UK Payment Practice Analysis

Introduction

According to research by payment processing, the UK's small and medium-sized businesses are reportedly owed £26 billion in past-due payments. In order to stop these morally repugnant practices, the UK government has decided to make all the information public so that buyers (large businesses) will be held responsible going forward.

Methodology

I performed this analysis with **SQL** using **MSSQL** under **Azure Data Studio** using an **Excel** file downloaded from the UK government open source database here. The dashboard was made using **Tableau** and **Figma**.

Problem Statement

Late payments are still a difficult problem for SMEs. Large corporations frequently and consistently fail to pay their suppliers on time, which causes enormous financial losses for suppliers, particularly SME suppliers globally. According to data by payment processing processor Bacs, the UK's small and medium-sized businesses are currently owed £26 billion in past-due payments. Invoice payments were received late 71% of the time on average for the 307 large enterprises that submitted payment reports to the UK government.

Analysis Purpose

I'll be doing a descriptive study of the data from 2017 to the present (2022) and calculating a score or point for the buyer's credibility. You can rely on the buyer at a high point to make payments on schedule.

How to read the data

· The reporting period (start date and end date or the duration for which the buyer company has to report the payment numbers)

· Filing information (When did the company file the records)

· Whether Payments were made during the reporting period

· Payment Metrics like Average time to pay

· Distribution of Invoices spanned across different Payment duration buckets

· Standard Payment Period (Shortest and Longest)

· Typical Payment Contractual terms agreed with Suppliers

· Changes made in Payment terms and have suppliers been notified of changes etc.

Data Limitations

1. Null values were present; some of them could be altered, but the majority couldn't, and filtering them would have changed the results of the entire analysis.

```
[11]   1   UPDATE payment_practices
       2   SET Payments_made_in_the_reporting_period = 'True'
       3   WHERE Payments_made_in_the_reporting_period IS NULL AND Average_time_to_pay IS NOT NULL
       4
       5   UPDATE payment_practices
       6   SET Participates_in_payment_codes = 'Yes'
       7   WHERE Participates_in_payment_codes = 'True'
       8
       9   UPDATE payment_practices
      10   SET Participates_in_payment_codes = 'No'
      11   WHERE Participates_in_payment_codes = 'False'
```

(0 rows affected)

(0 rows affected)

(0 rows affected)

Total execution time: 00:00:08.256

2. Some of the information is not sufficiently supported to provide a thorough prediction bias. It was an overview of all the business deals that each company had made during the reporting period.

3. Because the report was only a summary, it was challenging to provide an "average time to pay back" as a standard point because this payback duration is solely dependent on the buyer and supplier, and this information wasn't included in the report. For instance, paying back 25 days at company A can take 200 days at company B, and both parties are content.

Exploratory Data Analysis

- UK firms recorded a total of 9359 companies and 61,972 reports between 2017 and 2022.

```
1   SELECT
2       COALESCE(CAST(YEAR(Filing_date) AS VARCHAR), 'Total') AS Year,
3       COUNT(DISTINCT Company) AS Company_Count,
4       COUNT(Report_ID) AS Report_Count
5   FROM
6       payment_practices
7   WHERE Start_date >= '2017-01-01'
8   GROUP BY ROLLUP(
9       YEAR(Filing_date))
```
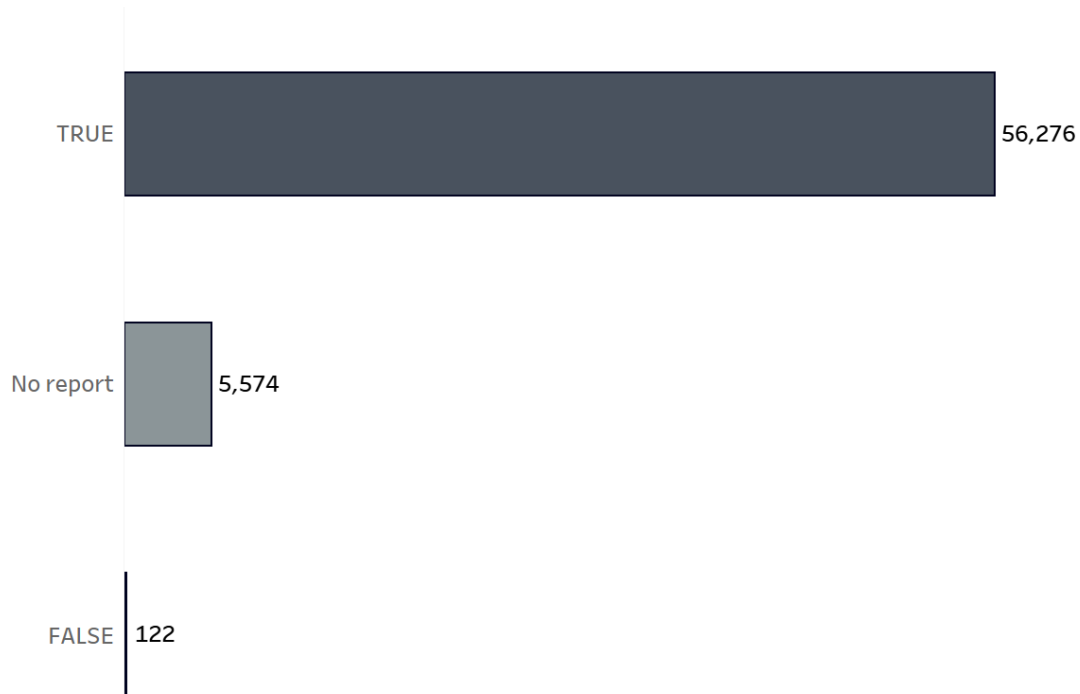
(7 rows affected)

