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Research Report

Record increase in payment remarks: A red flag for Norwegian firms?

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Staff memo

Record Increase in Payment Remarks: A Red Flag for Norwegian Firms?

27.11.2024

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Record Increase in Payment Remarks: A Red Flag for Norwegian Firms?*

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Abstract

This staff memo documents a detailed analysis of the payment remark database to better understand whether the recent increase in payment remarks signals an impending wave of bankruptcies. We find that the number of high-bankruptcy-risk firms is growing in proportion to the total number of firms with remarks. This suggests that the recent increase in payment remarks is likely to predict a proportional rise in bankruptcies and should therefore be closely monitored.

1 Introduction

When a firm fails to make timely payments to a utility provider, a supplier of goods or services, a bank, or tax authorities, and is late by a certain number of days, this is recorded in a database of payment remarks. While a missed payment may sometimes be accidental, it can also indicate serious liquidity or even solvency issues within the firm. Historically, payment remarks and bankruptcies in Norway have been reasonably correlated, but their trends have diverged since 2018. The reasons for this divergence are not yet fully understood, but one possible contributor is the adoption of IFRS 9 accounting standards, which might have led banks and other financial institutions to recognize credit losses earlier, potentially resulting in more payment remarks. Another factor is government support during the Covid-19 pandemic, which might have caused bankruptcies to decline more sharply than the number of firms with payment remarks. Now, payment remarks are at an all-time high, while bankruptcies have not yet returned to pre-pandemic levels. This raises an important question: does the current growth in payment remarks, which began with the recent monetary policy tightening cycle, signal an impending wave of bankruptcies?

*The views and conclusions in this publication are those of the authors and are not necessarily shared by Norges Bank. They should therefore not be reported as the views of Norges Bank. Any errors and omissions are the sole responsibility of the authors.

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In this staff memo, we address this question through a detailed analysis of the payment remark database. We begin by examining the development of payment remarks for firms that went bankrupt between January 2013 and October 2024. The analysis identifies key criteria for determining high-bankruptcy-risk firms, such as the number of remarks, the NOK amount associated with those remarks, and the growth rates of both the number and the NOK amount of remarks. We then test the effectiveness of these criteria in predicting bankruptcy and analyze recent trends in the number of firms that meet the high-bankruptcy-risk criteria. We find that the number of high-bankruptcy-risk firms is increasing in proportion to the total number of firms with outstanding payment remarks. This suggests that bankruptcies may rise proportionately as well, and therefore, the development of payment remarks should be closely monitored.

Given the proportionate growth in the number of high-risk firms, we propose a simple method to forecast the aggregate number of bankruptcies over a one-year horizon. We demonstrate that, historically, this prediction method has been reasonably accurate, except during the period from 2018 to 2021, when a sudden divergence between payment remarks and bankruptcies occurred. Since 2022, however, the growth rates of payment remarks and bankruptcies have realigned and the prediction method has regained its accuracy. The method predicts that the number of bankruptcies will be 11 percent higher next year (from November 2024 to October 2025) compared to last year (from November 2023 to October 2024).

The remainder of the memo is structured as follows: Section 2 presents the data; Section 3 analyzes high-bankruptcy-risk firms; Section 4 proposes a prediction method for the aggregate number of bankruptcies; and Section 5 concludes.

2 Data and descriptive statistics

This staff memo analyzes the database of payment remarks collected by Dun & Bradstreet - a credit bureau (kredittopplysningsbyrå) operating in Norway - and delivered to Norges Bank on a monthly basis. For each payment remark, we observe the names and ID numbers of both the debtor and the creditor, the NOK amount associated with the remark, the date from which the remark is active, and the date when the remark was closed (e.g., when a missed payment is paid). As of October 2024, the database contained 8,310,707 remarks. Table 1 shows their distribution across different types. We primarily focus on Inkasso (debt collection) remarks, which constitute the majority of the total remarks. To analyze how Inkasso remarks may predict bankruptcies, we also use Konkurs (bankruptcy) and Tvangsoppløsning (forced liquidation) remarks.

All firms that are registered in Norway and thus have a Norwegian organization number are susceptible to enter the database if they receive a payment remark. As of October 2024, the database contains 6,283,912 Inkasso remarks issued between 340,808 debtor firms and 98,255 creditor firms. The oldest Inkasso remark in the database was active from 2007 February 6, but the number of early remarks is relatively low. The number of newly issued Inkasso remarks increased sharply

