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can complicate access to debt financing for growth firms

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**The flip side of the coin: how entrepreneurship-oriented insolvency laws can complicate access
to debt financing for growth firms**

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Abstract

This study examines the impact of the change towards a more debtor-friendly insolvency law on debt financing of growth firms. Prior studies rarely consider that insolvency laws not only impact entrepreneurship but can also impact the relationship between the firm and its various stakeholders. We consider the impact on the relationship with the key stakeholders of the firm, namely its creditors. Using the recent change in Belgian insolvency law as an exogenous policy shock, we investigate the changes in the use of debt for growth firms, considering the heterogeneity of debt. Our findings indicate that the financing mix for growth companies has altered after the change towards a more debtor-friendly insolvency law: they seem to be less likely to receive financing from financial institutions and trade creditors. However, we found that payments to the government and employees are delayed after the change, probably to compensate for this lack of debt financing.

1. Introduction

Entrepreneurial activity is generally assumed to be a crucial mechanism for economic development (Van Stel, Carree, & Thurik, 2005). At the macro level, entrepreneurship is a driver of structural change, job creation, and overall economic growth. At the micro level, it drives the innovation and subsequent development of new firms (Stam, Suddle, Hessels, & Van Stel, 2009). For this reason, policymakers seek to craft legislation that encourages entrepreneurship. Research has also shown that individuals' propensity to start new ventures is generally affected by such legislation or economic policy (Armour & Cumming, 2008). While there is already extensive empirical literature on the effect of tax legislation and interest policy

on entrepreneurship (Braunerhjelm & Eklund, 2014; Georgiou, 2009), the impact of insolvency laws on entrepreneurship is rarely examined. Nevertheless, the few empirical findings in the literature support a link between insolvency law and entrepreneurship (Armour & Cumming, 2008; Braunerhjelm & Eklund, 2014; Lee, Peng, & Barney, 2007; Peng, Yamakawa, & Lee, 2010). Several cross-country studies have found a positive association between a more debtor-friendly insolvency law and entrepreneurship by studying the change in self-employment or firm-formation rates (Armour & Cumming, 2008; Fan & White, 2003; Lee, Lee, Yamakawa, & Yamakawa, 2012; Lee, Yamakawa, Peng, & Barney, 2011). In addition, some single-country studies have shown that changes towards a more debtor-friendly insolvency law positively impact an individual's decision to start or restart (e.g., after a bankruptcy) a business (Dewaelheyns & Hulle, 2008).

Although an insolvency law may directly affect whether or not to start a business, it may also have an influence on the entrepreneurial environment over the lifetime of a business. More specifically, firms that aim to grow need sufficient financial resources in order to finance their growth. For this reason, growth firms often rely on debt to foster this growth (Vanacker & Manigart, 2010). However, we argue that insolvency laws may also influence the extent to which growth firms can attract debt financing and is therefore essential to examine because it gives us a complete picture of the effectiveness of the law.

More specifically, in insolvency proceedings, the interests of the debtor on the one hand and the rights of the creditor on the other must be balanced (Estrin, Mickiewicz, & Rebmann, 2017; Staszkievicz & Morawska, 2019). When we fail to take this balance into account, the overall success of the change in the law is ambiguous. The shift towards a more debtor-friendly insolvency law generally means that the law is 'less friendly' towards creditors, making the issuance of debt towards entrepreneurs less likely or contracted under stricter terms. For instance, the law changes often introduce measures that ensure that all new income obtained

after bankruptcy goes directly to the bankrupt entrepreneur. While this may benefit debtors by providing them with a second chance, it also means that creditors may face increased risks and challenges in recovering their claims. Therefore, a debtor-friendly insolvency law that takes (too) little account of creditors may lead to insufficient financial resources in the market, since creditors such as banks may become more cautious when extending credit to firms operating within a debtor-friendly insolvency environment. We argue that this could lead to a situation in which the insolvency law is an obstructing factor in the granting of credit towards firms. This situation would be especially harmful to growth firms, which are generally characterized by a higher risk profile (Wilson, 2011). As a result, growth firms may not always obtain (sufficient) funding to grow further. Therefore, this study will investigate to what extent insolvency laws can disrupt the possibility of attracting debt financing for growth companies. In doing so, we will not only look at whether growth companies will have more or less access to debt in general after the change in the insolvency law. We will also take into account the heterogeneity of debt by examining the change in the general debt level, the proportion of debt provided by financial institutions and the proportion of trade credit after the law change.

We will examine the effect of implementing a more debtor-friendly insolvency law within a single country, namely Belgium. This allows us to observe behavioral changes resulting from a shift in an insolvency law, which contrasts with existing studies using a cross-country analysis. Differences in (entrepreneurial) behavior across countries may be explained not only by differences in (insolvency) regulations. It may also be explained by cultural, political, and economic disparities and interactions between different relevant fields of law which may co-determine the legal structure of a firm and its legal relations with creditors.

As changes in insolvency laws mainly attempt to foster entrepreneurship and start new businesses, insolvency laws will especially impact private SMEs (Keasey, Pindado, & Rodrigues, 2015). The impact on access to debt is also expected to be higher for private SMEs

as they are more informationally opaque, which makes them riskier to creditors (Vanacker & Manigart, 2010). Therefore, this study focuses on SMEs. Our selection ultimately results in a dataset of 25 284 companies, active in both 2017 (the year before the implementation of a more debtor-friendly insolvency law) and 2019 (the year after this implementation). The empirical results suggest first and foremost that growth firms experience more difficulties in obtaining debt financing in general after the law change. Moreover, our results also indicate that the financing mix of growth companies changed after the change towards a more debtor-friendly insolvency law: they become less likely to receive financing from financial institutions and trade creditors, but try to manage their cash position in other ways by deferring payments to the government and employees.

This study contributes to the existing literature in several ways. First, while previous studies have primarily focused on the intentions of entrepreneurs to start or restart businesses in response to changes in insolvency laws, our research goes a step further. We examine how a shift towards a more debtor-friendly insolvency law affects the debt financing of growth firms. By considering the impact of insolvency laws on the relationship between firms and their stakeholders, specifically creditors, we provide a more comprehensive understanding of the effects of such laws.

Furthermore, previous studies have predominantly utilized cross-country analyses or focused solely on interest rates when assessing the effectiveness of insolvency laws. In contrast, our study employs a single-country analysis, allowing us to observe behavioural changes resulting directly from a change in the insolvency law within Belgium. This approach provides valuable insights into the specific impact of the law on debt financing in a localized context.

Additionally, we extend the analysis beyond traditional banking institutions by recognizing the heterogeneity of creditors. Rather than solely focusing on banks, we consider

multiple stakeholders involved in debt financing. This more comprehensive examination of creditors offers a nuanced understanding of the impact of insolvency laws on debt accessibility.

Beyond its contributions to the existing literature, this study also has practical implications for practitioners and policymakers. By shedding light on the potential consequences of the legal environment on obtaining debt financing, our findings can guide decision-making regarding the design and implementation of insolvency laws.

The paper starts with a description of the institutional context, an overview of the theoretical background, and the development of the hypotheses. Next, we discuss the data set, describe how growth is measured, how the dependent variables to determine the degree of debt financing are defined, and how independent constructs are measured. After that, we present our research findings, followed by conclusions and avenues for further research.

2. Theory and hypotheses

2.1. Institutional context

On May 1, 2018, the Belgian legislator implemented a thorough overhaul of its insolvency law: a Book XX was added to the Code of Economic Law, which contains a revised codification of both the Bankruptcy Act of August 8, 1997, and the Act on the Continuity of Enterprises of January 15, 2009. At the moment of entry into force of Book XX of the Code of Economic Law, the Acts of 1997 and 2009 were repealed. Book XX of the Code of Economic Law now contains all legal provisions relating to insolvency of undertakings in Belgium, including natural persons-entrepreneurs, legal persons and legal entities without legal personality (e.g. a partnership). All three subjected categories of debtors are treated on the same footing by Book XX., i.e. Belgian insolvency law does not distinguish between natural persons-entrepreneurs, legal entities without legal personality and legal persons in insolvency proceedings in any

fundamental manner, as they are subject to the same insolvency procedures. However, Belgian law does take into account the specific characteristics of each of the three types of creditors.

Belgian law recognizes two main types of insolvency proceedings: the judicial reorganization procedure (*reorganization judiciaire*) and the bankruptcy procedure (*faillite*). The judicial reorganization procedure is a reorganization procedure which aims to help avoid formal bankruptcy through the development of a reorganization scheme, proposed payment plans, proposed haircuts for certain (categories of) creditors etc. while the debtor remains in possession. Such a procedure can either be fostered by a court-appointed mediator, or through formalized procedure under the supervision of the commercial court.

The bankruptcy procedure on the other hand is aimed at the liquidation of the bankrupt enterprise by a trustee in bankruptcy (*curateur*), starting from the principle of the equality of creditors, while taking into account all relevant special rights and security interests. Crucially, at the closing of the bankruptcy procedure, legal entities will cease to exist, whereas for natural persons the default rule is that all debt which was not paid during the procedure continues to exist unless the debtor qualified for a debt remission scheme. Historically, Belgian insolvency law hinged on the idea that all debt by commercial debtors should be paid and that a bankruptcy procedure should have a sanctioning character (R. Crivits & J. Vrebos, 2023; Verougstraete, 2018). Gradually, this central idea has been softened, e.g. through the introduction of a conditional debt remission scheme.