Total execution time: 00:00:00.701

Year	Company_Count	Report_Count
2017	293	298
2018	7003	8723
2019	7595	15087
2020	7010	13667
2021	6775	13386
2022	6377	10811
Total	9359	61972

- During the reporting period, over 56,000 reports which is **90%** of all reports had payments paid.

Reporting Period Payments

TRUE	56,276
No report	5,574
FALSE	122

"True" means businesses engaged in a qualifying contract and making payment during the reporting period.

"No report" means a business did not enter into any qualifying contract and, therefore, no payments were made.

"False" means businesses that signed up for eligible contracts during the reporting period but made no payments.

```
[6]    1    SELECT
       2        COALESCE(CAST(YEAR(filing_date) AS VARCHAR), 'Total') AS YEAR,
       3        COUNT(CASE WHEN Payments_made_in_the_reporting_period = 'True' THEN 1 END) AS True, --
       4        COUNT(CASE WHEN Payments_made_in_the_reporting_period = 'False' THEN 1 END) AS False, -
       5        COUNT(CASE WHEN Payments_made_in_the_reporting_period IS NULL THEN 1 END) AS No_Report
       6    FROM
       7        payment_practices
       8    WHERE Start_date >= '2017-01-01'
       9    GROUP BY ROLLUP(
      10        YEAR(filing_date))
```

Warning: Null value is eliminated by an aggregate or other SET operation.

(7 rows affected)

Total execution time: 00:00:15.355
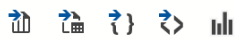
	YEAR	True	False	No_Report
1	2017	263	0	35
2	2018	7873	0	850
3	2019	13541	42	1504
4	2020	12367	33	1267
5	2021	12299	19	1068
6	2022	9933	28	850
7	Total	56276	122	5574

