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Artificial intelligence advancements and US nuclear energy deregulation are drivers of the short-term market returns of nuclear firms?

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ABSTRACT

This study examines the short-term market effect of the US nuclear market deregulation announcements in an environment of increasing investments in AI, which demand clean energy. By employing an event study methodology, our results suggest that worldwide nuclear energy firms experienced a positive and statistically significant impact on stock prices for the announcements of investments in AI and nuclear market deregulation, particularly among larger firms and those located in the US. These findings support the cash flow hypothesis for AI and the deregulation hypothesis for the nuclear market. Practical implications of our findings are provided.

1. Introduction

After decades of stagnation, nuclear energy is facing a resurgence due to its reliability as a zero-carbon energy source and the increase in energy consumption expected from investments in artificial intelligence (AI) (e.g., Aslam, 2025; Goldman Sachs, 2025). On January 21, 2025, President D. Trump announced at the White House the Stargate Initiative - a $500 billion investment initiative by American technology giants in AI infrastructure in the U.S. by 2029, which he designated as being “the largest AI infrastructure project by far in history” and it would help keep “the future of technology” in the US.[1]

The growth in AI-driven data centres is expected to be a key determinant of the makeup of the power grid – and its emissions – over the next two decades. The fast expansion of infrastructure, particularly data centres and cloud computing, has resulted in a substantial increase in energy consumption and emissions (e.g., Chidolue et al., 2024). It is expected that electricity demand from data centres could triple by 2028.[2] According to Lee and Yan (2024), the anticipated significant increase in electricity demand relies heavily on

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[1] https://www.bbc.com/news/articles/cy4m84d2xz2o.
[2] https://www.energy.gov/articles/doe-releases-new-report-evaluating-increase-electricity-demand-data-centers

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clean energy sources for sustainability, particularly nuclear energy.

Project Stargate forces authorities to confront a fundamental question: how can they sustain a high-tech future while also achieving their climate goals? The answer lies in an energy strategy that includes "it all"- one that incorporates renewables, advanced storage solutions, and small modular nuclear reactors (SMRs) (e.g., Goldman Sachs, 2025; Kim and Woo, 2025). However, uncertainty in climate policy, characterized by changing regulations on carbon emissions and incentives for clean energy, presents considerable challenges for long-term investment strategies (e.g., Benlemlih and Yavaş, 2024). To solve this problem, on May 23, 2025, President D. Trump signed executive orders aimed at accelerating the adoption of nuclear energy in the United States.[3] These orders focus on reducing regulatory and cost barriers for entry and provide capital for nuclear plants. The goal is to expand the country's nuclear power capacity from approximately 100 GW today to 400 GW by 2050. Therefore, China plans to construct 150 nuclear reactors in 15 years to achieve 200 GW of nuclear power by 2035, as outlined in China's 14th five-year plan (e.g., Goldman Sachs, 2025).

The aim of this investigation is to empirically analyse the short-term effects of two initiatives supported by D. Trump – Stargate Initiative and lowering regulatory and cost barriers to entry – on the nuclear listed firms. According to Jurewitz (2002), nuclear plants in the US take an average of 12 years to build and obtain a license, which is twice as long as it takes in countries like France, Japan, Sweden, and others. The limited deployment of new nuclear plants in the US is related to high capital costs and long and uncertain duration of construction (e.g., Bistline et al., 2019). In some cases, interest expenses resulting from delays accounted for half of the final costs of the plants (e.g., Delmas and Heiman, 2001; Jurewitz, 2002). Some nuclear power proponents have argued Nuclear Regulatory Commission's safety models have led to regulations that are too strict and costly to implement, creating a barrier to nuclear power.[4]

A strand of literature indicates that deregulation has had a significantly positive impact on the operating efficiency and safety of nuclear plants (e.g., Zhang, 2007; Davis and Wolfram, 2012; Hausman, 2014; Lei et al., 2017; Lei and Tsai, 2019). Davis and Wolfram (2012) show that deregulation has resulted in substantial consolidation within the market. They demonstrate that deregulation and consolidation lead to a 10% improvement in operating efficiency, mainly by decreasing the frequency and duration of reactor outages. Hausman (2014) reveals that safety did not decline, and, in some cases, actually improved following deregulation. Lei et al. (2017) examine whether electricity deregulation in the United States has encouraged reactor owners to pursue power uprates, which are investments that increase generation capacity in a cost-effective and profitable manner. Their findings indicate that deregulated reactor owners are more likely to seek power uprates compared to their counterparts who operate regulated reactors.

Additionally, Alesina et al. (2005) highlight that regulatory reforms that significantly reduce entry barriers stimulate investment. Another strand of literature explores the spillover effects between the nuclear energy sector and the Artificial Intelligence sector (Aslam et al., 2025), as well as the fossil fuel markets (Ijaz et al., 2025). Aslam et al. (2025) reveal that the Artificial Intelligence sector displays strong interconnectedness, primarily functioning as a net receiver of shocks, because of its reliance on clean energy sources and its vulnerability to fluctuations in the energy market.

This paper adds contributions to the discussion about the effects of the Stargate Initiative (US $500 billion investment in AI infrastructure in the US) and regulatory changes that reduce barriers to entry introduced by D. Trump in the nuclear sector. To the best of our knowledge, this is the first study that analyse the short-term market impact of market deregulation and recent AI investment announcement in the worldwide nuclear listed firms.

We apply an event study methodology on 49 publicly listed nuclear energy firms to evaluate the short-term market impact of two White House announcements – Stargate Initiative and Trump's executive orders to deregulate the nuclear energy market. Our results demonstrate a positive and statistically significant abnormal return around the two events. This result is justified by the significant investments in AI (which requires a large supply of clean energy) and efficiency gains associated with market deregulation. The results also show that the benefits of Stargate Initiative and market deregulation are higher for larger nuclear firms and those located in the US.

2. Literature review and theoretical framework

The structural link between artificial intelligence (AI) infrastructure advancements and nuclear equity returns is rooted in asset complementarity (Williamson, 1985). Generative AI workloads generate an invariant, near-constant peak load profile at a continuous gigawatt-scale, driving an estimated 160% surge in data center power demand by 2030 (Goldman Sachs, 2025; McKinsey, 2025). Alternative energy matrices fail to internalize this reliability premium: natural gas-fired generation exposes tech hyperscalers to carbon-compliance liabilities and fuel volatility, whereas variable renewables—even when paired with battery storage (BESS)—introduce prohibitive levelized costs of storage and volume risks (Joskow, 2011; Fertig et al., 2012). Nuclear energy uniquely resolves this constraint through zero-carbon emissions and superior capacity factors exceeding 90%. Under the cash-flow hypothesis, equity markets recognize that major infrastructure commitments, such as the $500 billion Stargate Initiative announced in January 2025, channel structural cash flows preferentially to the nuclear sector via long-term behind-the-meter Power Purchase Agreements (PPAs) (Goldman Sachs, 2025; McKinsey, 2025). These highly predictable revenue streams mitigate external financing constraints and enhance the net present value (NPV) of nuclear developers by reducing the agency costs of long-term capital deployment (Stein, 2003). Therefore, we hypothesize:

[H1] White House Stargate Initiative Announcement has a positive impact on the short-term market value of nuclear firms.

