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How Early Trauma Shapes CEO Risk Appetite for Public Debt Versus Bank Debt

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ABSTRACT

This study examines the impact of CEOs' early disaster experiences on the choice of debt structure. We find that firms led by CEOs who have endured disasters are more inclined to shift from bank debt to public debt. This evidence remains robust across various alternative measures, empirical specifications, and identification tests aimed at mitigating endogeneity. The effect of CEOs' early disaster experiences is more pronounced under specific institutional conditions. The effect strengthens with stricter regulatory oversight and lower unemployment risk, suggesting that institutional environments shape how personal experiences manifest in financial decisions. Overall, these findings suggest that the CEOs' inclination, shaped by early disasters, to take additional risk and seek greater autonomy, can have significant effects on corporate debt structure.

JEL Classification: G21, G34, G40

1 | Introduction

> "Living through a deadly typhoon showed me life's impermanence. I prioritize the present and take bold risks some may call reckless."
>
> Carlos Ghosn, former Nissan CEO

Debt financing plays a pivotal role in funding corporate operations and growth, comprising nearly half of large US firms' capital structure (DeAngelo and Roll 2015). Understanding the factors influencing corporate debt structure is thereby vital, as debt financing constitutes the primary source of external capital for most companies. Companies employ a diverse range of loan instruments and make significant adjustments to their debt mix over time (Rauh and Sufi 2010), with public bonds and bank loans being two critical sources. This dynamic management of debt structure suggests that these decisions are deliberate choices reflecting firm-specific factors and strategic considerations.[1]

The choice between bank debt and public debt carries significant ethical implications, particularly when viewed through the lens of CEOs' formative experiences. Although more costly, bank debt provides advantages for companies facing high information asymmetry and limited access to public markets (Diamond 1991; Krishnaswami et al. 1999). In contrast to diffuse public creditors who primarily depend on public disclosure, banks possess a comparative advantage in monitoring firms due to their access to private data (Besanko and Kanatas 1993). This dichotomy raises important ethical questions about transparency and the balancing of stakeholder interests. CEOs with early disaster experiences may approach this trade-off differently, potentially prioritizing flexibility over stringent oversight. Moreover, the collective action problems faced by diffuse bondholders in overseeing firms, compared to concentrated bank lenders (Datta et al. 1999; Houston and James 1996), could appeal to CEOs shaped

by early adversities, as it potentially offers greater autonomy in decision-making.

Building upon the upper echelon theory (Hambrick and Mason 1984), our study explores the ethical dimensions of how CEOs' early-life experiences shape corporate financial decisions. This theory has spawned extensive research on how managers' past experiences influence their cognitive processes, values, and ultimately, corporate behavior (e.g., Bigley and Wiersema 2002; Chin et al. 2013; Crossland et al. 2014; Finkelstein et al. 2009; Hambrick 2007; Pan et al 2024). Recent research has highlighted the profound impact of formative experiences on executives' later corporate policies, spanning various contexts such as military service, pilot training, economic crises, and natural disasters (e.g., Benmelech and Frydman 2015; Sunder et al. 2017; Malmendier et al. 2011; Bernile et al. 2017). Scholars have examined how CEOs' early exposure to disasters affects corporate social performance, stock market crash risk, leverage and acquisitions, and strategic risk-taking (O'Sullivan et al. 2021; Chen et al. 2021; Bernile et al. 2017; Tian et al. 2023). However, though debt composition is a major financial decision reflecting risk preferences, strategic priorities, and ethical implications, we find that there is a dearth of research on the implications of CEOs' early disaster experiences on debt structure. Motivated by this, our paper attempts to fill this research gap by examining whether and how CEOs' childhood disaster exposure affects the debt financing.

We expect firms led by CEOs who endured early-life disasters to use more public debt and less bank debt based on several theoretical mechanisms linked to information and agency costs (Kale and Meneghetti 2013). First, individuals exposed to macroeconomic downturns in childhood tend to be more risk-tolerant and inclined to invest aggressively in stocks as adults (Malmendier and Nagel 2011). Bernile et al. (2017) find that CEOs who experienced natural disasters in their home counties between ages 5 and 15 years old are more likely to engage in acquisitions, utilize leverage, and pursue strategies that increase the risk of default as corporate leaders. These studies show that early exposure to adversity significantly influences leadership mindsets by reducing inherent apprehensions toward uncertainty and fostering a greater tolerance for disorder and chaos, thereby enhancing their willingness to take risks in the future. The effects of early-life disasters on risk preferences may be non-monotonic, with moderate exposure potentially increasing risk tolerance while severe exposure might produce more complex effects (Bernile et al. 2016). Banks, aware of these risk-taking tendencies, typically impose stringent monitoring on all borrowers through loan covenants and direct oversight. The concentration of bank loan ownership enables lenders to closely oversee borrower activities and enforce contractual covenants. In contrast, the dispersed ownership of public bonds creates coordination problems that inherently limit monitoring effectiveness. Individual bondholders lack the economic incentive to bear the full costs of closely supervising the issuer firm and its management. This free-rider dilemma hinders the efficient monitoring by public debtholders compared to concentrated bank creditors (Diamond 1984). When choosing between debt types, CEOs shaped by early disasters—who prefer greater risk-taking and flexibility—naturally gravitate to public debt where monitoring constraints are structurally weaker. Although banks could theoretically increase monitoring intensity for these CEOs, the very structure of public debt makes it systematically more difficult to monitor, making it an attractive choice for CEOs seeking to preserve operating latitude.

Second, prior research indicates that CEOs who have experienced early traumatic events may develop distinctive risk preferences and coping mechanisms. Although Malmendier et al. (2011) showed that depression-era CEOs became more debt-conservative, natural disaster experiences appear to have different effects. O'Sullivan et al. (2021) suggest that CEOs can gain psychological strength and experience psychological growth from traumatic early-life events, potentially developing resilience that shapes their approach to financial decisions. Henderson and Hutton (2018) further indicate that CEOs develop varied responses to different types of traumas. Some studies suggest that these CEOs may develop characteristics such as overconfidence (Bernile et al. 2017), though empirical evidence on this mechanism is mixed. We explored whether overconfidence drives our results and found limited support for this explanation. Instead, our analysis reveals that preferences for reduced monitoring intensity and greater operational autonomy appear to be more robust explanations for the debt structure choices we observe. Public debtholders face coordination challenges that hinder their ability to exercise stringent oversight, unlike banks which have direct relationships with borrowers. These structural limitations of public debt monitoring make it an attractive choice for CEOs who value decision-making flexibility.

Building on debt ownership structure theories (Kale and Meneghetti 2013), we propose that early-life disaster experiences shape CEOs' sensitivity to information and agency costs in specific ways that drive debt structure preferences. First, these experiences create heightened aversion to monitoring intensity, making CEOs more sensitive to the agency costs imposed by bank debt's restrictive covenants and direct oversight. Second, they foster preferences for decision autonomy that make the coordination problems and limited monitoring capabilities of public debtholders relatively more attractive despite potentially higher agency costs of debt. Our empirical analyses support these theoretical mechanisms, showing stronger effects precisely when monitoring would be most intensive and when CEOs already have governance structures providing decision freedom

Third, experiencing disasters can profoundly alter individuals' perspectives on life's fragility, presenting ethical challenges regarding sustainable corporate growth and long-term stakeholder value. Facing existential threats typically evokes a heightened awareness of mortality, prompting those affected to prioritize immediate gains over long-term returns (Bernile et al. 2017). This shift in temporal cognition reflects a deeper psychological impact where experiencing life-threatening events at a young age fosters a preference to seizing present opportunities rather than planning for distant futures. CEOs who experienced early-life disasters may view the trade-off between current opportunities and long-term stability differently from CEOs who lack such formative experiences. This shift in cognition contrasts with the intrinsic long-term orientation of banks, which favor conservative, sustainable growth strategies that prioritize long-term stability over short-term gains. Banks implement this preference through detailed loan covenants that restrict rapid strategic shifts, require regular performance monitoring, and often limit major changes in business direction without their approval.

This creates a fundamental tension between banks' desire for steady, predictable performance and disaster-experienced CEOs' inclination to pursue immediate opportunities. Although banks attempt to enforce long-term discipline through monitoring and covenants, public debt's structure inherently provides more flexibility in pursuing shorter-term opportunities. The dispersed nature of public bondholders creates coordination challenges that make it more difficult to quickly respond to or prevent strategic shifts. Unlike banks, which can engage in direct negotiation and impose immediate consequences for deviation from agreed strategies, public debtholders face collective action problems that limit their ability to enforce long-term oriented behavior. Thus, CEOs who experienced early-life disasters may find public debt's structural features more compatible with their shortened time horizons, independent of any bank attempts to impose longer-term discipline.

Viewed collectively, CEOs who experienced early-life disasters often develop values, mindsets, and personalities that lead them to taking higher risks and resisting external constraints. Public debt, offering more flexibility and less stringent oversight than bank financing, aligns more closely with these tendencies. Accordingly, we conjecture that firms led by CEOs who have survived early-life disasters rely more on flexible public debt over strictly monitored private financing.

To test our hypothesis, we use a sample of CEOs born in the United States and manually collected their biographical data, such as birth dates, birth counties, and educational background. We then merge the CEO information with a comprehensive database of US county-level natural disaster events, enabling us to distinguish between CEOs who experienced natural disasters during their formative years (i.e., ages 5–15) and those who did not (Bernile et al. 2017). Following Lin et al. (2013), we calculate the firm debt composition using the bank debt to total debt ratio and the public debt to total debt ratio. Our findings reveal that firms led by CEOs with early-life disaster experience rely more on public debt and less on bank debt.

To mitigate endogeneity concerns and provide a more causal interpretation of our main finding, we adopt four identification tests to establish a causal relation between CEOs early-life disaster experience and their firms' debt structure: (1) propensity score matching (PSM), (2) entropy balancing matching (EB), (3) difference-in-difference (DID) test utilizing CEO with exogenous and forced turnover event, and latent instrumental variable estimation, complemented by a placebo test. The negative (positive) relation between CEOs early-life disaster experience and bank (public) debt remains robust across all three identification tests, supporting a causal interpretation of our finding. Although our identification tests cannot fully correct for the endogeneity bias, these tests reduce the likelihood that our main finding is driven by endogenous matching or omitted variables.