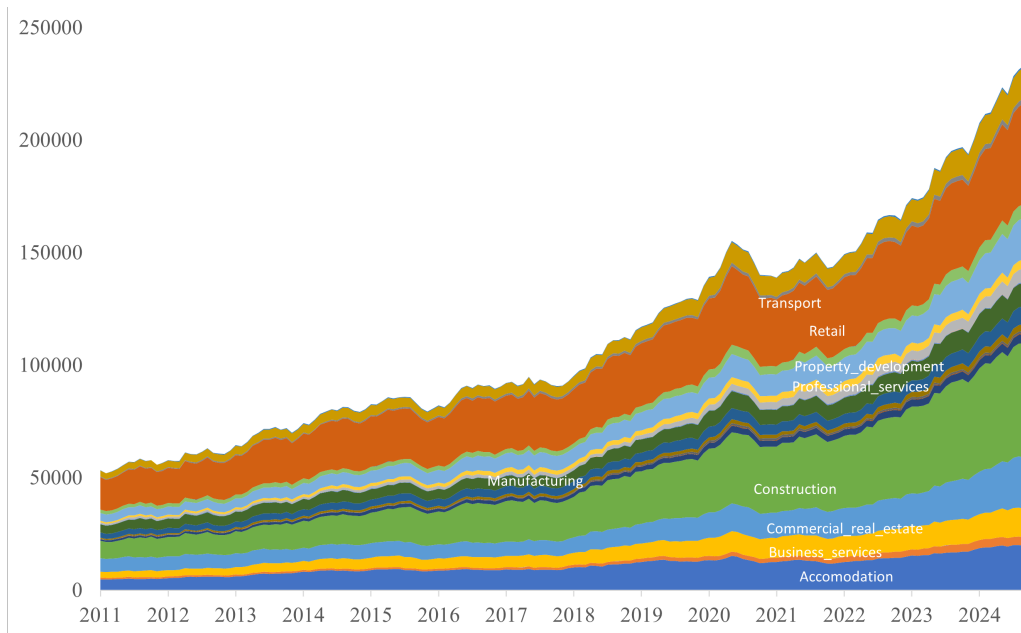
from December 2010 to January 2011 and has grown steadily since then. Therefore, we assume that the data is comprehensive and that its quality can be trusted from January 2011 onward. The number of firms with at least one outstanding Inkasso remark at month-end has increased from 13,257 in January 2011 to 38,789 in October 2024.

Type of remarks	Number of remarks
Inkasso (Debt collection)	6,283,912
Utlegg (Warrants for asset arrest)	273,015
Intet til utlegg (Indications of no assets remaining)	240,928
Leasingavtale (Leasing agreements)	224,226
Factoringavtale (Factoring agreements)	186,332
Konkurs (Bankruptcies)	128,090
Tvangsoppløsning (Forced liquidations)	24,570
Other	949,634
Total	8,310,707

Table 1: Numbers of different remarks in the database as of October 2024.

Figure 1 shows the number of outstanding Inkasso remarks at the end of each month since January 2011, broken down by debtor industry. Since 2018, this number has been on a rise, reaching a total of 228,808 remarks with 4 billion NOK outstanding as of October 2024. The growth has primarily been driven by the construction industry, while the proportions across other industries have remained relatively stable.

Figure 1: Number of outstanding remarks, by debtor industry



Source: Dun & Bradstreet and Norges Bank

Table 2 provides the numbers of outstanding Inkasso remarks, broken down by debtor and

creditor industries as of October 2024. Both debtors and creditors are ranked by the NOK amount associated with the remarks. The largest debtor industries are construction, commercial real estate, and retail. The largest creditor industries by NOK amount are banks, other financial institutions, and retail. Creditor industries such as information, public administration, and electricity issue many Inkasso remarks, but they are relatively small in terms of NOK amounts. The average remark size, calculated by dividing the total NOK amount by the total number of Inkasso remarks is equal to 17,181 NOK.

