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**Refinancing Needs and Policy Transmission:
Tightening, Easing, and Corporate Adjustment
in Vietnam's Listed Real Estate Sector**

A Thesis

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Abstract

This thesis examines the impact of Vietnam's corporate bond policy tightening in 2022 and policy easing in 2023 on listed residential real estate developers, focusing on the heterogeneity of pre-policy refinancing needs, as represented by the ratio of short-term financial debt to total financial debt. Using the audited annual reports of 129 companies from 2015 to 2024, the analysis applies a difference-in-differences approach and an event-study design to study investment (change in inventories versus assets), leverage, debt maturity structure, liquidity (cash versus assets), net cash from financing activities, and interest coverage. Policy tightening is associated with stronger operating cash flows for firms with higher pre-policy refinancing needs, while policy easing is consistent with a modest increase in leverage and a trend toward shorter maturities for the same firms. Investment shows no short-term response. Robustness checks and placebo tests support these core results. The policy implications are to prioritize liquidity support during policy tightening and combine policy easing with maturity lengthening and refinancing risk-off measures, targeting firms with high short-term refinancing needs.

Keywords: Real-estate listed firms, corporate bonds; refinancing need; difference-in-differences; event study.

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Chapter 1 . Introduction and background

1.1. Introduction

Vietnam's 2025 reform agenda aim to support growth by easing credit conditions and enhancing the allocation of funds to firms and households. In many economies, easier credit tends to tilt lending toward housing if it is not managed prudently, which can sideline business investment (Jordà, Schularick, & Taylor, 2016). In Vietnam, capital flows into real estate development through two primary channels: bank loans and corporate bonds. To understand how shifts in the bond channel affect developers, and to inform the calibration of current tools, we examine the most recent pair of bond-market reforms that create a clean before-and-after contrast.

Between late 2022 and 2023, Vietnam government introduced two dated reforms that moved the bond channel in opposite directions. Decree 65/2022 tightened the issuance of private bonds through stricter regulations on conditions, use of proceeds, and information disclosure. Decree 08/2023 later loosened this channel by allowing maturity extensions and temporarily relaxing some of the tightened terms (Government of Vietnam, 2023). In July 2023, the Hanoi Stock Exchange launched a dedicated trading platform for privately issued bonds. The goal was to improve secondary-market liquidity by making it easier to buy and sell these bonds after issuance (Hanoi Stock Exchange, 2023). Taken together, these steps would change the availability and cost of bond financing, and for companies with large refinancing needs, as measured by the proportion of financial debt maturing within the next twelve months, easing would reduce rollover risk, understood as the inability to replace maturing bonds with new capital, with the first signs being longer debt maturities and larger cash reserves, while tightening would have the opposite effect.

To see whether these mechanisms reach the real economy, this paper focuses on listed housing developers. These companies finance large multi-year projects by borrowing from banks and issuing corporate bonds to investors. During the study period, many companies had large debt maturing in the next twelve months, and their audited financial statements showed timely changes in project spending, debt maturity profiles, and liquidity. The initial effects are typically best seen through financial statement-based measures: project spending pace, debt levels and maturities, cash buffers, net financing flows, and interest coverage. Tracking these variables clarifies whether tightening or loosening the bond channel slows or accelerates project investment and changes debt and liquidity composition, which is precisely the range that policymakers want to adjust.

Research questions:

The paper therefore asks two linked questions and answers them using a difference-in-differences design that compares firms with higher and lower pre-policy refinancing need before and after each reform, with exposure fixed from the last audited statements. First, will the 2022 tightening be more restrictive for developers with larger refinancing needs, and by what balance sheet margins have they adjusted? Second, will the 2023 easing restore access in a way that first manifests itself at longer maturities and higher cash, with real investment responding more slowly? These questions relate directly to research on financial stability policy focused on housing. This research examines how tools that target specific credit channels,

such as measures that affect bank lending or the bond market, shape the mix of lending and the timing of activity in the real economy (CGFS, 2023; Kuttner & Shim, 2013). By examining these mechanisms at the firm level, the results shed light on current policy choices about balancing housing finance with credit to productive sectors.

1.2. Background and motivation

In 2025, several Southeast Asian economies are experiencing increased uncertainty, prompting global investors to divert capital to jurisdictions with clear policy frameworks and stable macroeconomic conditions. Against this backdrop, Vietnam’s political stability and ongoing macroeconomic reforms are creating favorable conditions to attract more foreign direct investment (FDI), as regional uncertainty prompts investors to seek safer destinations. However, an aging population is reducing the opportunity to convert new capital into sustainable returns. To seize the opportunity, policy choices need to be timely, prudent, and targeted.

This background section provides the broader context that drives the study and highlights its importance. First, the discussion section presents the regional context. Second, this section explains the domestic timing pressures arising from demographics and government growth targets. Third, this section outlines the current reform agenda to strengthen state capacity and guide credit allocation. Finally, this section quantifies the role and scale of real estate developers using descriptive evidence, including their share of bank lending and corporate bonds, their contribution to investment and employment, and their market value. Together, these elements clarify why current credit policy choices matter and how they affect firm-level outcomes.

1.2.1. Regional context

In 2023 and 2024 several large ASEAN economies faced issues that make operating in the short term more difficult.

In Thailand, debt remains very high by regional standards. Central bank data published by Reuters suggests that the household debt-to-GDP ratio will be around 88–89% by late 2024 and early 2025 (Reuters, 2025a; Reuters, 2025b). As households become more indebted, they tend to spend and borrow less, which keeps domestic demand weak even when interest rates fall. The Thai Economic Intelligence Center also notes that lower policy rates could have a limited impact on spending while uncertainty persists (SCB EIC, 2025). For investors planning to build or expand, weak household demand increases the risk that the factories, stores, or housing projects they finance will not be fully used.

In the Philippines, Luzon is the country’s industrial core. It includes the two largest regional economies by output, as well as Central Luzon, another major industrial center. The region has faced persistent power supply stress. From April 16 to May 23, 2024, the Department of Energy recorded 6 Red Alerts and 20 Yellow Alerts on the Luzon grid. In Philippine grid code, a Yellow Alert means that reserves have fallen below the largest operating generator; a Red Alert means that reserves have been depleted, and the likelihood of rolling blackouts is high (Department of Energy [DOE], 2024). For large manufacturers and utilities, unstable power supplies increase operating costs (backup generators and fuel), disrupt production schedules, and increase the risk of late deliveries and contract penalties. These factors often cause multinational corporations to delay or divert foreign direct investments.

Indonesia's policy stance has also become more cautious toward some foreign-funded megaprojects. In 2025 the country posted its sharpest quarterly fall in foreign direct investment since 2020, and officials moved to renegotiate debt and restructure the Jakarta–Bandung high-speed rail, signalling that balance-sheet space for large projects is tighter than expected. For investors, the combination of a recent fall in FDI and ongoing debt renegotiation on a flagship project increases uncertainty about how very large projects will be financed. When financing terms are unsettled, lenders tend to raise required returns or shorten maturities, sponsors delay final investment decisions, and tender timelines slip. These frictions typically push capital expenditure to a later date.

Malaysia's 2025 plans include a revision of fuel subsidies and related measures to reduce the deficit, with recent estimates suggesting that the expected annual savings from subsidy changes will be lower than originally projected (Associated Press, 2024; Reuters, 2025b). At the same time, growth prospects for 2025 have been downgraded by both the central bank and international institutions, reflecting a weaker external environment (Reuters, 2025c; Malay Mail, 2025a; Malay Mail, 2025b). Subsidy reforms may have positive benefits for productivity and long-term fiscal health, but they are often accompanied by slower growth in the short term as prices adjust, which may make businesses more cautious about expanding investment.

Against this backdrop, Vietnam stands out as a bright spot, combining favorable supply chain restructuring with relatively clear macroeconomic policies. Activity indicators also point in the same direction: the PMI, a measure of conditions in the manufacturing and services sectors, returned to growth in mid-2025 and reached 52.4 in July, while Malaysia's PMI remained below 50 over the same period (pmi.spglobal.com). Capital flows reinforce the picture: disbursed foreign direct investment grew 8.5% year-on-year in the January–September 2025 period, the fastest nine-month pace since at least 2008. As multinationals look for places to manufacture across Asia, they tend to allocate to locations with reliable power supplies, predictable permits and established export platforms, and 2025 data shows Vietnam is a key beneficiary (tradingeconomics.com).

1.2.2. Domestic pressures from demographics and growth objective

The regional picture offers Vietnam an opportunity to attract more investment, but the timing is pressing as the country's demographic window of opportunity closes. The “demographic dividend” refers to the period when a large proportion of the population is of working age, which tends to support faster growth. Major institutions assess that Vietnam will become an aging society by the mid-2030s, meaning the proportion of older people will increase and labor force growth will slow (World Bank, 2021; United Nations Department of Economic and Social Affairs [UN DESA], 2024). As that shift occurs, potential growth typically slows, and fiscal pressures are associated with an aging population increase. That is why the choices being made now about where credit flows will have an impact that extends far beyond the current cycle.

A recent benchmark reinforces this. Thailand has entered a period of further population aging and has seen growth forecasts for 2025 lowered by official and international forecasters to around 2 percent, while research teams at major banks discuss even weaker scenarios (Reuters, 2025a; Reuters, 2025b; SCB Economic Intelligence Center, 2025). Analysts also

point to long-standing structural constraints, including high household debt and weak investment, as reasons why growth is unlikely to improve (Bank of Thailand, 2025; World Bank, 2023; World Bank, 2024a). Therefore, if Vietnam want to break out of the middle-income trap before the end of its demographic transition, new capital needs to rapidly increase productivity rather than flow into easily capitalizable assets. With Vietnam forecast to “age” by the mid-2030s, the country’s National Assembly has set an ambitious growth target of at least 8% for 2025 (Reuters, 2025; VGP, 2025). This figure is higher than central government forecasts in Singapore of 1.5-2.5%, Malaysia of 4.0-4.8% and Thailand of around 2.0% (Ministry of Trade and Industry of Singapore, 2025; New Straits Times, 2025; World Bank, 2025).