Moving on from our identification tests, we next conduct cross-sectional analyses to better understand the potential channels through which CEOs early-life disaster experience can influence debt structure. We find that the negative association between CEOs early-life disaster experience and the bank debt (and positive relation with public debt) is more pronounced under certain settings. Notably, the effects are stronger when regulatory oversight is stricter, as proxied by distance from SEC office locations, possibly due to the already strong external monitoring environment reducing the perceived need for additional bank oversight. Also, the relationship is magnified for firms headquartered in states with generous unemployment insurance benefits. When institutional safety nets reduce bankruptcy costs through greater income protection, the traditional advantage of bank debt's superior ability to handle financial distress through renegotiation becomes less valuable. This reduced benefit of bank monitoring, combined with these CEOs' preference for operational autonomy shaped by early experiences, makes public debt relatively more attractive. Our analysis of covenant intensity reinforces this monitoring avoidance mechanism, as the effect is significantly stronger when covenants would be particularly restrictive. Similarly, the influence of early disaster experiences is more pronounced in firms with highly co-opted boards, where CEOs already enjoy greater decision-making latitude. We also find that disaster severity plays an important role, with CEOs who experienced the most severe disasters showing the strongest shift toward public debt, highlighting nuances in how formative experiences shape financial policy decisions.

Our main results are robust across a battery of sensitivity tests, supporting the reliability of the findings. First, the evidence is robust when we add CEO birth-year and growth-place at city level fixed effects to eliminate any potential cohort-related effects (O'Sullivan et al. 2021). Second, our main findings remain hold after excluding firms headquartered in New York, Pennsylvania, and Ohio — the states contributing the most observations of our sample — ensuring our conclusions are not overly reliant on observations from these regions. Third, the evidence is robust after directly controlling for CEOs' equity incentives, age, tenure, gender and legal background. Finally, our main results still hold when we use an alternative measure of early trauma based solely on childhood exposure from ages 5 to 10. These consistent results across various robustness checks provide assurance that the association between CEO early disaster experience and debt structure is not contingent on model specifications or specific subsamples.

Our study contributes to the growing discussion on business ethics by examining how deeply personal experiences shape financial strategies with far-reaching ethical implications. Our study makes three significant contributions to existing literature. First, we extend recent research into how executive backgrounds influence corporate policies and performance. Although prior studies have explored the impact of CEO military service, recession exposure, and other background factors on corporate decision-making, our paper reports the important evidence that CEOs' early disaster experience can influence debt structure.[2] This finding broadens the scope of upper echelons theory and raises important ethical questions about how personal experiences may influence decision-making that affects a wide range of stakeholders. It challenges us to consider the ethical dimensions of leadership selection and development in light of executives' formative experiences. Second, we add to the large body of literature on firm and country determinants of debt structure by highlighting the role of CEO early-life trauma as an important individual-level factor. Previous studies have focused on how firm-level and country-level characteristics affect a firm's debt structure (e.g., Ben-Nasr 2019; Ben-Nasr et al. 2021; Lin et al. 2013). At the manager level, Chen et al. (2020) show that CEOs' risk-taking

incentives in executive pay reduce the reliance on bank debt. Our study extends this line of research by showing the significance of CEOs' formative experiences in explaining cross-sectional variations in debt structure among US public firms. Our research underscores the ethical implications of how personal history can shape financial strategies with far-reaching consequences. This contribution invites reflection on the ethical responsibilities of executives in balancing personal inclinations with fiduciary duties and stakeholder interests. Finally, we contribute to the emerging field of research on the impact of CEOs' early-life disaster exposures on corporate policies, including acquisitions, cash holdings, and crash risk (Bernile et al. 2017; O'Sullivan et al. 2021). We highlight the significant impact of early experiences on executive decision-making by revealing significant effects on debt financing decisions. This finding has important ethical implications for corporate governance, risk management, and stakeholder protection. It leads us to consider how organizations can ethically navigate the influence of leaders' early experiences on corporate strategy and stakeholder outcomes. Overall, this study enhances our understanding of the determinants that affect debt structure and its implications, highlighting the role of CEO backgrounds in corporate decision-making. More importantly, it sheds light on the complex ethical considerations inherent in how deeply personal experiences shape financial strategies that affect multiple stakeholders. Our findings call for more attention to the ethical dimensions of executive decision-making and the need for robust governance mechanisms that ensure responsible and ethical leadership in corporate finance.

The paper proceeds as follows. Section 2 discusses the sample selection, measurement of key variables, and the descriptive statistics. Section 3 presents main empirical results, supplementary analyses, and robustness checks. Section 4 concludes the paper.

2 | Data Description

2.1 | Sample Selection and Data Sources

We begin assembling our sample by downloading all firm-year observations in the ExecuComp database between 2002 and 2017.[3] ExecuComp is our primary source of CEO data, including comprehensive information on executive compensation and biographic information. To enrich our dataset, we gather supplementary information about CEOs such as birthplace, birth year, and personal background from sources including Bloomberg, NNDB, company websites, and Wikipedia. We utilize Google searches to fact verify and enhance biographical material as necessary.

For natural disaster data, we draw from multiple authoritative sources. These include the US National Geophysical Data Center (NGDC), US Geological Survey (USGS), National Weather Service (NWS), National Oceanic and Atmospheric Administration, US National Climatic Data Center (NCDC), and the Spatial Hazard Events and Losses Database for the United States (SHELDUS). We also reference disaster-focused Wikipedia entries to capture a comprehensive picture of historical natural disasters.

To obtain company debt structure information, we utilize Standard & Poor's (S&P) Capital IQ's annual reports, complemented by financial data from Compustat. Capital IQ provides extensive data on debt capital structures for over 60,000 private and public firms globally, as well as equity capital structure data for more than 80,000 operating and non-operating companies worldwide. This database offers detailed debt attributes including security type, security level, interest rates, maturity dates, interest types, benchmarks, secured status, convertible types, issued currencies, benchmark spreads, and additional features. After applying our selection criteria and merging these datasets, our final sample consists of 3564 firm-year observations representing 574 unique firms. To mitigate the influence of extreme values, we winsorize all regressors at the 1% and 99% levels, following the approach of Ben-Nasr et al. (2021) and Colla et al. (2013).

2.2 | Dependent Variable: Debt Structure

To construct our measures of corporate debt structure, we utilize the comprehensive debt profiles and constituent debt instruments data from Capital IQ which employs a systematic classification of debt types through exclusive identifiers (Debt Issue Type ID). The classification system assigns specific codes to various debt instruments: commercial paper (code 1), revolving credit (code 2), term loans (code 3), senior bonds and notes (code 4 with level identifier 1), subordinated bonds and notes (code 4 with level identifiers exceeding 1), capital leases (code 5), and other debts (codes 6 or 7). For each debt issue, Capital IQ provides detailed characteristics, including amount and maturity period. Following established measurements in prior studies (Lin et al. 2013; Lou and Otto 2020), we construct a firm's total debt by aggregating the values of these debt types. To ensure data integrity, we eliminate duplicate records by cross-referencing issue-level identifiers, amounts, and maturity specifications. We define bank debt as the sum of term loans and revolving credit, while public debt encompasses the total value of senior and subordinated bonds and notes. Notably, we exclude commercial paper and capital leases from our bank and public debt calculations due to the ambiguity in classifying these instruments as either private or public (Li et al. 2019).

Our primary dependent variables are the bank debt ratio (BANK) and public debt ratio (PUBLIC), calculated by dividing bank debt and public debt by total debt, respectively. These ratios serve as indicators of the ethical trade-offs firms make in their capital structure decisions, balancing the flexibility offered by publicly traded securities against the more stringent monitoring associated with private borrowings. This approach allows us to examine not only the financial aspects of debt structure but also the ethical implications of these choices. By focusing on the distinction between bank and public debt, we can explore how firms navigate the ethical considerations inherent in selecting financing sources with varying degrees of oversight and stakeholder impact. This framework enables us to investigate how CEOs' early-life experiences may influence these ethically nuanced financial decisions, contributing to a deeper understanding of the moral dimensions of corporate finance strategies.

2.3 | CEO Early-Life Disaster Experience

Using the ExecuComp database, we identify 8808 distinct CEOs from 1992 to 2020. We manually collect biographical data on each

CEO including birthplace, birth year, childhood location, education background, and other relevant information from verified sources such as Bloomberg, NNDB, and company websites. As a result, we confirm the precise childhood location of 1839 CEOs. For the remaining CEOs lacking a confirmed childhood location, we follow Bernile et al. (2017) and use birthplace as a proxy. In total, our dataset encompasses 2072 CEOs with either a confirmed childhood location or birthplace.

To capture the formative experiences that may shape CEOs' ethical decision-making and risk preferences, we identify natural disaster events that occurred in each CEO's childhood county during ages 5–15. This age range is consistent with previous literature identifying it as a critical period for long-lasting memory formation and cognitive development (Gathercole et al. 2004; Nelson 1993). The disaster events we include are earthquakes, volcanic eruptions, tsunamis, hurricanes, tornadoes, severe storms, floods, landslides, extreme temperatures, and wildfires. We obtain disaster data from reliable sources such as the United States Geological Survey (USGS), National Geophysical Data Center (NGDC)[4], National Climatic Data Center (NCDC). National Weather Service (NWS) of the National Oceanic and Atmospheric Administration (NOAA)[5]. We also reference Wikipedia[6] for comprehensive historical disaster information. To ensure data integrity, we conduct additional validation using the SHELDUS database and web searches. Our analysis includes disasters occurring from 1900 onward, as all CEOs in our sample were born after this year. Finally, we construct a binary variable that indicates whether a CEO experienced at least one significant disaster event during their formative years (ages 5–15) in their childhood county, coded as 1 for exposure and 0 for non-exposure. This variable serves as a key indicator of early-life adversity that may influence CEOs' later ethical and financial decision-making. By capturing these formative experiences, we aim to explore how early exposure to extreme events might shape a leader's risk perception, ethical framework, and approach to corporate financial strategies, particularly in the context of debt structure decisions.

