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Instruments of Alternative Finance for European SMEs

TRABAJO FIN DE GRADO

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Abstract

In this paper, I examine in detail the current role of modern, alternative instruments of finance for European SMEs in today's economic, regulatory, and banking environment. SMEs in Europe are severely credit-constrained and lack the sufficient means to fund their growth and survival. The situation has worsened in recent years following the Covid-19 pandemic, with high interest rates, supply chain issues, and increasingly complex regulations and firm reporting requirements.

Throughout the paper, I examine the specific limitations experienced by younger and smaller enterprises in accessing financing, as well as the different alternative solutions that have are increasingly being used to deal with these limitations. I conclude that some of the most appropriate solutions being utilised by SMEs are factoring, leasing, securitisation, and peer-to-peer lending. I also find a growing importance of asset-based lending mechanisms in the coming years, driven by the rise of online platforms and fintech solutions. I came across no research analysing the relationship between the performance of alternative finance instruments and economic variables that particularly affect SME access to funding. As such, this paper also attempts to determine such relationships. Various relationships, although limited in conclusiveness, are found between the utilisation of the aforementioned four instruments and variables such as interest rates, supply chain pressures, perceived finance obstacles, and time trends. This paper contributes to the growing calls by economic institutions, policymakers, and SME firms themselves, for increased adoption of alternative finance models, as well as improved access to traditional bank lending.

Keywords: Alternative finance, SME Lending, Lending Constraints, Fintechs, Asset-Based Lending.

Resumen

En esta investigación examino en detalle el papel actual de los instrumentos modernos y alternativos de financiación para las PYME europeas en el actual entorno económico, normativo y bancario. Las PYME europeas sufren graves restricciones de crédito y carecen de medios suficientes para financiar su crecimiento y supervivencia. La situación ha empeorado en los últimos años tras la pandemia de Covid-19, con tipos de interés elevados, problemas en la cadena de suministro, y la creciente complejidad de la normativa y los requisitos de información de las empresas.

A lo largo del documento, examino las limitaciones específicas que experimentan las empresas más jóvenes y pequeñas a la hora de acceder a la financiación, así como las diferentes soluciones alternativas a las que se recurre cada vez más para hacer frente a estas limitaciones. Llego a la conclusión de que algunas de las soluciones más adecuadas que utilizan las PYME son el ‘factoring’, el arrendamiento financiero, la titulización y los préstamos ‘peer-to-peer.’ También observo una importancia creciente de los mecanismos de préstamos basados en activos en los próximos años, impulsados por el auge de las plataformas en línea y las soluciones Fintech. No he encontrado ninguna investigación que analice la relación entre la utilización de los instrumentos de financiación alternativa y las variables económicas que afectan especialmente el acceso de las PYME a la financiación. Como tal, este documento también intentó determinar dichas relaciones. Se encuentran diversas relaciones entre la utilización de los cuatro instrumentos mencionados y variables como los tipos de interés, las presiones de la cadena de suministro, los obstáculos financieros percibidos y las tendencias temporales. Este artículo contribuye al creciente llamamiento de las instituciones económicas, los responsables políticos, y las propias PYME en favor de una mayor adopción de modelos de financiación alternativos, así como de un mejor acceso a los préstamos bancarios tradicionales.

Palabras Clave: Financiación Alternativa, Préstamos a Pymes, Restricciones Crediticias, Fintechs, Préstamos basados en Activos.

Introduction

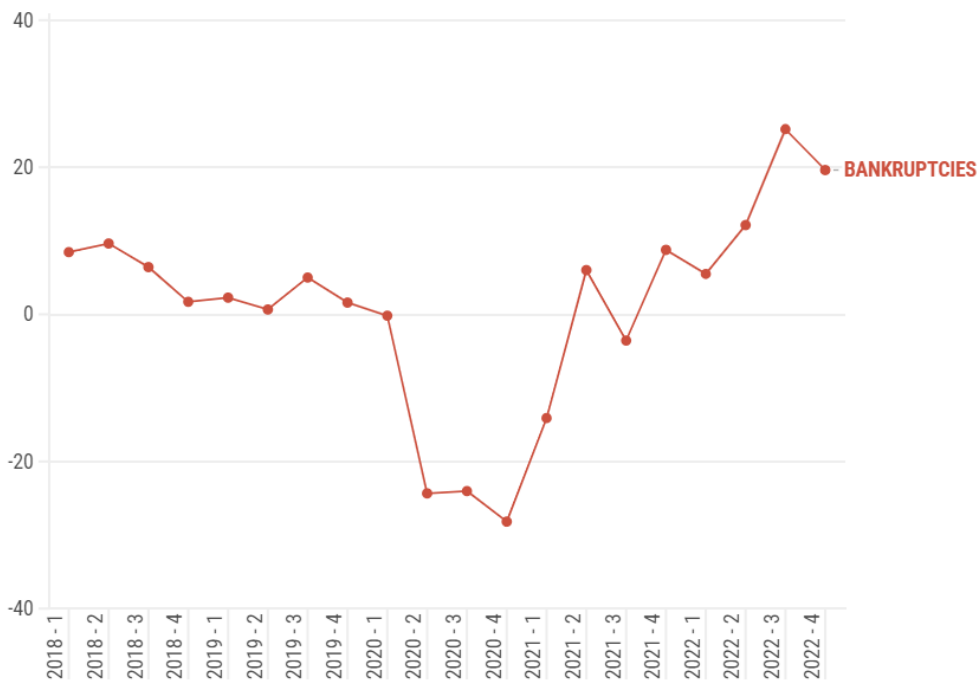
Looking to the recent economic conditions experienced across Europe, we get quite a dire sense of the current immediacy required in aiding SMEs and their access to finance. Unprecedented economic uncertainty arose in 2020 from the immediate effects of the Covid-19 pandemic. Later, as these effects eased, SMEs faced staffing issues that made it difficult to deal with the rapid increase in demand, as well as significant increases in the price of their inputs. More recently, the historically high inflation rates, increased energy costs, supply chain issues and export restrictions, caused in large part due to the Russia-Ukraine war, have created significantly challenging conditions for SMEs (European Commission, 2023). Many firms have not had the chance to fully recover from the pandemic, and so diverse funding sources are needed more than ever to help them to navigate these new issues.

Speaking at a European Economic & Social Committee hearing in 2023, *SME United* Economic Policy Directory Gerhard Huemer highlighted the several key problems contributing to increasingly tight financial access for SMEs (*SMEUnited*, 2023). *Firstly*, the high-interest rate environment is both impacting financial costs directly, as well as indirectly through late payment rates. SME suppliers are also reducing payment terms, resulting in SMEs being squeezed from both sides. *Secondly*, Huemer highlights the uncertainty surrounding the European sustainable finance environment as well as additional reporting requirements, both of which are leading to tighter banking credit conditions. *Finally*, the offer of financial instruments has decreased, and this, coupled with the additional complexity of newer instruments, is reducing the supply of loans on offer to SMEs. The following three areas of improvement were proposed at the hearing:

- Fight inflation to allow the ECB to cut interest rates.
- European institutions need to increase the provision of financial instruments “to allow SMEs to progress with restructuring and transition”.
- Addressing the lengthy permitting procedures, expensive reporting requirements and complex regulatory environment experienced by SMEs.

However, monetary conditions have continued to tighten, and fiscal support has diminished, causing large increases in SME bankruptcies recently, as can be seen in the graph below (OECD, 2024).

Figure 1: SME Year-On-Year Bankruptcy Growth Rate across OECD Countries



Source: OECD (2024)

Despite limited and non-diverse access to financing, member governments and economic institutions within the EU all recognise the severe importance of broadening this access. For example, the OECD, in addressing their net zero climate goals, acknowledge that these goals won't be achieved without SMEs – who represent around 40% of European greenhouse gas emissions – being able to access finance to drive innovative solutions to the crisis. The 2022 G20 report on the principles of SME financing added three new principles associated with leveraging financial technologies and Fintech to reduce financing barriers, as well as strengthening the availability of sustainable finance and strengthening the resilience of SME finance in crisis times (OECD, 2022). This list of principles was created with the goal of strengthening SME access to traditional bank financing, as well as promoting non-bank finance.

Several of these alternative non-bank solutions will be explored in detail throughout this work. I will highlight those that are most suitable for SMEs, and later attempt to analyse how they perform under certain economic conditions. I begin, though, by exploring the crucial role that SMEs play in European economies, and their unique limitations that hinder their efforts to secure financing that is vital to their existence.

Objectives

The primary objective of this thesis is to understand the current role of modern, alternative instruments of finance for SMEs in today's economic, regulatory, and banking environment. I will do this through a descriptive exploration of many of the options that exist, with the aim of comparing these against traditional means of funding. In doing so, I aim to place particular emphasis on the efficiency and applicability of each instrument for SMEs. I also hope to explore the importance of the aforementioned *European Economic & Social Committee* proposals in attempting to deal with the constrained SME financing conditions. Secondary to this, I hope to develop a thorough understanding of the importance of SMEs in European economies, and the characteristics of them that limit their access to traditional means of finance.

Throughout this process, I aim to compile much of the most relevant literature and economic studies to show that the financing issue facing SMEs today is as critical as ever, and that there is insufficient progress in solving this issue. I am unaware of any works that attempt to draw links between current important economic and business variables and the utilisation of alternative finance instruments. I see this as a being an important addition to the literature, in determining the future relevance of various instruments. As such, I will attempt to do this.

1. The European SME Situation

1.1 Defining the SME and its Role in European Economies

The European Commission defines small and medium-sized enterprises (SMEs) as those enterprises which employ fewer than 250 people, and with an annual turnover not exceeding €50m or an annual balance sheet total not exceeding €43m (European Commission, 2003). The SME definition can be further broken down by medium-sized, small, or micro enterprises, as shown below.

Figure 2: SME Definition Criteria

Company category	Staff headcount	Turnover	or	Balance sheet total
Medium-sized	< 250	≤ € 50 m		≤ € 43 m
Small	< 50	≤ € 10 m		≤ € 10 m
Micro	< 10	≤ € 2 m		≤ € 2 m

Source: European Commission (2003)

The Commission highlights that SMEs represent 99% of all EU businesses and are key contributors to economic growth and job creation, accounting for between 40-60% of GDP and up to 70% of employment within OECD countries (Paulet et al., 2014).

Breaking down the 99% SME figure further, it is observed that a majority of these, ≈94% (only including enterprises belonging to the non-financial business sector) belong to the *Micro* category, with under ten employees (European Commission, 2023). Micro-enterprises also account for a majority of employment. However, in terms of value added (measured in both current and constant prices), all three size categories are virtually equal. Low knowledge-intensive industries account for around 60% of SMEs, although this figure has been declining over the past 15 years in favour of knowledge-intensive industries. The three most concentrated industries for SMEs in 2022, which together represented almost 60% of SMEs, were ‘*wholesale and retail trade*’, ‘*professional, scientific and technical activities*’, and ‘*construction*’.

Before moving on to the importance of improving financial access for SMEs, it is first crucial to note the characteristics typical of SME financing. Young and small firms particularly depend on external finance for growth and survival. In periods of high interest rates, as currently seen, they cannot rely on internal funds to stay afloat. Most of their financing comes from bank

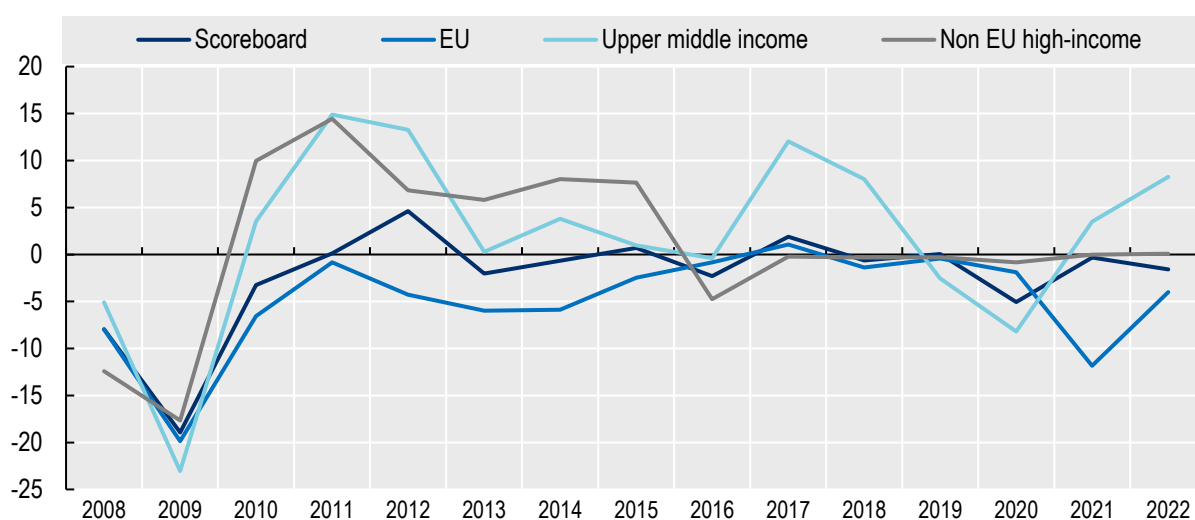
credit, and usually just from one source. Typically this is in the form of an established borrower-lender relationship (Paulet et al., 2014). In relaxed economic and banking conditions, this type of relationship aids the access to finance for firms that lack the financial information that larger firms can provide. However, in constrained periods, when collateral and rigorous reporting standards are required, these smaller firms cannot access liquidity with banks.

1.2 SME Financing Limitations

In the aftermath of the global financial crisis of 2008-09, companies faced serious credit constraints as banks restricted their lending activities. However, SMEs became particularly constrained during this period as liquidity risk from the collective actions of the banks, along with credit supply limitations imposed by the world's central banks, led to commercial banks favouring safer loans (Paulet et al. 2014). De Haas and Van Horen (2013) also explain that, in such crisis periods, banks will rely on the markets for finance, further limiting their availability to finance investment projects. The assessment of loan applications become much stricter, and as a result SMEs, who are limited by information asymmetry and opaqueness in their funding efforts, suffer in a more intense way than larger, established companies. In fact, in the UK the overdraft rejection rate rose by over 50% in 2008 relative to 2001 (Fraser, 2012). For the same period, the term loan rejection rate increased by over 160%. An OECD study (Wehinger, 2014) highlights various empirical papers that have found that the deleveraging of European banks has led banks to particularly reduce their exposures to SMEs. It states that only dedicated policy measures to support SME lending can counter these effects.

