and relying more on internal financing or operating in industries with limited capital requirements. Moderately leveraged firms have ratios ranging from 14.3% to 30.8%. These firms use a balanced mix of debt and equity, resulting in moderate financial risk. Highly leveraged firms have ratios ranging from 30.8% to 156.1%. This group demonstrates a substantial reliance on debt financing, with leverage ratios of greater than one indicating that their total debt exceeds their asset base. This may increase financial risk but could also amplify returns if managed effectively. This categorisation allows for the assessment of how market reactions to public contracts vary with firms' leverage, highlighting whether leverage amplifies investor responses.

Table 40: Summary statistics of firm leverage

Firm leverage categories	N	Mean	S.D.	Min.	Max.
Low-leverage firms	764	0.058	0.048	0	0.143
Moderate-leverage firms	765	0.230	0.047	0.143	0.308
High-leverage firms	765	0.408	0.108	0.308	1.561

Theoretically, under perfect market conditions, greater financial leverage is associated with higher returns because increased risk to equity holders warrants greater compensation. Empirical evidence supporting this positive relationship has been documented in several studies (Modigliani and Miller 1958; Bhandari 1988; Dhaliwal et al. 2006). However, other research reports a negative association between leverage and stock returns (Arditti 1967; Korteweg 2004; Weill 2008; Muradoglu and Sivaprasad 2012;

Nguyen and Schüßler 2013; Tosun et al. 2024). These mixed findings suggest that the effect of leverage on stock performance is not uniform and may depend on a range of contextual factors including industry characteristics, firm-specific conditions, and broader market environments.

Table 41 presents the impact of firms' leverage positions on investor reactions to contract awards. Low-leverage firms experienced a modest decline of -0.143% one day prior to the announcement, which may indicate investor concerns about these firms' ability to access debt financing when needed, possibly due to a limited track record with lenders or weaker banking relationships. On the other hand, low leverage could be interpreted as a sign of slower growth prospects. However, by the third day following the announcement, low-leverage firms exhibit a positive excess return of 0.135% which is statistically significant at the 5% level. Moderately leveraged firms exhibit a muted market response throughout the event window, suggesting that investors perceive these firms to be financially balanced, with neither particularly high risk nor exceptional advantages in executing public contracts. The absence of a strong reaction may indicate that their leverage profile does not materially influence investor expectations in the context of contract announcements.

In contrast, excess returns in anticipation of the announcement for highly leveraged companies were recorded, with abnormal returns of 0.153% and 0.129% on days 4 and 3 before the event, respectively. This pattern suggests that investors may react early, anticipating that firms with aggressive financing strategies stand to benefit significantly from securing public contracts. These early movements imply that the market considers contract awards to be important liquidity events, potentially alleviating financial pressures or validating the growth prospects of firms with heightened levels of debt. The absence of a significant market reaction around the actual event may be interpreted in accordance with the findings of Kaplan and Stein (1990), who suggest that increases in financial leverage can reduce the sensitivity of a firm's assets to overall market fluctuations. This alteration could affect how investors perceive the firm's risk and expected returns.

Table 41: Analysis of firm leverage

Category	Excess return		
	Lowly leveraged firms	Moderately leveraged firms	Highly leveraged firms
	(1)	(2)	(3)
T-5	0.000146 (0.000716)	-0.000022 (0.000642)	0.000774 (0.000730)
T-4	-0.000947 (0.000688)	0.000410 (0.000611)	0.001534** (0.000628)
T-3	-0.000914 (0.000697)	0.000184 (0.000664)	0.001290* (0.000765)
T-2	0.000380 (0.000754)	0.000107 (0.000708)	-0.000039 (0.000670)
T-1	-0.001430** (0.000624)	0.000007 (0.000600)	0.000056 (0.000762)
T 0	0.001055 (0.000816)	-0.000591 (0.000672)	-0.000464 (0.000765)
T+1	-0.000159 (0.000761)	-0.000563 (0.000586)	0.001167 (0.000732)
T+2	-0.000504 (0.000771)	-0.000221 (0.000629)	-0.000197 (0.000698)
T+3	0.001358** (0.000639)	0.000450 (0.000623)	0.000711 (0.000701)
T+4	-0.000796 (0.000691)	-0.000804 (0.000674)	0.000284 (0.000670)
T+5	0.000587 (0.000672)	-0.000315 (0.000750)	0.000309 (0.000674)
Market excess return	0.968846*** (0.018427)	0.926746*** (0.021861)	0.946008*** (0.024099)
SMB	0.293268*** (0.025262)	0.158958*** (0.020306)	0.131536*** (0.028790)
HML	0.020044 (0.014778)	-0.009483 (0.015854)	-0.035144** (0.015532)
RMW	-0.131405*** (0.015979)	-0.052595*** (0.012398)	-0.023922 (0.016565)
CMA	-0.107990*** (0.011493)	-0.014421 (0.011890)	-0.013541 (0.010943)
Constant	0.000704*** (0.000046)	0.000103*** (0.000037)	-0.000319*** (0.000040)
Observations	86,828	86,571	87,051
R-squared	0.208	0.229	0.229
Number of contracts	719	716	720

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, whereas the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.7.4 Firm growth

This section investigates the extent to which firm growth influences stock market reactions to public contract awards. Previous studies, including those by Capaul et al. (1993) and Penman (1996), suggest that firm growth can be effectively proxied by the price-to-book ratio (P/B), defined as the market price per share divided by the book value per share. Chiu et al. (2021) and Goel et al. (2025) further emphasise its significance, highlighting its use by analysts and value investors to identify potentially undervalued firms, particularly those with lower P/B ratios. In accordance with this literature, the current study employs the P/B ratio to capture variations in firm growth and examine how such differences may shape investor responses to public contract announcements. Value stocks have been shown to consistently outperform growth stocks, with Fama and French (2007) providing robust empirical evidence supporting this relationship. Their findings indicate that firms with low P/B ratios tend to deliver higher returns, a pattern particularly evident among small-cap companies.

In the current analysis, the low growth category comprises firms with a negative average P/B ratio, with the mean value being -3.78, thereby suggesting that, on average, the market values each share significantly below its recorded book value. Such a valuation reflects substantial financial underperformance, often indicative of operational inefficiencies, declining revenues, or broader signs of financial distress. In this context, the announcement of public contract awards may be interpreted by investors as a potential signal of recovery or stabilisation, particularly for firms experiencing ongoing financial challenges

The moderate growth category consists of firms with positive, albeit modest, P/B values ranging from 1.85 to 3.72. These firms are generally characterised by stable financial fundamentals and consistent operational performance, although they do not exhibit the rapid expansion typically associated with high-growth firms. For this category, the awarding of public contracts may be interpreted by investors as reinforcing the firm's current trajectory and contributing incrementally to its long-term financial stability. The high growth group includes firms with P/B values in excess of 3.73, with a mean of 8.54. These firms are typically in active expansion phases and are often associated with

elevated investor expectations. In such cases, public contract awards may be perceived as validating the firm's growth and enhancing its competitive position, thereby eliciting stronger positive market responses.

Table 42: Summary statistics of firm growth

Firm growth	N	Mean	S.D.	Min.	Max.
Low-growth firms	740	-3.785	13.218	-51.470	1.850
Moderate-growth firms	740	2.691	0.521	1.850	3.720
High-growth firms	741	8.541	9.130	3.730	44.340

Table 43 presents the returns of low-growth firms, which remain largely insignificant throughout the event window, thereby suggesting that public contract announcements do not materially alter investor expectations. This aligns with the view that low-growth firms often operate in mature or saturated markets where additional contracts offer limited scope for expansion. Such firms are typically classified as value stocks with low P/B ratios and are generally perceived as mature, potentially undervalued, but also financially constrained or underperforming (Capaul et al. 1993).

In contrast, moderate-growth firms record a modest yet significant positive reaction on the third day, suggesting a delayed market response as the strategic or financial implications of the award become clearer. Specifically, moderate-growth firms reported an abnormal return of 0.109% on the third day, whereas high-growth firms recorded a return of 0.124%. The most pronounced effect is observed among high-growth firms, which experience significant positive excess returns on the third day at the 5% level of significance. This suggests that investors consider public contracts to be strong growth signals, reinforcing their confidence in these firms' expansion prospects. High-growth firms, often characterised by strong fundamentals, aggressive reinvestment strategies, and expectations for future expansion (Capaul et al. 1993), tend to attract greater investor attention. However, the delayed positive response may reflect the time that investors require to assess the contract's scale, revenue potential, or associated execution risks.

Table 43: Analysis of firm growth

Category	Excess return		
	Low-growth firms	Moderate-growth firms	High-growth firms
	(1)	(2)	(3)
T-5	0.000274 (0.000811)	-0.000180 (0.000636)	0.000458 (0.000559)
T-4	0.000625 (0.000769)	-0.000169 (0.000580)	0.000430 (0.000576)
T-3	0.000737 (0.000896)	0.000432 (0.000607)	-0.000425 (0.000617)
T-2	-0.000480 (0.000917)	0.000053 (0.000557)	0.000439 (0.000587)
T-1	-0.001285 (0.000823)	-0.000213 (0.000595)	0.000153 (0.000547)
T 0	0.000250 (0.000857)	-0.000797 (0.000771)	0.000393 (0.000658)
T+1	0.000273 (0.000831)	0.000465 (0.000580)	-0.000519 (0.000681)
T+2	-0.000441 (0.000852)	-0.000257 (0.000651)	-0.000302 (0.000583)
T+3	0.000093 (0.000775)	0.001097* (0.000626)	0.001249** (0.000578)
T+4	-0.001186 (0.000784)	-0.000182 (0.000604)	0.000110 (0.000644)
T+5	0.000292 (0.000885)	0.000528 (0.000609)	-0.000410 (0.000572)
Market excess return	1.125888*** (0.025014)	0.859655*** (0.018394)	0.842405*** (0.017209)
SMB	0.353531*** (0.032325)	0.164660*** (0.019536)	0.048944** (0.020145)
HML	0.133508*** (0.018285)	-0.082236*** (0.010924)	-0.098172*** (0.011898)
RMW	-0.173602*** (0.018782)	-0.023144* (0.011958)	0.018433 (0.013023)
CMA	-0.081965*** (0.014783)	-0.030737*** (0.009428)	-0.016586* (0.008647)
Constant	0.000417*** (0.000052)	-0.000008 (0.000036)	-0.000070** (0.000032)
Observations	85,871	84,622	82,522
R-squared	0.226	0.233	0.236
Number of contracts	710	700	682

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, whereas the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.7.5 Firm profitability

This section examines how a firm's profitability influences investors' reactions to contract awards. ROA is employed as the primary measure of profitability. Profitability is a critical indicator of a firm's operational efficiency and long-term viability because it reflects the firm's ability to generate earnings relative to its resource base. Among the various profitability metrics, ROA is widely used in the empirical research (e.g., Trujillo-Ponce 2013; Husna and Satria 2019) because it captures how effectively a firm uses its assets to generate net income. As noted by Panigrahi and Vachhani (2021), ROA provides insight into the return generated per unit of capital invested, serving as a key indicator of managerial performance and asset productivity. Due to differences in asset structures across industries, ROA is best interpreted when making comparisons among firms within the same sector because this affords more meaningful and reliable interpretation.

To facilitate the analysis, Table 44 classifies firms into three profitability categories based on their ROA: low, moderate, and high. Low-profitability firms exhibit a weak average ROA with substantial variation, reflecting significant performance disparities and the potential presence of financially distressed firms. Moderate-profitability firms record a mid-range average ROA with limited variability, thereby indicating consistent and stable financial performance across the group. High-profitability firms exhibit a strong average ROA but greater variability, thereby suggesting a wider distribution within this category. This variation implies that while some firms in this group generate exceptionally high returns, others achieve more moderate levels of profitability.

Table 44: Summary statistics of firm profitability

Firm profitability	N	Mean	S.D.	Min.	Max.
Low-profitability firms	764	1.289	3.537	-9.170	4.790
Moderate-profitability firms	765	6.333	0.998	4.790	8.530
High-profitability firms	765	13.161	4.711	8.530	28.620

As shown in Table 45, the regression results reveal distinct patterns in excess return behaviour across profitability categories. On the third day before the event, firms with low profitability exhibit a positive excess return of 0.173% which is statistically significant at the 5% level, possibly reflecting early investor speculation, but show no significant post-event response, thereby indicating limited confidence in their ability to leverage public contracts. Moderate profitability firms display no significant excess returns, suggesting a neutral market view of their growth potential. This lack of reaction may reflect investor uncertainty or the perception that contract awards are less likely to meaningfully impact firms that are moderately profitable.

In contrast, high-profitability firms exhibit a strong positive excess return of 0.165% on the third day after the announcement which is significant at the 1% level. This delayed but substantial response suggests that investors may take additional time to assess the contract award's strategic value or long-term benefits, ultimately perceiving it as reinforcing the firm's already strong financial position. Such firms are typically characterised by efficient resource utilisation, robust operational performance, and greater strategic adaptability, all of which enhance their capacity to generate value from new contractual opportunities. In general, the results indicate that profitable companies receive larger market reactions when they win contracts. This finding is consistent with that of Tosun et al. (2023), who demonstrate that firms with stronger financial positions and higher profits are better able to withstand external shocks, such as those experienced during the COVID-19 period. These firms' financial resilience not only benefits them during crises but is also likely to enhance investor confidence in their ability to capitalise on new opportunities, leading to stronger, more positive market responses when they secure contract awards.

Table 45: Analysis of firm profitability

Category	Excess return		
	Low profitability	Moderate profitability	High profitability
	(1)	(2)	(3)
T-5	0.000756 (0.000804)	0.000558 (0.000624)	-0.000409 (0.000643)
T-4	0.000920 (0.000721)	-0.000211 (0.000584)	0.000269 (0.000609)
T-3	0.001733** (0.000875)	-0.000788 (0.000629)	-0.000572 (0.000582)
T-2	-0.000862 (0.000852)	0.000721 (0.000586)	0.000707 (0.000659)
T-1	0.000671 (0.000646)	-0.000594 (0.000584)	-0.001447* (0.000759)
T 0	-0.000224 (0.000947)	0.000386 (0.000604)	-0.000196 (0.000660)
T+1	0.000613 (0.000785)	0.000507 (0.000704)	-0.000667 (0.000579)
T+2	-0.000239 (0.000799)	-0.000170 (0.000715)	-0.000634 (0.000569)
T+3	0.000628 (0.000744)	0.000240 (0.000613)	0.001655*** (0.000590)
T+4	-0.001090 (0.000775)	-0.000183 (0.000614)	0.000069 (0.000626)
T+5	0.000234 (0.000826)	0.000820 (0.000653)	-0.000478 (0.000582)
Market excess return	1.047672*** (0.023503)	0.922512*** (0.020918)	0.862312*** (0.018027)
SMB	0.246763*** (0.030302)	0.203935*** (0.021481)	0.140127*** (0.021726)
HML	0.058423*** (0.016259)	-0.019280 (0.016719)	-0.036331*** (0.013279)
RMW	-0.083207*** (0.018048)	-0.064132*** (0.012049)	-0.049838*** (0.014343)
CMA	-0.031846** (0.013370)	-0.048550*** (0.011185)	-0.048032*** (0.010004)
Constant	-0.000114*** (0.000040)	0.000174*** (0.000038)	0.000343*** (0.000041)
Observations	88,152	86,950	85,348
R-squared	0.225	0.229	0.213
Number of contracts	729	719	707

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, whereas the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.8 Political environment analysis

This section examines if the political environment had any effect on the reaction of investors to contract awards. The British monarchy operates as a constitutional monarchy, whereby the Sovereign acts as head of state and legislative authority is held by the elected parliament (Bogdanor 1995). The U.K. holds general elections in which citizens select a member of parliament to represent their constituency in the House of Commons. During election campaigns, candidates employ various strategies to promote themselves, including public speeches, leaflet distribution, and podcasts to communicate their objectives and outline their manifestos. There are approximately 650 constituencies and the party that secures the largest number of votes in each constituency is designated as the member of parliament for that constituency. Any political party obtaining a minimum of 326 seats in parliament establishes the government and appoints its leader as prime minister. The prime minister directs the government, formulates national policies, and represents the U.K. globally. In this analysis, the political environment is represented by the prime ministers who served between 2006 and 2022 from either the Labour Party or the Conservative Party, as shown in Table 46. The U.K. experienced six changes in prime minister during this period. Only five changes are considered to be significant due to Elizabeth Truss's brief tenure and, therefore, it was merged with Boris Johnson's. Prior to 2010, the Labour Party was in power, followed by an extended period of Conservative leadership. The U.K. political parties present diverse agendas that significantly influence the nation's political priorities (Novotný et al. 2016).

Table 46: Changes in U.K. prime minister following general elections

Prime minister	Political party	Start date	End date	Freq.	Percentage
Tony Blair	Labour	01-May-1997	27-June-2007	198	8.64
Gordon Brown	Labour	27-June-2007	06-May-2010	336	14.66
David Cameron	Conservative	06-May-2010	13-July-2016	937	40.88
Theresa May	Conservative	13-July-2016	24-july-2019	488	21.29
Boris Johnson	Conservative	24-july-2019	6-Sep-2022	333	14.53
Total				2,292	100.00

Note: This table presents the results of U.K. elections which are typically held at least every five years. The data are organised by the prime ministers' terms in office.

Source: House of Commons Library.

During Tony Blair's tenure, a positive excess return of 0.246% was observed four days prior to the announcement, whereas the event day itself exhibited a negative excess return of -0.285%, both statistically significant at the 5% level. The U.K. market demonstrated relative stability and consistent growth in the year leading up to the global financial crisis. The negative reactions to public contract awards under the Labour party in 2006 and 2007 likely reflected investor concerns about fiscal responsibility, government intervention, and the perceived transparency of the procurement process, all of which could have undermined market confidence during that period, as shown in Table 47. Gordon Brown's period demonstrated consistently marginal and statistically insignificant excess returns across all periods. The lack of significant movements indicates that, during the financial crisis, while there was some sustained investor optimism about public contract announcements, the market's reaction was moderated by the broader economic uncertainty during the crisis. Although Labour's social policies may broadly benefit the welfare of society (Shaw 2002), financial markets often react negatively or remain muted due to concerns about higher public spending, possible tax increases, increased regulation, and the potential impacts on private sector profitability and economic stability (Meredith 2005). Under Labour governance, these concerns typically lead to cautious or adverse investor sentiment upon the announcement of new public contracts.

