

Firm entry and exit dynamics in Austria: uncovering the economic significance of insolvencies beyond simple counts

In Austria, insolvencies are usually tracked by simply counting the number of firms going insolvent. This study shows that such absolute counts offer only limited insight. Using weighted insolvency rates, we analyze insolvency patterns in Austria between 2019 and 2024. We find that insolvencies were rare, stable across time, and mostly affected small firms. Our findings moreover highlight the need for improved data and refined metrics to support future policy.

Authors

Helmut Elsinger
Oesterreichische Nationalbank,
Research Section
helmut.elsinger@oenb.at

Pirmin Fessler
Oesterreichische Nationalbank,
Research Section
pirmin.fessler@oenb.at

Aleksandra Riedl
Oesterreichische Nationalbank,
Research Section
aleksandra.riedl@oenb.at

Stefan Trapp
Oesterreichische Nationalbank,
Research Section
stefan.trapp@oenb.at

JEL classification

D22, G33, L25, E61, R30

Keywords

insolvencies, resource allocation, firm turnover, business demography, Austria



Insolvency rates low despite challenges

Between 2019 and 2024, insolvencies remained low and stable, with unweighted insolvency rates averaging around 1%. This finding held despite the COVID-19 crisis. We moreover find a marked increase in the number of firms.



Insolvencies mostly affect smaller firms

When weighted by firms' assets, workforce and loans, insolvency rates show that larger and economically important firms are less likely to become insolvent. This finding was also confirmed when breaking down insolvency rates by sector.



Results call for a more refined approach

Our results reveal the limitations of count-based indicators and highlight the importance of improved microdata and more meaningful metrics. These are crucial for understanding how insolvency frameworks contribute to greater resilience and structural transformation in economies.

Opinions expressed by the authors of studies do not necessarily reflect the official viewpoint of the Oesterreichische Nationalbank or the Eurosystem.

Abstract¹

In Austria, insolvencies are often narrowly perceived as signs of economic distress and are typically tracked through absolute insolvency counts. This paper challenges the informational value of such counts and reframes insolvency within the broader context of firm turnover, emphasizing the functional role of insolvencies in facilitating resource reallocation and structural transformation. Using firm-level data from the Integrated Firm-Level Database (IFLD) of the Oesterreichische Nationalbank (OeNB), we analyze firm dynamics in Austria between 2019 and 2024. We document that insolvencies constitute a small and stable share of firm exits – averaging around 1% of the firm population – even amid post-pandemic normalization. By constructing weighted insolvency rates based on firms' total assets, employment, and credit exposure, we show that economically significant firms are less likely to become insolvent. We moreover find that insolvency patterns are concentrated in smaller, less systemically relevant segments of the economy. Sectoral breakdowns confirm these patterns and illustrate the added value of disaggregated metrics. Our results expose the limitations of count-based indicators and highlight the importance of improved microdata and more meaningful metrics to inform forward-looking and efficiency-oriented policy frameworks.

Note that while we cannot update all analyses from the paper to the most recent month, our main finding, namely that the insolvency rate remains stable, continues to hold through the first half of 2025.

JEL classification: D22, G33, L25, E61, R30

Keywords: insolvencies, resource allocation, firm turnover, business demography, Austria

1 Introduction

Insolvencies are often perceived as inherently negative events and monitored based on simple aggregate counts (e.g. KSV1870, 2025). This perception dominates public and media discourse in Austria, where increasing insolvency numbers are frequently portrayed as symptoms of broader economic distress. For example, *Industriemagazin* (2024) warned that “Austria faces a massive wave of corporate insolvencies in 2024,²” attributing this trend to a “toxic mix” of inflation, tighter financing conditions, and weak growth. Consequently, insolvency statistics are frequently invoked to justify policy interventions aimed at halting or reversing such trends (KSV1870, 2024).

This framing is problematic for three reasons. First, it promotes a narrow view of insolvency as mere failure, overlooking its institutional role in facilitating market exit, enabling structural transformation, and promoting long-term economic dynamism. Efforts to indiscriminately suppress insolvencies can distort market signals and perpetuate inefficiencies. Second, the use of simple insolvency counts as indicators of economic health is flawed and can distort policy responses. Insolvency statistics are often computed without reference to a clearly defined firm population and do not relate insolvency events to that

¹ The authors would like to thank Philipp Roderweis and Barbara Meinx for helpful comments and valuable suggestions.

² German original: “Österreich steht 2024 vor einer massiven Welle von Unternehmensinsolvenzen.”

population, further obscuring their interpretation. Third, insolvencies are typically lagging indicators of economic activity. Even if accurately measured, they tend to respond to downturns with delay, reflecting past conditions rather than providing early warnings. In practice, definitional ambiguities and the lack of economic weighting further reduce their informational value.

In many cases, the firm populations used include sole proprietorships that are part of the household sector. These entities, while legally classified as firms, are difficult to distinguish from households and often lack economic significance. Excluding such firms is essential for meaningful interpretation and for aligning measurement with the concept of the corporate sector (Elsinger et al., 2021). In addition, such counts do not account for the economic weight of the firms involved and thus fail to distinguish between minor and systemically important insolvencies. This lack of granularity undermines their utility as policy indicators and risks distorting the public debate.

This paper challenges the informational value of simple insolvency counts and reframes insolvency within the broader context of firm turnover (i.e. firm entries and exits) and firms' economic relevance. Using harmonized firm-level data from the Integrated Firm-Level Database (IFLD) of the Oesterreichische Nationalbank (OeNB), we construct refined indicators that relate insolvency events to the evolving firm population and weight them by economically relevant variables such as firms' total assets, number of employees, and outstanding bank credit.

Our analysis covers the period from 2019 to 2024 and yields three key findings. First, insolvencies remained a minor component of firm dynamics throughout the period under review, with the unweighted insolvency rate fluctuating around 1% – despite the COVID-19 crisis and a significant increase in the firm population. Second, when accounting for economic relevance, insolvency rates are markedly lower: In 2023, the asset-weighted insolvency rate was 0.58%, the employment-weighted rate 0.75%, and the loan volume-weighted rate 0.65%, compared to an unweighted rate of 1.02%. Third, sectoral patterns underscore the importance of distinguishing between unweighted and weighted insolvency rates. While unweighted rates peaked in sectors like construction, accommodation, and administrative services, weighted rates reveal that insolvencies in these areas particularly concerned smaller, economically less important firms that are less relevant for financial stability. In contrast, sectors such as professional services and manufacturing exhibit fewer insolvencies in absolute terms, but relatively higher rates when weighted by total assets – suggesting greater economic impact.

Note that while we cannot update all analyses from the paper to the most recent month, our main finding, namely that the insolvency rate remains stable, continues to hold through the first half of 2025.

Although the media has once again warned that 2025 would be a new record year for bankruptcies, the insolvency rate has, in fact, remained virtually unchanged. Until early May, it was slightly below the previous year's level, while since June, it has been slightly above. The only noticeable increase this year has been in the real estate and housing sector. Instead of triggering alarmism, however, this increase should rather be interpreted as an early sign of normalization within the real estate sector. Furthermore, simply counting insolvencies in this sector is particularly misleading. In the real estate industry, economic business units are often split into several legal entities. As a result, individual insolvency cases can significantly inflate the overall insolvency count without accurately reflecting the actual economic impact. What is more, the number of firm entries has markedly exceeded the number of insolvencies and other exits within the real estate sector in the last years.

These findings underscore the limitations of using absolute insolvency counts as policy indicators. Rather than treating all insolvency events as failures to be minimized, policymakers should recognize their role

in structural adjustment and focus on enabling timely, efficient exits, where appropriate. This is especially relevant in Austria, where – as recent OECD analyses have shown – the insolvency framework lags behind international best practices (see e.g. André and Demmou, 2022). We do not argue that all insolvency events are benign or that policy responses are never warranted. However, we argue that any intervention should be grounded in improved microdata and refined indicators, which provide a more accurate, evidence-based foundation for economic policymaking.

The remainder of the paper is structured as follows. Section 2 reviews the theoretical role of insolvencies in enabling resource reallocation, market selection, and economic resilience. Section 3 presents the empirical setup, including the data structure and methodology. Section 4 provides evidence on firm turnover and presents the results for weighted insolvency metrics to assess the economic significance of insolvencies. Section 5 concludes with implications for research and policy design.