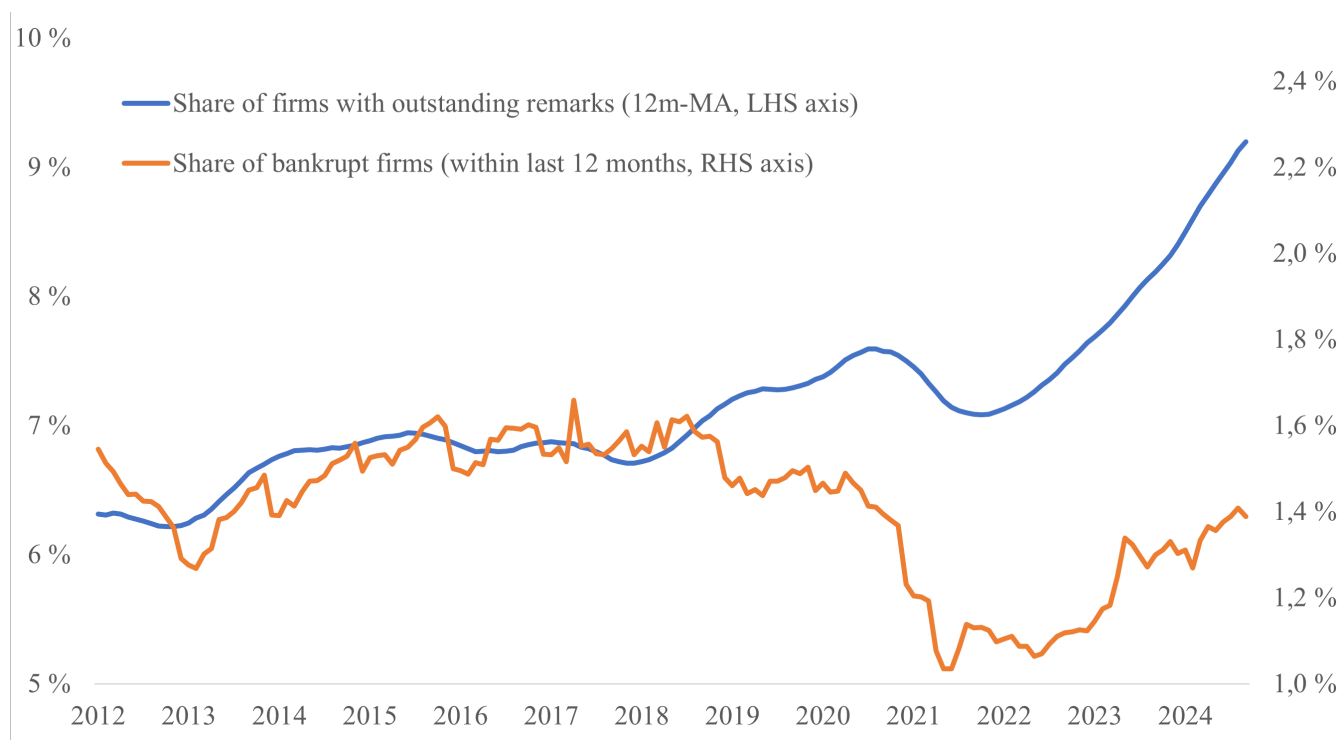
2024 October					
Debtors			Creditors		
	m NOK	number ('000)		m NOK	number ('000)
Construction	748 (19%)	49 (21%)	Banks	900 (23%)	3 (1%)
Commercial_real_estate	631 (16%)	23 (10%)	Finance	621 (16%)	33 (14%)
Retail	544 (14%)	44 (19%)	Retail	528 (13%)	26 (11%)
Professional_services	284 (7%)	18 (8%)	Missing	286 (7%)	17 (7%)
Property_development	242 (6%)	6 (3%)	Professional_services	283 (7%)	14 (6%)
Accommodation	221 (6%)	20 (9%)	Construction	231 (6%)	4 (2%)
Transport	212 (5%)	13 (6%)	Information	199 (5%)	44 (19%)
Manufacturing	210 (5%)	10 (4%)	Electricity	158 (4%)	17 (7%)
Information	205 (5%)	8 (3%)	Commercial_real_estate	148 (4%)	3 (1%)
Business_services	187 (5%)	13 (5%)	Manufacturing	143 (4%)	5 (2%)
Other	114 (3%)	6 (3%)	Business_services	136 (3%)	12 (5%)
Cultural	88 (2%)	4 (2%)	Transport	94 (2%)	14 (6%)
Agriculture	65 (2%)	4 (2%)	Public_administration	63 (2%)	25 (11%)
Health	49 (1%)	3 (1%)	Accommodation	27 (1%)	1 (1%)
Other_services	42 (1%)	4 (2%)	Water	25 (1%)	3 (1%)
Teaching	30 (1%)	2 (1%)	Health	20 (1%)	2 (1%)
Finance	25 (1%)	1 (0%)	Other_services	17 (0%)	5 (2%)
Water	13 (0%)	1 (0%)	Cultural	14 (0%)	1 (0%)
Electricity	12 (0%)	0 (0%)	Agriculture	11 (0%)	0 (0%)
Mining_except_oil	10 (0%)	0 (0%)	Property_development	8 (0%)	0 (0%)
Missing	1 (0%)	0 (0%)	Other	7 (0%)	0 (0%)
Public_administration	0 (0%)	0 (0%)	Teaching	5 (0%)	0 (0%)
Banks	0 (0%)	0 (0%)	Mining_except_oil	4 (0%)	0 (0%)
Total	3 931 (100%)	229 (100%)	Total	3 931 (100%)	229 (100%)

Table 2: Numbers of Inkasso remarks with associated NOK amounts by debtor and creditor industries as of October 2024. The proportions relative to the total of all industries are reported in brackets.

3 Inkasso remarks indicate high-bankruptcy-risk firms

Figure 2 shows that the share of firms in Norway with at least one outstanding Inkasso remark (12-month moving average) has reached 9.2 percent, while the share of firms that went bankrupt within the past year has reached 1.4 percent. Both shares used to evolve similarly, but began

Figure 2: Shares of firms in Norway with outstanding Inkasso remarks and bankruptcies



Source: Dun & Bradstreet and Norges Bank

to diverge in 2018.¹ With government support during the Covid-19 pandemic in 2020-2021, the divergence widened further, as the share of bankruptcies dropped significantly more than the share of firms with payment remarks. In the wake of recent monetary policy tightening, the share of firms with payment remarks has reached new highs, while the share of bankruptcies has yet to return to pre-pandemic levels.² Given the divergence between remarks and bankruptcies, it is unclear whether the recent increase in remarks signals an increased bankruptcy risk among firms.