While SME financing conditions have improved since the crisis, lending to SMEs declined more recently in 2022 due to rising interest rates and reduced credit availability as a result of increased risk perception by banks. In fact, in some countries, interbank and deposit rates reached levels not witnessed since the 2008 financial crisis. Inevitably, these increased rates were passed on by commercial banks to borrowing companies (OECD, 2024). The median of newly registered EU SME loans declined by 4% during this period, after a significant 12% decline in 2021. These figures are represented in the graph below, where a comparison against the average of all OECD countries ("Scoreboard") shows that this financing issue is more prevalent in the EU.

Figure 3: Growth in New SME Lending, 2008-22



Source: OECD (2024)

Significantly, the OECD report also suggests a crucial imbalance between SMEs and larger enterprises in terms of debt financing. The ratio of SME loans to total business loans rose 4 percentage points in 2022 (compared to the average 0.2 p.p increase in the previous five years), likely due to the faster decline in total business loans in comparison with SME loans. This highlights the ability of larger enterprises to repay their loans to avoid increased lending costs. In analysing recent trends in SME interest rates, the OECD report also highlights the stark 29% increase in 2022 relative to the previous year, compared with a 1.7% increase at the height of the financial crisis. As such, despite SMEs expressing high lending requirements, many are deterred from actually seeking debt finance.

Even in economically secure periods where credit-constraints are not prevalent, SMEs face financing issues given their shortage of collateral, as well as high variance in profitability and growth (OECD, 1997). In this regard, the EU-27 five-year survival rate for new enterprises was recorded in 2018 as 45% (Eurostat, 2018), and one study (Kaya, 2021) found that SME insolvency risk increased, on average, by around 21% during the pandemic.

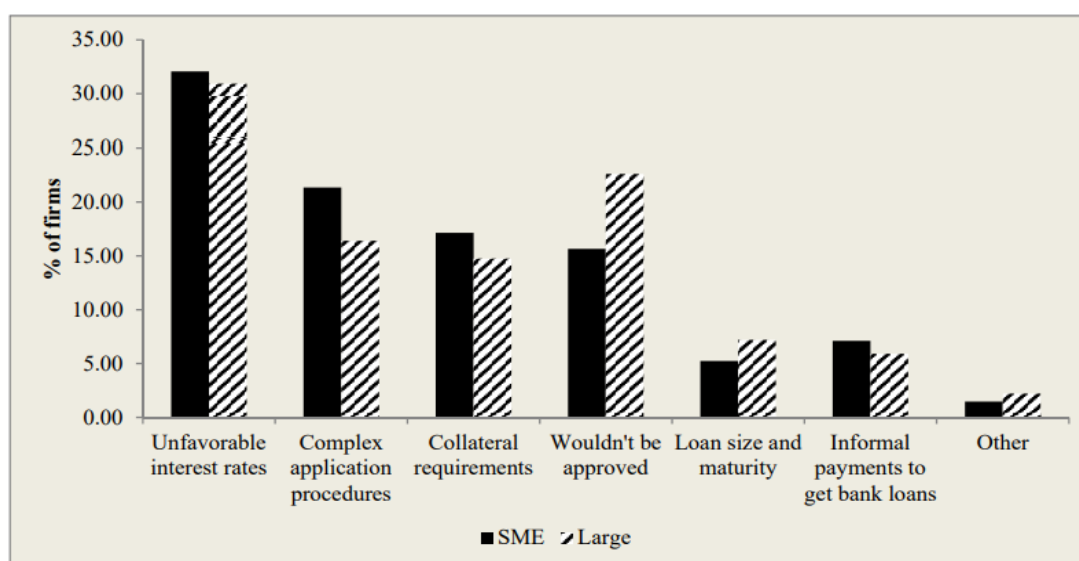
Information asymmetry, in the form of adverse selection and moral hazard also is a major factor that constrains SME access to financing (Ayyagari et al., 2017). Adverse selection arises as SMEs have limited information that allows lenders to assess the investment quality and credit risk. At the same time, lenders are unable, without significant monitoring costs, to ensure that these informationally opaque SMEs are using the capital for the agreed-upon purposes. These

two factors make lending institutions reluctant to lend to SMEs, despite their growth potential (Huang et al., 2014). This asymmetry doesn't just arise from the absence of historic performance evidence or documentation within SMEs but is also intensified by a reluctance by borrowers to disclose sensitive information that they wish to avoid leaking to competition (Moro et al., 2015). The World Bank (2017) highlight extensive literature showing that in countries with better information sharing systems, there is greater access to bank loans. Further underlining the importance of reducing asymmetric information issues for SMEs. Moro et al. (2015) show that a reduction in information asymmetry has a positive effect on the amount of short-term credit a firm can obtain.

Beyond experiencing more intense constraints than larger firms, SMEs are also disproportionately negatively affected by the consequences of these constraints. Existing literature highlights that SMEs rely heavily on credit loans to finance their investments (Albertazzi and Marchetti, 2010). In fact, a recent OECD report exploring new approaches to SME financing (2015) states that *'bank lending is the most common source of external finance for many SMEs and entrepreneurs, which are often heavily reliant on straight debt to fulfil their start-up, cash flow and investment needs.'* Unlike larger firms, SMEs often have little internal cash flow to finance their activities and may not possess the required collateral that banks currently demand to acquire a loan. Unfortunately, the OECD report also points to growing concerns that this constraint situation for SMEs will become the 'new normal' throughout on-going financial reforms. These reforms, named Basil IV, will be explored later. In developing economies, where SMEs are of particular importance, this disproportionate effect is worse. SME owners strongly rely on internal funds and cash from friends and family to run their enterprises. In fact, the *International Finance Corporation* state that each year 40% of micro, small and medium enterprises (MSMEs) in developing countries have a \$5.2 trillion financing need, equivalent to 1.4x the 2019 level of global MSME lending (The World Bank, 2019).

Looking at data on the perceptions that SMEs themselves have towards their financing situation, we can observe the awareness SMEs have of these limitations and how this affects their decisions to apply for loans. In this regard, the World Bank (2017) surveyed SMEs across 135 countries between 2006 and 2014, finding that access to financing was the most reported obstacle for these enterprises. Furthermore, the survey shows the large percentage of both SMEs and large enterprises that cite 'unfavourable interest rates', as well as 'collateral requirements' as primary reasons for not applying for a loan.

Figure 4: Why firms don't apply for a loan?



Source: World Bank Group (2017)

The *European Securities and Markets Authority (ESMA)*, in their report on SME access to public capital markets (2017), further highlight the disparity between larger firms and SMEs in dealing with credit constraints. In terms of public SME equity markets, low levels of liquidity inhibit investment opportunities. Additionally, many SMEs simply lack the confidence and knowledge to navigate the offering process and to deal with share price volatility. As a result, a significant IPO gap exists for SMEs. At the same time, however, equity issuance is not often a viable option for smaller companies considering the relatively high fixed costs associated with listing. The report also highlights that, for large firms, corporate bond issues were an important source of finance for non-financial companies in the aftermath of the financial crisis, allowing them to mitigate the effect of lending constraints. In this way many companies were able to refinance their existing bank loans. In fact, compared to 2006, the number of corporate bond issuances in Europe had nearly doubled by 2016. However, SMEs did not have the luxury of the corporate bond markets to help in the same way. The disadvantages these firms face in seeking bank credit – high information asymmetry, creditworthiness uncertainty, lower visibility – also serve as impediments in issuing corporate bonds, as well as issuing equity. In fact, the ESMA report highlights the crucial fact that initial access to equity markets facilitates subsequent access to equity, bond, and bank financing. Therefore, the inherent structural disadvantages of SME firms have severely limited their ability to deal with financial constraints

in the same way that larger firms can. This further highlights the need for improved and dedicated SME means of financing.

1.3 Changing Regulation: Basel IV Framework

The Basel Framework constitutes the set of standards set out by the *Basel Committee on Banking Supervision (BCBS)*. The framework is the primary global standard setter for the prudential regulation of banks (*BIS*, 2023). It has played an important role in global banking regulation through capital and liquidity measures since 1973, especially in the aftermath of the global financial crisis.

New changes to the framework took place in 2017 and are due to take effect from 2025. These are commonly referred to as *Basel IV* and will restrict banks' use of internal risk models that determine lending activities (*Nordea*, 2024). New changes are also being made in the areas of leverage, exposure and credit valuation adjustments. The results of these changes are estimated to have a disproportionate impact on the European banking system, where there will be a need for an additional €52 billion of a capital buffer. Copenhagen Economics estimate that the borrowing costs of EU corporates will increase by around 25 basis points. For some regions, such as Sweden, the effect will be more severe, with a potential 50 basis points increase.

While many of the new regulations pertain to activities with large corporations with over €500 million in revenue, the overall tightening of restrictions could negatively impact SME access to financing, especially those with no credit rating that are deemed particularly risky. It is hard to predict the impacts of such measures. However, past examination of the resulting effects from Basel III regulations found that the implementation had a moderately negative effect in emerging and developing markets (*Melecky et al.*, 2020).

2. Instruments of Alternative Financing

2.1 Concept of Alternative Financing

There is a consensus among economic and financial institutions, as well as the existing literature, as to what constitutes alternative financing instruments. *The University of Cambridge Alternative Finance Benchmarking Report* summarises the alternative finance market as those instruments and distributive channels “*that emerge outside of the traditional financial system*” (Wardrop et al., 2015). Traditional debt instruments (bank loans, overdrafts, credit lines, credit cards) are the most common source of external finance for SMEs and are useful in financing the short-term needs of firms (OECD, 2015). However, for the reasons previously explained, this is typically only applicable for those firms that have historical financial information, secure cash flow, access to collateral or guarantees, and a tested business model.

An OECD report (2015) highlights that “*newer, innovative and fast-growing companies, with a higher risk-return profile*” are less suited to traditional debt financing. Other possible characteristics of SMEs can limit its access to receiving bank loans. They often need large amounts of capital to grow, yet their profit forecasts are precarious. Additionally, often smaller businesses such as startups have a business model that involves intangibles which can’t be used as collateral.

This is precisely why policymakers are constantly recommending broadening SME access to finance, not only through improved traditional means, but also through the adoption of more alternative financing instruments. These instruments give smaller firms more choice in raising capital that suit their size, industry, and individual needs.

2.2 Current State of Alternative Financing

Since the financial crisis of 2007-8, the alternative finance industry has grown rapidly across Europe, the US and the UK. In fact, in the three-year period following 2011, the market for European alternative finance instruments grew at a rate of 115%, reaching €620m in 2014 (Wardrop et al., 2015). The market particularly developed for the SME sector, emerging as a grass-roots answer to the increasingly credit-constrained banking environment. In the few years following the crisis (2011-2014), this market provided an estimated €385 million worth of growth financing to almost 10,000 SMEs and startups. In 2017, an estimated 24,107 European

SMEs raised around €1.6B through online alternative finance platforms (Ziegler *et al.*, 2021). This was mainly focused on instruments such as *P2P Consumer and Business lending*, *Invoice Trading*, and various *Crowdfunding* techniques as we will explore later. According to Statista (2024), the European market, including the UK, has grown from 1.5 billion dollars in 2013 to 22.6 billion dollars in 2020.

The ECB's 2017 Survey on the Access to Finance of Enterprises (SAFE) highlighted the lack of diversification of European funding sources, stating that only 10% of SME funding came from market-based equity securities, and only 3% from market-based debt securities (ECB, 2017). As previously explored in section 1, SMEs don't have the same ability as larger firms do in dealing with credit constraints. While larger firms utilized the corporate bond market post-crisis, SMEs instead reacted to the constrained environment by increasingly relying on internally generated funds and, importantly, alternative financing instruments (ESMA, 2017). Indeed, Lovells (2019) highlights how, due to the tightening of Basel lending regulations post financial crisis, the window of opportunity for other participants has broadened.

The rapid and significant growth and technological advances in the Fintech industry have also driven adoption of alternative finance instruments in recent years. According to an analysis conducted by *McKinsey & Company* (2023), Fintechs represent 5% of the global banking sector's net revenue. Furthermore, it was estimated that this figure will grow 15% annually between 2022 and 2028, which is three times the overall banking industry's growth rate. Fintech lending is shown to have a positive effect on firm growth and investment (European Central Bank, 2022). Furthermore, the ECB has found that SMEs are substituting long-term bank debt with Fintech debt through peer-to-business loans, allowing firms to diversify their financing sources "*away from the banking sector and reduce exposure to banking shocks.*" In fact, the increasing presence of Fintech offerings is having a negative effect on the performance and profitability of traditional financial institutions (Emrullahu *et al.*, 2023).

2.3 Taxonomy

In this section, various sources of alternative financing are explored from the suitability and perspective of SMEs, with particular focus on efficiency.

An OECD report on new approaches to SME financing (2015) organises alternative financing techniques into four distinct categories based on risk/return levels, as seen below. For the purpose of this work, in considering the requirements and characteristics of SMEs, the low risk/return asset-based and debt-based instruments have been the main focus. However, hybrid and equity instruments are briefly explored also. Much of the explanation of these instruments come from this OECD report, except where otherwise stated.

Figure 5: Taxonomy of Alternative External Financing Techniques

Low Risk/ Return	Low Risk/ Return	Medium Risk/ Return	High Risk/ Return
Asset-Based Finance	Alternative Debt	“Hybrid” Instruments	Equity Instruments
<ul style="list-style-type: none"> • Asset-based lending • Factoring • Purchase Order Finance • Warehouse Receipts • Leasing 	<ul style="list-style-type: none"> • Corporate Bonds • Securitised Debt • Covered Bonds • Private Placements • Crowdfunding (debt) 	<ul style="list-style-type: none"> • Subordinated Loans/Bonds • Silent Participations • Participating Loans • Profit Participation Rights • Convertible Bonds • Bonds with Warrants • Mezzanine Finance 	<ul style="list-style-type: none"> • Private Equity • Venture Capital • Business Angels • Specialised Platforms for Public Listing of SMEs • Crowdfunding (equity)

Source: OECD (2015)

2.4 Asset-Based Finance

Asset-based finance is commonly used by SMEs across OECD countries, especially in Europe where the use of these instruments is used as much as conventional bank lending (OECD, 2015). Funding is acquired based on the value of the assets a firm owns (accounts receivables, inventory, machinery, etc.) instead of based on the firm’s own credit status. There are several key benefits borrowing firms can achieve in using asset-based financing instruments. Namely, financing is acquired much faster and under more flexible terms than a traditional bank loan, with a fixed repayment schedule not required. Additionally, firms that would not qualify for traditional credit, due to temporary losses or a lack of credit history, can use their assets to acquire funding regardless of balance sheet position, future cash flow expectations and without a required personal guarantee. The main downside to asset-based financing is that the associated costs can be significantly higher than with traditional debt.

