Department for Business & Trade

Late Payments Research

Estimating the total economic cost of late payments and their impact on the UK economy

July 2025

LE London Economics

This research has been carried out by London Economics, on behalf of the Department for Business and Trade & the Office of the Small Business Commissioner.

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Contents

List of key terms

CATI survey: Computer Assisted Telephone Interviewing, a form of interviewing where the interviewer is guided by questions on a computer screen and respondents provide answers over the phone.

Control group: A group of subjects (businesses in this case) against which the outcomes of the treatment group (in this case businesses experiencing late payment issues) are compared.

Debt finance: The process by which a business raises capital by borrowing, typically through loans or other lines of credit, which must be repaid with interest over time.

Difference-in-difference: A statistical technique used to estimate causal relationships, comparing the changes in outcomes over time between a treatment group and a control group.

DBT: The Department for Business and Trade.

FAME: The Financial Analysis Made Easy database by Bureau van Dijk. A UK company database providing detailed financial, ownership, and corporate structure information.

GDP: Gross Domestic Product - A measure of the total economic output of a country, representing the value of all goods and services produced in a year.

GVA: Gross Value Added - An economic measure of the value of goods and services produced minus the value of the raw materials and inputs.

IDBR: Inter Departmental Business Register - A database maintained by the UK government, containing information on UK businesses used for statistical purposes.

Invoice discounting: A form of short-term finance where a business uses its outstanding invoices as collateral to secure a loan from a lender.

Invoice factoring: A form of short-term finance where a business sells it outstanding invoices to a third-party for a percentage of their value.

Late payment: Payment after the agreed or contractual payment date or payment terms of over 60 days.

Long payment terms: Payment terms of more than 60 days.

LSBS: The Longitudinal Small Business Survey - A UK government survey collecting data annually from small and medium-sized enterprises (SMEs).

Online survey: A method of data collection conducted via the internet, allowing respondents to complete questionnaires electronically.

ONS: The Office for National Statistics - The UK's recognised national statistical institute, responsible for collecting and publishing economic, demographic, and social data.

Opportunity cost: The value which reflects the best alternative use a good or service could be put to, used widely in cost-benefit analysis.

OSBC: Office of the Small Business Commissioner - An independent public body, sponsored by the Department for Business and Trade, that supports small businesses in resolving disputes related to payment issues with larger customers.

Overdue invoice: An invoice that has not been paid by the stipulated or contractual payment date.

PSM: Propensity score matching - A statistical technique used to reduce bias by matching treatment and control units (businesses in this case) with similar characteristics based on their probability of receiving a treatment (experiencing late payment issues in this case).

Supply chain finance: A financial solution that allows businesses to receive payment on their invoices earlier.

Trade credit: A financing arrangement where a buyer is allowed to purchase goods or services and pay the supplier at a later scheduled date.

Transfer: The movement of financial resources from one entity to another in the context of this study.

Treatment Group: A group of subjects (businesses in this case) that receives a treatment (experience late payment problems in this case).

Executive Summary

Introduction

Businesses in the UK often offer their customers 'trade credit', where payment by the customer is permitted after the delivery of the goods or services. This can lead to a situation where businesses experience delays in receiving payment, which can cause cash flow problems for businesses.

Businesses are impacted both when invoices are paid beyond the agreed or contractual payment date and when long payment terms are imposed. This report considers the impact of both of these issues, and defines late payment as any combination of:

- Overdue invoices, where businesses are paid beyond the agreed or contractual payment
- Long payment terms, where businesses agree to payment more than 60 days after goods or services have been delivered

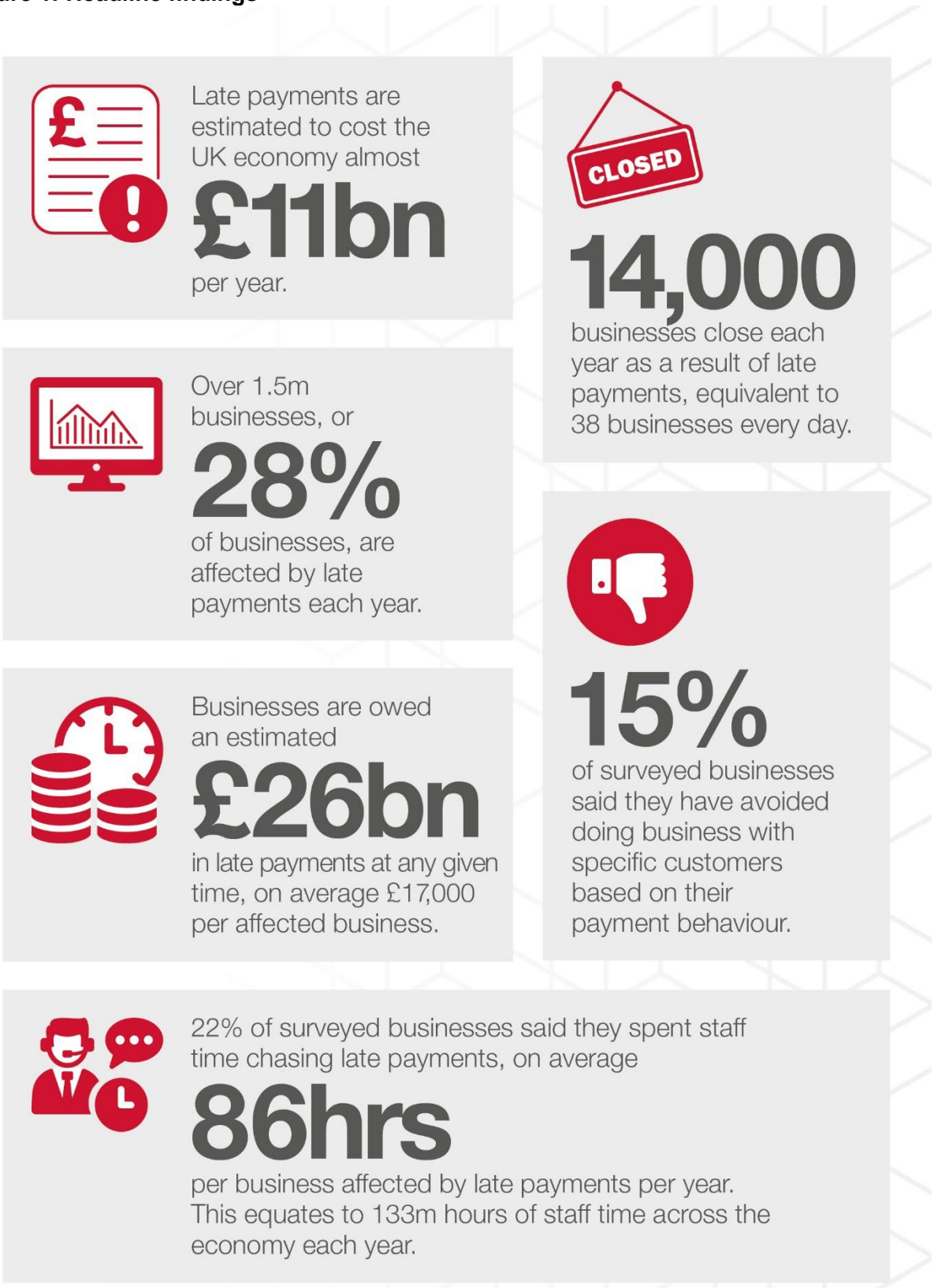
Previous research has highlighted that late payment can be detrimental for businesses, and over the last 30 years Government has introduced policy measures to help address the issue of late payments. Against this backdrop, London Economics were commissioned by the Department for Business and Trade (DBT) and the Office of the Small Business Commissioner (OSBC) in November 2024 to undertake a study on the impact of late payments on UK businesses and the UK economy. The approach used for this study consists of three main strands.

1. Design, delivery and analysis of a quantitative survey of 1,455 businesses. The survey was conducted by YouGov and IFF Research and took place between 15/01/25 and 07/02/25.
2. Econometric analysis of secondary data to assess the impact of late payments on business survival and investment.
3. A quantification exercise, drawing together the results of the first two strands, to estimate the cost of late payments to businesses as well as the wider economy.

Headline findings

- Late payments are estimated to cost the UK economy almost £11 billion per year.
- Over 1.5 million businesses, or 28% of businesses, are affected by late payments each year.
- Businesses are owed an estimated £26 billion in late payments at any given time, on average £17,000 per business affected by late payment.
- 22% of surveyed businesses said they spent staff time chasing late payments, on average 86 hours per business affected by late payment per year. This equates to 133 million hours of staff time across the economy each year.
- 14,000 businesses close each year as a result of late payments, equivalent to 38 businesses every day.
- 15% of surveyed businesses said they have avoided doing business with specific customers based on their payment behaviour.

Figure 1: Headline findings



Impact of late payment on businesses

Responses to the Longitudinal Small Business Survey (LSBS) suggest that late payment is a significant issue for businesses. Indeed, almost 8% of business indicate that late payments are a 'big problem' for them. In the YouGov/IFF Research survey run as part of this report, a significant proportion of businesses reported that their customers were paying late, as shown in Table 1.

Table 1: Late payment issues faced by businesses at the time of the survey run for the study

Late payment issues currently faced	Micro (0 – 9 employees)	Small (10 – 49 employees)	Medium (50 – 249 employees)	Large (> 250 employees)
Both overdue invoices and payment terms longer than 60 days	12%	21%	35%	59%
Overdue invoices only	6%	12%	11%	4%
Payment terms longer than 60 days only	1%	5%	3%	3%
No issues	80%	58%	49%	33%
Don't know	1%	3%	1%	0%

Source: London Economics analysis of YouGov/IFF Research survey. Note: N=680 (Micro), N=437 (Small), N=281 (Medium), N=57 (Large). Note: The percentages in each column do not add to 100% due to rounding.

Most businesses with late payment issues in the survey experience late payments both in the form of customers not paying on time and payment terms in excess of 60 days, rather than one of these exclusively. Micro businesses were least likely to experience issues with late payment at the time of the survey but this is likely driven by the fact that they are less likely to offer trade credit to their customers. This does not however suggest that the late payment issues faced by micro businesses are less severe.

Survey data also suggests that businesses take a wide range of different, costly, activities in order to manage their late payment issues. This is shown in Table 2.

Table 2: Actions taken in 2024[1] as a result of late payments

Type of action	Action	Proportion of businesses reporting that they undertook the action
Recovering late payments	Spent staff time chasing unpaid debtors	22%
Recovering late payments	Commissioned a debt collection agency to chase debtors	7%
Recovering late payments	Started legal proceedings against one of your customers	8%
Managing cash flow	Take out debt finance	6%
Managing cash flow	Raise equity finance	5%
Managing cash flow	Inject personal funds into the business	14%
Managing cash flow	Used supply chain finance, invoice factoring, invoice discounting or sold overdue invoices to a debt recovery organization	7%
Other actions	Reduce headcount	6%
Other actions	Raised prices of goods and services	11%

Source: London Economics analysis of YouGov/IFF Research survey. N = 1455.

Approximately 28% of businesses indicated that they were affected by late payment (they took at least one of the actions in the table above).[2] As such, it is estimated that approximately 1.54 million businesses are affected by late payment.

The most common action taken by businesses in response to late payment issues is using staff resource to chase unpaid debtors, which was done by more than a fifth (22%) of surveyed businesses. Across all businesses in the economy, approximately 133 million hours of staff time was spent chasing late payments, about 86 hours per business affected by late payment.

[1] The survey questionnaire asks respondents about the last year, which does not perfectly align with the calendar year 2024 as the survey was conducted in late January and early February 2025.
[2] YouGov/IFF Research survey responses from this study differ from the LSBS. This study explicitly asks about late payment issues in terms of both overdue invoices and long payment terms, where the LSBS only asks whether businesses have a problem with being paid later than they normally require. This study also considers large businesses, where the LSBS only considers SMEs.

Table 3: Average current value of late payments by size class

Size class (employees)	Average value of late payments (all businesses, £)	Average value of late payments (businesses affected by late payment, £)	As a % of annual turnover (businesses affected by late payment)
Micro (0 - 9)	2,480	9,214	4.61%
Small (10 - 49)	25,855	52,081	1.47%
Medium (50 - 249)	106,357	193,635	0.79%
Large (> 250)	447,987	703,479	0.23%
Average	4,796	17,085	0.95%

Source: London Economics analysis of YouGov/IFF Research survey and DBT Business Population Estimates 2024. N=660 (Micro), N=396 (Small), N=258 (Medium), N=51 (Large).

Survey responses suggest that micro businesses affected by late payments on average have the highest share of their turnover tied up in late payments (4.61%) among all business sizes, and that this share declines with size. For the average representative business affected by late payments, late payments at any point in time account for approximately 1% of turnover. Overall, the research estimates that at any given time UK businesses provide approximately £26 billion[3] of 'finance' to their customers in the form of late payment. Survey respondents were also asked to indicate the cost (in terms of staff resource or financial) to their business associated with some of these actions.

This allows for the estimation[4] of the aggregate cost to businesses as a result of late payment, shown in Table 4.

[3] This is calculated by combining the estimates from the table above with data on the composition of the business population.

[4] Using data on the composition of the business population

Table 4: Opportunity cost of late payments for businesses[5]

Cost	Low estimate (£m)	Central estimate (£m)	High estimate (£m)
Staff time spent chasing unpaid debtors	1,561	2,259	3,061
Debt collection	624	1,132	1,807
Legal cost	593	1,213	2,065
Servicing debt finance taken out as a result of late payment	630	1,165	1,770
Supply chain finance, invoice discounting, invoice factoring and selling overdue invoices	620	1,213	1,898
Total	**4,028**	**6,982**	**10,600**

Source: London Economics analysis of YouGov/IFF Research Survey, DBT Business Population Estimates 2024 and LFS data on average wages. Note: The low, central and high estimates reflect the 90% confidence intervals of the costs.

Each of these costs involves the use resources (either staff time or other services paid for by businesses), which could be used elsewhere were it not for late payment issues, and have an opportunity cost for businesses. In total, these costs add up to almost £7 billion a year, which is approximately 0.13% of total business turnover. Some businesses also reported that they proactively try and avoid late payment problems. Indeed, 15% of businesses surveyed indicated that they avoided doing business with specific customers due to poor payment practices in the last year.

The cost of late payments for the economy

Late payment issues, if sufficiently serious, can also lead businesses to reduce their investment or even close. Econometric analysis was used to estimate the impact of late payments on survival and investment. In the case of business survival, the analysis suggests that late payments do have a substantial impact. Table 5 compares business closure rates between businesses with late payment issues in the 2015-2017 period to similar[6] businesses that did not develop late payment issues.

[5] Note that not all of the costs associated with the actions listed in Table 2 above are monetized. In particular, costs associated with raising equity finance, injecting personal funds, reducing headcount or raising prices have not been monetized.

[6] Similar businesses were identified using a Propensity Score Matching approach. Details on the econometric methodology can be found in Annex 1.

Table 5: Impact of late payments being a big problem on business closure rates

Late payment problem	Share closed by 2017	Share closed by 2018	Share closed by 2019	Sample size
No	2%	2%	7%	157
Yes	9%	14%	20%	143
Impact of late payments (difference in closure rates)	7%	11%**	14%*	300

*Source: London Economics analysis. Note: **=p<0.05, *=p<0.1*

Closure rates are higher among businesses with late payment issues than similar businesses without these issues, and the difference in closure rates is statistically significant at (at least) the 10% level when considering businesses closing by the end of 2018 and 2019. The results of the analysis suggest that about 14,000 additional businesses close every year (or 38 every day) as a result of late payments being a 'big problem'. For context, according to ONS data there were approximately 330,000 business closures in 2023.[7] It is also estimated that these 14,000 businesses account for approximately 40,000 jobs.

In contrast, the econometric analysis of the impact of late payments on investment did not yield statistically significant results. However, this does not mean that there is not an impact. Indeed, responses to the YouGov/IFF Research suggest that some businesses did forego investment in 2024 as a result of late payment. Table 6 provides estimates for the average amount of annual investment foregone as a result of late payments.

Table 6: Average amount of annual investment foregone as a result of late payments

Size class (employees)	Average amount of investment foregone (all businesses, £)	Average amount of investment foregone (businesses affected by late payment, £)	As a % of annual turnover (businesses affected by late payment)
Micro (0 - 9)	1,643	6,103	3.06%
Small (10 - 49)	9,517	19,170	0.54%
Medium (50 - 249)	69,310	126,187	0.51%
Large (> 250)	49,045	77,015	0.03%
Average	2,493	8,881	0.49%

Source: London Economics analysis of YouGov/IFF Research survey. N=656 (Micro), N=396 (Small), N=258 (Medium), N=44 (Large).

Based on the opportunity cost for businesses[8] resulting from late payments, as well as estimates for the wider impact of late payments on the economy through the channels of business survival and investment, the research estimates[9] the total cost to the economy of late payments. This is

[7] ONS (2024). Business demography, quarterly, UK: April to June 2024. Available on the ONS website.
[8] The cost of making payments on debt finance taken out as a result of late payments is excluding from the calculation of the cost to the economy on the basis that that such payments are purely a transfer from one business to another (a financial institution).
[9] Full details of the quantification approach can be found in Annex 1.

presented in Table 7 – the low and high estimates reflect the 90% confidence intervals of each of the costs.

Table 7: Annual cost of late payment for the economy

Cost	Low estimate (£m)	Central estimate (£m)	High estimate (£m)
Increase in business closures	437	3,214	5,979
Decrease in investment	903	1,714	2,833
Staff time spent chasing unpaid debtors	1,561	2,259	3,061
Debt collection	624	1,132	1,807
Legal cost	593	1,213	2,065
Supply chain finance, invoice discounting, invoice factoring and selling overdue invoices	620	1,213	1,898
Total	**4,739**	**10,745**	**17,643**

Source: London Economics analysis

The total cost to the economy is estimated to be almost £11 billion per year, which is approximately 0.4% of GDP. It is important to note that there may be other costs of late payment that are not quantified here (for example, if businesses increase their prices as a result of late payments, reducing their international competitiveness) and as such the £11 billion estimate could be conservative. However, it is also important to note that some of the economic activity that would occur without late payments (due to increased investment and decreased business closures) might be displaced from other firms. As such it is also possible that some of the individual costs (in the table above) that comprise the £11 billion estimate could be overestimates in places.
The results of the YouGov/IFF survey also suggest that the vast majority (approximately 84%) of late payments (by volume) faced by UK businesses are from UK customers. Therefore, given the magnitude of the cost for the economy of late payments, there would be substantial economic benefits of improving payment culture in the UK. Indeed, the analysis suggests that a decrease in poor payment practices of just 10% could have economic benefits worth almost £1 billion per year.

Conclusion

This report provides a comprehensive overview of the late payment problem in the UK, as well as the costs arising as a result of the late payment problem. It highlights the scale of the problem, with an estimated 1.5 million businesses (28% of the population) affected by late payments and an estimated £26 billion of late payments owed to businesses at any time. It is estimated that the cost to businesses as a result is approximately £7 billion a year.