With the introduction of the revised insolvency law in 2018, which primarily focuses on the bankruptcy procedure, the Belgian legislator intended to further liberalize the debt remission system and ensure that all new income obtained after bankruptcy goes directly to the bankrupt entrepreneur. The philosophy behind the legislative amendments is that an insolvency law should offer a second chance to a bankrupt entrepreneur, rather than dissuading from

entrepreneurial activities (Appermont, 2020), and even to stimulate new entrepreneurial activities (Verougstraete, 2018). According to the Explanatory Memorandum accompanying the bill which led to the introduction of Book XX, the promotion of ‘a second chance’ for entrepreneurs was one of the main aims of the Belgian legislator in this reform. Moreover, when preparing these reforms, the Belgian legislator took note of the proposal of November 2016 of the European Commission (Verougstraete, 2018). This proposal would lead to the adoption of European Directive 2019/1023 on preventative restructuring frameworks, on discharge of debt and disqualifications, which was adopted on 20 June 2019. Interestingly, this Directive imposes an obligation for all EU Member States to ensure that insolvent entrepreneurs have access to at least one procedure that can lead to a full discharge of debt and contains the boundaries for a legal framework for debt relief in each Member State. This Directive ought to have been transposed to national law by all Member States by 17 July 2021.

Even against the background of this uniform European framework, the Belgian debt remission scheme is quite generous. For example, one of the new rules states that a debtor in a bankruptcy proceeding is allowed, unlike under the previous insolvency law, to keep all income received from a cause that dates back to after the bankruptcy (Reynaert, 2020; Vandebogaerde, 2020). Additionally, the threshold for natural persons which qualify as ‘undertakings’ according to the Code of Economic Law to obtain immediate debt relief at the closing of the bankruptcy proceedings has been significantly lowered by the Belgian legislator in the sense that it has a quasi-automatic procedure upon mere request of the natural person involved (Pasteger, 2018).

Furthermore, the new insolvency legislation was introduced in a broader context of economic law reforms in Belgium. On May 1, 2019, the new Belgian Code on Companies and Associations entered into law. In the same vein, the Belgian legislator aimed to support entrepreneurial activity by further lowering the threshold to set up a limited liability company, which offers strong insolvency protection to its shareholders. For example, the Belgian

legislator abolished the minimum capital requirement for the ‘Besloten Vennootschap’ and allows the founders more leeway to obtain debt financing rather than requiring that the founders provide equity to the company itself. These and other regulatory interventions imply that entrepreneurs can set up a limited liability company, which offers strong insolvency protection, in a relatively ‘cheap’ manner. Even though these provisions are technically part of company law, they play a pivotal role in insolvency proceedings and hence have an ‘insolvency finality’. The ultimate goal of this package of legislative measures reforming Belgian economic law was to stimulate entrepreneurship in Belgium (Geens, 2017). In practice therefore, these branches of the law are strongly intertwined. For example, institutional creditors such as banks often demand personal guarantees from company founders which also serve as directors when lending to the company. If such directors can obtain debt relief by investigating a bankruptcy procedure, such creditors may adjust their behavior. Therefore, the objective of this study is to examine this comprehensive set of measures as a cohesive whole, encompassed by the overarching goal of a change towards a more debtor-friendly insolvency law.

A comparison of the key legal provisions of the new insolvency and corporate law is summarized in Table 1, so as to clarify the expected pro-debtor effect in the Belgian law.

Table 1
Key changes in the Belgian insolvency and corporate law, along with their expected pro-debtor effect.

Old rule	New rule	Expected net effect
Art. 16 Bankruptcy Law August 8, 1997: The bankrupt estate encompasses all assets held by the bankrupt entrepreneur, with the exception of non-attachable assets as defined in the Belgian Code of Civil Procedure. This rule also applies to all non-attachable assets acquired by the bankrupt entrepreneur after the bankruptcy proceeding has been opened. Other assets acquired by the bankrupt entrepreneur during the bankruptcy procedure will be part of the bankrupt estate.	Art. XX.110 Code of Economic Law: The bankrupt estate encompasses all assets held by the bankrupt entrepreneur and all assets that are acquired by the bankrupt entrepreneur on the basis of a cause predating the opening of the bankruptcy procedure, apart from non-attachable assets as defined in the Belgian Code of Civil Procedure. All assets acquired by the bankrupt entrepreneur on the basis of a cause postdating the opening of the bankruptcy procedure are not part of the bankrupt estate.	Pro-debtor effect: The new rule has a significant pro-debtor effect because it entails a significant reduction of the scope of the bankrupt estate, which is to be liquidated by the trustee in bankruptcy ('curator'). The bankrupt entrepreneur can retain all assets acquired on the basis of a cause (e.g., labor performances) that postdates the opening of the bankruptcy procedure. This encourages the bankrupt entrepreneur to start other economic activities, even during the bankruptcy procedure, by excluding the gains derived from such activities from the bankrupt estate.
Art. 80 Bankruptcy Law August 8, 1997: Under certain conditions, the bankrupt entrepreneur could benefit from a scheme of debt remission for debts which could not be repaid, even after liquidating all relevant assets in their bankrupt estate. This was the co-called 'excusability scheme'. Conditions were - <i>inter alia</i> - that the creditors of the bankrupt entrepreneur were permitted to advise on the excusability. The trustee in bankruptcy ('curator') and the bankrupt entrepreneur would also be heard by the bankruptcy court towards the end of the bankruptcy proceedings. If the court concluded that the bankrupt entrepreneur was 'unlucky' and 'acted in good faith', they could be 'excused'.	Art. XX.173 Code of Economic Law: The bankrupt entrepreneur can obtain debt remission for all debts which could not be repaid, even after liquidating all relevant assets in their bankrupt estate under the new regime of 'discharge of debt'. The bankrupt entrepreneur should launch a request for debt discharge within three months after the opening of the bankruptcy procedure. The bankruptcy court should decide on the debt discharge request by the end of the bankruptcy procedure at the latest. The bankrupt entrepreneur can request a decision on debt discharge before the end of the bankruptcy procedure, after a waiting period of 6 months. Any interested party, including the trustee in bankruptcy and the public prosecutor's office can, from the start of the bankruptcy procedure, request that discharge will be refused or only partially allowed, in case the bankrupt entrepreneur has committed an 'obviously grave error' which contributed to the bankruptcy.	Pro-debtor effect: The new rule has a significant pro-debtor effect because the Belgian legislator significantly reformed the former 'excusability' regime in favour of the bankrupt entrepreneur. These changes include - on a non-exhaustive basis - that the debtor can request for debt discharge before the end of the bankruptcy proceedings, that the creditors of the bankrupt estate are no longer requested to give their advice on the character and conduct of the debtor and that vague conditions such as 'being unlucky' and 'having acted in good faith' have been replaced by the more strict criterion of not having committed an 'obviously grave error' before the opening of the bankruptcy procedure. The debtor's character and conduct after the opening of the procedure are no longer to be considered. In line with the intentions of the legislator, discharge of debt should be granted on a quasi-automatic basis, upon request of the bankrupt entrepreneur.
Arts. 212 and 214 Belgian Company Code of May 7, 1999: When establishing a limited liability company ('BVBA'), one must have at least a minimal registered capital of 18,550 euro to be provided by the founder-shareholders of the company. A BVBA can be founded by one founder-shareholder, but if that founder-shareholders founds an additional BVBA, that founder-shareholder is jointly and severally liable for all debts of that additional BVBA. In other words, the shareholder will not benefit from limited liability for any additional BVBA founded alone after the first one.	Art. 5.3 Belgian Code on Companies and Associations: The BV as the new default corporate form with limited liability, can be founded by one or more founding shareholders. There is no limitation anymore on the amount of BV's one can found as sole shareholder. Moreover, the requirement to provide a minimal registered capital has been abolished. The new rule requires the founder(s) of a BV to ensure that the firm, at the moment of its founding, has equity capital that is adequate in light of the proposed activity, also considering other sources of financing, but the theoretical minimum of capital is currently 0 euro.	Pro-debtor effect: By abolishing the 'minimal capital requirement' for the default corporate legal form, the new rule allows founders more leeway to obtain debt financing rather than requiring that they provide equity to the company itself. Moreover, the amount of equity to be provided by the founding shareholders themselves is potentially much lower than 18,550 euro. Finally, one can now found an indefinite amount of limited liability companies as sole shareholder, without losing the benefit of limited liability.

2.2. Growth firms and debt financing

Financial capital is one of the essential resources a business requires to support its growth. Access to finance does not directly cause growth, but credit constraints may affect growth by suppressing it. In this regard, Becchetti and Trovato (2002) show that finance shortage is an essential restraint on the growth of firms. Therefore, to achieve their targeted growth rate, growth firms often rely on additional financial resources (Manigart & Struyf, 1997).

Firms can choose from a diverse range of financing choices, covering internally generated funds, debt financing, and new equity. Two leading approaches, the trade-off theory and the pecking order theory, are usually cited in capital structure research. According to the trade-off theory, the trade-off between tax benefits and the bankruptcy costs of debt determines the optimal capital structure (Frank & Goyal, 2003; Myers, 1984; Titman & Wessels, 1988). Therefore, the capital structure can be described as optimal when the costs and advantages of debt are equal (Fama & French, 2002). The optimal capital structure may differ from firm to firm depending on their characteristics, including size, age and tax and asset structure. Unlike the trade-off theory, the pecking order theory suggests that there is no well-defined target for a firm's debt ratio (López-Gracia & Sogorb-Mira, 2008; Myers & Majluf, 1984). More specifically, the pecking order theory predicts the existence of a financing hierarchy, where firms will first prefer to use internal funds and only use debt and finally new equity if these internal funds prove insufficient (Myers & Majluf, 1984; Vanacker & Manigart, 2010). However, internal resources are likely to be limited, especially in growth firms that consume large amounts of cash (Beck & Demirguc-Kunt, 2006).