- To address late payments, payment codes were revised in early 2019 after being introduced in 2008. A business with a payment code is thought to be one that pays promptly because the penalty for late payment is having the code removed with a bad public notice. Over the years, there has been a decline in the use of payment codes, most likely as a result of the numerous firms that have had their codes revoked for bad payment practices.
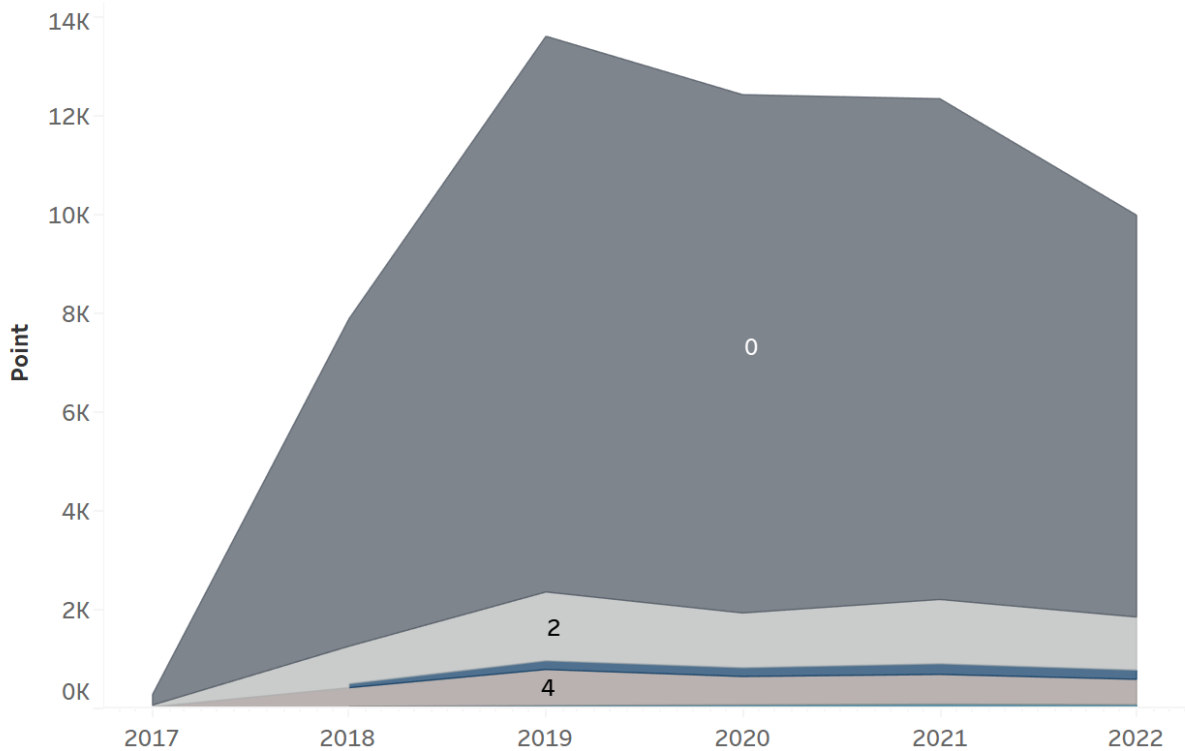
YoY Payment Code Diference
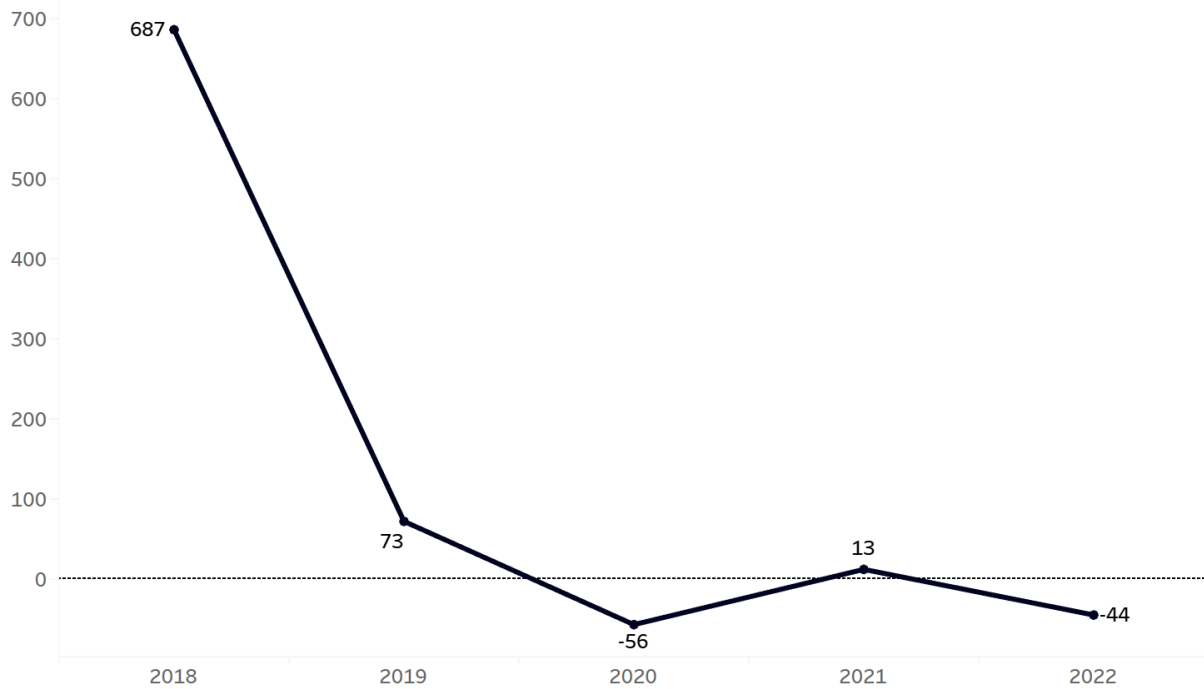
However, the analysis's most crucial step is to assign points or scores to businesses despite their poor payment habits in order to identify those that are most likely to make payments on time. The points show that "0" predominated the most, which supports the dishonest payment activities.