2 The role of insolvencies in economic dynamism

This section explains why insolvencies are an integral part of dynamic market economies and argues against the use of raw insolvency counts as a policy metric. Section 2.1 outlines the institutional foundations of insolvency systems in economies based on debt and limited liability. It shows that insolvency law is not meant to prevent failure, but to manage it productively. It further explains how misaligned credit allocation can distort both firm survival and firm exit: Viable firms may be underfinanced, while unproductive firms may persist, ultimately undermining efficient firm dynamics and weakening the economic meaning of insolvency events. Section 2.2 reviews empirical literature that demonstrates the contribution of insolvency frameworks to productivity, innovation, and structural change, and discusses how these systems support entrepreneurship, labor reallocation, and financial stability. Section 2.3 draws policy implications, warning against using raw insolvency counts as crisis indicators and advocating for better data and tailored metrics to inform more forward-looking and efficiency-oriented policy decisions.

2.1 Institutional foundations and the role of limited liability

In any economic system that relies on debt, the occurrence of insolvencies is a natural and necessary feature – neither exceptional nor inherently undesirable. Because debt inevitably carries the possibility of default, insolvency frameworks are essential institutional tools for managing that risk. Their importance is especially pronounced in modern economies, which heavily rely on the institution of limited liability – shielding firm owners and shareholders from personal responsibility for business debt. While this legal structure facilitates entrepreneurial risk-taking and capital accumulation, it also creates moral hazard. Firms (and their owners and shareholders) can take risks and keep all the profits in case of success, but do not have to bear the full potential losses, which are instead borne by creditors and, in some cases, the public (Hansmann and Kraakman, 2000). Without a formal mechanism to manage failure and distribute losses, such moral hazard might be amplified. Therefore, insolvencies governed by insolvency laws are a necessary part of our modern economies. Their institutional role is to regulate such failures, enforcing creditor rights and enabling the reallocation of resources from failing to more productive firms (Hart, 1995; Djankov et al., 2008).

In a hypothetical economy without limited liability, owners and shareholders of firms would remain personally liable for all obligations. Creditors could pursue personal assets in case of default, and debt markets would function under different incentives and constraints. The scope for risk-taking would likely

be smaller, but so would the willingness to invest. In contrast, limited liability encourages capital formation and firm entry. However, this benefit also makes it necessary to have effective mechanisms in place to manage firm exit and default.

In practice, limited liability structures are also frequently used for non-commercial purposes such as tax optimization, intergenerational wealth transfer, or shielding personal assets from claims in divorce or litigation. This is especially relevant in jurisdictions like Austria, where private foundations and limited liability companies serve as legally sanctioned asset protection tools (Schwank, 2013; Alexander and Klemmer, 2009). Insolvency law becomes indispensable in this context. It determines how the burdens of failure are distributed, typically through a priority structure that protects secured creditors (priority structure of claims) while recognizing the rights of other stakeholders. It is not designed to prevent firm failure, but to manage it efficiently and transparently. A well-functioning insolvency regime facilitates the liquidation or restructuring of firms at minimal social cost and preserves value where possible. Crucially, it also enables the timely reallocation of capital and labor to more productive uses.

Yet, whether insolvency frameworks achieve this goal in practice crucially depends on the surrounding institutional environment – in particular, on the way credit is allocated and monitored. Credit market dynamics shape which firms receive financing, how risks are distributed, and, ultimately, which firms survive or fail. In this sense, insolvency outcomes often reflect not just business fundamentals but also systemic features of credit allocation.

In Austria, for instance, credit markets are highly concentrated, with limited effective competition and a dominance of similarly structured banks (Ferstl and Seres, 2012; Hauner, 2005). Regulatory constraints, risk assessment models, and incentives for uniform treatment (e.g. under sector-specific frameworks or regulations) often lead to homogeneous credit allocation, regardless of firm-specific fundamentals.³

The way insolvency risk is allocated fundamentally influences credit market behavior on both the supply and demand side (Berger and Udell, 2006). In theory, when banks retain default risk – as is typical in systems with effective insolvency regimes – they have a strong incentive to monitor borrowers, assess creditworthiness, and price loans according to expected losses for each firm separately. In practice, however, credit markets are constrained by imperfect information and transaction costs. As a result, banks often settle into second-best pooling equilibria, where low- and high-risk borrowers are priced similarly due to the difficulty of accurately distinguishing between them. This leads to adverse selection: Safer firms may exit the credit market and satisfy their demand for debt capital through other channels such as bond markets or supplier credits, while riskier firms persist. To mitigate these distortions, banks often rely on blunt instruments such as collateral size or other guarantees, which can separate risks to some extent, but introduce frictions and limit access to credit for innovative firms which may not (yet) have many assets. Although bank credit is generally cheaper and more accessible than market-based finance for most firms, distortions in pricing and monitoring can still result in inefficient equilibria, especially when screening incentives are weak.

Robust competition should encourage banks to develop better screening technologies to differentiate between borrowers and attract good borrowers. Banks that perform this screening well are more likely to survive, while those that do not are crowded out. However, in markets with limited competition, screening incentives are muted. This is particularly evident in Austria, where a small number of structurally similar banks dominates the credit market. Limited competitive pressure, combined with

³ Note that the same mechanisms also apply to credit to households.

regulatory harmonization – such as common risk assessment frameworks, standardized reporting rules, and centralized refinancing mechanisms – discourages innovation in credit evaluation and reinforces uniform lending practices. In such settings, banks may prefer uniform pricing and minimal differentiation, while reducing active borrower monitoring. The result is an erosion of market discipline: Even when insolvency risk formally resides with lenders, the institutional mechanisms that would normally induce screening, monitoring, and efficient capital allocation are significantly weakened. This tendency is further reinforced by recent institutional shifts in the insolvency framework such as the introduction of the Austrian Restructuring Act in July 2021⁴. By strengthening restructuring options and debtor protections, the act may raise expropriation risks for creditors and increase the reliance on collateral to mitigate potential losses.

On the demand side, credit dynamics are altered by shifting insolvency risk mainly to borrowers, for example through strong collateral enforcement or informal norms that extend liability beyond the firm (e.g. personal guarantees or family co-signing practices). Risk-averse entrepreneurs, particularly those with limited wealth or high-income volatility, may forgo investment opportunities even when a clearly positive value is expected and the investment is socially beneficial. They may particularly do so if downside risks are uninsured. This increases the effective cost of capital and suppresses credit demand, especially among liquidity-constrained or early-stage firms.

Thus, contrary to the common assumption that transferring risk to borrowers automatically boosts credit supply, the opposite may occur. In markets with limited banking competition, such as oligopolistic or highly concentrated systems, banks can engage in strategic price setting to preserve margins rather than expand lending volumes. With fewer incentives to compete for marginal borrowers, banks may limit credit access, particularly to firms lacking collateral if no detailed case-by-case assessment and monitoring is in place for the reasons mentioned above. As a result, both the willingness to lend and to borrow declines – not due to legal constraints, but because institutional structures weaken the mechanisms that would otherwise promote risk sharing and capital formation. Lower competition allows banks to engage in oligopolistic price setting, resulting in reduced credit volumes and fewer incentives to expand access to riskier or less collateralized borrowers (Stiglitz and Weiss, 1981; Crawford et al., 2018).

The outcome is a structurally weaker credit market, especially for young, innovative, or informationally opaque firms with high ex-ante uncertainty. These firms are most in need of flexible risk assessment, but least likely to receive it in a concentrated banking environment where standardization and regulation dominate.

In addition, insolvency proceedings are not always neutral in their application or effect. Firms may strategically time or structure their exit to minimize losses to owners – particularly in institutional environments where enforcement is weak, judicial capacity is limited, or creditor coordination is fragmented. Legal protections such as limited liability and insolvency law originally designed to foster entrepreneurship can be misused to shield assets, delay restructuring, or externalize costs onto creditors and the public.

Properly designed insolvency systems perform a critical economic function: They enable the orderly exit of unviable firms, facilitate the reallocation of capital and labor toward more productive uses, and maintain competitive pressure through firm turnover (Djankov et al., 2008; La Porta et al., 1998).

⁴ See <https://www.ris.bka.gv.at/eli/bgbl/I/2021/147/20210726>.

Insolvency should not be viewed merely as a failure, but as a key mechanism of economic dynamism and structural adjustment. Box 1 summarizes how firm exits in general contribute to productivity, innovation diffusion, and structural transformation across the economy.

Box 1: Insolvencies and economic dynamism

Productivity growth and resource reallocation: Firm exits, including insolvencies, play a critical role in reallocating economic resources – capital, labor, and technology – from unproductive entities to more efficient firms. This process prevents the stagnation of resources in declining sectors and optimizes aggregate productivity, sustaining long-term economic growth.