When internal funds are insufficient to finance the growth of a firm, the question of whether to raise additional debt or new equity becomes critical. Debt financing is an important source of financing for growing businesses, as it is first of all expected to be widely available (Vanacker & Manigart, 2010). Moreover, debtholders, as for instance banks, do not wish to

share in the value creation (so control of the firm is retained) as equity investors do (Vanacker & Manigart, 2010). Therefore, issuing new equity happens rather as a last resort. Moreover, the cost of issuing new equity is overall much higher than the cost of debt, especially for small and unquoted businesses. Venture capital investors, for instance, require an average yearly return of more than 20% for later stage investments and as much as 55% for early stage investments (Sapienza, Manigart, & Vermeir, 1996). The study of Rahaman (2011) confirms the popularity of debt financing by stating that as the number of internal resources decreases, firms switch towards debt financing as a means to finance growth. Therefore, in line with, among others, the study of Vanacker and Manigart (2010), we expect that the more a company grows, the less likely it is that its internal resources will be sufficient to finance that level of growth, and thus the higher the need for debt financing. This brings us to our first baseline hypothesis.

Hypothesis 1a (H1a): There is a positive association between the firm's growth rate and its proportion of debt.

We do not only expect a relationship between the growth rate of a firm and the level of total debt, but also between the firm's growth rate and various types of debt. In general, there are four main groups of creditors: banks, trade creditors, employees (e.g., unpaid wages), and the government (e.g., unpaid taxes) (Baugnet & Zachary, 2007). It is rather unlikely that the government and employees will finance growth since there is little room for negotiation to increase these debt levels. Therefore, to finance growth, a company will most likely go to banks and trade creditors.

First of all, bank debt is widely available and principally the cheapest source of outside financing. Next, bank financing allows firms to secure the necessary funding for various purposes, such as working capital management, investment in equipment and machinery,

research and development, and expansion plans. Banks therefore provide long-term financing, such as term loans and syndicated loans, which are ideal for large investments and projects that require a lot of money. In addition, banks help firms with immediate cash flow needs by offering short-term financing options like lines of credit and short-term loans (Vanacker & Manigart, 2010).

However, bank financing also has disadvantages. More specifically, banks are quite strict and risk averse in deciding whether or not to give a loan to a firm (Rostamkalaei & Freel, 2016). Before issuing a loan, banks will first collect the necessary financial information of the firm. However, it is rather complex for a bank to assess whether the information provided by the firm is reliable and complete. Therefore, this 'asymmetry' of information will, in turn, force the bank to incur costs to screen, contract, and finally monitor the firm (Rostamkalaei & Freel, 2016). As a consequence, they will screen the potential customer before entering into the contract with the counterparty by gaining greater insight into the other party's (private) information (Berger & Udell, 1998). Then, once a bank has 'selected' a company and entered into a loan contract, the bank will continue to follow up and thus monitor the company after that, since it is difficult to ensure that entrepreneurs will not take excessive risks or misuse the funds (also known as the problem of 'moral hazard').

However, despite advancements in models and statistical frameworks that enable banks to more accurately estimate firms' probability of default (Agarwal & Taffler, 2007; Cestari, Risaliti, & Pierotti, 2013; Hovakimian, Kayhan, & Titman, 2012; Jones, Johnstone, & Wilson, 2017; Odom & Sharda, 1990; Shumway, 2001; Succurro, Arcuri, & Costanzo, 2019), the challenge of separating potentially successful firms from less successful ones, known as the problem of 'adverse selection,' still persists. While banks can assess the likelihood of default, determining which firms have the potential to overcome financial difficulties and succeed remains a complex task. Factors such as market conditions, management capabilities, and

unforeseen events can significantly influence a firm's future prospects, making it difficult to differentiate between viable businesses and those destined for failure at the outset. Thus, despite improved risk assessment capabilities, it remains a challenge for banks to separate potentially successful firms from less successful ones.

Additionally, the problems associated with asymmetric information are more present for smaller companies in a growth process (Beck & Demirguc-Kunt, 2006). Smaller growth firms often suffer from a somewhat opaque disclosure, making them perceived as more 'risky'. (Baugnet & Zachary, 2007; Rostamkalaei & Freel, 2016). For instance, they generally have limited financial reporting requirements and fewer alternative information, making it more difficult for them to signal their quality or to develop a high reputation (Berger & Udell, 1998). A bank has several ways to overcome such problems associated with information asymmetries: implementing strict risk management regulations or simply prioritizing larger, less risky firms (Baugnet & Zachary, 2007). However, these options may be detrimental for smaller firms, since they, as a result can only borrow money to a limited extent (Wilson, 2011). Therefore, especially growth companies, will simultaneously have recourse to other, additional creditors.

In this respect, trade credit will also be important for a growth company to finance its growth in addition to bank debt. It is a lenient source of financing and considered to be cheap¹ (Martínez-Sola, García-Teruel, & Martínez-Solano, 2013). While bank debt financing covers both short-term and long-term needs, trade credit is a form of short-term financing provided by suppliers. Trade credit is typically used for immediate working capital requirements and is repaid within a few months (Duca, 1986).

Furthermore, trade creditors often have an information advantage over banks concerning their customers' activity as they acquire private information about their customers

¹Nonetheless, it is important to note that trade credit is actually relatively expensive, especially when compared to bank debt (Baugnet & Zachary, 2007). For instance, trade creditors often offer a payment discount if the customer pays within a short period (for example, a 3% discount if you pay within 7 days). However, if you do not pay within this period, you consider this discount as 'interest' that you pay later. This is quite a high interest rate in order to obtain credit, compared to an annual interest rate of approximately 2%, that you spend on your bank loan.

(Uchida, Udell, & Watanabe, 2013). This ensures that they can better assess the firm and enables them to provide debt to firms more quickly compared to banks (Baugnet & Zachary, 2007; Uchida et al., 2013). Trade credit may thus be interesting and necessary for a growth company to help finance its growth. The study of Robb and Robinson (2014), which shows that the average firm relies, besides bank debt, heavily on trade credit to finance their growth, supports this argumentation.

Since bank debt and trade credit are the most ‘popular’ sources of financing, we expect there to be increasing reliance on these sources by growth companies. In other words, based on the existing finance literature, we hypothesize that firm growth results in an increase in the proportion of bank debt and trade credit in the total financing mix (i.e., total liabilities), which brings us to the following hypotheses:

Hypothesis 1b (H1b): There is a positive association between the firm’s growth rate and the proportion of debt granted by financial institutions.

Hypothesis 1c (H1c): There is a positive association between the firm’s growth rate and the proportion of trade credit.

2.3. Change towards a more debtor-friendly insolvency law

The overall objective of the change towards a more debtor-friendly insolvency law is mainly to foster entrepreneurship. Several studies examining the impact of insolvency laws indeed find a positive association with starting or restarting a business (Armour & Cumming, 2008; Fan & White, 2003; Lee et al., 2012; Lee et al., 2011). Furthermore, the study of Estrin et al. (2017) shows that both personal bankruptcy law and corporate bankruptcy law mainly influence high

impact entrepreneurship (consisting of ambitious entrepreneurs). Also, the cross-country study of Prusak, Morawska, Łukowski, and Banasik (2022) confirms that in countries characterised by an efficient legal system and at the same time debtor-friendly bankruptcy law, the level of risk acceptance among entrepreneurs is higher, which is reflected in higher levels of entrepreneurship and innovation. In addition to an impact on entrepreneurship, previous studies also indicate that as entrepreneurs become more aware of the protections offered through the government regulation of bankruptcy, they become less concerned with the effects of failure and are willing to raise higher levels of debt (Van Auken, Kaufmann, & Herrmann, 2009).

However, the law change will not only impact debtors (i.e. the entrepreneurs) but will also influence creditors' behavior. A change towards a more debtor-friendly insolvency law typically implies a shift in the legal framework that is perceived as less favourable towards creditors. This change generally leads to creditors perceiving increased risk following the law amendment. The entrepreneurial risk associated with the debtor's financial obligations is effectively transferred to the creditors, who face a higher likelihood of encountering difficulties in recovering their debts in the event of the debtor's bankruptcy. The debtor-friendly nature of the law change can result in creditors becoming less likely to collect the full amount of debt owed to them. This change in dynamics arises because the revised insolvency law introduces measures that provide greater protection and relief for debtors, making it easier for them to restructure their debts, negotiate settlements, or even obtain complete debt forgiveness (Berkowitz & White, 2002; Fossen, 2014; Hirose, 2009; Lee et al., 2012). As a consequence, creditors may experience a decrease in their ability to fully recover the debts owed to them. The increased risk and reduced recovery prospects can result in creditors becoming more cautious when extending credit to entrepreneurs operating within the debtor-friendly insolvency framework. This argumentation is supported by, among others, the results of the cross-country study of Lee et al. (2012) and the German study of Fossen (2014), which examined the impact

of a more forgiving personal bankruptcy law, that allows for a ‘fresh start’, on both debtors and creditors. On the one hand, it was found that the law made entrepreneurship more attractive, as entrepreneurs do not risk losing as much wealth and future income in the case of bankruptcy. On the other hand, financial institutions were found to become more risk-averse towards entrepreneurs because the entrepreneurial risk is shifted to the creditors, who, in the event of the debtor's bankruptcy, become less likely to collect their debt.