[3] https://www.whitehouse.gov/articles/2025/05/president-trump-signs-executive-orders-to-usher-in-a-nuclear-renaissance-restore-gold-standard-science/

[4] https://www.science.org/content/article/boost-nuclear-power-trump-orders-controversial-rewrite-radiation-safety-rules

Economic theories suggest that market deregulation and increased competition alter incentives for firms, leading to significant efficiency gains and cost reductions. Traditional efficiency gains from deregulation are largely attributed to the better alignment of incentives with input choices (Averch and Johnson, 1962) or to addressing agency problems (Laffont and Tirole, 1986). While prior legislative frameworks like the Energy Policy Act of 2005 (EPAct 2005) attempted to stimulate the sector through indirect production tax credits, they left the open-ended, multi-year licensing bottlenecks intact, compounding investment irreversibility and sunk-cost risks (Dixit and Pindyck, 1994). In contrast, the 2025 nuclear deregulation reform introduces a distinct institutional paradigm shift by legally mandating an absolute 18-month licensing cap and streamlined safety reviews tailored for Small Modular Reactors (SMRs). By compressing the regulatory gestation period, this policy eliminates the option value of delaying investment and minimizes the compounding cost of debt during construction (Dixit and Pindyck, 1994; Gollier et al., 2005; Rothwell, 2006). Markets recognize this structural reduction in institutional drag as an immediate boost to expected efficiency and asset deployment (Davis and Wolfram, 2012; Hausman, 2014). Therefore, we hypothesize:

[H2] White House Nuclear Market Deregulation Announcement has a positive impact on the short-term market value of nuclear firms.

The heterogeneity in cross-sectional market returns around these event windows can be rigorously explained through Political Economy Theory and the Resource-Based View (RBV). Under political economy frameworks of regulatory capture (Stigler, 1971; Peltzman, 1976), domestic (US) firms possess strategic proximity to the 2025 regulatory shift, allowing them to minimize information asymmetries and preferentially exploit the expedited federal environmental review timelines and public land allocations. Non-US firms, conversely, face cross-border capital frictions and lack direct access to these domestic institutional rents. Concurrently, from an RBV perspective (e.g., Barney, 1991), gigawatt-scale AI infrastructure demands rare, non-substitutable organizational capabilities. Large, highly liquid nuclear firms possess the requisite organizational slack and balance sheet capacity to absorb substantial front-end engineering design costs and scale SMR production rapidly (e.g., Wernerfelt, 1984). Conversely, small developers face binding financing constraints, high financial leverage, and severe high-assay low-enriched uranium supply chain bottlenecks, dampening their capacity to capture the market premium. Therefore, we hypothesize:

[H3] Country- and firm-specific characteristics impact the market value of nuclear firms around the two events analysed.

3. Data and methodology

We use an event study methodology to analyse the stock market's effects on the White House Stargate Initiative and nuclear market deregulation announcements for a list of nuclear energy firms. This methodology has been applied in the analysis of the impact of nuclear accidents (e.g., Kawashima and Takeda, 2012) and, more recently, in the examination of the impact of the election and measures adopted by Trump (e.g., Martins et al., 2025a,b) on financial markets.

The data utilized in the event study were assembled from different sources. The nuclear energy firm's stock returns and country benchmark indices[5] were gathered from Eikon Refinitiv. The final sample has 49 worldwide nuclear listed firms. The sample was obtained through Eikon Refinitiv, by selecting all listed firms belonging to the Uranium industry. Like, Ferstl et al. (2012), we filter out all illiquid stocks without trading reported in the estimation and event windows. Appendix I shows the distribution of nuclear listed firms by country and uranium industry subsectors.

To measure the magnitude of stock price impact to the White House Stargate Initiative and market deregulation announcements, we apply the standard abnormal returns (AR) method using the market model. The ARs from the market model are measured by the residual returns estimated based on the regression equation below:

$$E(R_{i,t}) = \alpha + \beta R_{m,t} + \varepsilon_{i,t} \tag{1}$$

where, E(R_{it}) is the expected rate of return for nuclear listed firm *i* on trading day *t*; R_{mt} refers to the observed return of the country's benchmark indices on the same trading day *t*; α_i and β_i are the coefficients of the regression for the daily rate of return of nuclear firm *i* and the market rate of return, respectively. e_{it} refers to the error term. The stock market index of the country where the nuclear firm is listed serves as the benchmark for comparison.

We use the event dates of January 21, 2025 (White House Stargate Initiative announcement) and May 23, 2025 (White House Nuclear Market Deregulation announcement) to compute the ARs, which are calculated by the difference between the observed returns of nuclear listed firm *i* on day *t* (R_{it}) and the expected return computed by the market model $E(R_{it})$, as the following equation:

$$AR_{it} = R_{it} - E(R_{it}) \tag{2}$$

The event date is nominated as day $t = 0$. We used an estimation window of 30 trading days prior to the event (Martins, 2024b). The choice of a short estimation window aims to avoid overlapping of the two events. Fig. 1 exemplifies the event timeline used to calculate the ARs. By aggregating the abnormal returns over a specific time interval, we compute the cumulative abnormal returns (CARs) using the following specification:

[5] Appendix 1 presents the benchmark indices used to calculate abnormal returns, which are based on the empirical studies of Martins (2024a) and Costa *et al.*, (2025).

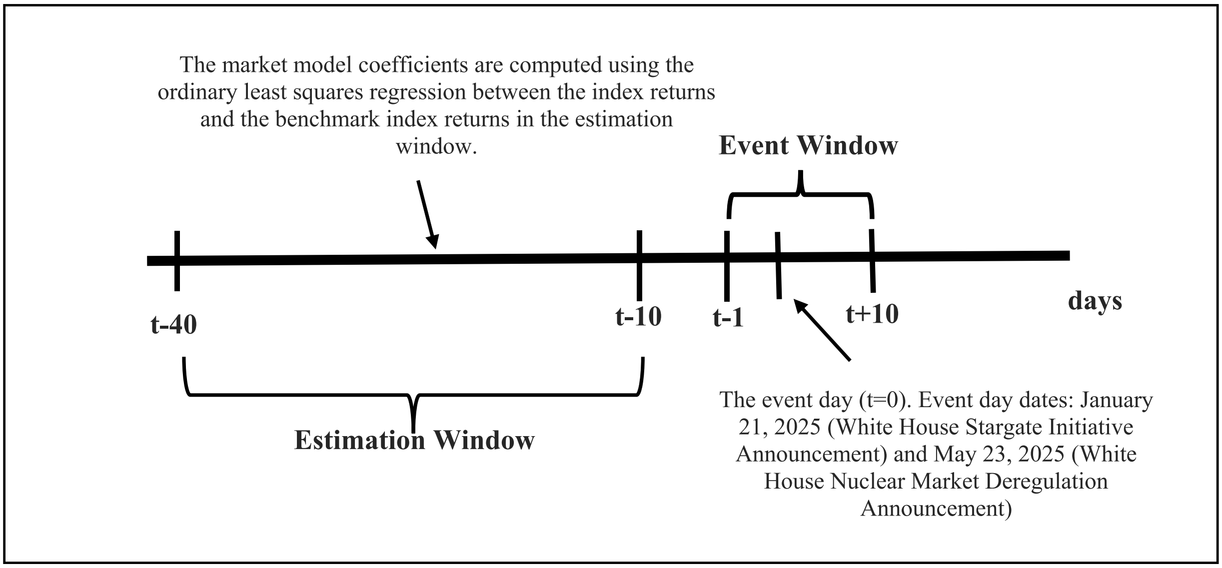

Fig. 1. Event timeline.
The figure illustrated the event timeline used to compute ARs. This study examines two event dates – January 21, 2025 (White House Stargate Initiative announcement) and May 23, 2025 (White House Nuclear Deregulation announcement).

$$CAR[t_1, t_2] = \sum_{t_1}^{t_2} AR_t \tag{3}$$

We analyse seven different time intervals for the CARs: [−1,1], [−1,5], [−1,10], [−5,5], [0,2], [0,5], and [0,10]. Lastly, for each time interval, we compute the cumulative average abnormal returns (CAARs) based on the specification below:

$$CAAR[t_1, t_2] = 1 \Big/ N \sum_{t_1}^{t_2} CAR_{[t1,t2]} \tag{4}$$

where, N characterises the sample size of the sample (in this case, N = 49).