Firm turnover and innovation diffusion: Endogenous growth models emphasize the role of firm turnover in fostering innovation and knowledge spillovers. Entry and exit dynamics stimulate technological diffusion by ensuring that markets remain competitive and adaptive, enhancing overall economic resilience and innovation potential.

Institutional efficiency: The quality of institutional frameworks significantly affects the dynamics of firm exits. Efficient insolvency systems reduce legal uncertainty, streamline bankruptcy procedures, and lower the costs of restructuring or liquidation. By facilitating smoother and quicker firm exits, institutions enable dynamic reallocation while minimizing economic distortions.

Bankruptcy costs and market incentives: Bankruptcy costs influence firm behavior and market efficiency. While high costs deter insolvencies, asymmetric information or legal protections – such as limited liability – can make insolvency proceedings strategically beneficial for some firms. Policies aimed at reducing unnecessary barriers and transaction costs ensure that insolvencies serve their intended economic function.

Labor reallocation and structural transformation: Labor mobility is integral to economic adaptability. When firms exit, workers transition from contracting sectors to expanding ones, contributing to structural transformation. Barriers to firm exit impede this reallocation, slowing necessary adjustments to shifting technological trends and consumer demands.

Policy design and economic stability: Sound insolvency regimes balance the interests of creditors and debtors while fostering economic stability. Policies that promote early restructuring, prevent resource misallocation, and reduce personal penalties for failure encourage entrepreneurial activity, innovation, and efficient market functioning. Harmonization efforts, such as the EU's preventive restructuring frameworks, exemplify the importance of policy design in enhancing insolvency processes.

The policy challenge lies not in minimizing insolvency counts, but in fostering institutional environments that support early, efficient, and economically meaningful exits. Achieving this requires granular, high-quality and also complete microdata. It also requires tailored indicators of insolvencies (along with outcome metrics such as recovery rates and restructuring effectiveness, which are beyond the scope of this paper). Moreover, it calls for a shift away from crude aggregate measures such as raw insolvency counts, which are often misleading and strategically deployed to justify public support or the allocation of taxpayer resources.

2.2 Literature on the role of insolvencies and insolvency laws

The empirical literature reinforces the economic mechanisms summarized in box 1, providing robust evidence that insolvency systems play an important role in supporting productivity, innovation, and structural transformation. A broad consensus underscores the importance of firm turnover, with insolvencies facilitating the reallocation of resources from inefficient entities to more productive ones. This mechanism of “creative destruction,” as discussed by Bartelsman et al. (2004), not only enhances productivity by reallocating resources but also increases market contestability, promoting innovation and adaptability across economies. The performance of firms, particularly new entrants, is shown to vary significantly depending on the institutional and policy environments, emphasizing the need for frameworks that minimize barriers to firm growth and resource reallocation.

McGowan and Andrews (2016) highlight how well-designed insolvency systems allow for the swift exit of non-viable firms and the restructuring of potentially viable ones, reducing the prevalence of “zombie firms” that hinder long-term growth. Caballero et al. (2008) argue that keeping unprofitable firms in the market leads to distorted competition. They depress product-market prices by maintaining excess capacity while raising wage pressures, as labor remains locked in underperforming firms with declining productivity. Similarly, Kliatskova and Savatier (2019) emphasize that timely and transparent insolvency procedures prevent resources from being trapped in unproductive enterprises and foster financial stability. The harmonization of insolvency laws within the European Union, as outlined in the 2019 Directive on preventive restructuring frameworks (European Parliament and Council, 2019), further illustrates how coherent frameworks can support economic renewal and mitigate nonperforming loans.

Recent research highlights the broader implications of insolvencies for entrepreneurship and innovation. Fu et al. (2020) demonstrate that lenient insolvency laws reduce the stigma and risks associated with business failure, thereby encouraging high-growth and opportunity-driven entrepreneurship.

André and Demmou (2022) stress the importance of early-warning systems and streamlined insolvency procedures, particularly for small and medium-sized enterprises (SMEs), to address unique challenges and promote entrepreneurial activity. Coutinho et al. (2023) further argue that harmonized insolvency mechanisms enhance economic resilience during periods of financial distress by addressing credit misallocations and freeing resources for productive use.

Evidence from the Banque de France (Bureau and Libert, 2016) also highlights the role of bankruptcies in economic restructuring, noting significant productivity gains when less efficient firms exit the market. This process, driven by insolvencies, fosters innovation and efficiency improvements among established firms while reducing productivity gaps between failing and surviving entities.

Additionally, Jamet et al. (2023) discuss the importance of harmonizing insolvency laws across Europe. They emphasize the potential of reforms to lower costs, enhance transparency, and accelerate firm exits, thereby facilitating economic renewal and financial integration.

Improved insolvency laws typically lead to a rise in observed insolvencies. This rise is not a sign of economic distress, but serves as evidence of a more responsive institutional framework that facilitates productive exits, encourages market entry, and strengthens overall economic adaptability.

2.3 Policy implications

Efforts to harmonize insolvency frameworks across jurisdictions reflect a growing recognition of their central role in promoting efficient resource allocation and economic resilience. The 2019 Directive on preventive restructuring frameworks (European Parliament and Council, 2019) exemplifies this push, aiming to establish shared principles that enable quicker and more predictable restructuring processes while lowering barriers to firm exit.

In contrast, policy interventions that seek to suppress firm exits, such as indiscriminate subsidies or administrative barriers to insolvency, may offer short-term stability, but often undermine long-term economic adaptability. Prolonging the life of inefficient firms distorts market signals, hampers productivity growth, and reduces incentives for innovation. It also risks creating moral hazard, particularly when firms come to rely on public support rather than operational improvements.

Historical examples such as fossil fuel subsidies and large-scale bailouts during the 2008 financial crisis and the COVID-19 pandemic underscore the risks of poorly targeted support. While such interventions may have stabilized employment or credit markets in the short term, they often lacked mechanisms to align public risk-taking with future gains, effectively socializing losses while privatizing profits. As a side effect, they also tend to conserve existing distributions of wealth and economic power, particularly in economies where firm ownership is highly concentrated. Rather than facilitating broader access to opportunity or supporting structural transformation, such measures can reinforce entrenched inequalities and institutional inertia.

Forward-looking policies should therefore strike a balance between immediate stabilization needs and longer-term structural goals. This includes fostering efficient firm turnover, strengthening early-warning systems, and reducing the procedural and informational frictions that hinder timely exit and resource reallocation. Investments in digital infrastructure, streamlined insolvency procedures, and institutional capacity building are critical to this agenda. As highlighted in recent OECD analyses, Austria's insolvency framework in particular lags behind best practices. It lacks comprehensive pre-insolvency mechanisms and early-warning tools – especially for SMEs – resulting in fewer timely restructurings and a higher prevalence of inefficient firms remaining on the market (André and Demmou, 2022; McGowan et al., 2016). These institutional shortcomings reduce the effectiveness of capital and labor reallocation, ultimately weakening the productivity-enhancing function of firm turnover.

Moreover, when public resources are allocated to support firms – whether through subsidies, credit guarantees, or bailouts – economic theory suggests that such interventions should be designed to internalize the positive externalities. From a welfare economics perspective, failing to require some return to the public – whether through profit-sharing, conditional reinvestment, or equity participation – can result in a misallocation of surplus and reinforce distributive imbalances. Well-designed subsidy schemes should therefore include mechanisms that align private gains with social contributions, ensuring that public risk-taking yields reciprocal public benefit.

Ultimately, insolvency should be understood not as an economic failure to be suppressed, but as a mechanism of adjustment that – when properly governed – supports innovation, competitiveness, and sustainable growth. As OECD evidence has shown, countries with more responsive and accessible insolvency frameworks experience faster capital reallocation and stronger productivity growth. While Austria has made some institutional strides, particularly with the implementation of EU restructuring directives, significant gaps remain, especially in terms of SME accessibility, creditor coordination, and early intervention mechanisms (André and Demmou, 2022; McGowan and Andrews, 2016).

3 Data and methodology

This section introduces the data sources and empirical strategy used to analyze firm dynamics and insolvency patterns in Austria. The analysis is based on the Integrated Firm-Level Database (IFLD) of the Oesterreichische Nationalbank (OeNB), a harmonized microdata infrastructure that links official administrative data from multiple sources⁵. The database provides consistent information on firm characteristics, financial statements, employment, and credit exposures at the firm level. In section 3.1, we describe the structure of the dataset, define the populations used for different parts of the analysis, and report data availability and completeness. Section 3.2 then explains how we construct both unweighted and weighted insolvency indicators and motivates the choice of economic weighting variables to better capture the relevance of insolvency events.