Most Common Points

0

2

4

Since I had to take a number of factors into account to determine why a company would merit a low score due to terrible payment methods, this was actually the most difficult portion of the analysis for me. However, as the saying goes, understand your data before you start analyzing, and in this case, I was proven guilty. I eventually discovered a workaround, but after understanding the entire meta-data, which took me days to locate, it seemed incredibly simple.

Simply said, since this is business, and people create deals that are advantageous to them, it is not acceptable to assess a corporation's payment speed by the number of days.

However, it would be nice to have an insight into how often large businesses pay back on average, according to the data.

Popular days to pay back
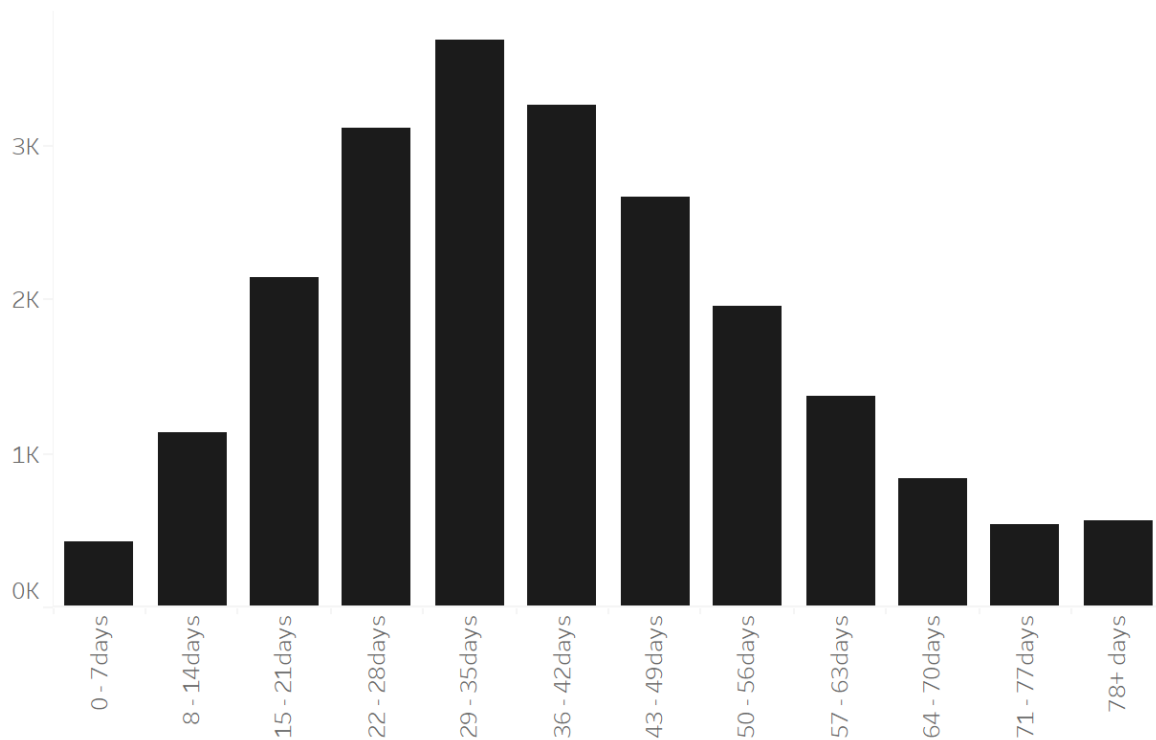
The most popular average days for buyers (businesses) to pay back regardless of their position, either good or bad, stands at between 29 and 35 days. But, it is nice to say this alone does not judge a good payment practice.