Regarding the examination of differences in CAARs between nuclear listed firms based on location (US vs non-US nuclear firms), firm size, and firm liquidity (above vs below the median), we calculate the CAARs and their differences for each subgroup. To assess statistical significance, we utilize a two-sample z-test to analyse the observed differences in the portfolios.

Finally, we use Ordinary Least Squares (OLS) to examine if specific firm characteristics impact the firm's CARs, through the following equation:

$$CAR_i = \beta_0 + \beta_1 \ln(SIZE_i) + \beta_2 LEV_i + \beta_3\ LIQ_i + \ \beta_4 AGE_i + \beta_5 D\_US_{ii} + \varepsilon_i \tag{5}$$

where, CAR_i is the cumulative abnormal returns calculated above for firm i for time windows [0;2] and [0;5]; $SIZE_i$ is the market capitalization in USD (natural logarithm) for firm i; LEV_i is the ratio of total liabilities to total assets (%) for firm i; LIQ_i is the ratio of current assets to total assets (%) for firm i; AGE_i is the number of years since the firm i was founded; D_US_i is a dummy variable that takes the value of one if the firm headquarters is in the US, and 0 otherwise. Descriptive statistics are shown in Panel 2 of Table 1.

4. Results

4.1. Abnormal returns

Table 1 offers the CAARs observed around the White House Stargate Initiative and nuclear market deregulation announcements for the worldwide nuclear energy listed firms. The results indicate a positive and statistically significant stock price effect of both events. The table presents CAARs of 5.754%, 9.806%, and 7.102% around the White House Stargate Initiative announcement, for the time windows [−1;1], [0;2], and [0;5], respectively. For these time intervals, the parametric (t-test) and non-parametric (Corrado rank test) tests reveal a level of significance of at least 5%. The positive abnormal returns are explained by the projected massive growth in demand for electricity from data centres, in which a significant portion of this energy supply is intended to come from nuclear energy (e.g., Lee and Yan, 2024; Goldman Sachs, 2025). To rule out information leakage or pre-announcement market adjustments, we formally test for anticipation effects in the pre-event window [−10, −2]. The resulting CARs are statistically insignificant.

Regarding the impact of the White House nuclear market deregulation announcement, it is possible to perceive positive and

Table 1

Descriptive statistics of CAARs and control variables and tests for the significance of abnormal returns.

This table shows descriptive statistics of Cumulative Average Abnormal Returns (CAARs), calculated using the market, and control variables, as well as the results of abnormal returns significance tests. All values of firm's control variables are computed from the previous year-end accounting figures. $SIZE_i$ is the market capitalization in USD (natural logarithm) for firm *i*; LEV_i is the ratio of total liabilities to total assets (%) for firm *i*; LIQ_i is the ratio of current assets to total assets (%) for firm *i*; AGE_i is the number of years since the firm *i* was founded; D_US_i is a dummy variable that takes the value of one if the firm headquarters is in the US, and 0 otherwise. θ_1 and τ_1 are the p-value of *t*-test statistics and Corrado rank test statistics, respectively, based on Brown and Warner (1980) and Corrado (1989). ***, ** and * means statistical significance at the 1%, 5% and 10% level, respectively.

Variable	Mean	SD	25th perc.	Median	75th perc.	θ_1	τ_1
Panel 1: Descriptive Statistics of CAARs and Results of Tests for the Statistical Significance							
Event 1: White House Announcement of the Stargate Initiative (January 21, 2025)							
CAAR [−1,1]	5.754%	9.653%	−0.268%	3.941%	9.187%	0.042**	0.047**
CAAR [−1,5]	6.639%	12.223%	−0.978%	3.504%	10.592%	0.039**	0.042**
CAAR [−1,10]	2.562%	11.543%	−4.268%	2.614%	5.125%	0.075*	0.078*
CAAR [−5,5]	3.656%	11.392%	−4.122%	3.369%	5.025%	0.065*	0.062*
CAAR [0,2]	9.806%	12.690%	2.555%	7.136%	12.815%	0.006***	0.008***
CAAR [0,5]	7.102%	12.987%	0.901%	5.408%	10.400%	0.034**	0.039**
CAAR [0,10]	3.338%	13.727%	−4.666%	2.143%	5.876%	0.084*	0.087*
CAAR [−10,−2]	−0.351%	12.285%	−1.157%	−0.289%	1.782%	0.542	0.551
Event 2: Announcement of Trump's Executive Orders (Regulatory Changes) on Nuclear Energy (May 23, 2025)							
CAAR [−1,1]	19.526%	9.676%	10.404%	17.147%	23.582%	0.000***	0.000***
CAAR [−1,5]	15.256%	8.799%	4.965%	11.109%	18.434%	0.000***	0.000***
CAAR [−1,10]	19.813%	10.117%	10.144%	14.220%	26.711%	0.000***	0.000***
CAAR [−5,5]	12.034%	9.826%	1.947%	7.143%	15.429%	0.003***	0.004***
CAAR [0,2]	16.921%	9.140%	6.688%	13.959%	18.182%	0.000***	0.000***
CAAR [0,5]	14.405%	8.730%	4.466%	10.412%	16.285%	0.000***	0.000***
CAAR [0,10]	18.961%	10.136%	6.629%	14.231%	26.614%	0.000***	0.000***
CAAR [−10,−2]	1.534%	15.038%	−1.639%	1.205%	3.523%	0.421	0.430
Panel 2: Descriptive Statistics of Control Variables							
SIZE (ml)	3772.97	7839.49	89.41	522.02	2794.18		
LEV	9.82%	10.72%	2.20%	7.35%	11.97%		
LIQ	41.32%	30.49%	17.65%	34.95%	63.39%		
AGE	25.14	23.18	12.00	20.00	33.00		
D_US	20.41%	40.30%	0	0	0		

significant abnormal returns with a magnitude greater than the previous event, with CAARs presenting values of 19.526%, 16.921%, and 14.405% for the time windows [−1;1], [0;2], and [0;5], respectively. Both parametric and non-parametric tests demonstrate that statistical significance level of 1% across the seven analysed time intervals. The cost reductions and efficiency gains associated with the political decision to deregulate the nuclear market explain the high positive abnormal returns found around the event. In the nuclear energy industry, investors exhibit a high level of aversion to risk due to historical regulatory and construction-related delays, as well as the inherent risks associated with nuclear technology (e.g., Hausman, 2014; Lei et al., 2017; Lei and Tsai, 2019). This announcement, by breaking down economic barriers to capital entry into the industry, constitutes good news for these firms, justifying the results found for CAARs.