3.1 Data sources and design of subsets

The empirical analysis draws on the Integrated Firm-Level Database (IFLD) of the Oesterreichische Nationalbank (OeNB), a harmonized microdata infrastructure that merges several official data sources. More precisely, the IFLD links firm-level records from the Austrian commercial register, annual financial statements, employment statistics, and loan-level credit data compiled under the AnaCredit Regulation ((EU) 2016/867). This rich data environment enables consistent identification of firm entries, exits, and insolvency events while also providing detailed information on firm size, workforce, and credit exposure.

To address different analytical objectives, we define two distinct samples:

1. Full firm population for turnover analysis (2019–2024):

For the analysis of firm stocks and flows over time – including entries, exits, and insolvencies – we use the full population of entities classified as nonfinancial corporations under ESA sector 1100. This includes all market-producing firms registered in the Austrian commercial register, regardless of their actual economic activity, and irrespective of their legal form. Crucially, this means that the dataset also comprises entities that do not engage in regular business operations and exist primarily for legal or financial structuring purposes – for instance, asset protection, tax optimization, or liability segregation. However, since economic inactivity is not directly observable for most firms, we do not exclude such cases *ex ante*, and they remain part of the population under study. The size of this comprehensive firm population increased from approximately 239,000 in 2019 to around 280,000 in 2024. This growth in the firm stock is crucial for interpreting the relative scale of insolvency flows.

Firm dynamics are defined as follows:

- Entry: A firm newly appears in year $t+1$ after not being present in year t .
- Exit: A firm disappears from the Austrian commercial register (Firmenbuch) in year $t+1$ after being present in year t , including both voluntary and involuntary closures.
- Insolvency: Insolvencies are identified using judicial records from the Austrian legal notices database (Ediktsdatei), including bankruptcies, formal restructuring procedures, and cases where proceedings were rejected due to insufficient assets. Multiple

⁵ Some parts of it also use an extended set of data from the production data structure of the IFLD we call UDS (Unternehmensdatensatz).

insolvency events for the same firm are only counted separately if they are more than 90 days apart.

2. Restricted firm sample for insolvency analysis (2023):

To assess the structural characteristics of firms that became insolvent in 2023, we link insolvency events in that year to financial and employment data from 2021. We also merge in credit exposure information from Austria's central credit register as of end-2021. This allows us to construct two additional indicators: a binary variable for whether a firm held bank loans, and the total volume of outstanding bank liabilities. By referencing a point in time well before the insolvency event, we enable a comparison of firm characteristics. We focus on 2023 insolvencies because 2021 is the most recent year for which harmonized and complete balance sheet, employment, and loan-level data are available across firms. Using 2021 data ensures that the weighting variables reflect the pre-insolvency characteristics of both insolvent and surviving firms. We are currently working on extending the IFLD to enable consistent linkage of financial and employment variables across multiple years, which will allow future analyses to track changes in firm characteristics and insolvency dynamics over time. This restricted sample only includes firms with legal forms that are required to submit annual financial statements to the commercial register. These are limited liability companies (GmbH), stock corporations (AG), limited partnerships with limited liability (GmbH & Co KG), general partnerships with limited liability, and European companies (SE). Overall, the sample for 2023 comprises about 193,000 firms that are required to submit annual financial statements. Somewhat surprisingly, however, almost 10% of firms legally required to submit financial statements did not do so in 2023 (see also table 2 in section 4.2).

The two subsets listed above form the empirical basis for the analyses that follow, with one subset covering the full firm population over time, and one the firms required to submit annual financial statements, which enables a focus on firm-level characteristics before insolvency. The next section outlines the methodology for constructing both unweighted and weighted insolvency indicators based on these data.

3.2 Construction of indicators and metrics

The most basic measure for assessing the prevalence of insolvencies is the unweighted insolvency rate, defined as the proportion of insolvent firms relative to the total number of firms in a given population:

$$\text{Insolvency rate} = \frac{\text{Number of insolvent firms}}{\text{Total number of firms}} \times 100.$$

This formulation treats all firms equally, regardless of their economic size or systemic relevance. It relates the number of insolvent firms to the total firm population, which changes continuously. While intuitively and informationally superior to mere insolvency counts, it still has serious limitations in environments such as Austria, where the firm population includes a large share of economically marginal entities. These include dormant holding companies, tax-optimization vehicles, or firms created solely for asset isolation, which inflate the firm population without being economically relevant entities with a relevant business model. On top of that, the failure of a small company is treated identically to the insolvency of a large employer or a major credit client, despite their vastly different implications for employment, creditor exposure, and economic reallocation. This limitation is particularly relevant in the Austrian context, where

the firm size distribution is highly skewed, with many very small firms and only a small fraction of large firms (Hirsch et al., 2025).

To overcome these shortcomings, we adopt a weighted insolvency rate that accounts for each firm's economic significance. The general form of the weighted rate is:

$$\text{Weighted insolvency rate} = \frac{\sum_{i=1}^N w_i \cdot d_i}{\sum_{i=1}^N w_i} \times 100,$$

where w_i denotes the weight assigned to firm i , d_i is a binary indicator equal to 1 if firm i is insolvent in 2023 and 0 otherwise, and N is the total number of firms in the respective subset.

The choice of the weighting variable reflects the economic dimension we seek to analyze. We construct four variants of the weighted insolvency rate:

1. Asset-weighted: using total assets to capture the share of balance sheet resources at risk.
2. Employment-weighted: using the number of employees to reflect labor market exposure.
3. Loan-dummy weighted: assigning a weight of 1 to firms with bank loans to isolate insolvencies among bank credit-taking firms.
4. Loan-volume weighted: using outstanding bank liabilities to measure the potential financial risk to the banking system.

All weights are derived from firm characteristics observed in 2021, while insolvency events are recorded for the year 2023. This approach accounts for the fact that balance sheet data are often missing or incomplete at the time of insolvency – particularly for firms that fail early in the year or do not file final accounts. Relying on 2021 data ensures that the information used for weighting is not only available and consistent but also reflects the pre-distress situation of both insolvent firms and their non-insolvent peers. This allows for meaningful comparisons across firms and ensures that all weighting variables – such as firm assets, employment, and loan exposures – refer to a common reference point prior to the insolvency event. The weighted approach improves interpretability by allowing us to assess whether insolvencies are concentrated among small, economically marginal firms or whether they disproportionately affect larger, more economically significant entities. If the weighted insolvency rate exceeds the unweighted one, this signals that larger or more exposed firms are relatively more affected. In contrast, a lower weighted rate indicates that insolvencies are primarily occurring among smaller firms with limited macroeconomic relevance. Therefore, the approach also provides a simple decomposition of the unweighted rate, which simply assumes equal weight across all firms. By applying economically meaningful weights, we preserve the firm-level structure while shifting analytical focus toward the aggregate material impact. Asset-weighted rates can simply be interpreted as a percentage of total assets, employee-weighted rates as a percentage of total employees, and loan-weighted rates as a percentage of total loans held or employed by firms that are affected by insolvencies. This enables a clearer distinction between the frequency of insolvencies and their economic significance.

4 Empirical results

This section presents the empirical results on firm dynamics and insolvency patterns in Austria, drawing on the IFLD described earlier. We begin with an overview of aggregate firm stocks, entries, exits, and insolvency trends over time (section 4.1). We then assess the economic relevance of insolvencies using weighted measures that account for firm size, employment, and credit exposure (section 4.2). Finally, we explore the age profile of insolvent firms to examine the life-cycle dimension of business (section 4.3).

4.1 Firm stocks, flows, and insolvency trends

Table 1 presents an overview of firm dynamics in Austria from 2019 to 2024. The stock of firms increased from 238.7 thousand in 2019 to 279.7 thousand in 2024, reflecting overall stable and continuous growth – even through the Covid-19 pandemic.

Firm turnover, defined as the sum of firm entries and exits, ranged between 25.2 thousand and 29.3 thousand firms annually. Entry numbers were relatively stable, fluctuating between 16.2 thousand and 20.2 thousand per year, with a slight decline after 2021. Exits remained comparatively low during the pandemic years 2020 and 2021, with about 9.0 thousand exits annually, before rising to 11.8 thousand in 2023 and decreasing to 10.6 thousand in 2024.

Insolvencies decreased sharply during the COVID-19 crisis, falling to 1.5 thousand cases in 2020 and 2021. By 2024, insolvencies rose to 3.2 thousand, doubling compared to the pandemic lows. However, even at their 2024 peak, insolvencies remained a minor component of total firm turnover, with entries and voluntary exits dominating firm dynamics.

Overall, the rise in insolvencies in 2023 and 2024 must be viewed in the context of a growing firm population and continued high levels of entries. In our view, the data can be best described as representing a gradual normalization of firm dynamics rather than a crisis.