The econometric analysis identifies that late payments also have a wider economic cost, with big late payment problems having a statistically significant and negative impact on businesses survival prospects. Indeed, it is estimated that over 14,000 businesses close every year (or 38 every day) as a result of late payments. This impact on survival forms part of an estimated total cost of late payments to the economy of almost £11 billion per year (approximately 0.4% of GDP).

This highlights the potential magnitude of economic benefits of improving payment culture in the UK. Further action by Government could help realise these benefits.

Introduction

Policy context

Businesses in the UK often offer their customers 'trade credit', where payment by the customer is permitted after the delivery of the goods or services. Businesses are impacted both when invoices are paid beyond the agreed or contractual payment date and when long payment terms are imposed. This can lead to cash flow problems for businesses.

This report considers the impact of both of these issues and defines late payment as any combination of:

- Overdue invoices, where businesses are paid beyond the agreed or contractual payment
- Long payment terms, where businesses agree to payment more than 60 days after goods or services have been delivered

The Department for Business and Trade (DBT) has introduced several measures to help address the issue of late payments:

- *The Late Payment of Commercial Debts (Interest) Act 1998* allows businesses to impose interest and debt recovery costs on late payments and sets default payment terms at 30 days.[10] [11]
- *The Enterprise Act 2016* established the Office of the Small Business Commissioner (OSBC), an independent public body sponsored by DBT, which helps small businesses deal with late payment and unfair payment terms across the UK.[12]
- *The Reporting on Payment Practices and Performance Regulations 2017* introduced requirements for large businesses to regularly report on their payment performance, helping improve transparency.[13] [14]
- In late 2024, the Fair Payment Code was launched to drive further improvements in payment culture among UK businesses.[15] The new code, which replaces the earlier Prompt Payment Code, allows businesses to apply for different tiers of awards that reflect their payment practices and payment performance.

Objectives of this study

Late payment can impact businesses through a wide range of different 'channels'. Businesses can face increased costs if they need to use staff time to chase overdue invoices or commission a debt

[10] The legislation can be viewed on the legislation.gov.uk website.
[11] The original legislation has been updated many times, most recently by *The Late Payment of Commercial Debts (Amendment) Regulations 2018*.
[12] Further information on the OSBC can be found on its website.
[13] The legislation can be viewed on the legislation.gov.uk website.
[14] The legislation has been updated many times, most recently by *The Reporting on Payment Practices and Performance (Amendment) Regulations 2025*.
[15] Additional detail on the Fair Payment Code can be found on the OSBC website.

collection agency. They may also use invoice financing or take on debt finance in order to mitigate cash flow problems, resulting in reduced profits for the business. In extreme cases, the cash flow issues created by late payment may result in businesses foregoing investment or ceasing to trade.

These different channels represent costs to both businesses and the wider economy. Figure 2 outlines these channels diagrammatically. Businesses affected by late payments sometimes need to take actions they would otherwise not have to take, which have an opportunity cost. Where businesses are constrained by cash flow problems resulting from late payments, they may also need to reduce or scale down productive activity, leading to lower levels of economic outputs. Importantly, removing these costs by addressing the underlying problem of late payments could result in a net benefit to the UK economy.

Existing research has highlighted that late payment can be harmful for businesses and the economy. For example:

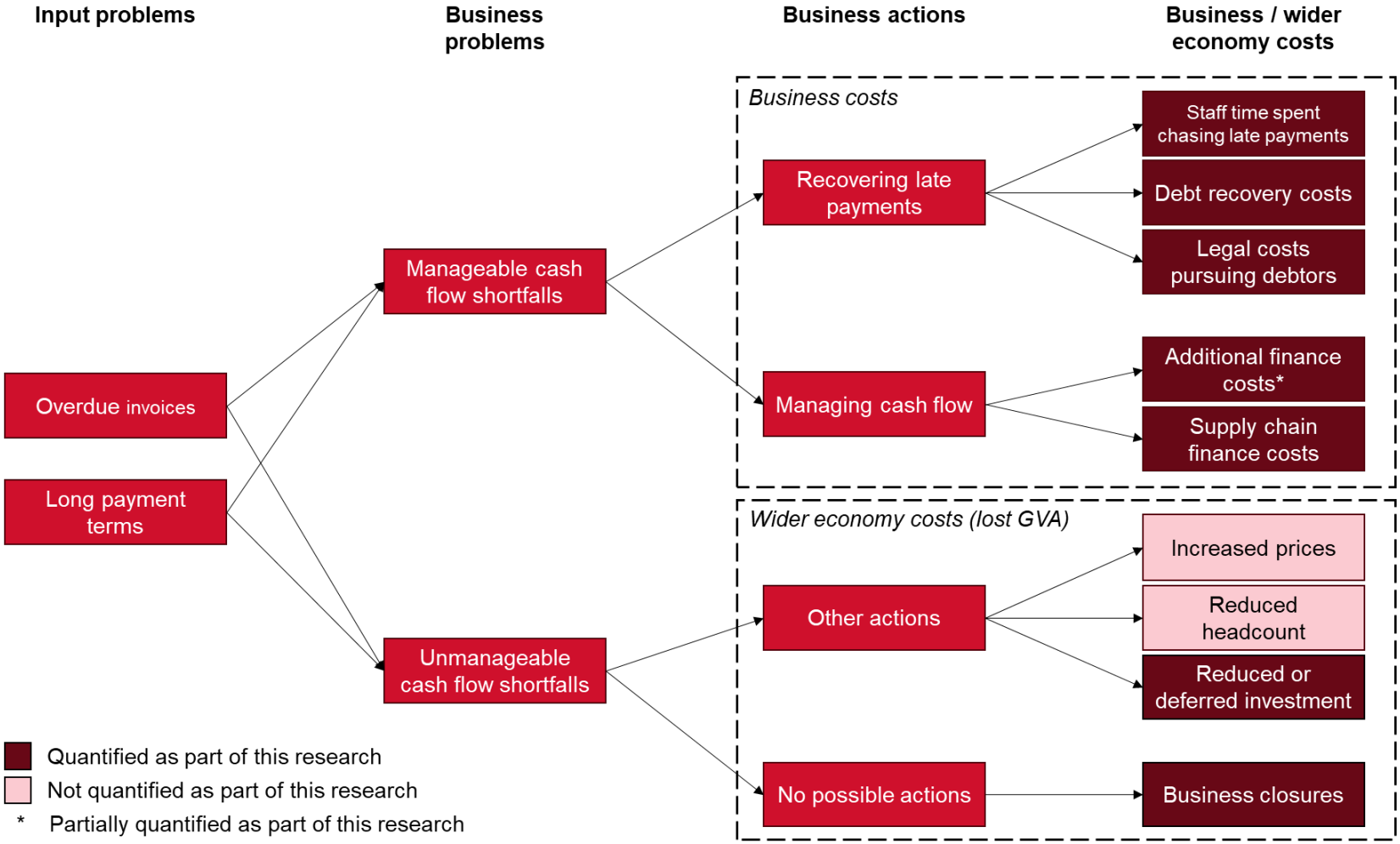
- A study conducted by Opinium on behalf of Intuit QuickBooks estimated that 56.4 million hours of staff time are spent chasing late payments each year, which costs businesses £6.3bn annually.[16]
- Another study for the Federation of Small Businesses found that the UK's poor payment culture results in the closure of 50,000 businesses every year, resulting in £2.5bn in lost output.[17]
- Research from Xero estimates that late payments cost small businesses £1.6bn in 2023, in terms of lost interest.[18]

The existing research base on late payments (some of which is discussed above) has some limitations. Firstly, the research discussed above does not consider all the impact channels through which late payments may affect businesses or the economy. Secondly, some findings are significantly dated, using data from many years ago. Thirdly, it predominantly relies on survey data rather than analysis of secondary data on actual business outcomes, which limits its methodological robustness.

In order to help fill this evidence gap, London Economics were commissioned by the DBT and the OSBC in November 2024 to undertake a study of the impact of late payments on UK businesses and the UK economy. This study covers all of the main impact channels of late payments, and combines analysis (including econometric analysis) of both primary and secondary data sources.

[16] The results of the study are published on the Intuit Quickbooks website.
[17] The results of the study are published on the FSB website.
[18] The results of the study are summarised in a press release on the Xero website.

Figure 2: How late payments creates costs for businesses and the wider economy



Summary of the approach

The approach used for this study consists of three main strands:

1. Design, delivery and analysis of a quantitative survey of 1,455 businesses. The survey was conducted by YouGov and IFF Research and took place between 15/01/25 and 07/02/25. Responses to the survey provide evidence on the current late payments landscape, the impact of late payments on businesses and the mitigating actions used by businesses to limit the impact of late payments.
2. Econometric analysis of secondary data to assess the impact of late payments on business survival and investment. The analysis is based on data from the Inter-Departmental Business Register (IDBR), the Longitudinal Small Business Survey (LSBS) and Bureau van Dijk FAME (Financial Analysis Made Easy) database.
3. A quantification exercise, drawing together the results of the first two strands, estimating the impact of late payments on businesses as well as the wider economy.

Structure of this report

The remainder of this report is structured as follows:

- Chapter 1 discusses the impact of late payments on businesses.
- Chapter 2 explores the cost of late payments for the economy.
- Chapter 3 provides some concluding remarks on the key findings of this research.
- Annex 1 provides detail on the methodology and data used to estimate the impact of late payments on businesses and the economy.
- Annex 2 details the primary data collection undertaken as part of this research.
- Annex 3 provides a summary of a literature review which was previously commissioned by DBT and informed this research.

1. Impact of late payment on businesses

This chapter sets out the impact of late payments on businesses. Firstly, it sets out the current landscape of late payments in the UK. Then, it estimates the costs for businesses of late payments. Finally, it discusses the actions taken by businesses to mitigate the impact of late payments.

The current landscape of late payments

A substantial proportion of UK businesses report having an issue with late payments in the LSBS. Table 8 summarises the extent to which late payments are a problem for SMEs of different sizes.

Table 8: The extent to which late payments were a problem for SMEs in 2023

Size class (employees)	Late payment problem in 2023	Share of SMEs
Micro (0 - 9)	Big problem	7.8%
Micro (0 - 9)	Small problem	20.3%
Micro (0 - 9)	No problem	19.5%
Micro (0 - 9)	Don't offer trade credit	52.4%
Small (10 - 49)	Big problem	5.8%
Small (10 - 49)	Small problem	29.5%
Small (10 - 49)	No problem	20.7%
Small (10 - 49)	Don't offer trade credit	44.0%
Medium (50 - 249)	Big problem	6.7%
Medium (50 - 249)	Small problem	36.5%
Medium (50 - 249)	No problem	15.8%
Medium (50 - 249)	Don't offer trade credit	40.9%

Source: Longitudinal Small Business Survey[19]. Note: N=1,480 (Micro), N=926 (Small), N=342 (Medium).

While more than half of micro businesses/sole traders and over 40% of larger SMEs do not offer trade credit and therefore implicitly do not face any issues related to late payment, most SMEs of all size classes that do offer trade credit do experience some level of problem with late payment.

Late payment appears to be particularly likely to be a big issue for micro businesses, with almost a sixth of the 47.6% of micro businesses that offer trade credit indicating that late payment is a big problem for their business. Responses to that same question split by sector suggest that broadly speaking late payment is a problem across the economy.

[19] The question asked in the LSBS is “Do you have a problem with customers paying you later than you require them to in your normal terms of business?”. Note that the LSBS distinguishes between SMEs with and without employees – this analysis does not follow this split to be consistent with the YouGov/IFF Research survey.

Table 9: The extent to which late payments were a problem in 2023 by sector

Sector	Payment problem in 2023	Share of SMEs
Primary/Manufacturing	Big problem	5.3%
Primary/Manufacturing	Small problem	37.4%
Primary/Manufacturing	No problem	31.2%
Primary/Manufacturing	Don't offer trade credit	26.2%
Construction	Big problem	10.1%
Construction	Small problem	31.9%
Construction	No problem	18.5%
Construction	Don't offer trade credit	39.5%
Distribution	Big problem	5.6%
Distribution	Small problem	24.0%
Distribution	No problem	19.1%
Distribution	Don't offer trade credit	51.3%
Business Services	Big problem	9.1%
Business Services	Small problem	24.9%
Business Services	No problem	19.6%
Business Services	Don't offer trade credit	46.4%
Other Services	Big problem	5.0%
Other Services	Small problem	14.9%
Other Services	No problem	10.6%
Other Services	Don't offer trade credit	69.6%

Source: Longitudinal Small Business Survey. Note: N=340 (Primary/Manufacturing), N=276 (Construction), N=824 (Distribution), N=908 (Business Services), N=404 (Other Services).

That businesses report late payment as a problem is perhaps unsurprising given the frequency of late payments in the UK.[20] The YouGov/IFF Research survey commissioned as part of this research asked businesses about whether they experience late payments and found a substantial proportion reporting overdue payments or long payment terms. In the remainder of this chapter, when this report refers to the impacts of late payments on businesses, it refers to the self-reported impacts in the YouGov/IFF Research survey.

[20] Note that there is also published data on the extent to which late payment/cash flow is a problem for businesses in the SME Finance Monitor. The latest release, available on the BVA BDRC website, highlights that 19% of SMEs face these issues. The LSBS is used as the main secondary data source for this research given that it includes questions on late payment.

Table 10: Late payment issues faced by businesses at the time of the survey

Late payment issues currently faced	Micro (0 - 9)	Small (10 - 49)	Medium (50 - 249)	Large (> 250)
Both overdue invoices and payment terms longer than 60 days	12%	21%	35%	59%
Overdue invoices only	6%	12%	11%	4%
Payment terms longer than 60 days only	1%	5%	3%	3%
No issues	80%	58%	49%	33%
Don't know	1%	3%	1%	0%

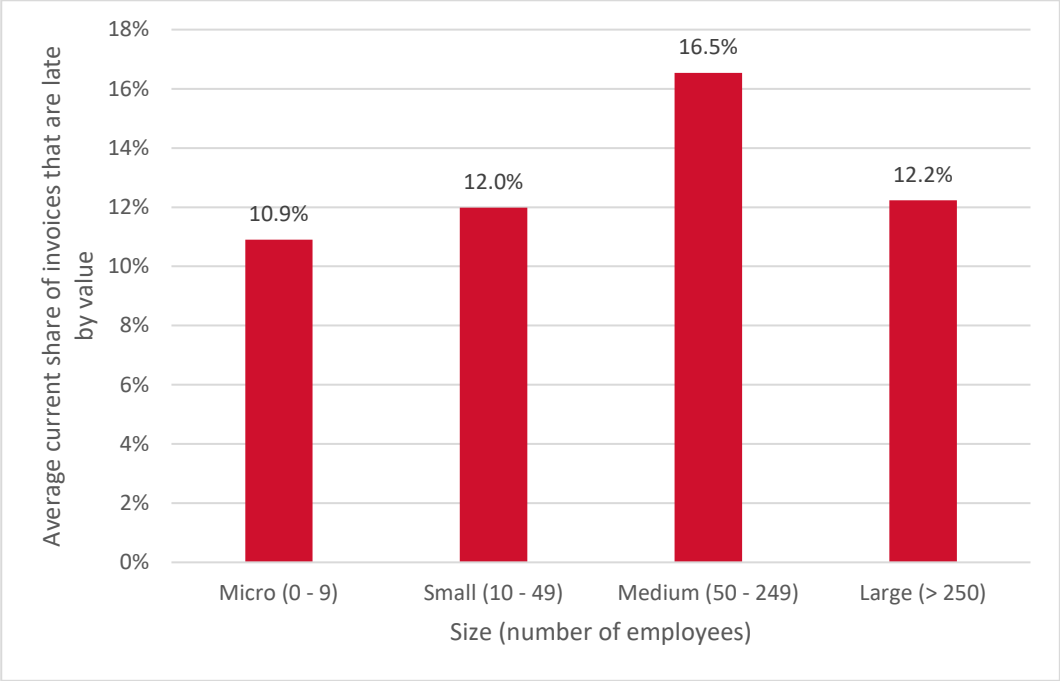
Source: London Economics analysis of YouGov/IFF Research survey. Note: N=680 (Micro), N=437 (Small), N=281 (Medium), N=57 (Large).

At the time of the survey, whilst approximately 20% of micro businesses reported having late payments from their customers, the proportions of small, medium and large businesses experiencing such issues were much higher at 42%, 51% and 67% respectively. This is likely because micro businesses are less likely to offer trade credit to their business customers (see Table 8 above), so are less likely to experience late payment problems.

An important difference is that this survey question asks businesses about their late payment issues at the time of the survey whereas the LSBS asked businesses whether they had a problem with late payments in general. The LSBS also considers SMEs only, and not large businesses.

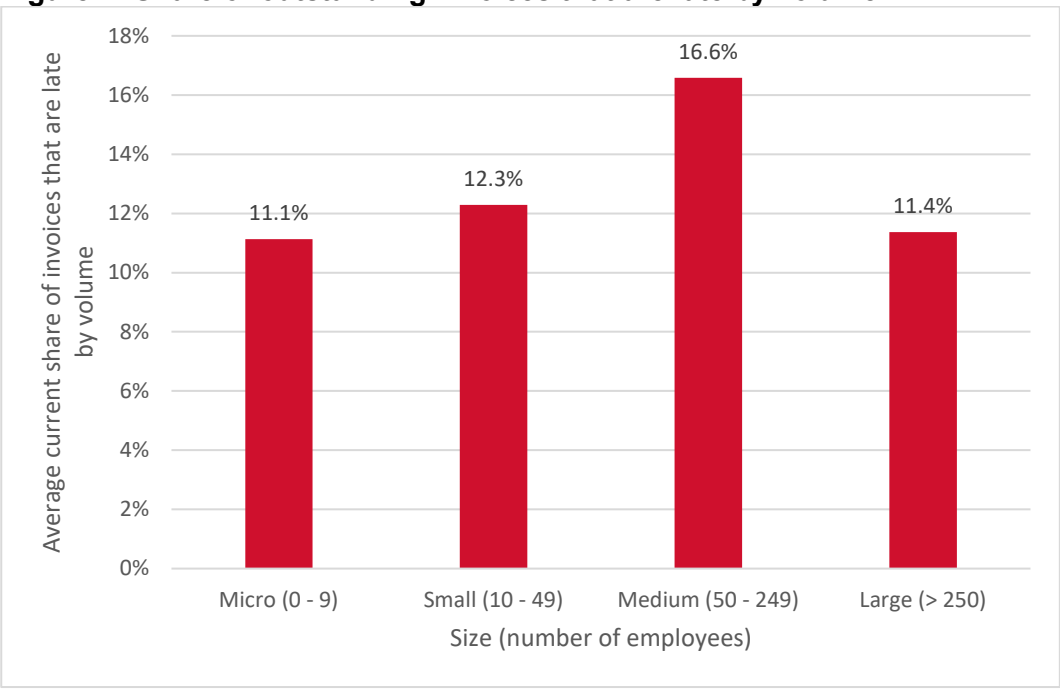
Among businesses experiencing late payment issues, most experienced both overdue sales invoices and payment terms of longer than 60 days. A minority experienced overdue sales invoices and no payment terms of longer than 60 days, while relatively few businesses experienced payment terms of longer than 60 days but did not have overdue sales invoices. The charts below frame these late payment issues in terms of the proportion of invoices that businesses reported were late at the time of the YouGov/IFF Research survey, by volume and value.