Moreover, given the higher perceived riskiness of growth firms, it is likely that these firms will mainly have to bear the consequences of stricter creditors after the law change (Wilson, 2011). Given the fact that the availability of funding and the willingness of lenders to expand credit supply are influenced by the strength of creditor protection, as stated in the supply-side theory of Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998), we thus argue that a change towards a more debtor-friendly insolvency law might make it more difficult for growth firms to obtain debt financing from creditors. This brings us to the following hypothesis:

Hypothesis 2a (H2a): The change towards a more debtor-friendly insolvency law weakens the positive association between the firm’s growth rate and its proportion of debt.

Based on the Law and Economics literature, however, we expect that not every creditor will adjust their behavior in the same way after the law change. Within this literature stream, banks are called “adjusting creditors”. As argued by Armour (2006), these are creditors who have the resources, know-how, and bargaining power to enter into transaction costs to strengthen their position as creditors and to neutralize as much as possible the risk of default on the part of the debtor (Armour, 2006). In other words, banks are generally wealthy creditors (resources) who have the power to behave more strictly and risk averse in lending (bargaining power). Furthermore, banks have a legal department, where lawyers assess (new) laws daily and provide advice on evaluating and covering risks (know-how). It is also justifiable for banks to carry out

such a thorough but expensive risk assessment of (potential) customers (and thus incur transaction costs), as they have a large customer base. By operating on such a large scale, banks can create economies of scale, meaning that the costs associated with gathering information and setting credit terms for debtors diminish, as they can spread it over a significant number of customers. Additionally, a bankruptcy law generally establishes a hierarchy for the repayment of creditors, with secured creditors having priority over unsecured creditors. Preferred creditors, such as employees and tax authorities, are given higher priority in repayment. Unsecured creditors, including banks, rank lower in the hierarchy and their recovery depends on the available assets and the extent of the debtor's liabilities (Armour, Menezes, Uttamchandani, & van Zwieten, 2015). Taking this into account, banks will be more risk-averse than for example preferred creditors in extending credit to (risky) growth firms (Rostamkalaei & Freel, 2016).

In addition, after a change towards a more debtor-friendly insolvency law, the legal departments of banks are likely to identify greater risk and thus implement new procedures for granting credit. More specifically, banks will lend money more cautiously, making it harder for firms to borrow money. The results of Lee et al. (2012) and Fossen (2014), which examined the impact of a 'fresh start' policy (giving the bankrupt person the chance to start anew) on both debtors (by looking at the effect of wealth on entrepreneurial activity after the reform) and creditors (by looking at the impact of the reform on interest rates), support this argumentation. Banks became more risk-averse towards entrepreneurs (Berkowitz & White, 2002; Chen, Li, & Shen, 2020; Fossen, 2014; Hirose, 2009; Lee et al., 2012). Since growth firms are already characterized by their higher risk profiles, it may become even more complicated for them to obtain loans from financial institutions (Wilson, 2011). Taking into account the new insolvency law, we expect financial institutions to be more adjusting, and thus more reluctant in providing debt financing to growth firms after the change towards a more debtor-friendly insolvency law, which brings us to the following hypothesis:

Hypothesis 2b (H2b): The change towards a more debtor-friendly insolvency law weakens the positive association between the firm's growth rate and the proportion of debt granted by financial institutions.

Furthermore, according to the Law and Economics literature, trade creditors are called “non-adjusting creditors”. Following Armour and Cumming (2008), they do not often alter the terms at which they extend credit in response to a debtor's riskiness. A possible explanation for this is that trade creditors may not have the resources, bargaining power, and know-how, unlike an adjusting creditor such as a bank, to behave in a strict and risk-averse manner. Moreover, trade creditors operate on a smaller scale than banks, making it less justifiable for them to incur high transaction costs since they can spread them over fewer customers, and it thus becomes difficult for them to create economies of scale. In addition, trade creditors can enjoy a special advantage attributed to a strong transactional relationship in which they acquire private information about their customers, already reducing the risk of granting credit (Baugnet & Zachary, 2007; Uchida et al., 2013). Therefore, they may not alter the terms at which they extend credit after the change towards a more debtor-friendly insolvency law, especially since these terms are also often institutionalized within a sector (Martínez-Sola, García-Teruel, & Martínez-Solano, 2013).

Furthermore, trade creditors often benefit from specific provisions that provide them with a higher level of protection compared to banks or other secured creditors. One example of such protection is the reservation of ownership clause, also known as a retention of title agreement. This clause allows trade creditors to retain ownership of goods or inventory supplied to a debtor until they are paid in full. In the event of bankruptcy or insolvency, this clause grants trade creditors a higher priority in the distribution of assets compared to other creditors. By retaining ownership, trade creditors are afforded greater protection and a better chance of recovering their outstanding debts. It strengthens the position of trade creditors and enhances their protection in

case of debtor default or insolvency. This additional level of security for trade creditors can impact the overall dynamics of debt financing and influence the willingness of trade creditors to extend credit to firms (Van de Plas & Vanmeenen, 2019).

From the above, we can infer that trade creditors deal with a law change differently than banks do. Therefore, we expect it will be more evident for growth companies to obtain financing from trade creditors than from banks after the change towards a more debtor-friendly insolvency law. In other words, since trade creditors are less adjusting than financial institutions in granting credit, we expect growth companies to (partially) substitute financial debt for trade credit after the change in the law. This brings us to the final hypothesis:

Hypothesis 2c (H2c): The change towards a more debtor-friendly insolvency law strengthens the positive association between the firm's growth rate and the proportion of trade credit.

The conceptual framework of our hypotheses is summarized in Fig. 1.

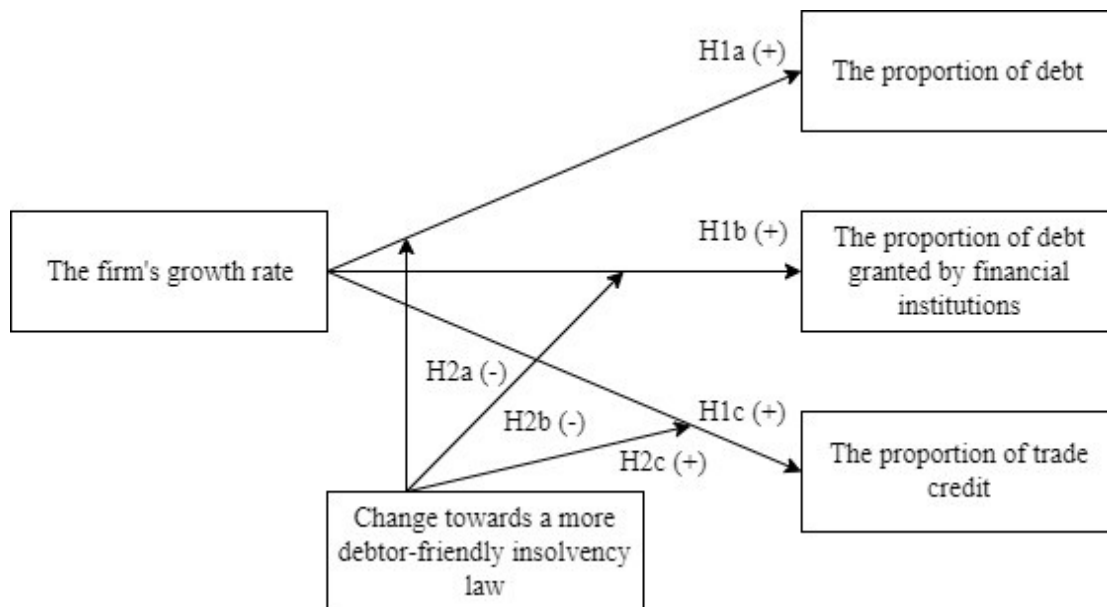


Fig. 1: Conceptual framework: a moderation model

3. Data and methodology

3.1. Data

The empirical evidence of this study is based on detailed yearly financial statement data of Belgian SMEs, as provided in the Bel-first database (Bureau Van Dijk). Just like other European civil law countries, Belgium is known as a "real SME country", since they make up over 1 million of all firms in Belgium and play a vital role in the economy, contributing to employment, economic growth, and innovation (FOD Economie, 2022b). All Belgian limited liability companies have to file detailed financial statement information, irrespective of their size. For our main analysis, we focus on SMEs, since the impact on access to debt is considered higher for these firms, as they are more informationally opaque, which makes them riskier to creditors (Vanacker & Manigart, 2010). For the definition of an SME, we refer to article 1:24 of the Belgian Code on Companies and Associations, which determines, based on size criteria, whether a firm is an SME. This is the case if it exceeds a maximum of one of the following thresholds: a workforce of up to 50 full-time equivalents, a turnover of 9 million euros, and a balance sheet total of 4.5 million euros.

From all active private Belgian SMEs, we select, for the years 2017 and 2019 SMEs (i) that are not part of the financial services industry, (ii) that achieve growth in total assets in 2017 compared to 2015 and (iii) that still exist in 2019. We have chosen to measure firm growth by the growth in total assets as this is the most suitable measure of firm growth to use in an SME context (e.g. Danbolt, Hirst, & Jones, 2011; Kallapur & Trombley, 1999; Weinzimmer, Nystrom, & Freeman, 1998). Furthermore, we select data for the years 2017 and 2019, as 2017 is the year before implementing the debtor-friendly insolvency law, and 2019 is the year after implementing the law but before Covid-19. We only select information of these years to observe an actual change in (more risk-averse) behavior of creditors towards growth entrepreneurs due

to the implementation of a more debtor-friendly insolvency law. In addition, key parameters (such as annual economic growth, interest rates, etc.) remained relatively constant for 2017 and 2019 (FOD Economie, 2020). This selection ultimately results in a dataset of 25 284 companies active in both 2017 and 2019.