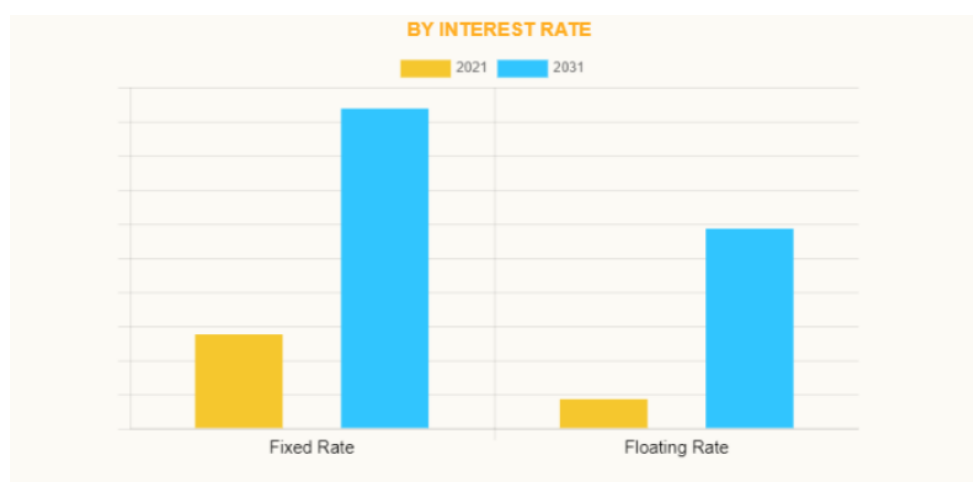
2.4.1 Asset-based lending (ABL)

The OECD report on new alternative finance approaches defines asset-based lending (ABL) as the securing of finance using the appraisal value of balance-sheet assets as collateral. It highlights how it is a way for financiers to address the problem of information asymmetry experienced in smaller enterprises. Typically, it involves the use of four asset classes as collateral: *accounts receivables, inventory, equipment, and real estate*. However, more recently, intangible assets have become more accepted due to enhanced methods of valuing such assets. Often, a revolving arrangement – known as a revolving credit facility - is allowed, whereby more finance can be secured by the borrower as new assets are generated through growth. ABL is increasingly becoming an accepted approach to financing due to the “*freedom, flexibility and cost savings*” it can offer (Lovells, 2019). This is largely due to technological advances that grant borrowers the ability to move inventory faster through lean manufacturing, and lenders the ability to examine assets faster through innovative data capture and analysis techniques.

Looking at the substantial growth this financing mechanism has undergone requires an examination of global figures, given the lack of open-source data for the European region. An *Allied Market Research* report (2023) valued the global ABL market at \$562 billion in 2021, with projections of the market reaching \$1.7 trillion in 2031. A *Global Information Inc* market report (2024) valued it at \$698 billion in 2023, with forecasts of \$787 billion in 2024, and \$1.3 trillion in 2028. It attributes the recent growth to credit challenges and increased demand for working capital financing. Meanwhile, the substantial forecasted growth is attributed in large part to increasing demand for non-traditional financing, a large focus on working capital optimization, the application of AI in credit decisioning processes, and increasing collaborations between traditional lenders and Fintechs.

However, this growth is not without its downsides as the cost of borrowing through ABL, as seen below, is expected to substantially increase by 2031.

Figure 6: Current and Projected Interest rates of ABL Market



Source: Allied Market Research (2023)

ABL can be a very efficient and useful means of financing for SMEs, and in particular start-up companies with limited credit history or fast-growing and cash-strapped firms. ABL allows firms to respond to their short-term cash needs quicker than with traditional debt. SMEs in sectors where it can be hard to accurately reflect value, such as those facing seasonal build-up of inventory or receivables, can also effectively utilize ABL. The revolving arrangement capability of ABL grants growing SMEs the ability to finance their expansion due to the borrowing limit expanding rapidly as the value of the underlying assets rise. In this way ABL is a highly flexible source of financing for smaller firms that need to adapt to their rapidly evolving business environments. Customizable borrowing terms and repayment schedules also provides more flexibility to firms, allowing them to cater to their individual business requirements (Lovells, 2019). An important characteristic of ABL that allows for traditionally ‘unsafe’ firms to obtain funding is the way in which lenders closely monitor the value of the secured assets, often daily. This foregoes the requirement a traditional lender would have of maintaining a conservative financial position over the loan terms. The increasingly wide range of assets that can be secured under ABL gives SMEs of any sector, with strong accounts receivables and a solid base of creditworthy customers, the ability to overcome temporary lending constraints, and as such can be particularly utilized in dealing with cash flow issues or in taking advantage of growth opportunities (OECD, 2015).

Despite these efficiencies for SMEs, ABL still carries significant risks for lenders, explaining why it can be particularly costly compared to other forms of financing. For example, the

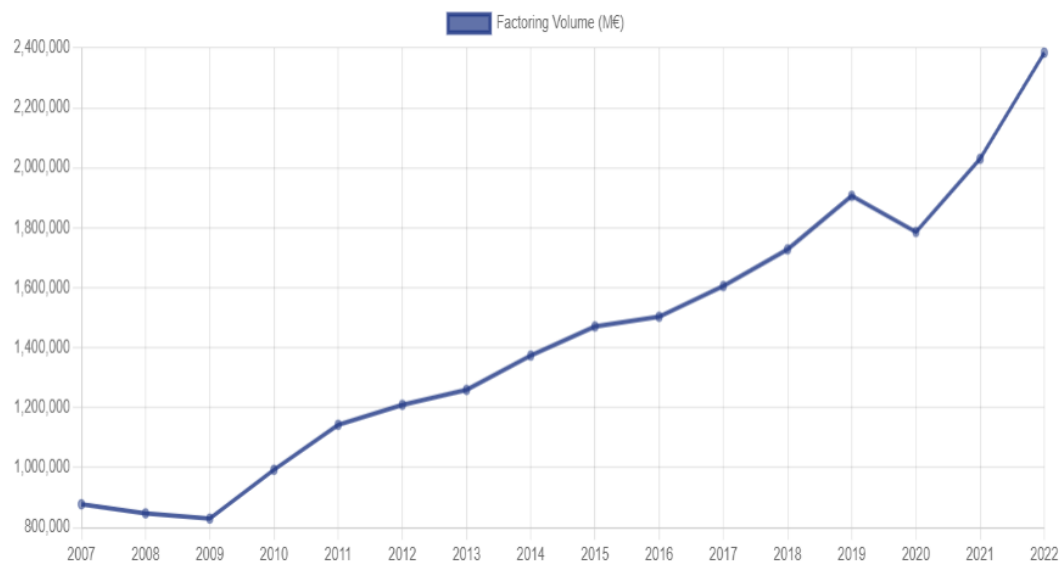
absence of secondary markets exposes lenders to generic credit risk. Collateral risk exists too, whereby the underlying asset may decline in value after the loan has been granted, sometimes to a point where it can't be liquidated. For example, accounts receivables can be diluted by credit notes for return or damages. It is partly for this reason that asset-based loans are granted at a discount to the actual asset value. A loan-to-value ratio (LVR) of 80-85% is typical for AR (Caouette et al., 2008). Less liquid assets such as inventory can be much lower, possibly at 40% of the estimated inventory value. It is possibly for these reasons that 62% of general asset-based finance advances are granted to large companies (*Landscape*, no date).

2.4.2 Factoring

Factoring involves a business selling its accounts receivables to a third party (the factor) at a discount (Polishchuk et al., 2018). The factor later makes a profit by collecting the receivables. Factoring is very similar to *invoice trading* and, like with ABL, is a method of financing based on the value of a firm's underlying asset – in this case the accounts receivable – rather than on the firm's creditworthiness. However, factoring differs from ABL in that it solely involves the use of accounts receivable and is usually sold at a discount rather than being collateralised. The receivable sold to a factoring company generally must come from a client with a good credit rating. In this way the factor is concerned only with the creditworthiness of the client behind the receivable, and not the firm seeking finance itself. This addresses the key financing issue of information asymmetry.

As can be seen in the graph below, the volume of factoring in Europe has experienced significant, continuous growth since the financial crisis. In 2023 the European factoring services market size was estimated at around €2 trillion and is estimated to have an CAGR of 8.2% between 2024 and 2030 (GrandViewResearch, 2023).

Figure 7: Factoring Evolution 2007-2022 (in millions of €)



Source: EU Federation (2023)

Factoring is consistently one of the most utilised sources of alternative financing in Europe. In 2017 it had the second largest share of the alternative finance sector at 16% (Ziegler *et al.*, 2021). In fact, the European market has a majority share of global factoring volume which is being driven by SMEs, especially as fintech companies provide rapid offerings in this area. The global representative body for factoring, the *FCI*, has a unique network in Europe that facilitates cross-border factoring collaboration. In fact, a white paper on the factoring and commercial finance (FCF) sector find that SMEs completely dominate the sector (EUFederation, 2019).

A DG Enterprise report (2002) on factoring describes the appropriateness of this financial instrument, helping to explain the growing trend. *Firstly*, the costs of funds are competitive against bank overdrafts. Typically, factoring rates range between 1% and 5%, and the average advance payment – the funding granted to the borrower – is 80% (Commercial Capital LLC, 2023). *Secondly*, while banks require collateral, factors consider invoices as secure assets and therefore provide small, growing firms with more funding than traditional sources. *Finally*, the speed in processing payment against invoices is far more efficient than that of banks granting credit. Another key advantage of factoring is that, unlike traditional lending, or even ABL, factoring does not generate any form of debt on the balance sheet. The firm selling the accounts

receivables has no loan to repay. In this way, the firm can rapidly convert its accounts receivables into cash (OECD, 2015).

As the borrower's own creditworthiness is not assessed under this source of financing, factoring can be particularly useful for high-risk, newer, or informationally non-transparent firms, as well as firms that don't possess tangible assets to secure, and firms that are growing faster than their credit lines. Finally, the OECD (2015) also highlight the usefulness of factoring for SMEs partaking in international trade or exporting, whereby exporters can "*significantly reduce the cost of collecting credits overseas, as well as the exchange rate risks.*" This also passes on the risk and cost associated with firms monitoring the creditworthiness of one of their customers abroad.

2.4.3 Purchase Order Finance (POF)

Polishchuk *et al.* (2018) define POF's purpose as "*a funding option for businesses that need cash to fill single or multiple customer orders.*" It is funding for the production stage, whereby a working capital advance is granted to complete the production of a good or service for a specified customer. A financier will receive a purchase order from the borrower and must determine whether the borrower's client is creditworthy and if the production can be completed as per the contract. If so, the funds are granted to complete the purchase order (OECD, 2015). In this way, and similarly to factoring, POF transfers credit risk from the firm seeking financing to a customer deemed more creditworthy. However, there is more risk associated with POF, and so interest rates and fees are generally higher than with other instruments of asset-based lending. Often lenders may look to mitigate some risk by seeking guarantees and collateral, or by insisting that a factor intervenes in the transaction if the payment terms of the customer are beyond a certain threshold (60 or 90 days). In this case, the firm seeking financing would have to pay higher costs.

POF is especially useful for growing firms with insufficient cash flow and limited access to working capital, and who receive orders which are higher than their current capacity to pay suppliers upfront allows. As a result, POF is usually used in conjunction with other lending facilities and not as a replacement or sole means of financing. Additionally, as the creditworthiness of the firm's customer is considered above that of the firm itself, POF can be particularly useful for newer firms with little credit history, and those small firms that fall within supply chains. As a financial instrument that particularly supports production, it is

typically associated with producers, distributors, wholesalers, and resellers of manufactured products.

2.4.4 Warehouse Receipts

Warehouse receipts are used to guarantee the quantity and quality of a particular commodity that is stored at a certified facility (Polishchuk et al., 2018). The receipt received from the facility is proof of the commodity standard and is used as collateral to secure a loan. The lender places a *lien* on the commodity – a claim or legal right against assets (Investopedia, no data) – to restrict its selling before the loan is repaid. The possible amount a firm can borrow in this way is usually 50-80% of the stored commodity value, and storage fees are included in addition to interest and tax (OECD, 2015). A useful example is that of agricultural production, whereby producers access credit by using these receipts. This mechanism allows them to delay selling their products until prices are favourable, resulting in improved trade and credit mobilization (EU, 2017). Warehouse receipts are thus particularly effective for producers and traders of storable agriculture commodities such as sugar and grain. As with the previous asset-based finance mechanisms described, warehouse receipts are a useful financing means for firms that lack collateral or a sufficient credit history.

2.4.5 Leasing

A lease is a contract that outlines terms under which one party agrees to rent property owned by another party (Polishchuk et al., 2018). It is used commonly to finance the use and purchase of equipment, vehicles, and real estate. Just like other asset-based finance instruments, the value of the underlying asset and the firm's ability to generate sufficient cash flows to meet regular payments, is considered over the creditworthiness of the firm (OECD, 2015).

The owner of the asset (lessor) provides the customer (lessee) with the right to use the asset for a determined period, in exchange for regular payment. Ownership of the asset may or may not be transferred to the lessee at the end of the contract. The lessee takes on the related risks that would otherwise come with ownership, such as maintenance and insurance costs.

The ECB's SAFE survey (2023) highlighted that for the 2023 survey period, SMEs reported leasing to be the financing source for which they had the most extreme need. This is no surprise, given that leasing is the second most utilised financing instrument (following bank overdrafts) among SMEs in Europe (ECB, 2023), and remains more popular than traditional bank loans (EIF, 2023). According to LeaseEurope (no date), in 2018 leasing firms helped European

businesses invest in assets worth over €384 billion, with an outstanding portfolio at year end reaching €802 billion. The group also reinforces the fact that, besides short-term credit, leasing is the most relevant form of lending for European SMEs. Importantly, leasing is generally a low-risk lending instrument which experiences lower default rates than typical loans. This is because leased assets are typically crucial equipment for a firm's operations, and as such lessees tend to prioritize lease payments over other financial commitments (Leaseurope, 2019).