Table 1

Firm stock and flows from 2019 to 2024

	Stock of firms	Entries	Exits	Turnover (sum of entries and exits)	Insolvencies
Thousands					
2019	238.7	16.3	9.7	26.0	2.2
2020	245.3	16.2	9.0	25.2	1.5
2021	256.5	20.2	9.1	29.3	1.5
2022	266.5	19.2	9.0	28.2	2.0
2023	274.1	16.6	11.8	28.4	2.5
2024	279.7	17.3	10.6	27.9	3.2

Note: Data includes all registered firms which are non-financial firms (ESA sector 1100) in Austria. All values in thousand firms.

Source: IFLD 2021.

To illustrate this point more accurately, we present relative indicators in chart 1. Despite fluctuations in absolute firm numbers, the turnover rate – defined as the sum of entries and exits relative to the total firm stock – remained remarkably stable, ranging between 10% and 11.5% throughout the period under review. In contrast, insolvencies as a share of total turnover reveal a clear upward trend: From a low of

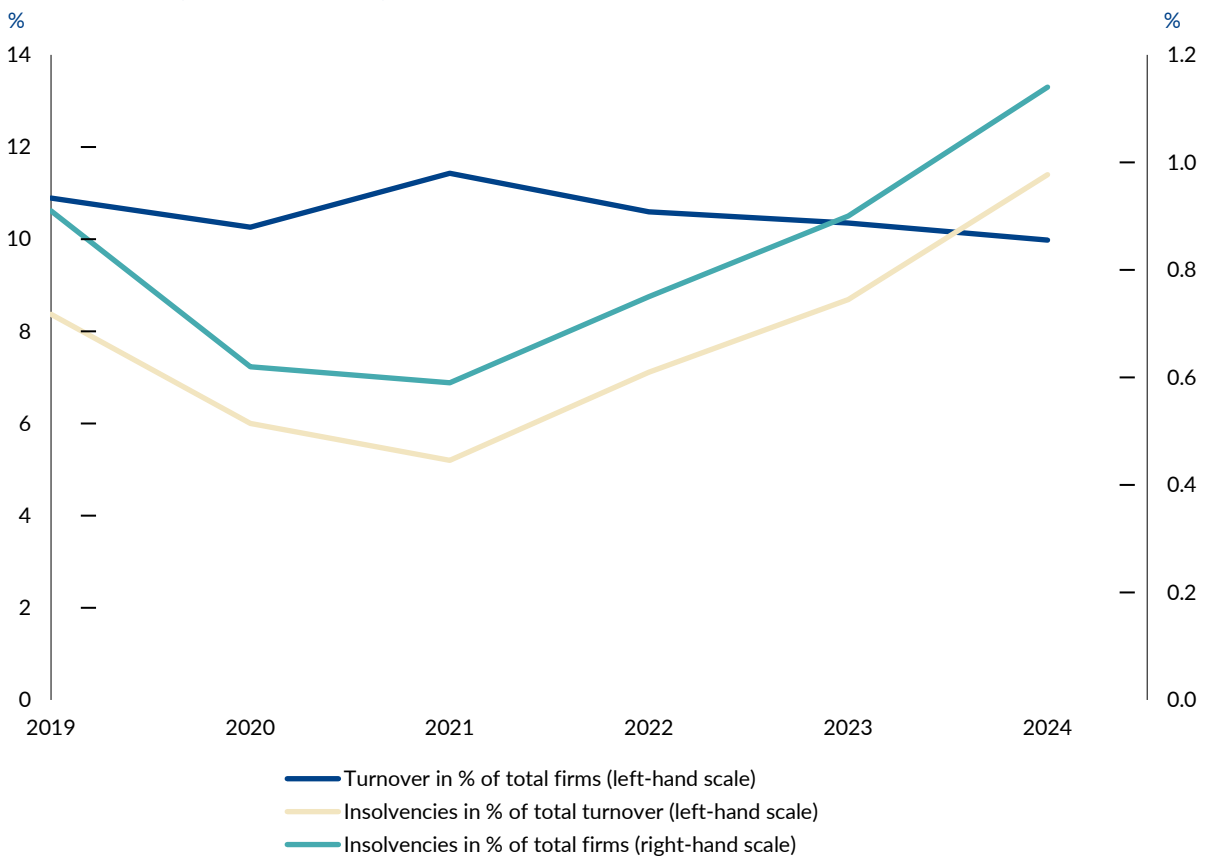
5.2% in 2021, this share rose steadily to reach 11.4% by 2024. This shift suggests that, while the overall level of firm turnover held steady, a growing proportion of exits were due to insolvencies rather than other (including voluntary) exits.

Measured against the total firm population, however, insolvency rates remained far more stable, hovering around 1% – with a low of 0.59% in 2021 and a modest increase to 1.14% by 2024. This relative stability, despite the rise in absolute insolvency cases, reflects the continuous growth of the firm base and indicates that insolvencies remain a minor component of broader firm dynamics.

Taken together, these findings point to a normalization in the composition of exits following the artificial suppression of insolvencies during the pandemic, rather than to a sign of systemic distress.

Chart 1

Firm turnover (entries and exits) and insolvencies



Source: OeNB, UDS.

4.2 Insights from weighted insolvency rates

As outlined in section 3.1, this analysis focuses on the restricted population of firms that are legally required to submit annual financial statements. In 2021, this sample amounted to approximately 193,000 firms. Within this group, not all firms provide complete data for the variables used in our weighting approaches. While bank loan information is available for the entire sample, a substantial share of firms has missing values for total assets or employment figures. It is surprising that almost 10% of firms lack

balance sheet information, even at the more aggregated balance sheet levels. After all, they are legally required to provide such data. This lack of information is a severe problem for data analyses.

In what follows, we refer to a full available sample when each insolvency rate is calculated based on the largest possible subset for that variable. Alternatively, we refer to a complete-data subsample when restricting the analysis to firms with non-missing values across all dimensions. This smaller, fully observed subsample allows for a robustness check that ensures comparability across weighting methods. Analyses based on the full available sample that claim to make statements about the full population of firms required to submit statements rely on the assumption that data are missing at random and support greater external validity. By contrast, analyses based on the complete-data subsample improve internal validity by holding the population constant. At the same time, however, these analyses throw away a lot of information – at the cost of potentially excluding systematically different firms and risking external validity.

Table 2

Subsets with regard to available data

Subset	Number of firms
Thousands	
All firms required to submit annual financial statements	193.2
Asset data available (and possibly employee data)	175.1
Employee data available (and possibly asset data)	150.9
Both available	150.5
Only asset data available	24.6
Only employee data available	0.4
Both missing	17.6

Note: All counts in thousand firms.

Source: IFLD 2021.

Before calculating weighted insolvency rates, it is important to assess the structure of the underlying data. Table 3 presents descriptive statistics for the restricted sample of firms that are legally required to submit annual financial statements, including those with missing values for key variables. We deliberately report these figures for the full available sample – rather than limiting the analysis to the complete-data subsample – to provide a transparent view of data coverage, missingness patterns, and reporting practices. This approach highlights the practical challenges associated with administrative microdata and informs the subsequent decision to construct both variable-specific and fully observed subsamples.

Table 3 reveals that missing values are particularly common for data on employment (21.9% of all firms and 32.3% of insolvent firms) and on total assets (9.3% and 25.5%, respectively). While bank liability data are complete, a substantial share of firms – especially those that became insolvent – also report zero or negative values for key financial items. Notably, 17.1% of all firms and 35.4% of insolvent firms report negative equity capital (already at least one year before the insolvency event), which is consistent with deteriorated financial positions. These patterns underscore the heterogeneity of firm size and financial health in the firm population, the importance of considering economic weight in insolvency measures, and the need for robustness checks that control for missing data in a systematic way.

Table 3

Information on missing, negative, and positive values

		Missing	< 0	0	> 0	Total
%						
Total assets	All firms	9.3	0.0	0.7	90.0	100
	Insolvent firms	25.5	0.1	0.8	73.6	100
Equity capital	All firms	9.3	17.1	0.6	73.0	100
	Insolvent firms	25.5	35.4	0.6	38.5	100
Total liabilities	All firms	9.6	0.1	5.0	85.2	100
	Insolvent firms	25.9	0.1	1.6	72.4	100
Outstanding bank liabilities	All firms	0.0	0.0	64.0	36.0	100
	Insolvent firms	0.0	0.0	58.6	41.4	100
Equity ratio	All firms	10.0	16.5	0.5	73.0	100
	Insolvent firms	26.4	34.6	0.5	38.5	100
Liability ratio	All firms	10.5	0.0	4.9	84.7	100
	Insolvent firms	26.9	0.0	1.5	71.7	100
Number of employees	All firms	21.9	0.0	24.2	53.9	100
	Insolvent firms	32.3	0.0	14.2	53.5	100

Notes: Firm statistics from the year 2021; insolvency in the year 2023; number of all firms is 193,178; number of insolvent firms is 1,977.