3.2. Variables

Main variables: debt financing, growth and law change

The dependent variables representing the degree of debt financing are constructed in line with previous literature (Alipour, Mohammadi, & Derakhshan, 2015; Hirose, 2009; Qamar, Farooq, Afzal, & Akhtar, 2016; Zheng, 2018). We measure and include all variables both in 2017 and 2019. To test hypotheses 1a and 2a, we use the ratio ‘total debt to total assets’ as a dependent variable. To test hypotheses 1b and 2b, we use the ratio ‘loans from financial institutions to total assets’. As in most European countries, of all external debt resources, the primary source of financing for Belgian firms remain banks (FOD Economie, 2022a; Robb & Robinson, 2014; Rostamkalaei & Freel, 2016). We consider both long-term and short-term financial debts as loans from financial institutions, as indicated on the company's balance sheet.

Finally, to test hypotheses 1c and 2c, we use the ratio ‘trade credit to total assets’ as a dependent variable. As in other European countries, trade credit will also be important for a Belgian growth company to finance its growth in addition to bank debt (FOD Economie, 2022a). We consider both long- and short-term trade payables, also indicated on the company's balance sheet, as trade credit.

Furthermore, the continuous variable 'Growth' is included in the regression analysis to examine whether the growth rate of a firm affects the degree of debt financing and how this relationship is then affected by the law change. The variable is calculated as the growth in total assets, over a three-year period². More specifically, to calculate the level of growth of a firm in 2019, we calculated the change in total assets for that company from 2017 to 2019. The level of growth in 2017 was calculated over the period 2015-2017.

Finally, in order to test the moderating effect in hypotheses 2a, 2b, and 2c, we include the dummy variable 'Year' that considers the change towards a more debtor-friendly insolvency law. The variable equals 0 when the data relates to 2017 (before the change towards a more debtor-friendly insolvency law) and equals 1 when the data relates to 2019 (after the change towards a more debtor-friendly insolvency law, before Covid-19).

Control variables

In line with the study of Chittenden, Hall, and Hutchinson (1996), Rajan and Zingales (1998), Audretsch and Dohse (2007), Alipour et al. (2015) and Qamar et al. (2016) we include seven control variables: Age, Size, Liquidity, Profitability, Asset structure, Depreciation and industry. We measure and include all variables both in 2017 and 2019.

First, we include the age of each firm in our dataset. Younger firms automatically have fewer internal resources, so we can expect younger companies to have a higher need for external debt financing (Audretsch, 2007; Chittenden et al., 1996). The age of a firm is calculated as 2017 (or 2019) minus the year of establishment.

² As a robustness check we changed the growth indicator from total assets to the average number of employees in our main analysis. Growth was then measured by the evolution of the average number of employees over three years. The results were in line with our main analysis (and additional analysis). The only difference reflects in the results regarding hypothesis 2c. In this analysis, the interaction term was not significant.

We also control for the size of the company. We expect there to be a negative association between a firm's size and the level of debt. Large companies generally have more internal resources available, so they may be less likely to rely on external debt financing (Alipour et al., 2015; Audretsch, 2007). Almus (2000) further complements this by stating that smaller firms have limited access to internal resources, so we expect these firms to have a higher need for external debt financing. To account for a skewed distribution, we use the natural logarithm of total assets.

According to the trade-off theory, firms should ensure sufficient liquidity through receiving debt to meet their commitments (Alipour et al., 2015). Furthermore, we expect liquidity to be important to obtain debt financing, and thus we expect a positive association between liquidity and the level of debt. The liquidity of a firm is measured by dividing current assets by current liabilities.

In addition, we also control for profitability because firms with greater profitability have less need for external financing on the one hand but are more likely to receive debt because they are less likely to fail (Alipour et al., 2015; Chittenden et al., 1996). The profitability of a firm is measured by dividing Earnings Before Interest and Taxes (EBIT) by total assets.

Furthermore, a firm's tangibility has a predicted positive association with the level of debt. A company with more tangible assets would require more collateral assets to repay its debt in the event of bankruptcy and, therefore, would have a greater ability to attract more debt (Alipour et al., 2015; Chittenden et al., 1996).

Next, the trade-off theory predicts that in case of availability of an alternative tax shield such as depreciation, firms deploy less debt to gain tax benefits (Ghosh, Harrington, & Smith, 2011). We measure the depreciation ratio of a firm by dividing the amount of depreciation by total assets.

Finally, we control for industry effects by adding 10 dummy variables in our regression analysis, each representing an industry, based on the NaceBel sector codes.

3.3. Model specification

Since the scope of application of Book XX of the Economic Law Code includes all Belgian firms, meaning that no distinction can be made between a treated and untreated group, a traditional Difference-in-Difference analysis cannot be applied. For this reason, and in line with the studies of Singh, Jadiyappa, and Sisodia (2021) and Agrawal, Gonzalez-Urbe, and Martinez-Correa (2022), we use multivariate regression analyses to test our hypotheses. To test hypotheses 1a, 1b and 1c, we run the following model, in which Y will represent the ratio ‘total debt to total assets’ to test H1a, the ratio ‘loans from financial institutions to total assets’ to test H1b, and the ratio ‘trade credit to total assets’ to test H1c:

$$Y_{it} = \beta_0 + \beta_1 \text{Year}_i + \beta_2 \text{Growth}_i + \beta_3 \text{Age}_i + \beta_4 \text{Ln}(\text{size})_i + \beta_5 \text{Liquidity}_i + \beta_6 \text{Profitability}_i + \beta_7 \text{Asset structure}_i + \beta_8 \text{Depreciation}_i + \text{Industry Effects} + \varepsilon_i$$

Since our main objective is to examine whether the debt financing of growth companies was affected by the change in the insolvency law, we perform a moderation analysis with ‘Year * Growth’ as a moderating variable in the following regression model to test hypotheses 2a, 2b, and 2c:

$$Y_{it} = \beta_0 + \beta_1 \text{Year}_i + \beta_2 \text{Growth}_i + \beta_3 \text{Year} * \text{Growth}_i + \beta_4 \text{Age}_i + \beta_5 \text{Ln}(\text{size})_i + \beta_6 \text{Liquidity}_i + \beta_7 \text{Profitability}_i + \beta_8 \text{Asset structure}_i + \beta_9 \text{Depreciation}_i + \text{Industry Effects} + \varepsilon_i$$

4. Empirical results

Descriptive statistics

The descriptive statistics can be found in Table 1. An average company in this dataset is 21,13 years old in 2017 and 23,13 years old in 2019. The average company has, in 2017, a size of 2,2 million euros in terms of total assets, and in 2019 a size of 2,4 million euros in terms of total assets. Further, on average, the liquidity ratio is 1,99 in 2017 and 2,06 in 2019, indicating that an average company in our dataset is able to meet its short-term liabilities with cash obtained from the realization of current assets. The average profitability ratio is 0,0696 in 2017 and 0,0715 in 2019, indicating a stable profitability. The average ratio ‘total debt to total assets’ is 0,61 in 2017 and 0,59 in 2019. The average ratio ‘loans from financial institutions to total assets’ are 0,19 both in 2017 and 2019. Finally, the average firm has a growth in total assets of 45 percent, over a three-year period, in 2017 and 28 percent, over a three-year period, in 2019. As already stated, we focus on small businesses that achieve growth in total assets in 2017 compared to 2015, and still exist in 2019. However, this also means that a firm in our dataset may no longer show growth in total assets (over a three-year period) in 2019 (hence the minimum growth rate being negative in 2019).

Table 2
Descriptive statistics of the variables.

Variable		Mean	Std. Deviation	Min.	Max.
Total debt to total assets	2017	,6187	,2578	,1447	1,0585
	2019	,6064	,2607	,1446	1,0586
	Mean	,0123***			
	difference				
Loans from financial institutions to total assets	2017	,1901	,1929	,0000	,6051
	2019	,1806	,1902	,0000	,5949
	Mean	,0095			
	difference				
Trade credit to total assets	2017	,1807	,1593	,00821	,5738
	2019	,1748	,1576	,00820	,5702

	Mean difference	,0059***			
Growth	2017	,4534	,4705	,00003	1,6900
	2019	,2825	,4665	-,2000	1,6900
	Mean difference	,1709***			
Age	2017	21,13	12,909	3,00	117,00
	2019	23,13	12,909	5,00	119,00
	Mean difference	-2,000***			
Size ^a	2017	2202,58	6466,9206	11,9370	636 697
	2019	2400,14	7280,5339	2,4720	666 301
	Mean difference	-197,56***			
Liquidity	2017	1,9993	1,7624	,4300	6,6600
	2019	2,0654	1,8322	,4300	7,2100
	Mean difference	-,0661***			
Profitability	2017	,0696	,0919	-,0929	,2854
	2019	,0715	,09519	-,1149	,2909
	Mean difference	-,0019***			
Asset structure	2017	,3252	,2529	,0119	,8284
	2019	,3203	,2528	,0099	,8242
	Mean difference	,0049			
Depreciation	2017	,0611	,0469	,0033	,1742
	2019	,0586	,0460	,0026	,1698
	Mean difference	,0025			

a. Natural logarithm used in the regression model.

b. SIZE is expressed in thousands.

c. N = 25 284.