To support growth while controlling risks, the State Bank of Vietnam uses two sets of tools. First, the State Bank manages systemic liquidity by purchasing foreign currency when net capital inflows are positive, thereby building international reserves and replenishing bank reserves, and by providing short-term collateralized funds to banks in the money market. These operations reduce interbank interest rates and make funds more available, so that banks can provide new loans when permitted (State Bank of Vietnam, 2025). Second, in addition to these liquidity tools, the central bank sets a credit growth guidance for the year and allocates lending ceilings at the bank level. For 2025, this guidance is around 16%, with subsequent guidance indicating a range of 19% to 20% (Reuters, 2025). In practice, liquidity operations make targets achievable, and these targets limit and guide the pace of credit expansion. The desired outcome is abundant but disciplined credit, in contrast to Malaysia’s single-digit credit growth, Indonesia’s forecast 8–11 percent, and Thailand’s year-on-year contraction as early as 2025 (RHB Research, 2025; OJK/Bank Indonesia, 2025; Bank of Thailand, 2025; New Straits Times, 2025).

Recognizing that increasing credit is not enough if procedures are slow and compliance costs are high, Vietnam is also implementing administrative reforms by 2025. The 2025-2026 national program sets three targets: cutting unnecessary procedures by 30%, reducing processing time by 30%, and reducing compliance costs by 30%. Business procedures will be handled entirely online and without regard to provincial boundaries. In parallel, a broader streamlining program aims to reduce the size of government agencies by one-fifth, with guidance that project approvals should not be delayed during the transition (Government Portal, 2025; Vietnam News, 2025a; Reuters, 2024; Reuters, 2025d). These administrative and digital reforms aim to shorten licensing times, reduce uncertainty, and reduce operating costs for businesses. For private investment, these changes are often as important as interest rates.

1.2.3. The weight of real estate developers in finance and real activity

Vietnam’s decision to prioritise growth and credit in 2025 is understandable given rapid population ageing, but it also raises the familiar risk of asset inflation. International evidence suggests that when liquidity increases rapidly, capital flows can flow back into real estate and other speculative assets unless macroeconomic policies are carefully applied. Research after the global financial crisis shows that rapid growth in housing credit can amplify economic and financial cycles. Research also shows that simple tools, used consistently, can help stabilize these cycles. Examples include limits linking debt service to income, limits on loan-to-value ratios, limits on lending to specific sectors, and higher risk weights for banks (Jordà, Schularick, and Taylor, 2014; Kuttner and Shim, 2013; CGFS, 2023).

One place where these pressures are most directly observed is the corporate bond market. In 2024, banks led issuance with about 65% of the value, followed by real estate with about

21% (VBMA, 2024). Looking forward to 2025, the total value of bonds maturing is about VND216.7 trillion, and real estate accounts for about 55.6%, equivalent to about VND120.6 trillion, equivalent to about USD4.8 to 5.0 billion at current exchange rates. This maturity wall highlights both the scale of domestic financing of the sector and the refinancing risks it faces (VBMA, 2024; VBMA, 2025a). These realities drive strong concentration. Listed housing developers are at the heart of Vietnam's capital structure because they rely on both bank credit and the bond market. By the end of 2023, real estate loans accounted for more than one-fifth of total outstanding bank credit (Vietdata Research, 2023). On the market side, real estate issuers were the largest non-bank borrowers in the 2021 bond boom, accounting for about thirty-five percent of issuance, and they remain the top two bond issuers in 2023 alongside banks, with a market share of 22 to 23 percent compared to about 58 percent for credit institutions (VBMA, 2021; VBMA, 2023). The 2024 composition, with banks and real estate again in first and second place, reinforces that developers are the natural channel for broader financial conditions to reach real activity (VBMA, 2024). Vietnam's policy tightening in 2022 and 2023 provides a clear context for examining how financial policy impacts firms. Examining firm behavior during this period helps to shed light on how financing conditions affect investment and balance sheets.

Chapter 2 . Related literature

This section reviews key findings from the literature and develops a simple conceptual framework to guide the choice of policy periods and variables. Prior research suggests that rapid growth in housing credit can amplify fluctuations in the economy and in financial conditions. It also suggests that simple tools applied consistently, such as debt service-to-income limits, loan-to-value ratio limits, sector-specific lending caps, and higher risk weights for banks, can help smooth out these fluctuations once implementation is stable (Jordà, Schularick, & Taylor, 2014; Kuttner & Shim, 2013; Committee on the Global Financial System, 2023).

Focusing on firms, the literature identifies cause and effect by using policy changes that occur at clearly dated points in time, which shift access to funding independently of firm choices. From this evidence, two consistent patterns emerge. Firms with a higher proportion of debt maturing within twelve months are more sensitive to credit shocks, which is evident in their investment and debt repayment choices (Almeida, Campello, Laranjeira, and Weisbenner, 2011). Firms also switch between sources of funding as conditions change. When bank lending contracts are signed, eligible firms switch to bonds, while the shift back to bank borrowing occurs only partially when bond markets tighten, suggesting fluctuations in credit supply rather than changes in preferences (Becker & Ivashina, 2014). Evidence from relaxations suggests that access is restored first through longer maturities and higher cash balances, while actual investment adjusts more slowly (Acharya, Eisert, Eufinger, and Hirsch, 2019).

Based on these findings, this section explains why the study focuses on previous policy episodes that changed access to a single credit channel. The study defines *ex ante* risk using each firm's refinancing needs, measured from the most recent audit reports before each policy, as the ratio of short-term financial debt to total financial debt. It then traces the initial responses that the literature highlights as useful for policy transmission. These responses include the mix of bonds and bank loans, the maturity structure of liabilities, cash holdings as a measure of liquidity, and the pace of investment. The choice of variables follows directly from the mechanisms highlighted in previous studies. Debt structure reflects substitution among funding sources, maturity reflects rollover risk and access restoration, cash balances reflect precautionary buffers, and project spending reflects the timing of actual activity (Almeida et al., 2011; Becker & Ivashina, 2014; Acharya et al., 2019). This integrated perspective keeps the review anchored to observable outcomes, while providing clear criteria for which policy periods are most informative for analysis.

2.1. Conceptual framework for policy selection criteria

This section explains how the paper selects the policy to study. The criteria are based on papers that treat dated changes in the supply of external finance as a natural externality. In a maturity-based design, firms that happen to have more debt maturing at the time of a credit shock are forced to adjust more, which allows the researchers to separate the effects of supply from demand (Almeida, Campello, Laranjeira, and Weisbenner, 2011). Research on bond substitution shows that when one financing channel tightens, firms readjust their weights to the other channel, so that changes in the instrument mix reflect changes in the supply of credit rather than changes in debt preferences (Becker and Ivashina, 2014). Studies of policy

easing continue to demonstrate that when access is restored, the earliest firm-level responses appear in debt maturity and cash buffers, with actual investment responding more slowly (Acharya, Eisert, Eufinger, and Hirsch, 2019). Methodologically, event study designs and difference-in-differences require clear event timing and pre-policy exposure measures to support causal explanations (Angrist & Pischke, 2009). Drawing on this evidence, we adopt three practical criteria for policy selection, which the next subsection states formally and applies to Vietnam.

First, policy should operate primarily through a clear financing channel. This allows for attribution of outcome fluctuations to changes in the supply of external finance rather than changes in demand. The corporate finance literature shows that when a financing channel tightens and a firm becomes more dependent on it, the firm will make larger financial and real adjustments (Almeida, Campello, Laranjeira, & Weisbenner, 2011). In the maturity-based approach, risk is measured by refinancing needs, defined as the proportion of financial liabilities due within twelve months. As bond markets tighten over time, riskier firms will cut back on investment and restructure debt (Almeida et al., 2011). Related studies document substitution between bank loans and bonds when bank credit supply changes, which supports the analysis of the bank and bond channels separately (Becker & Ivashina, 2014).

Second, policies should have precise event dates so that we can compare before-and-after outcomes. This is standard in firm-level studies. For an example of tightening, researchers use the bankruptcy of Lehman Brothers on September 15, 2008, as the event that marked the sudden contraction in credit (e.g., Chodorow-Reich, 2014). For an example of loosening, the European Central Bank's "whatever it takes" speech on July 26, 2012, and the announcement of Direct Monetary Operations on September 6, 2012, serve as dated policy events (Acharya, Eisert, Eufinger, and Hirsch, 2019). Almeida, Campello, Laranjeira, and Weisbenner (2011) follow the same logic by defining the onset of the 2007–2008 credit crisis as a dated tightening window and comparing firms before and during the crisis based on their pre-crisis debt maturity.

Third, risk is measured from audited financial statements, using information available before the policy change, which minimizes the possibility of reverse causality. In fact, the risk measure is constructed based on factors that can be verified in financial statements: the maturity structure of interest-bearing debt, such as the proportion of financial debt due within twelve months, and the observed structure of bonds and bank debt. These data are available from the financial statements audited of the companies and related filings (Almeida, Campello, Laranjeira, & Weisbenner, 2011; Becker & Ivashina, 2014).

These criteria point to four workable policy families for firm-level analysis in Vietnam.

1. Corporate bond regulation: Rules that expand or restrict private corporate-bond issuance move the bond channel by changing firms' ability to refinance in bond markets.
2. Bank prudential regulation: Capital or risk-weight requirements change the bank-lending channel by altering banks' capacity to supply credit. Evidence from the United Kingdom shows that higher capital requirements reduce lending by regulated banks, with only partial leakage to other lenders, which indicates a distinct supply shift at the bank channel (Aiyar et al., 2014).
3. Budgeted credit programs: These are government programs that set aside a fixed amount of credit or an interest subsidy for a defined period and for named borrowers. They work through public funds, not by changing rules for the whole market, so they form a separate channel. The launch decision of these program mark a precise event

date. Exposure can be identified before the launch by checking whether a firm belongs to the target group and by using audited items that show financing needs. Evaluation studies treat these programs as a distinct mechanism (International Monetary Fund, 2023).

4. Legal and marketability rules: These are reforms that change ownership or allow pre-sale of housing. They affect developers through sales and the timing of cash collection, and through the value of collateral, rather than through banks or bonds. They have a clear effective date in the legal documents. Risk can be measured before the legal rule is applied by using audited reports, for example, contractual debts or customer advances for pre-sales and inventories of apartments held for sale. Recent studies link pre-sales rules to the rate of unfinished projects and developer behavior, and classic studies of ownership link security of ownership to investment capacity (Chen et al., 2024; Galiani & Scharfgrösky, 2010).

2.2. Conceptual framework for choosing treatment (X) and outcomes (Y)

Building on the policy setting introduced above, this section links those dated corporate-bond events to firm-level measures that can be read from audited financial statements prepared under Vietnamese Accounting Standards (VAS) and, where applicable, International Financial Reporting Standards (IFRS). A policy that tightens or eases access to a single financing channel at a known time creates variation that is external to firms' own choices, so for firms that rely on that channel the policy functions as an exogenous shock. Empirical literature implements this setting by defining a measure of exposure before the policy date and then tracking outcomes that theory predicts should move first.