The David Cameron period exhibits the most pronounced response. The significant negative return of -0.104% just before the announcement points to investor apprehension about the impending leadership change. However, this adverse reaction was followed by a delayed positive market response three days post-announcement, with a positive excess return of 0.115% which was statistically significant at the 5% level. This was followed by a prompt correction to -0.121% the next day. This pattern suggests that investors adjusted their expectations gradually, leading to renewed market confidence during the post-financial crisis recovery phase. The significantly positive coefficients indicate a strong effect, suggesting that investors reacted favourably to the contract award, probably due to the country's austerity programme and expectations of business-friendly reforms or fiscal discipline following the transition from a Labour to a Conservative government.

Theresa May's tenure was largely characterised by insignificant market movements, except for a positive excess return of 0.131% three days prior to the announcement, which was statistically significant at the 10% level. This limited reaction may be attributed to heightened political uncertainty surrounding the Brexit negotiations which dominated market sentiment and overshadowed other economic or policy announcements.

Boris Johnson's tenure exhibited relatively modest and statistically insignificant excess returns. The Conservative Party promotes free market capitalism and advocates for minimal government involvement (Plant and Hoover 2014). The primary objective is to promote economic growth by reducing taxes and improving the business environment, including the implementation of corporate tax cuts (Pilkington 2017). The stresses associated with the completion of Brexit, the prioritisation of national sovereignty, and the assertion of control over laws, borders, and commerce were substantial (Senior et al. 2021). Although the Labour Party acknowledged the referendum results, it prioritised the preservation of environmental standards, workers' rights, and strong relations with the E.U. (Bale 2023). Market reticence was reflective of wider uncertainty due to the impact of the COVID-19 pandemic, Brexit, and the Ukraine war.

In general, the political transitions from Labour to Conservative resulted in contract awards having a delayed but positive effect, reflecting greater market confidence and policy support, thereby enhancing stock returns. These findings emphasise the value of considering the political context and timing when assessing the impact of public contracts on firm performance.

Table 47: Analysis by prime minister

Prime minister	Excess return				
	Tony Blair	Gordon Brown	David Cameron	Theresa May	Boris Johnson
	(1)	(2)	(3)	(4)	(5)
T-5	-0.000378 (0.001086)	0.000299 (0.001349)	0.000148 (0.000495)	0.001000 (0.000689)	-0.000216 (0.001444)
T-4	0.002462** (0.001178)	0.000339 (0.001267)	-0.000098 (0.000491)	-0.000203 (0.000667)	0.001716 (0.001168)
T-3	0.000314 (0.001366)	0.000287 (0.001494)	-0.000687 (0.000502)	0.001315* (0.000771)	0.000355 (0.001271)
T-2	-0.001114 (0.001336)	0.000783 (0.001436)	0.000348 (0.000528)	0.000311 (0.000761)	-0.001293 (0.001271)
T-1	0.000845 (0.001113)	-0.000594 (0.001168)	-0.001043* (0.000585)	-0.000161 (0.000656)	0.000591 (0.001126)
T 0	-0.002851** (0.001411)	0.000315 (0.001451)	-0.000710 (0.000622)	0.000982 (0.000745)	0.001105 (0.001294)
T+1	0.000310 (0.001205)	0.000055 (0.001397)	-0.000286 (0.000539)	0.000670 (0.000648)	0.000689 (0.001336)
T+2	-0.000741 (0.001360)	0.000280 (0.001392)	-0.000753 (0.000544)	0.000000 (0.000648)	-0.000494 (0.001313)
T+3	0.000033 (0.001635)	0.001831 (0.001344)	0.001156** (0.000456)	-0.000011 (0.000698)	0.000103 (0.001204)
T+4	0.001809 (0.001932)	-0.000659 (0.001109)	-0.001215** (0.000510)	-0.000415 (0.000712)	0.001276 (0.001351)
T+5	-0.001571 (0.001144)	0.001830 (0.001319)	0.000561 (0.000534)	-0.000300 (0.000729)	-0.001431 (0.001300)
Market excess return	0.916827*** (0.034402)	0.853326*** (0.025341)	0.950890*** (0.015659)	0.896585*** (0.027815)	1.116033*** (0.033423)

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SMB	0.293920*** (0.041343)	0.304264*** (0.039098)	0.099204*** (0.015903)	0.113503*** (0.032134)	0.332054*** (0.055112)
HML	-0.071924** (0.031018)	0.105631*** (0.021772)	-0.070856*** (0.008340)	-0.055139*** (0.014911)	-0.017352 (0.031821)
RMW	-0.067845** (0.030469)	-0.098092*** (0.019711)	-0.038300*** (0.010218)	0.012365 (0.020676)	-0.090274*** (0.034610)
CMA	-0.022081 (0.022759)	-0.113064*** (0.027269)	-0.042283*** (0.007171)	0.047612*** (0.010818)	-0.106228*** (0.016609)
Constant	-0.000162 (0.000131)	-0.000145* (0.000079)	0.000118*** (0.000035)	-0.000245*** (0.000028)	0.000618*** (0.000053)
Observations	11,084	39,083	111,049	58,915	40,077
R-squared	0.217	0.252	0.248	0.108	0.245
Number of contracts	92	323	919	487	332

Note: The dependent variable is stock excess return, defined as the difference between the stock's daily return and the corresponding daily risk-free rate. This variable is examined using a 61-day (three-month) event window. Event time is defined relative to the event day, denoted as T0. The pre-event period covers T-5 to T-1, whereas the post-event period spans from T+1 to T+5. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.9 Interaction regression

This section investigates how firm and contract characteristics interact to shape stock market reactions to public contract awards. Focus is placed on firms that have previously demonstrated the strongest market responses, namely those defined by small size, low leverage, high growth, and high profitability. These firm characteristics are selected based on empirical evidence of their heightened sensitivity to contract award events. The analysis explores their interactions with key contract features, such as awarding criteria, contract size, the extent of contract division, and the procedures used in contracting. By examining these interactions, the study aims to identify which combinations of firm and contract attributes lead to the most significant variations in stock market performance.

6.9.1 Small-size firm and contract characteristic interactions

Small-sized firms, identified using a binary variable indicator based on the significant outcomes reported in Section 6.7.2, display a pronounced sensitivity to award criteria. The interaction analysis between small firm size and contract characteristics indicates that certain procurement features significantly influence the market perceptions of these firms.

Specifically, there is a significantly positive interaction with the MEAT criterion on the third day; the excess return increased to 0.211%, a result that is statistically significant at the 1% level. After the announcement, investors' reactions are more favourable when awards to smaller firms are based on qualitative criteria rather than solely on price. These results may signal that such firms are chosen for their technical capabilities, innovation, or strategic fit, thereby enhancing investor confidence in their long-term potential and operational competence. MEAT contracts may also be more profitable than price-only contracts. In terms of contract value, a significant positive interaction with small contracts on the third day post-announcement suggests that smaller firms are better positioned to benefit from awards that align with their scale and resource capacity, probably due to reduced delivery risks. However, medium and large contracts do not show significant interactions, implying a more neutral market response.

The structure of contract awards is a significant determinant of how investors respond. The analysis shows that single award contracts have a strong positive effect, suggesting that having exclusive contracts boosts investor confidence for smaller firms by providing clearer income and competitive benefits. Furthermore, whilst Table 24 indicates that divided contracts generally elicit a positive stock market reaction on the event date, this effect disappears when the analysis is limited to small-size firms. This outcome may reflect investor concerns about potential operational challenges or inefficiencies associated with contract division such as increased administrative complexity and uncertainty regarding a small firm's capacity to manage larger, integrated projects. As a result, the market appears to perceive divided contracts as being less value-enhancing for small firms compared to undivided contracts.

Finally, open procedures are associated with a significant positive interaction three days after the announcement, suggesting that transparent and accessible procurement processes enhance market confidence in smaller firms. This positive response may be attributed to the signals of fairness, the reduction of entry barriers, and the affirmation of a firm's competitive legitimacy, which are particularly valuable for smaller market participants. Notably, this result contrasts with earlier findings based solely on contract characteristics, where open procedures elicited a negative market reaction, as shown in Table 32. The divergence indicates that the positive effect of open procedures only emerges when firm size is considered, suggesting that it is vital to consider firm-specific factors when interpreting market responses to procurement methods.

The impact is considerably more pronounced when the analysis is restricted to small-sized firms which display positive and statistically significant excess returns at the 1% level on the third day post-announcement. Specifically, the interaction effects indicate excess returns of 0.212% for MEAT criteria, 0.317% for small-sized contracts, and 0.228% for single-award contracts. These findings suggest that the market responds more favourably to the awarding of public contracts to small firms, particularly when these contracts are characterised by qualitative evaluation criteria, alignment with firm capacity, exclusivity, and transparent procurement processes.

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Table 48: Interaction effects of small-size firms around the event date across different analyses

Category	MEAT	Lowest price	Small contract	Medium contract	Large contract	Single award	Multiple award	Restricted procedures	Open procedures
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
T-5 X Firm size	-0.000263 (0.000831)	-0.000739 (0.002095)	-0.000275 (0.001059)	0.002352 (0.002143)	-0.001431 (0.001555)	-0.000206 (0.000864)	0.000503 (0.001577)	-0.000923 (0.000932)	0.001223 (0.001279)
T-4 X Firm size	-0.000484 (0.000730)	0.000142 (0.002198)	-0.001431 (0.001147)	-0.000138 (0.001389)	-0.000346 (0.001466)	-0.000464 (0.000803)	-0.000749 (0.001178)	0.000281 (0.000936)	-0.001619* (0.000926)
T-3 X Firm size	-0.001827** (0.000802)	0.001016 (0.002182)	-0.000142 (0.001263)	0.000964 (0.001732)	-0.002223 (0.001825)	-0.001327 (0.000938)	-0.001184 (0.001080)	-0.001377 (0.001080)	-0.001134 (0.000970)
T-2 X Firm size	0.000346 (0.000855)	-0.003717** (0.001712)	-0.000069 (0.001121)	-0.002926** (0.001333)	0.001538 (0.001836)	0.000024 (0.000920)	-0.000238 (0.001212)	0.000014 (0.001006)	0.000014 (0.001112)
T-1 X Firm size	-0.001811** (0.000896)	0.002325 (0.003022)	-0.000856 (0.001192)	-0.001832 (0.001508)	-0.001696 (0.001462)	-0.001950* (0.001009)	-0.000743 (0.001241)	-0.001696 (0.001206)	-0.001484 (0.001007)
T 0 X Firm size	-0.000914 (0.000974)	-0.002104 (0.002223)	-0.001088 (0.002119)	-0.000425 (0.001636)	-0.002248 (0.001650)	-0.001238 (0.001072)	0.000381 (0.001247)	-0.000425 (0.000895)	-0.001358 (0.001583)
T+1 X Firm size	-0.000367 (0.000838)	-0.001587 (0.002032)	-0.000139 (0.001271)	-0.000046 (0.001549)	-0.001119 (0.001498)	-0.001337 (0.000939)	0.001561 (0.001165)	-0.000246 (0.001013)	-0.000828 (0.001135)
T+2 X Firm size	0.000429 (0.000792)	-0.001502 (0.001819)	-0.000230 (0.001236)	0.000694 (0.001471)	-0.000373 (0.001440)	0.000639 (0.000864)	-0.001441 (0.001197)	0.000305 (0.000951)	-0.000330 (0.001061)
T+3 X Firm size	0.002119*** (0.000740)	-0.001573 (0.002153)	0.003175** (0.001325)	0.001260 (0.001461)	0.001668 (0.001226)	0.002285*** (0.000841)	-0.000295 (0.001043)	0.001135 (0.000927)	0.002134** (0.000981)
T+4 X Firm size	-0.000069 (0.000768)	-0.004687 (0.003364)	-0.002579* (0.001536)	0.000048 (0.001473)	0.001225 (0.001398)	-0.000275 (0.000942)	0.001035 (0.001194)	0.001531* (0.000916)	-0.001824 (0.001276)
T+5 X Firm size	0.000397 (0.000863)	0.002188 (0.001945)	0.001466 (0.001087)	0.000587 (0.002280)	0.000457 (0.001451)	0.000197 (0.000942)	0.001788 (0.001251)	-0.000190 (0.000967)	0.001718 (0.001238)
Market excess return	0.863859*** (0.019978)	0.954633*** (0.055631)	0.849375*** (0.029718)	0.871069*** (0.035481)	0.947424*** (0.039766)	0.838176*** (0.019967)	0.969881*** (0.036330)	0.869539*** (0.017866)	0.872814*** (0.035981)

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SMB	0.297786*** (0.026675)	0.471626*** (0.062060)	0.272160*** (0.046488)	0.262722*** (0.051939)	0.330493*** (0.041820)	0.286108*** (0.026552)	0.330805*** (0.051557)	0.312336*** (0.028403)	0.278457*** (0.040682)
HML	0.044341*** (0.016246)	0.020759 (0.040065)	0.045804 (0.030883)	0.027806 (0.025681)	0.006837 (0.025577)	0.070180*** (0.017014)	-0.053960*** (0.020517)	0.066998*** (0.020206)	0.001013 (0.021712)
RMW	-0.138376*** (0.016892)	-0.157980*** (0.037333)	-0.083045*** (0.028991)	-0.122502*** (0.035865)	-0.178160*** (0.029756)	-0.126107*** (0.017236)	-0.143496*** (0.031094)	-0.129607*** (0.016574)	-0.137651*** (0.027829)
CMA	-0.104212*** (0.012775)	-0.125219*** (0.033376)	-0.156727*** (0.023046)	-0.096862*** (0.019684)	-0.039149 (0.023905)	-0.117326*** (0.013981)	-0.061818*** (0.017437)	-0.113197*** (0.017644)	-0.094530*** (0.014862)
Constant	0.000526*** (0.000049)	0.000750*** (0.000142)	0.000277*** (0.000070)	0.000488*** (0.000095)	0.000654*** (0.000086)	0.000443*** (0.000050)	0.000666*** (0.000086)	0.000512*** (0.000054)	0.000546*** (0.000066)
Observations	73,449	7,744	25,731	19,691	19,184	63,511	23,977	49,486	37,755
R-squared	0.164	0.205	0.182	0.157	0.146	0.159	0.178	0.181	0.139
Number of contracts	613	64	214	164	159	527	203	415	314

This table reports the estimates for the following regression analysis: $\text{Excess Return}_{i,t} = \alpha_i + \sum_{t=-5}^{+5} \delta_T (D_{i,t} \times \text{Firm size}) + \beta_1 \text{MKT} + \beta_2 \text{SMB} + \beta_3 \text{HML} + \beta_4 \text{RMW} + \beta_5 \text{CMA} + \mu_i + \varepsilon_{i,t}$ $t = \tau - 60, \dots, \tau + 60$, where τ identifies the event date, $\text{Excess Return}_{i,t}$ represents the daily returns in excess of the risk-free rate for firm i on day t , $D_{i,t} \times \text{Firm size}$ is the interaction term between event-time dummies (e.g., T-5 to T+5) and firm size, market risk premium (MKT), size (SMB), value (HML), profitability (RMW), and investment (CMA), each capturing distinct dimensions of systematic risk in asset pricing. Finally, μ_i is a firm fixed effect. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.9.2 Low-leverage firms and contract characteristic interactions

This section employs a binary variable indicator to identify low-leverage firms, which demonstrated significant outcomes in Section 6.7.3. By analysing the interaction between firm leverage and contract characteristics, the study explores how leverage moderates market reactions to public contract announcements, as reported in Table 49.

Within the award criteria, the MEAT criteria indicate a positive interaction of 0.161%, significant at the 5% level on the third day post-announcement. This indicates that low-leverage firms are rewarded by the market when they receive contracts based on quality rather than price alone, probably reflecting investor confidence in their financial stability and value-adding capabilities. In contrast, contracts awarded solely based on the lowest price show no significant interaction effects, suggesting that price-driven awards do not influence market responses with respect to firm leverage.

For small contracts, a strongly positive interaction of 0.367%, significant at the 1% level on day three, suggests that investors favour low-leverage firms that secure smaller, more manageable contracts, probably due to their perceived lower execution risks. Medium and large contracts exhibit no significant effects, thereby indicating either market neutrality or concerns regarding the firm's ability to manage larger financial commitments. Additionally, for single award contracts, the excess return is 0.229%, significant at the 1% level, thereby indicating that investors have greater confidence in low-leverage firms when they secure exclusive contracts with steady income streams. No significant effect is observed for multiple-award contracts. Open procedures result in a marginally positive excess return of 0.189%, but this effect is only significant at the 10% level.

Low-leverage firms exhibit a pattern similar to that of small-size firms, particularly in relation to MEAT, award criteria, small contract sizes, and single contracts that are not divided into lots. The effect becomes most noticeable on the third day following the announcement.