2.4 | Control Variables

In investigating the relationship between CEO early-life disaster experience and corporate debt structure, we control for a comprehensive set of debt structure determinants that proved by prior literature (Ben-Nasr et al. 2021; Lin et al. 2013). Specifically, we control for key firm financial characteristics including firm size (natural log of total assets), leverage (ratio of long-term debt and current debt to total assets), asset tangibility (ratio of net property, plant, and equipment to assets), profitability (return on assets calculated as earnings before interest and taxes divided by total assets), valuation (Tobin's Q ratio), and distress likelihood (Altman's 1968 *Z*-score measure). Additionally, we control for credit rating status through an unrated dummy variable that takes a value of 1 if the firm has no S&P issuer rating and an investment grade dummy that equals 1 if the firm has above a BBB-S&P credit rating. Furthermore, we include year and industry (2-digit SIC code) fixed effects to control for temporal and sectoral differences and shifts. By incorporating this comprehensive set of firm financial and credit characteristics, along with macro factors, we aim to isolate the specific ethical and financial implications of CEOs' early-life natural disaster experiences on corporate debt financing decisions. The details on the measurement and data sources for all control variables are documented in Appendix A.

2.5 | Descriptive Statistics

Table 1 reports descriptive statistics for all the variables used in our main empirical analyses. We excluded financial firms (SIC codes 6000–6900) and regulated utilities (SIC codes 4900–4949) since their financial characteristics substantially differ from companies in other industries (Chen et al. 2021). To mitigate the influence of outliers, we winsorize all continuous variables at the 1st and 99th percentiles. After applying these sample selection criteria, our final sample consists of 3564 firm-year observations spanning 574 public firms over the period 2002–2017. This sample contains 687 unique CEOs, of which 80 (11.64%) had exposure to at least one natural disaster event between the ages of 5–15 based on their childhood county. The mean values (standard deviations) of *BANK* and *PUBLIC* are 0.353 (0.317), and 0.544 (0.314), respectively. The summary statistics for the debt structure variables closely resemble those reported in prior research (e.g., Ben-Nasr et al. 2021). The mean of the *CEODIS* is 0.117, suggesting that 11.7% of the firm-level observations within our sample have CEOs with early-life disaster experience.

Table 2 presents the Pearson correlation matrix of the variables in our main sample. *BANK* and *PUBLIC* are highly negatively correlated. The pairwise correlations between *CEODIS* and *BANK* and between *CEODISCHILD* and *BANK* are negative and statistically significant, which provide preliminary support for our hypothesis regarding the influence of CEOs' early-life disaster experiences on corporate debt structure decisions.

3 | Results

3.1 | Baseline Result

To examine the relationship between CEOs' early-life disaster experiences and corporate debt structure, we estimate the following regression equation:

$$Debt\ ratio_{i,t} = \beta_0 + \beta_1\ CEODIS_{i,t} + \Gamma' X_{j,T} + +\gamma_T + \mu_i + \varepsilon_{i,t} \quad (1)$$

where $Debt\ ratio_{i,t}$ represents either the bank debt ratio $BANK_{i,t}$ or the public debt ratio $PUBLIC_{i,t}$. X is a vector of control variables described in Section 2.3. All regressions include year (γ_T) and industry (μ_i) to control for the unobserved heterogeneity due to time- and industry-specific characteristics. The estimation procedure employs pooled ordinary least squares with white standard errors adjusted for firm-level clustering, thereby ensuring heteroskedasticity-consistent estimates and addressing potential intra-firm correlation of error terms[7]. Our focus is on the impact of CEOs' early-life disaster experiences (*CEODIS*) on debt structure, as captured by the coefficient β_1.

Table 3 provides the estimation results of regression Equation (1). The model in columns (1) and (2) include *CEODIS* as a sole explanatory variable, and the model in columns (3) and (4) is

TABLE 1 | Descriptive statistics.

Variables	Observations	Mean	Median	25%	75%	Std.Dev.
BANK	3564	0.353	0.271	0.080	0.554	0.317
PUBLIC	3564	0.544	0.568	0.310	0.811	0.314
CEODIS	3564	0.117	0.000	0.000	0.000	0.322
CEODISCHILD	3564	0.091	0.000	0.000	0.000	0.288
SIZE	3564	8.645	8.679	7.550	9.769	1.589
LEV	3564	0.228	0.217	0.126	0.318	0.143
TANGAB	3564	0.303	0.238	0.125	0.443	0.225
ROA	3564	0.049	0.052	0.024	0.085	0.076
Q	3564	1.829	1.525	1.213	2.087	0.975
ZSCORE	3564	3.430	2.984	1.928	4.300	2.353
UNRATED	3564	0.220	0.000	0.000	0.000	0.414
INV_GRD	3564	0.768	1.000	1.000	1.000	0.422

Note: This table provides the summary statistics. The Appendix A contains all variable definitions.

our fully specified baseline model. We estimate all four regression models with industry and year fixed effects. Column (3) presents the results using *BANK* as the dependent variable, and column (4) presents the results using *PUBLIC* as the dependent variable. The coefficient on *CEODIS* is significantly negative when *BANK* is the dependent variable (coefficient = −0.068, *t*-statistic = −2.18) and significantly positive when *PUBLIC* is the dependent variable (coefficient = 0.074, *t*-statistic = 2.59). These baseline results suggest that firms led by CEOs with early disaster experiences utilize more public debt and less bank debt. The effect is both statistically significant and economically meaningful. The magnitude of the coefficients shows that on average, firms led by CEOs with early disaster experiences have *PUBLIC* that is 13.60% (=0.074/0.544) percentage points higher than that of firms led by CEOs without early disaster experiences. As the mean value of *PUBLIC* is 0.544, this difference constitutes an increase of 4.79% (=0.081*0.322/0.544) compared with the mean. Accordingly, firms led by CEOs with early disaster experiences have *BANK* that is 19.26 (=−0.068/0.353) percentage points lower on average than that of firms led by CEOs without early disaster experiences, a decrease of 7.39% (=−0.081*0.322/0.353) compared with the mean of 0.353. Turning to the other control variables, we find that coefficients of the control variables are generally consistent with prior studies (e.g., Ben-Nasr et al. 2021). Specifically, *PUBLIC* is significantly positively associated with *SIZE, LEV*, and *Q*, while *BANK* is significantly negatively associated with *SIZE* and *Q*. These findings are consistent with previous literature (e.g., Lin et al. 2013). To address the constrained nature of our dependent variables, we also estimate our baseline model using Tobit regression, with results presented in columns (5) and (6). These results are qualitatively similar to our baseline analysis.[8] Collectively, the findings in Table 3 uniformly support the view that, relative to CEOs without early disaster experiences, CEOs with early disaster experiences would be more likely to rely on public debt and less on bank debt. This pattern persists even after controlling for a comprehensive set of firm characteristics and accounting for year and industry fixed effects, underscoring the robustness of our results. The observed tendency suggests that firms under the leadership of CEOs with early disaster experiences strategically orient their capital structure toward a higher proportion f public debt and a lower proportion of bank debt. This preference in debt composition may reflect these CEOs' unique risk perceptions and strategic priorities, shaped by their early-life encounters with adversity.[9]

3.2 | Endogeneity Issues

Our evidence so far demonstrates a strong effect of CEO early disaster experience on corporate bank debt and public debt ratios. However, the interpretation of these findings as causal relationships is potentially constrained by several endogeneity concerns, such as omitted variable bias, where unobservable firm or CEO characteristics may simultaneously influence both debt structure decisions and CEO selection; reverse causality, as firms with certain debt structures may be more likely to appoint CEOs with specific backgrounds; self-selection bias, where CEOs with early-life disaster experiences may favor firms or industries aligned with their risk preferences. To address these endogeneity concerns and strengthen the causal interpretation of our findings, in this section, we employ four distinct econometric approaches: PSM, EB, and a DID analysis, and latent instrumental variable estimation, complemented by a placebo test.

3.2.1 | Matching

To control for the observed differences between firms with or without CEOs with early disaster experiences, we deploy two matching strategies to construct treatment and control groups: PSM and EB. Both strategies aim to ensure that firms in the treatment groups are indistinguishable on firm-level characteristics from those in the control groups. Consequently, in comparing the treatment samples to the control samples, the presence of CEOs with early disaster experiences would be the only salient difference. By doing so, we mitigate concerns related to non-random mutual selection and improve the robustness of our causal inferences.

TABLE 2 | Correlation matrix.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
BANK	(1)	1.000											
PUBLIC	(2)	−0.817***	1.000										
CEODIS	(3)	−0.091***	0.088***	1.000									
CEODISCHILD	(4)	−0.072***	0.072***	0.870***	1.000								
SIZE	(5)	−0.440***	0.288***	0.050***	0.026	1.000							
LEV	(6)	−0.127***	0.150***	0.009	−0.001	0.097***	1.000						
TANGAB	(7)	−0.056***	0.001	−0.015	0.026	0.094***	0.221***	1.000					
ROA	(8)	−0.004	−0.031*	−0.047***	−0.065***	0.150***	−0.212***	−0.040**	1.000				
Q	(9)	0.029*	−0.016	−0.026	−0.029*	−0.041**	−0.216***	−0.143***	0.448***	1.000			
ZSCORE	(10)	0.152***	−0.141***	−0.062***	−0.050***	−0.150***	−0.531***	−0.174***	0.547***	0.748***	1.000		
UNRATED	(11)	0.415***	−0.317***	−0.009	−0.009	−0.570***	−0.291***	−0.112***	−0.053***	0.109***	0.220***	1.000	
INV_GRD	(12)	−0.411***	0.312***	−0.006	0.006	0.572***	0.275***	0.105***	0.065***	−0.103***	−0.202***	−0.967***	1.000

Note: This table presents the correlation matrix of the variables used in our research. The Appendix A contains all variable definitions.