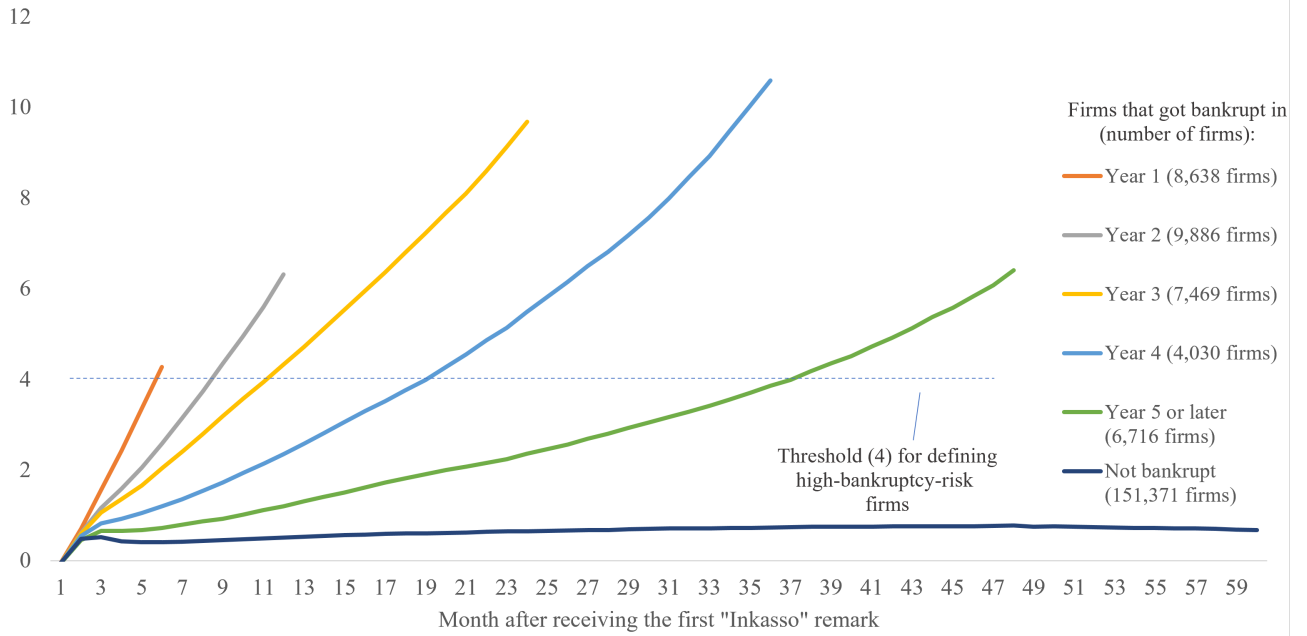
To investigate how Inkasso remarks can help predict bankruptcies at the firm level, we focus on all firms that received their first Inkasso remark in 2013 or later.³ The firms are divided into six groups based on the time between their first Inkasso remark and the point at which they go bankrupt: within the first year, the second year, the third year, the fourth year, the fifth year or later, and those that never went bankrupt during the sample period.

¹While investigating the exact causes of this divergence is beyond the scope of this staff memo, one possible contributor is the adoption of the IFRS 9 accounting standards in Norway in January 2018. IFRS 9 had a significant impact on financial institutions, requiring them to recognize credit losses earlier than under previous standards, which could have led banks and other financial institutions to issue more debt collections. Figure 14 in the Appendix shows that the growth in the NOK amount in remarks that began in 2018 was largely driven by banks. Importantly, since banks issue relatively few debt collections compared to other industries, IFRS 9 does not appear to be related to the overall increase in the number of remarks, which suggests that there are other contributing factors such as, e.g., potential changes in the scope of debt collection statistics.

²See Hjelseth et al. (2024) for the analysis of the divergence between payment remarks and bankruptcies.

³Since high-quality data on Inkasso remarks is available from January 2011, this approach provides a two-year window to ensure that firms did not receive Inkasso remarks prior to 2013.

Figure 3: Average number of outstanding remarks (per firm)



Source: Dun & Bradstreet and Norges Bank

Figure 3 shows, for each of the six groups of firms, the average number of outstanding remarks (on the y-axis) at the end of each month following the receipt of their first Inkasso remark (on the x-axis).⁴ According to the figure, most firms in the sample did not go bankrupt, and among those that did, the majority failed within the first few years after receiving their first Inkasso remark. Firms that go bankrupt within the first year after receiving their first Inkasso remark (orange line) have, on average, four outstanding remarks by the end of the sixth month. Firms that go bankrupt within the second, third or fourth year, on average, have six, ten, or eleven outstanding remarks by the end of the first, second or third year, respectively. In contrast, firms that do not go bankrupt consistently have, on average, only one outstanding remark. Figure 9 in the Appendix shows a similar pattern for the NOK amount associated with remarks relative to the firm's total assets.⁵

Our observations so far suggest three criteria for identifying firms heading toward bankruptcy: (1) a high number of outstanding remarks, (2) a high NOK amount associated with those remarks, and (3) rapid growth in both the number and the NOK amount of remarks. We focus on the first criterion and define high-bankruptcy-risk firms as those with *four or more outstanding remarks*. We classify firms with one, two, or three outstanding remarks as low-risk. The appendix demonstrates

⁴As firms enter the year in which they go bankrupt, the number of observations begins to change, disrupting the smoothness of the lines in the figure. Therefore, each line is truncated at the end of the last full year before bankruptcies occur. For the firms that went bankrupt in the first year, the line is truncated after six months.

⁵For instance, firms that go bankrupt within the first, second, and third year have outstanding liabilities from Inkasso remarks that, on average, constitute 17 percent, 20 percent, and 27 percent of their balance sheet, by the end of the first half-year, first year, and second year, respectively. Total assets are observed as close as possible to the time when the first Inkasso remark is issued and are held constant over time.

that similar results hold for the other criteria and for different thresholds within each criterion.

To evaluate the predictive power of these criteria, we estimate within-sample bankruptcy probabilities (i.e., frequencies) for different time horizons, conditional on whether a firm meets the criterion for being classified as high bankruptcy risk. Table 3 summarizes the bankruptcy frequencies for 1-year, 2-year, and 3-year horizons. We find that a high-bankruptcy-risk firm has a 28 percent chance of going bankrupt within one year. In contrast, the bankruptcy frequency within one year for a low-risk firm is four times lower.

Number of outstanding remarks	1 year	2 years	3 years
4 or more	28%	44%	53%
1-3	7%	14%	19%

Table 3: Bankruptcy frequencies conditional on a number of Inkasso remarks (three horizons).