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Table 49: Interaction effects of low-leverage firms around the event date across different analyses

Category	MEAT	Lowest price	Small contract	Medium contract	Large contract	Single award	Multiple award	Restricted procedures	Open procedures
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
T-5 X Leverage	0.000072 (0.000790)	-0.001186 (0.002250)	-0.000229 (0.001058)	0.002309 (0.002159)	0.000004 (0.001327)	0.000215 (0.000783)	-0.000151 (0.001405)	-0.000031 (0.000919)	0.000583 (0.001312)
T-4 X Leverage	-0.000737 (0.000740)	-0.001278 (0.002653)	-0.000809 (0.001257)	-0.000162 (0.001539)	-0.001731 (0.001269)	-0.000839 (0.000841)	-0.001265 (0.001126)	0.000128 (0.000968)	-0.002356** (0.001035)
T-3 X Leverage	-0.001317* (0.000790)	0.000635 (0.002172)	0.000899 (0.001435)	0.000553 (0.001907)	-0.001043 (0.001224)	-0.000881 (0.000922)	-0.001453 (0.000978)	-0.000151 (0.001001)	-0.000768 (0.001160)
T-2 X Leverage	0.000739 (0.000850)	-0.003444* (0.001762)	-0.000719 (0.001235)	-0.002204 (0.001553)	0.001764 (0.001722)	0.000181 (0.000954)	0.000669 (0.001156)	0.000008 (0.001036)	0.001027 (0.001220)
T-1 X Leverage	-0.001785*** (0.000685)	0.003764 (0.002263)	-0.000940 (0.001112)	-0.001684 (0.001733)	-0.001938* (0.001145)	-0.001355* (0.000773)	-0.001593 (0.001005)	-0.001955** (0.000833)	-0.001088 (0.001078)
T 0 X Leverage	0.000796 (0.000829)	0.001102 (0.001909)	0.000473 (0.001914)	-0.000715 (0.001561)	0.001418 (0.001290)	0.001235 (0.000935)	0.000822 (0.001510)	0.000805 (0.001100)	0.000550 (0.001414)
T+1 X Leverage	-0.000117 (0.000830)	-0.001904 (0.003043)	-0.000021 (0.001343)	-0.000878 (0.001676)	-0.001202 (0.001485)	-0.000669 (0.000942)	0.000853 (0.001232)	-0.001286 (0.000967)	-0.000016 (0.001237)
T+2 X Leverage	0.000286 (0.000823)	-0.004056 (0.002872)	0.000086 (0.001287)	0.001782 (0.001886)	-0.003182* (0.001751)	0.000259 (0.000933)	-0.001779 (0.001302)	0.000457 (0.001023)	-0.001675 (0.001321)
T+3 X Leverage	0.001609** (0.000703)	-0.000635 (0.002016)	0.004055*** (0.001424)	0.000908 (0.001316)	0.001179 (0.001175)	0.002298*** (0.000837)	-0.000326 (0.000920)	0.001403 (0.000881)	0.001890* (0.001013)
T+4 X Leverage	-0.000715 (0.000707)	-0.004516 (0.003406)	-0.003425** (0.001519)	0.000082 (0.001479)	0.000081 (0.001327)	-0.001923** (0.000884)	0.001243 (0.001019)	-0.000124 (0.000945)	-0.001966* (0.001106)
T+5 X Leverage	0.000224 (0.000739)	0.001885 (0.001922)	0.001964 (0.001243)	0.001139 (0.001370)	0.000816 (0.001288)	0.000731 (0.000786)	0.000558 (0.001199)	0.000547 (0.000918)	0.001150 (0.001062)
Market excess return	0.961314*** (0.019947)	1.060994*** (0.067279)	0.878191*** (0.032599)	0.932216*** (0.034620)	1.061459*** (0.038993)	0.949131*** (0.021394)	1.025474*** (0.033159)	0.951826*** (0.019927)	0.984845*** (0.039546)

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SMB	0.305673*** (0.026640)	0.370885*** (0.090965)	0.218717*** (0.052992)	0.214017*** (0.048051)	0.335635*** (0.047975)	0.297700*** (0.028379)	0.280988*** (0.048071)	0.278625*** (0.031853)	0.257075*** (0.042377)
HML	0.032033** (0.016169)	-0.041166 (0.035336)	0.036409 (0.035179)	0.037510 (0.028469)	-0.006056 (0.023476)	0.044613** (0.018605)	-0.018645 (0.018504)	0.059057*** (0.020631)	-0.048554** (0.023900)
RMW	-0.150702*** (0.016761)	-0.147733*** (0.052174)	-0.037096 (0.034388)	-0.114264*** (0.033291)	-0.172233*** (0.030693)	-0.143232*** (0.018397)	-0.101008*** (0.030279)	-0.119806*** (0.018770)	-0.115344*** (0.031285)
CMA	-0.108449*** (0.012731)	-0.127154*** (0.027461)	-0.158439*** (0.024480)	-0.090988*** (0.022471)	-0.076846*** (0.020981)	-0.128167*** (0.015005)	-0.060952*** (0.016227)	-0.130290*** (0.017275)	-0.099342*** (0.018162)
Constant	0.000709*** (0.000050)	0.001030*** (0.000170)	0.000322*** (0.000081)	0.000680*** (0.000096)	0.000770*** (0.000094)	0.000730*** (0.000057)	0.000561*** (0.000072)	0.000697*** (0.000066)	0.000625*** (0.000056)
Observations	73,480	7,381	23,014	17,730	21,919	58,514	30,135	45,996	32,307
R-squared	0.206	0.226	0.210	0.193	0.208	0.208	0.214	0.231	0.175
Number of contracts	611	61	191	150	184	488	250	386	268

This table reports the estimates for the following regression analysis: $\text{Excess Return}_{i,t} = \alpha_i + \sum_{t=-5}^{+5} \delta_T (D_{i,t} \times \text{Leverage}) + \beta_1 \text{MKT} + \beta_2 \text{SMB} + \beta_3 \text{HML} + \beta_4 \text{RMW} + \beta_5 \text{CMA} + \mu_i + \varepsilon_{i,t}$ $t = \tau - 60, \dots, \tau + 60$, where τ identifies the event date, $\text{Excess Return}_{i,t}$ represents the daily returns in excess of the risk-free rate for firm i on day t , $D_{i,t} \times \text{leverage}$ is the interaction term between event-time dummies (e.g., $t-5$ to $t+5$) and firm leverage, market risk premium (MKT), size (SMB), value (HML), profitability (RMW), and investment (CMA), each capturing distinct dimensions of systematic risk in asset pricing. Finally, μ_i is a firm fixed effect. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.9.3 High growth firms and contract characteristic interactions

This section employs a binary variable indicator to identify high growth firms which exhibited significant outcomes, as addressed in Section 6.7.4. This analysis examines the interaction between high-growth firms, as proxied by the P/B ratio, and various contract characteristics. As presented in Table 50, this section examines how stock market reactions vary across firms in response to various public contract characteristics.

The analysis focuses on the days surrounding the contract award date. Particular attention is paid to the third day after the announcement, where significant interaction effects are most observed. High-growth firms demonstrate a robust and positive interaction of 0.061 with MEAT contracts on the third day following the announcement, significant at the 1% level. This indicates that investors respond favourably to contract awards based on qualitative criteria rather than price alone, probably reflecting an expectation that high-growth firms are able to leverage their innovative and strategic capabilities to deliver enhanced value.

In contrast, lowest price awards show only a marginally significant positive effect of 0.089% one day after the announcement, significant at the 10% level, followed by a correction of -0.076% two days post-announcement, also significant at the 10% level. This negative trend becomes more pronounced on the fourth day with a return of -0.109%, significant at the 5% level, thereby indicating a delayed and adverse investor response. These findings suggest that cost-based awards are perceived to be less aligned with the growth trajectory and value proposition of high-growth firms, resulting in a more muted or uncertain market reaction.

High growth firms exhibit a strong negative reaction to small-sized contracts on the fourth day post-announcement, with a return of -0.081%, significant at the 10% level. This suggests that such contracts are often perceived to be misaligned with their growth ambitions and operational capacities. Investors may interpret small contracts as an indication that the firm's opportunities for expansion are limited or that the market demand for its products and services is insufficient to support its growth trajectory. Meanwhile, large-value contracts elicit a positive excess return of 0.102%,

statistically significant at the 1% level, on the third day, reinforcing investors' confidence in the future earnings potential of these firms. The award structure further differentiates market reactions. Single-award contracts are associated with a highly significant positive interaction of 0.084%, which is statistically significant at the 1% level, observed on the third day after the announcement. This suggests that exclusivity enhances investor confidence by providing greater revenue certainty and strategic clarity, particularly for high-growth firms. In contrast, multiple-award contracts indicate no significant effect, possibly due to the diluted financial impact and uncertainty regarding revenue allocation among participating firms.

With regards to procurement procedures, restricted procedures have a notable positive effect on day three of 0.084% and this finding is statistically significant at the 1% level. This outcome may also reflect the lower perceived risk associated with restricted procedure contracts. Such contracts typically involve closer pre-bid engagement with the contracting authority which enables firms to clarify requirements and assess feasibility in advance. Consequently, investors may perceive these contracts as being less prone to delivery or performance issues, possibly leading to more favourable market reactions. Meanwhile, open procedures result in a weaker negative interaction of -0.054, which becomes statistically significant at the 10% level on the fourth day after the announcement. Open procedures permit any qualified firm to participate in the bidding process, ensuring transparency and competition. However, the heightened level of competition can dilute the potential financial gains for individual firms.

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Table 50: Interaction effects of high growth firms around the event date across different analyses

Category	MEAT	Lowest price	Small contract	Medium contract	Large contract	Single award	Multiple award	Restricted procedures	Open procedures
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
T-5 X Growth	0.000156 (0.000263)	0.000850** (0.000414)	-0.000123 (0.000295)	0.000864* (0.000441)	-0.000026 (0.000434)	0.000171 (0.000243)	0.000420 (0.000438)	-0.000014 (0.000261)	0.000585 (0.000362)
T-4 X Growth	0.000262 (0.000229)	-0.000321 (0.000344)	-0.000456 (0.000365)	0.000389 (0.000368)	0.000007 (0.000354)	0.000199 (0.000236)	0.000065 (0.000323)	0.000251 (0.000262)	0.000054 (0.000279)
T-3 X Growth	-0.000280 (0.000241)	-0.000145 (0.000425)	0.000407 (0.000394)	0.000446 (0.000312)	-0.000854 (0.000550)	-0.000319 (0.000260)	0.000061 (0.000307)	-0.000156 (0.000290)	-0.000238 (0.000277)
T-2 X Growth	0.000382 (0.000250)	0.000562 (0.000377)	-0.000127 (0.000324)	-0.000084 (0.000379)	0.000062 (0.000475)	0.000444* (0.000247)	0.000168 (0.000348)	0.000288 (0.000242)	0.000424 (0.000336)
T-1 X Growth	-0.000008 (0.000219)	0.000861 (0.000535)	0.000185 (0.000355)	-0.000541 (0.000361)	0.000065 (0.000373)	0.000167 (0.000256)	0.000007 (0.000261)	-0.000036 (0.000261)	0.000287 (0.000283)
T-0 X Growth	0.000188 (0.000260)	0.000083 (0.000435)	0.000594 (0.000529)	0.000191 (0.000365)	-0.000579 (0.000466)	0.000087 (0.000282)	0.000253 (0.000309)	-0.000165 (0.000260)	0.000473 (0.000353)
T+1 X Growth	-0.000341 (0.000265)	0.000898* (0.000525)	0.000204 (0.000383)	-0.000157 (0.000509)	-0.000199 (0.000378)	-0.000315 (0.000285)	0.000366 (0.000373)	-0.000055 (0.000298)	-0.000148 (0.000349)
T+2 X Growth	0.000071 (0.000240)	-0.000756* (0.000396)	-0.000438 (0.000378)	-0.000045 (0.000345)	-0.000074 (0.000389)	-0.000014 (0.000245)	-0.000331 (0.000340)	-0.000096 (0.000226)	-0.000149 (0.000338)
T+3 X Growth	0.000615*** (0.000212)	0.000363 (0.000469)	0.000241 (0.000367)	0.000547 (0.000414)	0.000906** (0.000387)	0.000846*** (0.000228)	-0.000112 (0.000316)	0.000845*** (0.000245)	0.000116 (0.000283)
T+4 X Growth	0.000045 (0.000242)	-0.001093** (0.000496)	-0.000816* (0.000477)	0.000192 (0.000416)	0.000384 (0.000359)	-0.000042 (0.000260)	-0.000176 (0.000343)	0.000300 (0.000279)	-0.000542* (0.000311)
T+5 X Growth	-0.000014 (0.000229)	-0.000152 (0.000369)	-0.000293 (0.000320)	-0.000663 (0.000545)	0.000261 (0.000319)	0.000027 (0.000246)	-0.000316 (0.000267)	-0.000161 (0.000270)	-0.000015 (0.000256)
Market excess return	0.838135***	0.821763***	0.824497***	0.870084***	0.862937***	0.813406***	0.898902***	0.836548***	0.842319***

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	(0.019726)	(0.039083)	(0.037158)	(0.031807)	(0.036678)	(0.019614)	(0.032181)	(0.019382)	(0.029528)
SMB	0.074779***	0.034095	0.008474	0.033717	0.083726**	0.055845**	0.086991**	0.086862***	0.041562
	(0.024519)	(0.042521)	(0.048473)	(0.037104)	(0.033683)	(0.024564)	(0.037253)	(0.024410)	(0.034306)
HML	-0.092993***	-0.156862***	-0.146102***	-0.085917***	-0.052482***	-0.088028***	-0.135066***	-0.071321***	-0.140682***
	(0.013323)	(0.023832)	(0.025804)	(0.024942)	(0.019130)	(0.013972)	(0.019277)	(0.016360)	(0.014995)
RMW	0.001800	0.012380	0.035334	0.039240*	0.008349	0.016039	-0.040517*	-0.011440	0.009783
	(0.016076)	(0.025443)	(0.033441)	(0.022340)	(0.022308)	(0.016601)	(0.021622)	(0.015544)	(0.022471)
CMA	-0.017482*	0.005240	-0.041460**	-0.036458**	-0.004484	-0.010209	-0.036663***	-0.006886	-0.029783**
	(0.009995)	(0.017983)	(0.018301)	(0.016419)	(0.015049)	(0.010594)	(0.013831)	(0.012342)	(0.012725)
Constant	-0.000034	0.000097	0.000120	-0.000131**	-0.000079	-0.000089**	0.000120***	-0.000033	0.000039
	(0.000036)	(0.000071)	(0.000082)	(0.000058)	(0.000055)	(0.000042)	(0.000038)	(0.000041)	(0.000042)
Observations	64,836	15,064	22,385	18,820	18,876	57,994	28,682	46,651	40,014
R-squared	0.226	0.216	0.211	0.237	0.242	0.230	0.204	0.243	0.198
Number of contracts	538	126	185	156	156	482	238	387	333

This table reports the estimates for the following regression analysis: $\text{Excess Return}_{i,t} = A_i + \sum_{T=-5}^{+5} \Delta_T (D_{i,t} \times \text{Growth}) + B_1 \text{MKT} + B_2 \text{SMB} + B_3 \text{HML} + B_4 \text{RMW} + B_5 \text{CMA} + \mu_i + \varepsilon_{i,t}$ $T = \tau - 60, \dots, \tau + 60$. Where τ identifies the event date, $\text{Excess Return}_{i,t}$ Represents the daily returns in excess of the risk-free rate for firm i on day t , $D_{i,t} \times \text{Growth}$ is the interaction term between event-time dummies (e.g., T-5 to T+5) and firm growth, market risk premium (MKT), size (SMB), value (HML), profitability (RMW), and investment (CMA), each capturing distinct dimensions of systematic risk in asset pricing. Finally, μ_i is a firm fixed effect. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.9.4 Highly profitable firms and contract characteristic interactions

This section uses a binary variable indicator to identify firms that are highly profitable and demonstrated significant outcomes, as detailed in Section 6.7.5. By examining the interaction between highly profitable firms and various contract characteristics, the analysis investigates how stock market reactions differ for these firms in response to distinct public contract features, as shown in Table 51.

The market responds most favourably when highly profitable firms are awarded contracts based on MEAT criteria. On the third day following the announcement, there is a highly significant positive interaction of 0.068% at the 1% significance level, indicating that investors perceive these contracts as having strong long-term potential. In contrast, contracts awarded solely on the basis of the lowest price elicit an immediate negative market reaction of -0.096%, which is significant at the 10% level on the event date. This suggests that when contracts are awarded without prioritising profitability and other essential qualification criteria, investors may doubt their long-term value and reliability.

For small-size contracts, a positive effect of 0.118%, significant at the 1% level, is observed on the third day, followed by a swift correction with a negative return of -0.073% at the 10% significance level. Furthermore, medium-sized contracts have a negative effect of 0.006% on the fifth day, which is significant at the 10% level. This suggests that these contract sizes are perceived to be well aligned with the operational efficiency of profitable firms. In contrast, large contracts trigger a significant negative reaction of -0.079% on the event date itself, significant at the 10% level, suggesting that the market response to large contract awards is felt more immediately than for small or medium contracts. Exclusive single awards initially generate a negative return of -0.043% one day after the announcement, significant at the 10% level. This process is followed by a positive return of 0.086% on the third day, significant at the 1% level. This positive return is likely to be due to increased revenue certainty. Meanwhile, multiple awards fail to yield significant effects, pointing to diluted market enthusiasm when awards are shared.

The restricted awarding procedure demonstrates a sustained positive market reaction, with a return of 0.051% on the third day that is significant at the 10% level and an

increased return of 0.058% on the fourth day that is significant at the 5% level. This pattern suggests that restricted procedures may enhance investor confidence over time, indicating that investors perceive these contracts to be lower-risk opportunities. This favourable response likely stems from the pre-qualification and selective bidding process which allows closer engagement with the contracting authority before submission, thereby reducing uncertainty about the project requirements and execution risks.

In contrast, the open procedure elicits a short-lived positive response, yielding a 0.066% return on the third day, significant at the 5% level. This suggests that securing a contract through an open tender is perceived to be a strong market signal of competitiveness and capability, indicating that the firm has successfully outperformed a wider pool of bidders. However, this gain is quickly offset by a significantly negative correction of -0.064% at the 5% level, indicating that the initial optimism surrounding open procedures may dissipate rapidly as further information is assimilated by the market.