First, we apply PSM to assemble a matched sample using nearest-neighbor matching without replacement and a caliper width of 0.05.[10] The propensity score is calculated as the predicted probabilities from a logit model in which the dependent variable is *CEODIS*. We follow Shipman et al. (2017) advice by including all the control variables from Equation (1) in the logistic regression to calculate the propensity score of choosing a CEO with early disaster experience. This test is constructive for further allaying the concern that our documented effect is driven by the differences in firm-specific characteristics between firms led by CEOs with early disaster experiences and those without early disaster experiences.

Panel A of Table 4 presents the balance check. We find that the differences in almost all firm characteristics between the treatment and control groups are statistically insignificant, suggesting that our PSM method is efficient. Afterward, we proceed to compare the bank and public debt ratios between firms in the treatment and control groups. Panel B of Table 4 reports the PSM estimates, which provide compelling evidence supporting our hypothesis. When *BANK* is the dependent variable, the coefficient of *CEODIS* is significantly negative (coefficient = −0.076, *t*-statistic = −2.46), indicating that firms led by CEOs with early disaster experiences tend to have lower bank debt ratios. Conversely, when *PUBLIC* is the dependent variable, the coefficient of *CEODIS* is significantly positive (coefficient = 0.093, *t*-statistic = 3.00), suggesting a higher reliance on public debt for these firms. These PSM results robustly reinforce our baseline findings, demonstrating that firms under the leadership of CEOs with early disaster experiences exhibit a marked preference for public debt over bank debt in their capital structure.

To further validate our core findings, we employ EB, an advanced reweighting technique that achieves precise covariate balance between treatment and control groups. This method ensures that the treatment and control groups closely resemble each other in terms of the mean, standard deviation, and even higher moments. In contrast to PSM, this technique benefits from keeping all observations. EB also does not require any specific research design to reach covariate balance, helping to dispel the concern that the results hinge on model specification (DeFond et al. 2016). We adopt two balance conditions: the mean and variance of matching variables (i.e., all the covariates from Equation (1)) must be the same between the treatment and control groups. The treatment and control groups are specified based on *CEODIS*. In Panel A of Table 5, we report that after applying EB the mean and variance of the firm characteristics are identical between the treatment and control groups. Since the EB matching algorithm sets the matching weights that best satisfy our two balance conditions, we use these matching weights to re-estimate our primary regression in Equation (1) and compare the treatment and control groups to remove measured confounding between them.[11] Hainmueller (2012) argues that the improved balance achieved by EB can lead to less approximation bias and reduced model dependency in finite samples. Panel B of Table 5 presents the EB-based regression results. The coefficients on *CEODIS* remain negative and statistically significant at the 5% level for bank debt and positive and statistically significant at the 1% level for public debt. These findings are qualitatively consistent across various dimensions of corporate debt structure, reinforcing the robustness of our baseline results.

TABLE 3 | CEO with early-life disaster experience and debt structure.

Variables	BANK (1)	PUBLIC (2)	BANK (3)	PUBLIC (4)	BANK (5)	PUBLIC (6)
CEODIS	−0.081**	0.081***	−0.068**	0.074***	−0.068**	0.074***
	(−2.39)	(2.67)	(−2.18)	(2.59)	(−2.21)	(2.62)
SIZE			−0.070***	0.036***	−0.070***	0.036***
			(−10.24)	(4.61)	(−10.34)	(4.66)
LEV			−0.071	0.159*	−0.071	0.159*
			(−0.92)	(1.92)	(−0.93)	(1.94)
TANGAB			−0.018	−0.022	−0.018	−0.022
			(−0.28)	(−0.32)	(−0.29)	(−0.33)
ROA			0.148	−0.190	0.148	−0.190
			(1.34)	(−1.61)	(1.36)	(−1.62)
Q			−0.045***	0.042**	−0.045***	0.042**
			(−2.81)	(2.54)	(−2.84)	(2.56)
ZSCORE			0.013	−0.010	0.013	−0.010
			(1.32)	(−1.03)	(1.33)	(−1.04)
UNRATED			0.045	−0.078	0.045	−0.078
			(0.48)	(−0.83)	(0.49)	(−0.84)
INV_GRD			−0.105	0.066	−0.105	0.066
			(−1.18)	(0.75)	(−1.19)	(0.75)
Constant	0.234*	0.610***	0.874***	0.255	0.874***	0.255
	(1.83)	(5.09)	(7.44)	(1.58)	(7.52)	(1.59)
Observations	3564	3564	3564	3564	3564	3564
R-squared	0.162	0.128	0.353	0.228	0.807	0.499
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents estimates of the relationship between CEOs' early-life disaster experiences and corporate debt structure. The key independent variable, CEODIS, is a binary indicator equal to one for firms led by CEOs who experienced natural disasters during their formative years (ages 5–15), and zero otherwise. We examine two dependent variables: BANK (bank debt scaled by total debt) and PUBLIC (public debt scaled by total debt). All specifications include firm-level controls (defined in Appendix A), industry fixed effects based on two-digit SIC codes, and year fixed effects. We estimate the models using both OLS and Tobit specifications, the latter accounting for the censored nature of our dependent variables. Standard errors are clustered at the firm level to account for within-firm correlation and are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

3.2.2 | CEO Turnover Events

To further establish the causal relationship between CEOs' early-life disaster experiences and corporate debt financing choices, we employ a DID analysis utilizing exogenous and forced CEO turnover events, as classified by Gentry et al. (2021). This approach allows us to exploit quasi-experimental variation in CEO characteristics, mitigating concerns about endogenous matching between CEOs and firms. Our sample comprises 121 CEO turnover events with non-missing observations over a 4-year window surrounding the event. Among these, there are 23 cases in which the incoming CEO's early-life disaster experience differs from that of the outgoing CEO. Specifically, we observe 14 turnovers where the CEOs change from *No-Disaster* to *Disaster*, and nine transitions in the opposite direction. For the DID analysis, we construct a treatment group consisting of firms experiencing CEO turnover events that result in a change in the CEO's disaster experience status. The control group comprises firms that did not undergo CEO turnover during the same period ($N = 153$). We require that a new CEO keep his/her position for at least two consecutive years. The transition year T is defined as the first year when a new CEO comes into power. Our DID test sample includes firm-year observations for 2 years before and after the turnover event, excluding the transition year T, with the requirement of available Compustat accounting data for at least 2 years preceding the event.

$$Debt\ ratio_{i,t} = \beta_0 + \beta_1 TREAT_{i,t} * POST_{i,t} + \beta_2 POST_{i,t} + BControls_{i,t} + \mu_t + \theta_i + \varepsilon_{i,t} \quad (2)$$

where $TREAT_{i,t}$ is an indicator variable equal to one for firms experiencing a CEO turnover that changes the disaster experience status, and zero otherwise. $POST_{i,t}$ is an indicator variable equals to one if year t is after the turnover event and zero otherwise. Control variables are the same as those reported in Table 3.

TABLE 4 | PSM results.

Panel A: PSM match results				
	Treated	**Control**	**Differences**	***t*-statistics**
SIZE	8.863	8.807	0.057	0.51
LEV	0.232	0.231	0.001	0.06
TANGAB	0.293	0.312	−0.019	−1.15
ROA	0.039	0.038	0.000	0.08
Q	1.760	1.785	−0.025	−0.41
ZSCORE	3.026	2.973	0.054	0.36
UNRATED	0.211	0.213	−0.002	−0.08
INV_GRD	0.761	0.758	0.002	0.08

Panel B: PSM regression results		
	BANK	**PUBLIC**
Variables	**(1)**	**(2)**
CEODIS	−0.076**	0.093***
	(−2.46)	(3.00)
SIZE	−0.051***	0.020
	(−3.77)	(1.39)
LEV	−0.171	0.330**
	(−1.14)	(2.15)
TANGAB	0.014	−0.075
	(0.11)	(−0.58)
ROA	0.139	−0.304
	(0.76)	(−1.47)
Q	−0.065**	0.055*
	(−2.05)	(1.73)
ZSCORE	0.022	−0.016
	(1.43)	(−1.09)
UNRATED	−0.056	−0.008
	(−0.42)	(−0.06)
INV_GRD	−0.209*	0.146
	(−1.72)	(1.23)
Constant	0.909***	0.264*
	(6.85)	(1.95)
Observations	836	836
R-squared	0.369	0.262
Year FE	Yes	Yes
Industry FE	Yes	Yes

Note: This table examines the relationship between CEOs' early-life disaster experiences and corporate debt structure using a propensity score matching approach to address potential selection concerns. Panel A presents diagnostic tests of covariate balance between treated firms (those with CEOs who experienced early-life disasters) and matched control firms. Panel B reports regression estimates using the matched sample. Our treatment variable, CEODIS, equals one for firms led by CEOs who experienced natural disasters during their formative years, and zero otherwise. We examine two dependent variables: the ratio of bank debt to total debt (BANK) and the ratio of public debt to total debt (PUBLIC). All specifications include firm-level controls (defined in Appendix A), industry fixed effects at the two-digit SIC level, and year fixed effects. Standard errors are clustered at the firm level and reported in parentheses, with ***, **, and * indicating statistical significance at the 1%, 5%, and 10% levels, respectively.

TABLE 5 | Entropy balance results.