4 Bankruptcies grow in proportion to remarks

Figure 4 shows that, among all firms in Norway, the share of high-bankruptcy-risk firms has been growing at a rate similar to that of low-risk firms.⁶ Figure 5 confirms that the proportions of firms with different numbers of outstanding remarks have remained relatively stable throughout the sample period. This suggests that, in general, the number of risky firms is growing in proportion to the total number of firms with remarks, and, as a result, bankruptcies are also likely to increase in the same proportion.

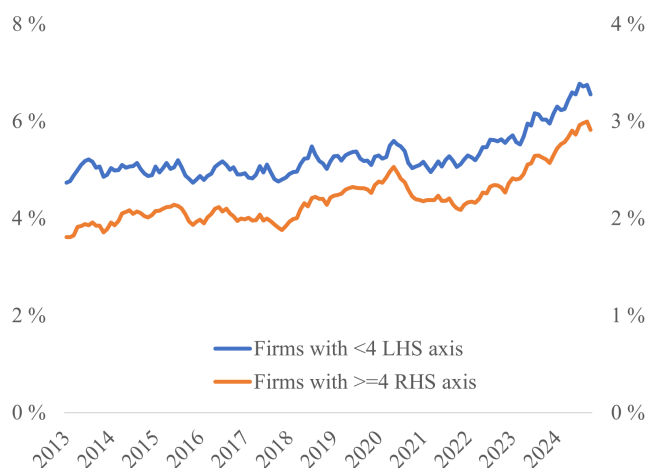


Figure 4: Share of firms with four or more outstanding remarks among all firms in Norway

Source: Dun & Bradstreet and Norges Bank

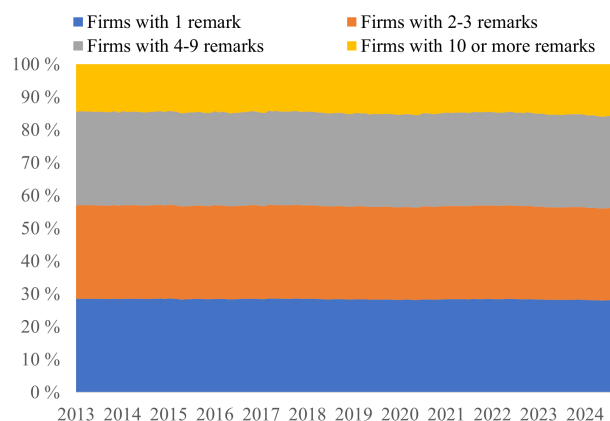


Figure 5: Proportions of firms with different numbers of outstanding remarks

Source: Dun & Bradstreet and Norges Bank

⁶High-bankruptcy-risk firms are significant employers and borrowers, with an average of 25 employees and 10 million NOK in bank debt in 2024. In comparison, low-risk firms have an average of 15 employees and 11 million NOK in bank debt.

Based on this, we propose a simple formula to predict bankruptcies within twelve-months:

$$B_{ym+12} = \frac{F_{ym} \times SB_{ym-12}}{1 - SU_{ym}} \quad (1)$$

where:

- B_{ym+12} is the number of bankruptcies predicted to occur during the period between year-months $ym + 1$ and $ym + 12$;
- F_{ym} is the number of firms with at least one Inkasso remark at the end of year-month ym ;⁷
- SB_{ym-12} is the share of firms with remarks that go bankrupt within the following full year, averaged over twelve month-end observations from $ym - 23$ to $ym - 12$;
- SU_{ym} is the share of bankruptcies unpredicted by remarks - those with no remarks one year in advance (± 4 months), averaged over twelve month-end observations from $ym - 11$ to ym .

As of the end of October 2024, the number of firms with at least one Inkasso remark (F_{ym}) equals 38,789. Figures 6 and 7 show the developments of variables SB_{ym-12} and SU_{ym} , respectively. Since the Covid-19 pandemic, the share of firms with remarks that go bankrupt within the following year has stabilized at around 10 percent, with the latest (12-month moving average) observation as of October 2023 at 10.5 percent. The latest observed (12-month moving average) share of bankruptcies that are unpredicted by remarks, as of October 2024, was 36 percent. Based on this, our formula predicts 6,364 bankruptcies next year (from November 2024 to October 2025), representing an 11 percent increase compared to last year. Next year's bankruptcies, as a share of all firms in Norway, are predicted to reach the pre-pandemic levels as of May 2019 (see Figure 8).

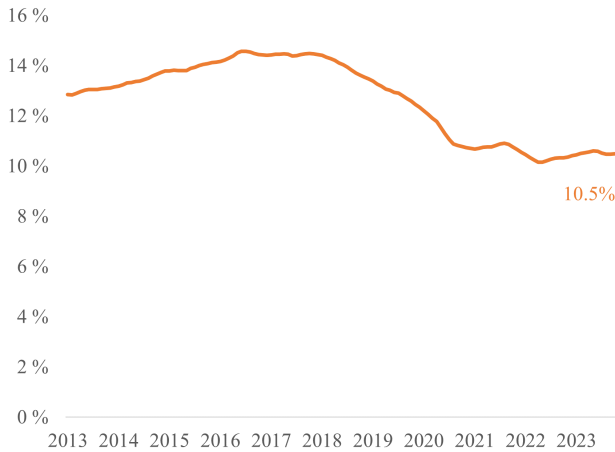


Figure 6: Share of firms with remarks that go bankrupt within one year (12 month MA)