Figure 3: Share of outstanding invoices that are late by value



Source: London Economics analysis of YouGov/IFF Research survey. N=234 (Micro), N=239 (Small), N=185 (Medium), N=41 (Large).

Figure 4: Share of outstanding invoices that are late by volume



Source: London Economics analysis of YouGov/IFF Research survey. N=234 (Micro), N=240 (Small), N=186 (Medium), N=45 (Large).

Medium sized businesses offering trade credit report that approximately 17% of their outstanding invoices (by both volume and value) are late. The corresponding proportions for other sizes of

business are lower, at around 11-12%. The fact that the results by volume and value are similar suggests that the likelihood of an invoice being paid late is not particularly linked to the value of that invoice.

The list below provides an overview of the kinds of impacts and costs that late payments can have for businesses. The frequency with which these actions are taken by businesses as a result of late payments is then discussed later in this section.

1. Costs associated with recovering late payments
    a) Spent staff time chasing late payments: When businesses use staff time to chase customers that are paying late there are associated wage and non-wage labour costs. This cost is quantified as part of this research.
    b) Started legal proceedings against one of their customers: When businesses hire a law firm to chase their customers that are paying late, they need to pay legal fees to the law firm. This cost is quantified as part of this research.
    c) Commissioning a debt collection agency to chase debtors: Debt collection agencies aim to recover debts from customers paying late through directly chasing or pursuing legal action where necessary. They typically charge a percentage of the debt collected as a fee, and as such when business hires a debt collection agency they will never receive the full amount they are owed. This cost is quantified as part of this research.
2. Managing cash flow in response to late payments
    a) Taken out debt finance: When a business takes out debt finance they will need to make interest repayments to the lender. This cost is quantified as part of this research.
    b) Raised equity finance: When a business raises equity the value of existing shareholdings are diluted. This is a cost for the owners of the business, however as it is not directly a cost for the business it is not quantified as part of this research.
    c) Injected personal funds into the business: When a business owner injects personal funds there is the possibility of personal loss for the owner if the business fails. This is a cost for the owner. However, as it is not directly a cost for the business it is not quantified as part of this research.
    d) Using supply chain finance, invoice factoring, invoice discounting or selling overdue invoices: These services involve a business receiving early payment of an invoice by a finance company. However, the business does not receive the full value of the payment as the finance provider takes a fee, which is a cost for the business. This cost is quantified as part of this research.
3. Other actions
    a) Reduced headcount: When a business reduces its number of employees, it might well not be able to produce the same level of output and therefore have a lower turnover. This cost is not quantified as part of this research.
    b) Raised prices of goods and services: When a business raises prices it may become less competitive in the market. It may therefore have lower turnover. This cost is not quantified as part of this research.

For the purposes of this research, businesses are considered to be 'affected by late payments' if they have undertaken any of the actions listed in the table above over the last year. Table 11 presents an estimate for the number and share of businesses affected by late payments in each size class.

Table 11: Number and share of businesses affected by late payments

Size class (employees)	Share of businesses affected by late payment	Number of businesses affected by late payment
Micro (0 - 9)	26.9%	1,408,593
Small (10 - 49)	49.6%	109,169
Medium (50 - 249)	54.9%	20,735
Large (> 250)	63.7%	5,254
Total	28.1%	1,543,751

Source: London Economics analysis of YouGov/IFF Research Survey and DBT Business Population Estimates 2024. N=667 (Micro), N=408 (Small), N=266 (Medium), N=50 (Large).

Table 12 shows the actions taken by businesses as a result of late payments. More than one fifth of businesses (22%) spent staff resources chasing unpaid debtors. Additionally, 8% of businesses commenced legal action against their customers and 7% commissioned a debt collection agency. Furthermore, more than one in ten (11%) of businesses report that they had to raise prices and 6% reduced headcount as a result of late payments.

Table 12: Actions taken in 2024[21] as a result of late payments

Type of action	Action	Proportion of businesses reporting that they undertook the action
Recovering late payments	Spent staff time chasing unpaid debtors	22%
Recovering late payments	Commissioned a debt collection agency to chase debtors	7%
Recovering late payments	Started legal proceedings against one of your customers	8%
Managing cash flow	Take out debt finance	6%
Managing cash flow	Raise equity finance	5%
Managing cash flow	Inject personal funds into the business	14%
Managing cash flow	Used supply chain finance, invoice factoring, invoice discounting or sold overdue invoices to a debt recovery organization	7%
Other actions	Reduce headcount	6%
Other actions	Raised prices of goods and services	11%

Source: London Economics analysis of YouGov/IFF Research survey. N = 1455.

The data also suggests that businesses must often find other sources of finance to mitigate the cashflow issues created by late payment. In particular, 14% of businesses report that they used personal funds from directors, 7% used supply chain finance or made use of other similar financial products, 6% raised debt finance and 5% raised equity finance.

Table 13: Average current value of late payments by size class

Size class (employees)	Average value of late payments (all businesses, £)	Average value of late payments (businesses affected by late payment, £)	As a % of annual turnover (businesses affected by late payment)
Micro (0 - 9)	2,480	9,214	4.61%
Small (10 - 49)	25,855	52,081	1.47%
Medium (50 - 249)	106,357	193,635	0.79%
Large (> 250)	447,987	703,479	0.23%
Average	4,796	17,085	0.95%

Source: London Economics analysis of YouGov/IFF Research survey and DBT Business Population Estimates 2024. N=660 (Micro), N=396 (Small), N=258 (Medium), N=51 (Large).

[21] The survey questionnaire (which can be found in Annex 2) ask respondents about the last year, which does not perfectly align with the calendar year 2024 as the survey was conducted in late January and early February 2025.

The average value of invoices that are currently late is increasing in size. However, when accounting for the fact that micro businesses have much smaller turnover they appear to have the most significant issue with late payments. This is likely to be in part because they will typically have less market power than their customers.

Based on these estimates and the number of businesses operating in the economy, at any given time businesses are providing approximately £26 billion[22] of interest free finance to their customers in the form of late payments. It should be noted that the provision of this interest free finance creates both winners (i.e. customers or debtors) and losers (i.e. suppliers or creditors), and as such is not a net cost for businesses.

The next section discusses the actions that businesses take in response to late payments that do have a net cost for businesses.

Costs for businesses as a result of late payments

The previous section provides evidence on the extent to which businesses experience late payment from their customers. This section presents the average costs for businesses as a result of late payment. The average cost is presented for all businesses, as well as for businesses which are affected by late payments (as defined above).

Table 14 provides the average number of hours spent by businesses of each size class per year.

Table 14: Average annual number of staff hours spent chasing unpaid debtors

Size class (employees)	Average number of hours (all businesses)	Average number of hours (businesses affected by late payments)
Micro (0 - 9)	20	75
Small (10 - 49)	69	138
Medium (50 - 249)	178	324
Large (> 250)	690	1,084
Average	24	86

Source: London Economics analysis of YouGov/IFF Research Survey. N=667 (Micro), N=408 (Small), N=266 (Medium), N=50 (Large).

Across all businesses in the economy, this represents 133 million hours of staff time spent by UK businesses chasing unpaid debtors. This is a significant drain on the productivity of UK businesses. Based on the number of hours spent chasing unpaid debtors, the research estimates the associated labour costs using ASHE data on wages.[23] Table 15 presents the average cost per business for each size class.

[22] The 90% confidence interval for this estimate is £18 billion to £36 billion. This is calculated by calculating the average value of late payments (by size class) by the number of businesses in each size class.
[23] The average labour cost estimate is £16.92 per hour. Details on how this is derived can be found in Annex 1.

Table 15: Average annual cost of staff time spent chasing unpaid debtors

Size class (employees)	Average annual cost (all businesses, £)	Average annual cost (businesses affected by late payments, £)	As a % of annual turnover (businesses affected by late payment)
Micro (0 - 9)	343	1,273	0.64%
Small (10 - 49)	1,160	2,337	0.07%
Medium (50 - 249)	3,012	5,484	0.02%
Large (> 250)	11,680	18,341	0.01%
Average	411	1,463	0.08%

Source: London Economics analysis of YouGov/IFF Research Survey, DBT Business Population Estimates 2024 and LFS data on average wages. N=667 (Micro), N=408 (Small), N=266 (Medium), N=50 (Large).

Whilst larger businesses typically spend more time chasing their unpaid debtors, the data suggests that the cost relative to turnover is largest for micro businesses (0.64%). In contrast, the value of staff time spent chasing unpaid debtors for large businesses is negligible relative to their turnover. The fact that micro businesses feel the need to spend more time chasing unpaid debtors is perhaps unsurprising given that, as shown in Table 13, at any one time they typically have a larger proportion of their annual turnover tied up in unpaid invoices.

Some businesses also resort to paying debt collection agencies in order to manage their late payment issues. Table 16 presents the average cost incurred by businesses for using these services.

Table 16: Average annual cost of using debt collection agencies

Size class (employees)	Average annual cost (all businesses, £)	Average annual cost (businesses affected by late payments, £)	As a % of annual turnover (businesses affected by late payment)
Micro (0 - 9)	132	492	0.25%
Small (10 - 49)	697	1,404	0.04%
Medium (50 - 249)	5,445	9,913	0.04%
Large (> 250)	9,685	15,208	0.00%
Average	206	733	0.04%

Source: London Economics analysis of YouGov/IFF Research Survey, DBT Business Population Estimates 2024. N=667 (Micro), N=403 (Small), N=266 (Medium), N=47 (Large).

Again, the costs as a proportion of turnover are highest for micro businesses and decline with size. In extreme cases, businesses may also take legal action against their debtors because of late payment. The average annual cost of such legal action is provided in Table 17.

Table 17: Average annual cost of taking legal action against unpaid debtors

Size class (employees)	Average annual cost (all businesses, £)	Average annual cost (businesses affected by late payments, £)	As a % of annual turnover (businesses affected by late payment)
Micro (0 - 9)	136	507	0.25%
Small (10 - 49)	828	1,669	0.05%
Medium (50 - 249)	7,320	13,327	0.05%
Large (> 250)	5,007	7,863	0.00%
Average	221	786	0.04%

Source: London Economics analysis of YouGov/IFF Research Survey, DBT Business Population Estimates 2024. N=664 (Micro), N=399 (Small), N=262 (Medium), N=43 (Large).

Businesses in the survey that indicated that they had taken on debt finance as a result of late payments were asked what the annual cost of servicing that debt was. Table 18 provides estimates of these average annual debt servicing costs for businesses.

Table 18: Average annual cost of servicing debt taken on due to late payments

Size class (employees)	Average annual cost (all businesses, £)	Average annual cost (businesses affected by late payments, £)	As a % of annual turnover (businesses affected by late payment)
Micro (0 - 9)	172	639	0.32%
Small (10 - 49)	1,620	3,262	0.09%
Medium (50 - 249)	13,459	24,503	0.10%
Large (> 250)	654	1,026	0.00%
Average	212	755	0.04%

Source: London Economics analysis of YouGov/IFF Research Survey, DBT Business Population Estimates 2024. N=660 (Micro), N=404 (Small), N=259 (Medium), N=44 (Large).

As above, the cost as a percentage of turnover declines with the size of the business. Additionally, in the case of debt servicing costs the data suggests that the impact on large businesses is negligible, with a lower absolute cost than for medium and small businesses. This might be because late payment issues for large businesses are rarely significant enough for them to require additional debt finance. Businesses also make use of other financial options available to them, including supply chain finance, invoice discounting and factoring and selling overdue invoices. Table 19 presents estimates of the average annual cost of using these services for businesses.

Table 19: Average annual cost of using supply chain finance, invoice discounting, invoice factoring and selling overdue invoices

Size class (employees)	Average annual cost (all businesses, £)	Average annual cost (businesses affected by late payments, £)	As a % of annual turnover (businesses affected by late payment)
Micro (0 - 9)	86	321	0.16%
Small (10 - 49)	1,332	2,683	0.08%
Medium (50 - 249)	8,733	15,899	0.06%
Large (> 250)	16,766	26,329	0.01%
Average	221	786	0.04%

Source: London Economics analysis of YouGov/IFF Research Survey, DBT Business Population Estimates 2024. N=654 (Micro), N=399 (Small), N=263 (Medium), N=46 (Large).

The costs are of a similar magnitude to the costs of servicing additional debt taken out due to late payment for small and medium sized businesses. However, the costs are greater for large businesses. The fact that large businesses are more likely to use these kinds of financial products to ease cash flow rather than taking out a standard bank loan is perhaps reflective of the greater availability of these products for more established businesses with a larger customer base.

This section has provided estimates of the average costs for businesses which result from late payments. It is important to note that the resources used by businesses (either staff time or other services paid for by businesses) could have alternative, productive, uses in a counterfactual world without late payments. In other words, business responses to late payments have an opportunity cost that could otherwise be avoided.[24]

This research has calculated the opportunity cost of business responses to late payment using market prices (the cost of staff time or the cost of purchasing services from other businesses), which provide a suitable proxy, where the value of the best alternative use of resources cannot be directly calculated. Importantly, resolving late payment problems and eliminating these opportunity costs can create a net benefit.

Table 20 presents a range of estimates[25] for the total opportunity cost for businesses which result from late payments. These costs are calculated by multiplying the average costs per business (at the size class level) from the tables above by the number of businesses in each size class.

[24] The HMT Green Book provides a full discussion of opportunity costs, which can be found on the gov.uk website.
[25] The range reflects the 90% confidence interval of the various costs at the size class level.

Table 20: Opportunity cost of late payments for businesses

Cost	Low estimate (£m)	Central estimate (£m)	High estimate (£m)
Staff time spent chasing unpaid debtors	1,561	2,259	3,061
Debt collection	624	1,132	1,807
Legal cost	593	1,213	2,065
Servicing debt finance taken out as a result of late payment	630	1,165	1,770
Supply chain finance, invoice discounting, invoice factoring and selling overdue invoices	620	1,213	1,898
Total	**4,028**	**6,982**	**10,600**

Source: London Economics analysis of YouGov/IFF Research Survey, DBT Business Population Estimates 2024 and LFS data on average wages

The estimate of £1.165 billion for additional debt finance suggests that a relatively modest but not trivial share of business finance is taken out as a result of late payments. Indeed, given that the stock of SME lending is approximately £175 billion, and typical interest rates are approximately 7.5%, annual SME debt repayments are likely in excess of £13 billion.[26] Therefore, approximately 9% of the debt finance taken out by SMEs is directly a result of late payment, where it could otherwise be used to fund growth and expansion.

Industry statistics are not readily available regarding the market size of supply chain finance, invoice discounting, invoice factoring or selling overdue invoices. However, data from IBISWorld suggests that the size of the factoring market in the UK was roughly £4 billion in 2024.[27] It is possible that demand for supply chain finance and other such products is driven more by late payments than debt finance as businesses may prefer to use traditional bank loans in order to fund investment rather than supply chain finance. There is also minimal data on the size of the debt collection market. However, a recent publication suggests the market was worth approximately £2 billion in 2024.[28] The estimate for the legal costs incurred by businesses unsurprisingly represents a small share of the UK legal services market, valued at £52 billion in 2024.[29]

In total, it is estimated that late payments cost businesses £7 billion a year. For context, this amounts to approximately 0.13% of total business turnover in the economy.

Actions taken to mitigate the impact of late payments

The YouGov/IFF Research survey also asked questions about potential mitigating actions that businesses can take to mitigate the costs of late payments. Businesses were asked whether or not they use any invoice software (e.g. Xero or Sage) to manage their payments.

[26] Typical interest rates were approximately 7.5% and the stock of SME lending was approximately £175 billion at the end of 2023 as per the British Business Bank Small Business Finance Markets 2023/24 Report, which is available on the Bank's website.
[27] A summary of the report can be found on the IBISWorld website.
[28] The publication can be found on the IBISWorld website.
[29] UK Legal Services Market Report 2025.

Table 21: Use of invoice software by businesses offering trade credit to their business customers

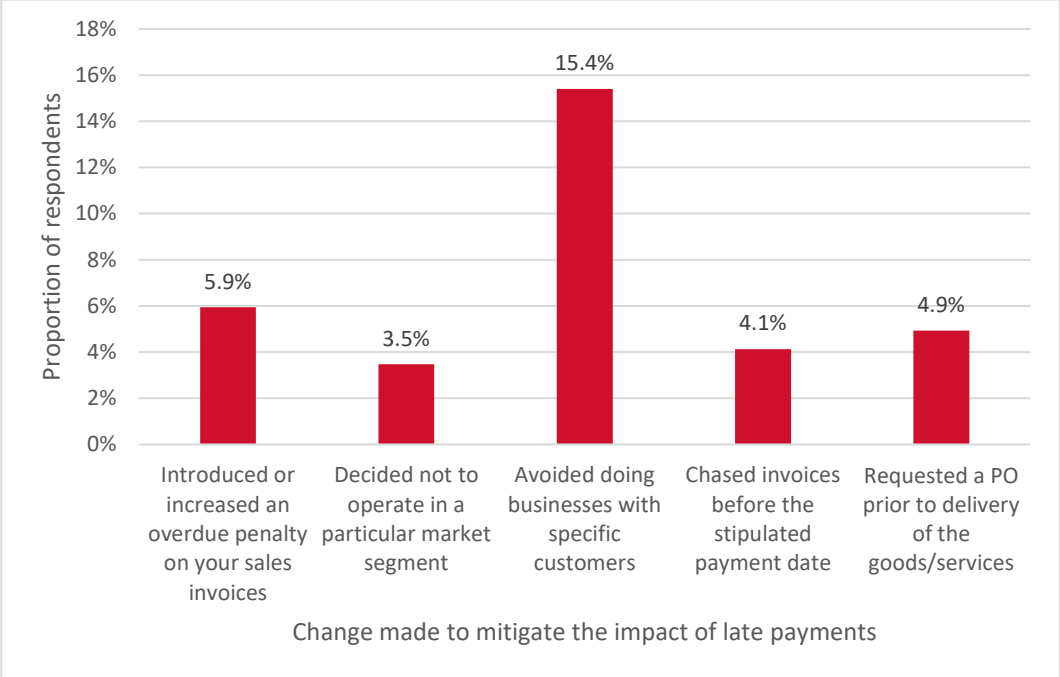
Use invoice software	Micro (0 - 9)	Small (10 - 49)	Medium (50 - 249)	Large (> 250)
Yes	20%	46%	54%	67%
No	80%	50%	44%	28%
Don't know	0%	4%	2%	4%

Source: London Economics analysis of YouGov/IFF Research survey. Note: N=680 (Micro), N=437 (Small), N=281 (Medium), N=57 (Large).

Only a fifth of micro businesses use invoice software, however larger businesses are more likely to use such products. This is driven in part by the fact that larger businesses are more likely to offer trade credit to their customers.