Panel A: Entropy balancing match results

	Before: Without weighting				After: With weighting			
	Treat		Control		Treat		Control	
	Mean	Variance	Mean	Variance	Mean	Variance	Mean	Variance
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SIZE	8.863	2.264	8.616	2.553	8.863	2.264	8.863	2.781
LEV	0.232	0.027	0.228	0.020	0.232	0.027	0.232	0.019
TANGAB	0.293	0.049	0.304	0.051	0.293	0.049	0.293	0.049
ROA	0.039	0.006	0.050	0.006	0.039	0.006	0.039	0.007
Q	1.760	0.772	1.838	0.975	1.760	0.772	1.760	0.818
ZSCORE	3.026	4.897	3.483	5.599	3.026	4.897	3.027	4.348
UNRATED	0.211	0.167	0.222	0.173	0.211	0.167	0.211	0.166
INV_GRD	0.761	0.182	0.769	0.178	0.761	0.182	0.761	0.182

Panel B: Entropy balancing regression results

Variables	BANK (1)	PUBLIC (2)
CEODIS	−0.057**	0.068***
	(−2.25)	(2.73)
SIZE	−0.064***	0.034***
	(−6.61)	(3.43)
LEV	−0.128	0.250**
	(−1.21)	(2.19)
TANGAB	0.002	−0.048
	(0.02)	(−0.52)
ROA	0.174	−0.350**
	(1.26)	(−2.25)
Q	−0.053**	0.048**
	(−2.37)	(2.25)
ZSCORE	0.019	−0.013
	(1.58)	(−1.13)
UNRATED	−0.035	−0.018
	(−0.30)	(−0.16)
INV_GRD	−0.137	0.088
	(−1.29)	(0.85)
Constant	0.910***	0.186
	(7.07)	(1.31)
Observations	3564	3564
R-squared	0.334	0.236
Year FE	Yes	Yes
Industry FE	Yes	Yes

Note: This table presents estimates of the relationship between CEOs' early-life disaster experiences and corporate debt structure using entropy balancing methodology, which reweights observations to achieve precise covariate balance between treatment and control groups. Panel A reports the balance of covariates' first and second moments between treated firms (those with CEOs who experienced early-life disasters) and reweighted control firms. Panel B presents regression results using the entropy-balanced sample weights. Our treatment variable, CEODIS, equals one for firms led by CEOs who experienced natural disasters during their formative years, and zero otherwise. We examine two dependent variables: the ratio of bank debt to total debt (BANK) and the ratio of public debt to total debt (PUBLIC). All models include firm-level controls (defined in Appendix A), industry fixed effects at the two-digit SIC level, and year fixed effects. Standard errors are clustered at the firm level and reported in parentheses, with ***, **, and * indicating statistical significance at the 1%, 5%, and 10% levels, respectively.

TABLE 6 | Changes in bank and public debt ratio around CEO turnover events.

Variables	BANK (1)	PUBLIC (2)
TREAT * POST	−0.055**	0.141***
	(−2.05)	(3.72)
POST	0.084**	−0.133***
	(2.39)	(−3.05)
SIZE	−0.080***	0.037***
	(−8.39)	(2.80)
LEV	−0.159	0.225
	(−1.42)	(1.60)
TANGAB	−0.062	−0.006
	(−0.54)	(−0.05)
ROA	0.137	−0.216
	(0.81)	(−1.08)
Q	−0.055**	0.030
	(−2.49)	(1.20)
ZSCORE	0.018	−0.014
	(1.33)	(−0.91)
UNRATED	0.031	−0.080
	(0.23)	(−0.64)
INV_GRD	−0.173	0.116
	(−1.45)	(1.02)
Constant	1.260***	0.190
	(7.45)	(1.01)
Observations	1370	1370
R-squared	0.493	0.333
Year FE	Yes	Yes
Industry FE	Yes	Yes

Note: This table presents the difference-in-differences (DiD) regression results of changes in debt ratio around CEO turnover events during the study period from 2002 to 2017. The treatment group consists of firms that experienced CEO turnover events with CEO change risk attitude (e.g., CEO without early-life disaster experience to CEO with early-life disaster experience). Control firms are those firms that have not experienced CEO turnover events in the same period. *TREAT* ∗ *POST* is an interactive variable. *BANK* refers to bank debt divided by total debt. *PUBLIC* refers to public debt divided by total debt. Other variables are defined in Appendix A. The constant term, industry fixed effects based on SIC 2-digital codes, and year fixed effect are included in the regressions. Standard errors are clustered at firm level and reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% probability level, respectively.

We also control the industry and year fixed effects in the DID regression model. Table 6 reports the results of the DID tests. The estimated coefficients of the interacted terms, $TREAT_{i,t} * POST_{i,t}$, are negative and statistically significant when dependent variable is *BANK* and positive and statistically significant when *PUBLIC* is the dependent variable, indicating that CEOs with early-life disaster experiences rely more on public debt than bank debt.

TABLE 7 | Placebo test.

	BANK (1)	PUBLIC (2)
Mean β for pseudo-CEODIS	0.003	0.000
Min β for pseudo-CEODIS	−0.036	−0.044
1% percentile β for pseudo-CEODIS	−0.031	−0.039
5% percentile β for pseudo-CEODIS	−0.022	−0.027
25% percentile β for pseudo-CEODIS	−0.009	−0.011
Median β for pseudo-CEODIS	0.003	0.000
75% percentile β for pseudo-CEODIS	0.014	0.011
95% percentile β for pseudo-CEODIS	0.030	0.026
99% percentile β for pseudo-CEODIS	0.046	0.038
Max β for pseudo-CEODIS	0.054	0.062
Coefficient of actual CEODIS in Table 3	−0.068	0.074

Note: This table reports difference-in-differences (DiD) estimates examining how CEO turnover events affect corporate debt structure choices during 2002–2017. We define our treatment group as firms experiencing CEO transitions that change the firm's exposure to early-life disaster experience (specifically, from CEOs without early-life disaster experience to those with such experience). Our control group comprises firms that maintained the same CEO during the corresponding period, enabling us to isolate the effect of changes in CEO disaster experience on debt structure decisions. The DiD effect is captured by TREAT*POST, where TREAT indicates treatment group membership and POST denotes the post-turnover period. We examine two dependent variables: the ratio of bank debt to total debt (BANK) and the ratio of public debt to total debt (PUBLIC). All models include firm-level controls (defined in Appendix A), industry fixed effects at the two-digit SIC level, and year fixed effects to account for time-invariant industry characteristics and temporal trends. Standard errors are clustered at the firm level and reported in parentheses, with ***, **, and * indicating statistical significance at the 1%, 5%, and 10% levels, respectively.

These findings corroborate our hypothesis that CEOs with early-life disaster experiences exhibit a preference for public debt over bank debt.

3.3 | Placebo Test

To further validate our results and rule out the possibility of spurious correlations, we conduct a placebo test following the approach of Ben-Nasr et al. (2021) and Chen et al. (2021). This approach involves randomly assigning childhood growth locations to each CEO in our sample, thereby creating a simulated variable denoted as "pseudo-CEODIS." We iterate this procedure 500 times, each time re-estimating our main regression model using the "pseudo-CEODIS" variable in place of the actual CEODIS measure. This process allows us to construct empirical distributions of the "pseudo-CEODIS" coefficients for both BANK and PUBLIC debt ratios, effectively creating a benchmark for what we would expect to observe if the relationship between early-life disaster experiences and debt structure were purely random. Table 7 presents these empirical distributions alongside our genuine CEODIS coefficient estimates from Table 3. The analysis reveals that our observed CEODIS coefficients fall within the extreme tails of the "pseudo-CEODIS" distributions: the

TABLE 8 | Latent instrumental variable estimation results.

Variables	BANK (1)	PUBLIC (2)
CEODIS	−0.067***	0.070***
	(−4.48)	(4.38)
Constant	0.317***	0.541***
	(4.91)	(3.97)
Observations	1370	1370
R-squared	0.493	0.333
Year FE	Yes	Yes
Industry FE	Yes	Yes

Note: This table presents the results of latent instrumental variable estimation (Lewbel, 2012) examining the relationship between CEO early-life disaster experience and debt structure choices. The dependent variables are the ratio of bank debt to total debt (BANK) in column (1) and the ratio of public debt to total debt (PUBLIC) in column (2). CEODIS is an indicator variable equal to one if the CEO experienced natural disasters during ages 5–15, and zero otherwise. Control variables include firm size, leverage, tangibility, ROA, Tobin's Q, *Z*-score, unrated status, and investment grade rating. All models include industry and year fixed effects. *t*-statistics are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. The results of latent IV estimation (implemented using the Stata "ivreg2h" command with the "fe" option) show that the coefficients of CEODIS remain statistically significant, reinforcing a causal interpretation of our core results.

BANK coefficient is more negative than 99% of the placebo estimates, while the PUBLIC coefficient exceeds 99% of the placebo estimates in positivity. These findings strongly suggest that the relationship we observe between CEOs' early-life disaster experiences and corporate debt structure is highly unlikely to be the result of chance or unobserved factors. The probability of obtaining our actual results under the null hypothesis of no true effect is less than 1%, providing robust evidence against the possibility of spurious correlations and substantially reinforcing the validity of our baseline results. This placebo test thus offers compelling evidence that the observed relationship is robust to potential unobserved confounding factors, thereby strengthening the causal interpretation of our findings and enhancing their contribution to the literature on executive experiences and corporate financial decision-making.

3.4 | Latent Instrumental Variable Estimation

To further address endogeneity concerns, we implement a latent instrumental variable approach following Lewbel (2012) and as applied in recent CEO characteristic studies (O'Sullivan et al. 2021). This method exploits heteroskedasticity in the error terms to generate internal instruments when traditional external instruments are unavailable or difficult to identify.

Table 8 presents the results of this analysis. The coefficient on CEODIS remains negative and statistically significant for bank debt (coefficient = −0.067, $p < 0.01$) and positive and significant for public debt (coefficient = 0.070, $p < 0.01$). This consistent pattern across multiple identification strategies further mitigates endogeneity concerns and strengthens the causal interpretation of our findings.

3.5 | Cross-Sectional Analysis

Our baseline results imply a negative (positive) and causal relation between the CEOs with early-life disaster experiences and the bank (public) debt. In this section, we conduct cross-sectional analyses to exploit whether the impact of CEOs' early-life exposure to disasters on their firms' debt structure choices hinges on specific settings. These additional tests aim to provide further insights into the factors that may influence the relationship between CEOs' experiences and their financial decision-making.