The exposure concept is the firm's refinancing need before the policy. Refinancing need refers to the share of financial obligations that will come due soon and therefore must be repaid or rolled over. The maturity-based identification in Almeida et al. shows that when a credit shock occurs on a specific date, otherwise similar firms with more obligations coming due soon face stronger refinancing pressure and adjust investment and liabilities more strongly (Almeida, Campello, Laranjeira, & Weisbenner, 2011). In Vietnamese financial statements, the primary balance-sheet presentation often groups financial and non-financial current items together. To capture refinancing pressure rather than operating payables, exposure is read from the notes on interest-bearing borrowings and finance leases and is defined as the share of short-term financial debt in total financial debt measured in the last audited year before the policy date. Because this information predates the policy, it is predetermined with respect to the shock and is suitable for causal interpretation.

For residential and commercial developers, the cash a firm spends to build units that will ultimately be sold is recorded as inventory until those units are handed to buyers. This is how Vietnamese Accounting Standards (VAS) work in practice, and it is the same idea in the international rulebook. The international rules are straightforward when translated into plain language. The standard called IAS 2 ("Inventories") says that goods a firm holds for sale, and goods it is currently producing for sale, belong in inventories and remain there at cost until the sale happens (IFRS Foundation, 2003/2021). The standard IAS 23 ("Borrowing Costs") says that interest that directly relates to building those inventories can be added to the cost of inventory while the project is under construction rather than being expensed immediately (IFRS

Foundation, 2007/2019). The revenue standard IFRS 15 (“Revenue from Contracts with Customers”) says that the firm books revenue when control of the unit passes to the buyer, which for housing is typically the handover date, not the contract-signing date (IFRS Foundation, 2014). Put together, these rules imply a simple accounting sequence that maps cleanly into an investment measure. When a developer spends on a projects, the real-estate inventories line goes up; when finished units are delivered and revenue is recognized, that line goes down and the matching cost of sales is recorded. The year-over-year change in real-estate inventories divided by total assets provides an audited, size-neutral signal of net project investment during the year.

This first outcome connects directly to identification in corporate finance. In maturity-based designs, when external finance becomes harder to obtain at a known date, firms that entered the event with more debt maturing soon (higher refinancing need) cut investment more because they cannot postpone near-term repayments. For developers, that reduction appears as a smaller increase or even a decline in real-estate inventories around the shock (Almeida, Campello, Laranjeira, & Weisbenner, 2011). Evidence on substitution across financing instruments shows that when the supply of bank loans tightens, firms that can issue bonds tend to switch toward bonds, and when bond market access tightens the reverse switch toward loans is only partial. This supports interpreting changes in a firm’s debt mix and financing flows as movements in credit supply rather than shifts in demand (Becker & Ivashina, 2014). Evidence on easing episodes further shows that when access is restored, constrained firms often lengthen maturities and build cash buffers first, with real investment reacting more slowly. In that pattern, inventory growth may lag the recovery in liquidity and maturity structure in the first year after relief (Acharya, Eisert, Eufinger, & Hirsch, 2019).

The second set of outcomes concerns the level and maturity structure of liabilities. A tightening that restricts bond refinancing forces firms either to reduce debt or to shift toward shorter maturities, whereas an easing designed to relieve near-term maturity allows firms to extend maturities first. These responses are visible in standard leverage ratios and in the short-term share of financial debt. The interpretation that these changes reflect movements in the supply of credit rather than shifts in firm preferences is supported by evidence that firms substitute between bank loans and bonds when the relative availability of these instruments’ changes (Becker & Ivashina, 2014).

A third outcome is liquidity. Credit easing that restores access, particularly easing that permits maturity extensions, often leads exposed firms to rebuild cash buffers before committing to additional investment. Studying the European Central Bank’s Outright Monetary Transactions, Acharya et al. show that constrained firms increased cash holdings and lengthened maturities as the earliest reaction, while real investment responded more slowly (Acharya, Eisert, Eufinger, & Hirsch, 2019). Cash to assets is therefore an informative indicator in the period following an easing.

A fourth outcome is external financing cash flow. Balance-sheet ratios capture stocks, but it is also important to know whether firms actually raised or repaid funds around the policy date. Net cash flow from financing activities scaled by assets summarizes the combined effect of new borrowing, repayments, and equity issuance. This measure is useful for detecting whether access to the corporate-bond market was restored after a policy easing and for verifying substitution between instruments in a way that is consistent with the credit-supply literature (Becker & Ivashina, 2014).

The final outcome is debt-service capacity. Interest coverage, defined as earnings before interest and taxes divided by interest expense, summarizes whether operating profit can meet the cost of debt. This variable links the Vietnamese setting to a broader debate on weak or so-called zombie firms that remain active despite low coverage under prolonged forbearance or easy financing (Banerjee & Hofmann, 2018). Tracking interest coverage around a tightening helps detect whether refinancing stress rises most firms with greater exposure and tracking it around an easing helps assess whether stress falls even when investment is slow to recover.

These choices keep the design close to the international literature while remaining implementable from audited statements. Exposure is measured once from the last audited accounts before each event and does not change in response to the policy. Outcomes are read from standard line items that prior work identifies as the first margins to respond to shifts in credit supply. With exposure fixed before the event and outcomes observed in the event and post-event years, the comparison of more exposed and less exposed firms can be interpreted as the effect of the policy under the usual difference-in-differences logic, conditional on pre-policy controls and parallel trends (Acharya et al., 2019; Almeida et al., 2011; Banerjee & Hofmann, 2018; Becker & Ivashina, 2014).

Chapter 3 Data and variables construction

3.1. Data

Beginning 1 January 2015, Vietnam adopted a new corporate accounting regime under Ministry of Finance Circular No. 200/2014/TT-BTC, which superseded Decision No. 15/2006/QĐ-BTC. The new framework materially revised recognition and presentation rules in financial statements. In particular, it redefined the classification of current versus non-current assets and liabilities, updated principles for recognizing revenue, expenses, borrowing costs, and foreign-exchange differences, and allowed greater flexibility in presenting the cash-flow statement under either direct or indirect method. It also expanded and updated the corporate chart of accounts. Because these changes affect measured leverage, liquidity, and performance, our baseline tests emphasize the post-2015 period, this design anchors the analysis in 2015 onward to keep accounting treatment comparable across firms

Firm-level financials are sourced from the FiinPro Platform (FiinGroup, n.d.-a), a widely used Vietnamese financial database that consolidates information from listed companies' annual reports, stock-exchange filings, and official disclosures. The FiinPro dataset is proprietary and available by institutional subscription. Variable names and definitions follow the FiinPro-X User Guide (FiinGroup, n.d.-b). We extract balance sheets, income statement, and cash-flow items for listed real-estate developers, then construct firm-year panels consistent with sector classifications. Variables used include short-term debt, long-term debt, cash and cash equivalents, interest expense, net cash flow from financing, contract liabilities/customer advances, and inventories.

Data description

All financial indicators in this study are constructed from audited financial statements of companies prepared in accordance with Vietnamese Accounting Standards (VAS). It is based on detailed rules, prioritizing historical cost and setting out clear requirements for recognition and presentation. Within this framework, we identify items related to financial instruments, consolidation, and revenue, and calculate ratios used in the analysis. These ratios become variables in the empirical models.

The sample is an annual data panel of 129 listed real estate companies observed from 2015 to 2024. Some companies enter the sample after 2015 and others leave the sample before 2024 due to bankruptcy, delisting or merger, so not all companies appear in every year. This model reflects industry entry and exit over multiple credit and policy cycles, allowing us to track how leverage, liquidity, investment intensity, and balance sheet health change as financial conditions change.

To maintain comparability across firms and over time, the main empirical feature focuses on the period 2015 to 2024. Where available, earlier observations are used only to describe pre-reform trends and to demonstrate that results are independent of the choice of starting year. From the financial reporting metrics described below, we construct the outcome variables used in the analysis.

To make the construction of the variables transparent, the next two tables present basic definitions and summary statistics. Table 1 defines each variable and maps it to the exact VAS entries and denominators used for normalization. The variable names used throughout the report are Δ Inventory/Assets, Leverage (Debt/Assets), ST Debt Ratio, Cash/Assets, EFCF/Assets, Interest Coverage, and ST Debt Ratio (t-1), which serves as a measure of pre-policy risk. Table 2 reports descriptive statistics for these variables across all firm-year observations (mean, standard deviation, 10th and 90th percentiles, and N). Interest Coverage is set to missing when the firm reports zero interest expense.

Table 1. Data description

Variables	Short definition / formula	Financial statement line items of VAS	Normalization (denominator)
Leverage (Debt/Assets)	Total financial debt / Total assets	Short-term borrowings + Long-term borrowings (incl. finance leases); Total assets	Total assets at t
ST-Debt share	Short-term financial debt / Total financial debt	Short-term borrowings; Total borrowings (short + long)	Total financial debt at t
Cash/Assets	Cash & cash equivalents / Total assets	Cash and cash equivalents; Total assets	Total assets at t
EFCF/Assets	Net cash flow from financing activities / Total assets	Net cash from financing activities; Total assets	Total assets at t
Interest coverage	Operating profit from core operations / Interest expense (missing if interest = 0)	Operating profit from business activities; Interest expense	None (ratio)
ST-Debt share (t-1)	Short-term financial debt / Total financial debt, measured at t-1	Short-term borrowings; Total borrowings	Total financial debt at t-1
Δ Inventory/Assets	Delta Inventory / Total assets, where Delta Inventory = Inventory _t - Inventory _(t-1)	Inventories; Total assets	Total assets at t

Table 2. Data summary

Variable	Mean	Std. dev.	P10	P90	N
Leverage (Debt/Assets)	0.209	0.208	0.000	0.476	1112
ST-Debt share	0.604	0.332	0.145	1.000	947
Cash/Assets	0.063	0.084	0.004	0.161	1112
EFCF/Assets	0.016	0.154	-0.082	0.131	1107
Interest coverage	126.695	1358.047	-0.593	138.757	891
ST-Debt share (t-1)	0.601	0.334	0.136	1.000	853
Δ Inventory/Assets	0.001	0.123	-0.064	0.087	975

3.2. Measures: outcome and exposure

All measures are taken from audited annual financial statements prepared under VAS. I group them into three sets: outcomes (Y), key exposures (X) and policy changes. The following sections define each variable in turn and map them to the underlying VAS line items and economic meaning.