Source: IFLD 2021, OeNB.

Table 4 presents descriptive statistics for these variables. Values are shown separately for the firms belonging to the restricted sample (193,178 firms) and for firms that became insolvent in 2023 (1,977 firms). To ensure comparability and interpretability of financial ratios, we limit the calculation of the equity ratio to firms with non-negative equity capital. While negative equity is economically meaningful – indicating deep financial distress – it renders the equity ratio undefined or misleading and is therefore excluded from ratio-based summaries.

Table 4 highlights several structural differences between all firms and insolvent firms. Insolvent firms are markedly smaller in terms of assets (median of EUR 249,500 vs. EUR 548,000). Moreover, they report significantly weaker balance sheets, with a lower median equity ratio (0.24 vs. 0.52) and a higher 99th percentile liability ratio (27.1 vs. 11.6), reflecting extreme leverage in some cases. Interestingly, median employment is slightly higher among insolvent firms (4 vs. 2 employees), suggesting that insolvencies are concentrated not among the smallest, probably inactive entities, but among micro and small firms with some workforce. However, the mean number of employees is lower for insolvent firms (13 vs. 15), indicating that they are less likely to include large employers. The patterns detailed above justify the need for weighted insolvency measures, as they help distinguish between the frequency and the economic significance of insolvencies.

Table 4

Descriptive information for relevant statistics

		P1	P20	Median	Mean	P80	P99
Total assets	All firms	1.0	90.0	548.0	7,269.0	2,784.0	87,642.6
	Insolvent firms	0.0	54.0	249.5	4,989.8	1,088.0	21,952.4
Equity capital	All firms	-1,398.7	1.0	123.0	3,531.2	896.0	43,975.4
	Insolvent firms	-3,277.7	-154.0	2.5	3,188.9	110.0	4,492.5
Total liabilities	All firms	0	18.0	203.0	3,188.1	1,356.0	36,032.0
	Insolvent firms	0.0	55.0	270.0	1,636.3	1,057.4	17,665.3
Outstanding bank liabilities	All firms	0.0	0.0	0.0	865.3	285.2	12,698.9
	Insolvent firms	0.0	0.0	0.0	363.8	208.2	6,474.7
Equity ratio (excl. neg. equity)	All firms	0.002	0.189	0.517	0.521	0.852	1.000
	Insolvent firms	0.000	0.081	0.244	0.324	0.559	1.000
Liability ratio	All firms	0.000	0.095	0.477	3.361	0.956	11.601
	Insolvent firms	0.000	0.517	0.926	2.910	1.646	27.056
Number of employees	All firms	0	0	2	15	11	203
	Insolvent firms	0	0	4	13	12	122

Notes: Firm statistics from the year 2021; insolvency in the year 2023; total assets, outstanding bank liabilities, equity capital, total liabilities and equity as well as liabilities in EUR thousand; number of all firms is 193,178; number of insolvent firms is 1,977.

Source: IFLD 2021, OeNB.

Insolvency rates are weighted as described in section 3.2 by four key variables: total assets, number of employees, and credit exposure – measured, first, by a binary indicator for having outstanding bank loans and, second, by the volume of those liabilities. To ensure statistical robustness and meaningful comparisons, we restrict the sectoral analysis to NACE sectors with at least 50 insolvencies in 2023. This threshold prevents distortions from very small samples while retaining the vast majority of economically relevant insolvency events.

Chart 2 presents unweighted and weighted insolvency rates across these sectors, using the full available sample for each weighting variable.

The unweighted insolvency rate is highest in construction (1.99%), followed by transportation and storage (1.63%), and administrative and support services (1.60%). At the lower end, professional, scientific, and technical activities exhibit a relatively low unweighted insolvency rate (0.41%). However, when weighted by total assets, this sector shows a markedly higher rate (1.25%), indicating that the firms becoming insolvent were, on average, larger and more economically significant than suggested by their unweighted insolvency rate. In contrast, sectors like transportation and real estate record very low asset-weighted rates (0.08% and 0.09%, respectively), signaling that insolvencies in these areas tend to affect small firms with limited balance sheet size.

When weighted by employment, the sectors construction, accommodation and food services as well as wholesale and retail trade stand out with relatively high insolvency rates, suggesting notable labor market exposure. Meanwhile, sectors such as administrative services and manufacturing display lower employment-weighted insolvency rates, indicating that affected firms are typically smaller employers.

Loan-weighted rates provide insight into potential bank exposure. Construction, accommodation, and wholesale trade again show relatively high values – both on a loan-dummy and loan-volume basis. Real

estate and transportation, by contrast, display low loan-weighted rates, reinforcing the view that many insolvent firms in these sectors are small and pose limited credit risk.

Overall insolvency rates are calculated across the full sample of firms, not just as an average of the selected sectors with at least 50 insolvencies. As such, these rates provide a baseline against which the sector-specific patterns can be assessed.

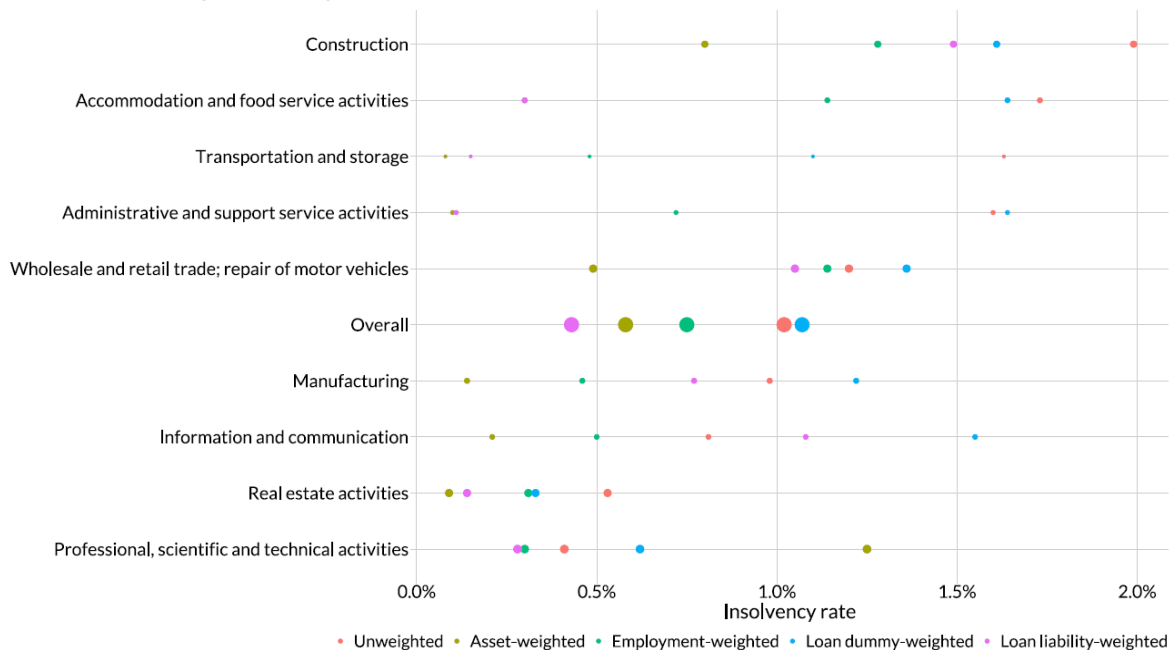
Taken together, chart 2 highlights the importance of moving beyond unweighted insolvency counts. Weighting by economically relevant firm characteristics reveals substantial heterogeneity in the actual economic significance of insolvencies across sectors. One notable pattern is that employment-weighted and loan-weighted insolvency rates are generally much lower than their unweighted counterparts, indicating that many insolvencies involve firms with relatively few workers or limited exposure to the banking system.

It is important to note that chart 2 is based on the maximum available sample for each weighting variable. As a result, the underlying firm populations differ across measures. This approach assumes that missing data are missing at random – a strong assumption. To test the robustness of our findings, we next compute insolvency rates using the complete-data subsample, in which data are available for all weighting variables. These results are shown in chart 3.

Chart 2

Insolvency rates by NACE sector (full available sample)

Comparison of unweighted and weighted rates



Source: IFLD 2021, OeNB.