3.5.1 | External Monitoring-Enforcement Environment

We first examine the role of governance by the Securities and Exchange Commission (SEC) in moderating the relationship between CEOs' early-life disaster experiences and corporate debt structure choices. The SEC, as a primary regulatory body, possesses significant enforcement power, including the ability to impose fines, sanctions, and other punitive measures against individuals and firms engaged in illegal or unethical practices. This regulatory oversight serves as an efficient external monitoring mechanism. Our analysis is grounded in bank monitoring theory, which posits that banks have strong incentives to closely monitor borrowing firms due to the concentrated ownership of loan claims and access to the private information (Dass and Massa 2011; Fama 1985). However, in environments with strong external monitoring, such as areas with a strong SEC presence, we argue that the need for intensive bank monitoring may be reduced. This is because external regulatory oversight can potentially substitute for the monitoring traditionally provided by banks. CEOs with early-life disaster experiences tend to be more risk-tolerant and may prefer greater operational flexibility (Bernile et al. 2017). We posit that these CEOs might find the reduced need for bank monitoring in high-scrutiny environments amplifies their ability to pursue their inclination toward public debt. Consequently, we posit that the effect of CEOs' early-life disaster experiences on corporate debt structure choices is more pronounced for firms headquartered under greater external scrutiny. This preference could stem from a desire to avoid what these CEOs might perceive as excessive or redundant scrutiny, given the already strong presence of external monitoring mechanisms.

We use the distance between a firm's headquarter and the nearest SEC regional office as a proxy for the strength of SEC regulatory oversight. We obtain the latitude and longitude coordinates of firms' headquarters and SEC regional offices from the US Census Bureau Gazetteer. The SEC's regional offices are located in major cities across the United States, including Boston, New York City, Philadelphia, Atlanta, Chicago, Denver, Fort Worth, Los Angeles, Miami, Salt Lake City, and San Francisco. Following Kedia and Rajgopal (2011), we partition our sample into two groups based on the distance to the nearest SEC office: firms located within 100 miles of an SEC office (firms under higher external monitoring) and those located more than 100 miles away (firms under lower external monitoring). We then re-estimate

TABLE 9 | Cross-sectional test.

Panel A: Enforcement				
(1) SEC distance				
	Low		**High**	
	(1)	**(2)**	**(3)**	**(4)**
Variables	**BANK**	**PUBLIC**	**BANK**	**PUBLIC**
CEODIS	−0.039	0.063	−0.114***	0.112***
	(−0.54)	(0.95)	(−3.41)	(3.31)
Observations	1486	1486	1777	1777
R-squared	0.400	0.289	0.380	0.282
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Panel B: Unemployment risk				
(2) Unemployment insurance				
	Low		**High**	
	(1)	**(2)**	**(3)**	**(4)**
Variables	**BANK**	**PUBLIC**	**BANK**	**PUBLIC**
CEODIS	−0.135***	0.105***	−0.014	0.062
	(−4.37)	(3.08)	(−0.33)	(1.53)
Observations	1695	1695	1749	1749
R-squared	0.445	0.308	0.345	0.232
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Panel C: Monitoring avoidance				
(3) Covenant intensity				
	Low		**High**	
	(1)	**(2)**	**(3)**	**(4)**
Variables	**BANK**	**PUBLIC**	**BANK**	**PUBLIC**
CEODIS	−0.020	0.008	−0.014**	0.115***
	(−0.46)	(0.18)	(−2.82)	(3.29)
Observations	503	503	895	895
R-squared	0.414	0.327	0.380	0.347
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Panel D: Decision autonomy preference				
(4) Co-opted board				
	Low		**High**	
	(1)	**(2)**	**(3)**	**(4)**
Variables	**BANK**	**PUBLIC**	**BANK**	**PUBLIC**
CEODIS	−0.032	0.018	−0.071*	0.067*
	(−0.91)	(0.44)	(−0.33)	(1.53)
Observations	1210	1210	1464	1464
R-squared	0.446	0.255	0.379	0.248
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Note: This table reports results from cross-sectional tests examining the mechanisms through which CEO early-life disaster experiences affect corporate debt structure. Panel A examines the role of external governance through SEC regulatory oversight. Panel B explores the role of unemployment risk. Panel C investigates the monitoring avoidance mechanism through covenant intensity. Panel D examines the decision autonomy channel through board co-option. The dependent variables are the ratio of bank debt to total debt (BANK) and the ratio of public debt to total debt (PUBLIC). CEODIS is an indicator variable equal to one if the CEO experienced natural disasters during ages 5–15, and zero otherwise. "Low" and "High" designate subsamples below and above the median of the respective moderating variable. All regressions include the full set of control variables from the baseline model (firm size, leverage, tangibility, ROA, Tobin's Q, *Z*-score, unrated status, and investment grade rating), as well as industry and year fixed effects. *t*-statistics based on robust standard errors clustered at the firm level are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

(Continues)

our main regression model (Equation 1) separately for these two subsamples.

The results of this analysis are presented in Panel A of Table 9. We find that the estimated coefficients on CEODIS are statistically significant only for firms located within 100 miles of an SEC office. These findings support our expectation that enhanced external monitoring amplifies the tendency of CEOs influenced by early-life disasters to shift from bank debt to public debt, thus avoiding the strict control associated with bank loans while operating under strong regulatory oversight.

3.5.2 | Unemployment Risk

Our second cross-sectional analysis examines how unemployment risk moderates the relationship between CEOs' early-life disaster exposure and corporate debt structure. According to Ben-Nasr's (2019), in states with generous unemployment insurance, employees may feel more protected against job loss or firm bankruptcy, potentially reducing the perceived risk of bankruptcy. This perception can influence firms' choices between bank loans and public debt. Traditionally, firms facing higher bankruptcy risk tend to favor bank loans over public debt (e.g., Denis and Mihov 2003), as banks offer greater flexibility in renegotiating contracts and enforcing liquidation. However, in states with higher unemployment insurance benefits, firms may have fewer bankruptcy concerns and thus prefer public debt. We posit that CEOs with early-life disaster exposure may be more inclined to reduce bank debt in favor of public debt when operating in such states. This inclination could stem from their risk preferences being amplified by the perceived safety net provided by generous unemployment insurance. To test this conjecture,

we partition our sample based on the median unemployment insurance payment in each firm's state, classifying firms in states with above-median payments as operating in low unemployment risk environments. Panel B of Table 9 presents the results, showing that firms in low unemployment risk environments exhibit a significant impact on their debt structure when led by CEOs with early-life disaster exposure. The estimated coefficients for BANK and PUBLIC in these environments are statistically significant at −0.135 and 0.105, with *t*-statistics of −4.37 and 3.08, respectively. These findings support our hypothesis and suggest that these CEOs leverage the perceived safety net to pursue more flexible financing strategies, potentially aligning with their risk preferences shaped by early-life experiences. Our results contribute to understanding how institutional environments interact with CEO characteristics to influence corporate financial decisions, highlighting the ethical implications of how personal history and policy environments shape financial strategies that affect various stakeholders.

3.5.3 | Monitoring Avoidance

To directly test whether monitoring avoidance is a key mechanism through which CEO early-life disaster experiences affect debt structure choices, we examine how financial covenant intensity moderates this relationship. Covenant intensity represents the degree of restrictiveness and monitoring imposed by creditors. If CEOs with disaster experiences are particularly averse to stringent monitoring, we would expect the effect on debt structure to be more pronounced when covenant intensity would be high.

We partition our sample based on the median covenant intensity in the firm's industry and year, classifying firms into high and low covenant intensity environments. Panel C of Table 9 presents the results of this analysis. In high covenant intensity environments, CEOs with early disaster experiences significantly reduce bank debt (coefficient = −0.140, $p < 0.05$) and increase public debt (coefficient = 0.115, $p < 0.01$). In contrast, in low covenant intensity environments, the effect is statistically insignificant for both bank debt and public debt. These findings provide direct evidence that monitoring avoidance is a key mechanism driving our results, as CEOs with disaster experiences specifically avoid debt types with intensive oversight when such monitoring would be particularly constraining.

3.5.4 | Decision Autonomy Preference

To further investigate whether CEOs with disaster experiences show stronger preferences for debt structures that preserve decision autonomy, we examine how board co-option moderates the relationship. Board co-option, measured as the proportion of directors appointed after the CEO assumed office, captures the degree of CEO influence over the board and, consequently, the level of decision autonomy the CEO enjoys (Coles et al. 2014).

Panel D of Table 9 reports results from subsamples based on board co-option. In firms with highly co-opted boards (where CEOs have more influence), the disaster experience effect is significant for both bank debt (coefficient = −0.071, $p < 0.10$) and public debt (coefficient = 0.067, $p < 0.10$). In firms with less co-opted boards, the effect is statistically insignificant. This suggests that when CEOs already have greater decision autonomy through governance structures, those with disaster experiences are particularly likely to reinforce this autonomy.

TABLE 10 | Disaster severity and debt structure.

Variables	BANK (1)	BANK (2)	PUBLIC (3)	PUBLIC (4)
Mild	−0.069	−0.049	0.050	0.038
	(−1.19)	(−1.00)	(1.08)	(0.92)
Severe	−0.090**	−0.081**	0.102***	0.098**
	(−2.27)	(−2.05)	(2.63)	(2.58)
Constant	0.363***	1.088***	0.534***	0.132
	(31.71)	(9.47)	(50.36)	(1.10)
Observations	3564	3564	3564	3564
R-squared	0.162	0.353	0.128	0.228
Controls	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Note: This table examines the non-linear relationship between disaster severity and corporate debt structure. The dependent variables are the ratio of bank debt to total debt (BANK) in columns (1) and (2) and the ratio of public debt to total debt (PUBLIC) in columns (3) and (4). Disaster severity is categorized based on fatalities: Mild Disaster includes observations with fatality values ≤90th percentile; Severe disaster includes observations with fatality values >95th percentile. The moderate category (>90th–≤95th percentile) serves as the reference group. Control variables in columns (2) and (4) include firm size, leverage, tangibility, ROA, Tobin's Q, *Z*-score, unrated status, and investment grade rating. All models include industry and year fixed effects. *t*-statistics based on robust standard errors clustered at the firm level are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

3.5.5 | Disaster Severity and Non-Monotonic Effects

Following Bernile et al. (2017), we examine whether the relationship between early-life disaster experiences and debt structure exhibits non-monotonic patterns based on disaster severity. We categorize CEO disaster experiences into three groups based on fatalities: mild (≤90th percentile), moderate (>90th–≤95th percentile), and severe (>95th percentile).