Source: Dun & Bradstreet and Norges Bank



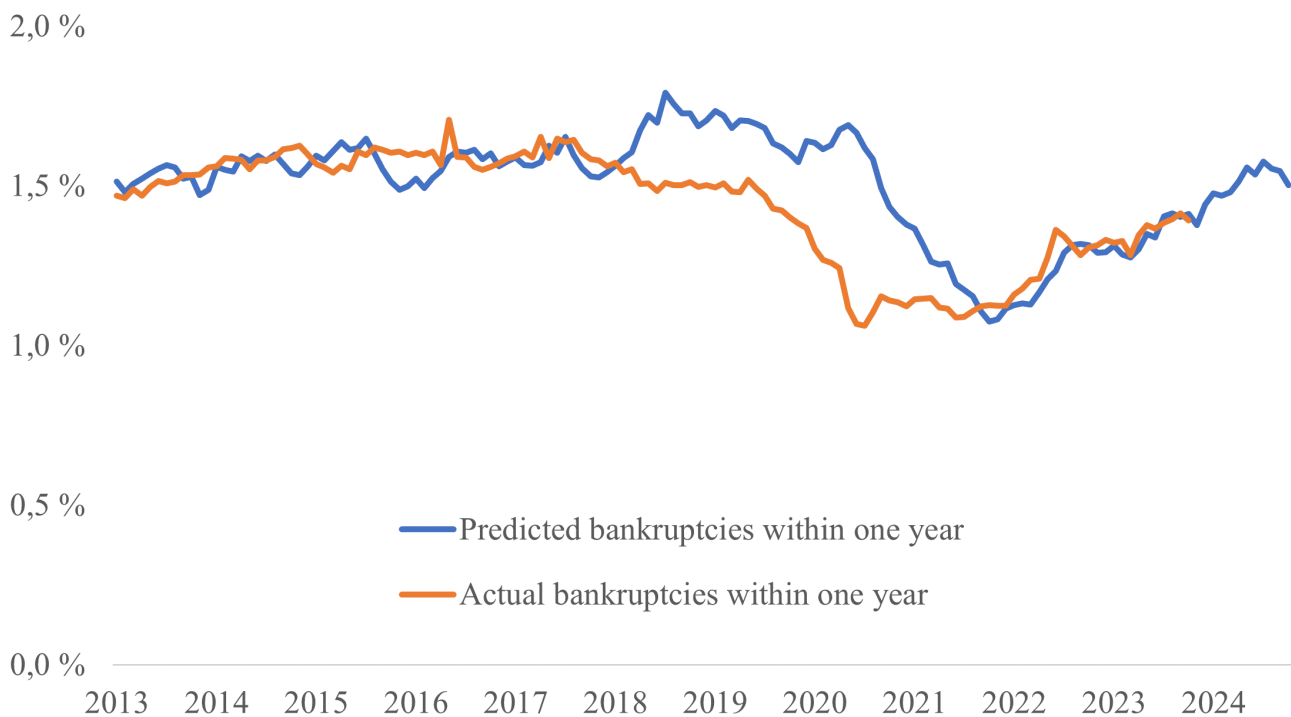
Figure 7: Share of bankruptcies that show no remarks around one year in advance (12 month MA)

Source: Dun & Bradstreet and Norges Bank

⁷We use all firms with remarks, not just those with four or more remarks, as both groups are growing proportionately. This simplifies calculations and maximizes observations, which helps reduce noise.

Figure 8 illustrates the historical accuracy of our proposed prediction method by comparing predicted and actual bankruptcies for the year following each month-end since 2013. The method has generally been accurate, except during the period from 2018 to 2021, when a sudden divergence between payment remarks and bankruptcies occurred (see Figure 2). Since 2022, however, the number of bankruptcies and the number of firms with remarks have grown in parallel (see Figure 2), which explains why the prediction method has regained its accuracy. Overall, our results suggest that the recent increase in payment remarks is likely to lead to a proportional rise in bankruptcies and should therefore be closely monitored.

Figure 8: Predicted vs. actual bankruptcies within the following year (as % of the total number of firms in Norway)



Source: Dun & Bradstreet and Norges Bank

5 Conclusion

This staff memo analyzes the payment remark database to better understand how payment remarks can help predict bankruptcies and whether the recent increase in remarks is concerning. We find that the number of outstanding remarks is a reasonably strong predictor of bankruptcy at the firm level. Additionally, we find that the number of high-bankruptcy-risk firms is growing in proportion to the total number of firms with remarks, suggesting that a simple proportion-based formula can be used to predict the total number of bankruptcies in the following year. This prediction method has been reasonably accurate historically, except during the period from 2018 to 2021, when a

significant divergence occurred between trends in payment remarks and bankruptcies. Since 2022, the growth rates in the number of bankruptcies and the number of firms with remarks have realigned, which helps explain why the prediction method has regained its accuracy. We conclude that the recent increase in payment remarks is likely to predict a proportional rise in bankruptcies and should therefore be closely monitored. Our proposed method predicts that next year's share of bankruptcies will reach 1.5 percent - a level last observed in May 2019.