Leasing can respond to the capital investment needs of new firms which lack the working capital that may be needed for outright purchase of asset and lack the credit history that is generally required to source this capital from traditional bank channels. More generally, leasing can serve SMEs that do not qualify for conventional bank lending due to high risk, opacity, and lack of collateral. Importantly for SMEs, there is little or no down-payment or deposit required with a lease contract, allowing it to finance a higher percentage of the capital cost of equipment, allowing the business to preserve cash resources and to use existing bank facilities to meet working capital needs (Gallardo, 1997). In this way leasing can also be attractive for SMEs that have access to traditional bank lending, as a more flexible mechanism for using the services of capital assets, while preserving cash reserves. Additionally, leasing contracts can be arranged in a relatively simple and quick manner, since security arrangement is not needed, and lease payments can be aligned to the pattern of the expected cash flow. However, it is important to consider that the overall cost of accessing the asset over its economic life may be higher than in the case of outright purchase.

Looking ahead to the future, it is possible that from a regulation point of view leasing becomes more attractive for SMEs, compared to other finance instruments. According to Leaseurope (no date), the low risk of leasing portfolios is not properly recognised under the new Basel IV changes and the European Capital Requirements Regulation (CRR). The group highlights that leasing should no longer be treated as equal to bank loans and have proposed a number of ideas to avoid an increase in the regulatory capital required for leasing activities.

2.5 Alternative Debt Instruments

Alternative debt instruments provide funding that differs from traditional debt in that it comes from investors in the capital markets instead of banks (OECD, 2015). However, the SME does not themselves access the capital markets, but rather receives a bank loan which is supported by activities in the capital markets. While many alternative debt instruments are not new, their

extension to SMEs has until now been limited. In this regard, innovations in fintech and crowdfunding have significantly increased the availability of this financing type to SMEs. In continuation, securitisation and debt crowdfunding/P2P lending are particularly explored due to their growing significance for SMEs.

2.5.1 Corporate bonds

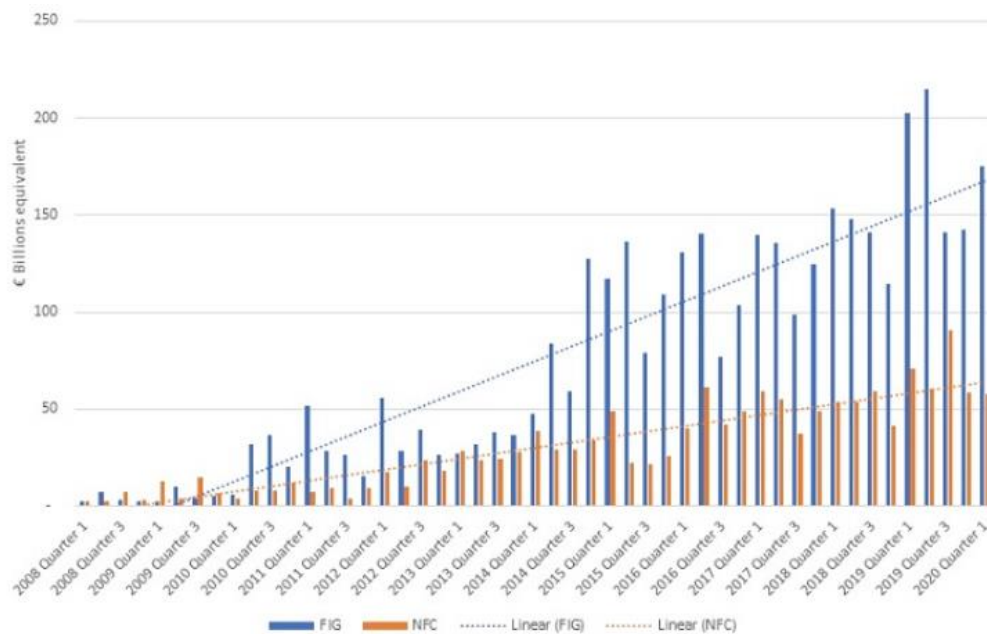
While there are public efforts to make corporate bond issuance more applicable to SMEs to help them access alternative financing, there are factors such as information asymmetries, small issuance size, and high costs that limit the applicability of corporate bond issuance by SMEs (CEPS, 2020). Similarly to government bonds, the company, in return for investor capital, commits to paying interest on the principal over the duration of the bond, as well as the full principal amount upon maturity. The company does, however, have the right to buy back the bond before maturity, in what is known as a ‘*call*’ (OECD, 2015). This gives the company flexibility as to payment terms, allowing them to adapt and drop this line of credit in the case of an influx of capital from elsewhere.

EU corporate bond issuance has greatly increased in recent years, more than doubling in the ten years between 2007 and 2017 (European Commission, 2017). This was driven by low interest rates and the European Central Bank’s *Corporate Sector Purchase Programme (CSPP)*¹.

In fact, corporate bonds have benefitted the most from the post-financial crisis credit-constraining conditions. The significant growth of this mechanism can be seen in the issuance graph below. For larger firms, corporate bonds have been shown to reduce the effects of bank lending restraints (ESMA, 2017). In fact, Darmouni and Papoutsi (2021) highlight the use of bond financing in insulating firms from banking sector shocks.

¹ In 2016 the Eurosystem began purchasing securities issued by non-bank corporations in many economic sectors, in both the primary and the secondary market. This programme is believed to have a tangible impact on market conditions, particularly in tightening spreads and stabilising the primary market. However, the programme has recently been largely tapered. As of 31st January 2024, CSPP holdings amounted to €325 billion - approx. one quarter in the primary market, three-quarters in the secondary market (Bank, 2024). (‘Improving European Corporate Bond Markets - Report from the Commission Expert Group on Corporate Bonds, November 2017’, no date).

Figure 8: EU Investment-Grade Historical Corporate Bond Issuance



Source: ICMA (2020)

However, large and medium-sized non-financial companies (NFCs) are the primary issues of corporate bonds, and this market has remained underutilised by SMEs, particularly in the European markets (ICMA, 2020). While there has been a shift towards smaller and riskier firms, new bond issuers are generally highly leveraged, with bonds used to invest in growth instead of replacing bank loans outright (Darmouni and Papotsi, 2021).

Traditionally, corporate bonds have not been a suitable source of SME financing as they typically require a secure credit history and limited volatility. As SMEs do not fit this definition, they would draw a low rating and high coupons (OECD, 2015). Additionally, the cost of raising corporate bonds can be as high as 10% of issuance. Another possible negative feature for SMEs is the fixed interest schedule, that unlike financing backed by assets, can carry default risk.

A recent innovation in the corporate bond markets, the *mini-bonds*, has attempted to deal with the characteristic issues that SMEs face with bond issuance. Mini-bonds allow unlisted SMEs to issue debt which is traded on regulated markets or specialized trading facilities (Ayyagari et al., 2017). This has largely been experimental across just a handful of European countries with the aim of increasing sources of market-based funding for SMEs. Additionally, these markets have had varying and fragmented results across countries. For example, in Germany between

2010 and 2014 there were a large number of defaults, and the market was shut down. Meanwhile, the Spanish *Mercado Alternativo de Renta Fija (MARF)* has had success trading small cap bonds since 2013. A key benefit of this instrument is that no rating or liquidity provider is required. Instead, an advisor is appointed to assist with the issuance process, helping to address problems of information asymmetry (ESMA, 2017). Ultimately, though, the higher risk associated with smaller, unknown companies has prohibited adoption growth of these instruments for SMEs.

2.5.2 Private Placements

Private placements are crucial in allowing unlisted companies to sell corporate bonds to a select few investors, typically institutional investors such as large banks and funds. They possess looser reporting standards and don't require a credit rating like a typical corporate bond. The European private placement market had an issuance volume of approximately €3.4bn in 2022, with its position expected to grow further in the coming years (Norton Rose Fulbright, 2024). Private placements are gaining traction as a long-term funding source, where a fixed-rate over the long-term attracts firms to this source of funding. The *European Corporate Debt Private Placement Market (ECPP)* has a main objective of providing financing for medium-sized listed or unlisted firms who may not be able to take advantage of the loan or bond markets (ICMA, 2016). However, in line with the issues we have seen in the loan market, the development of private placement markets is limited by lack of information on issuers and a lack of standardised documentation. Other impeding issues include illiquidity in secondary markets and insolvency law differences across regions (Nassr and Wehinger, 2015).

2.5.3 Debt Securitisation

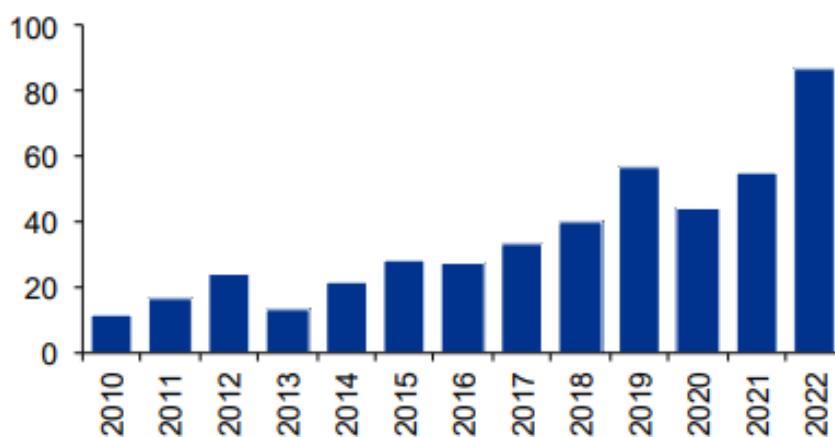
Securitisation is a structured finance technique whereby assets are pooled together to be sold in the capital markets as interest-bearing securities. The assets are placed into different risk tranches, granting various degrees of claims on the cash flows backed by the asset pool (OECD, 1999; Nassr and Wehinger, 2015)

Securitisation helps alleviate credit supply issues as banks can refinance loans and diversify their funding (Nassr and Wehinger, 2014). Debt securitisation presents indirect advantages to SMEs through the opportunity it grants banks. The credit risk belonging to the debt is passed on to the capital markets by the banks, who in doing so have removed the risky asset from their balance sheets and replaced it with highly liquid assets. This grants banks a reduced cost of

financing and allows them to increase their lending capacity. Importantly, the securitisation of SME loans is an attractive choice for banks due to more familiar bank-customer relationships, as well as increased monitoring capabilities (OECD, 2015).

Although securitisation fell significantly in recent years due to its significant role in the global financial crisis (Kraemer-Eis et al., 2010), the market for securitised debt is rising again and currently amounts to over €540bn in Europe (ESMA, 2023). Significantly, of this amount SME loans represents 15%. One trend the securitisation market is seeing as of late is the rise in the number of SRT transactions, as seen in the graph below (KPMG, 2023). SRT, or *Significant Risk Transfer*, is an EU regulatory concept that refers to capital relief trades. Since its introduction in Basel II in 2004, it has allowed banks to transfer their credit risk through securitisation, allowing for reduced capital requirements (González and Triandafil, 2023). Importantly for financial institutions, the aforementioned upcoming implementation of Basel IV capital regulations greatly increases the value of utilising securitisation as a risk mitigation technique (KPMG, 2023).

Figure 9: Number of SRT transaction per year

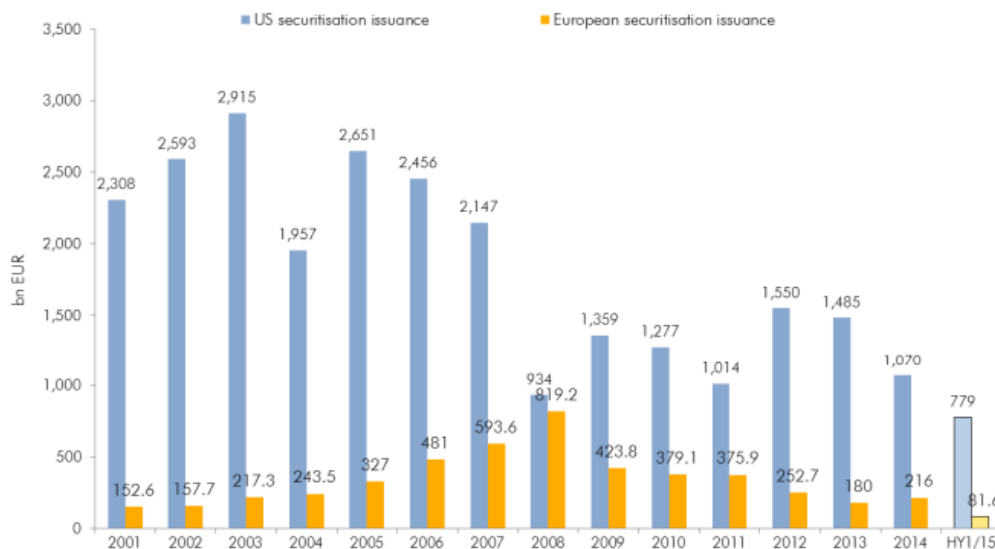


Source: KPMG (2013)

Increasingly, policymakers are recognising and promoting the need for a well-functioning securitisation market to help SMEs increase their access to financing within the EU (Kraemer-Eis et al., 2015). Indeed, such a market would grant banks the regulatory relief on their SME lending portfolio to lend more without the need to commit much of their capital base. In this way, the indirect access to capital market funding for SMEs is crucial to credit-constrained

SMEs (Nassr and Wehinger, 2015). The general underutilisation of the European securitisation market can be observed in the graph below, which compares issuance with the U.S. Of course, it is important to consider the limitations associated with the lack of EU single and unified capital markets as seen in the U.S.