Growth = The growth in total assets over three years; **Age** = 2017 or 2019 minus year of establishment; **Size** = Natural logarithm of total assets; **Liquidity** = Current assets divided by current debt; **Profitability** = EBIT divided by total assets; **Asset structure** = Fixed assets divided by total assets; **Depreciation** = Depreciation divided by total assets.

The correlation matrix, presented in Table 2, shows a strong significant positive correlation between growth and the dependent variables ‘Total debt to total assets’, ‘Loans from financial institutions to total assets’, and ‘Trade credit to total assets’, which is in line with hypotheses 1a, 1b, and 1c. The correlation matrix does not show significant correlations higher than 0.8, which indicates the absence of multicollinearity. Additionally, each variable’s variance inflation factor (VIF) is lower than the recommended threshold of 10 (the highest VIF being 1.545 in the model) (Alin, 2010). Therefore, we can conclude that multicollinearity is not present in our study.

Table 3
Pairwise correlations.

	1	2	3	4	5	6	7	8	9	10	11
Total debt to total assets	1	,516***	,464***	-,030***	,203***	-,213***	-,048***	-,762***	-,245***	,180***	,156***
Loans from financial institutions to total assets		1	-,153***	,000	,175***	-,099***	,010**	-,337***	-,251***	,578***	,303***
Trade credit to total assets			1	-,032***	,041***	-,090***	-,058***	-,390***	-,138***	-,326***	-,120***
Year				1	-,180***	,077***	,014***	,024***	-,014***	,004	,000
Growth					1	-,217***	,030***	-,134***	-,090***	,110***	,009**
Age						1	,071***	,152***	-,110***	-,039**	-,078***
Size ^a							1	,035***	-,066***	,083***	-,093***
Liquidity								1	,156***	-,239***	-,221**
Profitability									1	-,213***	-,081***
Asset structure										1	,493***
Depreciation											1

*, **, *** correlation significant at the 0.1 level, 0.05 level, 0.01 level (2-tailed).

a. Natural logarithm used in regression model.

b. N = 25.284.

Growth= The growth in total assets over three years; **Age** = 2017 or 2019 minus year of establishment; **Size** = Natural logarithm of total assets; **Liquidity** = Current assets divided by current debt; **Profitability** = EBIT divided by total assets; **Asset structure** = Fixed assets divided by total assets; **Depreciation** = Depreciation divided by total assets.

4.1. Regression results

Our regression results can be found in Table 3a and 3b. Column 1 of Table 3a shows a significant positive relationship between growth and debt financing, thereby confirming H1a. As expected, higher growth firms thus rely more on debt financing to achieve their growth.

Subsequently, we notice in column 2 of Table 3a that, as expected, companies that grow more have a higher reliance on external funding from financial institutions as we note a significant positive relationship between growth and the ratio loans from financial institutions to liabilities, confirming H1b. Furthermore, we notice the same for trade credit, thereby confirming H1c.

Hypothesis 2a examines if the change towards a more debtor-friendly insolvency law weakens the positive association between growth and total debt financing. Column 1 of Table 3b shows that the interaction term $\text{Year} \times \text{Growth}$ is significantly negative in the regression analysis, meaning that the positive association between growth and total debt indeed weakened after the change. Therefore, we can accept hypothesis 2a.

Next, hypothesis 2b examines whether the change towards a more debtor-friendly insolvency law weakens the positive association between growth and the proportion of debt granted by financial institutions. We notice in column 2 of Table 3b a significant negative effect of the interaction term. This result indicates that higher growth firms indeed experience more difficulties in obtaining credit from financial institutions, after the law change, thereby confirming H2b.

Finally, hypothesis 2c examines whether the change towards a more debtor-friendly insolvency law strengthens the positive association between growth and the proportion of trade credit. In column 3 of Table 3b we notice that the interaction term in the regression analysis is significantly negative, indicating that the law change weakens the positive association between the level of growth of a firm and the proportion of trade credit, meaning that we reject H2c.

This indicates that just like banks, trade creditors have become stricter towards growth firms after the law change.

Regarding the control variables, it first can be noted that these all show significant effects. The variable 'age' is negatively significant in our regression analyses. This means that younger companies have a higher need for external financing, as their internal resources may be too limited to finance growth (Chittenden et al., 1996). Next, the size of the firm is negatively significant in the analysis with as dependent variable 'Total debt to total assets' and positively significant in the analyses with as dependent variable 'Loans from financial institutions to total assets' and 'Trade credit to total assets'. Furthermore, in line with the study of Alipour et al. (2015), we notice that the variable 'Liquidity' is significantly negative, indicating that more liquid firms prefer internal resources for financial needs, or simply do not need external funding as they have sufficient internal resources. Consistent with the pecking order arguments, the coefficients for profitability are negative and significant in all regressions, indicating that firms with more profitability use less debt (Fama & French, 2002). The asset structure of the firm is negatively significant in the analyses with as dependent variable 'Total debt to total assets' and 'Trade credit to total assets' and positively significant in the analysis with as dependent variable 'Loans from financial institutions to total assets'. Finally, the depreciation ratio of the firm is positively significant in our regression analyses.

Table 4a
Regression results: direct effect of growth.

Dependent variable	Total debt to total assets	Loans from financial institution to total assets	Trade credit to total assets
Intercept	1,006*** (,049)	,156*** (,046)	,374*** (,038)
Year	,007*** (,001)	,009*** (,001)	-,003*** (,001)
Growth	,060*** (,002)	,043*** (,001)	,011*** (,001)
Age	-,002*** (,000)	-,001*** (,000)	-,001*** (,000)
Size ^a	-,005*** (,001)	,005*** (,001)	,004*** (,001)
Liquidity	-,102*** (,000)	-,016*** (,000)	-,044*** (,000)
Profitability	-,487*** (,008)	-,260*** (,008)	-,295*** (,006)
Asset structure	-,094*** (,003)	,372*** (,003)	-,329*** (,003)
Depreciation	,074*** (,018)	,074*** (,017)	,028** (,014)
Industry dummies	Yes	Yes	Yes
R-squared	,628110	,408013	,404084
F-statistic	4745,769***	1937,231***	1905,940***

a. Natural logarithm used in regression model.

b. N = 50.568.

Growth = The growth in total assets over three years; **Age** = 2017 or 2019 minus year of establishment; **Size** = Natural logarithm of total assets; **Liquidity** = Current assets divided by current debt; **Profitability** = EBIT divided by total assets; **Asset structure** = Fixed assets divided by total assets; **Depreciation** = Depreciation divided by total assets.

Table 4b
Regression results: moderation effect.

Dependent variable	Total debt to total assets	Loans from financial institution to total assets	Trade credit to total assets
Intercept	1,005*** (,049)	,155*** (,046)	,372*** (,038)
Year	,008*** (,001)	,010*** (,001)	-,002*** (,001)
Growth	,061*** (,002)	,045*** (,002)	,013*** (,001)
Year*Growth	-,002* (,001)	-,002** (,001)	-,003*** (,001)
Age	-,002*** (,000)	-,001*** (,000)	-,001*** (,000)
Size ^a	-,005*** (,001)	,005*** (,001)	,005*** (,001)
Liquidity	-,102*** (,000)	-,016*** (,000)	-,044*** (,000)
Profitability	-,487*** (,008)	-,260*** (,008)	-,295*** (,006)
Asset structure	-,094*** (,003)	,372*** (,003)	-,329*** (,003)
Depreciation	,074 (,018)	,073*** (,017)	,028** (,014)
Industry dummies	Yes	Yes	Yes
R-squared	,628122	,408046	,404165
F-statistic	4496,293***	1835,573***	1806,286***

a. Natural logarithm used in regression model.

b. N = 50.568.

Growth = The growth in total assets over three years; **Age** = 2017 or 2019 minus year of establishment; **Size** = Natural logarithm of total assets; **Liquidity** = Current assets divided by current debt; **Profitability** = EBIT divided by total assets; **Asset structure** = Fixed assets divided by total assets; **Depreciation** = Depreciation divided by total assets.

4.2. Additional analyses

The above analyses indicated that both financial institutions and trade creditors have become stricter towards growth firms after the change towards a more debtor-friendly insolvency law. Therefore, an important question to ask next is whether growth firms have taken on more debt from other creditors. The theory section already pointed out that, in general, there are four main groups of creditors: banks, trade creditors, employees (e.g., unpaid wages), and the government (e.g., unpaid taxes) (Baugnet & Zachary, 2007). In the additional regression analysis presented in Table 4a, we look at the 'residual category' (the government and employees). This regression analysis, with as dependent variable 'Government expenses to total assets' (calculated by adding up the balance sheet items taxes, salaries, and social charges, divided by total assets), shows that the interaction term 'Year*Growth' is significantly positive (this was also the case in the regression analyses in which taxes, salaries, and social charges were considered separately as a dependent variable). This may indicate a dangerous situation, namely that growth companies are delaying paying their taxes and personnel costs, and so in this way 'force' financing from the government and employees because they do not obtain enough funding from banks and trade creditors.

Furthermore, we replaced the ratio 'trade credit / total liabilities' by the ratio 'trade credit / short-term debt' when testing hypothesis 2c, being the impact of the change in law on the relationship between growth and the proportion of trade credit used. The results of this analysis (included in Table 4a) are similar to our main findings (and thus rejecting hypothesis 2c). Table 3b of our main findings shows that trade creditors have become stricter towards growth firms after the law change, since we find a significant negative interaction effect when testing hypothesis 2c. Table 4a (where we replaced the ratio 'trade credit / total liabilities' by the ratio 'trade credit / short-term debt' also shows a significant negative interaction effect when testing hypothesis 2c.