As a result, I made the decision to rate businesses according to their capacity to pay invoices more quickly within agreed terms and not just the number of days it takes them. Every company or buyer has a standard payment window they agree to work inside, and if they refuse to pay within that window, they submit a report of the invoices they paid outside of that standard agreement. We could therefore conclude that it is good practice to reduce or eliminate payments made outside of the normal payment period.

```
148    -- Uk businesses scored based on if they make payments according to agreement within the reporting period
149    SELECT
150        YEAR(filing_date) AS Year,
151        Company_number,
152        Company,
153        CASE
154            WHEN(Payments_made_in_the_reporting_period = 'True' AND Invoices_not_paid_within_agreed_terms = 0 AND Participates_in_payment_codes = 'Yes') THEN 5
155            WHEN(Payments_made_in_the_reporting_period = 'True' AND Invoices_not_paid_within_agreed_terms = 0 AND Participates_in_payment_codes = 'No') THEN 4 -- Businesses
156            WHEN(Payments_made_in_the_reporting_period = 'True' AND Invoices_not_paid_within_agreed_terms BETWEEN 1 AND 5 AND Participates_in_payment_codes = 'Yes') THEN 3
157            WHEN(Payments_made_in_the_reporting_period = 'True' AND Invoices_not_paid_within_agreed_terms BETWEEN 1 AND 5 AND Participates_in_payment_codes = 'No') THEN 2 -
158            WHEN(Payments_made_in_the_reporting_period = 'False' AND Invoices_not_paid_within_agreed_terms BETWEEN 0 AND 100) THEN 0 -- Businesses that are defaults from pr
159            WHEN(Payments_made_in_the_reporting_period = 'True' AND Invoices_not_paid_within_agreed_terms >5 AND Participates_in_payment_codes = 'Yes' OR Participates_in_pa
160            END AS Points
161    FROM payment_practices
162    WHERE Start_date >= '2017-01-01' -- 'NULL' values are businesses that did not enter into any qualifying contracts in the reporting period.
```

Results   Messages

	Year	Company_number	Company	Points
1	2017	01070807	MEDTRONIC LIMITED	0
2	2017	02553464	SEBDEN STEEL SERVICE CENTRES…	4
3	2017	07581532	GREENERGY FLEXIGRID LIMITED	0
4	2017	04058825	GREENERGY FUELS LIMITED	0
5	2017	02809935	GREENERGY INTERNATIONAL LIMI…	0

Here's my break down of the point;

- **Points "5" and "4"** are the **best points** to look out for. It indicates that businesses paid all their invoices in accordance with their standard payment terms.

Payment Made in Reporting period (True) + 0% default + Participation in Payment Code (True) = 5points

Payment Made in Reporting period (True) + 0% default + Participation in Payment Code (False) = 4points

Payment codes are not mandatory. But, it gives any supplier more confidence in such a business if they have payment codes.

- **Points "3" and "2"** are businesses that paid **95% of invoices** within their standard payment terms and **5%** outside of the agreement.

Payment Made in Reporting period (True) + 5% default + Participation in Payment Code (True) = 3 points

Payment Made in Reporting period (True) + 5% default + Participation in Payment Code (False) = 2points

- **Point "0"** by the representation is a negative point for businesses that missed their deadlines. They paid anywhere from **6% to 100%** of their invoices outside the terms of the contract. Additionally, also for businesses who were in default from the previous reporting period

Payment Made in Reporting period (True) + 94% default + Participation in Payment Code (True or False) = 0points

Payment Made in Reporting period (False) + 0% - 100% default + Participation in Payment Code (True or False) = 0points

NOTE; Businesses who does not make payment within reporting period but later recorded a % of invoices paid are usually default from the last reporting period.

"NULL" values represent companies that did not enter into any qualifying contracts.

How Do I Make A Decision?