The disparity in terms of the economic magnitude of the effects in the two events analysed reflects the critical role of regulatory uncertainty in capital-intensive sectors. The superior magnitude of deregulation returns reflects the primacy of mitigating irreversible commitment risk over simple demand shocks (e.g., Pindyck, 1991). Although Stargate initiative signals future cash flows, the shift in market deregulation policy directly reduces the risk-adjusted discount rate by compressing licensing timelines (e.g., Bernanke, 1983), allowing companies to internalize efficiency gains previously obscured by regulatory uncertainty (e.g., Hausman, 2014; Dixit and Pindyck, 1994).

In short, both results offer strong evidence for rejecting the null hypothesis. Thus, we can state that White House Stargate Initiative and nuclear market deregulation announcements had a catalytic effect on the stock prices of nuclear energy firms.

We also study the differences in stock market returns between various locations (US vs. non-US firms) and firm-specific characteristics, such as liquidity and size (above vs. below the median), around the two events. Table 2 presents the results for the Stargate Initiative. Table 3 presents the results for the White House nuclear market deregulation announcement. Panel 1 of Tables 2 and 3 exhibits the presence of two distinct magnitude patterns in terms of CAARs for US and non-US nuclear energy firms. Although CAARs are positive and statistically significant for both country subsamples, they have a greater magnitude for firms located in the US. The two-sample test results confirm the presence of statistically significant differences between the two subsamples, with a significance level of 1%. Both announcements, despite affecting the nuclear energy industry worldwide, have greater economic impacts in the US, primarily benefiting nuclear energy firms located there.

We also analyse whether firm size and liquidity affect CAARs. Panel 2 of Tables 2 and 3 presents the results for firm size (market capitalization). For both events, the CAARs are positive and statistically significant across the generality of time windows, for both subsamples (above and below the median in terms of market capitalization). It is still possible to observe the presence of higher CAARs for nuclear energy firms with larger market capitalization, as the test for differences reveals that the differences in terms of abnormal returns are statistically significant at a 5% significance level. As mentioned above, large firms are perceived as having the political

Table 2
Nuclear firm's CAARs by location, size and liquidity around stargate initiative and difference test for CAARs.
This table presents the firm's cumulative average abnormal returns (CAARs) around the White House Stargate Initiative announcement, and the differences in the CAARs across different subsamples. Panel 1 presents the firm's CAARs for two subsamples of firms in terms of location: US vs non-US. Panel 2 presents the firm's CAARs for two subsamples of firms in terms of size (market capitalization): market capitalization above median vs market capitalization below median. Panel 3 presents the firm's CAARs for two subsamples of firms in terms of liquidity: liquidity above median vs liquidity below median. The CAARs were estimated using the market model and daily returns for four different time windows [−1;1]; [0;2]; [0;5] and [−1,10]. θ_1 and τ_1 are the *t*-test statistics and Corrado rank test statistics, respectively of Brown and Warner (1980) and Corrado (1989) (see Serra, 2004, for more details). The significance of the differences in CAARs is determined via two-sample *z*-test. *, ** and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

		[−1; 1]	[0; 2]	[0; 5]	[−1; 10]
Panel 1: Location					
US	CAAR	16.010%	21.669%	16.024%	16.001%
	θ_1	3.192***	2.967***	2.832***	2.775***
	τ_1	3.134***	2.945***	2.811***	2.745***
Non-US	CAAR	3.123%	6.764%	3.137%	4.791%
	θ_1	1.723*	2.123**	1.345	1.249
	τ_1	1.711*	2.104**	1.303	1.235
Difference	CAAR	12.887%	14.905%	12.887%	11.210%
	z-test *(p-value)*	0.000***	0.001***	0.004***	0.007***
Panel 2: Size					
Market Capitalization Above the Median	CAAR	8.840%	12.763%	9.638%	7.842%
	θ_1	2.782***	3.438***	2.976***	2.745***
	τ_1	2.773***	3.425***	2.965***	2.738***
Market Capitalization Below the Median	CAAR	2.790%	6.968%	3.410%	2.507%
	θ_1	1.689*	2.134**	1.420	1.101
	τ_1	1.681*	2.128**	1.411	1.093
Difference	CAAR	6.050%	5.795%	6.228%	5.335%
	z-test *(p-value)*	0.011**	0.035**	0.032**	0.039**
Panel 3: Liquidity					
Liquidity Above the Median	CAAR	5.881%	12.030%	5.385%	6.129%
	θ_1	2.479**	2.900***	2.021**	1.921*
	τ_1	2.471**	2.911***	2.017**	1.913*
Liquidity Below the Median	CAAR	5.631%	7.670%	3.906%	3.346%
	θ_1	2.454**	2.489**	1.902*	1.711*
	τ_1	2.462**	2.478**	1.898*	1.707*
Difference	CAAR	0.250%	4.360%	1.479%	2.783%
	z-test *(p-value)*	0.464	0.056*	0.231	0.214

influence and resources that secure favourable regulation (e.g., Peltzman, 1976). Thus, although all nuclear energy firms benefit from increased demand and efficiency gains resulting from the two events analysed, our results suggest that these gains are greater for larger firms.

Finally, Panel 3 of Tables 2 and 3 presents the CAARs based on the firms' liquidity (above vs below the median in terms of firms' liquidity). Once again, it is possible to verify the presence of positive and statistically significant CAARs for both subsamples of firms. However, the two-sample test for CAARs' differences does not indicate any statistically significant differences in terms of CAARs between the two subsamples.

4.2. Cross-sectional analysis

We performed the cross-section impact of firm-specific characteristics variables on the abnormal returns of nuclear listed firms. The results in Table 4 show for both events a greater economic impact for US-based and larger firms. For the other variables, in general the effects are not statistically significant.

4.3. Robustness checks

We conduct additional robustness checks to assess the sensitivity of our findings to different model specifications and potential event contamination. Table 5 presents the CAARs for the two events analysed when a 60-day estimation window is used. Table 6 presents the results of the CAARs calculated based on the five-factor model of Fama and French (2015) (FF5). We computed FF5 model using the residual returns computed from the estimation of the following regression equation:

$$R_{i,t} - R_{f,t} = \alpha + \beta_1 \left[R_{m,t} - R_{f,t}\right] + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 RMW_t + \beta_5 CMA_t + \varepsilon_{i,t} \tag{6}$$

where, R_{ft} refers to the risk-free rate of return at time *t;* R_{mt} refers to the benchmark index; *SMB* refers to the small minus large market capitalization risk factor; *HML* refers to the high book-to-value minus low-book-to-value risk factor; *RMW* refers to the difference between the returns of firms with robust (high) and weak (low) operating profitability; *CMA* refers to the difference between the

Table 3
Nuclear firm's CAARs by location, size and liquidity around Trump's executive regulatory change orders on nuclear energy and difference test for CAARs.
This table presents the firm's cumulative average abnormal returns (CAARs) around the Trump's executive regulatory change orders announcement on nuclear energy, and the differences in the CAARs across different subsamples. Panel 1 presents the firm's CAARs for two subsamples of firms in terms of location: US vs non-US. Panel 2 presents the firm's CAARs for two subsamples of firms in terms of size (market capitalization): market capitalization above median vs market capitalization below median. Panel 3 presents the firm's CAARs for two subsamples of firms in terms of liquidity: liquidity above median vs liquidity below median. The CAARs were estimated using the market model and daily returns for four different time windows [−1;1]; [0;2]; [0;5] and [−1,10]. θ_1 and τ_1 are the *t*-test statistics and Corrado rank test statistics, respectively of Brown and Warner (1980) and Corrado (1989) (see Serra, 2004, for more details). The significance of the differences in CAARs is determined via two-sample *z*-test. *, ** and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