Next, as shown in Table 4b, we reran our analyses for large growth firms. Compared to our results on growth SMEs, we found similar significant results for hypotheses 1a, 1b and 1c. We have found no evidence for hypotheses 2a, 2b, and 2c, meaning that we cannot state that the change towards a more debtor-friendly insolvency law negatively moderates the relationship between growth and the degree of debt financing in the context of large growth firms. A logical explanation for this could be that large firms are generally perceived as being less risky compared to smaller ones. As a consequence, a shift towards a more debtor-friendly insolvency law would logically have a diminished impact on the relationship between growth and debt financing when it comes to large firms. This can be attributed to the fact that large firms are generally regarded as less risky in comparison to smaller ones. The substantial financial resources, established market presence, and diverse business operations of large firms provide them with a higher level of financial stability and repayment capacity. Consequently, creditors tend to display lower risk aversion when engaging with these large firms, making them more inclined to extend credit. Thus, any changes in the insolvency law that may favour debtors would have a relatively minor effect on the willingness of creditors to provide financing to large firms (Begenau, Farboodi, & Veldkamp, 2018).

In addition, banks might have anticipated the effects of the legal change before it was implemented in 2018. For this reason, and as shown in Table 4c, we conducted additional analyses comparing the years 2016 and 2019 instead of 2017 and 2019, as initially conducted in our primary analyses. The results obtained from this comparison align with the findings from our primary analyses, except for hypothesis 2b, which we cannot confirm due to the lack of a significant interaction effect. A possible explanation for this discrepancy is that the variable 'Growth' now encompasses the period from 2014 to 2016, which introduces a considerable time gap between the periods under observation, considering that the change towards a more debtor-friendly insolvency law occurred in 2018.

Furthermore, in our main results, we chose to investigate firms that existed both in 2017 and 2019, meaning that they were operational during both the year 2017 and the year 2019. However, this does not exclude the possibility that some of these firms had severe financial difficulties in 2019, which could subsequently limit their chances of obtaining debts and, therefore, distort our results. Therefore, as shown in Table 4d on p.38, we reran our analyses on the firms that were also still operational at the end of 2021 as firms that went bankrupt in 2020 or 2021 are likely to also have had financial difficulties in 2019. In other words, we filtered out all firms that no longer existed at the end of 2021 and/or no longer had a 'normal legal status' (because, for example, they are involved in a bankruptcy procedure). As shown in table 4d, the results remain completely in line with our main results.

Table 5a
Additional analysis

Dependent variable	Government expenses to total assets	Trade credit to short-term liabilities
Intercept	,403*** (,033)	,716*** (1,579)
Year	-,008*** (,001)	,579*** (,047)
Growth	-,005*** (,001)	-,517*** (,055)
Year*Growth	,002** (,001)	-,117*** (,036)
Age	,000*** (,000)	-,008*** (,002)
Size ^a	-,030*** (,000)	-,045* (,023)
Liquidity	,022*** (,000)	,001 (,013)
Profitability	,244*** (,005)	,046 (,259)
Asset structure	-,082*** (,002)	,241 (,590)
Depreciation	,088*** (,012)	-,655 (,590)
Industry dummies	Yes	Yes
R-squared	,329	,007
F-statistic	1303,845***	19,900***

a. Natural logarithm used in regression model.

b. N = 50.568.

Growth= The growth in total assets over three years; **Age** = 2017 or 2019 minus year of establishment; **Size** = Natural logarithm of total assets; **Liquidity** = Current assets divided by current debt; **Profitability** = EBIT divided by total assets; **Asset structure** = Fixed assets divided by total assets; **Depreciation** = Depreciation divided by total assets

Table 5b
Additional analysis: large firms.

Dependent variable	Total debt to total assets	Loans from financial institutions to total assets	Trade credit to total assets	Total debt to total assets	Loans from financial institutions to total assets	Trade credit to total assets
Intercept	1,365*** (,421)	-,312 (,235)	,414*** (,068)	1,153*** (,105)	,077 (,075)	,415*** (,068)
Year	-,016 (,015)	-,006 (,008)	-,001 (,002)	-,002 (,001)	,001 (,003)	-,002 (,002)
Growth	,018*** (,004)	,009*** (,002)	,002*** (,001)	,006*** (,001)	,003*** (,001)	,002** (,001)
Year*Growth	/	/	/	,010*** (,002)	,005*** (,002)	,002 (,001)
Age	-,002*** (,000)	-,001*** (,000)	,000*** (,000)	-,002*** (,000)	-,001*** (,000)	,001*** (,000)
Size ^a	-,019*** (,005)	,036*** (,003)	,000 (,001)	-,008*** (,001)	,014*** (,000)	,000 (,001)
Liquidity	-,023*** (,002)	-,002*** (,001)	-,011*** (,000)	-,026*** (,000)	-,005*** (,000)	-,011*** (,000)
Profitability	-2,549*** (,028)	-,272*** (,016)	-,088*** (,005)	-,198*** (,007)	-,055*** (,005)	-,088*** (,005)
Asset structure	-,824*** (,031)	-,143*** (,017)	-,270*** (,005)	-,120*** (,008)	,213*** (,005)	-,270*** (,005)
Depreciation	7,795*** (,118)	5,066*** (,066)	-,270 (,005)	,207*** (,030)	,040* (,021)	,017 (,019)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	,457161	,271106	,238411	,230498	,137464	,238473
F-statistic	905,094***	399,735***	337,749***	304,965***	163,417***	320,134***

a. Natural logarithm.

b. N = 19,364.

Growth= The growth in total assets over three years; **Age** = 2017 or 2019 minus year of establishment; **Size** = Natural logarithm of total assets; **Liquidity** = Current assets divided by current debt; **Profitability** = EBIT divided by total assets; **Asset structure** = Fixed assets divided by total assets; **Depreciation** = Depreciation divided by total assets.

Table 5c
Additional analysis: year 2016 – 2019.

Dependent variable	Total debt to total assets	Loans from financial institutions to total assets	Trade credit to total assets	Total debt to total assets	Loans from financial institutions to total assets	Trade credit to total assets
Intercept	1,091*** (,055)	,226*** (,059)	,197*** (,053)	1,078*** (,055)	,209*** (,061)	1,383*** (,210)
Year	,004*** (,002)	,010*** (,002)	,001*** (,001)	,014*** (,002)	,011*** (,002)	,311*** (,007)
Growth	,065*** (,002)	,056*** (,002)	,016*** (,002)	,081*** (,003)	,069*** (,003)	,056*** (,011)
Year*Growth	/	/	/	-,029*** (,004)	,001 (,004)	-,117*** (,013)
Age	-,002*** (,000)	-,001*** (,000)	-,001*** (,000)	-,002*** (,000)	-,002*** (,000)	,001*** (,000)
Size ^a	-,011*** (,001)	,026*** (,001)	,009*** (,001)	-,011*** (,001)	,025*** (,001)	-,151*** (,003)
Liquidity	-,098*** (,000)	-,025*** (,000)	-,043*** (,000)	-,098*** (,000)	-,025*** (,000)	,073*** (,002)
Profitability	-,458*** (,000)	-,414*** (,008)	-,272*** (,008)	-,455*** (,009)	-,501*** (,009)	-,297*** (,033)
Asset structure	-,095*** (,003)	,338*** (,003)	-,316*** (,003)	-,094*** (,003)	,338*** (,003)	,634*** (,108)
Depreciation	,087*** (,018)	,083*** (,017)	-,466** (,016)	-,140*** (,018)	1,186*** (,019)	-,641** (,571)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	,628462	,241605	,067434	,629041	,192273	,142777
F-statistic	4255,444***	801,459***	206,181***	4028,926***	598,858***	395,731***

a. Natural logarithm.

b. N = 42.786.

Growth= The growth in total assets over three years; **Age** = 2017 or 2019 minus year of establishment; **Size** = Natural logarithm of total assets; **Liquidity** = Current assets divided by current debt; **Profitability** = EBIT divided by total assets; **Asset structure** = Fixed assets divided by total assets; **Depreciation** = Depreciation divided by total assets.

Table 5d
Additional analysis: firms that have a normal legal status in 2021.

Dependent variable	Total debt to total assets	Loans from financial institutions to total assets	Trade credit to total assets	Total debt to total assets	Loans from financial institutions to total assets	Trade credit to total assets
Intercept	,856*** (,041)	,132*** (,036)	,374*** (,038)	,854*** (,041)	,130*** (,036)	,372*** (,038)
Year	,005*** (,001)	,006*** (,001)	-,003*** (,001)	,005*** (,001)	,007*** (,001)	-,002*** (,001)
Growth	,050*** (,001)	,027*** (,001)	,012*** (,001)	,051*** (,001)	,029*** (,001)	,013*** (,001)
Year*Growth	/	/	/	-,002* (,001)	-,002*** (,001)	-,003*** (,001)
Age	-,002*** (,000)	-,001*** (,000)	-,001*** (,000)	-,002*** (,000)	-,001*** (,000)	-,001*** (,000)
Size ^a	-,001*** (,001)	,006*** (,001)	,004*** (,001)	-,001*** (,001)	,006*** (,001)	,004*** (,001)
Liquidity	-,067*** (,000)	-,015*** (,000)	-,043*** (,000)	-,067*** (,000)	-,015*** (,000)	-,043*** (,000)
Profitability	-,384*** (,007)	-,185*** (,006)	-,293*** (,006)	-,384*** (,007)	-,186*** (,006)	-,294*** (,006)
Asset structure	-,051*** (,003)	,268*** (,003)	-,328*** (,003)	-,051*** (,003)	,268*** (,003)	-,327*** (,003)
Depreciation	,087*** (,018)	,200*** (,014)	,029** (,014)	,040*** (,016)	,199*** (,014)	,028** (,014)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	,522532	,401048	,403468	,522562	,401135	,403566
F-statistic	3018,121***	1845,596***	1865,277***	2859,558***	1750,007***	1767,790***

a. Natural logarithm.

b. N = 49.660.