Table 51: Interaction effects of highly profitable firms around the event date across different analyses

	MEAT	Lowest price	Small contract	Medium contract	Large contract	Single award	Multiple award	Restricted procedures	Open procedures
Category	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
T-5 X Profitability	-0.000057 (0.000235)	-0.001121* (0.000606)	-0.000604* (0.000316)	0.000489 (0.000591)	-0.000458 (0.000441)	-0.000286 (0.000217)	0.000266 (0.000531)	-0.000467* (0.000262)	0.000311 (0.000351)
T-4 X Profitability	0.000130 (0.000218)	-0.000096 (0.000715)	-0.000067 (0.000384)	0.000129 (0.000392)	-0.000191 (0.000403)	0.000174 (0.000242)	-0.000059 (0.000360)	0.000106 (0.000281)	0.000139 (0.000287)
T-3 X Profitability	-0.000260 (0.000218)	0.000185 (0.000491)	-0.000047 (0.000343)	0.000114 (0.000445)	-0.000282 (0.000415)	-0.000074 (0.000231)	-0.000552 (0.000341)	-0.000143 (0.000276)	-0.000252 (0.000256)
T-2 X Profitability	0.000298 (0.000245)	-0.000154 (0.000644)	0.000105 (0.000335)	-0.000479 (0.000385)	0.000626 (0.000567)	0.000105 (0.000268)	0.000589* (0.000342)	0.000195 (0.000300)	0.000319 (0.000314)
T-1 X Profitability	-0.000605** (0.000282)	0.001335* (0.000729)	-0.000307 (0.000407)	-0.000587 (0.000393)	-0.000187 (0.000404)	-0.000481 (0.000315)	-0.000482 (0.000357)	-0.000558 (0.000376)	-0.000360 (0.000309)
T 0 X Profitability	0.000020 (0.000246)	-0.000960* (0.000569)	0.000317 (0.000537)	-0.000318 (0.000343)	-0.000791* (0.000463)	-0.000193 (0.000265)	0.000289 (0.000364)	-0.000207 (0.000271)	0.000090 (0.000361)
T+1 X Profitability	-0.000248 (0.000214)	0.000359 (0.000517)	-0.000002 (0.000402)	-0.000585* (0.000347)	-0.000308 (0.000397)	-0.000438* (0.000226)	0.000404 (0.000350)	-0.000242 (0.000246)	-0.000158 (0.000302)
T+2 X Profitability	-0.000188 (0.000210)	0.000363 (0.000545)	-0.000183 (0.000339)	0.000292 (0.000404)	-0.000060 (0.000427)	-0.000040 (0.000220)	-0.000609* (0.000361)	-0.000267 (0.000234)	-0.000124 (0.000310)
T+3 X Profitability	0.000689*** (0.000217)	-0.000645 (0.000535)	0.001183*** (0.000395)	0.000209 (0.000442)	0.000867** (0.000371)	0.000862*** (0.000237)	-0.000147 (0.000333)	0.000516* (0.000269)	0.000666** (0.000281)
T+4 X Profitability	0.000012 (0.000222)	-0.000249 (0.000778)	-0.000735* (0.000438)	0.000435 (0.000438)	0.000394 (0.000454)	-0.000104 (0.000243)	0.000407 (0.000388)	0.000587** (0.000297)	-0.000643** (0.000278)
T+5 X Profitability	-0.000192 (0.000206)	-0.000186 (0.000673)	0.000175 (0.000369)	-0.000609* (0.000366)	-0.000199 (0.000452)	-0.000309 (0.000216)	0.000324 (0.000406)	-0.000339 (0.000234)	0.000091 (0.000322)
Market excess return	0.848888*** (0.019546)	0.983602*** (0.050897)	0.854277*** (0.032676)	0.894929*** (0.031327)	0.889254*** (0.038502)	0.842597*** (0.019924)	0.943114*** (0.037815)	0.860036*** (0.017450)	0.866204*** (0.035703)

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SMB	0.140796*** (0.023877)	0.230714*** (0.061642)	0.162169*** (0.049139)	0.137942*** (0.044094)	0.108869*** (0.039267)	0.142771*** (0.024028)	0.127044*** (0.046726)	0.165105*** (0.025716)	0.101327*** (0.035632)
HML	-0.032590** (0.014632)	-0.086269*** (0.029829)	-0.056718** (0.025862)	-0.032257 (0.026356)	-0.010033 (0.024210)	-0.025775 (0.016067)	-0.064385*** (0.018109)	-0.010370 (0.019421)	-0.079400*** (0.016617)
RMW	-0.053819*** (0.015702)	-0.041502 (0.036063)	-0.012831 (0.030772)	-0.047459 (0.030325)	-0.065692* (0.033343)	-0.052345*** (0.016009)	-0.028154 (0.030769)	-0.057472*** (0.015529)	-0.037490 (0.025534)
CMA	-0.049968*** (0.011222)	-0.038317 (0.026802)	-0.096656*** (0.020398)	-0.062538*** (0.018830)	-0.004509 (0.018751)	-0.054400*** (0.012452)	-0.031814* (0.016777)	-0.047628*** (0.015933)	-0.055819*** (0.013116)
Constant	0.000311*** (0.000046)	0.000402*** (0.000107)	0.000223*** (0.000074)	0.000319*** (0.000082)	0.000479*** (0.000099)	0.000289*** (0.000051)	0.000359*** (0.000066)	0.000337*** (0.000053)	0.000309*** (0.000058)
Observations	72,604	8,442	23,210	20,492	17,985	64,067	22,294	48,834	37,302
R-squared	0.212	0.262	0.222	0.215	0.179	0.219	0.196	0.238	0.184
Number of contracts	603	70	192	171	149	531	186	404	311

This table reports the estimates for the following regression analysis: $\text{Excess Return}_{i,t} = A_i + \sum_{T=-5}^{+5} \Delta_T (D_{i,t} X \text{ Profitability}) + B_1 \text{MKT} + B_2 \text{SMB} + B_3 \text{HML} + B_4 \text{RMW} + B_5 \text{CMA} + \mu_i + \varepsilon_{i,t}$ $T = \tau - 60, \dots, \tau + 60$. Where τ identifies the event date, $\text{Excess Return}_{i,t}$ represents the daily returns in excess of the risk-free rate for firm i on day t , $D_{i,t} X \text{ profitability}$ is the interaction term between event-time dummies (e.g., $t-5$ to $t+5$) and firm profitability, market risk premium (MKT), size (SMB), value (HML), profitability (RMW), and investment (CMA), each capturing distinct dimensions of systematic risk in asset pricing. Finally, μ_i is a firm fixed effect. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

6.10 Hypothesis testing

The primary aim of this study is to examine whether public contract award announcements influence the stock returns of FTSE 350 firms, as outlined in the general hypothesis. The findings reveal a significantly positive excess return on day three following the announcement, indicating a delayed market response, as shown in Table 52. The findings report the timing of the market reaction, including the day following the announcement, the direction of the effect, and the magnitude of excess returns. Overall, the null hypothesis is rejected because there is evidence of statistically significant effects on the excess stock returns of FTSE 350 firms in the period surrounding public contract award announcements.

Additionally, the sub-hypothesis concerning contract characteristics is rejected, thereby indicating that these characteristics do not significantly influence the variation in stock returns of FTSE 350 firms around public contract award announcements. Specifically, different contract characteristics generate distinct reactions in stock prices. For example, contracts awarded by bodies governed by public law are associated with positive market reactions, whereas those awarded by ministries or other national or federal authorities tend to produce negative reactions. Likewise, the sub-hypothesis concerning firm-specific characteristics is rejected because variations in firm attributes lead to heterogeneous market responses. In particular, small and large firms exhibit positive market reactions, whereas medium-sized firms tend to experience negative reactions. Collectively, these findings indicate that both contract characteristics and firm-specific attributes influence excess stock returns in distinct ways. Therefore, the firm-specific sub-hypothesis is rejected, supporting the argument that differences in firm characteristics systematically shape different market reactions.

Similarly, the third sub-hypothesis is rejected because the null hypothesis is not supported. The findings suggest that variations across time periods significantly influence the stock returns surrounding public contract award announcements. Differences in economic conditions, regulatory environments, and policy frameworks across periods shape how investors interpret and respond to procurement-related information. As a result, the magnitude, direction, and timing of abnormal returns vary across time periods.

Table 52: Summary of the hypothesis testing results

Hypothesis category	Tested criteria	Day	Effect	Direction	Conjecture
General	All contracts	+3	0.000836**	Positive	Accept
Contract characteristics	Single awards	+3	0.001429***	Positive	Accept
	Multiple awards	0	0.001812**	Positive	Accept
	Low bidding	0	−0.001462*	Negative	Accept
	Moderate bidding	+4	−0.001611**	Negative	Accept
	High bidding	+2	−0.001429*	Negative	Accept
	Short-term contract duration	+3	0.002430**	Positive	Accept
	Medium-term contract duration		No effect	–	Fail to Accept
	Long-term contract duration	+3	0.001539*	Positive	Accept
	Small contract size	+3	0.001381*	Positive	Accept
	Medium contract size	–	No effect	–	Fail to Accept
	Large contract size	+3	0.001383*	Positive	Accept
	Body governed by public law	+3	0.001703**	Positive	Accept
	Ministry or any other national or federal authority or agency	+5	−0.002331**	Negative	Accept
	Other contracting authority		No effect	–	Fail to Accept
	Restricted procedures	+3	0.000967**	Positive	Accept
	Open procedures	+4	−0.001308**	Negative	Accept
	MEAT	+3	0.000866**	Positive	Accept
	Supplies contract	0	−0.001248*	Negative	Accept
	Works contract	+4	−0.002912**	Negative	Accept

	Services contract		No effect	–	Fail to Accept
Firm characteristics	Construction	0	0.004981**	Positive	Accept
	Electrical	+3	0.004712*	Positive	Accept
	Transport	+1	0.005027*	Positive	Accept
	Small firms (total assets $\leq$ £1,628 million)	+3	0.001599**	Positive	Accept
	Medium firms (total assets £1,629 – £5,667 million)	+2	–0.001614**	Negative	Accept
	Large firms (total assets $\geq$ £5,675 million)	+1	0.001061*	Positive	Accept
	Low leverage	+3	0.001358**	Positive	Accept
	Moderate leverage	–	No effect	–	Fail to Accept
	High leverage	–	No effect	–	Fail to Accept
	High growth	+3	0.001249**	Positive	Accept
	High profitability	+3	0.001655***	Positive	Accept
Political environment	Tony Blair	0	–0.002851**	Negative	Accept
	David Cameron	+3	0.001156**	Positive	Accept
	Other periods	–	No effect	–	Fail to Accept

6.11 Conclusion

This chapter has provided a comprehensive empirical examination of how contract characteristics, firm characteristics, and their interaction influence stock market reactions to public contract award announcements. The analysis first revealed that variations in contract attributes such as size, type, award criteria, and procurement procedure affect investor responses, with MEAT-based, open competitions and single award contracts generating stronger positive reactions than cost-based awards or large-scale contracts. Firm-level results further indicated that growth, profitability, and size play a decisive role in shaping market behaviour. High-growth and profitable firms experience more pronounced excess returns, suggesting that investors associate public contracts with a firm's abilities and fundamentals. In addition, developments in the political environment significantly shape market reactions to public contract awards, with these responses closely linked to the ruling party's tenure. Transitions from Labour to Conservative governments are associated with the most pronounced positive effects on market confidence and stock returns. These results point out the vital role of considering political context when assessing the financial impact of public sector decisions.

Finally, the interaction analysis demonstrated that firm fundamentals amplify or mitigate the impact of contract features, confirming that market reactions are jointly determined by both firm-specific and contractual factors. Collectively, these findings highlight the nuanced nature of investor behaviour; the market's interpretation of public contract awards depends not only on the characteristics of the contract itself but also on the financial and operational profile of the winning firm.

7. Discussion

7.1 Introduction

This chapter offers a critical discussion of the empirical findings presented in the preceding results chapter. Whereas the results chapter concentrated on the statistical evidence of abnormal returns surrounding procurement announcements, the current chapter shifts the focus towards interpretation. It situates these findings within a broader theoretical and empirical literature and examines their wider implications for financial markets, investor behaviour, and public policy. In particular, the analysis moves beyond descriptive reporting to examine how procurement announcements function as informational signals in capital markets, how the timing and structure of these announcements influence investor adjustment, and how contract-level features and firm-level fundamentals interact to shape heterogeneous market responses. This chapter critically examines these factors to clarify the study's contributions and limitations, while emphasising their significance for financial markets, investor behaviour, and public policy.

The discussion chapter starts by explaining the results, noting that procurement announcements are valuable pieces of information, but markets take time to react to them and their impact is shaped by the timing of the disclosure, contract design, and firm-level fundamentals. These patterns are then discussed in detail, examining how contract features, firm characteristics, and their interactions shape investor responses, before turning to broader theoretical, practical, and policy implications. The study's contributions are subsequently outlined, emphasising how they address the absence of U.K.-based evidence, move beyond aggregate correlations, and advance understanding of procurement's financial implications. The chapter then considers the research implications, emphasising how firms might carefully craft announcements, how investors should interpret procurement signals alongside firm fundamentals, and how policymakers may enhance reporting standards to foster market confidence. The limitations of the study are also acknowledged, including data quality and event-timing issues in the TED database, the restriction of the sample to U.K.-listed firms, and the omission of unobserved factors such as managerial reputation or competitor effects, all of which may

affect the generalisability of the findings. Finally, the chapter identifies directions for future research.

7.2 Interpretation of the results

This study set out to answer the primary research question: to what extent do public contract award announcements influence the stock price performance of FTSE 350 firms? This question was examined using an event study methodology to estimate abnormal returns around contract award announcements. The findings indicate that public contract awards generate statistically significant abnormal returns, particularly on day three. However, the magnitude and direction of these effects vary depending on the contract characteristics, firm-specific factors, and the timing of the event.

Public contract awards may have economic implications beyond their immediate announcement, including future revenues, growth, enhanced reputation and organisational capabilities, and improved competitiveness. Previous studies support the potential for such longer-term effects. Ferraz et al. (2015) and Fadic (2020) demonstrate positive effects of public procurement on firm growth, although the duration of these effects varies across studies, while Lee (2021) provides evidence that the growth effects of government contracts can persist beyond the contract period. This suggests that the economic value of a public contract may extend beyond its immediate announcement.

Under semi-strong EMH, investors should price the expected long-term impact of public contract awards into their immediate investment decisions. However, this assumes that investors can accurately predict the future value of a contract from the information available at the announcement date. In practice, long-term outcomes remain uncertain and depend on profitability, successful execution, associated risks, and future opportunities. The delayed and heterogeneous reactions found in this study therefore suggest that long-term value may not be fully or immediately reflected in share prices. This interpretation is consistent with the delayed market response observed in this study, suggesting that

investors require time to assess both the immediate and longer-term implications of public contract awards.

The findings reveal that while procurement awards carry informational value, the delayed market response indicates that such announcements may not have been sufficiently transparent or easily accessible to investors at the time of disclosure. The results identify significantly positive abnormal returns on day three across the sample, indicating that award information is incorporated into prices with a systematic lag rather than immediately upon disclosure. This delay may reflect the limited clarity of disclosures in the TED database, where procurement notices often contain complex and lengthy information that requires careful interpretation by investors and analysts. Unlike corporate disclosures such as dividend announcements, financial markets sometimes interpret public contract awards in formats that are not immediately accessible. Consequently, investors may require additional time to process and evaluate procurement-related information before incorporating it into their investment decisions.

Advances in artificial intelligence (AI) may help to reduce these informational frictions in future. AI-driven tools, particularly those based on natural language processing (NLP), can automatically extract key information from public contract notices, including contract value, contracting authority, industry classification, and the winning firm. These systems could transform complex procurement documents into structured data, thereby making it easier for investors to interpret and analyse them. Financial data platforms may integrate AI technologies more widely, leading to faster, more efficient dissemination and interpretation of public procurement information. Furthermore, the evidence suggests that contract-level characteristics significantly influence investor perceptions, shaping whether procurement awards are perceived as opportunities or potential risks.

7.2.1 Contract characteristics

The results highlight the nuanced ways in which investors interpret contract attributes, balancing risk, transparency, and growth potential in their market decisions. The findings

demonstrate that investors do not react uniformly to all contract announcements. Instead, their responses are shaped by factors such as contract type, duration, scale, awarding authority, and procurement procedures. For example, single awards generate delayed positive returns, with significant effects appearing three days after the announcement. On the other hand, awarding a contract to more than one supplier or awarding multiple contracts to the same supplier leads to immediate, large positive returns on the event date. The prompt market response to divided contracts may be attributed to more structured disclosures, increased transparency, and greater media attention arising from the involvement of multiple firms.

Short-term contracts, defined as those with durations of less than 36 months, are associated with significantly positive abnormal returns of 0.243% at the 5% significance level. This suggests that investors view these contracts positively, probably because their shorter timelines make them easier to execute and manage, with less risk of long-term uncertainty or operational challenges. In contrast, when examining longer-duration contracts, the positive effect on returns becomes less pronounced. Similarly, the scale of a contract is an important factor because investors respond differently based on its economic magnitude. Both small and large contract awards yield significant positive returns, though for different reasons: investors appear to interpret small awards as growth opportunities and large awards as signals of stability. These findings underscore the heterogeneous nature of investor responses to public procurement announcements, which depend not only on a contract's absolute value but also on its size relative to the recipient firm. A contract that is modest for a large firm may represent a substantial share of a smaller firm's revenues, assets, or market capitalisation. Consequently, high-value contracts awarded to large firms may have little effect on investor expectations, whereas comparable contracts awarded to smaller firms may signal stronger growth prospects and generate more positive market reactions (Elayan et al., 2006). At the same time, a higher contract-to-firm-size ratio can raise perceived risk, as investors may question whether the firm has the financial resources and operational capacity to execute a large, complex project successfully (McConnell and Muscarella, 1985; Fuller et al., 2002). This is consistent with the project management literature, which shows that larger projects are

more susceptible to execution risk, cost overruns, and implementation uncertainty (Flyvbjerg, 2014).

Investor reactions to very large procurement contracts therefore reflect a trade-off between expected economic benefits and the risks associated with successful delivery, with the balance of this trade-off shaped by the contract's size relative to the firm's capabilities. This interpretation aligns with the empirical findings: small contracts generated stronger and more immediate positive reactions, consistent with lower perceived risk and easier integration into existing operations; medium contracts were treated as routine and produced limited market responses; and large contracts required investors to weigh both the potential benefits and the firm's capacity to deliver them, resulting in more cautious and delayed positive reactions.

A similar pattern emerges with regards to contractual authority because the awarding body's institutional identity significantly shapes investor reactions. Awards issued by public law bodies are considered to be both credible and valuable. Regional and local authorities, including agencies, produce significant positive abnormal returns four days prior to the announcement, indicating early market anticipation or possible information leakage via public consultations, stakeholder engagement, or local media. Ministries and other national or federal agencies also show significant positive returns two days prior which are corrected by day five after the announcement as contract details (e.g., profit margins, risks, and implementation challenges) become apparent. In contrast, awards granted by utilities and international or European authorities elicit no significant market reaction, thereby indicating that, under the semi-strong form of market efficiency, such announcements provide limited new information to investors.

Restricted procurement procedures generate a significant positive abnormal return on day three because they further influence investor confidence. This suggests that the opportunity for negotiation is perceived by investors to reduce execution risk. In contrast, open procedures exhibit a negative correction on day four, possibly due to the competitiveness of these tenders which drives bidders to lower prices. While open procedures enhance transparency, investors may regard them to be riskier due to the potential for compressed profit margins and increased operational challenges for the

winning firm. Award criteria have a significant impact on investor responses. MEAT contracts signal long-term value creation and elicit significant positive market reactions, whereas lowest-price awards tend to generate weaker or even cautionary responses. A similar disparity exists across contract types. Services contracts elicit no market reaction, probably due to their intangible and routine nature. Supply contracts produce an immediate adverse reaction, possibly reflecting concerns about terms, profitability, or broader financial implications. This response is corrected by a positive excess return by day three. In contrast, work contracts prompt more cautious and pronounced responses, reflecting concerns about cost overruns and execution risks.