		[−1; 1]	[0; 2]	[0; 5]	[−1; 10]
Panel 1: Location					
US	CAAR	30.471%	28.148%	18.388%	31.264%
	θ_1	4.184***	3.865***	2.902***	3.147***
	τ_1	4.167***	3.857***	2.892***	3.129***
Non-US	CAAR	16.719%	14.042%	11.383%	16.876%
	θ_1	5.111***	4.292***	2.893***	2.579***
	τ_1	5.1077***	4.278***	2.877***	2.559**
Difference	CAAR	13.751%	14.106%	7.005%	14.388%
	z-test *(p-value)*	0.001***	0.001***	0.042**	0.001***
Panel 2: Size					
Market Capitalization Above the Median	CAAR	25.651%	21.736%	18.263%	24.616%
	θ_1	5.905***	4.013***	2.829***	2.948***
	τ_1	5.892***	4.002***	2.814***	2.939***
Market Capitalization Below the Median	CAAR	15.446%	12.029%	10.510%	14.042%
	θ_1	4.835***	3.318***	2.476**	2.506**
	τ_1	4.821***	3.302***	2.469**	2.511**
Difference	CAAR	10.205%	9.707%	7.753%	10.574%
	z-test *(p-value)*	0.042**	0.039**	0.049**	0.031**
Panel 3: Liquidity					
Liquidity Above the Median	CAAR	19.918%	18.641%	15.345%	22.022%
	θ_1	6.248***	5.756***	3.540***	3.593***
	τ_1	6.235***	5.741***	3.502***	3.576***
Liquidity Below the Median	CAAR	18.149%	15.170%	13.426%	17.511%
	θ_1	5.591***	4.539***	2.664***	2.458**
	τ_1	5.545***	4.521***	2.639***	2.464**
Difference	CAAR	1.769%	3.471%	1.919%	4.511%
	z-test *(p-value)*	0.445	0.189	0.358	0.178

Table 4
Cross-sectional analysis.
This table offers the cross-sectional estimation for the 49 worldwide listed nuclear CARs' around the White House Stargate Initiative announcement (January 21, 2025) and the White House Nuclear Deregulation announcement (May 23, 2025). The dependent variables are the firm's CARs for two different time windows: [0;2] and [0;5]. The firm-specific and explanatory variables are computed from accounting data based in the prior year-end. $SIZE_i$ is the market capitalization in USD (natural logarithm) for firm *i*; LEV_i is the ratio of total liabilities to total assets (%) for firm *i*; LIQ_i is the ratio of current assets to total assets (%) for firm *i*; AGE_i is the number of years since the firm *i* was founded; D_US_i is a dummy variable that takes the value of one if the firm headquarters is in the US, and 0 otherwise. ***, ** and * mean statistical significance at the 1%, 5% and 10% levels, respectively. Standard errors adjusted for heteroskedasticity and clustering at the country level are reported in parentheses. # Obs. denotes the number of observations used in the estimation.

	White House Stargate Initiative Announcement		White House Nuclear Market Deregulation Announcement	
	CAR [0; 2]	CAR [0; 5]	CAR [0; 2]	CAR [0; 5]
Constant	0.166	0.037	0.086	0.076
	(0.966)	(0.209)	(0.317)	(0.278)
Ln(SIZE)	0.014**	0.022**	0.020**	0.024**
	(2.034)	(2.111)	(2.224)	(2.018)
LEV	−0.013	−0.028	−0.028	−0.043*
	(−0.889)	(−1.439)	(−1.481)	(−1.779)
LIQ	0.050*	0.053	0.021	0.024
	(1.722)	(1.444)	(1.132)	(1.122)
AGE	−0.002	−0.001	−0.001	−0.001
	(−1.051)	(−1.268)	(−0.443)	(−0.446)
D_US	0.131***	0.163***	0.150***	0.185***
	(2.982)	(2.789)	(3.110)	(3.016)
# Obs.	49	49	49	49
Adj. R^2	0.478	0.424	0.486	0.446

Table 5
CAARs and tests for the significance of abnormal returns using a 60-day estimation window.
This table shows the CAARs calculated using the market and an estimation window of 60 days, as well as the results of abnormal returns significance tests. θ_1 and τ_1 are the p-value of *t*-test statistics and Corrado rank test statistics, respectively, based on Brown and Warner (1980) and Corrado (1989). ***, ** and * means statistical significance at the 1%, 5% and 10% level, respectively.

Variable	Mean	SD	25th perc.	Median	75th perc.	θ_1	τ_1
Event 1: White House Announcement of the Stargate Initiative (January 21, 2025)							
CAAR [−1,1]	5.602%	8.882%	0.231%	3.839%	9.999%	0.044**	0.046**
CAAR [−1,5]	6.275%	11.630%	1.293%	3.311%	10.137%	0.040**	0.041**
CAAR [−1,10]	3.700%	11.969%	−1.699%	2.855%	5.512%	0.064*	0.067*
CAAR [−5,5]	5.097%	13.906%	−1.329%	6.255%	8.332%	0.052*	0.055*
CAAR [0,2]	9.381%	12.051%	2.775%	7.352%	12.351%	0.008***	0.009***
CAAR [0,5]	7.205%	11.773%	1.186%	6.038%	10.331%	0.034**	0.036**
CAAR [0,10]	2.693%	12.746%	−4.705%	2.442%	6.775%	0.089*	0.092*
CAAR [−10,−2]	−0.394%	12.735%	−1.553%	−0.749%	1.678%	0.518	0.535
Event 2: Announcement of Trump's Executive Orders (Regulatory Changes) on Nuclear Energy (May 23, 2025)							
CAAR [−1,1]	19.627%	9.653%	10.889%	16.973%	23.171%	0.000***	0.000***
CAAR [−1,5]	15.319%	8.840%	4.601%	11.433%	21.431%	0.000***	0.000***
CAAR [−1,10]	19.905%	10.798%	7.236%	13.515%	29.100%	0.000***	0.000***
CAAR [−5,5]	11.995%	9.876%	1.514%	8.408%	18.513%	0.000***	0.000***
CAAR [0,2]	16.928%	9.157%	6.580%	14.430%	20.504%	0.000***	0.000***
CAAR [0,5]	14.438%	8.769%	4.119%	11.479%	18.558%	0.000***	0.000***
CAAR [0,10]	19.023%	10.775%	6.571%	14.625%	29.382%	0.000***	0.000***
CAAR [−10,−2]	1.545%	17.611%	−1.315%	1.369%	2.785%	0.433	0.439

Table 6
CAARs and tests for the significance of abnormal returns using five-factor model of Fama and French.
This table shows the CAARs calculated using the five-factor model of Fama and French (2015) as well as the results of abnormal returns significance tests. θ_1 and τ_1 are the p-value of *t*-test statistics and Corrado rank test statistics, respectively, based on Brown and Warner (1980) and Corrado (1989). ***, ** and * means statistical significance at the 1%, 5% and 10% level, respectively.