Figure 10: Securitisation annual issuance Europe versus US 2010-15 (bn EUR)



Source: Kraemer-Eis *et al.* (2015)

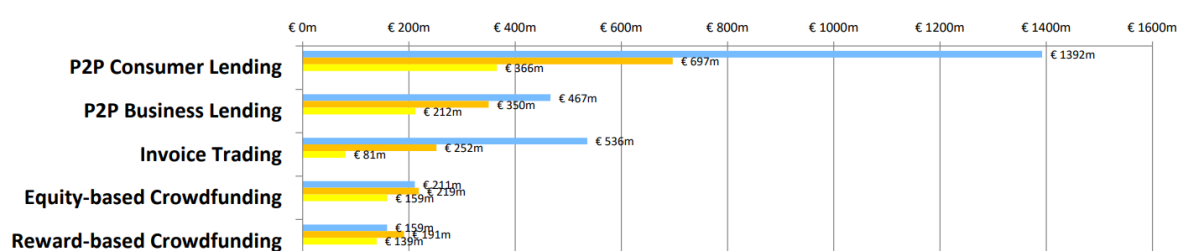
SME securitisation issuance in the primary market is low in large part because SME issuance is regarded by many investors as uneconomic. The risky characteristics and asset quality of SMEs require a relatively high yield, and this cannot be provided by the cash flows of these asset pools. Low liquidity conditions also add to the perceived risk of SME securities. As a result, securitisation as an alternative instrument of finance remains underutilised. To change this, asset spreads would need to increase, or the perceived risk would need to decrease, perhaps through more readily available information on SME issuances (Nassr and Wehinger, 2014). Given that policymakers consider the securitisation of SME loans as a path to revitalising SME bank lending, serious consideration is needed regarding how to make these loans more favourable for investors (Kaya, 2015).

2.4.4 Crowdfunding

This type of funding differs greatly from other debt instruments in the fact that it involves financing from a large amount of people providing small amounts of funding in place of large amounts from a group of small investors. This includes models such as mini-bonds, peer-to-peer (P2P) and invoice lending (Polishchuk *et al.*, 2018). P2P lending is the main focus of crowdfunding within this study.

The data shows that this type of lending is of great significance within the alternative financing markets. In fact, 2014 data shows that, excluding the UK, peer-to-peer *consumer* lending was the largest alternative financing market in Europe, valued at €275 million (Wardrop *et al.*, 2015) (Importantly, this data comes from a report that is strict in its definition of alternative financing and does not include instruments such as leasing or securitisation). P2P consumer lending involves mostly unsecured personal loans granted through individual debt-based transactions on an online marketplace. P2P *business* lending differs in that it refers to peer-to-peer loans granted to individuals or businesses for commercial purposes. The graph below shows the massive growth of the main crowdfunding models in Europe between 2015 and 2017. In fact, data from 2017 (blue line) shows total P2P lending as the most utilised mechanism of alternative financing, almost triple the trade volume of invoice trading (similar to factoring).

Figure 11: Alternative Finance Volume in Europe by Model 2015-2017 (€ EUR)



Source: Cambridge Center for Alternative Finance (2017)

One important innovative characteristic of crowdfunding is the way in which funding is secured directly from the audience without the intermediation of any traditional financial institution such as a bank (OECD, 2015). In the case of *P2P* lending, the online platform simply matches lenders with potential borrowers. One advantage of this lending model is the direct exchange of information between both parties which is visible to other potential borrowers, possibly broadening the creditor base. In the context of SMEs, P2P lending can provide quick funding to smaller companies that lack the collateral and credit history requirements of traditional

lending (Harbi, no date). Abbasi et al. (2021) highlight the increased importance of this instrument in funding SMEs, showing that the greater presence of Fintech companies granting P2P loans increases the access of finance to SMEs among OECD countries.

Equity-based crowdfunding can also be attractive to smaller start-ups who may be too innovative or complex to be understood and lack access to traditional finance sources. Individual investors may be more willing to invest in these riskier enterprises due to the prospect of being a part of the venture in its early stages (OECD, 2015). Troise et al. (2023) also proposes the idea that equity-based crowdfunding can help SMEs internationalise, through increased visibility and support from international contacts which not only helps in terms of financial resources, but also provides key knowledge into the process of expanding internationally.

2.6 Hybrid Instruments

Hybrid instruments are not pure debt or pure equity instruments, but rather combine features of both into a single mechanism. As a result, they carry greater possibilities of risk and return than straight debt, but consequently a lower expected risk and return than with straight equity. Traditional hybrid instruments include subordinated debt, participating loans, and mezzanine finance. However, I will briefly explore a more innovative and alternative hybrid instrument – *ICOs*.

2.5.1 Initial Coin Offerings (ICOs)

This newly innovative mechanism of raising funds consists of the creation of digital tokens on blockchain technology by young, micro-SMEs, which are distributed to investors in exchange for capital (fiat currency or mainstream cryptocurrencies) (OECD, 2019). The token granted to the investor can possess functional qualities such as access to the project, or it can possess debt or equity-like qualities, therefore placing it in the hybrid class of financial instruments. Often, though, it is simply intended as the sole means of payment for the venture's future products or services (Lyandres et al., 2020). Commonly, ICOs are viewed as similar to IPOs, but wherein IPOs are a mechanism for established companies, ICOs are usually project-based and a means to financing the initial undertaking of the project. ICOs can also be comparable to crowdfunding mechanisms, such as P2P lending or reward-based crowdfunding giving the investor future use in the product. Often *venture capital* (VC) investment is complementary to

ICO offerings, where VC funds might fund the expense of the offering. Inherent to the technology it is built upon, though, ICOs can only be useful solutions for SMEs that have a real business rationale behind the use of the blockchain.

The OECD report on ICOs (2019) highlights the efficiency gains in terms of speed and cost that ICOs grant SMEs in facilitating the exchange of value without the need of a trusted intermediary such as a bank. The major advantage of this is in the opportunity SMEs have to diversify their sources of finance, allowing them to not solely focus on the profit potential of their enterprise. ICOs are also efficient in the sense that they grant SMEs access to an unlimited, global pool of investors, where any type of investor can invest. Of course, this also carries risk in terms of financial consumer protection. ICOs can also be issued and executed with rapid speed due to the technology being used. The OECD report highlights the cases of Bancor, which raised \$150M in 3 hours, and BAT, raising \$34M in less than a minute. While the technology certainly facilitated this, it is important to also note that a lack of disclosure requirements and due diligence by investors also contributed in large part. The low cost of token issuance driven by efficiency savings from blockchain-based solutions is considered to be one of the most important benefits of financing through ICOs.

One of the greatest limitations of ICOs, though, is the total uncertainty as to regulations that apply to them, exposing both firms and investors to significant risks. A large proportion of ICOs don't provide information about applicable laws or regulator status. Additionally, regulatory uncertainty extends to the underlying ledger technology and smart contracts, particularly in terms of recourse in the case of technological failure. Regulatory arbitrage² can be undertaken due to the global, cross-border reach of ICOs, for example to take advantage of the favourable ICO tax environments of certain jurisdictions. Finally, the lack of standardized disclosure requirements makes it significantly difficult for investors to accurately assess risks. In fact, it has been shown that the informativeness of an ICO's white paper – detailing the purpose of the ICO as well as a business plan – is a determinant in ICO success (Lyandres et al., 2020). These issues only serve to weaken this mechanism of SME finance by promoting fraud and drawing important financial resources away from genuine startups (OECD, 2019).

² The structuring of company activities to reduce or get around the impact of regulation, without reducing the underlying risk (ECB, 2017).

2.6 Conclusions

In choosing financial instruments to quantitatively analyse for this study, a significant consideration criterion was the efficiency with which SMEs can acquire financing, in terms of time, costs and requirements. In this way, instruments such as *asset-based lending*, *corporate bonds* and *warehouse receipts* were not considered for the analysis due to their costly nature and limitations in how much can be borrowed. Corporate bonds and *private placements* are also seen to be limited by issues of information asymmetry and lack of standardised documentation that make them somewhat ineffective for general SME utilisation. In the cases of *mini-bonds* and *ICOs*, these instruments are too new and not widely utilized. ICOs in particular, while highly innovative, are limited to the cryptocurrency industry and lack the regulation and general use capabilities for SMEs as a whole. While *POF* appears highly useful for growing SMEs, there is unfortunately limited open-source data available to consider including it in the analysis.

On the other hand, the following four instruments were chosen based on the evidence and insights discovered in the literature review, pertaining to the specific characteristics these instruments possess that make them most relevant for SMEs in the current economic environment. The market size, growth, stability and liquidity observed among these financial instruments make them especially relevant for inclusion in this analysis: ***factoring; leasing; securitisation and P2P business lending.***

Factoring provides SMEs with upfront, immediate cash flow to fund working capital requirements or fulfil orders in the short-term. P2P lending also supports urgent requirements of capital with a streamlined and convenient loan application process. P2P lending also has substantial efficiency gains in being able to access a large pool of diverse investors that are more willing to accept competitively low interest rates, if any, in support of innovative entrepreneurial ventures. The diverse investment pool also results in greater stability and resilience during periods of economic uncertainty where traditional banking can't be relied upon.

Additionally, except for securitisation, these instruments don't involve collateral or personal guarantees. In fact, in the case of factoring the issues of creditworthiness and information asymmetry are relinquished as the borrower's clients become the attention of the lenders. This allows SMEs flexibility in managing their financing needs as they change. For example, with factoring, as the enterprise grows so too do the accounts receivables, allowing firms to obtain

additional financing and scale their operations. In terms of leasing, contract terms (e.g., duration, payment frequency) can be chosen to suit the operational requirements of the business. SMEs can also upgrade to newer assets at the end of their lease term, allowing them to adapt to technology changes and changes in their own equipment and asset needs. Importantly, leasing has been consistently seen as a more popular means of financing among SMEs, and has been expressed very recently as their most acute need in terms of funding. The common thread of not taking on any long-term debt is crucial in allowing firms, especially those younger SMEs, to stay flexible. In this way, these instruments particularly fund short-term SME growth, while not impacting future credit capacity. In most cases no debt burden is created at all. Instead, existing internal cash flow is preserved for the day-to-day operational expenses.

As we have previously seen, the top three most concentrated industries for European SMEs are ‘*wholesale and retail trade*’, ‘*professional, scientific and technical activities*’, and ‘*construction*’. Factoring is a particularly useful finance mechanism for firms in the ‘wholesale and retail trade’ industries due to their need to fulfil large orders, and the sizeable portion of accounts receivable they possess. Additionally, firms in the ‘professional, scientific, and technical activities’ industries, as well as the ‘construction’ industry, are well suited to take advantage of leasing mechanisms to acquire specialised equipment and technology without the need for large, upfront capital investments, or exposure to ownership risks or issues related to asset management in the early stages of a firm’s operations. While securitisation is not a readily utilized instrument for SME financing currently, its inclusion in this analysis recognises its future potential in aiding SME access to finance. The importance of securitisation has been increasingly recognised by policymakers as of late, with the recovery of the SME securitisation market being a focus area of the *CMU* and the European Commission. Indeed, the new Basel IV framework encompasses regulations to promote simple, transparent and standardised (STS) securitisation that are more favourable for SMEs. Ultimately, given the limited direct access that SMEs have to European capital markets, and the resulting reliance on bank lending, an inclusive securitisation market can be utilised to transform illiquid SME loans into an asset class with adequate market liquidity (Kraemer-Eis et al., 2015).

These four instruments will be analysed to attempt to explain various economic predictors of usage, with the aim of understanding their relevancy and resilience under economic pressures affecting SMEs today.

3. Methodology

This study uses quantitative explanatory research to attempt to find correlations and causation between various economic variables and financial instruments. Various sources were used to compile data for the four chosen financial instruments. Annual total factoring turnover data for Europe (including the UK) was taken from *EU Federation* (2023), the representative body for the factoring and commercial finance industry in the EU. Leasing data comes from *Leaseurope's* annual survey results, which compiles total new leasing activities of its member associations. The *Association for Financial Markets in Europe (AFME)* publish annual data regarding securitisation issuance. For this analysis, placed issuance, rather than total issuance, has been considered as to not include securities retained by financial institutions. In this way, only securities that are sold to investors are considered, given the hypothesis that greater volumes would imply that banks are granting more riskier loans that are subsequently passed on to investors. For P2P lending, business lending data over consumer lending has been collected due to its relevance for SMEs (Ziegler *et al.*, 2021). The data is taken as total transaction value in Europe (excluding the UK), but is reported in U.S. dollars (Statista, 2021).

The following six economic variables were chosen to include in the analysis: *Interest rates, GDP Growth, Inflation, Retail Trade, External Financing Gap, Supply Chain Pressures*. Interest rate data was taken from the ECB's Data Portal (2024) and is represented as the average annual Euro area cost of borrowing for non-financial corporations. GDP growth rates come from Macrotrends (2024) and is represented as the annual percentage growth rate of GDP within the EU. Rates are reported at market prices based on constant local currency. Macrotrends also provided inflation data, measured by the consumer price index. For retail trade data, Statista (2024) provided the total volume in the EU-27 between 2009 and 2022 and have indexed the results with 2015 as the base year. External financing gap data, which will be referred to hereinafter as *loan obstacles*, is measured throughout the Euro area in the ECB's annual *Survey on the Access to Finance for Enterprises (SAFE)*. It is a weighted average firm level perception of the financing gap in relation to bank loans, credit lines, trade credit, equity securities, and debt securities. It is calculated as the difference between the change in financing needs and the change in availability of external financing from period to period (ECB, 2017). Finally, supply chain pressures are measured through the *Global Supply Chain Pressure Index (GSCPI)*, an index that integrates both transportation cost data and manufacturing indicators to provide a gauge of global supply chain conditions (Federal Reserve Bank of New York, 2024). Importantly, it includes factors such as supplier delivery times and backlogs. In the following

analysis, this variable will be referred to as GSCPI. Official data is given monthly as standard deviations. For the purposes of this analysis, the monthly data has been annualised (as seen below) in the following way:

$$\text{Monthly variances calculated: } \text{Var}_i = \sigma_i^2$$

$$\text{Monthly variances summed: } \text{Var}_{\text{annual}} = \sum_{i=1}^{12} \text{Var}_i$$

$$\text{Annual standard deviation: } \sigma_{\text{annual}} = \sqrt{\text{Var}_{\text{annual}}}$$

Correlation Matrix

Correlation matrices will be created in excel to initially determine relationships between the individual economic variables and the financial instrument data. These will be determined with the Pearson correlation coefficient. These correlations are supplemented with individual p values to determine the statistical significance of the correlations. As a general rule, correlations will only be determined significant if the given p value is below or equal to 0.05. Correlations will also be analysed between the economic variables themselves to determine any risk of multicollinearity before moving on to the regressions. This will help to create the most accurate and appropriate regression models.