Businesses were also asked about other changes they made to mitigate the impact of late payments. Their responses are illustrated in Figure 5.

Figure 5: Mitigating actions against the costs of late payments taken by businesses



Source: London Economics analysis of YouGov/IFF Research survey. Note: N=1455.

15% of respondents suggested that they have avoided doing business with specific customers (this was the most common survey response). 4% reported avoiding specific market segments where customers frequently pay late. This suggests that businesses at times view the potential costs (discussed above) resulting from late payments as outweighing the value of sales from certain customers. It is important to note that helping businesses to avoid engaging with businesses that

are poor payers is an objective of recent government interventions aimed at improving transparency.[30]

In contrast, relatively few businesses offering trade credit to their customers report that they have introduced or increased an overdue penalty on their sales invoices (6%), requested a purchase order prior to delivery of goods/services (5%) or chased invoices before the stipulated payment date (4%). It is possible that if businesses were more active in implementing these practices the frequency with which they face late payment issues would be reduced, although clearly this would come at the cost of additional staff resource dedicated to managing payments from customers.

[30] Including *The Reporting on Payment Practices and Performance Regulations 2017* and the Fair Payment Code.

2. The cost of late payments for the economy

This chapter sets out the cost to the economy of late payments. First it discusses the impact of late payment on business survival and investment. Then, it estimates the overall economic impact of late payments. Finally, it discusses the potential economic benefits from improving payment culture in the UK.

The impact of late payment on business survival

Econometric analysis was used to assess whether late payments have an impact on business survival. Businesses which had late payment issues were identified based on the question in the LSBS on the degree to which the business has an issue with late payment discussed in Table 8. This information was used to construct treatment and control groups:

- Treatment group. Businesses that did not report that late payments were a big problem for them at the start of the 2015 to 2017 period but did indicate that late payments were a big problem in either (or both) 2016 or 2017.
- Control group. Businesses that did not report that late payments were a big problem for them in the 2015 to 2017[31] period.

Business closure rates over several years (as indicated by the IDBR) were then compared between the treatment and control groups to estimate the impact of late payment on business closure rates.

It should be noted that, as the analysis is based on the LSBS which only includes SMEs, large businesses are not included in the analysis. Further steps, including Propensity Score Matching (PSM) were also undertaken to increase the similarity of the treatment and control groups. Full details on the methodological approach can be found in Annex 1.

The econometric analysis suggests that late payment issues do have a statistically significant impact on business closure rates. Table 22 compares the closure rates of the treatment group (i.e. those with late payment issues) to the control group. This comparison is made at the end of 2017, the end of 2018 and the end of 2019 to allow for the possibility of immediate and longer-term impacts of late payment issues.

[31] The reason why the 2015 to 2017 period was chosen for analysis is that this allowed the largest possible sample size for the analysis, and allowed for several years of business closures prior to the Covid-19 pandemic which had a substantial impact on business closure rates.

Table 22: Impact of late payments being a big problem on business closure rates

Late payment problem	Share closed by 2017	Share closed by 2018	Share closed by 2019	Sample size
No	2%	2%	7%	157
Yes	9%	14%	20%	143
Impact of late payments (difference in closure rates)	7%	11%**	14%*	300

*Source: London Economics analysis. Note: **=p<0.05, *=p<0.1*

The results suggest that businesses with a big late payment problem are significantly more likely to close than similar businesses who offer trade credit but do not have big late payment problems. Indeed, the results suggest that over a several year time horizon late payments that are a 'big problem' may increase the likelihood of a business closing by more than 10%. Combining these estimates with data on the prevalence of big late payment issues can be used to estimate the number of additional businesses (SMEs in this case) that close every year as a result of big late payment problems.

The analysis suggests that 14,468[32] additional businesses close every year (or 38 each day) as a result of late payments. For context, according to ONS data there were approximately 330,000 business closures in 2023.[33] This highlights the severity of cash flow issues caused by late payments. It is also estimated that the 14,468 businesses that close each year due to late payments account for approximately 40,000 jobs.

The analysis regarding the impact of late payments on business closure rates was also calculated at the size class level.

[32] The 90% confidence interval for this estimate is 1,968-26,914 businesses.
[33] ONS (2024). Business demography, quarterly, UK: April to June 2024. Available on the ONS website.

Table 23: Impact of late payments being a big problem on business closure rates, by size class

Size class (employees)	Late payment problem	Share closed by 2017	Share closed by 2018	Share closed by 2019	Sample size
Micro (0 - 9)	No	2%	2%	7%	41
Micro (0 - 9)	Yes	9%	14%	21%	43
Micro (0 - 9)	Impact of late payments (difference in closure rates)	7%	12%	14%	84
Small (10 - 49)	No	4%	4%	4%	70
Small (10 - 49)	Yes	2%	5%	6%	64
Small (10 - 49)	Impact of late payments (difference in closure rates)	-2%	1%	2%	134
Medium (50 - 249)	No	4%	6%	9%	46
Medium (50 - 249)	Yes	6%	11%	17%	36
Medium (50 - 249)	Impact of late payments (difference in closure rates)	2%	5%	7%	82

Source: London Economics analysis

The estimated impact of late payments being a big problem on business survival is largest for micro businesses. This is perhaps unsurprising given that micro businesses typically have the largest share of late payments from their customers (by value and volume). However, none of the estimates above are statistically significant and so the extent to which one can draw inferences on the impact of late payments on survival by size class is somewhat limited. The lack of statistical significance despite the large point estimates (particularly for micro businesses) is driven by the relatively small sample size in each size class.

The limited sample size for the analysis means that it is also not possible to estimate how the impact of late payments varies by UK nation and region. It is therefore not possible to provide robust estimates for how the approximately 14,000 businesses that close every year due to late payment are distributed across the UK. Table 24 provides an indication of how these closures would be distributed, under the assumption that the impact of having a big late payment problem on survival is uniform across nations and regions. This highlights the fact that all nations and regions of the UK are likely impacted by late payments.

Table 24: Estimated number of additional business closures, by UK nation and region

Nations and regions	Estimated number of additional business closures per year
East Midlands	797
East of England	1,419
London	2,872
North East	685
North West	1,364
South East	2,644
South West	1,051
West Midlands	974
Yorkshire and The Humber	1,005
Northern Ireland	319
Scotland	498
Wales	373

Source: London Economics analysis of LSBS and DBT Business Population Estimates.

Businesses that responded to the YouGov/IFF Research survey were also asked about the extent to which late payment issues threatened the survival prospects of their business. Table 25 below provides the self-reported impacts of late payments on the survival prospects of businesses.

Table 25: Risk of late payments to business survival prospects

Risk of late payments to survival prospects	Micro (0 - 9)	Small (10 - 49)	Medium (50 - 249)	Large (> 250)
No risk at all	77%	55%	51%	40%
A small risk	10%	20%	21%	34%
A moderate risk	7%	19%	16%	14%
A major risk	5%	5%	12%	4%
Don't know	1%	1%	0%	7%

Source: London Economics analysis of YouGov/IFF Research survey. Note: N=680 (Micro), N=437 (Small), N=281 (Medium), N=57 (Large).

Micro businesses are the least likely to suggest that late payments present a moderate or major risk to their survival prospects (12%). As discussed previously, this is primarily a function of the fact that micro businesses are less likely to offer trade credit than larger businesses, rather than that the late payment issues they experience are less severe. This descriptive analysis provides further support to the view that late payments can, in extreme cases, lead to business closures.

The impact of late payment on investment

Econometric analysis was also used to estimate the impact of late payment on investment. The treatment and control groups were constructed using the same definition as in the analysis on business survival – i.e. based on the extent to which businesses indicate late payments are a big problem are an issue in the LSBS and using a PSM approach. Once the treatment and control groups were constructed, a difference-in-difference approach was used to estimate the impact of late payments on investment. Full details on the methodological approach can be found in Annex 1.

The analysis explores the impact of late payments being a big problem on investment[34] in 2017, as well as average investment from 2017 to 2018 and from 2017 to 2019. Running the model over several years allows for an assessment of whether the impact of late payments on investment occurs quickly or with a delay. The estimate for the impact of late payments on investment is not statistically significant at conventional levels in any model.

Table 26: Impact of late payment on investment

Quantity	2017 investment	Average investment in 2017 and 2018	Average investment in 2017, 2018 and 2019
Econometric estimate for the impact of late payments on investment	-0.229	0.535	0.148
Standard error	(0.664)	(0.714)	(0.759)
Sample size	314	298	286

Source: London Economics analysis.

It should be noted that not only are the coefficients not statistically significant, the associated p-values are also very large. Indeed, the smallest p-value associated with any of the coefficients presented in the table above (the coefficient in the rightmost column of the table) is 0.27, and as such none of the coefficients are close to being significant at conventional levels. One possible reason for this result, relative to that of business survival which did identify a statistically significant impact, is that the sample size is smaller as investment data was not available for all businesses in the FAME database. Further detail on the limitations of the econometric analysis can be found in Annex 1.

The lack of a statistically significant impact estimate does not mean that there is no impact of late payments on investment. Evidence related to the impact of late payment on investment was also collected from the YouGov/IFF Research survey. Businesses were asked whether they had decided to invest less as a result of their late payments issues, and if so, by how much. Overall, 10% of businesses indicated that they have decided to invest less in 2024[35] because of late payments. Table 27 presents the average level of investment foregone, across all businesses, as a result of late payments.

Table 27: Average amount of annual investment foregone as a result of late payments

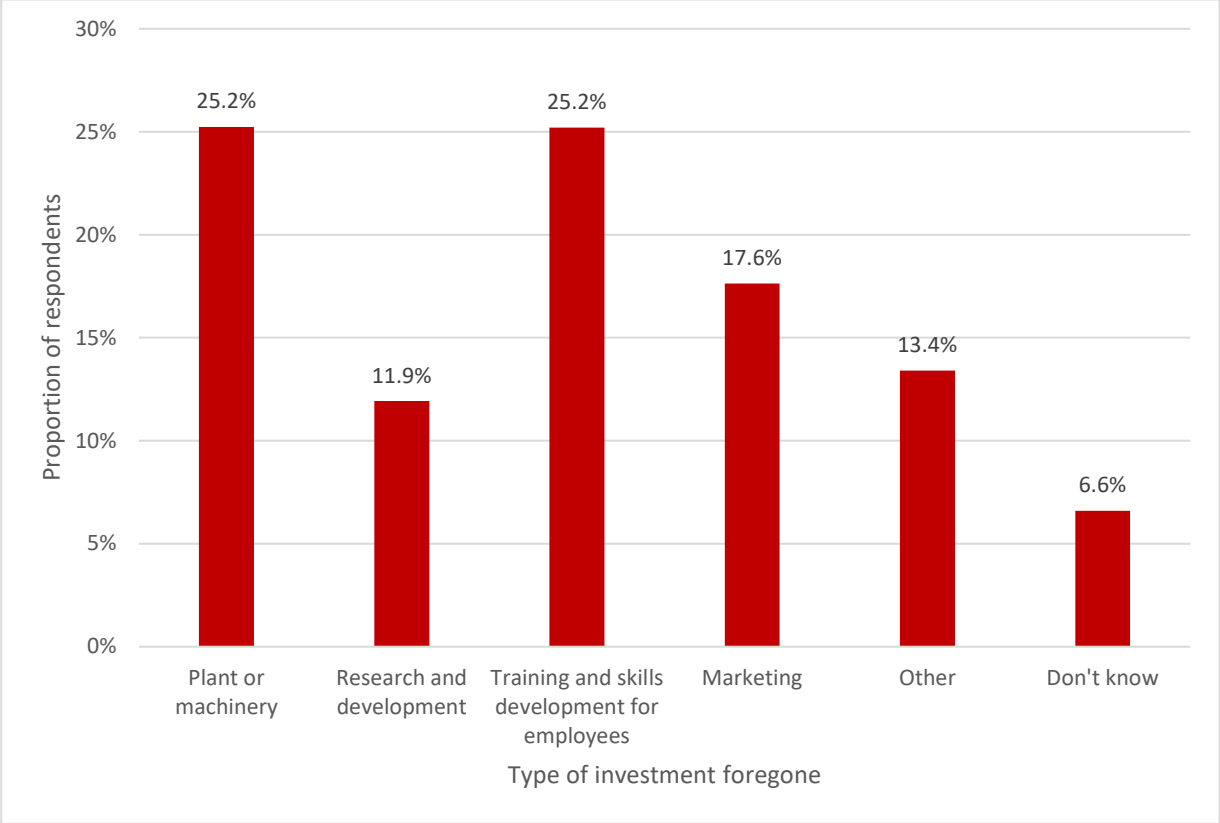
Size class (employees)	Average amount of investment foregone (all businesses, £)	Average amount of investment foregone (businesses affected by late payment, £)	As a % of annual turnover (businesses affected by late payment)
Micro (0 - 9)	1,643	6,103	3.06%
Small (10 - 49)	9,517	19,170	0.54%
Medium (50 - 249)	69,310	126,187	0.51%
Large (> 250)	49,045	77,015	0.03%
Average	2,493	8,881	0.49%

[34] Details on the investment data used in the analysis can be found in Annex 1.
[35] Again, the specific period asked about was 'the last year' and the survey was undertaken in early 2025, so the time period does not perfectly align with 2024.

Source: London Economics analysis of YouGov/IFF Research survey. N=656 (Micro), N=396 (Small), N=258 (Medium), N=44 (Large).

It appears that micro businesses forego the largest amount of investment (relative to their turnover) and large businesses the least. Again, this may be because micro businesses on average have a larger value of late payments relative to their turnover. The fact that (even in absolute value) large businesses forego less investment on average than medium sized businesses perhaps reflects the fact that late payments are rarely a significant issue for large businesses. Businesses were also asked to indicate the main type of investment which was foregone. Their responses are displayed in Figure 6.

Figure 6: Type of investment foregone as a result of late payment



Source: London Economics analysis of YouGov/IFF Research survey. N=213.

The most common forms of investment foregone were plant or machinery and training/skills development for employees (25% each). 18% of respondents indicated that marketing expenditure was reduced as a result of late payments. Only 12% of respondents indicated that R&D expenditure was foregone as a result of late payments.

The cost of late payments for the economy

The previous chapter covered the costs faced by businesses as a result of late payments, in particular estimating costs arising from the following:

- Staff time spent chasing unpaid debtors.
- Contracting debt collection agencies.

- Servicing debt finance taken out as a result of late payment.
- Supply chain finance, invoice discounting, invoice factoring and selling overdue invoices.
- Taking legal action against unpaid debtors.

The costs for businesses arising from servicing debt payment taken out as a result of late payments are purely a transfer from businesses to financial institutions. Therefore, while it is an opportunity cost for businesses it is not a cost for the economy as a whole.

However, all other costs listed above do have an associated economic cost. There is also a cost for the economy in terms of the lost economic activity from business closures and reduced investment resulting from late payments. The econometric analysis described above provides an estimate for the number of businesses each year that close due to late payment issues. Combined with data on business turnover it is possible to estimate the annual reduction in economic activity resulting from late payments. In a similar vein, there is an implied reduction in investment due to late payments. Table 28 presents the estimated cost for the economy due to late payments through various impact channels.

Table 28: Annual cost of late payment for the economy

Cost	Low estimate (£m)	Central estimate (£m)	High estimate (£m)
Increase in business closures	437	3,214	5,979
Decrease in investment	903	1,714	2,833
Staff time spent chasing unpaid debtors	1,561	2,259	3,061
Debt collection	624	1,132	1,807
Legal cost	593	1,213	2,065
Supply chain finance, invoice discounting, invoice factoring and selling overdue invoices	620	1,213	1,898
Total	**4,739**	**10,745**	**17,643**

Source: London Economics analysis

The central estimate that late payments result in an annual economic cost of approximately £11 billion. To put this into context, UK GDP in 2024 was approximately £2.85 trillion[36], and so the annual cost to the economy of late payments is approximately 0.4% of GDP. The low and high estimates reflect the 90% confidence interval of the estimates of each of the costs.[37]

As discussed in the previous chapter, there are some potential costs (for example if late payments result in businesses raising their prices and thus becoming less internationally competitive) not quantified in this research, and as such these estimates could be conservative. There are also other potential costs that are not explored at all in the survey. For example, late payments may have an impact on the mental health of business owners and senior management teams, or

[36] House of Commons (2025). Gross domestic product (GDP): Economic indicators. Available in the House of Commons Library.
[37] Given the differential impact of late payments by size, and the fact that the survival analysis excludes large businesses, the confidence intervals are calculated at the size class level and aggregated up.

employees may have less time to undertake training or upskilling as a result of their time spent managing late payment problems.

On the other hand, it might be that there are some businesses that benefit as a result of late payment, and therefore that the true cost to the economy could be somewhat lower. For example, some of the economic activity of businesses that close due to late payments may be passed on to rival firms. Similarly, businesses that pay their suppliers late may be able to invest more as a result of the additional cash flow that paying late provides.

The fact that the cost of late payments is so large highlights the potential economic benefits of improving payment culture in the UK and thereby reducing the negative impacts of late payments. Importantly, UK Government interventions are limited to domestic businesses and are unlikely to be able influence payment practices of customers outside the UK. Therefore, when estimating the potential benefits of improving payment culture it is important to account for the fact that the proportion of the cost arising from poor payment practices by non-UK customers is likely to be unaffected.

Data from the YouGov/IFF Research survey suggests that 84% of late payments (by volume) to UK businesses are from UK customers. For context, total UK exports amount to approximately £875 billion per year[38], which is approximately 17% of total business turnover. Given that 16% of late payments are from foreign customers, this suggest that the propensity of UK customers to pay late is roughly similar to the propensity of foreign customers to pay late.

Policy to improve payment culture could conceivably affect approximately 84% of late payments to UK businesses. The table below demonstrates cost savings for the economy associated with different levels of reduction in late payments by UK businesses. As above, the low and high estimates are derived from the 90% confidence intervals of the various different costs. Note that the estimates in Table 29 rest on the assumption that the cost to the economy of late payments is proportionate to the prevalence of poor payment practices, which could not be directly tested as part of this research.

Table 29: Reduction in costs for the economy associated with different levels of reduction in poor payment practices

Reduction in poor payment practices by UK businesses	Low estimate (£m)	Central estimate (£m)	High estimate (£m)
10%	396	898	1,475
20%	792	1,796	2,950
30%	1,188	2,695	4,425
40%	1,585	3,593	5,900
50%	1,981	4,491	7,375
60%	2,377	5,389	8,850

Source: London Economics analysis

The estimates in the table suggest that even a modest reduction in poor payment practices (10%), could reduce the cost to the economy of late payment by almost £900m, and that even a modest decrease in the prevalence of poor payment practices could have substantial savings.

[38] Data on UK exports can be found on the gov.uk website.

3. Conclusion

Results

This report provides a comprehensive overview of the late payment problem in the UK, as well as the costs arising as a result of the late payment problem. Unlike previous studies, it draws on a wide range of primary and secondary data sources and uses a rigorous mix of descriptive and econometric methods.