Variable	Mean	SD	25th perc.	Median	75th perc.	θ_1	τ_1
Event 1: White House Announcement of the Stargate Initiative (January 21, 2025)							
CAAR [−1,1]	4.641%	9.157%	−0.742%	3.938%	7.443%	0.055*	0.057*
CAAR [−1,5]	5.820%	11.205%	−0.865%	5.525%	8.228%	0.046**	0.049**
CAAR [−1,10]	2.425%	9.350%	−4.518%	1.319%	3.704%	0.080*	0.081*
CAAR [−5,5]	3.419%	11.432%	−3.911%	3.267%	6.183%	0.068*	0.070*
CAAR [0,2]	7.956%	11.431%	2.051%	5.798%	10.365%	0.013**	0.015**
CAAR [0,5]	6.622%	10.460%	0.636%	5.474%	9.527%	0.037**	0.039**
CAAR [0,10]	2.521%	13.202%	−3.921%	2.292%	5.551%	0.094*	0.097*
CAAR [−10,−2]	0.153%	11.890%	−0.995%	0.105%	1.210%	0.555	0.562
Event 2: Announcement of Trump's Executive Orders (Regulatory Changes) on Nuclear Energy (May 23, 2025)							
CAAR [−1,1]	18.721%	9.361%	10.840%	15.208%	22.983%	0.000***	0.000***
CAAR [−1,5]	13.695%	8.462%	5.847%	10.203%	16.716%	0.000***	0.001***
CAAR [−1,10]	15.961%	9.738%	6.588%	11.798%	20.982%	0.001***	0.002***
CAAR [−5,5]	10.824%	9.234%	1.225%	7.166%	14.645%	0.004***	0.006***
CAAR [0,2]	16.612%	8.855%	6.627%	13.258%	18.422%	0.000***	0.000***
CAAR [0,5]	13.547%	8.547%	5.149%	10.058%	15.851%	0.000***	0.000***
CAAR [0,10]	15.812%	9.998%	5.616%	12.793%	22.141%	0.000***	0.000***
CAAR [−10,−2]	1.215%	15.980%	−1.119%	0.996%	2.867%	0.311	0.320

returns of firms that invest conservatively and firms that invest aggressively. We obtained the risk-free rate return and the Fama-French factors *SMB, HML, RMW, CMA* from Kenneth French's homepage at Dartmouth College.[6] The general conclusions of the study do not change when these two different methods are used in estimation. To further ensure that our main findings are not driven by general market trends, random statistical variation, or pre-existing trends rather than the isolated events, we also conduct a placebo (counterfactual) test. Specifically, we re-estimate the CARs for our sample firms using five randomly selected pseudo-event dates. If our baseline results were a product of random market noise, we would expect to observe statistically significant abnormal returns around these false dates. However, the CARs for all five placebo windows are statistically insignificant and hover closely around zero. Due to space constraints, these results are not tabulated but are available upon request. This lack of significance confirms that the valuation effects documented in our primary analysis are uniquely tied to the actual event dates, reinforcing the robustness of our main conclusions. To account for sample heterogeneity, we segment firms into three subsectors based on primary activities: (*i*) *Uranium Miners*, (*ii*) *Nuclear Utilities*, and (*iii*) *SMR Developers and Fuel Processors* (see Appendix I). Table 7 reports subsector CAAR estimates using the

[6] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

Table 7
CAARs and tests for the significance of abnormal for nuclear subsectors.
This table shows the CAARs calculated using the market model for each three nuclear subsectors as well as the results of abnormal returns significance tests. θ_1 and τ_1 are the p-value of *t*-test statistics and Corrado rank test statistics, respectively, based on Brown and Warner (1980) and Corrado (1989). ***, ** and * means statistical significance at the 1%, 5% and 10% level, respectively.

Variable	Mean	SD	25th perc.	Median	75th perc.	θ_1	τ_1
Event 1: White House Announcement of the Stargate Initiative (January 21, 2025)							
Panel A: Uranium Miners (# 35 firms)							
CAAR [−1,1]	5.525%	7.978%	0.284%	4.815%	9.590%	0.046**	0.048**
CAAR [−1,5]	6.308%	9.562%	−1.083%	6.031%	11.284%	0.041**	0.044**
CAAR [−1,10]	2.277%	9.631%	−2.204%	2.048%	5.429%	0.072*	0.074*
CAAR [0,2]	7.981%	8.196%	3.181%	8.571%	12.397%	0.007***	0.008***
Panel B: Nuclear Utilities (# 6 firms)							
CAAR [−1,1]	7.420%	7.310%	1.679%	6.995%	13.633%	0.018**	0.019**
CAAR [−1,5]	8.192%	10.487%	1.598%	8.304%	11.275%	0.020**	0.022**
CAAR [−1,10]	4.789%	9.213%	−3.657%	4.210%	10.061%	0.042**	0.045**
CAAR [0,2]	10.410%	9.245%	6.925%	10.046%	18.222%	0.002***	0.003***
Panel C: SMR Developers and Fuel Processors (# 8 firms)							
CAAR [−1,1]	13.449%	10.852%	8.411%	10.419%	15.800%	0.001***	0.002***
CAAR [−1,5]	14.710%	11.419%	−0.977%	14.005%	19.911%	0.010***	0.011**
CAAR [−1,10]	9.718%	16.823%	−3.981%	9.150%	16.186%	0.028**	0.031**
CAAR [0,2]	18.479%	16.744%	6.846%	17.041%	29.121%	0.000***	0.000***
Event 2: Announcement of Trump's Executive Orders (Regulatory Changes) on Nuclear Energy (May 23, 2025)							
Panel A: Uranium Miners (# 35 firms)							
CAAR [−1,1]	15.292%	8.287%	11.365%	15.579%	20.662%	0.000***	0.000***
CAAR [−1,5]	11.626%	10.826%	4.997%	11.105%	16.381%	0.000***	0.000***
CAAR [−1,10]	16.099%	14.753%	7.071%	12.456%	27.393%	0.000***	0.000***
CAAR [0,2]	12.904%	8.969%	6.872%	12.496%	16.284%	0.000***	0.000***
Panel B: Nuclear Utilities (# 6 firms)							
CAAR [−1,1]	28.064%	9.832%	15.668%	28.547%	38.549%	0.000***	0.000***
CAAR [−1,5]	24.256%	12.875%	13.353%	24.278%	30.771%	0.000***	0.000***
CAAR [−1,10]	27.952%	13.209%	15.673%	25.523%	36.470%	0.000***	0.000***
CAAR [0,2]	25.809%	15.210%	12.193%	23.848%	34.262%	0.000***	0.000***
Panel C: SMR Developers and Fuel Processors (# 8 firms)							
CAAR [−1,1]	29.763%	11.506%	20.974%	30.559%	39.017%	0.000***	0.000***
CAAR [−1,5]	24.774%	8.581%	20.337%	27.647%	30.552%	0.000***	0.000***
CAAR [−1,10]	30.518%	8.508%	23.079%	30.491%	38.001%	0.000***	0.000***
CAAR [0,2]	27.872%	10.635%	18.243%	26.872%	34.642%	0.000***	0.000***

market model, confirming that the market reaction remains uniform in sign and significance across all subsectors. Finally, to prevent bias from international time-zone asynchrony, we adjust the event date to the next available trading day for firms operating in markets (such as Asia and Australia) where the US announcement occurred outside local trading hours. This adjustment ensures that calculated abnormal returns precisely reflect the first available post-announcement market reaction. The results of this analysis are presented in Table 8.[7] The empirical conclusions drawn from our main results remain robust to this adjustment.