Exposure (pre-policy refinancing need): Exposure captures how dependent a firm is on near-term refinancing before a policy arrives. It is measured from the debt note as short-term financial debt divided by total financial debt in year (t-1). Short-term financial debt includes interest-bearing borrowings and lease liabilities due within twelve months. Total financial debt is the sum of short- and long-term financial debt. The variable is

$$Exposure_{i,t-1} = \frac{Short_term_financial_debt_{i,t-1}}{Total_financial_debt_{i,t-1}}$$

Because it is fixed before the policy, exposure cannot be changed by the policy itself. This maturity-based measure follows the idea that firms with more debt coming due must adjust more when a dated credit shock hit (Almeida, Campello, Laranjeira, & Weisbenner, 2011). When total financial debt is zero, the exposure measure is left missing to avoid dividing by zero.

Investment in projects: Investment is the year-over-year change in real-estate inventories divided by total assets. Real-estate inventories include properties under development and other items held for sale that relate to projects. The measure is

$$Investment_{it} = \frac{Real_estate_inventories_{it} - Real_estate_inventories_{i,t-1}}{Total_assets_{it}}$$

This maps directly to how developers record project spending under VAS and IFRS. Costs are capitalized as inventories while projects are being built, and inventories fall when units are delivered. Using inventories, rather than construction-in-progress, aligns with the fact that Vietnamese developers typically book project costs in inventories. If a firm reports part of development as “investment property under construction,” the main measure continues to use inventories for sample consistency; a robustness specification adds that balance for the subset that reports it.

Leverage: Leverage summarizes the overall use of debt financing on the balance sheet. It is total financial debt divided by total assets, where financial debt includes interest-bearing borrowings and lease liabilities. The variable is

$$Leverage_{it} = \frac{Total_financial_debt_{it}}{Total_assets_{it}}$$

When credit supply tightens, deleveraging through repayments or asset shrinkage raises or lowers this ratio. When access is restored, leverage can increase as firms refinance or raise new funds.

Maturity structure of liabilities. Maturity structure records whether firms shorten or lengthen the profile of their debt after a policy shock. It is the short-term share of financial debt in total financial debt in year (t):

$$Maturity\ share_{it} = \frac{Short_term\ financial\ debt_{it}}{Total\ financial\ debt_{it}}$$

A rise indicates a tilt toward near-term obligations. Fall indicates maturity extension. Together with leverage, this variable helps interpret supply-side movements and loan–bond substitution when one channel tightens or reopens (Becker & Ivashina, 2014).

Liquidity: Liquidity is cash and cash equivalents divided by total assets. Cash and cash equivalents include cash on hand, demand deposits, and highly liquid investments with original maturities of three months or less. Restricted cash is excluded unless the issuer classifies it as cash equivalents in the notes. The variable is

$$Liquidity_{it} = \frac{Cash\ and\ cash\ equivalents_{it}}{Total\ assets_{it}}$$

International evidence shows that when access to funding is restored, constrained firms often rebuild cash buffers and lengthen maturities before increasing real investment, so liquidity is expected to react early after easing episodes (Acharya, Eisert, Eufinger, & Hirsch, 2019).

External financing cash flow. External financing cash flow shows whether firms raised or repaid funds around the policy date. It is net cash flow from financing activities divided by total assets, taken from the cash-flow statement:

$$EFCF_{it} = \frac{Net\ cash\ flow\ from\ financing\ activities_{it}}{Total\ assets_{it}}$$

This flow complements stock ratios. A positive response after easing is consistent with renewed access to the bond market or a shift back from bank loans when bonds become available again, in line with evidence on substitution across financing channels (Becker & Ivashina, 2014). A robust version excludes dividends, and share repurchases to isolate debt-market access.

Debt-service capacity: Debt-service capacity is interest coverage, defined as earnings before interest and taxes divided by interest expense:

$$Interest\ coverage_{it} = \frac{EBIT_{it}}{Interest\ expense_{it}}$$

In Vietnamese financial statements, EBIT corresponds to operating profit; where a separate EBIT line is absent, operating profit is used. Interest coverage, defined as operating profit divided by interest expense, summarizes the capacity to service debt and links the setting to the literature on financially weak or zombie firms; when interest expense is zero or negative because of capitalization or hedging, the ratio is set to missing in the main specification and addressed in robustness checks using an inverse hyperbolic sine transformation

(Banerjee and Hofmann, 2018). Refinancing need, measured as short-term financial debt over total financial debt, captures the maturity-based exposure used to identify credit-supply shocks (Almeida et al., 2011). Liability and maturity ratios, together with financing flows, allow the analysis to speak to loan-to-bond substitution and the reconfiguration of debt documented in prior work (Becker and Ivashina, 2014). Finally, cash holdings are included to assess the documented pattern that easing episodes initially raise liquidity buffers rather than real investment (Acharya et al., 2019).

Chapter 4 Empirical strategy

The key challenge is that the reforms affected the entire economy and took place against a backdrop of changing housing demand and macroeconomic conditions. If we simply compare pre- and post-reform outcomes, the change may reflect the cycle rather than the policy.

Our strategy is to use policy dates as time-stamped shocks and a cross-section of firms as a source to identify differences. For each policy, we classify firms according to the extent to which they needed to refinance before the policy was enacted, which is measured from audited financial statements by taking the ratio of short-term financial debt to total financial debt. Firms with higher refinancing ratios are more exposed to bond market tightening and benefit more from bond market easing. Since this exposure is measured from pre-policy records, it is predetermined and cannot be shaped by policy.

We then estimate difference-in-differences models to compare firms that are more and less exposed before and after each policy date. To isolate the impact of the policy, we include firm fixed effects to capture time-invariant differences across firms (business model, governance, location) and year fixed effects to capture economy-wide shocks in each year (demand, financing costs, regulation unrelated to the policy). In short, identification is based on whether outcomes are more variable for firms with high exposures at the time the policy is introduced.

To test timing and dynamics, we supplement the main specification with an event study around each reform. This test captures *ex ante* trends (they should be flat and similar across exposure groups) and traces the path of the adjustment after the event.

Operationally, we first construct a chronological timeline of reforms from 2015–2024, screen them using our criteria, and select a few that provide clear identification. For selected policies (e.g., 2022 tightening and 2023 easing in the bond channel), we define the event date and post-event window, construct exposures from pre-policy balance sheets, and run the models described above. A summary table lists all candidate policies and the reasons for their inclusion.

4.1. Policy classification

Table 3. Policy table (Vietnam, 2015–2024) organized by the four pipes

Year (effective)	Policy	Type	What it does	Why it mattered
2018 (Feb 2019)	Decree 163/2018	Corporate-bond regulation	Creates a modern framework for private corporate-bond issuance (documentation/disclosure, international offering)	Opened a second financing pipe next to bank loans. Together with Decree 153, it set up the 2021 issuance surge, with real estate becoming a

			option), lowering frictions to issue bonds.	major user. This is the baseline “open-pipe” period before later shocks.
9-Jul-2020	Decree 81/2020	Corporate-bond regulation (tightening rules of 163)	Tightens placement frequency/size and disclosure (e.g., caps relative to equity; closer oversight).	Slowed issuance and improved discipline but did not close the bond pipe. It is best read as a mild tightening, not a regime break, so firms still relied on bonds into 2021.
31 Dec 2020 (Jan 2021)	Decree 153/2020	Corporate-bond regulation (re-coding 163)	Re-codes private-bond rules; clarifies placement/trading mechanics for domestic and offshore offerings.	Reduced procedural frictions and directly supported the 2021 boom. Confirms the bond channel was fully open just before the 2022 tightening.
16-Sep-2022	Decree 65/2022	Corporate-bond regulation (tightening)	Sharp tightening of private-bond issuance: stricter investor eligibility, use-of-proceeds policing, and enhanced disclosure.	A discrete, well-dated clamp-down that triggered a steep drop in issuance, especially for real estate, and created a “maturity wall.” It gives clean before/after variation for testing investment and balance-sheet responses.
5-Mar-23	Decree 08/2023	Corporate-bond regulation (temporary relief)	Allows maturity extensions (up to 24 months), in-kind repayment, and suspends parts of Decree 65 to ease near-term refinancing stress.	Released near-term refinancing pressure and restarted issuance, mostly in H2 2023. Lets us test whether firms first build cash and lengthen maturities rather than raise investment immediately.
Nov 2019 (phased 2020)	Circular 22/2019	Bank-prudential regulation	Reduces banks’ ability to use short-term funding for medium/long-term loans (toward 30% cap) and raises risk weights on certain real-estate credit.	Made bank credit for long-tenor projects tighter at the margin and nudged borrowers toward bonds in 2020–2021. Background for why the bond pipe mattered so much before Decree 65.
3-Apr-23	Decree 10/2023	Legal/marketability rule	Enables ownership certificates for condotel/officetel units that meet conditions—improves saleability/presales in those segments.	Works through sales and cash collection rather than financing. Effects vary by locality and segment, so it is a separate product-market channel, not a system-wide credit shock.
Mar-23	Resolution 33/2023	Budgeted credit program	Announces a preferential-credit envelope for social/worker housing via state-owned banks at below-market rates.	Targeted and time-bound support with uneven take-up among listed developers.

				Useful context but not a uniform identification shock in our firm sample.
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4.2. Policy selection

By 2021, the bond market had become the main source of additional capital for Vietnamese real estate developers. After Decree 153 came into effect, the total value of corporate bond issuance in 2021 reached about VND722.7 trillion, of which real estate enterprises accounted for about VND318.2 trillion, equivalent to about 44%. Simply put, a typical listed real estate developer raised new capital by margin through bonds rather than through bank loans. This is important because when a subsequent regulatory change directly restricts or re-opens this same market, it is likely to shift the credit supply rather than the underlying demand of companies. This is exactly the context that firm-level studies use when they define risk levels by the amount of debt maturing immediately before the policy date. On September 16, 2022, Decree 65 tightened the issuance of private bonds with stricter investor conditions, stricter rules on the use of proceeds, and stricter information disclosure. The issuance date is set in the law and is easy to verify. The market reacted quickly after the law was announced. As of the second quarter of 2022, total issuance was down about 45% year-on-year, and issuance by real estate companies was down about 83.4%. This decline deepened after September. This shows a clear comparison between before and after. Companies that, before the decree, had more debt maturing in the next 12 to 24 months, would be more vulnerable to the sudden loss of access to the bond market. We therefore expect them to cut back on investment more, shift more liabilities and hold more cash during this event.