The study highlights the scale of the problem, finding that more than 1.5 million (28%) of business are affected by late payments, and that an estimated £26 billion of late payments are owed to businesses at any one time. The results also show that the burden created by this on businesses is very large. It is estimated that the cost to businesses because of late payments is approximately £7 billion a year. There is also evidence to suggest that the burden is greatest for micro businesses who are least likely to be equipped to deal with late payments.

The econometric analysis identifies that late payments have a wider economic cost, with late payment problems having a statistically significant and negative impact on business survival prospects. Indeed, it is estimated that over 14,000 businesses close every year (or 38 each day) as a result of late payments. This impact on survival contributes to an estimated total cost of late payments to the economy of almost £11 billion per year (approximately 0.4% of GDP). Given the magnitude of this impact, it is estimated that a 10% reduction in poor payment behaviour by UK businesses could lead to a cost saving of almost £1 billion per year. At a time when growing the economy is at the forefront of the policy agenda, ensuring that SMEs have the cashflow to continue scaling and creating jobs is of vital importance.

Future research

The high impact of late payments also demonstrates the importance of interventions designed to reduce late payments. Research over the next few years should aim at assessing whether recent Government policies have had their intended effects, and investigate how late payments policy can be improved and developed in the future. This research could provide a framework for estimating the benefits of different policies, and help further understand value for money.

Future research could also usefully go further and explore how the impacts of late payments vary for different kinds of businesses (e.g. businesses which export or businesses in specific sectors or UK nations and regions). There are also other impacts of late payments (e.g. on competitiveness or mental health of management teams) that could also be explored.

Limitations

This report attempts to quantify the annual costs of late payments in the UK using a combination of primary and secondary data as well as descriptive and econometric analysis. This is a methodologically challenging process and there are some limitations which should be noted:

- Some of the business problems resulting from late payments represent transfers of liquidity. Transfers do not involve the consumption of resources, rather pass purchasing power from one business to another (in this case, in terms of additional liquidity in the form of trade credit). For example, a creditor business might be worse off as a result of late payment, and choose to invest less in their business as a mitigating action. This reduction in business

investment leads to a decrease in GVA, but because trade credit is transferred rather than consumed, it could be offset by actions taken by the debtor business – they might use the additional liquidity they receive as a result of late payment to invest in their own business. When considering the total cost of late payments, and any benefits arising from reducing the prevalence of late payments, transfers need to be accounted for. The research partially mitigates this problem, removing some estimated business costs from the final totals. However, this research does not directly estimate the value of or account for the benefits of late payment for debtor businesses.

- It is possible that some businesses may have found it difficult to provide perfectly accurate answers to some of the questions that were used to quantify the costs of late payments. Respondents were not given sight of the questions in advance of the survey and so may not have known (for example) exactly how many staff hours are spent chasing overdue invoices or the total expenditure on debt collection services. If respondents provide responses that are systematically too large or too small, the cost estimates may not be accurate. Furthermore, some respondents only provided responses in bands, which were converted into numerical responses by taking the midpoint. It could also be the case that, where banded responses are provided, the true cost could be systematically above or below the midpoint of the indicated band.

- The analysis attempts to quantify the cost of late payments by combining analysis based on the LSBS and the YouGov/IFF Research survey. The YouGov/IFF Research survey clearly defines late payments as payment after the agreed contractual payment date or contractual payment terms of longer than 60 days. On the other hand, the definition of late payment in the relevant question of the LSBS refers to payment that is 'customers paying you later than you require them to in your normal terms of business'. This definition is slightly ambiguous and may not be interpreted in the same way as the definition of late payments in the YouGov/IFF Research survey. While this would not bias the results (as at no point in the quantification is an implicit equivalence drawn between the definitions in the two surveys) it may mean that the estimates for the cost of late payment through the channel of business survival may be an underestimate as it does not capture as broad a range of poor payment practices as the estimates based on the YouGov/IFF Research survey.

- The econometric analysis uses PSM to try and ensure that the comparison of outcomes between the treatment and control groups is as unbiased as possible. However, it is possible that some (unobservable) differences between the treatment and control groups that influence survival and investment remain after the PSM. If this were the case, it could bias the econometric estimates.

- For the econometric analysis of the impact of late payments on investment a proxy for investment was constructed as actual investment data was not available. This proxy may not be entirely accurate for all businesses in the analysis sample. For example, if a business disposed of assets, then the investment proxy would likely underestimate the true value of investment for that company.

- The econometric analysis explores the impact of late payment issues beginning in the 2016/17 period. While the results are appropriately scaled for the incidence of late payment issues in the most recent wave of the LSBS (2023), it is possible that the impact of late payment on survival and investment may have changed since 2016/17. If this were the case, the estimated cost to the economy of late payments through business closures may be inaccurate. The true impact of late payment issues occurring today on investment and business survival may only be quantified in the coming years.

Annex 1 – Estimating the impact of late payments

This annex provides detail on the analytical approach used to estimate the economic impact of late payments. This includes an overview of the data used, the econometric methodology and the approach used to quantify the costs for businesses and economic costs arising from late payments.

Data

Survey data

As discussed in Annex 2 below, a quantitative survey of businesses was delivered as part of this research. The survey provided estimates of the following inputs for the quantification exercise:

- The share (by volume and value) of invoices that are late and the total value of late payments faced by UK businesses.
- The share of late payments that arise from UK customers as opposed to foreign customers.
- The value of investment foregone as a result of late payments.
- The additional debt/finance related costs faced by businesses as a result of late payments.
- The costs faced by businesses attempting to recover late payments.
- The amount of staff time used by businesses to chase payment from customers.

Inter-Departmental Business Register (IDBR)

The IDBR is owned by the ONS[39] and provides a comprehensive[40] list of businesses operating in the UK economy. It is the main sample frame for business surveys and contains firmographic information over time. The two main sources of data for the IDBR are VAT and PAYE records from HMRC. For the purposes of this research, the following firm variables were extracted from the IDBR:[41]

- Region[42]
- Sector
- Turnover
- Employment
- Business closure (death date)

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[39] 'ONS take *no responsibility for the analysis or interpretation contained in this report'*
[40] Some small businesses are not included in the IDBR if they do not meet certain VAT turnover thresholds and have no employees.
[41] Specifically, London Economics were provided with the March extracts from 2014 to 2024.
[42] This was coded according to the standard twelve nations and regions of the UK: Nine English regions, and Scotland, Wales and Northern Ireland.

Longitudinal Small Business Survey (LSBS)

The LSBS is an annual survey of SMEs that was launched by the Department for Business Innovation and Skills in 2015. The first wave surveyed more than 15,500 businesses (sampled from the IDBR and Dun & Bradstreet across sizes and sectors). While the survey is not perfectly longitudinal, businesses that have answered previous waves are reinterviewed where possible.[43] Additionally, the sample has also been 'topped up' over time as other businesses have fallen out.

For the purposes of this analysis, London Economics were provided with data from the 2015 to 2023 waves of the survey. Responses to the following questions were used in the analysis:

- M1A on whether the respondent business offers trade credit to its customers.
- M3 on the extent to which late payments are an issue for the respondent business.
- R1 and R1a on the growth prospects of the respondent business.
- R3 on whether the closure or transfer of the respondent business is expected in the next three years.
- A14 on the ownership structure of the respondent business.

The main use of the LSBS data was to construct a group of businesses that have faced issues with late payment and a control group against which their outcomes could be compared (see the section below on the econometric approach for more details).

Financial Analysis Made Easy (FAME)

FAME is a database owned by Bureau van Dijk which covers over 11 million companies based in the UK and Ireland. It contains a time series of financial data as well as other firmographic information. For the purposes of this study, data from FAME is used to estimate the level of investment of businesses for the econometric analysis. Further detail on how the estimate for investment is derived can be found below.

Data matching and cleaning

In order to perform the analysis, the three main datasets (LSBS, IDBR, FAME) were merged together. The LSBS and IDBR were matched using the 'entref' variable. The entref is a pseudonymised operational ID variable included in many ONS secure business microdatasets. The FAME dataset was matched to the LSBS and IDBR using Company Registration Number (CRN). The CRN is a unique code used by Companies Houe, assigned upon incorporation, that allows for businesses to be identified. It was possible to match all of the observations in the LSBS to the IDBR, however it was only possible to match 79.5% of observations in the LSBS to FAME.

Once the data was merged together, a number of cleaning and processing steps were implemented:

[43] It is also of note that in order to limit the number of questions asked to LSBS respondents, respondents are arranged into cohorts and then only answer a subset of the full set of questions. Relevant late payments questions are asked of Cohort A.

- Deriving the SIC sections from the two-digit SIC variable provided in the IDBR.
- Deriving firm-level variables for the year of birth and closure, removing businesses that were indicated to have closed prior to 2015 unless they subsequently were indicated to have experienced a 'rebirth' and therefore could be used for the analysis.
- Creating firm-level variables for region, sector and age, taking the earliest observation of each where there was variation over time for a specific business.
- Creating a banded size variable (micro, small, medium, large) in each year based on employment data from the IDBR.
- Deriving the investment variables needed for the analysis (annual investment from 2014 to 2019, average annual investment in the 2017 to 2018 period and average annual investment in the 2017 to 2019 period).[44]
- Creating variables for each year indicating whether the business did not offer trade credit, had no problem with late payments, a small problem with late payments or a big problem with late payments based on questions M1A and M3 in the LSBS.
- Deriving a banded variable related to the growth expectations of the business based on 2015 and 2016 responses questions R1 and R1a from the LSBS.
- Creating a variable indicating whether the business expected to either close or have its ownership transferred based on 2015 and 2016 responses to question R3 in the LSBS.
- Creating a variable indicating whether the business is wholly or partly owned by another company based on the 2015 responses to question A14. This question was only available in the 2015 wave, and as such this variable was coded as unknown for businesses that did not respond to the LSBS in 2015 but responded in later years.

Econometric approach

Defining the treatment

The first step in the econometric analysis was to define the treatment variable used to indicate whether businesses would be eligible to participate in the treatment group or the control group. Given the time frame of the econometric analysis, the 14,695 businesses answering the LSBS in 2015 or 2016 (or both) were eligible for consideration for the treatment or control businesses. The treatment and control groups were constructed using the following five steps:

1. Businesses indicating that they do not offer trade credit to their customers in any year were excluded from consideration. The reason for this is that a business that does not offer trade credit cannot have issues with late payment from its business customers, and therefore could not be in the treatment group. Furthermore, the fact that it does not offer trade credit means it has a fundamentally different business model to businesses that do offer trade

[44] Further detail on the construction of the investment variable can be found in the discussion of the investment analysis below.

credit and therefore is also not a suitable prospect for the control group. After this step 7,569 businesses remained under consideration for the treatment or control groups.

2. Out of the remaining businesses, eligibility for the treatment group required a business indicating that that it did not have a big problem with late payment (i.e. it had no problem or a small problem) in 2015, or if they did not respond in 2015, did not have a big problem in 2016. Treatment firms then had to switch to having a big problem in a subsequent year, the latest being 2017 (and not switch back; see step 4 below). The reason that data from 2015, 2016 and 2017 were used rather than just 2015 and 2016 or 2016 and 2017 was to increase the resulting analysis sample size. The composition of the treatment group is illustrated in Table 30 below.

3. Out of the remaining businesses, eligibility for the control group was identified as businesses that responded to the LSBS in at least two years in the period 2015-2017 and indicated they did not have a big problem with late payments in any of these years. The composition of the control group is illustrated in the Table 30 below.

Table 30: Definition of the treatment

Group	Degree of late payment problem in 2015	Degree of late payment problem in 2016	Degree of late payment problem in 2017
Treatment	No problem / Small problem	Big problem	Big Problem / Did not respond
Treatment	No problem / Small problem	No problem / Small problem / Did not respond	Big problem
Treatment	Did not respond	No problem / Small problem	Big Problem
Control	No problem / Small problem	No problem / Small problem	No problem / Small problem / Did not respond
Control	No problem / Small problem	Did not respond	No problem / Small problem
Control	Did not respond	No problem / Small problem	No problem / Small problem

4. Businesses that indicated that they (subsequent to indicating that they had a big late payment problem but no later than 2019[45]) no longer had a big problem with late payments were excluded from consideration for the treatment group.

5. Businesses that indicated that they had a big late payment problem in 2018 or 2019[46] were excluded from consideration for the control group.

A second, more restrictive, treatment definition was also used as a robustness check. The second treatment definition, in addition to the approach outlined above, excluded any businesses that responded to the LSBS in any year after 2017. The rationale for this approach is that a business that (for example) responded to the LSBS in 2019 would clearly not have closed in 2017 or 2018.

[45] 2019 was chosen as it is the end period of the econometric analysis.
[46] Ibid.

The results of the analysis based on this alternative treatment definition can be found later in this annex.

Table 31 summarizes the number of businesses that remain in the treatment and control groups after the steps above for each treatment definition.

Table 31: Number of firms[47] eligible for inclusion in the treatment and control groups

Group	Number of firms (baseline)	Number of firms (robustness check)
Treatment	146	107
Control	2,334	1,564
Total	2,480	1,671

Source: London Economics analysis

Propensity score matching

Propensity Score Matching (PSM) is an econometric technique which involves matching a group of treatment businesses to a similar group of control businesses based on the 'propensity score'. The propensity score is the probability of being in the treatment group (i.e. having a big problem with late payments as described above) conditional on the other characteristics of the business. A logit model is the standard approach for propensity score matching. The model is characterized by the following equation for business *j*:

Equation 1: $Pr\ (LPP_j = 1) = F(\boldsymbol{\beta C_j})$

- LPP_j is a dummy variable indicating whether or not business *j* is in the treatment group (i.e. whether it has a late payment problem).
- F is the cumulative standard logistic distribution with functional form $F(x) = \frac{1}{1+e^{-x}}$
- $\boldsymbol{C_j}$ is the vector of characteristics of business *j*, with associated coefficient $\boldsymbol{\beta}$.

Once propensity scores are calculated, each business that is in the treatment group is matched to a business in the control group with the most similar propensity score. This is known as the nearest neighbour algorithm. The algorithm allows for replacement, so that a given control business can be matched multiple times. The matching algorithm also imposes a maximum discrepancy between a treatment business and its matched control. This was set at one fifth of the standard deviation of the propensity scores (which is standard in PSM). For the analysis of investment, it was also required that both the treatment and matched control businesses had sufficient investment data in order for those businesses to be included in the difference-in-difference analysis. Table 32 provides a list of the variables included in the PSM.

[47] Note that the number of businesses in the treatment group is slightly larger than the treatment sample size for the econometric analysis (presented in Table 35) as a small number of treatment businesses (3 for the baseline treatment definition and 6 for the robustness check definition) were dropped in the PSM process.

Table 32: Variables included in the PSM

Variable	Description	Explanation
Treatment	Whether the business is in the treatment or control group.	This is the outcome variable in the propensity score matching.
Sector[48]	The sector that the business operates in.	Businesses in the same sector may face the same kinds of challenges as each other.
Region[49]	The region that the business is based.	Businesses in the same region may be more likely to be dealing with similar business customers.
Employment[50]	The number of employees that the business had in 2015.	Businesses of different sizes may face different issues as a result of late payments.
Turnover[51]	The turnover of the business in 2015.	Businesses of different sizes may face different issues as a result of late payments.
Turnover growth[52]	The growth of the business between 2014 and 2015.	The growth trajectory of the business prior to the late payment issues may influence the outcomes of the business after the late payment issues.
Age[53]	The age of the business in 2015.	More established businesses may be better able to deal with and manage late payment issues.
Closure or transfer over the next three years[54]	Whether the respondent expected the business to close or ownership to be transferred in the next 3 years in 2015.[55]	A business that expects to cease trading in the near future would be more likely to actually cease trading in the near future.

[48] This was coded into Primary/Manufacturing (SIC sections A-E), Construction (SIC section F), Distribution (SIC section G-I), Business Services (SIC sections J-N) and Other Services (SIC sections P-S).
[49] This was coded according to the standard twelve nations and regions of the UK: Nine English regions, and Scotland, Wales and Northern Ireland.
[50] This was coded according to Micro (0-9), Small (10-49) and Medium (50-249). Given the cost estimation is done at the size class level treatment businesses were matched to control businesses in the exact same size class.
[51] This was coded into the bands less than £100k, £100k to £500k, £500k to £5 million and £5 million or more.
[52] This was coded into the bands decreased by over 5%, decreased by less than 5%, increased by less than 15%, increased by at least 15%, N/A (new firm).
[53] This was coded into the bands less than 5 years, 5 to 10 years, 10 to 20 years and more than 20 years.
[54] This variable was coded as expect closure in the next 3 years, expect transfer of ownership in the next 3 years, neither or unknown. Treatment businesses were matched to control businesses which gave the exact same answer to this question in the analysis of the impact of late payments on business survival.
[55] 2016 if the businesses did not participate in the LSBS in 2015.

Variable	Description	Explanation
Expect growth over the next three years[56]	Whether the respondent expected the business to grow in the next 3 years in 2015.	A business that expects to grow may be more likely to invest or less likely to cease trading.
Investment growth[57]	Investment growth from 2014 to 2015.	A business ramping up its investment over the previous year may be more likely to continue to invest going forward.
Fully or partly owned by another company	Whether the business was fully or partly owned by another company in 2015.[58]	The ownership structure of a business may influence its propensity to have cash flow issues and its investment.

The PSM substantially reduced differences between the two groups. In the case of the analysis of the impact of late payment on business survival the reduction was slightly over a half. In the case of the analysis of the impact of late payment on investment, the reduction was approximately one third. Table 33 and Table 34 illustrate this reduction in differences between the treatment and control group across the different characteristics as a result of the PSM, for the survival and investment analyses respectively.

[56] This variable was coded into not expected to grow, expect 1%-24% growth, expect 25%+ growth and unknown.
[57] This variable was coded as decreased by over 90%, decreased by between 30% and 90%, decreased by less than 30%, increased by less than 80%, increased by 80% to 200%, increased by over 200%, incalculable. Treatment businesses were matched with control businesses with the same ownership structure in the analysis of the impact of late payments on investment.
[58] This variable was only available in the 2015 wave of the LSBS and as such this variable is coded as unknown for businesses that did not answer that wave of the survey.

Table 33: Balance tables - analysis of the impact of late payments on business survival

Characteristic	Average difference (pre-PSM)	Average difference (post-PSM)
Sector	3.4%	4.5%[59]
Region	2.0%	1.6%
Employment	5.4%	0.0%
Turnover	3.2%	2.8%
Turnover Growth	4.6%	2.2%
Age	7.8%	2.1%
Closure or transfer over the next three years	0.2%	0.0%
Expected growth over the next three years	6.4%	2.4%
Average	**4.1%**	**2.0%**

Source: London Economics analysis

Table 34: Balance tables - analysis of the impact of late payments on investment[60]

Characteristic	Average difference (pre-PSM)	Average difference (post-PSM)
Sector	3.1%	2.5%
Region	2.2%	2.5%
Employment	5.3%	0.0%
Turnover	4.7%	3.8%
Turnover Growth	4.6%	2.0%
Age	7.3%	5.7%
Closure or transfer over the next three years	1.2%	0.0%
Expected growth over the next three years	5.7%	2.5%
Investment growth	2.7%	0.0%
Fully or partly owned by another company	0.5%	5.9%
Average	**3.7%**	**2.5%**

Source: London Economics analysis

Once the PSM was complete, the final step in preparing the sample for analysis was to ensure that the sample was representative. The LSBS and IDBR overrepresent small and medium sized businesses (compared to micro businesses). The treatment and control groups were reweighted by size such that the distribution by size class matched that of businesses reporting a big late payment problem in 2023 (see Table 8).