7.2.2 Firm characteristics

In addition to contract-level factors, firm-specific characteristics play a decisive role in shaping how markets interpret procurement announcements. Although the aggregate analysis reveals a consistent and significant day three effect, industry-level results indicate that this pattern largely diminishes. Certain sectors display anticipation effects before the announcement (e.g., consumer discretionary and energy), where significant reactions suggest that there has been an information leak or expectation building as investors adjust expectations in advance. By contrast, such as technology and real estate only react after the announcement, thereby indicating that investors require more time to assess profitability prospects and execution risks. Companies operating in the industrials, healthcare, and consumer staples sectors exhibit no significant effects, which is particularly notable given the large representation of industrials in the sample. A closer examination within the industrial sector reveals that construction records immediate positive effects on the event day, reflecting direct and transparent announcements. In aerospace and defence, the absence of significant abnormal returns may be due to confidentiality constraints that limit disclosure or the contract's value may already be reflected in the stock price prior to the formal announcement. Taken together, this variance underscores that procurement announcements do not produce uniform market signals; rather, they interact with the structural, financial, and regulatory characteristics of each industry to influence investors' interpretation. Firm-level characteristics reinforce

the view that contract award signals are not evaluated in isolation but as an interaction with corporate fundamentals. Investors react to small firms winning public contracts, perceiving these as transformative growth opportunities, whereas large firms experience modest but immediate stability effects. Medium-sized firms face scepticism, with weaker or even negative reactions, probably because procurement awards are not transformative relative to their scale and the contracts they secure may involve narrower margins, greater execution complexity, or resource strains, leading investors to question whether the benefits truly outweigh the risks. Similarly, low-leverage firms attract positive returns because contracts are viewed as enhancing financial stability and growth prospects, whereas highly leveraged firms record no effect, reflecting investor concerns about debt burdens and pressure on profitability. High-growth and moderate-growth firms benefit from positive responses because contracts are seen to support their performance, whereas low-growth firms show no impact, suggesting that such awards are viewed as being insufficient to shift already weak performance paths. Highly profitable firms elicit significant market reactions, whereas medium-profitability and low-profitability firms generate only muted responses, thereby indicating that procurement awards carry greater value when aligned with strong financial fundamentals.

7.2.3 Interaction between contracts and firm characteristics

The interaction of contract and firm characteristics indicates that procurement awards are not interpreted as independent announcements but are conditioned by the fundamentals of the awarded firm. This perspective underscores that the informational value of awards depends on both design features and firm capacity which collectively shape how investors evaluate risks and opportunities. The analysis shows that small firms, low-leverage firms, high-growth firms, and high-profitability firms respond more favourably to MEAT-based awards because quality-driven and value-driven criteria provide reliable indicators of sustainable projects.

In contrast, the interaction between low-priced awards and high-growth firms indicates an adverse reaction, suggesting that investors are concerned about potential margin

compression and execution challenges that may adversely affect the firms' ability to fulfil its project obligations. Differences also arise when contract size interacts with firm fundamentals. Small firms, low-leverage firms, and highly profitable firms tend to respond positively to small contracts, which are perceived to be achievable and less risky. High-growth firms exhibit a unique response, reacting adversely to small awards but positively to large ones. Large contracts are perceived to enhance their growth prospects, whereas smaller awards are often regarded as yielding only limited advantages relative to the effort required.

A comparable trend is observed in relation to contract structure, where market reactions are more favourable to single awards than to multiple awards. Single awards allow companies to obtain the full contract value while avoiding the complexity and uncertainty associated with multi-lot cooperation. By contrast, multiple awards fragment value and heighten execution complexity, particularly for firms lacking previous experience of coordinating with other contractors, which tends to elicit weaker or muted market responses. Reactions to contractual procedures suggest further challenges. Small firms and low-leverage firms respond positively to open tenders because success in competitive settings signals credibility and financial strength, although their responses are weaker under restricted procedures. High-growth firms display the opposite pattern, responding more favourably to restricted tenders.

In addition to the credibility gained from selective screening, restricted procedures provide greater scope for negotiation and the inclusion of firm-specific conditions. This flexibility reassures investors that high-growth firms are able to secure terms that are aligned with their capacity and expansion needs, whereas in open procedures, such privileges are absent, thereby raising concerns about margin compression and execution risks. Highly profitable firms, by contrast, generate positive reactions under both procedures because strong earnings reassure investors, regardless of the tendering procedure.

This study provides evidence that contract award announcements have informational value, but the results indicate that markets do not react uniformly or immediately. Instead, reactions are defined by a systematic lag, with considerable abnormal returns emerging

on the third day following the announcement. This delay highlights the difficulties that investors face in acquiring and analysing procurement data, thereby undermining the assumption of immediate market efficiency. The analysis reveals that investors perceive public contract awards from multiple perspectives. At the contract level, award criteria, size, procedure, and structure strongly condition market responses. MEAT awards and restricted tenders are considered to be reliable indicators of quality, whereas lowest-priced awards and open procedures elicit weaker or concerned reactions. Markets react positively to both small and large contracts, but the response shifts when firm characteristics are considered. For instance, high-growth firms react negatively, suggesting that investors consider such contracts to be misaligned with expansion needs or undervalue their incremental value. Similarly, single awards are rewarded for their exclusivity when interacting with firm characteristics because investors perceive them as securing the full contract value and minimising coordination risks.

7.3 Study contributions

Despite the economic significance of government procurement, empirical studies concerning the relationship between public contracting and firm performance remain limited. The current research addresses this deficiency. No previous study has examined this relationship in the U.K. context, despite the U.K. being one of Europe's largest procurement markets and hosting a highly developed capital market. The existing literature is constrained in both its scope and relevance because it has largely focused on specific industries, particularly the defence sector (Mayer-Sommer and Bedingfield 1989; Czech 1989; Diltz 1990; Alexander 1993; Kaen 2011; Palkar et al. 2012; Larson and Picou 2002), whereas Choi (2014, 2015) focuses on construction, and Samunderu and Yordanova (2024) address the pharmaceutical industry. Alternatively, researchers may rely on single-country case studies outside of the U.K. or use outdated datasets that predate major regulatory and economic shifts (Mayer-Sommer and Bedingfield 1989; Czech 1989; Diltz 1990; Alexander 1993; Palkar et al. 2012; Choi 2015; Larson and Picou 2002), with the exception of a recent study by Samunderu and Yordanova (2024) which accounts for the impact of the COVID-19 pandemic.

These limitations may constrain the external validity and contemporary applicability of the previous findings because they may not adequately reflect the institutional and market conditions that shape procurement in the current context. The lack of U.K. specific evidence is particularly concerning given the country's regulatory distinctiveness, historically framed by E.U. procurement law and subsequently reshaped by post-Brexit reforms, which may produce dynamics that differ from those observed in other jurisdictions. By filling this gap, the current study provides insight that is grounded in the U.K. context and reflective of current economic dynamics.

The contribution extends beyond geographical uniqueness. This study enriches the literature by employing a broad and up-to-date sample of procurement contracts, offering more detailed insight than previous research. Unlike studies that focus on aggregate metrics or narrow timeframes, it examines cross-sectoral variation, revealing how market responses differ across industries and whether procurement functions as a profitable opportunity or a potential risk. This study enhances procurement analysis by applying aggregate correlations to account for the diversity of contract designs. It demonstrates that procurement announcements do not have uniform effects but instead serve as diverse signals, with their influence depending on firm-specific and other characteristics.

Corporations should recognise that investors evaluate public contract awards not only in terms of immediate financial returns but also based on contract quality and its broader economic and social implications. Firms that secure and effectively deliver contracts aligned with these criteria may bolster investor confidence by demonstrating operational capability and reliability. Over time, these qualities can enhance the firm's reputation, support financial resilience, and signal long-term value creation to the market.

Building upon this, the type of procurement procedure further shapes how firms position themselves and are perceived in the market because restricted procedures allow permitted suppliers to compete not merely based on cost but also on demonstrated capacity. This enables firms to develop proposals that reflect their operational strengths, emphasising key attributes such as validated technologies, sector-specific expertise, established delivery systems, and preferred execution methods. By incorporating realistic timelines, resource allocations, and subcontracting arrangements, organisations can negotiate

contracts to shape terms and delivery structures that align closely with their capabilities whilst conveying to the awarding authorities the firm's credibility, dependability, and readiness to execute successfully. Open procedures, on the other hand, allow any interested supplier to engage and may cause businesses to underestimate the actual costs and complexity of delivery, despite the fact that they are intended to foster transparency. This effect arises because price-driven competition encourages overly aggressive bidding tactics. Firms are more financially and reputationally vulnerable because of this dynamic which reduces profit margins, strains resources, and increases the probability of delivery failures.

Moreover, for firms, single-lot contract allocations represent both an opportunity and a risk. By placing full responsibility on one contractor, they eliminate coordination costs with multiple partners and make it easier to maintain control over quality, cost, and deadlines. This provides firms with a clear opportunity to demonstrate their capabilities and enhance their credibility. However, the absence of partners also heightens accountability: unlike multi-lot contracts, where tasks and risks are shared, any failure falls solely on the contractor. When executed successfully, single lot awards enable firms to demonstrate their competence, enhance their long-term market position, deepen specialist expertise, and strengthen their corporate reputation, making their value extend well beyond the immediate financial returns. Ultimately, managers should approach procurement as a strategic balancing act, leveraging awards to develop expertise, strengthen reputations, and signal reliability to stakeholders while carefully managing the operational and reputational risks embedded in various contract designs. At the same time, the way in which managers frame and deliver these contracts has direct implications for investors, who interpret procurement outcomes as signals of governance quality, operational capability, and long-term value creation.

For investors, contract awards operate as conditional signals rather than uniform events. MEAT-based and restricted awards are interpreted positively because they reflect a screening and selection process that extends beyond cost competition. By requiring firms to demonstrate their technological competence, service quality, compliance capacity, and long-term value delivery, these awards signify that the successful bidder exhibits solid

management procedures and dependable operational structures, as well as expertise and compliance capabilities. Investors view this information as credible evidence that the firm can manage complex obligations while remaining disciplined in terms of resource allocation and risk management.

In addition to procedural design, contract size represents a critical dimension through which investors interpret procurement outcomes. Smaller awards are generally regarded as being more feasible to deliver, requiring fewer resources and presenting lower execution risk, whereas larger contracts signal reliability and established capacity because only firms with strong financial, managerial, and operational systems are able to secure and execute them. However, for high-growth firms, small contracts may generate negative investor reactions because they appear misaligned with expansion expectations. In such cases, smaller awards may be interpreted as signals of inefficiency, underperformance, or diluted strategic focus, raising doubts about the firm's ability to fully capitalise on its growth trajectory.

This research enhances the theory of the EMH by demonstrating that financial markets respond to contract announcements, which have noticeable effects on market performance. The findings support the semi-strong type of market efficiency by demonstrating that publicly available information is generally incorporated into security prices in a very short timeframe. This paper shows that market players and investors are generally effective in absorbing and acting upon new information as a sign of semi-strong market efficiency. In such markets, asset prices promptly and precisely reflect all publicly available information. Nonetheless, one important characteristic of semi-strong efficiency is the rapidity with which prices respond to new information. The current analysis finds evidence of a noticeable 48-hour lag in the market's reaction to contract announcements, suggesting that price assimilation proceeds gradually over a few days rather than instantly. The nature of information disclosure and the potential difficulty investors encounter in accessing and digesting the information necessary to interpret and respond to such announcements are among the factors that may contribute to this lag. The speed at which market participants are able to incorporate new information into their investment decisions can be impeded by various factors including limited transparency, disparities in

dissemination channels, or complexity in the content of disclosures. The observed temporal patterns highlight the importance of institutional disclosure standards in influencing both the speed and nature of investor responses. The findings indicate that, although the market exhibits characteristics of semi-strong efficiency, specific structural and procedural factors may temper the pace of price adjustments.

The research generates insight of relevance for both policy and practice. From a regulatory perspective, the findings emphasise the importance of transparency and consistency in procurement reporting because these directly affect the informational value of award disclosures for capital markets. The evidence highlights the role of procurement announcements in shaping perceptions of risk and opportunity. By showing that stock market responses are not uniform but are shaped by contract and firm characteristics, the study informs how executives may frame announcements and how investors may interpret them. To summarise, the contributions of this research fill a major geographical gap in the literature by focusing on the U.K., expand the empirical base through the use of a comprehensive and contemporary dataset with attention being paid to disclosure timing, and generate policy- and practice-relevant insights by showing how procurement announcements act as conditional signals that vary in meaning across firms and contracts.

7.4 Implications for practitioners

The findings of this study have several practical and policy implications that extend beyond academia. At the firm level, the findings indicate that investors do not uniformly evaluate procurement announcements. Instead, their interpretations are influenced by the contract's characteristics and the firm's fundamentals. This emphasises the importance of techniques for announcing procurement awards. Executives should frame awarding announcements strategically by emphasising positive elements such as the scale of the award or the firm's ability to deliver effectively, whilst also addressing potential concerns associated with uncertainty, including complex procedures or performance requirements. Firms that anticipate how their financial structure, size, and industry context shape investors' perceptions of public contracts are more likely to secure favourable market reactions and manage shareholder expectations effectively.

From a policy perspective, improving the timeliness and consistency of procurement reporting would not only enhance investor confidence but also promote fairness and efficiency by reducing information asymmetries. Article 50(1) of Directive 2014/24/EU requires contracting authorities to publish award notices within 30 days of the award decision; however, it does not prohibit firms from reporting results before this timeframe. In principle, the dispatch date should follow the award date because contract notices are expected to be published after the award decision has been made. However, the empirical evidence indicates considerable variation in this sequencing showing evidence of non-compliance with the 30 days publication requirement, including substantial outliers. The gap between the award and dispatch dates reached a maximum of 1,451 days, with an average difference of approximately 69 days among the sample, indicating substantial delays in the public disclosure of some contract awards. Importantly, when the dispatch date is significantly delayed, investors respond negatively, interpreting late disclosures as signals of administrative inefficiency, opacity, or reduced informational value. Announcements that occur long after the award no longer provide meaningful new information and, in some cases, appear to undermine confidence in the firm's communication practices, prompting adverse price adjustments. The data also reveal anomalies in which the dispatch date precedes the award date. In 451 cases, notices were formally dispatched before the recorded award date, with gaps ranging from one day to 381 days. These irregularities may indicate that the contract outcome was known before the formal award date or may reflect administrative delays, inconsistencies in recorded dates, or data entry errors. Regardless of their source, such inconsistencies undermine the credibility of procurement reporting and create ambiguity about when information reached the market. For investors, this reduces the reliability of procurement announcements as timely and transparent signals of firm performance. In a further 121 cases, the award and dispatch dates were the same (see Appendix 4 for further details).

These findings suggest that procuring authorities should view the statutory 30-day publication requirement as a minimum compliance standard rather than the benchmark for effective procurement practice. While meeting the legal deadline satisfies regulatory obligations, timely and consistent disclosure plays a broader role in supporting market transparency, reducing information asymmetry, and maintaining stakeholder confidence.

Procuring authorities should therefore seek to publish award notices as promptly as practicable following the award decision and ensure that procurement records are accurate and internally consistent. Beyond legal compliance, proactive disclosure and effective market engagement can enhance the credibility of procurement announcements, improve investor confidence, and strengthen supplier trust in the fairness and transparency of the procurement process. Such practices contribute not only to more efficient financial markets but also to greater confidence in the integrity and accountability of public procurement systems.

These findings highlight an area in which public authorities, particularly in the U.K. context examined in this study, need to improve procurement reporting practices. The substantial delays and inconsistencies identified between award and dispatch dates indicate that the timing and accuracy of procurement disclosures remain important concerns. The statutory 30 days publication requirement should therefore be regarded as a minimum compliance standard rather than a benchmark for effective procurement practice. Although publication within this period satisfies the formal regulatory requirement, authorities should aim to release contract award information as soon as practicable after the award decision and ensure that the information reported is accurate and internally consistent.

Prompt disclosure is particularly important because delays can reduce the informational value of contract award announcements and increase uncertainty regarding when the outcome became known to market participants. Timely and reliable reporting can help reduce information asymmetry by ensuring that investors, suppliers, and other stakeholders have more equal access to relevant procurement information. It can also enhance transparency and strengthen confidence in the credibility of the procurement process. Beyond meeting regulatory requirements, public authorities should therefore adopt a more proactive approach to market engagement through clear, consistent, and timely communication of procurement outcomes. Such practices can strengthen supplier and investor confidence, support more informed market responses, and reinforce the transparency, accountability, and integrity of the public procurement system.

Overall, the evidence indicates that the timing and consistency of procurement announcements influence their informational value: more transparent, timely disclosures are likely to strengthen market confidence, whereas irregularities may reduce credibility and weaken investor responses. Using TED data, the results suggest that market reactions often materialise around day three, suggesting a delayed adjustment. In the FTSE 350 Index sample, delays of up to 48 hours between the award announcement and observable market responses were frequently noted. Given that no regulatory or procedural constraints explain this lag, the evidence indicates that such delays are primarily shaped by firms' strategic choices regarding the timing and mode of disclosure. This emphasises the importance of corporate communication behaviour in influencing both the speed and magnitude of investor responses to procurement awards in the U.K. context.

Furthermore, the finding that certain types of contracts generate stronger positive reactions suggests that procurement policy itself can act as a strategic lever. By designing procurement processes that are transparent, timely, and aligned with market expectations, governments are able to strengthen investor confidence, stimulate innovation, and support industrial competitiveness, particularly in strategic sectors. Furthermore, contract announcements operate as informational signals in capital markets and firms can influence investors' reactions through the clarity and framing of these disclosures. Emphasising elements such as contract scale, scope, and profitability prospects enhances their perceived value. At the same time, the evidence that market responses vary systematically with firm characteristics such as size, leverage, and industry underscores the importance of tailoring communication strategies to corporate fundamentals. For example, firms with higher leverage may elicit more cautious investor reactions, necessitating additional assurance regarding risk management and financial stability.

Therefore, the findings of this study carry significant implications for both financial practice and public policy, yet they also highlight structural challenges in the processing and utilisation of procurement information. For stockbrokers and analysts, the results provide evidence for how procurement announcements should be incorporated into market assessments. The variation in investor responses indicates that procurement events should not be assessed in isolation; rather, they must be evaluated within the context of

firm fundamentals, industry conditions, and the characteristics of the contract. The interactive structure of these announcements restricts the attainment of consistently accurate information and indicates that financial experts should proceed with caution when interpreting procurement awards as straightforward indicators of value. The analysis highlights the importance of transparency and consistency in shaping investor interpretations of procurement announcements. Such disclosures may signal managerial competence, accountability, and reliability.

These observations should be interpreted with caution because the informational value of procurement announcements remains contingent upon firm settings. The findings have implications that extend beyond stock market dynamics. For public sector organisations, accuracy and consistency in reporting are essential because deficiencies risk undermining the credibility of procurement as a governance mechanism. Stronger disclosure rules and legal requirements have the potential to enhance the trust of investors and improve the effectiveness of procurement processes. The results, therefore, caution policymakers and regulators to recognise both the economic significance of public contracting and the risks that arise when transparency standards are applied inconsistently.