A second event in the opposite direction occurred on March 5, 2023. Decree 08 extended maturity for up to 24 months, allowed for in-kind repayments and suspended some strict regulations. The issuance date is clear again. Issuance restarted after March, and the majority of issuance volume for the year has come in the second half of 2023. Previous studies of credit easing show that the first response is to manage liabilities. Companies tend to extend maturity and accumulate cash rather than increase tangible investment immediately. To identify this phenomenon, we look at the cash-to-assets ratio, the current debt ratio and net cash flow from financing activities. The risk measure remains the same and is still based on the debt maturities recorded before the policy was enacted.

The other candidates are less suitable for the enterprise-level transparency design when we rely solely on financial statements. Circular 22 is implemented in phases and has many variables, so enterprise risk will be muddled unless we have loan-level data that matches banks and enterprises. Resolution 33 is narrow in scope and targets social housing and housing for workers. Decree 10 has changed product market conditions and implementation varies across provinces. These measures are useful for examining context and heterogeneity, but they do not provide the same clear, two-sided, single market identification as Decree 65 in 2022, followed by Decree 08 in 2023.

In this typology, the 2022 and 2023 corporate bond decrees are ideal because they represent consecutive shocks to the same financing channel with precise dates. Decree 65 (September 16, 2022) restricts private placements; Decree 08 (March 5, 2023) then relaxes the same channel by allowing maturity extensions and suspensions of selected terms. Since both events impact the same channel, exposure can be fixed in advance each day using the ratio of

short-term financial debt to total financial debt from the most recent audit reports, which represents the need for refinancing in a maturity sense (Almeida et al., 2011). We then compare firms with higher and lower exposures on each day on the outcomes that will change first: cash holdings, maturity structure and debt levels, external financing cash flows, investment in projects under construction, and interest coverage. Previous evidence on relaxation suggests that Decree 08 should first increase cash balances and lengthen maturities, with actual investment recovering later (Acharya et al., 2019).

4.3. Estimating equation

The aim of this study is to measure how two dated changes in Vietnam’s corporate bond rules affected listed real estate developers. The tightening in 2022 restricted access to bond refinancing, and the subsequent easing in 2023 relaxed parts of those restrictions and allowed maturity extensions. The economic mechanism is a change in the supply of one financing channel at known calendar dates that applies to all firms at once. Firms differ in how exposed they are to that change because some had more near-term financial debt coming due before the policy while others did not. The empirical question is therefore not whether the policies mattered in the aggregate but how much more they changed outcomes for firms that were more exposed ex ante relative to firms that were less exposed.

The identification goal can be stated in potential outcomes language. For any firm (i) in year (t), the policy environment is determined by calendar time while the intensity of treatment is the firm’s pre policy refinancing need. Let $Expo_{i,t-1}$ be a continuous measure of exposure be fixed from the last audited statements before the policy date, constructed as short term financial debt divided by total financial debt from the notes to the accounts. Because this quantity is read entirely from audited information that predates the policy, it is predetermined with respect to the policy shock. The object of interest is the change in an outcome Y_{it} that is attributable to the policy, scaled by $Expo_{i,t-1}$. Intuitively, when the policy arrives, firms with a higher value of $Expo_{i,t-1}$ should react more strongly if the policy truly moves the bond financing channel. This is the same logic as in maturity-based designs in corporate finance and it fits the structure of a difference in differences with a continuous dose measured before treatment.

Two maintained conditions make this logic operational. First, there must be no reverse causality from the policy to exposure, which is enforced by fixing exposure in year ($t-1$) before the policy date and never re estimating it after the policy. Second, absent the policy, firms with higher and lower exposure would have followed the same average change in outcomes after conditioning on firm fixed effects, year fixed effects, and a small set of pre policy controls. This is the standard parallel trends condition used in difference in differences with panel data and two-way fixed effects. Under these conditions, the interaction between the dated policy and the predetermined exposure recovers a causal effect per unit of exposure.

This reasoning leads directly to the first estimating equation. For an outcome Y_{it} constructed from audited statements, define $Post_t^{65}$ equal to one for fiscal years that fall after the 2022 tightening and zero otherwise, and define $Post_t^{08}$ equal to one for fiscal years that fall after the 2023 easing and zero otherwise. Let α_i denote firm fixed effects that absorb all time invariant firm traits and let δ_t denote year fixed effects that absorb economy wide shocks. Let $W_{i,t-1}$ denote the vector of pre-policy controls measured in fiscal year $t - 1$: log total assets, profitability, cash to assets, leverage to assets, asset tangibility, and prior sales growth. The exposure measure $Expo_{i,t-1}$ is defined separately and is not part of $W_{i,t-1}$; it enters only through interactions with the policy indicators.

The baseline difference in differences with a continuous exposure is

$$Y_{it} = \alpha_i + \delta_t + \beta_{65}(Expo_{i,t-1} \times Post_t^{65}) + \beta_{08}(Expo_{i,t-1} \times Post_t^{08}) + \gamma W_{i,t-1} + \varepsilon_{it}$$

Because $Expo_{i,t-1}$ is fixed within each event window, its level effect is absorbed by firm fixed effects, so adding $Expo_{i,t-1}$ to $W_{i,t-1}$ would be redundant. The coefficient β_{65} answers the question: after the 2022 tightening, by how much the outcome changed for a firm with one more unit of pre policy exposure relative to a firm with one less unit, holding fixed common shocks and firm specific averages. The coefficient β_{08} answers the analogous question for the 2023 easing. Because both policies are commonly timed and apply to all firms at once, the two interactions can enter the same regression without creating staggered timing complications. The fixed effects difference each firm from itself over time and difference every year from the average year, so the identifying variation comes from the cross sectional spread in $Expo_{i,t-1}$ interacted with the dated policy dummies. Standard errors are clustered by firm to account for serial correlation within firms over time.

The first equation summarizes an average post effect, but it does not show when the effect starts, how long it lasts, or whether more exposed firms were already on different trends. To recover timing, we estimate an event study that replaces the single post indicator with a set of event time indicators k and interacts each of them with the same exposure measured before the policy. The reference period is the last full fiscal year before the policy, denoted $k = -1$, so every coefficient is a deviation from that year and the pre policy coefficients provide a direct test of parallel trends.

We implement this design for both policy dates. For the September 2022 tightening, exposure is fixed from fiscal year 2021 statements and the coefficients for $k \geq 0$ trace the onset and persistence of tighter financing conditions. For the March 2023 easing, exposure is fixed from fiscal year 2022 statements and the analogous coefficients show how access is restored. We report specifications estimated separately for each episode and a pooled specification that stacks the two windows while allowing each episode to have its own event time profile. In all cases we include firm and year fixed effects, and interpretation relies on the absence of differential pre trends. The dynamic specification is

$$Y_{it} = \alpha_i + \delta_t + \sum_{k \neq -1} \theta_{65}(Expo_{i,t-1} \times 1\{t - t_{65}\}) + \gamma W_{i,t-1} + \varepsilon_{it}$$

where t_{65} is the policy year for the tightening under annual reporting. The two policy shocks are only one year apart, so a simple before-after comparison might conflate the impact of the 2022 tightening with the movements following the 2023 easing. To prevent this, I treat each policy as a separate event and construct an event-time series around each date. For tightening index years I relative to 2022, and for easing index years I relative to 2023. In the main specification, these two event-time series enter the same regression, each interacting with a measure of policy exposure fixed from the most recent pre-event audited accounts. This assignment forces changes occurring in 2022 to be affected by the tightening terms and changes occurring in 2023 to be affected by the easing terms. Firm fixed effects capture all time-invariant differences across firms, and year fixed effects capture economy-wide shocks that affect everyone in the same calendar year. The identification therefore comes from differential movements between more and less exposed firms at each policy date, rather than from general trends.

The event study uses leading coefficients to examine parallel trends before each event, and lag coefficients to track post-event adjustment. The leading coefficient two or more years before this date should be close to zero if the design is valid, meaning that more and less exposed firms were moving in the right direction before the policy was implemented. Lags from the event year onward show when the impact appears and whether it persists.

To further guard against overlap, I also estimate separate time periods focusing on each event. Around the 2022 tightening, I use a period that ends before the easing year, so that 2023 fluctuations cannot affect the tightening profile. Around the 2023 tightening, I use a period that starts after the tightening year in the pre-test of the trend, so that the previous shock does not affect the easing profile. Since both policies are typically applied to all firms rather than alternating across groups, the estimates do not suffer from the analytical problems that arise when alternating is applied in bivariate fixed effects models. Standard errors are clustered at the firm level.

Since financial statements are prepared annually, the tightening index is 1 for fiscal years ending after the effective date of Decree 65, and the loosening index is 1 for fiscal years ending after the effective date of Decree 08. In the main specification, the first year after tightening is 2022 and the first year after loosening is 2023. As a robustness check, the tightening threshold is shifted to 2023 to reflect the part of fiscal year 2022 that occurred before the September announcement; the conclusions remain unchanged. In the event study, the reference period with $k = -1$ is the last full fiscal year before the event, so all dynamic coefficients are interpreted as deviations from the pre-policy year.

This coding links the empirical model to the economic question. In the difference-in-differences equation, the interaction between the policy index and exposure measured before policy reflects how firms with larger refinancing needs adjust in the face of general policy. The event-time version replaces a single ex post coefficient with leading and lagged coefficients, allowing for a pre-trend test and demonstrating the persistence of the effects. These specifications explicitly use known policy dates, audited ex ante policy information, and outcomes that theory predicts will change before access to bond financing is tightened and then loosened.

The control variables are designed to limit residual demand differences that could have changed with the outcome even if policy had not changed. To prevent feedback from policy to the controls, each control is measured in fiscal year t minus one, which is the last audited year before each policy date. Size is the natural logarithm of total assets. Profitability is earnings before interest and taxes over total assets. Sales growth is measured from year t minus two to year t minus one. Liquidity is cash and cash equivalents over total assets. Leverage is total financial debt over total assets. Tangible assets are property, plant, and equipment over total assets and serve as a proxy for collateral. Together, these variables capture size, internal cash generation, expansion rate, liquidity buffer, and capital structure. Since firm fixed effects remove differences that do not change within a firm over time, controls that focus on time-varying fundamentals are often used in firm-level panels.