I created it so users or SMEs can just key in the name of any company they want to form a qualifying contract with,

Points

0.000 ▮▮▮▮▮ 5.000

Company Point Overview

Company Name

Report ID	Year of Year	Company Number	Company Name
2	2017	01070807	MEDTRONIC LIMITED
3	2017	02553464	SEBDEN STEEL SERVICE CENTRES LIMITED
4	2017	07581532	GREENERGY FLEXIGRID LIMITED
5	2017	04058825	GREENERGY FUELS LIMITED
6	2017	02809935	GREENERGY INTERNATIONAL LIMITED
7	2017	OC399969	MISHCON DE REYA LLP
8	2017	07656429	CENTER PARCS (HOLDINGS 1) LIMITED
9	2017	05746068	SPIRIT PUB COMPANY (TRENT) LIMITED
10	2017	05699544	SPIRIT PUB COMPANY (LEASED) LIMITED
11	2017	05269240	SPIRIT PUB COMPANY (MANAGED) LIMITED
12	2017	05266811	SPIRIT PUB COMPANY (SERVICES) LIMITED
13	2017	04341771	SPIRIT PUB COMPANY (SUPPLY) LIMITED
14	2017	03324496	GREENE KING RETAIL SERVICES LIMITED
15	2017	03324493	GREENE KING SERVICES LIMITED
16	2017	SC181811	PREMIUM DINING RESTAURANTS AND PUBS LIMITED
17	2017	05265451	GREENE KING RETAILING LIMITED
18	2017	03298903	GREENE KING BREWING AND RETAILING LIMITED

Data Source: GOV.UK |Created By: Adejayan Ebunoluwa

They see their points over time and decide whether or not to do business with them. For instance, KPMG UK is a fantastic option and has a solid track record.

Points

3.000 ▮▮▮▮▮ 5.000

Company Point Overview

Report ID	Year of Year	Company Number	Company Name	
1523	2018	03580549	KPMG UK LIMITED	3
7500	2018	03580549	KPMG UK LIMITED	3
14923	2019	03580549	KPMG UK LIMITED	5
22613	2019	03580549	KPMG UK LIMITED	5
30229	2020	03580549	KPMG UK LIMITED	5
36991	2020	03580549	KPMG UK LIMITED	5
43729	2021	03580549	KPMG UK LIMITED	5
50347	2021	03580549	KPMG UK LIMITED	5
57232	2022	03580549	KPMG UK LIMITED	5

Whereas a business like Greene King Services Limited has a consistency in settling invoices outside of agreed terms. They belong to the category of delaying 94% of invoices outside their standard payment period and terms.

Points

0.000 2.000

Company Point Overview

Report ID	Year of Year	Company Number	Company Name	
15	2017	03324493	GREENE KING SERVICES LIMITED	0
1781	2018	03324493	GREENE KING SERVICES LIMITED	0
8921	2018	03324493	GREENE KING SERVICES LIMITED	0
15968	2019	03324493	GREENE KING SERVICES LIMITED	0
23938	2019	03324493	GREENE KING SERVICES LIMITED	2
31189	2020	03324493	GREENE KING SERVICES LIMITED	0
38232	2020	03324493	GREENE KING SERVICES LIMITED	0
42224	2021	03324493	GREENE KING SERVICES LIMITED	0
46342	2021	03324493	GREENE KING SERVICES LIMITED	0
52411	2022	03324493	GREENE KING SERVICES LIMITED	2
58895	2022	03324493	GREENE KING SERVICES LIMITED	0

Data Source: GOV.UK |Created By: Adejayan Ebunoluwa

Below is a screenshot of the interactive dashboard. The background was created in Figma, while Tableau handled the rest of the tricks.

UK Payment Practices

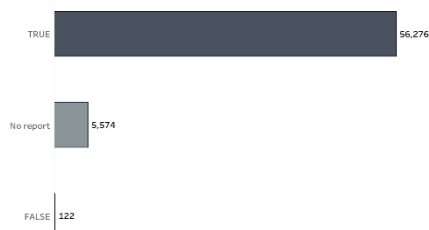| Total Report	Total Filed Report	Total Company	Company With Codes
61,972	56,398	9,359	1,057

The public dataset that the UK government releases about large businesses and their small- and medium-sized enterprise (SMEs) suppliers is intended to assist SMEs in making the best choices regarding who to enter into a "Qualifying contract" with based on these businesses' prior performance, which is an overview of their payment practices.