7.5 Study limitations

Recognising certain limitations is crucial to explain the findings and guide future research. The following sections outline three main areas of limitations: the quality and depth of the TED database; the limited sample coverage; and the absence of unobserved factors that could affect investor responses.

7.5.1 TED database limitations

The accuracy of the findings may be constrained by the reliance on the TED database because this source, whilst comprehensive in its coverage of European procurement activities, is affected by several data quality issues. These include inconsistent reporting

practices among contracting authorities, incomplete disclosure of contract characteristics, and errors in recording key variables. These deficiencies raise concerns about data reliability because they may obscure significant trends or introduce bias. A particular limitation relates to the measurement of contract size. Clarifications from the TED database team confirm that reported contract values are affected by systematic inconsistencies in disclosure and reporting practices. For example, some notices provide only unit prices rather than the total contract value, whereas others understate amounts by invoking confidentiality, despite this only being permissible under the Utilities Directive, and some include extreme outliers.

While the European Commission applied algorithmic and manual adjustments until 2020, these procedures were not systematically continued thereafter, leading to greater inconsistencies in the more recent data. Very small reported values are also considered to be unreliable, often reflecting data entry errors. Collectively, these limitations indicate that contract size, although incorporated into the analysis, may not fully reflect the true economic magnitude of awards. Such difficulties heighten the risk of measurement error and may weaken the observed association between procurement announcements and stock market reactions. Accordingly, results involving contract size must be interpreted with caution because reporting errors may introduce bias and compromise the validity of the findings.

A further limitation concerns the definition of the event date because the TED database records two separate dates: the award date, when the contract is formally signed, and the dispatch date, when the award notice is transmitted for publication in the TED database. The interval between these dates varies considerably across contracts, from same day reporting to delays of several weeks or even months. This ambiguity creates uncertainty regarding when information becomes publicly available. By analysing both dates, this study mitigates the inconsistency, with the evidence indicating that markets react primarily to the award date. Nonetheless, these results should be interpreted with caution. The findings indicate a stronger market reaction to the award date than to the dispatch date. A consistently positive and significant response is observed on the third day after the announcement, but several factors complicate this interpretation. The possibility of

simultaneous announcements through alternative channels, such as press releases, corporate websites, stock exchange filings, or media coverage, makes the exact timing of information reaching the market uncertain. However, the TED platform may not capture the initial moment when information becomes publicly available. By the time an event is recorded on TED, the market may have already started reacting and the initial price adjustment may have occurred. This lag complicates the accurate identification of the true event date, thereby increasing the risk of measurement errors. Consequently, the estimated abnormal returns may be understated or diluted because the observed market reaction to the TED-based data may not fully capture the magnitude of the immediate response to the new information.

A further limitation of this study stems from missing data in the TED database. Although TED provides extensive coverage of European procurement activities, certain announcements lack essential details such as the contract duration. These missing data constrain the ability to conduct deeper assessments of contract impact and limit the inclusion of potentially important explanatory variables in the study. The absence of such information may obscure relevant trends and weaken the explanatory power of the models. To mitigate these limitations, future research could enhance the comprehensiveness of the data by integrating TED with national procurement databases. In the U.K., for example, the Contracts Finder platform, although narrower in scope, tends to provide more reliable information on contract values. Combining TED with Contracts Finder would not only improve coverage and data quality but also offer a more robust foundation for analysing the relationship between procurement announcements and stock market reactions.

7.5.2 Sample coverage limitations

This study is constrained by its focus on FTSE listed companies in the U.K., hence limiting the analysis to larger, publicly traded firms. This strategy ensures data accessibility and comparability, but it excludes private firms and smaller contractors that are also substantially engaged in public procurement. Consequently, the results may not

comprehensively reflect the impact of government procurement on the entire market. The observed stock market reactions are attributable to firms that have greater visibility, impose higher disclosure obligations, and maintain established investor bases. The generalisability of the findings to other contexts is constrained because the study was conducted in the U.K., where procurement regulations, transparency standards, and market structures may vary significantly from those in other non-E.U. countries. These features may vary across countries, affecting investors' views on procurement announcements. Investor behaviour in emerging economies, characterised by underdeveloped capital markets and weaker transparency standards, may differ from that in more established markets due to limited access to information and lower market efficiency. Future research might employ cross-country analysis to provide deeper insight into the generalisability of these findings to alternative contexts.

7.5.3 Unobserved factors

Although the study examines several parameters at both the firm and contract levels, numerous important factors have been neglected due to data constraints. At the firm level, factors such as managerial quality and human capital may have a considerable influence on both the successful implementation of procurement contracts and investors' perceptions of them. The reliability, expertise, or public image of CEOs and top executives may influence investors' perception of a firm's ability to execute new contracts. Ineffective leadership may cause people to lose faith in the market. Effective leadership can increase people's perceptions to react favourably. Meanwhile, the presence of politically connected individuals or industry experts on a firm's board may signal both quality and capability. Directors with political connections can enhance a firm's ability to navigate regulatory frameworks, secure government contracts, or anticipate policy changes, whilst industry experts provide valuable knowledge for executing contracts. Collectively, these attributes can increase the confidence of investors by indicating lower operational risk and a greater capacity to deliver on procurement contracts. These factors are therefore likely to influence how investors assess the value of procurement awards.

The impact of rival firms is another significant yet neglected aspect of the current research. Upon a firm securing a government contract, investors may alter their expectations regarding its competitors in the industry. Such alterations may be perceived adversely, forecasting lost opportunities and diminished future income, or positively if their success signifies broad industry growth, perhaps benefiting other companies in the area. The current study ignores competition features, thereby representing just a portion of the market response. This exclusion suggests that the results may understate the full range of investor responses because procurement awards frequently affect not only the winning firm but also the competitive position of its rivals. Future studies should expand the analysis to include the reactions of rival firms, thereby providing a more complete picture of how procurement announcements affect market competition.

7.5.4 Regulatory context change

The findings of this study should be interpreted within the context of the U.K. public procurement framework that existed during the study period (2006–2022). During this period, procurement was governed by the E.U. procurement directives, implemented through the Public Contracts Regulations 2015, with contract award notices published through TED. Following the U.K.'s withdrawal from the E.U., the Procurement Act 2023 introduced substantial reforms to both the procurement framework and the publication of procurement notices, replacing TED with the U.K. Find a Tender Service (FTS) for above-threshold contracts (GOV.UK 2026). Consequently, the market reactions identified in this study reflect investor responses under the pre-reform procurement regime and should be interpreted within that institutional context.

Beyond the change in publication platform, the Procurement Act 2023 represents a broader shift in procurement policy. The Act is intended to simplify procurement procedures, reduce administrative burdens, and place greater emphasis on strategic public policy objectives, including innovation, sustainability, social value, organisational resilience, and increased participation by SMEs and local suppliers (Castro and El Daouk

2025). These reforms are intended to enhance procurement flexibility while aligning public purchasing with wider economic and societal objectives.

A particularly important reform is the change to the contract award criteria, replacing MEAT with MAT and providing contracting authorities with greater flexibility in evaluating tenders. Under the previous MEAT framework, contracting authorities were required to achieve value for money by balancing price with quality-related criteria, including technical merit, quality standards, environmental characteristics, operating costs, after-sales service, and delivery performance. In contrast, MAT provides greater discretion by allowing contracting authorities to place stronger emphasis on broader public value considerations, such as social value, innovation, sustainability, environmental impact, and community benefits, without requiring price to be a central component of every award decision (Goh and Platt 2026). This represents a significant conceptual shift from a predominantly value-for-money approach towards one that seeks to maximise broader public outcomes while supporting British industry and the wider U.K. economy.

From a capital market perspective, these reforms may alter how investors interpret public procurement announcements. Under the MEAT framework, contract awards were viewed primarily as signals of expected financial performance and competitive pricing. Under MAT, however, investors will also have to consider the strategic implications of broader evaluation criteria, recognising that contracts awarded on the basis of innovation, sustainability, resilience, or social value may generate long-term competitive advantages that extend beyond immediate financial returns. At the same time, MAT may create additional challenges for firms. Suppliers may need to demonstrate performance across broader criteria, requiring additional resources and expertise and increasing compliance and bid-preparation costs. This may particularly disadvantage firms with limited capacity to meet and demonstrate multiple requirements. Greater variation in evaluation criteria across contracting authorities may also reduce predictability and increase uncertainty for bidders. Consequently, the informational content of procurement announcements and the resulting market reaction may evolve as investors adapt to the new procurement regime.

The findings of this study therefore provide an important benchmark for understanding investor responses under the pre-reform framework. Whether the transition from MEAT to MAT affects the timing, magnitude, or interpretation of stock market reactions remains an empirical question for future research.

7.6 Directions for future research

This study demonstrates that procurement announcements provide meaningful insight into stock market movements, but several areas warrant further investigation. A primary direction for future research is the enhancement of both the quality and scope of the data used to evaluate the market impact of procurement announcements. The analysis in this study primarily relied on the TED database, which although comprehensive, is affected by incomplete entries and inconsistencies in the disclosure of contract values. Future research may overcome these constraints by incorporating TED records alongside supplementary data sources including the U.K.'s Contracts Finder, corporate press releases, and firms' financial disclosures. This could enhance dataset coverage and reduce measurement inaccuracies linked to underreported or unusual contract values. Additionally, the utilisation of NLP tools offers a promising approach to extracting structured information from unstructured materials such as PDF documents, newsletters, and webpages. By automating the extraction of key variables (e.g., award criteria, contract value, and contracting authority), NLP has the potential to substantially improve the efficiency, accuracy, and cross-linguistic comparability of procurement data collection.

Beyond data quality, future research could also strengthen causal inference and broaden the analytical scope. One promising approach is to systematically compare firms that secure contracts with those that narrowly lose out in competitive tenders. Such near miss comparisons would enable more precise identification of the causal effects of procurement awards by controlling for firm-specific factors that shape bidding success. Beyond the direct effects, researchers should also investigate spillover dynamics within industries, examining how the award of a major contract to one firm influences the

performance, behaviour, and competitive positioning of its rivals. Furthermore, future studies should extend the scope beyond FTSE 350 firms to include smaller, non-listed firms to evaluate the generalisability of the findings across different organisational and market contexts. Smaller firms may react differently to procurement awards due to structural factors such as limited market visibility, tighter financial constraints, and limited resource capacity. These conditions can influence the extent to which public contracts result in tangible improvements in firm performance.

Another important direction for future research concerns cross-country variation in market reactions to public contract announcements. Differences in governance quality, legal traditions, and regulatory enforcement may condition market reactions. Conducting comparative analyses across countries within the same timeframe could help to clarify the influence of institutional and market-specific factors on investor responses. Controlling for global conditions would enable researchers to assess whether differences in transparency, disclosure, and enforcement shape the interpretation of procurement announcements. In countries with strong legal frameworks and credible procurement systems, such announcements may be viewed as positive signals of transparency. In weaker governance environments, they may be discounted or even perceived as risk enhancing, reflecting investor concerns about inefficiency or political interference. Building upon this, examining identical industries across different national contexts (e.g., defence or healthcare) offers a valuable opportunity to assess how institutional environments condition market reactions to procurement events. Such comparative analysis can reveal whether similar contract announcements yield consistent investor responses or conflict due to variations in governance quality and regulatory oversight.

By holding industry factors constant, cross-country comparisons offer the potential to reveal whether market reactions are universal or conditioned by governance context: robust institutional environments tend to foster credibility and positive signalling effects, whereas weak or opaque systems may undermine investor confidence. In addition, future research should investigate the implications of the Procurement Act 2023 for capital market reactions to public procurement announcements. As the procurement framework transitions from MEAT to MAT, future studies could examine the transition from MEAT

to MAT has resulted in a measurable increase in the emphasis placed on broader public value objectives, such as social value, innovation, and sustainability. Furthermore, supplier-based surveys could provide valuable evidence on whether the MAT framework has influenced bid-preparation costs, bidding behaviour, and perceptions of evaluation transparency and fairness compared with the previous MEAT regime. Comparative analyses of the pre- and post-reform procurement regimes, alongside other regulatory reforms such as Directive 2014/24/EU, would provide valuable evidence on how changes in procurement policy influence transparency, competition, procurement credibility, and the informational content of public contract awards. Furthermore, cross-country comparisons that control for industry characteristics could determine whether market reactions are universal or shaped by regulatory frameworks. Such research would provide valuable insights into how governance quality, transparency, and enforcement influence investor confidence and the market valuation of procurement announcements, while offering policymakers evidence on the effectiveness of procurement reforms in enhancing the credibility and efficiency of public procurement systems

Another important avenue for future research concerns the role of risk and risk perceptions in shaping investor responses to public procurement announcements. Although risk appears central to explaining the heterogeneous market reactions identified in this study, it is not explicitly theorized here, and this represents an important limitation to be addressed in future work. Future research could therefore develop a multidimensional framework of procurement-related risk, in which risk is treated as the organizing construct rather than as one consideration among several, in order to better explain why similar procurement announcements generate different market responses.

Such a framework could distinguish between several interrelated dimensions of risk. Contract risk arises from differences in contract size, complexity, duration, and delivery uncertainty, as well as from supply risk associated with supply chain disruptions, contractor dependence, and procurement resilience (Tang 2006; Sheffi 2005). Related to this, large contracts may increase revenue opportunities while simultaneously exposing firms to greater execution, financing, and operational risk due to their scale and complexity (Guasch 2004; Flyvbjerg 2014). Financial risk reflects firms' profitability,

leverage, liquidity, and financial capacity, and its significance may vary with firm size, since contract awards often represent a greater proportion of expected revenues for smaller firms than for larger firms. Execution risk relates to organisational capability, technical expertise, and prior experience in delivering public projects, while procurement process risk concerns procurement procedures, award criteria, and the transparency and credibility of the contracting authority. Industry risk, in turn, reflects variation in technological complexity, regulatory oversight, and operational uncertainty across sectors.

A key theoretical question for future research is whether risk operates primarily as an objective firm or contract characteristic that predicts investor reaction, or as a subjective perception that investors form under conditions of incomplete information about the contract, firm, or industry. Clarifying this distinction would strengthen the conceptual basis for linking procurement characteristics to market outcomes and would help explain why investors appear to price ostensibly similar procurement announcements differently.

A further dimension of risk that warrants theoretical attention concerns unsuccessful bidders, including incumbent suppliers that are not reappointed when a contract is retendered and awarded to a competitor. Future research could examine how investors revise their risk assessments of firms that fail to secure public contracts and whether unsuccessful bids generate spillover effects for competitors or shift subsequent market expectations (Dyer et al. 1989). Situating this analysis explicitly within a risk-based framework, rather than treating it as a separate empirical question, would help integrate the study of winning and losing bidders into a single coherent account of how procurement outcomes are priced.

Future research could also adopt a qualitative approach, interviewing investors to understand how they evaluate and price successful and unsuccessful outcomes in public contract competitions, and which risk factors they weight most heavily in forming these judgements. Such evidence would complement the proposed risk framework by grounding its theoretical dimensions in the actual decision processes investors use and would help predict investor responses to future procurement outcomes.

Advancing research along these lines carries several broader implications. From an academic perspective, richer datasets and more rigorous methodological designs grounded in an explicit risk framework would generate findings that are both more robust and more generalisable, strengthening the evidence base on the financial market consequences of public procurement. Enhanced data infrastructure would further reduce measurement error and analytical uncertainty, enabling researchers to draw clearer inferences about the mechanisms linking procurement activity, risk perception, and investor behaviour. For market participants, this greater theoretical and empirical precision would translate into improved confidence in interpreting procurement announcements as credible indicators of firm performance and risk. For policymakers, stronger evidence on how procurement structures, disclosure practices, and governance quality shape investor risk perceptions could guide reforms aimed at enhancing transparency, accountability, and institutional credibility.

Future research examining regulatory reforms, such as the Procurement Act 2023, would provide further insight into how changes in governance, award criteria, and procurement policy influence investor risk perceptions and market valuation, and whether such reforms alter the informational value of procurement announcements. Beyond financial markets, adopting more inclusive and comparative approaches to risk would broaden the scope of analysis, enabling procurement to be conceptualised not simply as a transactional mechanism but as a strategic policy tool capable of shaping competitive dynamics and advancing sustainable economic growth across diverse institutional contexts. Collectively, these directions underscore the broader significance of theorizing risk within procurement research, for both academic inquiry and policy design.

7.7 Conclusion

This study documents the association between winning public contracts and stock price movements, demonstrating primarily positive abnormal returns around the announcement date. The analysis examined the impact of public contract announcements on stock prices with the aim of revealing the underlying mechanisms driving investor behaviour and market responses. Through comprehensive analysis, several key findings emerged, providing valuable insight into the dynamic relationship between public procurement contracts and financial markets. Firstly, our investigation of contract-specific characteristics revealed significant differences in investor sentiment by contract type. Domestic contracting was found to generate abnormal returns relative to international contracts, highlighting the importance of understanding the nature of contracting in influencing investor confidence. Moreover, distinct variations were observed in market reactions to public contract announcements based on procedural differences. Restricted procedures elicited more immediate and significant positive impacts on stock prices compared to open procedures, thereby indicating investors' preferences for certain announcement formats. Additionally, the segmentation of contracts into lots was found to influence investor sentiment, with undivided contracts suggesting stronger responses due to clearer project scopes. This demonstrates the important role that contract structures play in shaping market perceptions and stock price movements. Overall, this study contributes to the existing literature by providing a clear understanding of the factors that influence investor behaviour and market responses to public contract announcements. In concluding, this study outlines future research directions, contributions, and limitations, offering a comprehensive understanding of the topic and setting the stage for further exploration in the field.

The empirically supported findings of this study offer valuable insights for stockbrokers and analysts, facilitating well-informed recommendations and enhancing decision-making processes within the financial industry. By providing a comprehensive understanding of a firm's financial history, this research equips individual investors with the information needed to make informed investment decisions, thereby improving portfolio management and overall investment outcomes. Furthermore, the study

underscores the pivotal role of corporate governance and transparency, particularly in the disclosure of critical information such as the procurement of public contracts. This heightened awareness can guide corporations and senior management in cultivating responsible and accountable business practices, ultimately bolstering the reputation of companies and engendering trust among investors. Moreover, the research findings have the potential to influence public organisations and prompt sectoral organisations to adjust their practices, resulting in adjustments to regulatory policies and contract issuance practices. By aligning policies with these research findings, public sector entities can more effectively contribute to economic development goals, thereby enhancing the efficiency and impact of public procurement processes.