5. Conclusion

This paper examines the short-term market reaction to announcements of the White House Stargate Initiative and nuclear market deregulation for a list of worldwide nuclear energy firms. The results suggest that worldwide nuclear energy firms experienced statistically significant positive abnormal returns around the two events. This result is explained by the significant investments in AI (which requires a large supply of clean energy) and lower costs and efficiency gains associated with market deregulation. The results also show that the benefits of Stargate Initiative and market deregulation are higher for larger nuclear firms and those located in the US. While deregulation aims to lower barriers, it often reinforces the structural advantages of incumbents. For SMR developers, this creates a "capital wall" where regulatory efficiency fails to offset high initial deployment costs and the grid access controlled by large utilities (e.g., IAEA, 2024).

Our results offer a unique and timely contribution to the literature, providing practical insights for investors, policymakers, and nuclear energy firms as they navigate the complexities of the global energy transition and technological advancements. Making informed and profitable decisions may require investors and managers to monitor key policy announcements, like mega investments or market deregulation policies, and prioritize certain firm-characteristics (such as location and size) in portfolio allocation resources. The increase in nuclear energy demand and nuclear deregulation impacts firms by incentivizing efficiency and consolidation, which

[7] Due to space constraints, alternative specifications utilizing the Fama and French (2015) five-factor model—covering both the time-zone adjustments (Table 8) and the subsector analyses (Table 7)—are not tabulated. However, in all cases, the empirical conclusions remain qualitatively unchanged and robust.

Table 8

CAARs and tests for the significance of abnormal returns with time-zone adjustment.

This table shows the CAARs calculated using the market model with time-zone adjustment as well as the results of abnormal returns significance tests. We adjust the event date (t = 0) to the next available trading day for firms operating in markets (such as Asia or Australia) where the US announcement occurred outside local trading hours. θ_1 and τ_1 are the p-value of *t*-test statistics and Corrado rank test statistics, respectively, based on Brown and Warner (1980) and Corrado (1989). ***, ** and * means statistical significance at the 1%, 5% and 10% level, respectively.

Variable	Mean	SD	25th perc.	Median	75th perc.	θ_1	τ_1
Event 1: White House Announcement of the Stargate Initiative (January 21, 2025)							
CAAR [−1,1]	7.075%	8.934%	1.138%	5.507%	10.785%	0.040**	0.043**
CAAR [−1,5]	8.011%	11.804%	−0.950%	5.041%	14.232%	0.033**	0.038**
CAAR [−1,10]	3.065%	10.700%	−3.987%	2.850%	5.186%	0.068*	0.070*
CAAR [−5,5]	4.811%	10.009%	−3.342%	3.897%	7.345%	0.061*	0.063*
CAAR [0,2]	10.104%	11.744%	2.775%	8.895%	16.145%	0.004***	0.005***
CAAR [0,5]	7.956%	11.567%	1.134%	7.208%	13.011%	0.031**	0.034**
CAAR [0,10]	3.711%	12.123%	−4.001%	2.655%	6.123%	0.080*	0.082*
CAAR [−10,−2]	−0.415%	12.726%	−1.673%	−0.589%	1.678%	0.511	0.520
Event 2: Announcement of Trump's Executive Orders (Regulatory Changes) on Nuclear Energy (May 23, 2025)							
CAAR [−1,1]	18.622%	9.013%	10.057%	16.930%	21.379%	0.000***	0.000***
CAAR [−1,5]	13.990%	9.573%	4.601%	10.172%	18.710%	0.000***	0.000***
CAAR [−1,10]	19.381%	11.582%	6.912%	14.221%	29.562%	0.000***	0.000***
CAAR [−5,5]	11.611%	10.397%	1.009%	7.162%	17.943%	0.003***	0.004***
CAAR [0,2]	15.228%	8.920%	5.879%	11.492%	17.528%	0.000***	0.000***
CAAR [0,5]	13.830%	9.969%	3.803%	9.776%	16.782%	0.000***	0.000***
CAAR [0,10]	16.221%	12.152%	6.004%	13.547%	27.382%	0.000***	0.000***
CAAR [−10,−2]	1.634%	15.004%	−1.622%	1.323%	3.745%	0.388	0.394

can increase operating efficiency but may also pose risks to safety due to potential cost-cutting measures. As demonstrated by Walker and Wellock (2024), the "accelerated deployment" may compromise the long-term safety culture essential for preventing catastrophic failures in a deregulated, competitive market. Authorities must be aware of these challenges and, while remaining concerned with ensuring the safety of nuclear facilities, ensure they do not impose regulations and barriers that impede efficiency and social welfare gains.

While our study offers valuable insights, it is important to keep its limitations in mind. A crucial component in an event study is the announcement dates (e.g., MacKinlay, 1997). We used the dates from both announcements as the dates of the events. This does not rule out the possibility of partial anticipation of the positive effects, given that the negotiations were not entirely private. Additionally, while this study explores specific firm-level determinants of nuclear stock returns, further research is needed to isolate how other idiosyncratic variables influence these returns. Finally, future research could extend this analysis by formally testing the mechanisms and magnitudes of AI-nuclear spillover effects. Specifically, employing lead-lag correlation models and interaction frameworks—integrating measures like AI intensity or data centre energy demand—would clarify potential directional spillovers. Additionally, utilizing a difference-in-differences approach could statistically validate the relative magnitude of the deregulation effect against AI-driven demand shocks.

CRediT authorship contribution statement

António Miguel Martins: Writing – original draft, Investigation, Formal analysis, Conceptualization. **Bruno Albuquerque:** Software, Methodology, Investigation, Formal analysis, Data curation. **Luís Sardinha:** Software, Methodology, Investigation, Formal analysis, Conceptualization. **Nuno Moutinho:** Writing – review & editing, Validation, Supervision, Resources, Project administration, Funding acquisition.

Declaration of competing interest

None.

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Appendix I. Sample distribution by countries

This table presents the distribution of the 49 worldwide nuclear firms by countries (Panel A) and uranium industry subsectors (uranium miners, nuclear utilities and SMR developers and Fuel Processors) (Panel B) according to Refinitiv Eikon. The market benchmark used to estimate abnormal returns is also presented for each country. “#Firms” means the number of listed nuclear firms.

Panel A: Distribution by Country					
Country	# Firms	Benchmark Index	Country	# Firms	Benchmark Index
Australia	12	S&P/ASX 200	Hong Kong	2	Hang Seng
Canada	21	TSX Composite	UK	3	FTSE 100
China	1	Shanghai SE	US	10	Dow Jones Industrial Average

Panel B: Distribution by Uranium Industry Subsectors			
Subsector	# Firms	Subsector	# Firms
Uranium Miners	35	Nuclear Utilities	6
SMR Developers and Fuel Processors	8		

Data availability

Data will be made available on request.

References

Alesina, A., Ardagna, S., Nicoletti, G., Schiantarelli, F., 2005. Regulation and investment. J. Eur. Econ. Assoc. 3 (4), 791–825.

Aslam, A., 2025. Spillovers between hydrogen, nuclear, and AI sectors: the impact of climate policy uncertainty and geopolitical risks. J. Clim. Finance 11, 100065.

Averch, H., Johnson, L.L., 1962. Behavior of the firm under regulatory constraint. Am. Econ. Rev. 52 (5), 1052–1069.

Barney, J., 1991. Firm resources and sustained competitive advantage. J. Manage. 17 (1), 99–120.

Benlemlih, M., Yava?, Ç.V, 2024. Economic policy uncertainty and climate change: evidence from CO2 emission. J. Bus. Ethic. 191 (3), 415–441.