Regression Analysis

Both single and multiple linear regressions are used throughout the analyses. Excel is used to create regression models to determine the level of variance in the financial instrument data (dependent variable) that can be determined by the economic variables (independent variables). A regression analysis is important in going beyond an analysis of strength and direction of linear association that a correlation analysis provides, to allow for prediction and the opportunity to determine causation. Conducting a multiple regression analysis is important to this study, allowing for the description of the direct effects of multiple explanatory variables on the usage of financial instruments, accounting for the effects of each explanatory variable in the model (Morrissey, 2018). It allows for the isolation of individual variables to assess their sole effect on the dependent variable. Various key statistics are given in the regression models, that will not only show existing relationships, but also determine the correct models to use in determining said relationships.

Adjusted r square values are used to determine what percentage of the dependent variable data variance can be explained by the economic variables included in a particular model. Often this value will help to determine which model is most appropriate to use. *Standard error* is also helpful in supporting these determinations. *Significance F* is analysed to determine, much like the *p* value, whether the model in its entirety is statistically significant. If this value is above 0.05, the results will not be trusted. *Coefficients* refers to the individual independent variable relationships with the dependent variable. *P values* for each individual independent variable are also used to determine the significance of the individual coefficients within the model.

Multicollinearity

In many cases, due to high correlation among the independent economic variables, cases of multicollinearity exist which can adversely affect the regression's results. As an aid in determining if this effect is present in a given model, a *Variance Inflation Factor (VIF)* is calculated among the independent variables. Generally, values above 5 are considered to represent high collinearity, and models are adjusted as a result to improve its explanatory power.

$$VIF_i = 1 / (1 - R^2_i)$$

Heteroskedasticity

In some models, a test for heteroskedasticity is also conducted to further check its accuracy in ensuring that the standard deviations of the model's equation over time are constant, an important assumption of linear regression. The test conducted is the *Breusch-Pagan Test*.

Time Trend Factor

In some analyses, it is hard to determine the effects of the economic variables on the financial instruments due to both potential high correlation between years and the economic variables, as well as the overall growing trend of increased usage as time passes and instruments become universally accepted as a means of financing. As such, at times I will detrend the financial instrument data to remove any long-term systematic variation and leaving only short-term fluctuations. This method will be particularly utilized in situations where time (referred to in the analysis as years) cannot be added as an independent variable due to the multicollinearity effect it adds to other independent variables in the model. This is achieved through calculating the residuals – differences between observed and predicted values – based on the regression model and using these values as the new independent variable in a new regression.

4. Analysis

4.1 Election of Economic Variables

Interest rates

Interest rate changes is an important metric to include in this analysis, given that it directly influences the attractiveness of traditional lending through changing borrowing costs. Various possible hypotheses arise as to how interest rates affect the usage of the four chosen financial instruments. As interest rates increase there may be a resulting preference towards alternative finance, particularly for factoring as there is an immediate need for cash flow that can't be met with a traditional loan. Increased borrowing rates, which directly follow the ECB's key interest rates, might result in increased securitisation among banks and financial institutions, as they attempt to manage these higher costs and maintain liquidity. Indeed, Pescatori and Solé (2016), in their IMF working paper, present evidence that suggest that interest rate increases results in a migration of financial activity away from banks' balance sheets and towards the less-monitored non-bank sector via securitisation.

However, given a continuous linear decline, with virtually no fluctuation between 2014 and 2022 (main analysis data range), this data is likely limited in determining correlation with the various financial instruments.

Figure 12: Euro area Corporation Cost of Borrowing (2008-2024)

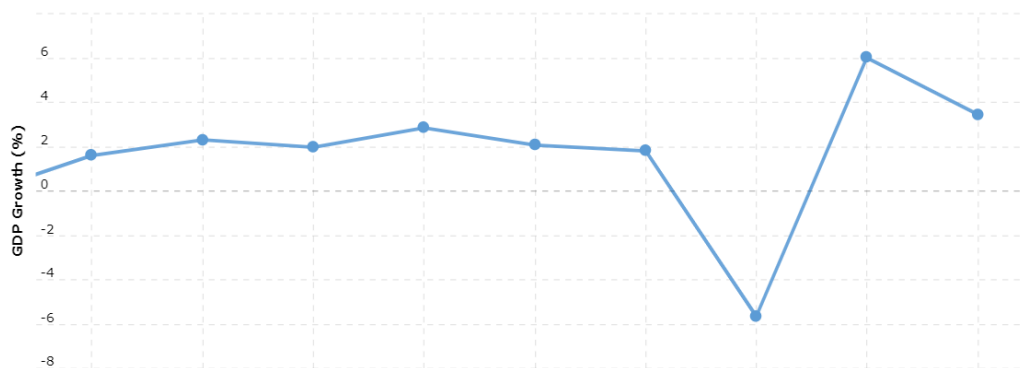


Source: ECB Data Portal (2024)

GDP Growth

As a key economic indicator, GDP growth signals periods of economic expansion and thus could have a direct effect on the usage of the four financial instruments as firms invest in growth. As is seen below, the rate has fluctuated within a healthy range of 2%-3% for the years preceding the Covid-19 pandemic, making a strong recovery post-pandemic. However, most of the years used in the data show little fluctuation, representing another limitation.

Figure 13: European Union GDP Growth Rate (1960 – 2024)



Source: *Macrotrends* (2024)

Inflation

Inflation is another crucial variable to include in the analysis, given its impact on interest rates, and thus the cost of borrowing. A high inflation rate typically results in an increase in interest rates by central banks to slow this pressure. Inflation also directly influences the cash flows and liquidity of businesses, making operations more expensive, resulting in a need for financial assistance. For example, a firm may prioritize leasing to manage rising costs associated with liquidity. Inflation may also cause investors to seek higher yield alternatives to risk free returns, such as P2P lending or securitised assets.

Retail Trade

The inclusion of retail trade, as a proxy for consumer demand, is particularly relevant in measuring overall economic activity. It could suggest an increased need for leasing and factoring to support expansion. It is especially relevant for factoring, where the ability to generate more receivables is directly impacted by fluctuations in trade volume.

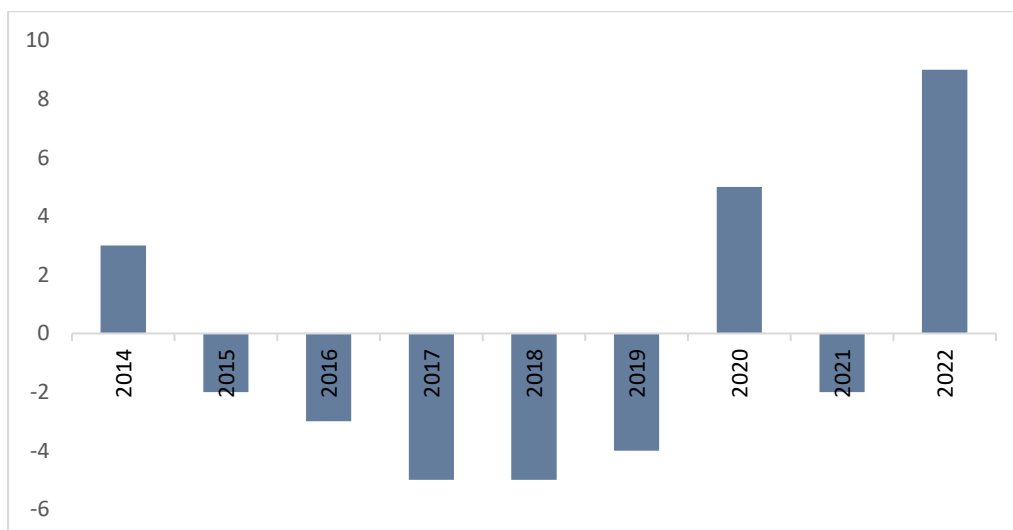
A possible limitation in this data arises as retail trade has grown consistently from 2014 to the present, with just a slight dip in 2020. This highlights the important of including the time trend element in the analyses.

Loan Obstacles

This measure captures firms' perception of traditional financial access, helping to explain their financing behaviour in times of limited access but increased need. It could explain periods of reliance on alternative instruments such as P2P lending. An important consideration is whether firms adjust their means of financing when they feel more financially constrained.

The graph below illustrates a negative gap from 2015 to 2019, signalling that in general firms had their financing needs met. However, in 2020 and 2022 a significant positive gap is observed.

Figure 14: External Financing Gap (2014–2022)



Source: ECB (2023)

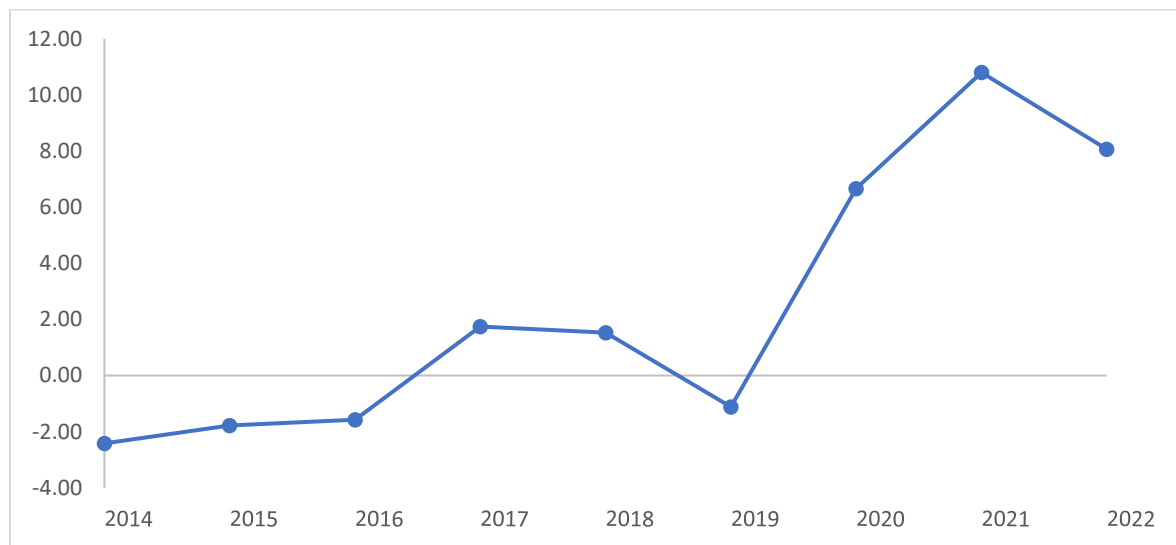
Supply Chain Disruptions

As can be seen below, from 2019 significant pressures were experienced in global supply chains. This was primarily driven by the Covid-19 pandemic, which stalled the trade of goods across borders, shutdown factories, created mobility restrictions, and increases in shipping costs and delivery times (Benigno *et al.*, 2022). While 2021 and 2022 saw an easing of these pressures, the index witnessed another upward spike due to disruptions created by the war in Ukraine, particularly in terms of the energy and agriculture sectors (Transport Geography, no

date). In 2023 the index decreased to a negative level not seen since the global financial crisis, and currently it remains below 0, implying reduced pressures.

Measuring this variable against alternative finance usage seems particularly important given today's interlinked global economy. Understanding this relationship can highlight the need for strong alternative financing solutions to promote effective cash flow management in a quick and flexible manner.

Figure 15: Global Supply Chain Pressure Index [GSCPI] 2014-2022



Source: *Macromicro* (2024)

4.2.1 Factoring

The following economic variables were not included in the multiple linear regression due to a lack of correlation and/or statistical significance for explaining factoring turnover variance: *Loan obstacles*, *GDP growth rate*, *Inflation rate*. Retail trade was found to be very strongly correlated to factoring (93%). Relatively strong correlations were found between factoring and GSCPI (69%), as well as interest rates (-77%) – see appendix *Table 1*. Retail trade, however, is seen to be strongly correlated with both interest rates and GSCPI, which would create an issue of multicollinearity in the regression model. Indeed, this effect was observed in the first regression model that was run. The model was found to be statistically insignificant, and the variable coefficients did not follow the direction of their individual correlations in the initial correlation matrix.

As a result, two separate models were created – one simple regression with just retail trade as the independent variable (model 2), and a separate multiple regression with interest rate and GSCPI (model 3). As can be observed in appendix *Table 2*, both models are significant, with high adjusted r square values. Model 3 was tested for multicollinearity and was found to have a VIF of just 1.3.

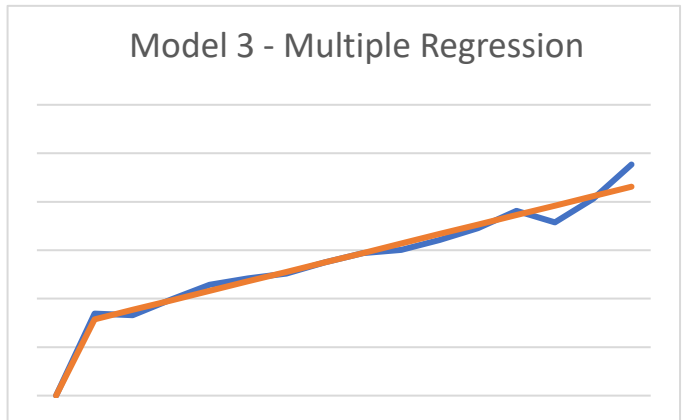
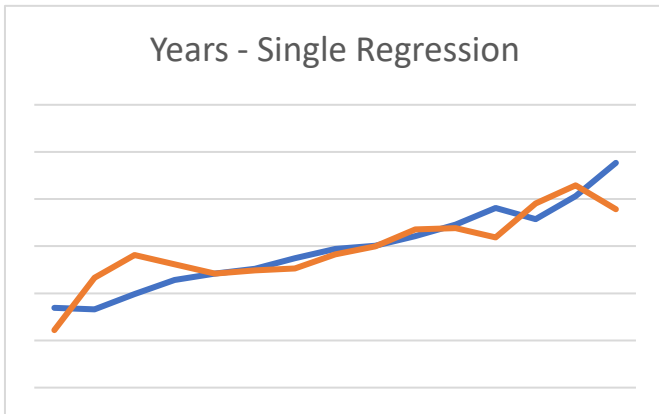
However, the factoring data is limited – just fifteen years of a continuous rise in turnover, with very low fluctuation. The effect of increased popularity and adoption as a financial instrument – a time trend element – was incorporated into the analysis to account for this. Indeed, time as a variable has a 98% correlation with factoring. Model 4 was created to incorporate years in a regression with interest rate and GSCPI, and model 5 created to incorporate it into the retail trade regression. The new adjusted r square values rise to 97% (model 4) and 95% (model 5). However, in both models, all variables except for years are no longer significant. This suggests that the time trend is the dominant factor in explaining variance in the factoring data.

