STAFF MEMO

Government support schemes during the Covid-19 pandemic have had a dampening effect on corporate credit risk

NORGES BANK

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Abstract

After the Covid-19 pandemic broke out, the authorities have introduced a number of measures aimed at the business sector. Support has largely been given to the sectors hardest hit by the pandemic and measures to contain it. A considerable share of banks' loan customers in these sectors have received support from one or more of these schemes. This has likely had a dampening effect on banks' credit loss risk.

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1 Introduction

The Covid-19 pandemic has led to a substantial loss of revenue for many businesses. The authorities have introduced extensive measures to help businesses through a demanding period. These measures are wide-ranging, from relaxation of the furloughing rules and deferrals of and reductions in direct and indirect tax payments, to cash support and government-guaranteed loan schemes. We analyse the effect of these schemes on the risk of losses by Norwegian banks by linking data from the support schemes to data on banks' credit exposures.

The measures implemented to reduce transmission of Covid-19 have led either to the direct closure of businesses or a sharp reduction in their customer base because people changed or had to change their behaviour. Problems also arose for businesses with cross-border activities. Access to foreign labour was restricted, and deliveries of intermediate goods from abroad have been delayed and become more expensive owing to higher transport prices.

There are several reasons why the authorities in many countries have chosen to support businesses affected by the pandemic:

- A desire to share the costs when individual businesses are affected by decisions intended to protect society as a whole.

- Bankruptcy processes are costly in themselves. Since the pandemic is assumed to be temporary, it may be economically profitable to help businesses get through a period of containment measures without having to go through a bankruptcy process.

- A large number of simultaneous corporate bankruptcies will reduce banks' lending capacity because banks' capital adequacy, funding and risk appetite will generally fall when banks absorb large losses. Banks' customers may find it difficult to obtain loans for new investment, possibly leading to a deeper and more prolonged economic decline.

The effects of such measures on financial stability are multifaceted. On the one hand, support measures will reduce the near-term probability of default and bankruptcy. If the fall in turnover is temporary, they will help businesses to remain operating without unnecessary liquidation and restructuring costs. Support measures will also reduce the likelihood that creditors, including banks, will have to forgive some debt to avoid larger losses. On the other hand, there is a risk

that support measures will encourage non-creditworthy businesses to borrow more, which can lead to larger losses on banks' exposures later. Another potential result of support schemes is that private agents will feel less need in the future to build buffers for possible crises, because experience shows that the authorities will intervene with support measures.

Even though support measures were intended to have a positive effect on financial stability, it does not mean that all measures are efficient in an economic sense. By providing support based on historical turnover, support measures may have led to weaker incentives for businesses to restructure during the crisis than they would have had in the absence of support measures. Maintaining support over time increases the risk of continuing operations that will not be profitable when containment measures are scaled back. Furlough schemes help ensure that businesses experiencing temporary problems do not lose a large share of their staff. On the other hand, furlough schemes may have resulted in higher unemployment during the first part of the pandemic, with more persons waiting to look for a new job. Further out, substantial pandemic-related public expenditure may increase the need for higher taxes, in which case they will have negative effects on output.

During the pandemic, the Norwegian authorities have implemented four different forms of economic support for businesses:

1. Helping to cut costs, such as the furlough scheme and cuts in VAT rates.

2. Direct support such as compensation for falls in turnover, such as the cash support scheme. More support has also been provided for alternative business activities, such as innovation and development.

3. Ensuring access to liquid funds, such as offering government-guaranteed loans and the possibility of deferring payment of direct and indirect taxes.

4. Protection against bankruptcy through changes in bankruptcy rules, which temporarily gave businesses increased protection from their creditors.

In this analysis, we will focus on the first three of these forms of economic support.

It is too soon to undertake an overall assessment of the support measures. Overall assessments must also take account of the need for the authorities to take action quickly in a very highly

uncertain situation. In this *Staff Memo* we will therefore limit ourselves to documenting the schemes and their scope and assess their effects on the risk of banks' credit losses.

We will first document the breakdown and scope of support schemes through 2020 and the beginning of 2021. In this connection, we will examine whether support has been given to businesses that were in trouble before the pandemic broke out - since this may be an indication that support measures prolong existing problems. We will then discuss how support measures have benefited banks' customers and what this might have meant for banks' exposures through the crisis. This builds on the discussion published in *Financial Stability Report* 2020 (see Norges Bank (2020)), *inter alia* by including additional support schemes.

We find that the support schemes primarily appear to have been used in sectors where measures to contain the spread of Covid-19 could be expected to have the largest negative effect on turnover. We also find that the support schemes generally have been used for businesses that appeared to be creditworthy at the beginning of 2020. In all, around 15 percent of bank loans to Norwegian non-financial corporations are held by businesses that have received support from at least one of the schemes we analyse. If these businesses had gone bankrupt, this might have meant a greater increase in banks' credit losses in 2020 and 2021.