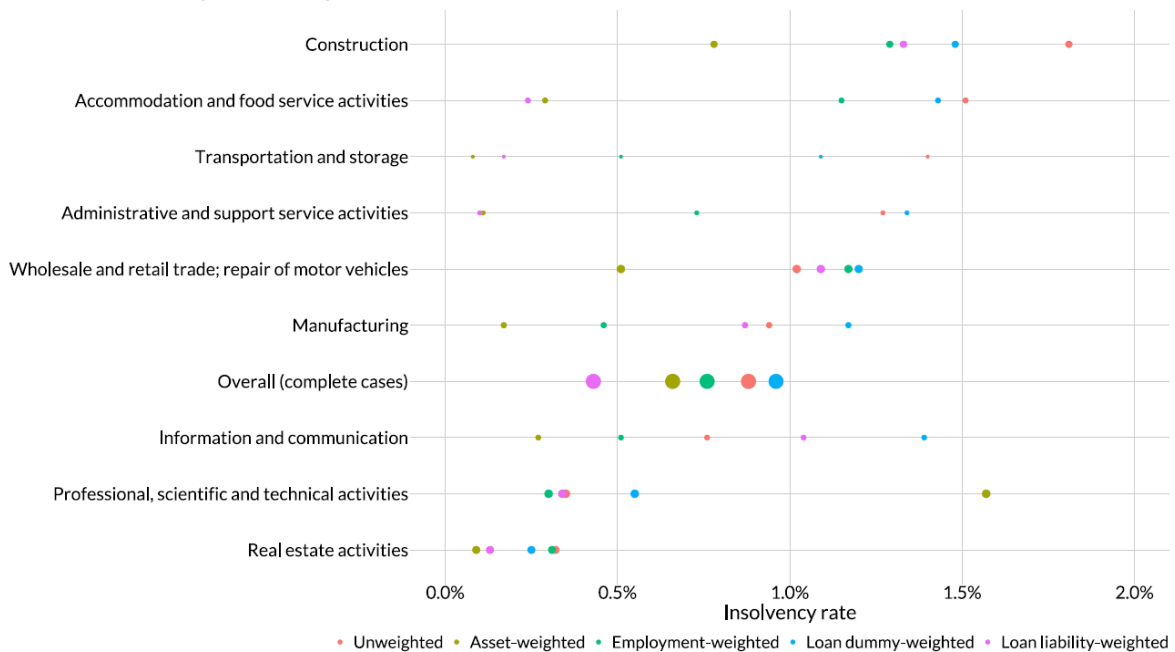
Chart 3 presents the weighted and unweighted insolvency rates by NACE sector for the complete-data subsample – i.e. firms for which information on total assets, employment, and bank loans is available. Unlike in chart 2, all rates here are calculated based on exactly the same firm population, which enhances internal validity and allows for fully aligned cross-weight comparisons.

Despite the restriction of using the complete-data subsample, the sectoral patterns remain largely consistent with those of the full available sample shown in chart 2, confirming the robustness of our results. Notably, sectors such as construction as well as accommodation and food services still show high unweighted rates, but markedly lower asset- and loan-weighted rates. Professional, scientific, and technical activities, on the other hand, again exhibit low unweighted, but higher asset-weighted insolvency rates. These results suggest that the observed differences are not artifacts of missing data and that the weighting patterns are statistically and economically stable.

While the complete-data approach ensures consistency across all weighting indicators, it necessarily excludes a non-trivial share of firms, which may reduce external validity. We therefore treat this approach as a robustness check rather than a definitive benchmark. In future work, we aim to impute missing values to expand coverage while maintaining comparability and external validity.

Chart 3

Insolvency rates by NACE sector (complete-data sample)
Comparison of unweighted and weighted rates (complete cases only)



Source: IFLD 2021, OeNB.

To sum up, insolvency rates are somewhat higher among firms with bank loans, but drop markedly when weighted by loan amounts, employment, or total assets. This suggests that insolvent, credit-taking firms tend to be economically smaller. This pattern holds across both the full available sample and the complete-data subsample. No sector with over 50 insolvencies in 2023 exceeds a 2% unweighted rate, and most fall below a 1% rate once weighted, highlighting that insolvencies remain a relatively minor component of firm dynamics when assessed in economic terms. This is also due to Austria’s large number of firms that exist primarily for legal or financial structuring purposes such as tax planning, asset shielding, or inheritance arrangements. Such firms inflate the firm count without reflecting active economic engagement.

4.3 Firm life cycle

Chart 4 presents the age distribution of firms across NACE sectors with at least 50 insolvencies in 2023, distinguishing between active firms, firms that exited in 2023, and firms that became insolvent in 2023. For this purpose, we defined mutually exclusive categories: “Firms that became insolvent in 2023” includes all firms formally recorded as insolvent in 2023, while “Firms that exited in 2023 (excl. insolvencies)” comprises all firms that disappeared from the Austrian commercial register in 2023 without having become insolvent earlier that year. Firms that were both insolvent and absent in 2024 are assigned exclusively to the category of insolvent firms. For clarity, firm ages are trimmed at the (overall) 95th percentile.

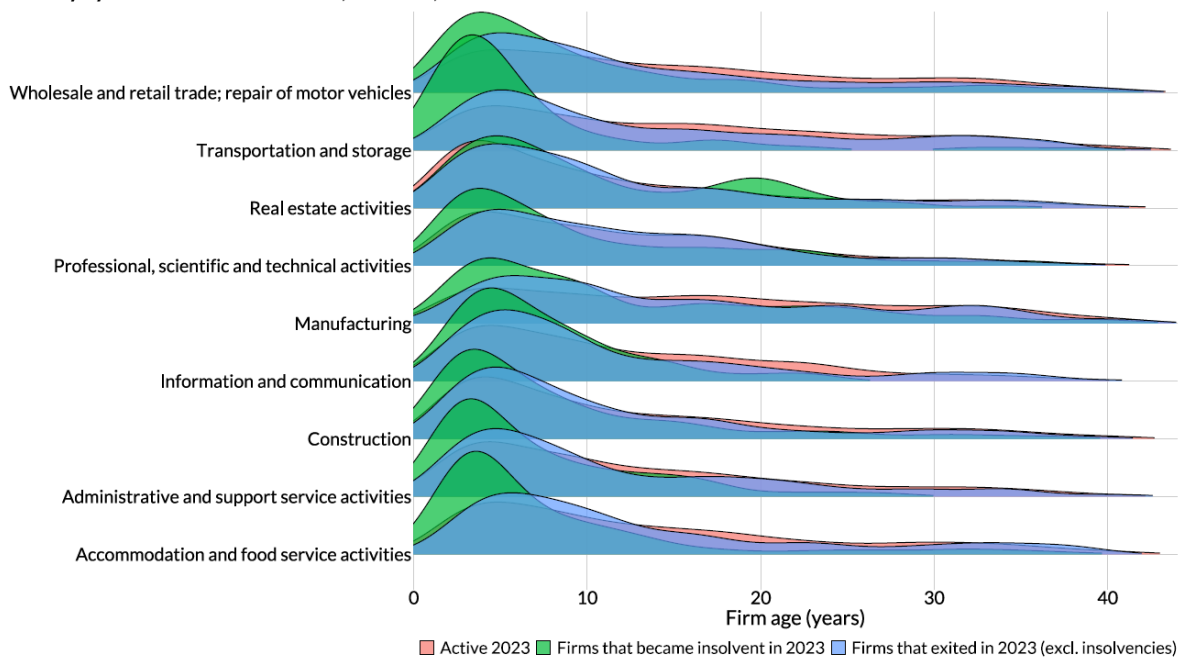
While insolvency may lead to exit, the two are not synonymous: Many firms exit voluntarily, through mergers or succession, or for nonfinancial reasons, and not all insolvencies result in immediate deregistration. The distributions reveal several consistent patterns: Both insolvencies and exits are disproportionately concentrated among younger firms, particularly in the first 10 to 15 years – a pattern consistent with early-stage fragility in firm development. At the same time, insolvencies occur across the entire age spectrum, indicating that structural decline can also affect older firms.

When compared to active firms, exits show a wider age spread, reflecting the diversity of exit pathways beyond financial distress. Insolvencies, while more narrowly distributed, still span all life-cycle stages.

These findings underscore the role of insolvency as part of a broader and continuous market selection process. A well-functioning insolvency regime must therefore accommodate both early restructuring for viable firms and timely exit mechanisms for those no longer competitive, regardless of firm age.

Chart 4

Firm age distribution by sector (min. 50 insolvencies)
Density by firm status in 2023: active, insolvent, or exited



Source: IFLD 2021, OeNB.