Bernanke, B.S., 1983. Irreversibility, uncertainty, and cyclical investment. Q. J. Econ. 98 (1), 85.

Bistline, J., James, R., Sowder, A., 2019. Technology, policy, and market drivers of (and Barriers to) advanced nuclear reactor deployment in the United States after 2030. Nucl. Technol. 205 (8), 1075–1094.

Brown, S.J., Warner, J.B., 1980. Measuring security price performance. J. Financ. Econ. 8 (3), 205–258.

Chidolue, O., Ohenhen, P.E., Umoh, A.A., Ngozichukwu, B., Fafure, A.V., Ibekwe, K.I., 2024. Green Data centers: sustainable practices for energy-efficient IT infrastructure. Eng. Sci. Technol. J. 5 (1), 99–114.

Corrado, C.J., 1989. A nonparametric test for abnormal security-price performance in event studies. J. Financ. Econ. 23 (2), 385–395.

Costa, J., Cró, S., Moutinho, N., Martins, A.M., 2025. Airline stock market reaction to CrowdStrike IT outage: an event study analysis. Financ. Res. Lett. 77, 107145.

Davis, L.W., Wolfram, C., 2012. Deregulation, consolidation, and efficiency: evidence from US Nuclear power. Am. Econ. J.: Appl. Econ. 4 (4), 194–225.

Delmas, M., Heiman, B., 2001. Government credible commitment to the French and American Nuclear Power industries. J. Policy Analy. Manage.: J. Assoc. Public Policy Analy. Manage. 20 (3), 433–456.

Dixit, A.K., Pindyck, R.S., 1994. Investment Under Uncertainty. Princeton University Press.

Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005). https://www.congress.gov/109/plaws/publ58/PLAW-109publ58.pdf.

Fama, E.F., French, K.R., 2015. A five-factor asset pricing model. J. Financ. Econ. 116 (1), 1–22.

Ferstl, R., Utz, S., Wimmer, M., 2012. The effect of the Japan 2011 disaster on nuclear and alternative energy stocks worldwide: an event study. Bus. Res. 5 (1), 25–41.

Fertig, E., Apt, J., Jaramillo, P., Katzenstein, W., 2012. The effect of long-distance interconnection on wind power variability. Environ. Res. Lett. 7 (3), 034017.

Goldman Sachs, 2025. Is nuclear power set for a revival? Goldman Sach Res. June 12, 2025. Available here: https://www.goldmansachs.com/insights/articles/is-nuclear-power-set-for-a-revival?chl=em&plt=briefings&cid=0613&plc=body.

Gollier, C., Proult, D., Thais, F., Walgenwitz, G., 2005. Choice of nuclear power investments under price uncertainty: valuing modularity. Energy Econ., 27 (4), 667–685.

Hausman, C., 2014. Corporate incentives and nuclear safety. Am. Econ. J.: Econ. Policy 6 (3), 178–206.

IAEA, 2024. Advances in Small Modular Reactor Developments, 2024 ed. International Atomic Energy Agency. Available here: https://www-pub.iaea.org/MTCD/Publications/PDF/p15790-PUB9062_web.pdf.

Ijaz, M.S., Lucey, B.M., Rahman, A., Khan, M.H., 2025. Unraveling nuclear connections in energy market dynamics. Financ. Res. Lett. 74, 106677.

Joskow, P.L., 2011. Comparing the costs of intermittent and dispatchable electricity generating technologies. Am. Econ. Rev. 101 (3), 238–241.

Jurewitz, J.L., 2002. The US Nuclear Power industry: past, present, and possible futures. Energy Environ. 13 (2), 207–237.

Kawashima, S., Takeda, F., 2012. The effect of the Fukushima nuclear accident on stock prices of electric power utilities in Japan. Energy Econ. 34 (6), 2029–2038.

Kim, Y.I., Woo, T.H., 2025. The role of small modular reactors (SMRs) in achieving net-zero emissions by an approach to climate actions. Nucl. Eng. Technol. 57, 103774.

Laffont, J.J., Tirole, J., 1986. Using cost observation to regulate firms. J. Politi. Econ. 94 (3, Part 1), 614–641.

Lee, C.C., Yan, J., 2024. Will artificial intelligence make energy cleaner? Evidence of nonlinearity. Appl. Energy 363, 123081.

Lei, Z., Tsai, C.H., 2019. Market deregulation and nuclear safety. Energy Econ. 82, 62–67.

Lei, Z., Tsai, C.H., Kleit, A.N., 2017. Deregulation and investment in generation capacity: evidence from nuclear power uprates in the United States. Energy J. 38 (3), 113–139.

MacKinlay, A.C., 1997. Event Studies in Economics and Finance. J. Econ. Lit. 35 (1), 13–39.

Martins, A.M., 2024a. Global equity, commodities and bond market response to Israel-Hamas war. Financ. Res. Lett. 67, 105900.

Martins, A.M., 2024b. Short-term market impact of crypto firms' Bankruptcies on cryptocurrency markets. Res. Int. Bus. Finance 70, 102370.

Martins, A.M., Albuquerque, B., Sardinha, L., Moutinho, N., 2025a. 2024 US presidential elections: an event study for US and Non-US fossil fuel and renewable listed firms. Int. Rev. Financ. Anal. 105, 104430.

Martins, A., Albuquerque, B., Sardinha, L., Moutinho, N.F., 2025b. Presidential elections and Secretary appointment: an event study for US biotechnology and drugs. Financ. Res. Lett. 85, 108125.

McKinsey & Company, 2025. The gigawatt race: powering the next generation of AI data centers (Global Energy Perspective 2025). McKinsey Infrastructure Practice. Available here: https://www.mckinsey.com/~/media/mckinsey/industries/energy%20and%20materials/our%20insights/global%20energy%20perspective%202025/global-energy-perspective-2025.pdf.

Peltzman, S., 1976. Toward a more general theory of regulation. J. Law Econ. 19 (2), 211–240.
Pindyck, R.S., 1991. Irreversibility, uncertainty, and investment. J. Econ. Literat. 29 (3), 1110–1148.
Rothwell, G., 2006. A real options approach to evaluating new nuclear power plants. Energy J. 27 (1), 37–54.
Serra, A.P., 2004. Event study tests: a brief survey. Manage. Org-Electron. J. Organiza. Manage. 2 (3), 248–255.
Stein, J.C., 2003. Agency, Information and Corporate Investment. Handbook of the Economics of Finance, 1. Elsevier, pp. 111–165 (2003).
Stigler, G., 1971. The theory of economic regulation. Bell J. Econ. 2 (1), 3–21.
Walker, J.S., Wellock, T.R., 2024. A short history of nuclear regulation, 1946-2024 (NUREG/BR-0175, Rev. 3). U.S. Nuclear Regulatory Commission. Available here: https://www.nrc.gov/docs/ML2421/ML24211A051.pdf.
Wernerfelt, B., 1984. A resource?Based view of the firm. Strateg. Manage. J. 5 (2), 171–180.
Williamson, O.E., 1985. The economic institutions of capitalism. Firms, markets, relational contracting. Das Summa Summarum Des Management: Die 25 Wichtigsten Werke für Strategie, Führung und Veränderung. Gabler, Wiesbaden, pp. 61–75.
Zhang, F., 2007. Does electricity restructuring work? Evidence from the US nuclear energy industry. J. Ind. Econ. 55 (3), 397–418.