2   Implemented support measures and the data

A number of government loan and grant schemes are aimed at the business sector, also in normal times. The Ministry of Trade, Industry and Fisheries and Innovation Norway have created a public statistics bank, (see National Data (2020)), of economic policy instruments in 2020.[1] The statistics bank contains grants, loans, guarantees and equity investments by government sector entities directly to or in private businesses or to public-private partnerships.

In this analysis, we wish to focus on schemes related to the Covid-19 pandemic. The instruments in the statistics bank are classified by whether the instrument is extraordinary, its budget has more than doubled in 2020, its budget has increased (but under double the amount) or there was no increase in the instrument's budget. We have chosen to analyse only schemes that are extraordinary or whose budgets have more than doubled. We also look at the crisis measures

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[1]Data collection has been extended to include schemes for 2021.

taken by the Norwegian Labour and Welfare Administration (NAV) included in the statistics

bank (Table 1).[2]

Table 1: Overview of support schemes included in the analysis

Responsible agency	Instrument	Budget	Introduction date	Amount appropriated 2020	Amount disbursed	Description
		Support type	Expiry		Number of unique businesses	
Norwegian Tax Administration and Brønnøysund Register Centre[1]	Compensation scheme	Extraordinary	Apr 2020	NOK 50bn	NOK 8.98bn	Monthly financial compensation to cover a share of unavoidable costs between March 2020 and June 2021 for businesses with a sharp fall in turnover owing to the Covid-19 pandemic. The compensation share has varied somewhat from month to month. Amount disbursed at 15 March 2021 pertains to the period through December 2020.
		Grants	Jun 2021		36 103 businesses	
Norwegian Tax Administration	Wage subsidies	Extraordinary	Jun 2020	-	NOK 0.18bn	Businesses with a fall in turnover could receive a subsidy per employee returning from furlough on account of Covid-19. The scheme applied for the calendar months Jul, Aug, Oct, Nov and Dec 2020 and pertained only to employers that fully or partly had furloughed employees at 31 Aug 2020. On 15 Mar 2021, a new wage support scheme entered into force for the period 15 Mar-30 Jun 2021. The application period opens on 3 May 2021.
		Grants	Dec 2020		1 718 businesses	
NAV	Wage compensation	Extraordinary	Mar 2020	-	NOK 7.53bn	For workers furloughed on 31 August 2020 or earlier, NAV covered wages from the third day after being furloughed, compared with normally after day 20 , and for a maximum of 18 days. For these 20 days, workers were entitled to full wages up to 6 times the National Insurance basic amount (G).
		Grants	Aug 2020		59 090 businesses	
NAV	Refund	Extraordinary	Mar 2020	-	NOK 0.49bn	Employers are refunded sick pay for days 4-16 when the sickness absence is due to Covid-19.
		Grants	Jun 2021		5 879 businesses	
GIEK	Loan guarantee scheme for businesses	Extraordinary	Mar 2020	NOK 50bn	NOK 10.32bn	Banks can extend loans with a government guarantee of 90 percent to businesses with acute liquidity needs owing to the Covid-19 crisis. Initially only to cover small and medium-sized enterprises. In April 2020, the scheme was opened to large enterprises. Loans under the scheme may have a term of up to six years.
		Loans	Jun 2021		3 904 businesses	
GIEK	Loan guarantee for airlines	Extraordinary	Mar 2020	NOK 6bn	NOK 4.49bn	Government loan guarentee for airlines with a Norwegian air operator certificate. Intended to help airlines gain access to market financing. The government contributes 90 percent of the guarantee, provided that external banks, credit institutions or other commercial counterparties provide the remaining 10 percent.
		Loans	Jun 2021		3 airlines	
Innovation Norway	Covid-19 relief[2]	Extraordinary	Mar - Jul 2020	NOK 0.85bn in all	NOK 0.48bn	- Grant scheme aimed at package tour operators. Intended to cover payments to customers connected with cancellation of package tours that were to have started in the period 14 March - 14 June 2020. To help fund statutory customer refunds and avoild bankruptcies for package tour operators. - Restructuring grants for tourism businesses with a large fall in turnover. Businesses may receive grants for costs relating to planned restructuring. A NOK 1bn increase was appropriated for this scheme in 2021, of which NOK 0.3bn is to be spent on existing applications from 2020. This is in addition to the stated amount appropriated in 2020. - Grants for private centres of innovation and entrepreneurial activity. Intended to assist these centres in maintaining services for startups and growth companies. - Grants to the cluster programme.
		Grants	Jun - Dec 2020 (extended into 2021)		405 businesses	
Innovation Norway	Compensation scheme for statutory maintenance	Extraordinary	Jul 2020	NOK 0.25bn	NOK 0.02bn	Intended to help ensure that businesses with a sharp fall in turnover in March-May 2020 obtain funds for performing statutory maintenance pursuant to the Act relating to amusement parks and Act relating to aerial tramways, since this is not compensated under the general compensation scheme.
		Grants	Sep 2020		64 businesses	
Innovation Norway	Loan scheme for package tour operators	Extraordinary	May 2020	NOK 1.5bn	NOK 0.27bn	Intended to cover payments to customers connected with cancellation of package tours that were to have started in the period 14 March - 14 June. To help fund statutory customer refunds and avoild bankruptcies for package tour operators. The scheme was administered alongside the grant scheme for the same purpose.
		Loans	Jun 2020		79 businesses	
Innovation Norway	Innovation grants	Budget more than doubled[3]	Mar 2020	NOK 2.10bn (increase)	NOK 2.13bn	Grants for small and medium-sized growth companies with development projects that may create new activity for the businesses and prevent unnecessary furloughs. The purpose is to be able to implement such development projects despite poor earnings and liquidity challenges. The scheme was extended in 2021 with an increase of NOK 0.5bn in innovation grants.
		Grants	Dec 2020 (extended into 2021)		1 112 businesses	
Innovation Norway	Startup grants	Budget more than doubled	Mar 2020	NOK 0.5bn (increase)	NOK 0.51bn	For entrepreneurs and startups with innovative business ideas with market and growth potential, but reduced access to equity.
		Grants	Dec 2020		918 businesses	
Innovation Norway	Risk loans	Budget more than doubled	Mar 2020	NOK 3bn	NOK 2.83bn	Increased loan budget from NOK 1.6bn to NOK 3bn. Innovation loans may be used to partially finance investment projects that involve new entry, innovation, restructuring, internationalisation and development. The increased loan budget will provide loans to businesses with considerable potential that would have difficulty meeting its financing needs in the market, even with the government's risk relief for banks. Particular focus on liquidity loans.
		Loans	Dec 2020		895 businesses	