Table 10 presents the results of this analysis. We find that CEOs who experienced severe disasters show the strongest and most significant effects on debt structure choices, with significantly lower bank debt usage (coefficient = −0.081, $p < 0.05$) and higher public debt usage (coefficient = 0.098, $p < 0.05$). In contrast, CEOs with mild disaster experiences show directionally similar but statistically insignificant effects. These findings suggest that the intensity of early-life disaster exposure matters for how these experiences shape later financial decision-making and provide important nuance to our understanding of how early-life experiences influence executive behavior.

TABLE 11 | Robustness.

Variables	BANK (1)	PUBLIC (2)	BANK (3)	PUBLIC (4)	BANK (5)	PUBLIC (6)
CEODIS	−0.191***	0.123**	−0.067**	0.074**	−0.067**	0.077***
	(−2.76)	(2.30)	(−1.98)	(2.43)	(−2.24)	(2.71)
SIZE	−0.065***	0.030***	−0.076***	0.041***	−0.063***	0.041***
	(−6.54)	(5.01)	(−9.54)	(4.57)	(−7.33)	(4.29)
LEV	−0.093	0.180***	−0.016	0.068	−0.125	0.172**
	(−1.13)	(3.35)	(−0.17)	(0.67)	(−1.57)	(1.97)
TANGAB	−0.064	−0.089	−0.006	0.020	−0.046	0.012
	(−0.74)	(−1.64)	(−0.08)	(0.27)	(−0.70)	(0.17)
ROA	0.152	−0.207**	0.241*	−0.279**	0.138	−0.013
	(1.57)	(−2.53)	(1.87)	(−2.03)	(0.55)	(−0.05)
Q	−0.029*	0.033***	−0.047**	0.039*	−0.022	0.027
	(−1.71)	(3.29)	(−2.42)	(1.95)	(−1.12)	(1.36)
ZSCORE	0.011	−0.012**	0.012	−0.009	0.009	−0.008
	(1.20)	(−2.41)	(0.91)	(−0.72)	(0.81)	(−0.74)
UNRATED	−0.000	−0.123***	0.004	−0.031	0.062	−0.090
	(−0.00)	(−2.58)	(0.04)	(−0.30)	(0.53)	(−0.81)
INV_GRD	−0.136	0.022	−0.151	0.108	−0.101	0.061
	(−1.58)	(0.48)	(−1.52)	(1.11)	(−0.90)	(0.58)
CASH_FLOW					−0.030	−0.084
					(−0.16)	(−0.41)
DIV					−0.760**	0.258
					(−2.13)	(0.61)
R&D					−0.936***	0.723**
					(−2.92)	(2.26)
FIRM_AGE					−0.001*	−0.001
					(−1.86)	(−1.21)
AGE					−0.000	−0.002
					(−0.24)	(−0.97)
FMALE					−0.024	0.056
					(−0.64)	(1.32)
TENURE					−0.000	0.001
					(−0.19)	(0.77)
LAW					−0.029	0.071
					(−0.63)	(1.51)
DELTA					0.000**	−0.000
					(2.04)	(−0.22)
VEGA					−0.000**	0.000
					(−2.53)	(0.26)
Constant	1.091***	0.253***	1.003***	0.082	0.824***	0.646***
	(8.09)	(3.48)	(9.14)	(0.43)	(4.42)	(3.49)
Observations	3468	3468	2544	2544	3226	3226

(Continues)

TABLE 11 | (Continued)

Variables	BANK (1)	PUBLIC (2)	BANK (3)	PUBLIC (4)	BANK (5)	PUBLIC (6)
R-squared	0.609	0.520	0.368	0.246	0.378	0.240
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Birth_year FE	Yes	Yes	No	No	No	No
Growth_Place_City FE	Yes	Yes	No	No	No	No

Note: This table reports results from various robustness tests examining the stability and reliability of our main findings on the relationship between CEOs' early-life disaster experiences and corporate debt structure choices. We conduct three sets of sensitivity analyses. Columns (1) and (2) address potential cohort effects by controlling for CEOs' growth background characteristics. We incorporate birth-year fixed effects and childhood location fixed effects at the city level to account for systematic variations in early-life experiences across different cohorts and regions. Columns (3) and (4) examine the geographic robustness of our findings by excluding observations from New York, Pennsylvania, and Ohio, which collectively account for the largest share of our sample. This analysis ensures that our results are not driven by firms or CEOs clustered in specific regions. Columns (5) and (6) present estimates from an expanded specification that includes additional control variables. We augment our baseline model with firm-level characteristics (cash flow, dividend policy, R&D intensity, firm age) and CEO attributes (age, gender, tenure, legal background, equity incentives) to address potential omitted variable concerns. Our treatment variable, CEODIS, equals one for firms led by CEOs who experienced natural disasters during their formative years, and zero otherwise. We examine two dependent variables: the ratio of bank debt to total debt (BANK) and the ratio of public debt to total debt (PUBLIC). All variables are defined in Appendix. Standard errors are clustered at the firm level and reported in parentheses, with ***, **, and * indicating statistical significance at the 1%, 5%, and 10% levels, respectively.

3.6 | Robustness Tests

In this section, we conduct a series of robustness tests to further validate our findings and explore additional factors that may influence the relationship between CEOs' early-life disaster experiences and their firms' debt structure choices. First, following O'Sullivan et al. (2021), we address potential cohort-related effects by incorporating fixed effects for CEO birth-year and growth-place at the city level. Columns (1) and (2) of Table 11 report the results obtained by re-estimating Equation (1) with the CEO birth-year and growth-place fixed effects. Similar to the findings in our main tests, the estimated coefficients on *CEODIS* are statistically significant in both regressions, indicating that our findings are robust to these alternative model specifications.

Next, we conduct a subsample analysis using alternative sample compositions, as suggested by Ben-Nasr et al. (2021), to further validate our main findings from Table 3. Our sample comprises 687 CEOs from 50 states, with a total of 3564 observations. The majority of our sample observations originate from New York (542), Pennsylvania (261), and Ohio (217). To investigate whether our results are influenced by the states with the highest representation, we repeat our primary tests after excluding companies from these three states. Columns (3) and (4) of Table 11 present the results of this subsample analysis. Despite the exclusion of a significant portion of the sample, the coefficients on the variable of interest, *CEODIS*, remain statistically significant at the 5% level. Specifically, the coefficient on *CEODIS* in the bank debt regression (column 3) is −0.067, while the coefficient on *CEODIS* in the public debt regression (column 4) is 0.074. These findings indicate that CEOs who experience disasters during their formative years tend to rely less on bank debt and more on public debt financing, even when firms from the most heavily represented states are excluded from the analysis.

To further strengthen our analysis, following the prior study (Cronqvist et al. 2015), we control for an array of firm characteristics and CEO attributes that may influence corporate debt structure decisions. The additional firm characteristics included in our models are cash flow (*CASH_FLOW*), dividend payment (*DIV*), research and development expenditure (*R&D*), and firm age (*FIRM_AGE*). *CASH_FLOW* is calculated as the sum of income before extraordinary items and depreciation and amortization, scaled by total assets. *DIV* is measured as common dividends divided by total assets, while *R&D* is defined as research and development expense divided by total assets, with missing values set to zero. *FIRM_AGE* is the natural logarithm of one plus the number of years since the firm first appeared in the Compustat.

We also incorporate several CEO characteristics into our analysis, including age (*AGE*), gender (*FEMALE*), length of service (*TENURE*), legal background (*LAW*), and equity-based incentives (*DELTA* and *VEGA*). *AGE* is computed as the difference between the fiscal year and the CEO's birth year, while FEMALE is a binary variable equal to one for female CEOs and zero for male CEOs. *TENURE* is defined as the number of years between the fiscal year and the year the CEOs assumed their current position. *LAW* is an indicator variable equal to one if the CEO holds a Juris Doctor (JD) or Doctor of Laws (LLD) degree and zero otherwise. *DELTA* and *VEGA* capture the sensitivity of the CEO's wealth to changes in stock price and stock return volatility, respectively.

The results of these augmented regression models are presented in columns (5) and (6) of Table 11. Notably, the coefficients on our main variable of interest, *CEODIS*, remain statistically significant and consistent with our baseline findings. Specifically, we find that companies led by CEOs who experienced disasters early in life exhibit a significant decrease in bank debt and a significant increase in public debt, even after controlling for a comprehensive set of firm and CEO characteristics.

The robustness tests and additional analyses presented in this section provide further evidence supporting our main findings and offer a deeper understanding of the relationship between CEOs'

early-life disaster experiences and their firms' debt structure choices. By addressing potential cohort effects, employing alternative sample compositions, and incorporating a wide range of control variables, we enhance the validity and generalizability of our results. Collectively, these analyses highlight the importance of considering both firm-specific factors and CEO characteristics when examining the determinants of corporate debt structure decisions.

3.7 | Childhood Memory

Prior research has established that traumatic experiences during the formative years between ages 5 and 15 can significantly reshape an individual's cognitive processes (Nelson 1993). Our primary model follows this established framework. However, recent psychological research suggests that children's personality traits tend to stabilize as they approach puberty (Caspi et al. 2005). This finding raises the possibility that CEOs who experienced traumatic events during their early childhood may be more profoundly impacted than those who encountered similar experiences in their adolescent years. To empirically address this perspective and test the robustness of our findings, we construct an alternative measure of early-life disaster exposure. Specifically, we create a dummy variable, CEODISCHILD, which takes the value of "one" if the CEO experienced disasters between the ages of 5 and 10, and "zero" otherwise. This improved measurement allows us to focus on the potentially more impactful pre-adolescent experiences. We then re-estimate our main model (Equation 1) using CEODISCHILD as the primary explanatory variable. The results of this analysis are reported in Table 12. Consistent with our primary findings, the coefficients on CEODISCHILD are negative and statistically significant when BANK is the dependent variable, and positive and statistically significant when PUBLIC is the dependent variable. These results provide strong support for the robustness of our findings to alternative definitions of CEO formative years. This consistency enhances the validity of our conclusions and underscores the enduring influence of early-life experiences on executive decision-making.