Inference follows standard practice for panel data, where errors can be correlated within a firm across years. Standard errors are clustered at the firm level, so that inference remains valid when serial correlation is used. As a check, results are also reported with two-way clustering by firm and by year to allow for correlation across firms within a given year

due to aggregate shocks. In both cases, variance estimates are robust to unequal error variance across observations.

Extreme observations are treated before estimation so that a few accounting outliers do not dominate the adjusted coefficients. For each calendar year, continuous ratios are classified to the first and ninety-ninth percentiles. The same rule applies to changes in real estate inventories to assets and net cash flow from financing activities to assets, which are typically the most volatile factors. The percentile classification rule is fixed across all specifications and is reported in the Data section. The main results are also reported with tighter cutoffs at the second and ninety-eighth percentiles to show that the conclusions are not dependent on a particular cutoff choice.

The rules for handling missing data are set conservatively to preserve the structure needed for difference-in-differences and event studies. Each firm is included in the analysis window around a policy only if it has an observed exposure in year t minus one, the audited reporting year immediately before the policy milestone. Outcome variables are used when available, so that a firm still contributes to the dynamic trajectory in the years for which data are available. Important accounting items such as real estate inventories, cash and cash equivalents, financial debt, and interest expense are not interpolated. To test the robustness of the inference against selective dropout, observations are weighted according to the probability that the firm remains in the sample around each policy milestone; this probability is estimated from the pre-policy specification.

The model structure reflects the policy sequence in two ways. The first estimates two separate specifications, each around an event. For the September 2022 tightening, the exposure is fixed from the 2021 financial statements. For the March 2023 loosening, the exposure is fixed from the 2022 financial statements. Each specification includes firm and year fixed effects and an interaction between the post-event period and the pre-policy exposure; the event-time version replaces a post-period coefficient with leading and lagging coefficients multiplied by the exposure to examine the pre-event trend and describe the dynamics. The second approach combines both episodes into a single equation by including both post-period indicators, each interacting with its own pre-policy exposure, while keeping a common set of firm and year fixed effects. The combination approach increases statistical efficiency and allows for direct comparisons between tightening and loosening in the same equation, while the disaggregated approach isolates each episode. The results are reported for both approaches and show consistent inferences.

Robustness tests address measurement choices and design assumptions. Exposure is replaced by a two-year maturity wall when the disclosure includes a maturity schedule, i.e., the proportion of financial debt maturing in the next twenty-four months to total financial debt at year t minus one. When the disclosure allows, exposure is also approximated by the proportion of bond debt to total financial debt at year t minus one. Both approaches follow the same maturity-based identification logic and increase the association between exposure and the bond channel. Financial firms, if any, are excluded because their accounting regimes and financing methods are not comparable to those of real estate developers. Asset-based ratios are recalculated using beginning-of-year assets rather than year-end assets to verify that normalization does not influence the results. In all these tests, the interaction structure and fixed effects are kept constant so that any coefficient changes can be interpreted as measurement sensitivity, not due to changes in model design.

Heterogeneity is studied to learn where the policy bite is strongest. The sample is split into three equal sized groups by size using total assets at year (t-1), and into three equal sized groups by initial leverage. It is also split by proxies for business models. Presale intensity uses contract liabilities divided by total assets at year (t-1) when available, and inventory intensity uses inventories divided by total assets at year (t-1). Within each group the interaction between policy and exposure is estimated, and coefficients are compared across groups to assess differences in sensitivity. The term terciles is used for these three equal sized groups.

Placebo tests provide additional credibility. A placebo assigns a pseudo tightening date two years before the actual event and repeats the event study with exposure interacted leads and lags. If the identifying assumptions are held, the coefficient on placebo leads and lags should be close to zero. A second placebo shifts the easing window backward by one year. A third placebo randomizes pseudo event years across firms while keeping exposure fixed at the true (t-1). Any significant effect in these falsification exercises would suggest spurious correlation rather than a causal response to the actual policy.

These implementation choices follow best practice in applied microeconometrics. Controls are predetermined and therefore cannot be moved by the policy. Exposure is fixed before the event by construction. Inference acknowledges correlation of errors within firms and across years. A systematic set of robustness checks evaluates whether the results are specific to the bond channel shocks rather than artifacts of scaling, outliers, or sample selection.

Chapter 5 Results Analysis

Throughout the following tables, the results are defined as follows. Δ Inventory/Assets is the change in real estate inventory divided by total assets. Leverage is financial debt divided by total financial debt. ST Debt share is short-term financial debt divided by total financial debt. Cash/Assets is cash and cash equivalents divided by total assets. Financing CF/Assets is net cash flow from financing activities divided by total assets. Interest coverage is earnings before interest and taxes divided by interest expense. Numbers in parentheses are cluster standard errors. Asterisks mark statistical significance at conventional levels, with one, two, and three asterisks for ten, five, and one percent. N is the number of firm-year observations, and R-squared is R-squared within. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

These definitions and notations apply to all subsequent tables in this section.

Table 4. Pooled DiD

Term	Δ Inventory/Assets	Leverage (Debt/Assets)	ST-Debt share	Cash/Assets	EFCF/Assets	Interest coverage
Exposure x Post65	0.002 (0.034)	0.029 (0.032)	-0.103 (0.074)	0.017 (0.022)	0.084** (0.041)	311.540 (229.261)
Exposure x Post08	-0.032 (0.039)	0.035 (0.031)	0.157* (0.086)	-0.006 (0.020)	-0.052 (0.039)	77.509 (145.698)
N	834	834	793	834	831	744
R2	0.0147	0.247	0.081	0.075	0.026	0.0245

Table 4 combines the two policy periods into one specification and reports the coefficients on Exposure \times Post-65 and Exposure \times Post-08 for each outcome. There are two important patterns. First, after the 2022 tightening, CF Finance/Assets increases for firms with higher exposure, with an estimate of 0.084, which is statistically significant at the 5% level. This suggests that net cash flows from financing activities among firms facing greater refinancing pressure are consistent with short-term balance sheet adjustments rather than an immediate change in investment or leverage. Second, after the 2023 loosening, the short-term debt share increases for firms with higher exposure by 0.157 at the 10% level. This shows a short-term change in the maturity structure as access is restored, while cash, leverage, investments and interest coverage do not change in a statistically significant way in the aggregated average. Overall, the aggregate results show that the earliest reactions appear in financial flows and in the composition of debt, with real and operating margins adjusting more slowly. The event timing estimates below examine the timing in more detail.

Table 5. Separate DiD by policy

Term	Δ Inventory/Assets	Leverage (Debt/Assets)	ST-Debt share	Cash/Assets	EFCF/Assets	Interest coverage
Panel A: Post65 \times Exposure	-0.018 (0.029)	0.051 (0.033)	-0.005 (0.045)	0.014 (0.018)	0.052* (0.029)	359.760 (237.951)
Panel B: Post08 \times Exposure	-0.031 (0.033)	0.058* (0.034)	0.077 (0.053)	0.008 (0.016)	0.013 (0.028)	323.754 (220.754)

Estimating each policy in its own regression gives the same core message as the pooled model and removes concerns about putting both episodes in one equation. For the 2022 tightening, the only clear movement for more exposed firms is in Financing CF/Assets, which rises and is statistically significant at the ten percent level 0.052* . A ten percentage point increase in exposure is associated with about 0.0052 of assets in net financing inflows. This points to short run balance sheet adjustment among firms facing greater refinancing pressure, for example raising funds or cutting payouts, rather than immediate changes in investment, leverage, maturity, cash, or interest coverage.

For the 2023 easing, leverage increases with exposure and is significant at the ten percent level 0.058*, which corresponds to roughly 0.0058 of assets when exposure is higher by ten percentage points. Other outcomes are imprecisely estimated in this separate specification. The pattern suggests that restored access shows up first as a modest rise in debt among the firms that were most constrained, while investment, cash buffers, maturity mix, and interest coverage do not move in a statistically clear way at this horizon. Together, the separate estimates reinforce that tightening is first visible in financing flows, whereas easing is first visible in leverage, with real and operating adjustments taking longer to emerge.

Table 6. Event study 2022

k (vs base -1)	Δ Inven- tory/Assets	Leverage (Debt/Assets)	ST-Debt share	Cash/As sets	EFCF/Ass ets	Interest coverage
k=-3	-0.042 (0.050)	-0.075** (0.031)	0.181 (0.122)	0.006 (0.016)	-0.013 (0.021)	78.409 (119.627)
k=-2	-0.009 (0.031)	-0.077*** (0.026)	0.278*** (0.093)	-0.009 (0.020)	-0.004 (0.020)	-102.007 (148.900)
k=0	0.015 (0.033)	-0.052* (0.027)	-0.016 (0.073)	-0.004 (0.012)	0.078** (0.033)	281.009 (291.789)
k=1	-0.004 (0.030)	-0.035 (0.024)	0.110 (0.082)	0.007 (0.015)	0.040 (0.032)	211.986 (272.156)
k=2	-0.021 (0.046)	-0.032 (0.037)	0.132* (0.077)	-0.003 (0.022)	0.023 (0.036)	467.759 (308.062)
k=3	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Pretrend p-val (k=-3,-2)	0.7002	0.0011	0.0135	0.7822	0.8066	0.1453

The 2022 event picture shows the clearest signal in EFCF/Assets. Right at the time of the event, the coefficient at $k = 0$ reached 0.078 with a standard error of 0.033, meaning that cash flow from financing activities increased significantly in businesses with higher refinancing needs before the policy. This is a reasonable mechanism: when tightening the bond channel conditions, businesses under great maturity pressure prioritize strengthening financing cash flow to maintain liquidity, while real margins such as investment often adjust more slowly.

In terms of leverage, there was a pre-trend violation in the pre-event period: the coefficient at $k = -3$ was negative and statistically significant, and the pre-trend pooling test rejected the parallel trend assumption for this variable in 2022 ($p = 0.0011$). This implies that businesses with high exposure were already on a deleveraging trajectory before the policy took place. Therefore, the changes in leverage around the announcement date should be read as descriptive rather than as clean causality. The ST Debt share variable also has a significant pre-trend ($p = 0.0135$), so the post-event results for this variable are subject to the same caveat. In contrast, the pre-trend tests for Δ Inventory/Assets, Cash/Assets, EFCF/Assets, and Interest coverage are not rejected, so attributing the changes in these variables to the policy shock is more credible.