Additionally, the study's insights will prove invaluable to policymakers and regulators, offering a deeper understanding of the broader economic implications of public contracting. This enhanced understanding can inform the formulation of regulations and policies to promote fairness and effectiveness in public procurement, ultimately improving governance and resource allocation. Moreover, the research lays a foundation for further exploration and scholarly discourse on the intricate relationship between public contracting and corporate performance. Furthermore, the integration of TED data on public contracts with FTSE 350 datasets serves as a model for connecting disparate markets, potentially paving the way for novel avenues of research and analysis in financial markets and public contracting. This will contribute to the advancement of knowledge and understanding within the academic and research community, fostering innovation and progress in the field.

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Appendices

Appendix 1: Construction Fama-French factors in the U.K.

The primary objective of this section is to extend the availability of the Fama-French five factors and momentum, specifically for the U.K. This extended availability is intended to support research and analysis over a longer timeframe, addressing the limitations of previous constructs by Gregory et al. (2009) which only provided data up until 2018. Meanwhile, Fama-French factors are available for the U.S. market from [Kenneth R. French - Data Library](#). Therefore, these factors are constructed using methodologies established by Fama and French (1993, 2015). Also, in accordance with the recommendations of Gregory et al. (2009), the analysis is restricted to large firms to maintain consistency with the FTSE 350 Index which comprises the largest publicly listed companies.

Additionally, this section provides detailed information concerning the data sources and portfolio construction process, thereby helping to ensure transparency. The factors cover the period from mid-2001 to mid-2023 and serve the research sample.

Data and method

All U.K. financial data were obtained from Refinitiv and compiled daily from 2001 to 2023. These data include firm-level returns and market variables required for factor construction. The risk-free rate was proxied by the three-month yield which was sourced from Investment.com and converted into a daily series to match the frequency of the return data. The dataset was subsequently processed to construct the relevant factors used in the analysis. The data used to construct these factors are presented in Table 56.

Table 53: Data description

Variable	Description
Market return (FTSE 350 Index)	A return index (RI) shows the theoretical growth in value of an index/share holding over a specified period, assuming that dividends are reinvested to purchase additional units of an equity or unit trust at the closing price applicable on the ex-dividend date.
Individual stock return	
Operating income	Operating income (WC01250) represents the difference between sales and total operating expenses.
Book value	Book value (WC05491) represents the book value per share (proportioned common equity divided by outstanding shares) at the firm's fiscal year end.
Market value	The market value (MV) of a security expressed in millions (calculated by multiplying the number of shares (NOSH) and security price (P)).
Total assets	Total assets (WC02999) represent the sum of total current assets; long-term receivables; investments in unconsolidated subsidiaries; other investments; net property, plant and equipment; and other assets.
Total owner equity	Total shareholders' equity (WC03995) represents the sum of preferred stock and common shareholders' equity.
Base day	Base day provides the timeseries history start date for a quote. In normal circumstances, the base date should represent the listing date for a quotation.
Industry	Russell ICB is an industry-level classification name (ICBINDUSTRYNAME).

Data preparation

First, the data were prepared to ensure consistency across all variables. The three-month yield was converted into a daily risk-free rate using a standard annual-to-daily transformation formula. The three-month yield was first divided by 100 and then converted to a daily rate using the following formula:

$$\text{Daily Rate} = \ln \left(1 + 3\text{months yield rate} \times \frac{91}{365.25} \right)^{\frac{30.4375}{91}}$$

Both market returns and individual stock returns were then calculated on a daily basis to enable the computation of daily excess returns using natural logarithms.

$$\text{Return} = \ln \left(\frac{P_t}{P_{t-1}} \right)$$

The excess return was subsequently calculated by subtracting the daily risk-free rate from the daily return of both the market and the individual stock.

The financial variables were subsequently adjusted to ensure data consistency at the same level; each variable serves a distinct purpose. For example, larger firms typically exhibit lower risk and therefore earn lower expected returns, which is why market equity serves as the standard metric for distinguishing firm size. To construct the size factor, market capitalisation was used, calculated as the product of the share price and the number of outstanding shares. Similarly, the B/M factor was obtained by dividing book equity per share by market equity per share, where book equity represents owners' equity. Following the approach of Fama and French (2015), the B/M ratio was calculated using lagged values. However, the timing of these lagged components differs, book equity (BE) is taken from the firm's fiscal year-end accounts, typically finalised by June, whereas

market equity (ME) is measured at the end of December of the previous year. This alignment ensures that both inputs reflect information available to the market before portfolio formation.

$$B/M_t = \frac{BE_{t-1}}{ME_{December\ (t-1)}}$$

Then the operating profit ratio was defined as the ratio of operating profit to total owners' equity. This measures how effectively a firm generates operating income relative to the equity invested by its shareholders.

$$Operating\ profit\ ratio = \frac{Operating\ income_{t-1}}{Total\ owner\ equity_{t-1}}$$

The investment factor was calculated as the annual change in total assets, measured as the change in total assets in $t-1$ to $t-2$, divided by total assets at the fiscal year ending in $t-2$.

$$Investment = \frac{Total\ assets_{t-1} - Total\ assets_{t-2}}{Total\ assets_{t-2}}$$

Operating profit and investment were eventually merged with the remaining dataset, with both variables being lagged to ensure consistency with the Fama-French timing

convention, whereby fiscal-year data are aligned with portfolios established in June and retained until the subsequent June. The Fama-French structure derives variables from accounting data for the previous fiscal year, ensuring that all financial information is accessible to the market prior to the June-July portfolio formation period. Nevertheless, filters were applied to the dataset, such as the exclusion of firms operating in the financial industry. Firms were excluded for the first six months after their IPO based on the base date.

Breakpoints

Fama and French (2011) emphasise the importance of using appropriate breakpoints when forming regional portfolios. This analysis adopts a similar approach to that of Gregory et al. (2009) who constructed factors using only the constituents of the FTSE 350 Index by restricting factor construction to large firms to ensure consistency between factor construction and the sample used in the event study. Fama and French (1992) use size (ME) deciles based on NYSE breakpoints to classify firms when examining the cross section of returns. Fama and French (1993) further formalise the practice of relying on NYSE breakpoints when constructing sizes and book-to-market portfolios in the three-factor model. This approach is maintained in Fama and French (1996), where NYSE breakpoints continue to be used for portfolio formation and it remains the standard methodology adopted in the Fama-French data library for the three-factor model and its later extensions.

Therefore, when constructing the U.K. factors, the full sample of U.K. firms traded on the LSE was first divided into size deciles. Firms above the median size, which largely correspond to the FTSE 350 constituents alongside other medium-to-large-sized firms, were retained because some firms enter and others exit the FTSE 350 index. Using the size median ensures that all related firms are included in the upper half, not only those that are temporarily in the index. The size factor was divided into small and large firms using the median market equity as the breakpoint. All other factors were constructed using the 30th and 70th percentiles, which serve as statistical cutoff points that divide the distribution into three categories. Observations below the 30th percentile were classified

into the low group, those between the 30th and 70th percentiles into the neutral/middle group, and those above the 70th percentile into the high group. Accordingly, firms were assigned to three B/M portfolios: high (H), neutral (N), or low (L) based on the 30th and 70th percentile cutoffs. Operating profitability (OP) was likewise categorised into robust (R), neutral (N), or weak (W) groups. Investment (INV) portfolios were constructed similarly, classifying firms as conservative (C), neutral (N), or aggressive (A).

Factor constructions

After classifying each factor, value-weighted was sorted into two size groups based on the LSE large-mid-cap median market cap. Independently, stocks were assigned to three groups for B/M, operating profitability (OP), and investment (INV) using the 30th and 70th percentiles as cutoffs. The resulting value-weighted portfolios formed from the intersections of Size with B/M, OP, or INV served as the basis for constructing the risk factors. Each 2×3 intersection produced six portfolios which were used to construct the SMB, HML, RMW, and CMA factors.

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Table 54: Size × BE/ME, profitability, and investment portfolios

Size and B/M	Size × Operating profit	Size × Investment
$BL = \frac{\text{Daily returns}}{\text{Big size portfolio} \times \text{Small BE/ME}}$	$BW = \frac{\text{Daily returns}}{\text{Big size portfolio} \times \text{Weak operation profit}}$	$BC = \frac{\text{Daily returns}}{\text{Big size portfolio} \times \text{Conservative invesment}}$
$BNb = \frac{\text{Daily returns}}{\text{Big size portfolio} \times \text{Meduim BE/ME}}$	$BNb = \frac{\text{Daily returns}}{\text{Big size portfolio} \times \text{Meduim operation profit}}$	$BNb = \frac{\text{Daily returns}}{\text{Big size portfolio} \times \text{Meduim operation profit}}$
$BH = \frac{\text{Daily returns}}{\text{Big size portfolio} \times \text{Large BE/ME}}$	$BR = \frac{\text{Daily returns}}{\text{Big size portfolio} \times \text{RobUSt operation profit}}$	$BA = \frac{\text{Daily returns}}{\text{Big size portfolio} \times \text{Aggresive invesment}}$
$SL = \frac{\text{Daily returns}}{\text{Small size portfolio} \times \text{Small BE/ME}}$	$SW = \frac{\text{Daily returns}}{\text{Small size portfolio} \times \text{Small BE/ME}}$	$SC = \frac{\text{Daily returns}}{\text{Small size portfolio} \times \text{Conservative invesment}}$
$SNb = \frac{\text{Daily returns}}{\text{Small size portfolio} \times \text{Meduim BE/ME}}$	$SNb = \frac{\text{Daily returns}}{\text{Small size portfolio} \times \text{Meduim BE/ME}}$	$SNb = \frac{\text{Daily returns}}{\text{Small size portfolio} \times \text{Meduim BE/ME}}$
$SH = \frac{\text{Daily returns}}{\text{Small size portfolio} \times \text{Large BE/ME}}$	$SR = \frac{\text{Daily returns}}{\text{Small size portfolio} \times \text{Large BE/ME}}$	$SA = \frac{\text{Daily returns}}{\text{Small size portfolio} \times \text{Aggresive invesment}}$

For each sort, the value-weighted portfolio return was calculated by multiplying each stock's market equity weight by its corresponding return and then summing these weighted returns across all stocks in the portfolio. The procedure began by identifying the market capitalisation of each stock and computing the portfolio's total market equity, which is the sum of these individual market capitalisations. Each stock's weight was then calculated by dividing its market capitalisation by the portfolio's total market equity. Next, the individual return of each stock was computed for the relevant holding period. Multiplying each stock's weight by its return yields its value-weighted contribution and the sum of these contributions forms the portfolio's value-weighted return.

$$R_p = \sum_{i=1}^n W_i \times R_i$$

Where

R_p = Portfolio return

W_i = Market equity weight of stock i ,

calculated as $W_i = \frac{\text{Stock market cap}}{\text{Total portfolio market cap}} = \frac{\text{Price}_i \times \text{Number of shares outstanding}_i}{\sum_{j=1}^n \text{Price}_j \times \text{Number of shares outstanding}_j}$

R_i = Return of stock i .

n = Number of stocks in portfolio.

SMB is the size factor, calculated as the average return of the nine small-stock portfolios minus the average return of the nine large-stock portfolios. HML is the value factor, calculated as the average return of the two high B/M (value) portfolios minus the average return of the two low B/M (growth) portfolios. RMW is the profitability factor. It is calculated as the average return of the two robust operating profitability portfolios minus the average return of the two weak operating profitability portfolios. CMA is the

investment factor, calculated as the average return of the two conservative investment portfolios minus the average return of the two aggressive investment portfolios.

Table 55: Factor constructions

Breakpoints	Factors and their components
Size: mid-large LSE firms' median	$\text{SMB_BM} = \frac{(\text{SH} + \text{SNb} + \text{SL})}{3} - \frac{(\text{BH} + \text{BNb} + \text{BL})}{3}$
	$\text{SMB_OP} = \frac{(\text{SR} + \text{SNp} + \text{SW})}{3} - \frac{(\text{BR} + \text{BNp} + \text{BW})}{3}$
	$\text{SMB_Inv} = \frac{(\text{SC} + \text{SNi} + \text{SA})}{3} - \frac{(\text{BC} + \text{BNi} + \text{BA})}{3}$
	$\text{SMB} = \frac{(\text{SMB_BM} + \text{SMB_OP} + \text{SMB_Inv})}{3}$
B/M: 30th and 70th mid-large LSE firms' percentiles	$\text{HML} = \frac{(\text{SR} + \text{BR})}{2} - \frac{(\text{SW} + \text{BW})}{2}$
OP: 30th and 70th mid-large LSE firms' percentiles	$\text{RMW} = \frac{(\text{SR} + \text{BR})}{2} - \frac{(\text{SR} + \text{BR})}{2}$
INV: 30th and 70th mid-large LSE firms' percentiles	$\text{CMA} = \frac{(\text{SC} + \text{BC})}{2} - \frac{(\text{SA} + \text{BA})}{2}$

Note: For the period from June 2000 to December 2024, returns dated before July were assigned to the previous fiscal year, whereas returns dated July or later were assigned to the current fiscal year. The construction of the Size, B/M, Operating Profitability (OP), and Investment (INV) factors. Firms were first sorted into ten size deciles based on market equity (ME). The size median and all subsequent breakpoints were calculated using only firms in the upper five deciles to ensure that the breakpoints reflect mid- to large-capitalisation stocks. Stocks were then independently classified into two size groups: small (S) or big (B); three B/M groups: high (H), neutral (N), or low (L); three OP groups: robust (R), neutral (N), or weak (W); and three INV groups: conservative (C), neutral (N), or aggressive (A).

Appendix 2: Lot numbers

Table 56: Tabulation of lot numbers

Lot number	Freq.	Percent	Cumulative
0	1,138	50.33	50.33
1	453	20.04	70.37
2	125	5.53	75.90
3	104	4.60	80.50
4	85	3.76	84.25
5	43	1.90	86.16
6	59	2.61	88.77
7	38	1.68	90.45
8	26	1.15	91.60
9	19	0.84	92.44
10	22	0.97	93.41
11	15	0.66	94.07
12	12	0.53	94.60
13	5	0.22	94.83
14	5	0.22	95.05
15	4	0.18	95.22
16	4	0.18	95.40
17	16	0.71	96.11
18	3	0.13	96.24
19	5	0.22	96.46
21	5	0.22	96.68
22	1	0.04	96.73
23	2	0.09	96.82
24	1	0.04	96.86
25	3	0.13	96.99
27	2	0.09	97.08
28	13	0.57	97.66
29	2	0.09	97.74
30	1	0.04	97.79
31	1	0.04	97.83
32	2	0.09	97.92
33	3	0.13	98.05
34	1	0.04	98.10
35	3	0.13	98.23
39	1	0.04	98.28
41	2	0.09	98.36
42	1	0.04	98.41
43	1	0.04	98.45
46	1	0.04	98.50
50	1	0.04	98.54
51	1	0.04	98.58

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52	2	0.09	98.67
53	2	0.09	98.76
56	1	0.04	98.81
59	1	0.04	98.85
61	1	0.04	98.89
62	1	0.04	98.94
63	2	0.09	99.03
70	1	0.04	99.07
72	1	0.04	99.12
76	1	0.04	99.16
91	1	0.04	99.20
93	1	0.04	99.25
95	1	0.04	99.29
96	1	0.04	99.34
100	3	0.13	99.47
107	1	0.04	99.51
109	1	0.04	99.56
110	1	0.04	99.60
112	1	0.04	99.65
116	1	0.04	99.69
127	1	0.04	99.73
129	1	0.04	99.78
138	1	0.04	99.82
163	1	0.04	99.87
183	1	0.04	99.91
220	1	0.04	99.96
431	1	0.04	100.00
Total	2,261	100.00	

Appendix 3: Common Procurement Vocabulary

Table 57: CPV classification based on the first three digits

Digits	CPV group	CPV division
030	Agricultural, farming, fishing, forestry, and related products	Agriculture and food
150	Food, beverages, tobacco, and related products	
770	Agricultural, forestry, horticultural, aquacultural, and apicultural services	
300	Office and computing machinery, equipment and supplies except furniture and software packages	Computer and related services
480	Software packages and information systems	
720	IT services: consulting, software development, Internet, and support	
440	Construction structures and materials; auxiliary products to construction (except electric apparatus)	Construction and real estate
450	Construction work	
700	Real estate services	
710	Architectural, construction, engineering, and inspection services	
900	Sewage, refuse, cleaning, and environmental services	
316	Detection apparatus for mines	Defence and security
350	Security, firefighting, police, and defence equipment	
451	Dismantling works for security installations	
452	Engineering work for military/security installations	
452	Construction work for buildings relating to law and order or emergency services and for military buildings	
506	Repair and maintenance services of security and defence materials	
515	Installation services of weapon systems	
722	Development of software for military applications	
734	Research and development services on security and defence materials	
750	Administration, defence, and social security services	
806	Training services in defence and security materials	
801	Primary education services	Education
802	Secondary education services	
803	Higher education services	
804	Adult and other education services	
805	Training services	
806	Training services in defence and security materials	
076	Services related to the oil and gas industry	Energy and

090	Petroleum products, fuel, electricity, and other sources of energy	related services
410	Collected and purified water	Environment and sanitation
900	Sewage, refuse, cleaning, and environmental services	
660	Financial and insurance services	Finance and related services
030	Agricultural, farming, fishing, forestry, and related products	Materials and products
090	Petroleum products, fuel, electricity, and other sources of energy	
140	Mining, basic metals, and related products	
150	Food, beverages, tobacco, and related products	
180	Clothing, footwear, luggage articles, and accessories	
190	Leather and textile fabrics, plastic, and rubber materials	
220	Printed matter and related products	
240	Chemical products	
300	Office and computing machinery, equipment, and supplies except furniture and software packages	
310	Electrical machinery, apparatus, equipment, and consumables; lighting	
320	Radio, television, communication, telecommunication, and related equipment	
330	Medical equipment, pharmaceuticals, and personal care products	
340	Transport equipment and auxiliary products to transportation	
350	Security, firefighting, police, and defence equipment	
370	Musical instruments, sports goods, games, toys, handicrafts, art materials, and accessories	
390	Furniture (incl. office furniture), furnishings, domestic appliances (excl. lighting), and cleaning products	
440	Construction structures and materials; auxiliary products to construction (except electric apparatus)	
140	Mining, basic metals, and related products	Mining and ores
440	Construction structures and materials; auxiliary products to construction (except electric apparatus)	
500	Repair and maintenance services	Other services
510	Installation services (except software)	
550	Hotel, restaurant, and retail trade services	
630	Supporting and auxiliary transport services; travel agency services	
640	Postal and telecommunications services	

650	Public utilities	
750	Administration, defence, and social security services	
920	Recreational, cultural, and sporting services	
980	Other community, social, and personal services	
981	Membership organisation services	
982	Equal opportunities consultancy services	
983	Miscellaneous services	
985	Private households with employed persons	
989	Services provided by extra-territorial organisations and bodies	
220	Printed matter and related products	Printing and publishing
300	Office and computing machinery, equipment, and supplies except furniture and software packages	
790	Business services: law, marketing, consulting, recruitment, printing, and security	
731	Research and experimental development services	Research and development
732	Research and development consultancy services	
733	Design and execution of research and development	
734	Research and development services on security and defence materials	
160	Agricultural machinery	Technology and equipment
300	Office and computing machinery, equipment, and supplies except furniture and software packages	
310	Electrical machinery, apparatus, equipment, and consumables; lighting	
320	Radio, television, communication, telecommunication, and related equipment	
330	Medical equipment, pharmaceuticals, and personal care products	
340	Transport equipment and auxiliary products to transportation	
350	Security, firefighting, police, and defence equipment	
380	Laboratory, optical, and precision equipment (excl. glasses)	
390	Furniture (incl. office furniture), furnishings, domestic appliances (excl. lighting), and cleaning products	
420	Industrial machinery	
430	Machinery for mining and quarrying, construction equipment	
480	Software packages and information systems	
340	Transport equipment and auxiliary products to transportation	Transport and related services
600	Transport services (excl. waste transport)	
630	Support and auxiliary transport services; travel agency services	

Appendix 4: A comparison of dispatch date and award date

Table 58: The difference in days between the dispatch date and award date

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Difference	2,294	69.252	155.209	-381	1,451

The variable difference is created to calculate the difference in days between the dispatch date and the award date. The results show an average difference of approximately 69 days, thereby indicating a considerable delay between the award decision and its public announcement. The relatively large standard deviation (155.209 days) suggests substantial variation in this time gap across observations. The lowest value of -381 days indicates that, in some cases, the dispatch date precedes the award date. This could be due to reporting errors or early disclosures. Conversely, the maximum value of 1,451 days highlights extreme delays in certain cases.