5 Conclusions

Insolvencies are not inherently negative events but essential mechanisms of structural adjustment in modern market economies built on limited liability. Yet in Austria, they are often misunderstood and monitored through headline counts that obscure their economic function. Moreover, these counts are frequently instrumentalized by interest groups to create crisis narratives, mobilize public support, and exert pressure for favorable policies or taxpayer-funded support.

The in-depth analysis of insolvency data from the period 2019–2024 conducted in this paper shows that simple insolvency counts provide limited insight. Simplified extensions using data from the first half of 2025 support the results achieved here: Simple counts neglect firm heterogeneity, ignore the broader dynamics of firm turnover (exits and entries), and fail to capture firms' economic relevance. Using granular firm-level microdata, we developed weighted insolvency rates based on firm assets, employment, and bank credit exposure. The rates reveal that insolvencies were not only rare – around 1% annually – but also remarkably stable, even during the pandemic. Furthermore, they were concentrated among small firms. However, insolvency rates are likely depressed by a large number of marginal legal entities that exist for tax, asset protection, or succession purposes rather than for active business operations. We did not adjust for this issue, meaning that many economically inactive firms remained in the denominator.

Recognizing these limitations underscores the importance of integrated firm-level microdata for building more meaningful indicators that can inform targeted, evidence-based policy.

In future research, we seek to extend the metrics used in this paper over time to also capture structural trends. Such longitudinal perspectives are critical for understanding how insolvency systems contribute to resilience and productive transformation in the broader economy. In addition, we plan to systematically identify firms that are economically active – i.e. those engaged in meaningful production and market activity – to obtain more meaningful benchmarks for firm dynamics, including insolvency rates. In parallel, we plan to impute missing data to reduce potential biases arising from incomplete reporting and enhance the robustness of future analyses.

Looking ahead, we hope that our findings not only support policymakers in designing more effective insolvency frameworks and strengthening the enforcement of firms' reporting obligations; we also hope that our results foster a more constructive understanding of insolvency – as a necessary mechanism for structural adjustment rather than a purely negative event.

6 References

- Alexander, R. G. and D. E. Klemmer. 2009.** Creative wealth planning with grantor trusts, family limited partnerships, and family limited liability companies. In: Estate Planning and Community Property Law Journal 2(2). 307–392.
- AK – Arbeiterkammer. 2015.** Tax Avoidance, Tax Evasion and Tax Havens. Vienna: Chamber of Labour. https://www.arbeiterkammer.at/infopool/wien/Studie_tax_avoidance.pdf
- Albuquerque, B. and R. Iyer. 2024.** The rise of the walking dead: Zombie firms around the world. In: Journal of International Economics 152.
- André, C. and L. Demmou. 2022.** Enhancing insolvency frameworks to support economic renewal. OECD Economics Department Working Papers, No. 1738. <https://doi.org/10.1787/8ef45b50-en>
- Berger, A. N. and G. F. Udell. 2006.** A more complete conceptual framework for SME finance. In: Journal of Banking & Finance 30(11). 2945–2966. <https://doi.org/10.1016/j.jbankfin.2006.05.008>
- Bartelsman, E. J., J. Haltiwanger and S. Scarpetta. 2004.** Microeconomic evidence of creative destruction in industrial and developing countries. IZA Discussion Papers, No. 1374. Institute for the Study of Labor (IZA), Bonn.
- Bureau, B. and T. Libert. 2016.** Is the impact of corporate bankruptcies only negative? Banque de France. <https://www.banque-france.fr/en/publications-and-statistics/publications/impact-corporate-bankruptcies-only-negative>
- Caballero, R. J., T. Hoshi and A. K. Kashyap. 2008.** Zombie lending and depressed restructuring in Japan. In: American Economic Review 98(5). 1943–1977.
- Coutinho, L., A. Kappeler and A. Turrini. 2023.** Insolvency frameworks across the EU: Challenges after COVID-19. European Commission Discussion Paper 182. <https://doi.org/10.2765/524729>
- Crawford, G. S., N. Pavanini and F. Schivardi. 2018.** Asymmetric information and imperfect competition in lending markets. In: American Economic Review 108(7). 1659–1701.
- Djankov, S., O. Hart, C. McLiesh and A. Shleifer. 2008.** Debt enforcement around the world. In: Journal of Political Economy 116(6). 1105–1150.
- Elsinger, H., P. Fessler, S. Kerbl, A. Schneider, M. Schürz and S. Wiesinger. 2021.** Calm before the storm? Insolvencies during the Covid-19 Pandemic. In: Financial Stability Report 41. OeNB. 57–76.
- European Parliament and Council. 2019.** Directive (EU) 2019/1023 on preventive restructuring frameworks, discharge of debt, and measures to increase the efficiency of procedures concerning restructuring, insolvency, and discharge of debt. Official Journal of the European Union, L 172/18. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019L1023>
- Ferstl, R. and D. Seres. 2012.** Clustering Austrian banks' business models and peer groups in the European Banking Sector. In: Financial Stability Report 24. OeNB. 79–95.

Fu, K., K. Wennberg and B. Falkenhall. 2020. Productive entrepreneurship and the effectiveness of insolvency legislation: A cross-country study. In: *Small Business Economics* 54(2). 383–404. <https://doi.org/10.1007/s11187-018-0040-6>

Hansmann, H. and R. Kraakman. 2000. The essential role of organizational law. In: *The Yale Law Journal* 110(3). 387–440.

Hart, O. 1995. *Firms, Contracts, and Financial Structure.* Oxford University Press.

Hauner, D. 2005. Explaining efficiency differences among large German and Austrian banks. In: *Applied Economics* 37(9). 969–980. <https://doi.org/10.1080/00036840500081820>

Hirsch, B., A. Riedl and S. Trappl. 2025. Firm characteristics and bank loan distribution: Who borrows in Austria? In: *OeNB Bulletin Q1/25*. 1–21.

Industriemagazin. 2024. Inflation, Zinsen, Energiekosten: Insolvenzen steigen auf Rekordhoch. September 24. [Österreich vor Insolvenzen-Rekord: 2024 könnten über 7.000 Firmen pleitegehen | INDUSTRIEMAGAZIN](https://www.industriemagazin.at/oesterreich-vor-insolvenzen-rekord-2024-koennten-ueber-7000-firmen-pleitegehen/)

Jamet, V., A. Massengo, J.-B. Gossé and E. Lamy. 2023. Speeding up the process of harmonising European insolvency law to strengthen financial integration. In: *Bulletin de la Banque de France* 249/3.

Kliatskova, T. and L. B. Savatier. 2019. Insolvency regimes and economic outcomes. *DIW Roundup: Politik im Fokus* 133. Deutsches Institut für Wirtschaftsforschung.

Kreditschutzverband von 1870 (KSV1870). 2024. Unternehmensinsolvenzen um 13 Prozent gestiegen. Press Release, January 12. [Insolvenzstatistik 2023 final | KSV1870](https://www.ksv.at/insolvenzstatistik-2023-final-ksv1870)

Kreditschutzverband von 1870 (KSV1870). 2025. Unternehmensinsolvenzen: Geringer Anstieg auf hohem Niveau. Press Release, April 10. [https://www.ksv.at/KSV1870-Insolvenzstatistik-Unternehmen Q1 2025 final pdf](https://www.ksv.at/KSV1870-Insolvenzstatistik-Unternehmen-Q1-2025-final-pdf)

La Porta, R., F. Lopez-de-Silanes, A. Shleifer and R. W. Vishny. 1998. Law and finance. In: *Journal of Political Economy* 106(6). 1113–1155.

McGowan, M. A. and D. Andrews. 2016. Insolvency regimes and productivity growth: A framework for analysis. *OECD Economics Department Working Papers*, No. 1309. <https://doi.org/10.1787/5jlv2jqhxgq6-en>

Schwank, F. 2013. The Austrian private foundation as a property holding structure. In: *Trusts & Trustees* 19(6). 558–562.

Stiglitz, J. E. and A. Weiss. 1981. Credit rationing in markets with imperfect information. In: *The American Economic Review* 71(3). 393–410.

© Oesterreichische Nationalbank, 2025. All rights reserved.

Address: Otto-Wagner-Platz 3, 1090 Vienna

PO Box 61, 1011 Vienna, Austria

Website: www.oenb.at

May be reproduced for noncommercial, educational and scientific purposes provided that the source is acknowledged.

Opinions expressed by the authors do not necessarily reflect the official viewpoint of the Oesterreichische Nationalbank or the Eurosystem.

Data protection information: www.oenb.at/en/dataprotection

ISSN 2960-5415 (online)