This dashboard provides few KPIs into the dataset and a scoring model to fast identify which business to engage in business with or not. You can rely on the buyer at a high point to make payments on schedule.
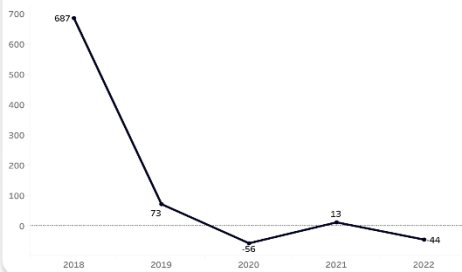
Details like 'If payment was made within reporting period' indicates;
- "True" if a business engaged in a qualifying contract and made payment during the reporting period.
- "No report" if a business did not enter into any qualifying contract and therefore, no payments to be made.
- "False" if a business signed up for eligible contracts during the reporting period but made no payments.
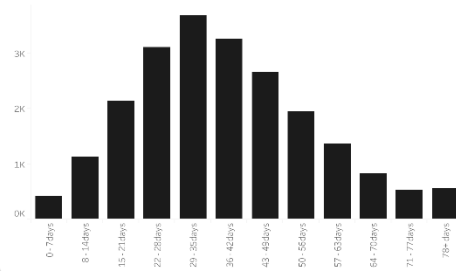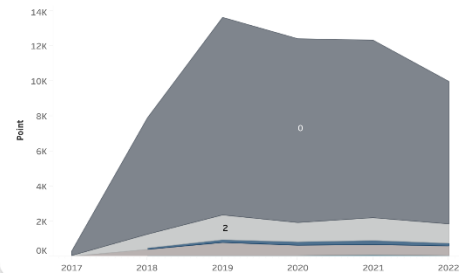
Reporting Period Payments

TRUE	56,276
No report	5,574
FALSE	122

YoY Payment Code Diference

687 (2018), 73 (2019), -56 (2020), 13 (2021), -44 (2022)

Points: 0, 2, 3, 4, 5

Popular days to pay back

0-7days, 8-14days, 15-21days, 22-28days, 29-35days, 36-42days, 43-49days, 50-56days, 57-63days, 64-70days, 71-77days, 78-days

Most Common Points

Point (2017–2022): 0, 2

Company Point Overview

Report ID	Year of Year	Company Number	Company Name	Average time to pay	
2	2017	01070807	MEDTRONIC LIMITED	25	0
3	2017	02553464	SEBDEN STEEL SERVICE CENTRES LIMITED	69	4
4	2017	07581532	GREENERGY FLEXIGRID LIMITED	21	0
5	2017	04058825	GREENERGY FUELS LIMITED	14	0
6	2017	02809935	GREENERGY INTERNATIONAL LIMITED	15	0
7	2017	OC399969	MISHCON DE REYA LLP	44	0
8	2017	07656429	CENTER PARCS (HOLDINGS 1) LIMITED	34	0
9	2017	05746068	SPIRIT PUB COMPANY (TRENT) LIMITED	40	0
10	2017	05699544	SPIRIT PUB COMPANY (LEASED) LIMITED	40	0
11	2017	05269240	SPIRIT PUB COMPANY (MANAGED) LIMITED	40	0
12	2017	05266811	SPIRIT PUB COMPANY (SERVICES) LIMITED	40	0
13	2017	04341771	SPIRIT PUB COMPANY (SUPPLY) LIMITED	40	0
14	2017	03324496	GREENE KING RETAIL SERVICES LIMITED	40	0
15	2017	03324493	GREENE KING SERVICES LIMITED	40	0
16	2017	SC181811	PREMIUM DINING RESTAURANTS AND PUBS LIMITED	40	0
17	2017	05265451	GREENE KING RETAILING LIMITED	40	0
18	2017	03298903	GREENE KING BREWING AND RETAILING LIMITED	40	0
19	2017	OC369632	SMITH & WILLIAMSON INVESTMENT MANAGEMENT LLP	15	4
20	2017	OC369631	SMITH & WILLIAMSON LLP	34	0
22	2017	07466427	TAYLOR WESSING SERVICES LIMITED	26	0
23	2017	00641132	JOHN WILEY & SONS LIMITED	37	0

Company Name

0.000   5.000

Relevant Links

- [Tableau Dashboard](#)
- [GitHub Code](#)
- [LinkedIn Profile](#)
- [Data Source](#)