Growth= The growth in total assets over three years; **Age** = 2017 or 2019 minus year of establishment; **Size** = Natural logarithm of total assets; **Liquidity** = Current assets divided by current debt; **Profitability** = EBIT divided by total assets; **Asset structure** = Fixed assets divided by total assets; **Depreciation** = Depreciation divided by total assets.

5. Economic implications of our results

The economic implications of a shift towards a more debtor-friendly insolvency law that limits the debt financing of growth firms can have significant consequences for the future orientation of bankruptcy reforms. Such changes can impact the availability of debt financing for firms, especially those seeking to finance their growth initiatives. This, in turn, may influence the investment decisions, entrepreneurial activities, and overall economic development of a country.

Belgium's experience is not unique, as other countries have also implemented pro-debtor changes in their bankruptcy regimes. For example, the United States enacted the Small Business Reorganization Act in 2019, which introduced a streamlined and more debtor-friendly bankruptcy process for small businesses. Similarly, Germany implemented reforms to its insolvency law in 2020, promoting early restructuring efforts and providing greater protection for debtors. We are convinced that other countries will similarly adopt debtor-friendly measures in their bankruptcy law, thus giving our findings relevance to other European countries with similar insolvency laws or those considering its implementation.

When analyzing the economic implications of these pro-debtor changes, it is important to consider both positive and negative effects. On one hand, a debtor-friendly insolvency law can provide struggling firms with a chance to restructure their debts and continue operating, preserving jobs and potentially maintaining economic productivity. It can incentivize entrepreneurs to take calculated risks, knowing that there are viable options for debt restructuring in case of financial distress. On the other hand, limiting debt financing for growth firms under a more debtor-friendly insolvency law may have unintended consequences. It can potentially reduce the availability of credit for these firms, making it more challenging for them to fund their growth initiatives. This, in turn, could hinder entrepreneurship, innovation, and

investment in the economy. If growth firms face greater difficulty in accessing debt financing, it may dampen their ability to expand, create jobs, and contribute to economic development.

From a normative perspective, the experiences and results observed in Belgium could serve as a basis for broader discussions on the implications of pro-debtor changes in other countries that have implemented similar reforms or are planning to do so. Lessons learned from Belgium, along with the experiences of countries like the United States and Germany, can inform the ongoing debate on the balance between debtor protection and access to debt financing for growth firms. Assessing the economic consequences and weighing the trade-offs of such reforms is essential to ensure the effectiveness and sustainability of bankruptcy regimes in supporting economic growth and resilience.

6. Conclusion

In this study, we examined the impact of the change towards a more debtor-friendly insolvency law on the debt financing of growth firms. Using the recent change in Belgian insolvency law as an exogenous policy shock, we investigated the changes in access to debt for growth firms, considering the heterogeneity of debt. We used data from 25 284 growth SMEs.

Our empirical results show a significant positive relationship between growth and debt financing. Furthermore, we also find a positive relationship between the level of growth of the firm and the proportion of loans from financial institutions and trade creditors. These results indicate that especially growing companies need sufficient and, above all, different sources of financing.

However, when examining the moderating effect of the change towards a more debtor-friendly insolvency law, the results indicate that higher growth firms experience more difficulties in obtaining credit after the change. Since financial institutions are described as “adjusting creditors” in the Law and Economics literature, we first predicted that after the law change, these creditors would become stricter towards growth firms. This was confirmed by our results, meaning that we find evidence consistent with this prediction. Furthermore, since trade creditors are described as “non-adjusting creditors” in the Law and Economics literature, we hypothesized that after the law change growth companies would (partially) substitute financial debt for trade credit. However, we found that after the introduction of a more debtor-friendly insolvency law, trade creditors have also become stricter towards higher growth firms after the law change. Subsequently, in our additional analysis (with taxes, salaries, and social charges, divided by total assets as dependent variable), we examined whether higher growth firms have taken on more debt from other creditors. The results of this analysis show that the interaction term is significantly positive, indicating a dangerous situation. More specifically,

this may indicate that growth companies are delaying paying their taxes and personnel costs, and so in this way implicitly use financing from the government and employees.

Overall, the results of this study thus show that the debt financing mix for growth companies has changed after the change in the Belgian insolvency law: they are now less likely to receive financing from financial institutions and trade creditors. There is no reason to assume that the weakened positive relationship between growth and debt, following the change towards a more debtor-friendly insolvency law, is due to a demand shift. No economic shocks occurred during the observed period that could explain a change in demand (FOD Economie, 2020). Moreover, the law change exclusively improved debtor conditions, reducing the likelihood of decreased credit demand in response to a more debtor-friendly insolvency law. Hence, our study aligns with Porta et al.'s (1998) supply-side theory. However, in the year following the law change it is found that payments to the government and employees are delayed. This may create an untenable and essentially dangerous situation, since the government now bears a large part of the extra risk for the creditors after the law change.

This study contributes to the literature in several ways. First, it demonstrates that an insolvency law not only affects the entrepreneur and whether to (re)start a business. It also affects the debt financing of a firm, thus potentially hindering the effectiveness of the law change (i.e. stimulating the entrepreneurial climate). Furthermore, prior studies have examined the effectiveness of an insolvency law either in a cross-country setup or looked exclusively at the effect of the change in the law on interest rates. In this study, however, we took the heterogeneity of debt into account when assessing the access to debt for growth companies after the change towards a more debtor-friendly insolvency law. Furthermore, we used a single-country analysis. As a result, we can observe behavioral changes resulting from a change in an insolvency law.

Finally, this study also entails practical contributions. Our findings provide guidance to the policymakers as to what are the possible consequences, both expected and unexpected, of such reforms in advance. Furthermore, our findings can serve as valuable guidance for other European countries that are considering the implementation of a more debtor-friendly insolvency law in the future. We show that while it is important to recognize the positive aspect of limiting potential negative outcomes for firms, it may become more difficult for them to obtain debt financing from creditors. It is crucial for policymakers to have this knowledge due to the significant impact an insolvency law can have on various stakeholders and the overall economy. By understanding the expected consequences, policymakers can assess whether the law aligns with their intended objectives, such as promoting economic growth, protecting creditors' rights, or facilitating the rehabilitation of financially distressed companies. Anticipating unexpected consequences allows policymakers to proactively address potential risks and unintended outcomes, preventing any adverse effects on businesses, individuals, and the broader financial system. Additionally, comprehensive knowledge of the consequences enables policymakers to fine-tune the law, incorporating necessary safeguards and mitigating measures, ultimately increasing its effectiveness and reducing potential negative repercussions.

This study also contains some limitations and future research suggestions. First, we look in this study at whether more growth relates to an increase or decrease in the level of debt after the law change. More specifically, we find in our results that there is a decrease in the level of debt for higher growth firms after the law change. However, the underlying decision-making mechanisms were not examined. For instance, we do not know how creditors perform a risk analysis with respect to growth firms, and they decide to become stricter towards growth firms in the granting of credit. In order to answer these questions, qualitative research is required.

Furthermore, while using a single-country analysis has several advantages, validating these results in other institutional contexts may also be a valuable path for future research, since

it may be interesting to investigate the impact of a more debtor-friendly law on the debt financing of growth firms in other geographic and political regions. Therefore, we consider validating the results of this study using a cross-country dataset to be a highly valuable opportunity for future research as well. In addition, using a traditional Difference-in-Difference analysis may be interesting for future research, for example in countries where the debtor-friendly insolvency law does not apply to all firms.

Next, this study examined the data over a relatively limited time span of two years (2017 to 2019). We were forced to do this, as otherwise, we would include the effect of COVID-19 in our analyses. This research question could therefore also be explored over a longer time period for future research, since examining the long-term impact of a law change could provide new insights on the matter. Furthermore, our methodology primarily emphasizes healthy firms (since the firms in our dataset are active in both 2017 and 2019), which may introduce a degree of sample bias. In addition, we use growth in total assets as a measure of growth. While this is the most commonly used measure in the literature, defining growth firms by only one measure may not disclose the full complexity and dynamics of their development and expansion. Due to data limitations, we had few options but to primarily rely on total assets, but we do acknowledge that a more comprehensive and nuanced analysis based on additional growth indicators is a highly valuable path for future research.

Finally, while the recent change in the Belgian insolvency law can clearly be labelled as pro-debtor overall, each specific provision may also have a specific impact on the debtor-friendliness. Moreover, each provision may also interact with other provisions, even outside insolvency law. While examining the effect of each specific provision and their interactions with other provisions is out of scope for this study, it would be highly relevant for future research, especially since it could further explain why an evolution towards a more debtor-friendly insolvency law may not have the same effect in every country.

Conflict of Interest Disclosure Form

The authors do not have any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations that could inappropriately influence, or be perceived to influence, their work.

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