While I don't perceive any causation between time and the other variables, there is a strong Pearson correlation coefficient between them. As such I have detrended the factoring data to capture the impact of the variables without any risk of multicollinearity caused by years. In these detrended models we see no statistical significance of any variables.

As such, I am inclined to just use the regression with years (model 6) to estimate the time trend effect on factoring data, excluding any other variables as non-significant. This model can explain 96% of the variance in the factoring data. Its coefficient, with a p-value of 1.372E-10, suggests that each additional year adds €97,690 in factoring turnover. However, given the limitations in only analysing 15 years, it is advisable to also consider the alternative model 3 which doesn't consider the time trend in the regression. This model, in considering interest rates, and supply chain pressures (GSCPI), accounts for 68% of the variance (adjusted). This model suggests that a 1% increase in interest rate yields a factoring turnover decrease of €227,278, while a one unit increase in GSCPI measure causes a €43,930 increase in turnover.

Both regression model predictions are graphed against the actual factoring data below, showing minimal deviation in both cases. For 2024, using predicted data for interest rates and GSCPI (same sources as original data), model 3 predicts factoring turnover of €683,627 – or -177% decrease from 2022. This seems very unlikely and is likely caused partly by extrapolation error – the GSCPI figure for 2024 did not appear in our regression dataset, and the interest rate is at

a level not seen since year 1 of the data (essentially an outlier). On the other hand, the single regression with years suggests that in 2024 factoring turnover will reach €2,350,504.



To conclude with the analysis of factoring turnover, the most accurate regression model shows that the majority of variance is explained by an increased adoption of usage over time. Other accurate models also suggest the possibility of an inverse interest rate relationship with factoring, as well as a positive relationship with supply chain pressures. However, further analysis would be needed with significantly more data points and a larger time range to determine the reliability of these relationships.

4.2.2 Securitisation

The time trend issue seen with factoring was determined not to be a factor here, with no correlation with securitisation issuance. No correlation was found between securitisation and both inflation and GSCPI. Interest rates have a low correlation with securitisation and its p-value suggests it to be statistically insignificant. Importantly, this doesn't support IMF findings of a positive correlation, but it doesn't reject them either. More data would be needed to determine this effect. On the other hand, a strong negative correlation was found with loan obstacles (-78%), a relatively strong correlation with GDP growth (63%), and a moderate and almost insignificant correlation with retail trade (49%). These three variables don't share strong correlations with each other, but nonetheless multicollinearity will be tested for. There is an important limitation in that there is less available data for loan obstacles, as well as less variation in the data (measured in whole numbers).

As such we begin by conducting a multiple regression between securitisation and the three aforementioned independent variables. This is model 1 (see appendix *Table 4*). This model yields an adjusted r square value of 62% and is determined significant. VIF calculations show

that multicollinearity does not exist. However, the model shows that only loan obstacles is a significant variable in explaining any variance.

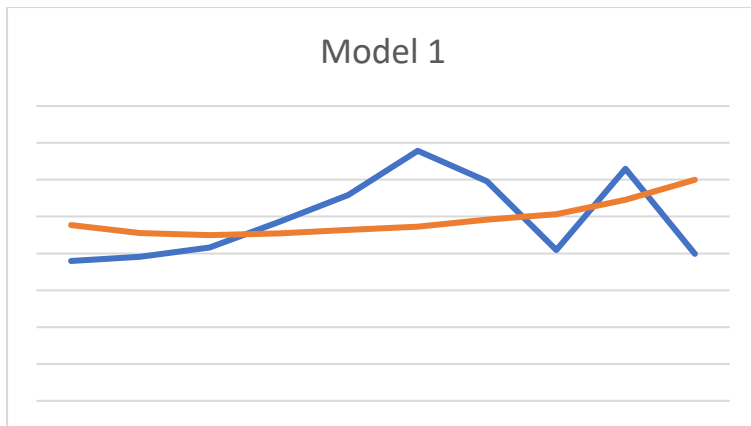
To account for the limited data on loan obstacles, model 2 was run with just GDP growth rate and Retail Trade. While GDP growth is shown to have a significant correlation, the overall model has a low adjusted r value of only 40%. The standard error has also risen significantly.

Due to the relatively low correlation between securitisation and retail trade, model 3 removes it and focuses just on GDP growth rate and loan obstacles. This model's adjusted r square is much higher at 53% and shows loan obstacles to be the only significant variable again. Given this, model 4 was run as a simple regression to test if loan obstacles alone can account for the data variance. While the model is significant, it has a lower adjusted r square and higher standard error than model 1. As such, model 1 is determined as the best model to analyse. Importantly, though, all three models that include loan obstacles show the variable to be statistically significant and have similar coefficients between -2.8 and -3.

Model 1 has a coefficient of -2.8, which theoretically makes sense. A 1-point decrease in the firm perceived finance gap is linked with a €2.8bn increase in securitisation placed issuance. Essentially, firms perceive less of a gap as banks are lending more through securitisation activities. While model 1 includes two seemingly insignificant variables, they are obviously important to the model, yielding the higher r square and standard error. They play a role in explaining more of the variance in the data.

With that, forecasts were made to the three economic variables. Statista (2024) forecasts a 1.7% growth rate in GDP for 2024. A 3.2% growth rate to retail trade was applied (3-year average) for 2024, and the loan obstacles figure (external financing gap) was estimated based on forecasts for the year (SAFE, 2024). Applying these figures to the model equation predicts securitisation placed issuance of €121bn for 2024.

The model's accuracy can be determined below, with the blue line representing actual issuance, and the orange line based on the regression estimates. An obvious limitation exists here in the fact that the line appears to not be completely linear. Further analysis would be needed.



To conclude with the securitisation analysis, confident results suggest that an inverse relationship exists between placed securitisation issuance and loan obstacles, or perceived financing gap. This makes sense, given our previous exploration of how securitisation helps to alleviate credit supply issues as banks offload risky assets to capital markets. As such, it can be declared that in times of increased securitisation issuance, firms increasingly feel that their financing needs are met. Further research would be needed with more data to distinguish the extent of causation in this relationship.

4.2.3 Leasing

Leasing usage data has a strong correlation with years, suggesting a similar time trend as in the case of factoring. It has a very strong inverse correlation with interest rates (-92%), as well as with loan obstacles (-72%). There is also a seemingly strong positive correlation with retail trade (89%) and a moderate one with GSCPI (68%). Leasing has insignificant relationships with both GDP growth and inflation. Given the high correlation between years and interest rate, retail trade, and GSCPI, years will not be put into a regression with these factors to begin with, to avoid multicollinearity errors. Like before, interest rates and retail trade have been separated into different models given their correlation (-82%).

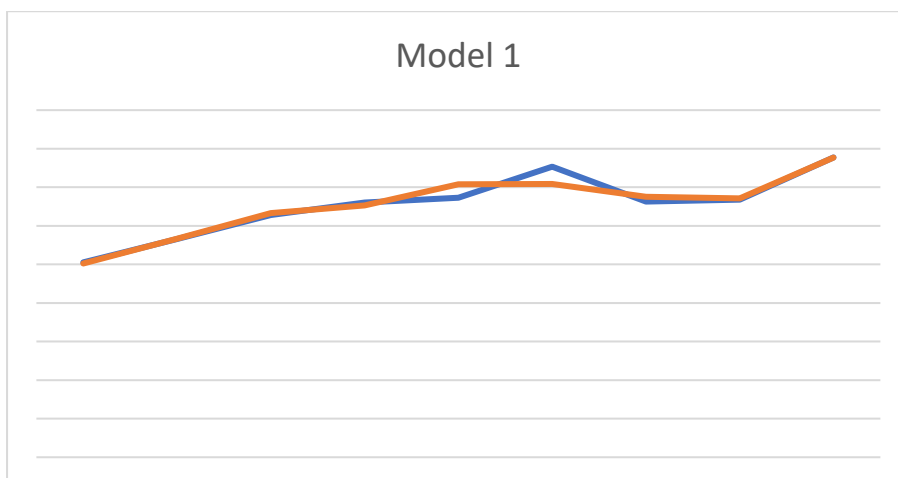
Model 2 contains retail trade, loan obstacles and GSCPI. However, retail trade isn't believed to have a real-world effect on factoring turnover. Indeed, this model confirms this hypothesis, with only the other two variables being statistically significant. Loan obstacles has a coefficient of -4892 and GSCPI of 4715 (although this variable is only significant at the 10th percentile – p value of 0.09). Model 1 removes retail trade and joins the other two variables with interest rate. Interest rates appear non-significant, while the other two variables are again significant (both at a 95% confidence level) with similar coefficients as model 2: Loan obstacles at -4591

and GSCPI at 4891. Both models have an adjusted r square value of 90% and a very low Significance F score. As such, it can be concluded that loan obstacles and supply chain pressures can largely explain the variance in the leasing data. Multicollinearity tests (VIF) eliminate the possibility of this risk, and a Breusch-Pagan test suggests insufficient evidence for the presence of heteroscedasticity.

Model 3 was run, whereby only loan obstacles and GSCPI were used as independent variables. Again, similar results were seen in terms of p-values and coefficients. However, a lower adjusted r square value was given. Years was included in a fourth model (model 4) to be sure that an underlying time trend was not influencing the results. This model showed loan obstacles and GSCPI as significant again, but years as insignificant. VIF scores are relatively low, adjusted r square is 90% again, and Significance F is once again very low, all suggesting that loan obstacles and GSCPI can confidently account for factoring data variance.

Due to a lower standard error value, model 1 is used in predictions. The same data was used for 2024 predictions as with factoring. The graph below shows how well the regression can predict the actual leasing data. However, due to limited data among the economic variables and leasing turnover, the 2024 forecast yields a -41% decrease from 2022. This shows the limitation of the regression due to issues of extrapolation – both GSCPI and interest rate forecasts don't fall within the range of the data used in the regression (2013-2021).

Our chosen model (model 1) shows that interest rates do not in fact have a significant impact on leasing activity. Of course, as mentioned above this may be different in the longer term, and our data is limited to 9 years, where the rate has never remained steady enough to allow for long term reactions in leasing rates, and thus leasing activity.



To conclude the leasing analysis, various successful models suggested that loan obstacles and supply chain pressures relate to the variance seen in the leasing data. It suggests that in times of increased supply chain disruptions, leasing activity increases significantly. However, the relationship suggested between leasing activity and loan obstacles did not support findings that the likelihood of using leasing increases for financially constrained SMEs (Gomez-Vazquez et al., 2019). Given the limited amount of leasing data available in this study, further research would be needed to determine more accurate results. This research should also focus on financially constrained firms rather than all firms to accurately determine the perceived finance gap relationship.

4.2.4 Peer-to-Peer Lending

The Pearson correlation matrix shows a high inverse correlation between P2P lending transaction value and interest rates (-80%), as well as with GDP growth (-70%), although with only within a 90% confidence level. GSCPI is positively correlated (74%), and retail trade even more so (92%). Inflation rate and loan obstacles are not included in any regression models due to insignificance in correlation. Once again, due to high correlation between interest rates and retail trade, these must be split between models.

Initial regressions showed statistical significance for retail trade and GDP growth rate, but not for GSCPI or interest rates. As such, model 1 (see appendix *Table 8*) was run with these significant variables. This yielded a highly significant model, with an adjusted r square of 95%. However, given the time trend factor that I believe is particularly relevant in the case of P2P lending as a more recent and innovative approach to financing, additional regressions must be run. When Model 2 was run, again with retail trade and GDP growth, but this time using detrended P2P data, both variables were found to be insignificant, as well as the model itself.

Splitting the variables up, Model 3 runs a regression with years and GDP growth, and Model 4 with just retail trade against detrended P2P data (given the high correlation between retail trade and years). Model 3 was significant, but with variance only explained by the time trend factor. Model 4 was completely insignificant. As such, given these results, and the limited amount of data in the model regarding P2P lending, both retail trade and GDP growth must be discarded in any analysis. This leaves just Model 5, which regresses years against the P2P data, showing a significant model with a 92% adjusted r square value. It suggests that each additional year adds \$295 million in P2P business lending value within the European market, resulting in a

projected value of \$2.9 billion for 2024. The graph below shows the regression equation results against the actual P2P data.



To conclude, P2P business lending was found to be solely influenced by the time-trend in the models used. This is logical given the recency in adoption growth of this financial instrument. Of course, it is expected that this financing mechanism will grow exponentially in the coming years, and so any predictive results should consider this. Given the novelty and severely limited data surrounding P2P, and crowdfunding lending in general, further research would be needed to derive more nuanced conclusions.

5. Conclusions

This study set out to determine the role and state of alternative financing, given the unique financing challenges that SMEs face in the current economic and banking climate. I began by exploring the significant importance of SMEs within European economies, before examining their financing limitations. Although SMEs represent over 99% of all EU businesses, contribute up to 60% of GDP, and represent up to 70% of employment, it is clearly evident that with recent peak levels of bankruptcies, SME access to finance is today as constrained as ever due to high interest rates, new and complex reporting requirements, and lower access to traditional bank lending.

The three proposals of the *European Economic and Social Committee* in dealing with the limited state of SME finance – cutting interest rates by tackling inflation, increasing the provision of financial instruments to SMEs, and addressing the complex regulatory and reporting requirements – have been particularly examined throughout this thesis. Given that SMEs particularly depend on bank credit for growth and survival, the recent periods of historically high interest rates must be dealt with. I have shown the alarming effects of this situation, with a 12% decline of EU SME loans in 2021, followed by 4% in 2022, as well as a 20% year-on-year bankruptcy growth rate at the end of 2022. I have also shown how the need for alternative financing sources has been increasingly met post financial crisis, particularly in the SME sector, where in the few years following the crisis, the market provided growth financing to almost 10,000 SMEs. Significantly, the European market reached 22.6 billion dollars in 2020, highlighting the important role of alternative finance models in addressing SME financing issues. However, we have also seen the lack of diversification in this market for SMEs that hinders the growth of the alternative finance sector. In fact, in 2017, while more than 24,000 European raised funding through online alternative finance platforms, only 13% of total SME funding was coming from market-based securities. As such, SMEs need to be able to utilise the corporate bond market and securitisation tools to the same extent as larger corporations who deal with their credit constraints in this way. Finally, I have examined the impediment placed on SMEs by the substantial regulatory and reporting requirements, which SMEs are not able to deal with due to information opaqueness and lack of collateral. These are only predicted to worsen with the Basel IV framework which will shortly bring increased collateral, leverage and exposure regulations. This strongly highlights the need for non-bank funding options that do not require such strict standards.