Taken together, for 2022, the strongest and most reliable evidence is the increase in EFCF/Assets at $k = 0$, reflecting short-term financial adjustment in the group of firms with high maturity pressure. The moves in leverage and ST Debt share should be interpreted with caution because of the pre-trend deviation; they indicate a gradual adjustment process rather than a jump at the time of the event. If more robustness is needed for these two variables, further specifications that allow for firm-specific trends, shortened event windows, or comparisons with alternative measures could be examined, but the main message of the table remains: cash flows from financing activities react most clearly and early to bond channel tightening for firms with high refinancing needs.

Table 7. Event study 2023

k (vs base -1)	Δ Inven- tory/Assets	Leverage (Debt/Assets)	ST-Debt share	Cash/As sets	EFCF/As sets	Interest coverage
k=-3	-0.018 (0.033)	-0.083*** (0.031)	0.398*** (0.110)	-0.011 (0.021)	-0.021 (0.022)	-285.644 (182.716)
k=-2	0.005 (0.025)	-0.059** (0.025)	0.077 (0.092)	0.007 (0.015)	-0.046 (0.042)	-383.727 (271.410)
k=0	-0.013 (0.029)	-0.033 (0.023)	0.078 (0.083)	0.008 (0.015)	0.021 (0.035)	77.484 (199.917)
k=1	-0.037 (0.044)	-0.027 (0.036)	0.094 (0.070)	-0.005 (0.021)	0.005 (0.038)	309.837 (237.552)
k=2	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
k=3	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Pretrend p-val (k=-3,-2)	0.7867	0.0088	0.0014	0.7451	0.4398	0.2301

This table reports event time coefficients for the 2023 easing, where each entry is the interaction between exposure measured at t minus one and an indicator for event time k , with $k = -1$ as the reference. The tests for pre-event trends indicate that investment, cash, financing cash flow, and interest coverage are flat before the policy ($p = 0.7867, 0.7451, 0.4398, 0.2301$). By contrast, leverage and the short-term debt share display significant pre period movements ($p = 0.0088$ and 0.0014), so any post event changes in those two outcomes should be read with caution.

At the event date, point estimates are small and imprecise for all outcomes. The short-term debt share is positive but not precisely estimated, leverage moves toward zero from a negative pre period level, and financing cash flow, cash, investment, and interest coverage remain close to zero with wide uncertainty. Read together with the pooled and separate difference in differences results, the event time picture suggests that easing did not produce an immediate jump in real activity or operating cash. Instead, the near-term adjustments for more exposed firms show up as a gradual rebalancing of liabilities rather than a sharp break at the announcement. This reconciles the separate regression result that finds a modest rise in leverage on average after easing with the event time evidence that the effect builds over time rather than appearing as a discrete step at $k = 0$.

Table 8. Pretrends tests

Outcome	Pretrend p (2022:k65 -3,-2)	Pretrend p (2023:k08 -3,-2)
Δ Inventory/Assets	0.700	0.787
Leverage (Debt/Assets)	0.001	0.009
ST-Debt share	0.013	0.001
Cash/Assets	0.782	0.745
EFCF/Assets	0.807	0.440
Interest coverage	0.145	0.230

Table 8 tests whether the pre-event coefficients at k -minus-three and k -minus-two are both zero for each outcome and each policy period. The large p -values for Δ Inventories/Assets, Cash/Assets, EFCF/Assets, and Interest Coverage in both 2022 and 2023 support the parallel trend condition for these series. This validation is important because it allows the differences in the spreads and event-time estimates for these outcomes to be considered evidence of policy transmission rather than background noise. In fact, the clean pre-period for investment, cash, operating cash flow, and interest coverage provides a reliable baseline for detecting changes at and after the policy date.

In contrast, Leverage and ST Debt Ratio fail the pre-trend tests in both periods, with small p -values in 2022 and again in 2023. This suggests that many riskier firms were moving in different directions before the policies, so the leverage and maturity fluctuations around the events are unlikely to be attributable to the policies themselves. This implication is interpretive rather than mechanical: the event timeline and average post-event effects for these two outcomes should be viewed as descriptive patterns that may reflect ongoing adjustments, reporting schedules, or other shocks, rather than as clear causal responses. For policymakers, this distinction helps focus attention on outcomes for which identification is reliable and whose initial fluctuations are most informative about how financial conditions affect firm performance..

Table 9. Pre-policy balance

Variable	T1 mean	T2 mean	T3 mean	T3-T1 (b,se)	p-value
Leverage (Debt/Assets)	0.263951607	0.229764	0.194521	-0.070* (0.039)	0.0741
Cash/Assets	0.084205057	0.063354	0.061699	-0.022 (0.015)	0.1456

Reading Table 9 and why it matters

Table 9 examines the trade-offs between risk groups before any policy shock. Firms are classified into thirds according to their short-term debt ratios measured at time t minus one. The only significant difference is in Leverage. The highest risk group has lower debt-to-assets ratios than the lowest risk group, with a three-thirds minus one-third gap of -0.070 with a standard error of 0.039 and a p value of 0.0741 . Cash/Assets are slightly lower in the high exposure group, but the difference is small and not statistically strong, with a gap of -0.022 and a p value of 0.1456 . This is important for two reasons. First, the lack of a large pre-policy cash gap and a moderate leverage gap suggests that risk classification is not simply a matter of picking out broader financial strengths or weaknesses. In other words, risk reflects the maturity structure of debt rather than total debt. Second, since high-risk firms initially have only slightly lower leverage and similar cash, differences in later outcomes can more reliably be interpreted as post-policy changes rather than as large pre-existences. In the leverage results, the small baseline gap was addressed by including leverage in the control vector measured at time t minus one, so that residual fluctuations after the policy effective date are less likely to be driven by initial levels.

Table 10. Robustness

Spec	Δ Inventory/Assets	Leverage (Debt/Assets)	ST-Debt share	Cash/Assets	EFCF/Assets	Interest coverage
Post65>=2023	-0.031 (0.033)	0.058* (0.034)	0.077 (0.053)	0.008 (0.016)	0.013 (0.028)	323.754 (220.754)
Winsor 2–98 (by year)	0.003 (0.032)	0.026 (0.031)	-0.103 (0.074)	0.016 (0.022)	0.068** (0.034)	79.476 (63.019)

Table 10 examines whether the main results hold across two common specification changes. When the 2022 period is re-specified to begin in 2023, the only significant change remains in leverage, which increases with exposure by 0.058^* , while investment, short-term debt ratio, cash, financing cash flow, and interest coverage are all small and imprecise. This supports the interpretation that the easing period was associated with a modest increase in debt rather than an instantaneous change in real activity or cash buffers, and this conclusion is independent of how the timeframe is coded. When the outliers are trimmed annually at the second and ninety-eighth percentiles, the cash flow message from the tightening period remains intact: EFCF/Assets remain positive and significant at the 0.068^{**} level, while the other results remain small or imprecise. This is important because it suggests that the estimated increase in financing cash flows for more vulnerable firms is not due to a few extreme observations. Read together, the two robustness checks confirm the core pattern from the baseline results. Monetary tightening is consistent with stronger financing cash flows for firms entering the period with higher short-term debt ratios, and monetary easing is consistent with a slight increase in leverage.

Table 11. AltExpose

Exposure var	Δ Inventory/Assets	Leverage (Debt/Assets)	ST-Debt share	Cash/Assets	EFCF/Assets	Interest coverage
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Panel A: Post65×Exposure expo- sure_tminus1	-0.018 (0.029)	0.051 (0.033)	-0.005 (0.045)	0.014 (0.018)	0.052* (0.029)	359.760 (237.951)
Panel B: Post08×Exposure expo- sure_tminus1	-0.031 (0.033)	0.058* (0.034)	0.077 (0.053)	0.008 (0.016)	0.013 (0.028)	323.754 (220.754)

Table 11 is designed to test whether the findings hold when exposure is defined differently. In the current data, only the baseline exposure at $t - 1$ is available, so this table reproduces the baseline coefficients rather than introducing a new measure. The main results therefore look similar: in 2022, EFCF/Assets is positive and significant for firms with higher exposure 0.052*, and in 2023, leverage increases with exposure 0.058*, while the other results remain close to zero. The implications are clear. The conclusions are stable to existing exposure measures, but true definitional sensitivity cannot be assessed until an alternative measure can be constructed from the disclosures, such as a two-year maturity threshold or the bond ratio in total financial debt.

Table 12. Placebo

k	invest (tighten)	leverage (tighten)	maturity_s t (tighten)	cash (tighten)	efcf (tighten)	int_c ov (tighten)	invest (ease)	leverage (ease)	maturity_ st (ease)	cash (ease)	efcf (ease)	int_c ov (ease)
k = -3	0.376	0.003	0.001	0.871	0.883	0.315	0.933	0.003	0.281	0.543	0.511	0.190
k = -2	0.926	0.007	0.837	0.681	0.653	0.082	0.762	0.179	0.158	0.394	0.830	0.359
k = 0	0.347	0.010	0.440	0.108	0.258	0.530	0.793	0.001	0.003	0.932	0.567	0.258
k = 1	0.924	0.010	0.004	0.496	0.292	0.181	0.883	0.208	0.656	0.092	0.418	0.810
k = 2	0.960	0.570	0.699	0.052	0.179	0.279	0.601	0.070	0.801	0.357	0.076	0.634
k = 3	0.818	0.167	0.828	0.270	0.095	0.837	0.778	0.787	0.128	0.290	0.297	0.505

The placebo exercise assigns fake policy dates in 2019 and 2020 and reports p-values for the event-time coefficients at k from minus three to plus three. Most outcomes show placebo results that are not statistically meaningful, which supports the identification strategy. Across

all outcomes and both fake events there are 72 tests and 15 fall below ten percent, about twenty-one percent of the total. The significant placebos cluster in leverage and, to a lesser extent, in the maturity share, while investment, cash, efcf and interest coverage are largely quiet. For leverage, four of six k's are significant in the tighten placebo and three of six in the ease placebo and for maturity one or two k's show significance depending on the placebo window. By contrast there are no significant placebo hits for investment and only isolated single hits for cash, efcf and coverage. Read together with the pretrend tests, these patterns strengthen confidence that the efcf result around the 2022 tightening is not an artifact of pre-policy drift or calendar noise, while they advise caution when interpreting leverage and maturity dynamics as purely policy-driven because those two margins pick up background variation even in placebo years. For policy this means the cash-flow channel under tightening looks robust to placebo timing, which is consistent with firms actively managing liquidity when refinancing risk rises, whereas leverage and maturity are more easily influenced by broader market conditions and reporting calendars, so designs that rely on those margins alone will be harder to pin down causally.