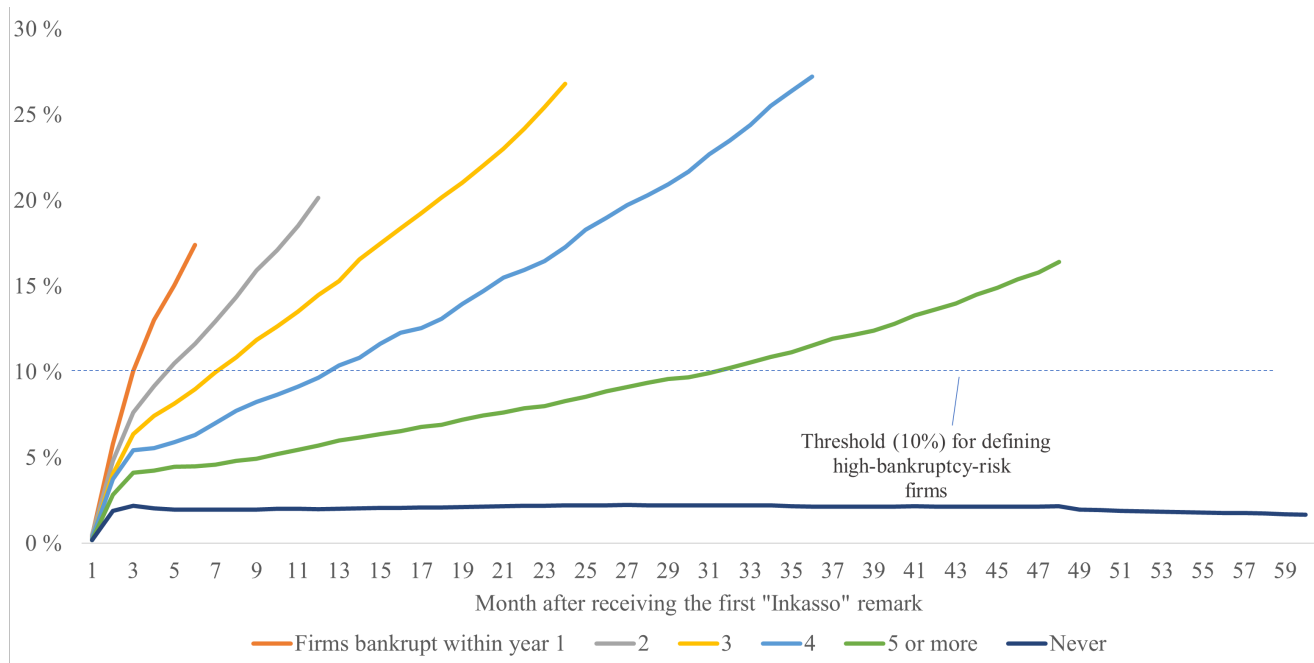
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6 Appendix

The appendix provides evidence that the results remain consistent with the baseline when using two alternative criteria to define high-bankruptcy-risk firms: (1) the NOK amount in remarks relative to the firm's total assets, and (2) the growth rate of the NOK amount in remarks. Figure 9 shows that firms heading toward bankruptcy tend to exhibit high (relative to assets) and rapidly-growing NOK amounts in Inkasso remarks. Figures 10 and 11 demonstrate that high-bankruptcy-risk firms, defined as those with liabilities in remarks exceeding 10 percent of their balance sheet, grow in proportion to the rest of firms with payment remarks. Figures 12 and 13 show similar trends when high-bankruptcy-risk firms are defined as those with 50 percent or faster 12-month growth in the NOK amount in remarks. Tables 4 and 5 present within-sample bankruptcy probabilities conditional on being classified as a high-bankruptcy-risk firm according to each of the two criteria. The appendix also shows that the growth in Inkasso remarks that began in 2018 was at least partially driven by banks as the creditor industry (Figure 14).

Figure 9: Average (per firm) outstanding NOK amount in remarks as % of total assets



Source: Dun & Bradstreet and Norges Bank

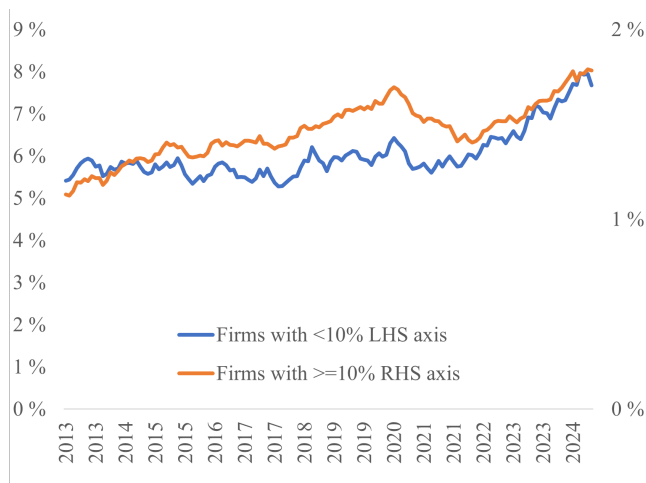


Figure 10: Share of firms with 10% or more in NOK amount associated with Inkasso remarks as % of total assets among all firms in Norway

Source: Dun & Bradstreet and Norges Bank

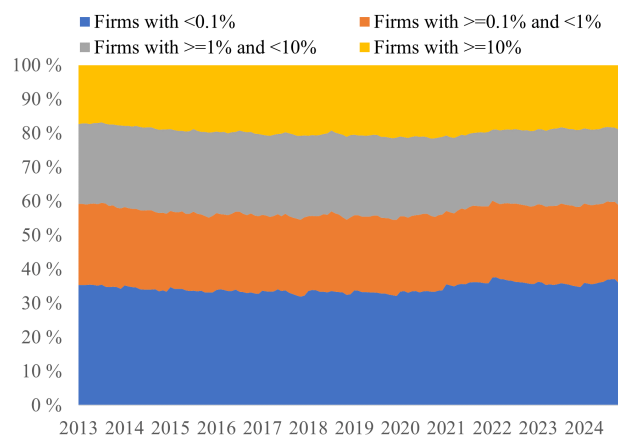


Figure 11: Proportions of firms with different NOK amounts associated with Inkasso remarks as % of total assets