Analysis of business survival

[59] The PSM reduces the overall differences between the treatment and control groups, but cannot guarantee that the groups are more similar on any specific characteristic. The average difference for some characteristics can therefore be higher post-PSM, compared to pre-PSM.

[60] This table specifically relates to the analysis of the impact of late payments on investment in 2017, the analysis samples are slightly different for the analyses also using 2018 and 2019 data however the performance of the PSM is very similar.

It was found that late payment problems had a statistically significant and positive impact on the likelihood of business closure. Table 35 provides the results of the analysis for the baseline model as well as the robustness check (described above).

Table 35: Analysis of the impact of late payments on business survival

Treatment condition	Treated	Share closed by 2017	Share closed by 2018	Share closed by 2019	Sample size
Baseline	No	2%	2%	7%	157
Baseline	Yes	9%	14%	20%	143
Baseline	Impact estimate	7%	11%**	14%*	300
Robustness check	No	8%	13%	19%	102
Robustness check	Yes	13%	19%	28%	101
Robustness check	Impact estimate	5%	6%	9%	203

*Source: London Economics analysis. Note: **=p<0.05, *=p<0.1*

The analysis using the more restrictive robustness check definition also found that business closure rates were higher for businesses with a big late payment problem than for similar businesses which did not have those problems. As this definition is more restrictive, the sample size is smaller and a larger impact would be needed to obtain statistical significance. The fact that the business closure rates are higher for both the treatment and control group under the alternative definition is to be expected, given that businesses responding to future waves of the LSBS (and therefore not closing) are excluded.

Analysis of investment

Data from FAME was used in order to measure investment made by firms. Investment is not provided in the data, and so a proxy[61] was constructed using fixed assets:

Equation 2: $Investment_t = Fixed\ assets_t - Fixed\ assets_{t-1} + Depreciation_t$

Where this proxy implies a negative value for investment, this was set to zero. For the purposes of the analysis, a log transformation[62] was applied to the investment variable. The difference-in-difference analysis is characterised by the following equation for business *i* at time *t*:

Equation 3: $Investment_{it} = \beta_0 + \gamma LPP_i + \delta I_t + \theta(LPP_i * I_t) + \varepsilon_{it}$

- $Investment_{it}$ is the outcome variable of interest, the level of investment.[63]
- β_0 is a constant term.

[61] The limitations of this proxy are discussed later in this annex.
[62] Specifically, the transformation was log(x+1).
[63] In the models assessing the impact over a longer time period (i.e. 2018 and 2019) this reflects average annual investment across the period (i.e. 2017 and 2018 or 2017, 2018 and 2019).

- LPP_i is a dummy variable indicating whether the business is in the treatment or control group.
- I_t is a dummy variable indicating whether the given observation is pre- or post-treatment.
- $LPP_i * I_t$ is an interaction term. θ is the coefficient of interest in the model, reflecting the difference in investment between the treatment and control groups before and after the late payment issues materialised.
- ε_{it} is an idiosyncratic error term.

The results of the analysis (including the robustness check) are provided in Table 36.
The two columns related to each time period reflect the two different treatment definitions used (see the final row of the table). Across all of the models, the coefficient related to the impact of late payments on investment (Treatment post interaction) is not statistically significant. The same can be said for the 'Post' coefficient (which reflects the difference in annual investment between the pre- and post-treated period for businesses which did not have late payment issues) and the 'Treatment' coefficient (which reflects the difference in investment in the pre-treatment period between businesses in the treatment and control group). As discussed above, the absence of a statistically significant impact estimate does not imply there is not an impact.

Table 36: Analysis of the impact of late payments on investment

Indicator	Statistic	2016 to 2017	2016 to 2017	2016 to 2018	2016 to 2018	2016 to 2019	2016 to 2019
Treatment post interaction	Coef	-0.229	0.592	0.535	0.656	0.148	0.718
Treatment post interaction	SE	(0.664)	(0.536)	(0.714)	(0.692)	(0.759)	(0.620)
Post	Coef	0.115	-0.271	-0.164	0.456	0.287	0.281
Post	SE	(0.500)	(0.356)	(0.515)	(0.514)	(0.584)	(0.441)
Treatment	Coef	-0.170	0.027	-0.175	0.028	-0.184	0.035
Treatment	SE	(0.491)	(0.446)	(0.526)	(0.446)	(0.556)	(0.446)
Constant	Coef	1.127***	0.562	1.129***	0.557	1.205***	0.553
Constant	SE	(0.331)	(0.340)	(0.355)	(0.340)	(0.373)	(0.340)
Observations	N/A	314	190	298	178	286	170
R-squared	N/A	0.011	0.043	0.010	0.137	0.016	0.133
Treatment definition	N/A	Base	Robust	Base	Robust	Base	Robust

Source: London Economics analysis. Note: Coef=Coefficient. SE=Standard Error. Base=Baseline. Robust=Robustness check. Details on the definition of the baseline and robustness check definitions can be found earlier in the 'Econometric approach' section of this annex.

The key assumption for validity of a difference-in-difference analysis is the common trends assumption. That is to say that, absent the impact of late payments, the investment trajectory of the treatment and control groups would be the same. This was tested econometrically by running the same model as above, but using the two years of data prior to the impact of late payment (i.e. 2014 and 2015). The lack of a statistically significant estimate for the 'Treatment and 2015 interaction' variable means that the common trends assumption is not rejected. In other words, the treatment and control groups did not follow a statistically different path of investment in 2014 and

2015. Table 37 presents the results of this analysis. As above, the different columns refer to the different analysis samples for each time period covered by the main analysis (e.g. the 2016 to 2017 columns in the table below relate to the 2016 to 2017 columns in the table above) as well as the definition of the treatment.

Table 37: Common trends analysis

Indicator	Statistic	2016 to 2017	2016 to 2017	2016 to 2018	2016 to 2018	2016 to 2019	2016 to 2019
Treatment and 2015 interaction	Coef	0.127	-0.323	0.127	-0.355	0.146	-0.359
Treatment and 2015 interaction	SE	(0.759)	(0.737)	(0.759)	(0.794)	(0.756)	(0.794)
2015 dummy	Coef	-0.500	0.006	-0.501	0.047	-0.520	0.050
2015 dummy	SE	(0.603)	(0.526)	(0.603)	(0.554)	(0.599)	(0.555)
Treatment	Coef	-0.420	-0.134	-0.425	-0.238	-0.445	-0.230
Treatment	SE	(0.532)	(0.407)	(0.532)	(0.437)	(0.528)	(0.437)
Constant	Coef	1.693***	1.475***	1.696***	1.574***	1.719***	1.570***
Constant	SE	(0.476)	(0.327)	(0.476)	(0.346)	(0.471)	(0.346)
Observations	N/A	272	182	264	172	258	164
R-squared	N/A	0.036	0.020	0.036	0.030	0.038	0.029
Treatment definition	N/A	Base	Robust	Base	Robust	Base	Robust

Source: London Economics analysis. Note: Coef=Coefficient. SE=Standard Error. Base=Baseline. Robust=Robustness check.

Quantifying the costs of late payments

This report provides estimates for various costs arising from late payments, measured in 2024/25 prices. Several of these (the cost of servicing additional debt finance taken on as a result of late payments, the cost of engaging debt collection agencies, the costs of supply chain finance, invoice discounting, invoice factoring and selling overdue invoices, legal costs of pursuing unpaid debtors and the current value of late payments in the economy) are calculated directly by scaling up (by the number of active business in each size class) the average cost (by size class) from the YouGov/IFF Research survey.[64] The calculation approach is illustrated in Table 38 for the total value of late payments, but the methodology is identical for the other costs mentioned above.

Note that the number of businesses in the table below, from the DBT Business Population Estimates, is used to aggregate all of the estimates of costs for businesses at the economy level.

[64] Costs were scaled to the business population using the DBT Business Population Estimates 2024. These can be found on the gov.uk.

Table 38: Example calculation – the value of late payments in the economy

Size class (employees)	Average value of late payments (all businesses, £)	Number of businesses	Value (£m)
Micro (0 - 9)	2,480	5,233,090	12,978
Small (10 - 49)	25,855	219,900	5,686
Medium (50 - 249)	106,357	37,750	4,015
Large (> 250)	447,987	8,250	3,696
Total	4,796[65]	5,498,990	26,375

Source: London Economics analysis of YouGov/IFF Research survey and DBT Business Population Estimates 2024. N=660 (Micro), N=396 (Small), N=258 (Medium), N=51 (Large).

It is also possible to perform this calculation based on the average value of late payments among businesses affected by late payment and the number of businesses affected by late payment, as illustrated in Table 39.

Table 39: Example calculation – the value of late payments in the economy for businesses affected by late payment

Size class (employees)	Average value of late payments (businesses affected by late payment, £)	Number of businesses affected by late payment	Value (£m)
Micro (0 - 9)	9,214	1,408,593	12,978
Small (10 - 49)	52,081	109,169	5,686
Medium (50 - 249)	193,635	20,735	4,015
Large (> 250)	703,479	5,254	3,696
Total	17,085	1,543,751	26,375

Source: London Economics analysis of YouGov/IFF Research survey and DBT Business Population Estimates 2024. N=660 (Micro), N=396 (Small), N=258 (Medium), N=51 (Large).

The cost of staff time spent chasing overdue invoices is calculated by multiplying the average number of hours spent chasing overdue invoices (from the YouGov/IFF Research survey) by £16.92. The figure of £16.92 is derived by taking the average wage for 'Administrative & Secretarial' activities from ASHE (£13.50),[66] uplifting this by an estimate for the share of non-wage labour costs[67] (17.2%) and applying a GDP deflator[68] (1.04) to convert the estimate into FY 24/25 prices.

In order to calculate the cost of late payments resulting from business closure it was first necessary to estimate the number of businesses (by size class) which close every year because of late payments. This was done by taking our econometric estimate which provides the causal impact of late payments on business mortality in percentage point terms, and multiplying by the number of businesses in each size class (from the DBT Business Population Estimates), and the proportion

[65] This is a weighted (by the number of businesses in each size class) average.
[66] The data can be found on the ONS website.
[67] The data can be found on the Eurostat website.
[68] ASHE (revised) data available at the time of this report refers to 2023. These costs are therefore uplifted for inflation to ensure consistent FY 24/25 price years throughout the report. GDP deflator data can be found on the gov.uk website.

by size class which had a big late payment problem in 2023 (from the LSBS, see Table 8). The annual impact is calculated by dividing the estimate for the impact on closures over the period 2016 to 2019 (14%, see Table 22) by four (as 14% is the impact over a four year period). This yields the following estimates for the number of businesses which close each year as a result of late payments. The low and high estimates are calculated using the lower and upper bound of the 90% confidence interval regarding the impact of late payments on closure.

Table 40: Number of businesses that close each year as a result of late payments

Size class	Low estimate	Central estimate	High estimate
Micro (0 - 9)	1,897	13,945	25,943
Small (10 - 49)	59	436	811
Medium (50 - 249)	12	86	161
Total	1,968	14,468	26,914

Source: London Economics analysis

Based on the estimates for the number of businesses that close each year due to late payment the estimated number of associated jobs lost (approximately 40,000) is also calculated. This is done by multiplying the estimated number of businesses that close in each size class (from the table above) by the average number of employees per business in each size class (derived from the DBT Business Population Estimates).[69]

As large businesses are not included in the LSBS, it is not possible to estimate the number of large businesses that close each year as a result of late payments. As shown in Table 25, large businesses were less likely to report that late payments presented a substantial risk to their survival than SMEs, and therefore for the purposes of this analysis it is (conservatively) assumed that no large businesses cease trading as a result of late payments problem. Given the estimates for the number of businesses in each size class which close each year as a result of late payments in the table above, the loss in turnover for the economy can be calculated using data on average turnover by size class from the DBT Business Population Estimates.

Estimates for average turnover by size class are provided in Table 41. In order to provide context to some of the figures in Chapter 2, estimates are also provided for the costs as a proportion of the average turnover of businesses with late payment problems. This research has not collected any data on how (within a given size class) average turnover varies between businesses which do and do not have a late payment problem.

As such, at the size class level the average turnover estimates are the same in both columns. However, some information on how many businesses are affected by late payment by size class was collected as part of this research (as shown in Table 11**Error! Reference source not found.**). Indeed, larger business are more likely to be affected by late payment, and therefore the average turnover among businesses affected by late payment is larger than the average turnover of all businesses.[70] Therefore, the estimate for the average turnover across businesses affected by late payment is larger than the average turnover across all businesses.

[69] These are 1.7 for micro businesses, 19.6 for small businesses and 97.4 for medium sized businesses.
[70] Note that this assumes, as highlighted in Table 41, that the turnover among businesses which are and are not affected by late payment but are within the same size class have on average the same turnover.

Table 41: Average turnover by size class

Size class	Average turnover (all businesses, £)	Average turnover (businesses affected by late payment, £)
Micro (0 - 9)	199,721	199,721
Small (10 - 49)	3,549,627	3,549,627
Medium (50 - 249)	24,541,219	24,541,219
Large (250+)	305,509,455	305,509,455
Average[71]	958,832	1,802,595

Source: London Economics analysis of YouGov/IFF Research Survey and DBT Business Population Estimates

This turnover estimate then converted to Gross Value Added (GVA) using estimates for the ratio of GVA to turnover (0.5) as reported in the ONS Input-Output tables.[72]

Data from the YouGov/IFF Research survey provides estimates for the average amount of investment foregone (by size class) as a result of late payment issues. This is then converted to a GVA impact using a multiplier for the GVA impact of investment. There is no standard multiplier for this, but existing research provides some insight. An analysis published by DIT in 2021 suggests that a £1 million investment in the UK boosts GVA by approximately £98,000 (i.e. roughly 10% of the boost in investment).[73] Another publication from the Institute for Government suggests that the elasticity of GDP with respect to the capital stock is between 0.2 and 0.3.[74] Given the size of the UK's capital stock (£5.1 trillion)[75] and GDP (£2.85 trillion)[76] this suggests that an increase in investment would boost GDP by 11%-17% of the value of the investment. It is therefore assumed in the quantification of the impact of late payment on investment that foregoing investment due to late payments has a cost for the economy equal to 12.5% of the value of that foregone investment.

[71] These averages are weighted average by size class. The reason that the weighted average is higher for businesses affected by late payment is that micro businesses (which have the lowest turnover) are less likely to be affected by late payment.
[72] The Input-Output tables can be found on the ONS website. The 0.5 estimate is obtained from the 'IOT' sheet by dividing gross value added by total output at basic prices.
[73] The report is available on the gov.uk website.
[74] The report is available on the Institute for Government website.
[75] ONS (2024). The national balance sheet and capital stocks, preliminary estimates, UK: 2024. Available on the ONS website.
[76] House of Commons (2025). Gross domestic product (GDP): Economic indicators. Available in the House of Commons Library.

Annex 2 – Primary data collection

This annex provides detail on the primary data collection conducted as part of this research. This includes the methodological approach, the characteristics of the survey sample and the survey questionnaire.

Methodology

The survey was delivered through a mix of online and CATI (Computer Assisted Telephone Interviewing). The reason for this was that while using an online survey enables a greater number of total responses within a given budget, CATI can be more effective for reaching larger businesses. The online survey was delivered using YouGov's panel, while the CATI survey was delivered by IFF Research. As illustrated in the section below, small, medium and large businesses were oversampled in the fieldwork to ensure that sample sizes were large enough for analysis by size class.

The survey questionnaire was developed by London Economics, with two rounds of feedback received from DBT, OSBC, YouGov, IFF Research and the academic technical advisors. Once the questionnaire was signed off by DBT and OSBC, an online pilot was conducted by YouGov to test the functionality, length and understanding of the questions. The online pilot took place between 03/01/25 and 07/01/25. Participants in the pilot were able to provide feedback on whether they fully understood what was being asked of them. Following the pilot, some minor changes were made to the wording of questions 3, 13 and 27 (the survey questionnaire is provided later in this annex).

The main fieldwork ran from 15/01/25 and 07/02/25. Both IFF and YouGov aimed to achieve a mix of business sizes and sectors (with the caveat that the online survey was only targeted at SMEs and the CATI survey only included medium and large sized businesses). Respondents to the CATI survey were given the option to contact a nominated member of the DBT project team in order to verify that the survey was being conducted for the purposes of this research. Once the fieldwork period closed, London Economics, YouGov and IFF Research prepared a single consolidated dataset. As part of this process, verbatim responses to questions were manually recoded where possible to fit in the existing code frame. The final dataset was weighted by size (employment) and sector.

Sample characteristics

Table 42 provides an overview of the survey sample.

Table 42: Survey sample composition by size class

Size class	Online responses	CATI responses	Total responses
Micro	680	0	680
Small	437	0	437
Medium	225	56	281
Large	0	57	57

Source: YouGov/IFF Research Survey

Data cleaning

The survey data was used to calculate several of the costs arising from late payments. Before the calculation of the costs, the following data cleaning was undertaken:

- Firstly, banded responses were converted into numerical estimates. For example, in question 23 of the survey businesses were asked how much they spent on legal proceedings against their customers in the last year. If they were unable to provide an exact numerical answer, they were presented with a series of bands (£1-£500, £501-£1,000 etc) and asked to indicate how much they spent. Responses to banded questions were converted into a numerical variable by taking the midpoint of the band. In the case of bands with no upper limit (e.g. more than £1 million), double the lower limit of the band was assigned (i.e. £2 million in this case).
- After the numerical cost variables had been created, it was also necessary to impute the costs for businesses who did not answer certain questions in the survey. For example, a business that indicated (at question 10) that they did not instruct a law firm to take action against a customer in the last year clearly had a zero legal cost as a result of late payment during that year. Similarly, businesses that indicated they do not offer trade credit to their business customers do also not incur any costs as a result of late payments.
- The final step was to assess whether any of the responses seemed implausible. Implausible responses could arise as a result of a mis-click or typo or due to misunderstanding the question. For example, in question 15 it is conceivable that some businesses thought they were being asked to provide the value of debt finance they took out as a result of late payment rather than the cost of servicing that debt.

The conditions for removal of outliers vary based on the researchers view of the plausibility individual responses. In the case of the current value of late payments or the amount of time spent chasing, values which were particularly high relative to the turnover or size of the business were excluded. For the costs associated with late payments, outliers were also identified based on the implied magnitude of the cost relative to turnover or size but also based on the indicated value of late payments. This is because a large response is more likely to be erroneous if the business does not have a large value of late payments, given that it would not make sense for a business to incur large costs to mitigate a very small late payment problem.