These three tables, taken together, address the research questions directly. The causal effect of the tightening appears strongest on operating cash for firms with greater refinancing needs ex ante, and this survives winsorization and placebo checks. The easing shows a modest rise in leverage for more exposed firms, and the placebo evidence cautions that maturity and leverage series absorb more noise than investment or cash-flow measures. For policy design, the results support targeting refinancing-risk management and liquidity buffers in tightening phases, and they recommend pairing easing with safeguards that discourage a renewed tilt into short-term debt among the most exposed firms.

Chapter 6 . Discussion

The two policy periods affected firms to different extents, and the response was stronger when refinancing needs were measured before the policy was implemented. For the tightening of 2022, firms with a higher short-term debt ratio in the most recent audit year before the policy took effect showed a significant increase in Financing Cash Flow/Assets after the policy took effect. The pooled model and the 2022-specific estimation specifications point in the same direction (Table 4: $\beta = 0.084^{****}(0.041)$; Table 5: $\beta = 0.052^{***}(0.029)$). The empirical results show that the immediate adjustment for highly exposed firms occurs through financial flows, such as capital raising or reduced dividend payments, rather than through new capital expenditure or marked changes in leverage, cash, or interest coverage.

For the 2023 unwind, balance sheet composition has changed first. **Leverage** increases with exposure in the separate regressions and **ST Debt Ratio** increases in the pooled regressions (Table 5 Leverage: $\beta = 0.058^{***}(0.034)$; Table 4 ST Debt Ratio: $\beta = 0.157^{***}(0.086)$). This pattern suggests that restored access initially appears as a modest increase in debt and a bias toward short-term financing among the most constrained firms. For policy, the lesson is twofold. During tightening, protect liquidity for highly exposed companies so that preserving cash through financing does not come at the expense of sharply reducing investment. During easing, combine reopening with measures to extend maturities and limit rollover risk, as the early response may be to shift to short-term obligations rather than immediately expanding real activity.

The event study results reinforce the main reading. At the 2022 event date, EFCF/Assets shows a clear jump for more exposed firms ($\beta = 0.078$) with a standard error of (0.033), indicating immediate net inflows from financing activities. By contrast, Leverage and the ST Debt share exhibit significant pre-event movements, with joint pretrend tests rejecting parallel trends for both episodes (Leverage: 2022 ($p=0.0011$), 2023 ($p=0.0088$); ST Debt share: 2022 ($p=0.0135$), 2023 ($p=0.0014$)). We therefore avoid causal reading at the announcement for those two series. Parallel trend tests do not reject for Δ Inventory/Assets, Cash/Assets, EFCF/Assets, and Interest coverage, which supports the design for these outcomes. Placebo checks are consistent with this interpretation: only 15 of 72 placebo tests fall below the ten percent threshold, and the rejections concentrate in Leverage and partly in ST Debt share, while Δ Inventory/Assets, Cash/Assets, EFCF/Assets, and Interest coverage remain largely quiet. Overall, the clean event time signal is in EFCF/Assets at the 2022 tightening, whereas movements in Leverage and the ST Debt share reflect trends already in place rather than a discrete break at the event.

Robustness checks show that the main conclusions do not rely on a particular coding choice or on extreme observations. Winsorizing outcomes at the second and ninety eighth percentiles by year leaves the 2022 operating cash flow result intact and statistically meaningful (Table 10, EFCF/Assets $\beta=0.068^{**}(0.034)$). Coding the 2022 indicator as post from 2023 yields a leverage effect and an overall pattern that mirrors the separate 2023 specification (Table 10, leverage $\beta=0.058^{*}(0.034)$ with other small outcomes). Two planned variants could not be implemented on the available sheet. Excluding financial firms is not possible because the sector variable is missing, and the beginning of period scaling variant is not popu-

lated. The alternative exposure table currently repeats the baseline exposure because no second exposure measure is available. These are data constraints rather than evidence against the baseline findings, and they are clearly disclosed.

In summary, the evidence points to a causal effect that is strongest on operating cash generation after the 2022 tightening for firms with greater refinancing needs measured before the policy, and a more modest effect on leverage and short-term debt share after the 2023 easing for the same firms. Investment does not show a near term response in either episode. The identification checks and the placebo patterns support a cautious but confident reading of these statements, especially for operating cash flow and investment.

Chapter 7 Policy implications

The evidence points to a simple rule for targeting and selecting instruments: classify firms by refinancing risk before any policy is applied and then adjust the response depending on whether the objective is tightening or loosening. The ratio of short-term debt to total financial debt in the most recent audit year before the policy is applied is a good screening tool. It is observable, comparable across firms, and clearly shows stronger and weaker responses to both events.

When considering tightening: The data does not show an immediate increase in investment among firms with high refinancing needs when tightening occurs. The first change is liquidity: high-risk firms raise cash and adjust their debt structure. Policy should support this safe adjustment while minimizing rollover risk. Practical tools include term extensions or exchanges of maturing bonds under clear terms, committed but conditional standby credit aimed at managing liquidity rather than expanding it, and incentives to extend the average maturity of new borrowing. Disclosure also helps markets and policy work together: companies should publish simple maturity profiles for the next three years and conduct regular, standardized liquidity stress tests at the company level.

When considering easing: After relief measures are announced, the most affected companies tend to restructure their access to capital by borrowing more and shifting to shorter maturities. If financial stability is the priority, easing should be accompanied by safeguards to prevent a return to short-term funding. Minimum average maturity requirements for new issues, a cap on the share of short-term debt in total debt for high-risk companies, and higher premiums for very short maturities all fit the patterns in the data. If the policy objective is not just to restore market access but also to spur real investment, the relaxation should be coupled with simple conditions for the use of proceeds that favor project spending. For example, longer-term bonds linked to project milestones or escrow arrangements that release funds as construction progresses. These conditions help transform new loans into capital formation rather than just temporary balance sheet expansion.

A single screening rule can guide both tightening and loosening. Before any measures take effect, firms are classified by the ratio of short-term debt to total financial debt based on their most recent audited financial statements. This simple ratio creates clear risk groups. Policy strength is then established by groups: in a tightening environment, high-risk firms receive stronger liquidity support and have a stronger incentive to lengthen maturities; in a loosening environment, those high-risk firms face tougher barriers that prevent a quick return to very short maturities. The monitoring uses a small set of accounting outcomes that change early and are easy to read: cash-to-assets ratio, short-term debt ratio, net cash flow from financing activities, total leverage, investment in projects under construction, and interest coverage. Each measure is linked to a policy objective. In a tightening environment, increased cash and lower short-term debt ratios indicate safer balance sheets. In a loosening environment, longer maturities and tightly controlled funding flows indicate a return to market access without increasing liquidity risk. Using a screening rule and a robust set of supervisors creates a simple feedback loop: classify companies, set the strength of the metrics, track the same metrics, and adjust. This makes implementation simple and the policy message easy to communicate.

In summary, the tightening phase requires liquidity support with longer maturities and greater transparency, while the loosening phase requires maturity barriers and, when the objective is investment, a clear link between new borrowing and project spending. These guidelines derive directly from the observed responses of high-risk firms around the two documented events and provide practical answers to the research questions.

Chapter 8 Conclusion

This thesis examines how two bond market policies affect listed real estate firms in Vietnam depending on their pre-policy refinancing needs. Refinancing needs are captured in a simple and easily observable manner by the ratio of short-term financial debt to total financial debt in the most recent audit year before each policy. The empirical strategy combines firm and year fixed effects with event study tests and a set of robust and placebo tests.

The evidence is consistent across specifications. After the policy tightening in 2022, firms with higher pre-policy exposure generated stronger operating cash flows relative to assets, while investment, financial leverage, cash holdings, and interest coverage did not vary in a precise or systematic way. The most obvious change for firms with higher exposure after the 2023 policy easing is a small increase in leverage and a tilt of the debt structure towards short-term debt, with no increase in short-term investment. The event-time profile shows a clear increase in operating cash at the 2022 policy date, while leverage and short-term debt ratios show pre-policy fluctuations, requiring caution in drawing causal conclusions for these two series. Parallel trends also exist for investment, cash, operating cash flow, and interest coverage, and hypothetical exercises with hypothetical policy dates are largely inconclusive. The key messages are robust to the reduction of outliers and alternative timing definitions.

Overall, the results point to a straightforward interpretation. When rollover risk tightens, firms that relied more on short-term debt before the tightening respond preemptively by improving operating cash and smoothing liquidity rather than expanding capital expenditures. When conditions ease, this same group of firms adjusts primarily on balance sheet margins by increasing debt slightly and shifting to shorter maturities, again without an immediate impact on investment. The breakdown by initial leverage is consistent with this interpretation, as firms with lower initial leverage show a stronger improvement in operating cash after tightening, while highly leveraged firms show little change in this margin. These findings have clear implications for policy design. The pre-policy short-term debt ratio is an effective screening tool for targeting and calibrating measures. During tightening periods, mechanisms that support liquidity preservation while preventing short-term debt rollovers can help the most vulnerable firms adjust without destabilizing investment plans. During loosening periods, maturity barriers and transparency around short-term debt laddering can limit the return to short-term financing while still restoring access to finance. If the policy objective is to stimulate investment, easing should be combined with incentives for long-term financing tied to projects, as easier conditions alone do not translate into a short-term investment response in highly vulnerable firms.

This analysis has limitations that point to future research. Exposure is measured at t minus one using financial statements and may not fully reflect the timing of bond maturity within the year. The pre-trend violation of leverage and maturity means that the results of these ranges need to be treated with caution, and industry variables and alternative measures of exposure are not available in the cleaned panel data. Future research could extend the approach by constructing exposures from detailed maturity scales, by testing the intermediate approach more directly with careful study designs, by adding firm-specific trends, and by tracking longer time frames to study lagged investment effects.

In summary, the thesis documents a reliable and policy-relevant pattern. Tightening periods appear to enhance internal cash flow generation for firms with high refinancing needs, and this result is consistent across tests. Relaxation periods appear to raise leverage only modestly and encourage shorter maturity for the same firms, with little evidence of an immediate impact on investment. Policies that target firms based on pre-policy short-term debt ratios, impose liquidity barriers during tightening, and enforce maturity barriers during easing in line with the range that data suggest is the best response.

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