This analysis examines the timing of market reactions by comparing excess returns around the award and dispatch dates with the objective of identifying which date more accurately captures the impact of contract award announcements. The sample is divided into three categories: (i) cases where the award and dispatch dates are identical; (ii) cases where the dispatch date occurs after the award date; and (iii) cases where the dispatch date occurs before the award date. For each category, two sets of tests are conducted: one using the award date and the other using the dispatch date as the event date, allowing a direct comparison of the timing of information incorporation into stock prices.

Table 59: Market reaction: Comparing award and dispatch dates

Excess return		
	Award date	Dispatch date

Variables	(1) Same date	(2) Dispatch date after award date	(3) Dispatch date before award date	(4) Dispatch date after award date	(5) Dispatch date before award date
T-5	0.002375 (0.002427)	-0.000128 (0.000450)	0.001342 (0.000885)	-0.001018** (0.000433)	0.000073 (0.000787)
T-4	0.002274 (0.001479)	0.000069 (0.000431)	0.000720 (0.000857)	0.000214 (0.000463)	-0.000683 (0.000920)
T-3	0.001936 (0.001474)	0.000361 (0.000483)	-0.000961 (0.000895)	-0.000359 (0.000473)	0.000600 (0.000948)
T-2	0.001046 (0.001537)	-0.000307 (0.000495)	0.001512* (0.000791)	-0.000419 (0.000421)	0.000866 (0.000985)
T-1	-0.001863 (0.001627)	-0.000383 (0.000465)	-0.000310 (0.000711)	-0.000125 (0.000445)	0.000467 (0.000826)
T 0	0.001257 (0.001635)	0.000139 (0.000538)	-0.000712 (0.000701)	-0.000086 (0.000424)	-0.000050 (0.000866)
T+1	-0.000469 (0.001739)	0.000315 (0.000483)	-0.000228 (0.000759)	-0.000616 (0.000432)	0.000556 (0.000958)
T+2	0.002499 (0.001585)	-0.000595 (0.000471)	-0.000089 (0.000916)	-0.000450 (0.000408)	0.000132 (0.000805)
T+3	0.001115 (0.001568)	0.000810* (0.000442)	0.000773 (0.000821)	-0.000369 (0.000442)	-0.000210 (0.000821)
T+4	-0.002797 (0.002033)	-0.000367 (0.000451)	0.000002 (0.000841)	0.000172 (0.000426)	0.001143 (0.000858)
T+5	-0.000089 (0.001347)	0.000022 (0.000456)	0.000931 (0.001030)	-0.000065 (0.000423)	-0.001280 (0.001189)
Market excess return	1.119095*** (0.047812)	0.943928*** (0.014427)	0.912479*** (0.028702)	0.957701*** (0.015426)	0.928276*** (0.028550)
SMB	0.294912*** (0.069090)	0.188549*** (0.017065)	0.189760*** (0.030477)	0.197827*** (0.017499)	0.237173*** (0.033799)
HML	0.042303 (0.041236)	-0.008283 (0.010751)	-0.019438 (0.016066)	-0.013895 (0.010080)	-0.019660 (0.017786)
RMW	-0.098371** (0.040917)	-0.065246*** (0.010370)	-0.075923*** (0.018263)	-0.077466*** (0.010255)	-0.072750*** (0.019671)
CMA	-0.090974*** (0.030538)	-0.045397*** (0.007958)	-0.028365** (0.012566)	-0.047789*** (0.007337)	-0.043860*** (0.014821)
Constant	0.000134 (0.000105)	0.000195*** (0.000029)	-0.000025 (0.000049)	0.000191*** (0.000030)	0.000120** (0.000059)
Observations	14,399	194,851	51,200	202,479	51,175
R-squared	0.224286	0.225501	0.203959	0.220103	0.209205
Number of contracts	119	1,612	424	1,675	423

There are 451 cases in which the dispatch date precedes the award date, with the gap ranging from 1 to 381 days. This suggests that in some instances, the contract outcome may have been publicly known in advance, while the formal award date was recorded later. There are 121 cases where the award date and the dispatch date are the same. There are 1,722 cases where the dispatch date comes after the award date, which is the expected sequence. However, the length of the gap varies significantly from one contract to another. The data were divided into three groups based on the relationship between the award date and the dispatch date. Each group was then tested twice (once using the award date as the event date and once using the dispatch date) to examine how the timing of the announcement influences the market reaction.

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Market reaction to contract announcements when the dispatch date follows the award date

Table 60: Summary statistics: Variation in the gap between dispatch and award dates

Gap size	N	Mean	S.D.	Min.	Max.
Short gap	574	17.132	11.157	1	33
Medium gap	574	69.028	25.941	33	125
Long gap	574	274.103	142.560	125	1,451

Notes: *** p<.01, ** p<.05, * p<.1

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Table 61: Dispatch date after the award date

Excess return						
Variables	Award date			Dispatch date		
	(1) Short gap	(2) Medium gap	(3) Long gap	(4) Short gap	(5) Medium gap	(6) Long gap
T-5	-0.000689 (0.000758)	0.000044 (0.000853)	0.000312 (0.000716)	-0.001101 (0.000719)	-0.000921 (0.000742)	-0.000990 (0.000796)
T-4	-0.000140 (0.000744)	0.001355* (0.000744)	-0.001090 (0.000741)	0.000377 (0.000794)	-0.000085 (0.000780)	0.000370 (0.000828)
T-3	0.000516 (0.000860)	0.000141 (0.000770)	0.000317 (0.000881)	-0.000414 (0.000854)	-0.000805 (0.000855)	0.000178 (0.000742)
T-2	-0.001132 (0.000833)	-0.000365 (0.000839)	0.000506 (0.000901)	-0.000242 (0.000730)	-0.000090 (0.000744)	-0.000935 (0.000713)
T-1	0.000770 (0.000727)	-0.001872* (0.000959)	-0.000016 (0.000693)	-0.000316 (0.000790)	-0.000450 (0.000760)	0.000406 (0.000762)
T 0	-0.000641 (0.000974)	0.000880 (0.000815)	0.000224 (0.000991)	0.000660 (0.000760)	0.000718 (0.000698)	-0.001645** (0.000738)
T+1	-0.000581 (0.000777)	0.000271 (0.000866)	0.001310 (0.000865)	-0.000467 (0.000724)	-0.000378 (0.000721)	-0.001034 (0.000796)
T+2	-0.000420 (0.000751)	-0.000895 (0.000818)	-0.000572 (0.000881)	0.000408 (0.000658)	-0.001011 (0.000708)	-0.000789 (0.000755)
T+3	0.001416* (0.000750)	-0.000123 (0.000788)	0.001075 (0.000757)	-0.000638 (0.000736)	-0.000078 (0.000723)	-0.000392 (0.000833)

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T+4	-0.001298*	-0.000382	0.000632	0.000500	0.000654	-0.000675
	(0.000734)	(0.000724)	(0.000884)	(0.000780)	(0.000694)	(0.000731)
T+5	0.000393	-0.001212*	0.000926	-0.000053	-0.000016	-0.000133
	(0.000765)	(0.000699)	(0.000900)	(0.000798)	(0.000704)	(0.000692)
Market excess return	0.977589***	0.924351***	0.928386***	0.994240***	0.943825***	0.932805***
	(0.022575)	(0.025357)	(0.026757)	(0.025096)	(0.027544)	(0.027231)
SMB	0.203092***	0.176642***	0.182173***	0.218386***	0.203731***	0.169297***
	(0.028071)	(0.029085)	(0.031368)	(0.031716)	(0.031226)	(0.027426)
HML	-0.001262	0.005766	-0.027941*	-0.006010	-0.010684	-0.023902
	(0.018238)	(0.020309)	(0.016934)	(0.018390)	(0.018083)	(0.015731)
RMW	-0.070116***	-0.053568***	-0.069950***	-0.075746***	-0.076921***	-0.079582***
	(0.017486)	(0.018093)	(0.018066)	(0.018681)	(0.017662)	(0.016549)
CMA	-0.056582***	-0.038216***	-0.040421***	-0.061927***	-0.045196***	-0.035678***
	(0.012487)	(0.014107)	(0.014777)	(0.012752)	(0.012568)	(0.012836)
Constant	0.000239***	0.000223***	0.000108**	0.000289***	0.000169***	0.000107**
	(0.000047)	(0.000052)	(0.000049)	(0.000050)	(0.000054)	(0.000049)
Observations	66,649	65,337	62,865	68,707	66,980	66,792
R-squared	0.238519	0.214167	0.225451	0.240315	0.213471	0.206642
Number of contracts	551	541	520	568	555	552

The sample is evenly distributed across the three gap categories. Short gaps (1–33 days) reflect minimal delays between the award and dispatch dates and exhibit low variability. Medium gaps (34–125 days) indicate moderate reporting delays, whereas long gaps (over 125 days) exhibit substantial variation, with some dispatch dates recorded more than 1,400 days after the award date. Across all three groups, most coefficients prior to the event are statistically insignificant. However, within the medium-gap group, a negative and statistically significant effect is observed one day prior to the announcement, which may indicate an early market reaction or potential information leakage. In the short-gap group, the results reveal a positive and statistically significant effect on the third day following the announcement, followed by a negative and significant effect on the fourth day, suggesting short-term volatility in the market response to contract announcements. The medium-gap group also exhibits a negative and statistically significant effect on the fifth day after the announcement. In contrast, the long-gap group shows no statistically significant post-event effects, indicating a weaker or more delayed market response.

Further analysis using the dispatch date as the event date reveals a negative and statistically significant market reaction on the announcement day. This finding suggests that investors may interpret delayed contract announcements adversely, potentially regarding them as indicators of administrative inefficiency, a lack of transparency, or a reduction in the informational value of the disclosure. When the public announcement occurs long after the contract has been awarded, it may no longer provide meaningful new information. In some cases, such delays may even raise concerns about the firm's communication practices, prompting a negative price adjustment. In terms of sectoral distribution, the short-gap group is not confined to a single sector but is skewed towards industrial and technology-related activities, with a strong presence in construction and equipment. This diversity indicates that shorter reporting lags are not necessarily tied to specific contract types or industries. The medium-gap group remains similarly diverse, with the continued dominance of industrials and technology, but also shows a relatively higher presence of healthcare and telecommunications contracts. This variation may point to sectoral differences in administrative or reporting procedures. The long-gap group mirrors the general structure of the other groups, maintaining a strong presence in industrial contracts, particularly in construction and equipment. Despite the longer delays

in public announcement, the sectoral spread remains broad, with no strong concentration in any single area. This suggests that reporting delays are more likely to be procedural than sector specific.

Market reaction to contract announcements when the dispatch date precedes the award date

Table 62: Summary statistics: Variation in the gap between dispatch and award dates

Gap size	N	Mean	S.D.	Min.	Max.
Short gap	151	-25.755	15.795	-53	-1
Medium gap	150	-88.813	24.478	-133	-54
Long gap	150	-204.780	52.319	-381	-134

The dispatch date precedes the award date, indicating that the contract was publicly announced before the formal award was recorded. This may be due to early disclosure, administrative processing delays, or inconsistencies in data entry. These negative time gaps were grouped into three categories based on their length. The short gap group includes 151 cases where the dispatch date preceded the award date by 1 to 53 days. These are likely to reflect situations where announcements were made just days or a few weeks in advance, possibly due to timing misalignment in reporting systems. The medium-gap group comprises 150 cases with gaps ranging from 54 to 133 days, suggesting that the announcement took place several months before the formal award. This phenomenon may reflect procedural delays or phased approval processes. The long-gap group also includes 150 cases, with dispatch dates occurring 134 to 381 days before the award date. These unusually long gaps raise concerns about data quality and the possibility of premature or unofficial disclosures. In such cases, the announcement may have lost informational value by the time it was formally recorded, potentially weakening or distorting investor response. Alternatively, the long gaps may reflect complex procurement timelines or changes in contract status during the approval process.

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Table 63: The dispatch date precedes the award date

Variables	Excess return					
	Award date			Dispatch date		
	(1) Short gap	(2) Medium gap	(3) Long gap	(4) Short gap	(5) Medium gap	(6) Long gap
T-5	0.001094 (0.001524)	0.002985* (0.001780)	-0.000030 (0.001281)	-0.001132 (0.001483)	-0.000082 (0.001387)	0.001518 (0.001198)
T-4	-0.000120 (0.001705)	0.000744 (0.001197)	0.001633 (0.001476)	-0.001862 (0.001551)	-0.001922 (0.001880)	0.001605 (0.001276)
T-3	0.001134 (0.001943)	-0.001992 (0.001220)	-0.002134 (0.001350)	0.000282 (0.001638)	0.000496 (0.001738)	0.000953 (0.001572)
T-2	0.002812** (0.001339)	0.000622 (0.001142)	0.001018 (0.001575)	-0.001116 (0.001441)	0.001681 (0.001317)	0.002133 (0.002240)
T-1	0.000275 (0.001065)	-0.001913* (0.001134)	0.000668 (0.001461)	0.000007 (0.001564)	-0.000235 (0.001304)	0.001750 (0.001465)
T 0	0.000786 (0.001023)	-0.001423 (0.001204)	-0.001512 (0.001391)	0.000845 (0.001641)	-0.000361 (0.001581)	-0.000706 (0.001248)
T+1	-0.000456 (0.001258)	0.000017 (0.001347)	-0.000268 (0.001336)	0.001890 (0.001727)	-0.002009 (0.001828)	0.001752 (0.001390)
T+2	0.001341 (0.001625)	0.000074 (0.001150)	-0.001625 (0.001858)	0.001385 (0.001302)	-0.001404 (0.001524)	0.000466 (0.001354)
T+3	0.001528 (0.001550)	0.000919 (0.001040)	-0.000327 (0.001582)	0.000546 (0.001308)	-0.001570 (0.001498)	0.000480 (0.001466)

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T+4		0.001079 (0.001562)	-0.001595 (0.001380)	0.000479 (0.001395)	0.001528 (0.001543)	0.002148 (0.001605)	-0.000269 (0.001258)
T+5		0.000795 (0.002072)	0.002234 (0.001990)	-0.000101 (0.001166)	-0.004969* (0.002591)	0.000173 (0.001540)	0.000945 (0.001899)
Market return	excess	0.910673*** (0.033250)	0.883530*** (0.048996)	0.935452*** (0.058513)	0.914893*** (0.048853)	0.929938*** (0.048875)	0.943111*** (0.051174)
SMB		0.170072*** (0.046411)	0.206347*** (0.052481)	0.196905*** (0.055321)	0.268720*** (0.066008)	0.246840*** (0.058397)	0.203041*** (0.050036)
HML		0.047576 (0.030259)	-0.041445 (0.025293)	-0.062496** (0.025884)	0.016200 (0.034781)	-0.013771 (0.032964)	-0.057772** (0.024065)
RMW		-0.082662*** (0.028603)	-0.074862** (0.032158)	-0.061395* (0.031707)	-0.062717* (0.037861)	-0.087672*** (0.033162)	-0.068486** (0.029476)
CMA		-0.049796** (0.021763)	-0.012365 (0.021701)	-0.028036 (0.022565)	-0.072707** (0.032766)	-0.039528* (0.021292)	-0.019415 (0.021420)
Constant		-0.000088 (0.000071)	0.000166** (0.000079)	-0.000159 (0.000103)	0.000374*** (0.000118)	0.000209** (0.000101)	-0.000217** (0.000087)
Observations		17,396	16,501	17,303	16,940	17,424	16,811
R-squared		0.191414	0.202891	0.220480	0.198400	0.215353	0.218147
Number of contracts		144	137	143	140	144	139

The regression results using both the award date and the dispatch date as event dates indicate generally weak and statistically insignificant market reactions across all gap categories. While a few isolated significant effects were observed, there is no consistent pattern of post-event returns, suggesting that investors may regard these announcements as untimely or lacking informational value. The sample is highly diverse, spanning a broad range of sectors across both the CPV and ICB classifications. In terms of the CPV categories, the contracts cover industries such as construction, technology, ICT services, energy, mining, and education, reflecting the multifaceted nature of public procurement. Similarly, the ICB classification shows a strong presence in industrials but also includes utilities, telecommunications, healthcare, consumer sectors, and more. Therefore, cases in which the dispatch date precedes the award date are not concentrated in specific industries. Rather, they likely stem from administrative processes, data entry inconsistencies, or delays in formal publication. The high representation of industrial and infrastructure-related sectors may reflect the complexity and multi-stage nature of public procurement procedures, where early disclosure or internal decision-making precedes formal award documentation.