In addressing this need, one of my main objectives of this thesis was to determine the various instruments of alternative finance that can be particularly utilised by SMEs to reach their finance needs. It can be concluded that some of the most suitable options are *factoring*, *leasing*, *securitisation*, and *P2P lending*. In my analysis of these instruments, I was able to explore the growing trend in usage of these finance options but was limited in any concrete determination of their relationships with several key economic indicators - such as interest rates, supply chain pressures, and perceived financing gap – that are seen to be so influential to the funding needs of SMEs. The importance of *asset-based lending* solutions was explored in depth too, as they will likely be a major driver of alternative funding sources for SMEs in the coming years with varying options being driven by new fintech solutions. I have shown how these instruments grant significant freedom and flexibility to SMEs, particularly those in the dominant European *wholesale and retail trade* sectors. These instruments also directly address the major issues associated with information asymmetry, creditworthiness, and collateral. However, their efficiency for SMEs is hindered by the lack of secondary markets.

Similarly, we have seen how the development of capital and secondary markets for SMEs is essential in dealing with credit constraint situations. We have seen a successful, albeit limited, example of this with the Spanish mini-bond. In terms of securitisation, we have seen its direct relationship with the perceived firm financing gap. We have also explored the growing importance that securitisation will play in the new Basel IV regulatory environment. Yet, SME securitisation remains severely underutilised due to low asset spreads and high perceived risk, as does other debt-based alternative instruments. As such, there is a great need for capital markets that SMEs can access to deal with their specific limitations. In terms of risk assessment, one solution offered by Canton et al. (2012) is for firms to focus on “relationship banking” which makes banks more likely to grant loans due to a reduction in information asymmetry between them and the borrower. The growing utilisation of innovative data capture and analysis techniques, as well as the application of AI seen in credit-decisioning processes could greatly help with this. In this regard, it has been shown that countries with better information sharing systems have greater access to bank loans (The World Bank, 2017).

Ultimately, there appears to be a lack of research and initiative into specific actions for improving the SME situation. Nassr and Wehinger (2015) advocate for the build-up of loan-level data, performance track records, and data sharing prioritisation in centralised platforms to increase the transparency of the SME financing market. This suggestion addresses the core issue that I have seen in how SME access to finance is dealt with - that SMEs need to be

addressed separately from larger enterprises. The issue is clear and well stated. It is dedicated and specific solutions that now need to be prioritized by European policymakers and larger financial institutions to boost an alternative sector that is in large part being propelled by innovative, but smaller, online platforms and Fintechs.

Declaración de Uso de Herramientas de Inteligencia Artificial Generativa en Trabajos Fin de Grado

ADVERTENCIA: Desde la Universidad consideramos que ChatGPT u otras herramientas similares son herramientas muy útiles en la vida académica, aunque su uso queda siempre bajo la responsabilidad del alumno, puesto que las respuestas que proporciona pueden no ser veraces. En este sentido, NO está permitido su uso en la elaboración del Trabajo fin de Grado para generar código porque estas herramientas no son fiables en esa tarea. Aunque el código funcione, no hay garantías de que metodológicamente sea correcto, y es altamente probable que no lo sea.

Por la presente, yo, Tom Edward Ryan, estudiante de E4 de la Universidad Pontificia Comillas al presentar mi Trabajo Fin de Grado titulado "Instruments of Alternative Finance for SMEs", declaro que he utilizado la herramienta de Inteligencia Artificial Generativa ChatGPT u otras similares de IAG de código sólo en el contexto de las actividades descritas a continuación [el alumno debe mantener solo aquellas en las que se ha usado ChatGPT o similares y borrar el resto. Si no se ha usado ninguna, borrar todas y escribir "no he usado ninguna"]:

1. **Metodólogo:** Para descubrir métodos aplicables a problemas específicos de investigación.
2. **Interpretador de código:** Para realizar análisis de datos preliminares.
3. **Generador de problemas de ejemplo:** Para ilustrar conceptos y técnicas.
4. **Revisor:** Para recibir sugerencias sobre cómo mejorar y perfeccionar el trabajo con diferentes niveles de exigencia.

Afirmo que toda la información y contenido presentados en este trabajo son producto de mi investigación y esfuerzo individual, excepto donde se ha indicado lo contrario y se han dado los créditos correspondientes (he incluido las referencias adecuadas en el TFG y he explicitado para que se ha usado ChatGPT u otras herramientas similares). Soy consciente de las implicaciones académicas y éticas de presentar un trabajo no original y acepto las consecuencias de cualquier violación a esta declaración.

Fecha: 03/06/2024

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Appendix

Table 1: Factoring Correlation and p-value Matrix

Pearson Correl. Coef	Year	Interest Rate (%)	GDP Growth Rate	Inflation Rate (%)	Retail Trade (index)	Loan Obstacles	GSCPI	Factoring
Chart Area	1							
Interest Rate (%)	-0.843318977	1						
GDP Growth Rate (%)	0.310926001	-0.201117646	1					
Inflation Rate (%)	0.205176793	0.2022089	0.30947853	1				
Retail Trade (index)	0.923867236	-0.818129341	0.335140287	0.515488051	1			
Loan Obstacles (%)	-0.038499525	0.567557955	-0.372329419	0.417277214	-0.070707888	1		
GSCPI (std. devs)	0.687691115	-0.486641287	0.278601918	0.461093536	0.798046278	0.172210731	1	
Factoring (Turnover €)	0.980644118	-0.769480849	0.39879041	0.364070775	0.926678083	0.061419028	0.689943243	1

p value (two tail)	Year	Interest Rate (%)	GDP Growth Rate	Inflation Rate (%)	Retail Trade (index)	Loan Obstacles	GSCPI	Factoring
Year								
Interest Rate (%)	7.8254E-05							
GDP Growth Rate (%)	0.259325704	0.472297407						
Inflation Rate (%)	0.463212227	0.469846523	0.261667281					
Retail Trade (index)	2.38228E-06	0.000348746	0.2415	0.059210337				
Loan Obstacles (%)	0.915907006	0.087025477	0.2894	0.23022601	0.846097484			
GSCPI (std. devs)	0.004605128	0.065832692	0.314654297	0.08364559	0.000624093	0.634263579		
Factoring (Turnover €)	1.37243E-10	0.000795722	0.140907683	0.182187603	1.91276E-06	0.866151555	0.004420429	

Table 2: Factoring Regression Models

	Model 3		Model 4			Model 5		Model 6
	Interest Rate	GSCPI	Interest Rate	GSCPI	Years	Retail Trade	Years	Years
Adjusted R²	0.6763			0.9658		0.9533		0.9587
Standard Errors	253,482			82,379		92,094		90,522
Significance F	0.0005			0.0000		0.0000		1.37243E-10
VIF	1.3103		3.6725	2.0123	5.3175	25.3144	25.3144	
Coefficients	-227,278	43,930	80,425	-645	115,001	9,014	84,927	97,690
p-value	0.0068	0.0351	0.0572	0.9325	0.0000	0.3388	0.0002	1.372E-10

Table 3: Securitisation Correlation and p-value Matrix

Pearson Correl. Coef	Interest Rate (%)	GDP Growth Rate	Inflation Rate (%)	Retail Trade (index)	Loan Obstacles	GSCPI (std. devs)	Securitisation
Interest Rate (%)	1						
GDP Growth Rate (%)	-0.201117646	1					
Inflation Rate (%)	0.2022089	0.30947853	1				
Retail Trade (index)	-0.818129341	0.335140287	0.515488051	1			
Loan Obstacles (%)	0.567557955	-0.372329419	0.417277214	-0.070707888	1		
GSCPI (std. devs)	-0.486641287	0.278601918	0.461093536	0.798046278	0.172210731	1	
Securitisation	-0.303343401	0.626457856	0.07854381	0.487789901	-0.776236018	0.289597602	1

p value (two tail)	Interest Rate (%)	GDP Growth Rate	Inflation Rate (%)	Retail Trade (index)	Loan Obstacles	GSCPI (std. devs)	Securitisation
Interest Rate (%)							
GDP Growth Rate (%)	0.472297407						
Inflation Rate (%)	0.469846523	0.261667281					
Retail Trade (index)	0.000348746	0.2415	0.059210337				
Loan Obstacles (%)	0.087025477	0.2894	0.23022601	0.846097484			
GSCPI (std. devs)	0.065832692	0.314654297	0.08364559	0.000624093	0.634263579		
Securitisation	0.271734105	0.012459799	0.780829884	0.076822201	0.008288933	0.295121391	

Table 4: Securitisation Regression Models

	Model 1			Model 2		Model 3		Model 4
	GDP Growth	Retail Trade	Loan Obstacles	GDP Growth	Retail Trade	GDP Growth	Loan Obstacles	Loan Obstacles
Adjusted R ²	0.6210			0.4925		0.6327		0.5529
Standard Errors	13.8			21.0		15.4		15.01
Significance F	0.0318			0.0240		0.0300		0.0083
VIF	1.2300	1.0648	1.1616					
Coefficients	0.736	1.060	-2.8054	4.813	1.129	1.403	-2.772	-3.046
p-value	0.681	0.150	0.018	0.039	0.203	0.473	0.024	0.008

Table 5: Leasing Correlation and p-value Matrix

Pearson Correl. Coef	Interest Rate (%)	GDP Growth Rate (%)	Inflation Rate (%)	Retail Trade (index)	Loan Obstacles (%)	GSCPI (std. devs)	Leasing
Interest Rate (%)	1						
GDP Growth Rate (%)	-0.201117646	1					
Inflation Rate (%)	0.2022089	0.30947853	1				
Retail Trade (index)	-0.818129341	0.335140287	0.515488051	1			
Loan Obstacles (%)	0.567557955	-0.372329419	0.417277214	-0.070707888	1		
GSCPI (std. devs)	-0.486641287	0.278601918	0.461093536	0.798046278	0.172210731	1	
Leasing	-0.9210636	0.415413905	0.14560397	0.89172223	-0.722089637	0.684874838	1

p value (two tail)	Interest Rate (%)	GDP Growth Rate (%)	Inflation Rate (%)	Retail Trade (index)	Loan Obstacles (%)	GSCPI (std. devs)	Leasing
Interest Rate (%)							
GDP Growth Rate (%)	0.472297407						
Inflation Rate (%)	0.469846523	0.261667281					
Retail Trade (index)	0.000348746	0.2415	0.059210337				
Loan Obstacles (%)	0.087025477	0.2894	0.23022601	0.846097484			
GSCPI (std. devs)	0.065832692	0.314654297	0.08364559	0.000624093	0.634263579		
Leasing	0.000154292	0.232528554	0.688158403	0.000526695	0.0280315	0.028874168	

Table 6: Leasing Regression Models

	Model 1			Model 2			Model 3	
	Interest Rate	Loan Obstacles	GSCPI	Retail Trade	Loan Obstacles	GSCPI	Loan Obstacles	GSCPI
Adjusted R ²	0.9000			0.8964			0.9078	
Standard Errors	13,274			13,507.9			12,746	
Significance F	0.0019			0.0021			0.0003	
VIF	4.7544	2.7026	2.8043	6.1016	2.0798	4.7365		
Coefficients	-13,253	-4,591	4,891	1041	-4892	4,715	-5,449	5,896
p-value	0.498	0.027	0.036	0.584	0.014	0.093	0.001	0.001

	Model 4		
	Year	Loan Obstacles	GSCPI
Adjusted R ²	0.8995		
Standard Errors	13,306		
Significance F	0.0020		
VIF	5.2476	1.6957	4.3385
Coefficients	2,798	-4,914	4,559
p-value	0.509	0.009	0.087

Table 7: P2P Lending Correlation and p-value Matrix

Pearson Correl. Coef	Interest Rate (%)	GDP Growth Rate (%)	Inflation Rate (%)	Retail Trade (index)	Loan Obstacles (%)	GSCPI (std. devs)	P2P Lending
Interest Rate (%)	1						
GDP Growth Rate (%)	-0.201117646	1					
Inflation Rate (%)	0.2022089	0.30947853	1				
Retail Trade (index)	-0.818129341	0.335140287	0.515488051	1			
Loan Obstacles (%)	0.567557955	-0.372329419	0.417277214	-0.070707888	1		
GSCPI (std. devs)	-0.486641287	0.278601918	0.461093536	0.798046278	0.172210731	1	
P2P Lending	-0.801736678	-0.703037537	0.456191816	0.921501736	0.202969719	0.736244963	1

p value (two tail)	Interest Rate (%)	GDP Growth Rate (%)	Inflation Rate (%)	Retail Trade (index)	Loan Obstacles (%)	GSCPI (std. devs)	P2P Lending
Interest Rate (%)							
GDP Growth Rate (%)	0.472297407						
Inflation Rate (%)	0.469846523	0.261667281					
Retail Trade (index)	0.000348746	0.2415	0.059210337				
Loan Obstacles (%)	0.087025477	0.2894	0.23022601	0.846097484			
GSCPI (std. devs)	0.065832692	0.314654297	0.08364559	0.000624093	0.634263579		
P2P Lending	0.030116298	0.078050306	0.303548939	0.003177546	0.662481444	0.05917816	

Table 8: P2P Lending Regression Models

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>	<i>Model 5</i>
	<i>Retail Trade</i>	<i>GDP Growth</i>	<i>Retail Trade</i>	<i>GDP Growth</i>	<i>Years</i>	<i>GDP Growth</i>	<i>Retail Trade</i>	<i>Years</i>
Adjusted R²	0.9480		0.0789		0.9393		-0.1874	0.9191
Standard Errors	150.6		164.5		162.7		186.7	187.7
Significance F	0.0012		0.3770		0.0016		0.8273	0.0004
Coefficients	100.37	-84.20	-13.49	-39.31	258.33	-45.39	-3.51	295.05
p-value	0.002	0.022	0.416	0.193	0.002	0.178	0.827	0.000