For the direct financial costs arising from late payments, the outlier cleaning process included the recoding of observations to missing in the following cases (details of the thresholds for each cost can be found in the table below).

1. The indicated cost is large relative to the turnover of the business.
2. The indicated cost is large relative to the turnover of the business and the value of late payments the business experienced at the time of the survey.
3. The indicated cost is large for businesses for which no turnover data was available.
4. The indicated cost is large in monetary terms for micro or small businesses.
5. The indicated cost is large in monetary terms and relative to the value of late payments the business experienced at the time of the survey.

Table 43 summarizes the cases in which variables were recoded to missing as well as the proportion of observations affected (i.e. the observation was excluded from the average calculation for a given cost if any of the conditions in the corresponding row of the table below apply). Whilst the general cleaning process is the same for all of the costs, the numerical thresholds vary across the different costs. The reason for this is for a given business, some costs would have a higher

plausible value than others (in the view of the researchers). For example, many capital investment projects are discrete and therefore if a business decides to defer or cancel an investment as a result of late payments, the size of that investment could be quite significant relative to the turnover of the business. In contrast, it would be highly unlikely that the interest payments on debt finance taken out due to late payments would be as significant relative to the turnover of the business.

Table 43: Steps taken to clean outliers

Variable	Cases where the variable was recoded to missing	Proportion of responses affected
Current value of late payments	1. Greater than 50% of turnover 2. Greater than £500,000 for micro businesses 3. Greater than £2,500,000 for small businesses 4. Greater than £12,500,000 for medium sized businesses.	1%
Number of annual staff hours spent chasing late payments	1. The number of hours is such that it is estimated that over 10%[77] of turnover is spent on staff costs chasing late payments 2. Greater than 3,080[78] for micro businesses 3. Greater than 15,400[79] for small businesses 4. Greater than 77,000[80] for medium sized businesses.	<0.5%
Value of investment foregone	1. Greater than 100% of turnover 2. Greater than 25% of turnover and 25 times the current value of late payments 3. Greater than £1,000,000 if no turnover data is available. 4. Greater than £500,000 for micro businesses or than £2.5 million for small businesses 5. Greater than £1,000,000 and 10 times the current value of late payments	1%
Cost of servicing additional debt finance taken out as a result of late payment	1. Greater than 10% of turnover 2. Greater than 5% of turnover and 5 times the current value of late payments 3. Greater than £250,000 if no turnover data is available 4. Greater than £50,000[81] for a micro business and £250,000[82] for a small business	1%

[77] Given the estimated labour cost of £16.92 per hour, this means that the response is considered to be an outlier if the business is indicating that it spends more than 8.5% of its turnover on staff costs to chase late payments.
[78] This is equivalent to approximately 2 FTE.
[79] This is equivalent to approximately 10 FTE.
[80] This is equivalent to approximately 50 FTE.
[81] The threshold for micro businesses is lowered to £30,000 when turnover is missing, as when turnover is missing businesses are not filtered out by conditions 1 and 2.
[82] The threshold for small businesses is lowered to £150,000 when turnover is missing, as when turnover is missing businesses are not filtered out by conditions 1 and 2.

Variable	Cases where the variable was recoded to missing	Proportion of responses affected
	5. Greater than £500,000 and double the current value of late payments	
Cost of hiring a debt collection agency	Same as previous	1%
Cost of supply chain finance, invoice discounting, invoice factoring and selling overdue invoices	Same as previous	2%
Cost of hiring a law firm to take action against unpaid debtors	Same as previous	1%

Survey questionnaire

1. [CATI only] How many people (including yourself) are currently employed by your business in the UK?

   a) 0 (i.e. sole trader with no employees)
   b) 1-9
   c) 10-49
   d) 50-249
   e) 250+
   f) Don't know

CATI ONLY: THANK AND CLOSE (SCREEN OUT) IF ANSWERED a) or b) or c) or f) at Q1.

2. Does your business offer **trade credit** to business customers? By trade credit we mean agreements between you and your customer to allow them to buy your goods or services without making payment immediately. An example of trade credit would be providing your customer with 30 days to pay after you send them an invoice.

   a) Yes
   b) No
   c) Don't know

IF ANSWERED c) at Q2 screen out as don't have sufficient knowledge to answer the survey.
If answered b) at Q2 thank and close as the rest of the questions would not be relevant for them

SHOW/TELL ALL

We will now ask you about the experience of your business with **late payments**. By late payments we mean **payments by your customers after the agreed contractual payment date (i.e. overdue), or contractual payment terms with your customers longer than 60 days.**

ASK ALL

3. Does your business have any overdue sales invoices or any outstanding invoices with payment terms longer than 60 days as of today?

    a) Yes, my business has **overdue customer sales invoices** and outstanding customer invoices with **payment terms longer than 60 days** as of today
    b) Yes, my business has **overdue customer sales invoices** but not outstanding customer invoices with payment terms longer than 60 days as of today
    c) Yes, my business has outstanding customer invoices with **payment terms longer than 60 days** but not overdue customer invoices as of today
    d) **No, my business does not** have outstanding customer invoices or outstanding customer invoices with payment terms longer than 60 days as of today
    e) Don't know

SCREEN OUT (OR FIND DIFFERENT PERSON IN COMPANY IN CATI) IF ANSWERED e) at Q3 as not appropriate to answer the survey

ASK IF ANSWERED a), b) or c) at Q3

4. What proportion of the sales invoices you have issued, as measured by the total number of your issued sales invoices, would you estimate are [overdue or have payment terms of longer than 60 days [(if a) at Q3)]/overdue [if b) at Q3]/have payment terms of longer than 60 days [if c) at Q3]] as of today?

    a) 1-10% (code 1)
    b) 11-24% (code 2)
    c) 25-49% (code 3)
    d) 50-74% (code 4)
    e) 75% or more (code 5)
    f) Don't know (code 6)

ASK IF ANSWERED a), b) or c) at Q3

5. What proportion of the sales invoices you have issued, as measured by the total **value** of your issued sales invoices, would you estimate are [overdue or have payment terms of longer than 60 days [(if a) at Q3)]/overdue [if b) at Q3]/have payment terms of longer than 60 days [if c) at Q3]] as of today?

    a) 1-10% (code 1)
    b) 11-24% (code 2)
    c) 25-49% (code 3)
    d) 50-74% (code 4)
    e) 75% or more (code 5)
    f) Don't know (code 6)

ASK IF ANSWERED a), b) or c) at Q3

6. What is the approximate **total value** of your invoices that are [overdue or have payment terms of longer than 60 days [(if a) at Q3)]/overdue [if b) at Q3]/have payment terms of longer than 60 days [if c) at Q3]] as of today?

   a) [INSERT NUMBER]
   b) Don't know

ASK IF ANSWERED b) at Q6

7. And would you say that the total value of your invoices that are [overdue or have payment terms of longer than 60 days [(if a) at Q3)]/overdue [if b) at Q3]/have payment terms of longer than 60 days [if c) at Q3]] as of today is…

   a) £1-£1,000 (code 1)
   b) £1,001-£5,000 (code 2)
   c) £5,001-£10,000 (code 3)
   d) £10,001-£20,000 (code 4)
   e) £20,001-£50,000 (code 5)
   f) £50,001-£100,000 (code 6)
   g) £100,001-£1,000,000 (code 7)
   h) More than £1 million (code 8)
   i) Don't know (code 9)

ASK IF ANSWERED a) or b) at Q3

8. Thinking about all of your business' **overdue invoices** today, which of the following would you say accounts for highest share of the **value** of your overdue invoices?

   a) 1 to 14 days overdue
   b) 15 to 29 days overdue
   c) 30 to 59 days overdue
   d) More than 60 days overdue
   e) Don't know

ASK IF IF ANSWERED a), b) or c) at Q3

9. Thinking about all of your business' invoices that are [overdue or have payment terms of longer than 60 days [(if a) at Q3)]/overdue [if b) at Q3]/have payment terms of longer than 60 days [if c) at Q3]], would you say these invoices are mostly from UK-based customers or mostly from non-UK customers?

a) All of our invoices that are [overdue or have payment terms of longer than 60 days [(if a) at Q3)]/overdue [if b) at Q3]/have payment terms of longer than 60 days [if c) at Q3]]are from UK customers
b) Most of our invoices that are [overdue or have payment terms of longer than 60 days [(if a) at Q3)]/overdue [if b) at Q3]/have payment terms of longer than 60 days [if c) at Q3]] are from UK customers but some are from non-UK customers
c) Roughly half of our invoices that are [overdue or have payment terms of longer than 60 days [(if a) at Q3)]/overdue [if b) at Q3]/have payment terms of longer than 60 days [if c) at Q3]] are from UK customers and roughly half are from non-UK customers
d) Most of our invoices that are [overdue or have payment terms of longer than 60 days [(if a) at Q3)]/overdue [if b) at Q3]/have payment terms of longer than 60 days [if c) at Q3]] are from UK customers but some are from non-UK customers
e) All of our invoices that are [overdue or have payment terms of longer than 60 days [(if a) at Q3)]/overdue [if b) at Q3]/have payment terms of longer than 60 days [if c) at Q3]] are from foreign customers
f) Don't know

ASK ALL

10. We will now ask you about the impact of **late payments** on your business. By late payments we mean **payments by your customers after the agreed contractual payment date (i.e. overdue), or contractual payment terms with your customers longer than 60 days.**

ONLINE: **Over the last year**, has your business done any of the following **as a result of late payments**? Please select all that apply.

As a result of late payments have you ….

Present grid as follows in online:

	Yes (code 1)	No (code 2)	Don't know (code 3)
Decided to invest less than the business would have done (Q10_1)	○	○	○
Decided to reduce headcount more than the business would have done (Q10_2)	○	○	○
Decided to take out debt finance that the business would not have taken out (Q10_3)	○	○	○
Decided to inject personal funds into the business that would otherwise not have been injected (Q10_4)	○	○	○
Decided to raise equity finance that the business would not have raised (Q10_5)	○	○	○
Spent staff time chasing unpaid debtors? (Q10_6)	○	○	○
Commissioned a debt collection agency to chase debtors? (Q10_7)	○	○	○
Used supply chain finance, invoice factoring, invoice discounting or sold overdue invoices to a debt recovery organization (Q10_8)	○	○	○
Raised prices of the goods and services that the business sells (Q10_9)	○	○	○
Started legal proceedings against one of your customers that have not paid on time (Q10_10)	○	○	○

CATI: Over the last year, has your business [INSERT OPTIONS FROM ABOVE, USE SAME CODES AS ONLINE. ROTATE] as a result of some of **late payments**?

IF ANSWERED NO OR DK TO ALL ITEMS IN Q10 SKIP TO Q25

ASK IF responded yes at Q10_1

11. You said that your business would have made more investment in the last year if not for late payments. What would be the total value (in GBP) of the **additional** investment your business would have made in the last year if your business never had any late payments? If you are not sure, please provide your best estimate.

    a) [provide number]
    b) Don't know

ASK IF ANSERED b) at Q11

12. Would you say the amount of additional investment your business would have made in the last year if it had not had any late payments would have been…?

    a) £1-£1,000 (code 1)
    b) £1,001-£10,000 (code 2)
    c) £10,001-£100,000 (code 3)
    d) £100,001-£1,000,000 (code 4)
    e) £1,000,001-£10,000,000 (code 5)
    f) More than £10,000,000 (code 6)
    g) Don't know (code 7)

ASK IF responded yes at Q10_1

13. And what type of investment would this have been? If there would have been more than one type of investment, please indicate the type that would have accounted for the largest total value of the investment that was not undertaken.

    a) Plant or machinery (code 1)
    b) Research and development (code 2)
    c) Training and skills development for employees (code 3)
    d) Marketing (code 6)
    e) Other (code 4)
    f) Don't know (code 5)

ASK IF responded yes at Q10_3

14. You said that your business took on debt finance in the last year that it would not have taken on if all of it had not had any late payments. What kind of debt was this? If there is more than one, please [online:select/CATI:tell me] the type that accounts for the largest value of debt finance.

a) Loan (code 1)
b) Invoice finance (code 2)
c) Trade credit (code 3)
d) Asset finance (code 4)
e) Other [please specify] (code 5)
f) Don't know (code 6)

ASK IF responded yes at Q10_3

15. And what is the annual cost of servicing this extra debt? If you are not sure, please provide your best estimate.

a) [provide number]
b) Don't know

ASK IF RESPONDED b) at Q15

16. Would you say that the annual cost of servicing this extra debt is…?

a) £1-£100 (code 1)
b) £101-£1,000 (code 2)
c) £1,001-£10,000 (code 3)
d) £10,001-£100,000 (code 4)
e) More than £100,000 (code 5)
f) Don't know (code 6)

ASK IF responded yes at Q10_6

17. You said that your business does spend staff time chasing late payments. In the last month, how many hours would you say have been spent by your staff chasing late payment? If you are not sure, please provide your best estimate.

a) [provide number]
b) Don't know

ASK IF responded b) at Q17

18. And would you say that the number of hours spent by the staff of your business chasing late payments in the last month is…?

a) Less than one hour (code 1)
b) More than one hour, less than 2 hours (code 2)
c) More than 2 hours, less than 5 hours (code 3)
d) More than 5 hours, less than 10 hours (code 4)
e) More than 10 hours, less than 50 hours (code 5)

f) More than 50 hours, less than 100 hours (code 6)
g) More than 100 hours (code 7)
h) Don't know (code 8)

ASK IF responded yes at Q10_7

19. You said that your business has commissioned a debt collection agency to chase unpaid debts during the last year. How much has your business spent commissioning debt collection agencies in the last year? If you are not sure, please provide your best estimate.

a) [provide answer]
b) Don't know

ASK IF responded b) at Q19

20. Would you say that the amount your business has spent commissioning debt collection agencies in the last year is…?

a) £1-£100 (code 1)
b) £101-£1,000 (code 2)
c) £1,001-£5,000 (code 3)
d) £5,001-£10,000 (code 4)
e) £10,001-£100,000 (code 5)
f) More than £100,000 (code 6)
g) Don't know (code 7)

ASK IF responded yes to Q10_8

21. You said that your business had used supply chain finance, invoice discounting, invoice factoring or sold overdue invoices to a debt recovery agency during the last year. What are the total losses (i.e. the difference between what you would have received without late payments and what you actually received) in the last year for your business from undertaking these activities? If you are not sure, please provide your best estimate.

a) [Provide answer]
b) Don't know

ASK IF responded b) at Q21

22. Would you say that these losses in the last year would have been…?

a) £1-£100 (code 1)
b) £101-£1,000 (code 2)
c) £1,001-£5,000 (code 3)
d) £5,001-£10,000 (code 4)
e) £10,001-£100,000 (code 5)

f) More than £100,000 (code 6)
g) Don't know (code 7)

ASK IF responded yes to Q10_10

23. You said that your business had started legal proceedings against customers that have not paid you on time during the last year. Please estimate how much you spent in legal fees over the last year on these activities. If you are not sure, please provide your best estimate.

a) [Provide answer]
b) Don't know

ASK IF ANSWERED b) at Q23

24. Would you say the amount spent by your business on legal proceedings against customers that had not paid you on time during the last year were…?

a) £1-£500 (code 1)
b) £501-£1,000 (code 2)
c) £1,001-£5,000 (code 3)
d) £5,001-£10,000 (code 4)
e) £10,001-£50,000 (code 5)
f) £50,001-£100,000 (code 6)
g) £100,001-£1,000,000 (code 7)
h) More than £1 million (code 8)
i) Don't know (code 9)

ASK ALL EXCEPT THOSE SKIPPING TO THE FINAL QUESTION AFTER Q10

25. To what extent do late payments pose a risk for the survival prospects of your business?

a) No risk at all (code 1)
b) A small risk (code 2)
c) A moderate risk (code 3)
d) A major risk (code 4)
e) Don't know (code 5)

ASK ALL

26. Does your business use any software to manage its invoices (e.g. Xero, Sage)?

a) Yes
b) No
c) Don't know

ASK ALL, DO NOT ROTATE

27. What, if anything has your business implemented over the last year in order to mitigate the impact of late payments? Please select all that apply.

    a) Introduced or increased an overdue penalty on your sales invoices (code 1)
    b) Decided not to operate in a particular market segment which has a significant proportion of customers that pay late (code 2)
    c) Avoided doing businesses with specific customers that have a reputation for paying late (code 3)
    d) Chased invoices before the stipulated payment date (code 7)
    e) Requested a PO prior to delivery of the goods/ services (code 8)
    f) Other (open end) (code 4)
    g) Not applicable – our business has not done anything to mitigate the impact of late payments (code 5)
    h) Don't know (code 6)

You have reached the end of the survey. Thank you for your participation.

Annex 3 – Academic literature review and initial methodology

This annex provides detail on a literature review and early methodological work completed, on behalf of DBT, by academics at Aston Business School (Dr. Dalila Ribaudo and Dr. Muntasir Shami). This work took place between January and March 2024, and has informed the research completed by London Economics.[83]

Understanding the late payment problem

Businesses in the UK often offer their customers 'trade credit', where payment by the customer is permitted after the delivery of the goods or services. This can lead to a situation where businesses experience delays in receiving payment, which can cause cash flow problems for businesses. Businesses are impacted both when invoices are paid beyond the agreed or contractual payment date and when long payment terms are imposed.

Importantly, late payment can cause cash flow problems for businesses, incur costs in terms of 'chasing' payments, and in the worst cases force businesses to shut down. Empirical work has mostly focussed on the impact on exit rate and how firms exiting the market may represent the bigger loss to the economy. The pioneering contribution by Wilson et al. (1997) identifies the primary causes for late payment in the UK, and still serves as a fundamental framework for understanding its causes and effects. The main driving forces are:

- **Market Structure:** In markets where dominant buyers hold significant bargaining power, they may exploit their position by demanding extended credit from suppliers. This behaviour is prevalent in markets with competitive supply chains, allowing buyers to dictate credit terms and pay late without fearing a supply loss. Bargaining power may result in longer credit periods, invoice discounts, and high delivery standards, especially in industries like construction and IT provision.
- **Poor Business and Credit Management Practices:** Late payment can also result from inadequate business and credit management. Disputes over product or service quality may lead customers to withhold payments until satisfied. Effective credit management involves establishing clear credit terms, limits, and periods before a transaction. It also requires credit checks on customers to assess their financial health and resolve disputes promptly.
- **Financial Distress and Economic Climate:** Businesses facing financial difficulties, often due to technology changes, management errors, or inefficiencies, may prioritize creditors differently during financial struggles. In times of economic downturns, late payments and business failures may increase. Overtrading in growth phases can also lead small businesses to become late payers.
- **Access to Finance Issues:** Small and growing businesses may encounter cash-flow challenges and late payments when struggling to secure institutional or bank finance. Undercapitalized or inappropriately financed businesses constantly battle with cash-flow issues. Research has shown that credit rationed firms, particularly those serving export

[83] London Economics had no involvement in the preparation of this annex.

markets, tend to delay trade credit payments when reaching their short-term bank finance limits.