Source: Dun & Bradstreet and Norges Bank

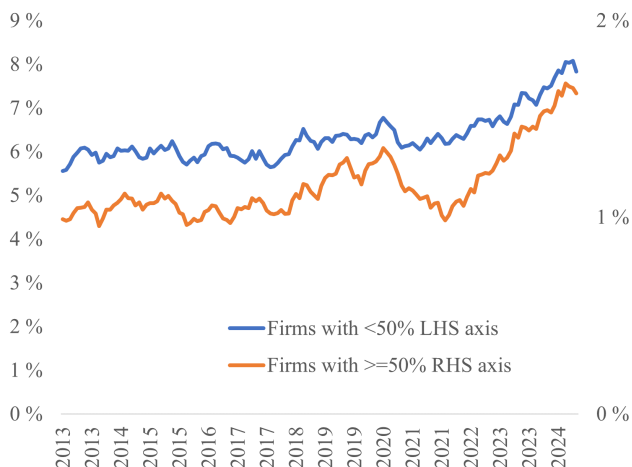


Figure 12: Share of firms with 50% or faster 12-month growth in NOK amount associated with Inkasso remarks among all firms in Norway

Source: Dun & Bradstreet and Norges Bank

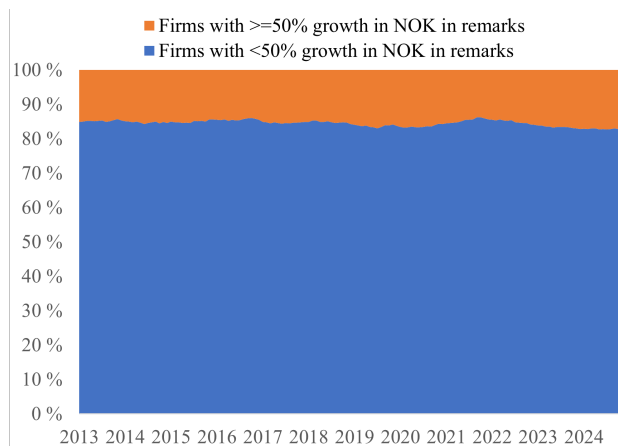


Figure 13: Proportions of firms with different 12-month growth rates in NOK amount associated with Inkasso remarks

Source: Dun & Bradstreet and Norges Bank

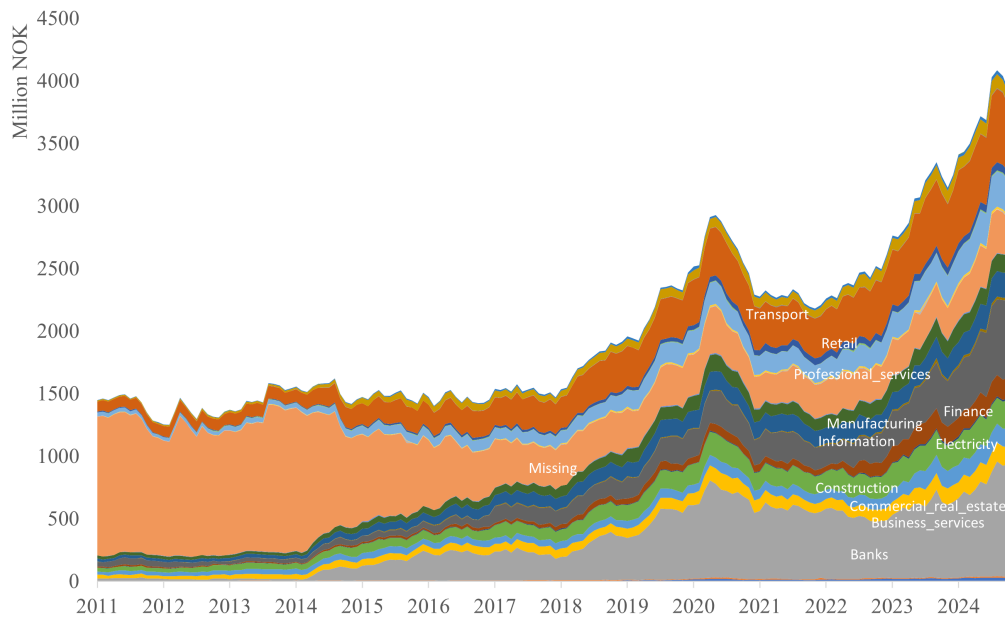
NOK amount in remarks as % of total assets	1 year	2 years	3 years
10% or more	23%	37%	45%
less than 10%	10%	17%	23%

Table 4: Bankruptcy frequencies conditional on the firm's NOK amount in Inkasso remarks as % of total assets (three horizons).

12-month growth rate in NOK amount in remarks	1 year	2 years	3 years
50% or more	24%	38%	45%
less than 50%	11%	15%	25%

Table 5: Bankruptcy frequencies conditional on the firm's 12-month growth rate in NOK amount associated with Inkasso remarks (three horizons).

Figure 14: NOK amount in outstanding remarks, by creditor industry



Source: Dun & Bradstreet and Norges Bank