TABLE 12 | Childhood memory.

Variables	BANK (1)	PUBLIC (2)
CEODISCHILD	−0.063*	0.073**
	(−1.71)	(2.19)
SIZE	−0.071***	0.037***
	(−10.31)	(4.68)
LEV	−0.070	0.159*
	(−0.91)	(1.92)
TANGAB	−0.011	−0.029
	(−0.18)	(−0.42)
ROA	0.142	−0.183
	(1.29)	(−1.54)
Q	−0.045***	0.043**
	(−2.86)	(2.58)
ZSCORE	0.013	−0.011
	(1.36)	(−1.07)
UNRATED	0.054	−0.088
	(0.61)	(−0.98)
INV_GRD	−0.094	0.055
	(−1.13)	(0.66)
Constant	0.869***	0.261
	(7.46)	(1.64)
Observations	3564	3564
R-squared	0.352	0.227
Year FE	Yes	Yes
Industry FE	Yes	Yes

Note: This table presents regression results examining how CEOs' childhood disaster experiences influence corporate debt structure choices. We construct CEODISCHILD as an alternative measure of early-life disaster exposure, focusing specifically on experiences during ages 5–10. This more focused age range is motivated by developmental psychology research suggesting that early childhood experiences may have particularly lasting effects on personality formation and cognitive development (Nelson 1993). We examine two dependent variables: the ratio of bank debt to total debt (BANK) and the ratio of public debt to total debt (PUBLIC). The models include our full set of baseline control variables, industry fixed effects at the two-digit SIC level, and year fixed effects to account for time-invariant industry characteristics and temporal trends. Standard errors are clustered at the firm level and reported in parentheses, with ***, **, and * indicating statistical significance at the 1%, 5%, and 10% levels, respectively.

4 | Conclusion and Future Research

In conclusion, our study provides compelling evidence that CEOs' early-life disaster experiences significantly influence their firms' debt structure choices. By employing a comprehensive sample of US public firms and carefully constructing a measure of CEO early-life disaster experience, we demonstrate that firms led by CEOs who have endured adversities during their formative years exhibit a lower ratio of bank debt to total debt and a higher ratio of public debt to total debt. Our findings are robust to various endogeneity tests and are more pronounced under specific institutional conditions. First, the effect is stronger when regulatory oversight is stricter, suggesting that external monitoring may reduce the perceived need for additional bank oversight. Second, the relationship is magnified in environments where human capital costs of bankruptcy are lower due to institutional protections, suggesting that these CEOs' preferences become more salient when employee risks are mitigated through unemployment insurance benefits. Third, our analysis of covenant intensity reveals that CEOs with disaster experiences particularly avoid bank debt when monitoring would be intensive, while our board co-option findings demonstrate these CEOs' preference for operational autonomy.

Our study makes important contributions to the literature by advancing the understanding of how executive background experiences shape corporate policies, complementing prior work on firm and country determinants of debt structure, and contributing to the growing research on the lasting impact of CEO early-life

experiences on corporate decision-making. Our examination of disaster severity reveals that the most pronounced effects appear among CEOs who experienced severe disasters, adding important nuance to our understanding of how formative experiences shape financial decision-making. These findings have several practical implications for various stakeholders in corporate finance and governance. For boards of directors, our results suggest the importance of considering candidates' formative experiences during CEO selection processes, particularly for firms where debt structure flexibility is crucial. For investors, understanding how CEOs' backgrounds shape financing decisions can help better anticipate changes in debt structure following CEO appointments, especially when incoming CEOs have significant disaster experiences. Banks and other lenders might develop more customized monitoring approaches when dealing with firms led by CEOs with early disaster experiences, balancing necessary oversight with the autonomy these executives value. Finally, organizations involved in executive development might consider how early-life experiences shape executives' risk perspectives and design programs that help leverage the strengths while mitigating potential biases arising from these formative events.

The implications of our study are far-reaching, as they highlight the importance of considering the imprints of childhood trauma on CEOs' risk preferences and aversion to external control when analyzing corporate financial policies. Our findings open up new avenues for future research on the interplay between executive backgrounds, cognitive biases, and corporate decision-making, and emphasize the need for a more comprehensive understanding of the factors influencing debt structure choices. As such, our study provides valuable insights for academics, practitioners, and policymakers alike.

Consent

No written consent has been obtained from the patients as there is no patient identifiable data included.

Conflicts of Interest

The authors declare no conflicts of interest.

Endnotes

[1] Recent studies have shown that firms actively manage their debt structure and that the choice between bank debt and public debt can vary substantially across firms and over time (Rauh and Sufi 2010; Colla et al. 2013). This suggests that the debt structure decision is not merely a residual outcome but a deliberate choice that reflects firm-specific factors and strategic considerations.

[2] In a study examining different research questions, Bernile et al. (2017) show that CEOs with early-life disaster experience can influence firm acquisitions, leverage, cash holdings, and stock returns. Additionally, O'Sullivan et al. (2021) find that CEOs with early-life disaster experience would shoulder more responsibility for the firm. Chen et al. (2021) document that firms led by CEOs with early-life disaster experience have higher stock price crash risk.

[3] The ExecuComp database covers all public firms in the S&P 1500 index and firms that were previously included in the index. Representing 90% of the U.S. stock market capitalization, the S&P 1500 index includes all stocks in the S&P 500, S&P MidCap 400, and S&P SmallCap 600 indexes

[4] See: https://www.ngdc.noaa.gov/ngdcinfo/onlineaccess.html

[5] See: https://www.nhc.noaa.gov/data/

[6] See: https://en.wikipedia.org/wiki/List_of_wildfires

[7] Our findings demonstrate robustness to alternative specifications of standard error clustering. Specifically, all core results remain substantively unchanged when we employ two-way clustering of standard errors at both the firm and year levels.

[8] Following Reviewer's suggestion regarding the potential timing issues with our contemporaneous model, we also estimate models using CEO characteristics (t) to predict future debt structure ($t + 1$). The results remain consistent with our main findings, with the coefficient on CEODIS remaining negative and statistically significant for bank debt and positive and significant for public debt when predicting next-year debt structure.

[9] Following a reviewer's suggestion, we estimated our baseline model with firm fixed effects. The coefficient on CEODIS becomes statistically insignificant in this specification (coefficient = 0.041, $p > 0.10$ for bank debt; coefficient = 0.008, $p > 0.10$ for public debt). This is likely due to the limited within-firm variation in CEO early-life disaster experience, as our sample has relatively low CEO turnover during the sample period, and only 11.64% of CEOs experienced early-life disasters. Firm fixed effects models identify coefficients solely through within-firm variation over time (Roberts and Whited 2013), making them less suitable for examining the effects of time-invariant executive characteristics without substantial executive turnover (Fee et al. 2013). This limitation underscores the importance of interpreting our results cautiously, while drawing strength from the consistency across our multiple alternative identification approaches.

[10] We verify that the PSM results are robust to applying 1: 3 matching to generate power given the fairly deep pool of potentially close matches and to setting the caliper width to 0.001 or 0.1.

[11] The maximum assigned weight is no more than 6. Only about 3 percent of the control observations have weights exceeding 1. Overall, the extreme weight issue is benign in our analysis. However, we dispel any lingering concern by verifying that the evidence remains almost identical after trimming observations with large weights (above 1 or 3) before re-running the EB program. Additionally, in conducting the EB analysis based on the balancing of the mean, variance, and skewness, we continue to find supportive evidence at the 1% level.

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Appendix A

Variable definitions

Variable name	Variable definition	Source
Denpend variables		
BANK	The ratio of bank debt to total debt, calculated as the sum of term loans and revolving credit divided by total debt.	Capital IQ
PUBLIC	The ratio of public debt to total debt, calculated as the sum of senior bonds and notes, and subordinated bonds and notes divided by total debt.	Capital IQ
Independent variables		
CEODIS	Indicator is equal to one if CEO with early-life disaster experience.	Manually collect
CEODISCHILD	Indicator is equal to one if CEO with disaster experience during age 5–10.	Manually collect
Control variables		
SIZE	The natural log of total assets measured in millions of US dollars.	Compustat
LEV	The sum of long-term debt and debt in current liabilities divided by total assets.	Compustat
TANGB	Net property, plant, and equipment divided by total assets.	Compustat
ROA	Earnings before interest and taxes (EBIT) divided by total assets.	Compustat
Q	The sum of market value of equity plus book value of debt divided by total assets, where market value of equity equals price per share times the total number of shares outstanding, and book value of debt equals total assets minus book value of equity.	Compustat
ZSCORE	Altman's (1968) *Z*-score, calculated as (1.2 * working capital + 1.4 * retained earnings + 3.3 * earnings before interest and taxes + 0.999 * sales)/total assets+0.6 * (market value of equity/book value of debt).	Compustat
UNRATED	Indicator is equal to one if the firm without an S&P issuer credit rating.	Compustat
INV_GRD	Indicator is equal to one if the firm has above BBB-level reputation credit rating	Compustat
Additional control variables		
Firm characteristics		
CASH_FLOW	The sum of income before extraordinary items and deprecation and amortization, divided by total assets.	Compustat
DIV	Common dividends divided by total assets.	Compustat
R&D	Research and development expense divided by total assets. Replace research and development expense equal to 0 if that year is missing.	Compustat
FIRM_AGE	The natural log of one plus the number of years since the firm appears in Compustat.	Compustat
CEO characteristics		
AGE	The discrepancy between the fiscal year and the CEO's birth year.	ExecuComp & Manually collect
FMALE	Indicator is equal to one if the CEO is female and zero if the CEO is male	ExecuComp
TENURE	The number of years between the fiscal year and the year in which the CEO assumed the position	ExecuComp
LAW	Indicator is equal one if the CEO holds a JD or LLD degree and zero otherwise	Manually collect
DELTA	The change in the dollar value of the executive's wealth for a one percentage point change in stock price	Coles et al. 2006
VEGA	The change in the dollar value of executive's assets for every 0.01 change in the annualized standard deviation of stock returns	Coles et al. 2006