The payment terms to which firms must abide is regulated by law. In the UK, *The Late Payment of Commercial Debts (Interest) Act 1998* allows businesses to impose interest and debt recovery costs on late payments and sets default payment terms at 30 days. *The Reporting on Payment Practices and Performance Regulations 2017* requires large businesses to regularly report on their payment performance.

Estimating the economic impact of late payment

What happens when firms fail to pay an invoice? It causes cash flow problems and other issues that firms need to tackle, for example:

- Firms need to chase their creditors. This represent a cost per se, because the time spent in chasing that payment is time foregone to engage in other business activities, i.e. it has an opportunity cost. This is usually estimated by:

Equation 4: $Total\ cost = Number\ of\ hours\ chasing\ payment \times Hourly\ wage$

- To compensate for the unpaid invoices, firms may tap into their overdraft or try to access other forms of credit e.g. a loan. However, this is not available to all firms and oftentimes SMEs do not have the same access to credit of their larger counterparts. One way to estimate this cost is using the Simple Interest Formula:

Equation 5: $Total\ accrued\ interest = Principal\ borrowed\ amount\ (1 + rt)$

Where r is the interest rate, and t is the length of borrowing in months or years.

- When firms can no longer meet its own payment obligations they could shut down and exit the market. This can be considered the biggest costs to the economy. When firms exit the market there is a loss that can be estimated in terms of displaced jobs, lost output or Gross Value Added. The latter aspect is the one most emphasised and addressed in the economic literature.

Equation 6: $GVA\ lost\ = Business\ turnover \times Turnover\ to\ GVA\ ratio$

Contextual academic literature and other research

Late payment creates uncertainty for many creditors and may affect employment strategies. In Germany, 35% of companies reported that late payment strongly influenced their need to lay off employees (similarly 30% in the UK, 28% in Spain, and 25% in France). On average, 40% of European business managers stated that late payment contributed to their decision not to hire new staff, while one out of four European companies mentioned job cuts as a consequence of late payments (Hausemer et al., 2015).

Late payments can also negatively impact the functioning of the internal market and cross-border trade. Many businesses view cross-border trade with businesses or public authorities from other EU Member States as riskier due to the frequency of late payments and uncertainty in dealing with late

payers. Consequently, companies may avoid engaging in cross-border trade, which hampers the functioning of the internal market. Ultimately, late payments can result in insolvency, leading to the loss of 450,000 jobs annually and outstanding debts of EUR 23.6 billion in the EU.

Focusing on bad debt, Intrum Justitia reported that in 2014 total losses for European businesses had increased from 3.0 to 3.1% of revenues, roughly equalling the cost of 8 million jobs (Hausemer et al., 2015). Research by NatWest has revealed that more than a quarter (27%) of small and medium-sized businesses in the UK are owed between £5,000 and £20,000 in unpaid invoices. Late payments have had a widespread impact, with 36% of SMEs reporting that over a third of their monthly payments arrive late.

The situation is particularly dire for London businesses, with 41% experiencing delayed payments. SMEs make up nearly two thirds (61%) of UK employment and play a crucial role in the economy. Over half (55%) report an increase in late payments over the past six months due to rising costs. Spending significant time chasing invoices is also taking its toll on small businesses as many as 31% spend between 21-30 hours per month on this task instead of focusing on customer service or business growth strategies. Cashflow issues are exacerbating the challenges, identified as the most pressing issue for 44% of businesses who struggle to plan effectively or meet financial obligations to suppliers and staff (Natwest, 2023).

According to a survey conducted by Barclays, UK SMEs were owed £8.3 billion at the end of February 2008 due to late payment. The time spent chasing late payers constituted more than four million wasted working hours or 544,640 wasted working days (Paul et al., 2011). Additionally, firms at times utilize downstream cost-shifting needs to delay trade credit payments for more flexible working capital management. However, this will typically have a negative impact on supply chain management. There is a trade-off between the flexibility gained from late payments and the risk of jeopardizing supply chain relationships, which incur high switching costs to replace suppliers (Wu et al., 2020).

Another important impact on businesses is the cost of administrative burdens which can include administrative penalties owed due to late payments. The Federation of Small Businesses (FSB) has found that late payments have a significant impact on small businesses. Specifically, 37% of firms experience cash flow difficulties, and at least 30% are forced to use an overdraft to address the issue. Moreover, chasing late payments creates substantial administrative burdens for small businesses; thirty-five percent report spending an average of 1.2 whole days per month on this task.

The FSB's findings also indicate that late payments can significantly affect business performance: about 20% of small businesses experience reduced profit growth due to them. Additionally, 16% have had to postpone investments, and 8% have delayed hiring new staff, demonstrating a tangible effect on productivity, growth, and overall economic performance.

At the macroeconomic level inflation is key to mention. Inflation reduces the real value of debt, and paying late means paying less. While inflation itself affects late payments only to a limited extent, it may have indirect effects as central banks take action to curb inflation by raising interest rates. This can negatively affect economic growth, firms' liquidity, and their financing options, thus impacting late payments too. Inflation increases business risks by making it more difficult to predict input factor prices. In a high-inflation environment, enterprises may find it challenging to pay their bills when prices sharply increase. During times of high-interest rates, delaying payment becomes very attractive as long as it does not entail paying interest (Hausemer et al., 2015).

Existing econometric approaches

The extant empirical evidence on late payments majorly focusses on to the impact on firm exit. When firms face cash flow issues the ultimate effect is that they exit the market because they cannot meet their payment obligations. Such obligations are established by the law, which intervenes on regulating the maximum payment terms that firms and public authorities must abide to. The most common approach to estimate the causal effects of policy interventions is the Difference-in-Difference research design (DiD). The 'canonical' version of DiD involves two periods and two groups. The untreated group never participates in the treatment, and the treated group becomes treated in the second period, meaning we can observe an average before-after effect.

To estimate the effects of late payments on firm exit rates, Connell (2015) employ a panel data for 17[84] EU countries over the period 2005-2010 across 9 sectors[85]. Regressions are run separately for the effects on firms' exit rates of payment delay in Government-to-Business (G2B) and Business-to-Business (B2B) transactions as it could be argued that past due payments from the private sector are not independent from late payments in the public sector. This consideration might substantiate a bias in the estimations by trying to explain firm exit rates by late payment in the private sector without taking that into account.

The idea is that the effect on private firms of late payments by the public administration could create spillovers to other private firms in the form of late payments in B2B. The effect needs to be analysed based on firm size. Government transactions are more likely to involve large firms, while transactions between private firms are more likely to impact SMEs.

Additional control variables follow the extant literature on determinants of exit rates (Connell, 2014, D'Costa et al., 2024) and these include: investment per person, employment, average size of firm, age of the firm, productivity (measured as labour productivity or Total Factor Productivity, see Levinsohn and Petrin (2003). These variables can be seen as 'sunk costs' in the sense that larger firms have more invested in their workforce, leading to higher costs associated with exiting the market, such as job displacement. Alternative to firm-control variables, sectoral dummies can be included in the model as the level of investments and size of the firm can be very sector-specific. Country fixed effects are also included to control for national time invariant characteristics which are expected to affect exit rates.

Finally, changes in value added at the sectoral level are included to capture changes in the economic cycle, which also allow to indirectly control for financial conditions. An alternative approach could be to include a dummy between 2008-2010, i.e. a 'crisis' dummy. The first approach is preferred because changes in value added also contain information at the sectoral level (investments, taxes, etc).

Conti et al. (2021) study to what extent stricter regulations affect firms' survival, focussing on G2B transactions, exploiting the introduction of the Late Payment Directive (LPD, EU Directive 2011/7/EU)[86] across the EU in 2011, by implementing a Differences-in-differences (DiD) research design. They use cross-sector panel data for a sample of 23 European countries over the period

[84] Italy, Spain, Portugal, Greece, Austria, Belgium, Czech Republic, Germany, Denmark, Estonia, Finland, France, Hungary, Netherlands, Poland, Sweden, Slovakia and United Kingdom.
[85] Mining, Manufacturing, Electricity and Gas and Water supply, Construction, Wholesale and retail trade, Hotels and restaurants, Transport and storage, Real estate and business activities, human health and social work activities.
[86] For a thorough review and outline of different policy options to the late payment problem in the EU see https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=SWD:2023:314:FIN

2008-2015 and leverage exogenous variation in payment terms brought about by the adoption of the LPD. Data are drawn from the Structural Business Statistics database which is the main source and provides information about the structure and performance of economic activities at the NACE 2-digitl level. Data are subsequently integrated with data from the OECD Database for Structural Analysis (STAN), the World Bank, the WIOD, and Intrum survey data on national payment terms.

The identification strategy rests on cross-sector and cross-country differences in governments' purchases of goods and services and different timing of adoption across countries. Sectors that have little transactions with the government constitute the control group. Conversely, those that sell a large fraction of their output to the government are the treatment group.

The standard case for applying the DiD method is when a change in the regulation, law, economic event (treatment) affects only a group of units, and another group (the controls) is similar in all other characteristics but is not affected by the intervention.

Both groups are observed over a period of time that crosses the adoption of the policy, the policy effect is captured by taking the mean outcome of the treated group with changes in the mean outcome of the control group.

All sectors in this context are bound to comply with the LPD, however sectors differ in the volume of trade with the public administration, and this creates different treatment intensities. Therefore, exposure to the law is defined on the basis of sectoral dependence on the government, measured by the fraction of a sector's output over total output that is purchased by a public administration. The indicator of treatment intensity is built using data from the World Input Output Database (WOID).[87]

These data provide sector-by-sector flows of final and intermediate goods and services for each country each year. The indicator is calculated in 2000 and assumes that the interconnection between sectors remain stable. The more a sector in a country sells to the government, the more that sector is exposed to the LPD, and hence the higher the expected impact on the firms in that sector.

The DiD econometric design is explained below.

Equation 7: $y_{sct} = \alpha + \gamma(Dependence_{sc} \times Post_{ct}) + \beta' x_{sct} + f_{ct} + f_{st} + f_{sc}xt + u_{sct}$

- y_{sct} represents the firms' exit rate in sector s in country c and year t
- $Dependence_{sc}$ measures the degree of dependence on the government for sector s in country c in 2000
- $Post_{ct}$ is a binary variable equal to one for country c when the LPD is in place and zero otherwise
- x_{sct} is a vector of controls that varies at the country, sector, and year levels
- f_{ct} is a group of country-year fixed effects that capture shocks common to all sectors in a country c and year t such as macroeconomic shocks and potential political cycles that may explain why some countries adopted the LPD earlier than others
- f_{st} is a group of sector-year fixed effects that take into account factors common to each sector in a given year, such as technological progress and fluctuations of world demand

[87] WIOD 2016 Release | WIOD | Groningen Growth and Development Centre | University of Groningen

- $f_{sc}xt$ is a group of country-sector linear time trends that eliminate differential trends in the focus variable that might invalidate the parallel-trends assumption-the key identifying assumption required for the validity of a DiD model
- u_{sct} is the disturbance term

For a given level of sector exposure, the impact of the LPD is estimated by comparing changes in firms' exit rates in sectors in adopting countries with changes in firms' exit rates in nonadopting countries. The expected the sign of the parameter y_{sct} is to be negative, an indication of firms' lower exit rates after the implementation of the directive in country-sector units with stronger commercial ties to the government as compared with country sector units with weaker economic relationships with the government.

Conti et al. (2021) find that the late payment directive reduced the exit rate of firms trading more with government as compared with those that trade less, and the magnitude depends on the degree of dependence on the government purchases. The decline in companies exiting the market is influenced by several factors, including a country's average initial payment delays, the prevalence of numerous small firms, and the level of corruption. Additional specifications offer suggestive evidence of a rise in employment after policy implementation, though conclusive results for entry and investment rates are not firmly established. This evidence implies that government initiatives mandating all public sector entities to settle invoices within 30 days enable businesses to access rightfully owed funds, consequently easing their financial constraints.

In the same context, (Ferrara and Ferraresi, 2022) explained the economic impact of faster payments in B2B commercial transactions following the implementation of the LPD directive in the EU, using firm-level data over the period 2008-2018 in nine European countries (Belgium, Germany, Spain, France, Finland, Hungary, Italy and the Netherlands). Applying a DiD econometric design, the authors used the average change over time of firms' cash flow for a group of firms exposed to the directive (i.e. the treatment group), on which the LPD could have a greater impact with respect to the average change of the same variable for a group of firms whose business activity is expected to be less exposed to the Directive (i.e. the control group).

A company's level of exposure to the directive can be gauged by the average number of days it takes to collect its credits. The assumption is that the longer it took for a company to collect money from its creditors prior to the LPD, the higher the likelihood of being exposed to late payments from other firms. Consequently, such firms might potentially benefit from adopting the LPD.

Conversely, for companies already adhering to the Directive's credit collection provisions, the expected impact of its introduction is relatively low. Therefore, firms with extended payment durations to collect credits are categorized as the treatment group, while those with shorter payment durations constitute the control group. Comparing the average change in a response variable between these two groups helps isolate the causal effect of the LPD from other underlying factors influencing the economy.

The main independent variable is an exposure indicator based on Orbis data calculated as the ratio between *Credits and Operative Revenue (x 360).* The variable needs to be compared in the periods before and after the exposure by taking the mean value of the average number of days a firm needs to collect its credits over the period 2008-2010. Taking the mean value instead of the absolute value before and after 2011 starting from the 2008, addresses potential endogeneity issues due to the exposure embodying the impact of the policy itself, which makes the number of days potentially very

different if measured in 2000 or 2010. This is reinforced by the fact that the financial crisis in 2008 has severely impacted the number of days taken by firms to collect credits and therefore taking an even earlier period can lead to a biased conclusion – for instance the LPD has had no effect.

On top of this, considering a treatment variable – the average collection days – allows the information to be similar to that observed in the year of the transposition of the LPD, while making sure that the indicator does not vary with unobservable shocks which can simultaneously impact firms' outcomes, i.e. reverse causality issues.

Equation 8: $y_{scft} = \alpha + \gamma(Credits\ collection\ f_{2008-2010}) \times post_{ct} + \delta xf_t + f_t + f_f + f_{ts} + u_{csft}$

- y_{scft} represents the cash flow of firm f in year t operating in country c and sector s
- $Credits\ collection\ f_{2008-2010}$ is a continuous variable, measured between 2008 and 2010 (before the LPD adoption), accounting for the average number of days a firm, f, takes to collect credits from its customers
- $Post_{ct}$ is a binary variable equal to one for country c when the LPD is in place and zero otherwise
- xf_t is a vector of firm-level explanatory variables which includes also firms' size (measured by the number of employees) measured at the baseline year and interacted with the post variable, to account for pre-existing firm differences
- f_t are time fixed effects that capture macroeconomic shocks common to all firms in each year t
- f_f are firm fixed effects that control for unobserved heterogeneity between firms
- f_{ts} are sector by year fixed effects that account for unobserved factors affecting a given sector in a specific year
- u_{csft} is the error term, double clustered at the firm and country-by-year level

The results show that, four years after the implementation of the LPD, the average cash flow has doubled compared to its value in the year preceding the directive's introduction, e.g. 2010. This finding pertains to the contrast between companies highly susceptible to payment delays (those taking 120 days to collect credits) and the less susceptible ones, i.e. companies already adhering to the LPD provisions for prompt payments (those collecting credits in less than 30 days). Estimates showed that on average the Directive brought about an increase in aggregate cash flow of approximately 3.69 million euro (+ 0.69%) for each differential day.

However, the impact manifested with a time delay, becoming evident four to five years after the LPD's enactment. Moreover, the primary contributors to this effect were the manufacturing and construction sectors, which are notable for a significant presence of SMEs within their relevant supply chains.

Using a different channel that could also help explain firm exit indirectly, in a paper by Kaya (2022), the author uses unique firm level survey data on SMEs financing conditions to understand the negative impacts of late payments to SMEs and their access to finance in the EU. The main findings show that SMEs which face late payments regularly or occasionally are around 7% more likely to face access to finance problems than their counterparts. This in effect, could potentially lead to firms shutting down as they become increasingly incapable of accessing finance.

The study uses the survey on the access to finance of enterprises (SAFE) data produced by the European Central Bank (ECB) and the European Commission (EC). This data offers insights into the current state of enterprise finances and tracks patterns in the demand for and accessibility of external funding. The findings of the survey are categorized based on factors such as company size, industry sector, geographical location, company age, financial independence, and ownership structure. SAFE is conducted bi-annually since 2009 and published in May and November covering the six months prior to the publishing time (Kaya, 2022).

Using this survey, Kaya (2022) construct a sample of 250 firms with less than 250 employees and a turnover of EUR 50 million which includes eleven countries: Austria, Belgium, Germany, Spain, Finland, France, Greece, Ireland, Italy, the Netherlands, and Portugal. An important question asked in the survey about the magnitude of late payments is as follows:

We will turn now to the subject of late payments. Has your company experienced problems due to late payments from any private or public entities in the past six months?

Participants provide responses to this question using a three-point scale: 1 indicating "Yes, regularly"; 2 representing "Yes, occasionally"; and 3 signifying "No." Kaya (2022) recode this late payment variable into a binary variable for ease of interpretation by basing the recoding on these response categories.

Some pertinent variables used in this paper from the SAFE survey include:

- Access to finance, which is a question that has a scale from 1 to 10, where 1 represents access to finance not being a problem at all.
- Credit constraints, a dichotomous variable which is if firms are credit constrained or not
- Finance conditions, a variable about the terms and conditions of bank financing; “how the price and non-price terms and conditions of a bank loan received changed last six months before the survey. The question includes several subcategories: (i) level of interest rates, (ii) level of the cost of financing other than interest rates, such as charges, fees, commissions, (iii) available size of loan, (iv) available maturity of the loan, and (v) the collateral requirements. Possible responses are: ‘was increased by the bank’, ‘remained unchanged’, ‘was decreased by the bank’ (Kaya, 2022).
- Company size, as smaller firms are more likely to suffer and report access to finance issues, which is split into micro, small and medium sized as dummy variables in terms of number of employees and take the value of one if the respective condition is satisfied.
- Firm age, as younger firms generally have more challenges when accessing finance; therefore a dummy variable for age is included.

Another important set of macro variables are seasonality-adjusted GDP growth which reflects the impact of fluctuations in overall economic conditions and the health and profitability of the banking sector where a variable of the return on equity (ROE) of the domestic banking sector is included.

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March 2024

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Lectus convallis consequat eget in ante. In quis ornare eros, in vestibulum felis. Sed volutpat, lectus et maximus hendrerit, nunc mauris eleifend quam, lobortis porta ligula dui eget sapien. Donec dignissim dictum magna. Nunc dignissim justo vitae quam consequat, at maximus mi rutrum. Vestibulum sit amet justo varius, iaculis justo eu, luctus enim. Nullam a tristique purus. Praesent sit amet dui id lectus scelerisque tempus ac ullamcorpe.

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