1) For the compensation scheme, amount appropriated and number of unique businesses are stated in accordance with data obtained from the agency public disclosure portals at 15 March 2021.
2) These schemes appear under the consolidated item "Covid-19 relief" in the statistics bank, but all extraordinary schemes and schemes with budgets more than doubled in the table are Covid-19-related.
3) The scheme appears in the category "budget more than doubled" in the statistics bank, but may be considered extraordinary.

Sources: Brønnøysund Register Centre, Innovation Norway, Ministry of Trade, Industry and Fisheries, Norwegian Labour and Welfare Administration (NAV), Norwegian Tax Administration and regjeringen.no

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[2]The "Bioeconomy" scheme is not directly related to Covid-19. The allocation for "Expertise programmes" associated with a mentor for businesses with growth ambitions is under NOK 5 million. These schemes are therefore omitted from the analysis, even though their budgets have more than doubled according to the statistics bank.

For parts of the analysis we have also directly accessed the public disclosure portals for the compensation scheme (Norwegian Tax Administration (2021) and Brønnøysund Register Centre (2021)) and the loan guarantee scheme for businesses (Norwegian Export Credit Guarantee Agency (GIEK) (2021)). Our analysis is based on information available at 15 March 2021.

Deferrals of and reductions in direct and indirect tax payments have also been an important instrument. Other measures have also been established aimed at the cultural sector, for example, and other more specialised measures. However, microdata for these schemes are not available to the public, and these schemes are therefore not covered by this analysis.

To limit the number of categories in the analysis, we group the support measure we cover as follows:

- *Cash support:* Compensation scheme

- *Wage compensation:* Wage compensation, refunds and wage subsidies

- *Grants, Innovation Norway (IN):* Innovation grants, Covid-19 relief, start-up grants and compensation scheme for statutory maintenance

- *Loan guarantee scheme:* Loan guarantee scheme for businesses[3]

- *Loans, Innovation Norway (IN):* Risk loans and loan scheme for package tour operators

The sectors in the analysis are divided into seven main categories:

Sector	NACE (SN 2007)
Tourism and hospitality	55: Accommodation, 56: Food and beverage services 79: Tour operator activities
Personal services	85.5-85.6, 86.2-86.9, 93-96
Transport	49-53 (excl. 49.500, 50.201 and 50.204)
Wholesale and retail trade	45-47
Manufacturing and construction	05, 07-08, 09.9, 10-33 (excl. 30.113 and 30.116), 41-43
Professional and commercial services	58-63, 69-75 (excl. 71.122). 77-78, 80-82
Other sectors	All other sector codes

Our sector analysis is built up from company-level data. Annual financial statements for 2019 for all businesses with a Norwegian organisation number required to keep accounting records

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[3]In addition, a loan scheme for airlines was established, where the disbursements primarily comprise loans to the airlines Norwegian and SAS. The scheme is included in Charts 3 and 4 in order to show its scope. Since Norwegian banks did not have large exposures to Norwegian and SAS at the beginning of the pandemic, this scheme will not be analysed further.

have been obtained from the Brønnøysund Register Centre.[4] In addition, we have obtained business-specific credit ratings from Bisnode. In Section 3, we first look at the breakdown of support schemes overall, before linking data for the support schemes to businesses' annual financial statements and credit ratings submitted in 2019. Here we limit the sample to include only support schemes for limited liability companies that submitted financial statements in 2019, with turnover greater than 0 and at least one employee.

Information from the Finanstilsynet (Financial Supervisory Authority of Norway) ENGA database (Finanstilsynet (2021)) enables us to see businesses' bank loans. In Section 6 we use this to find out how much support has been provided to businesses in banks' portfolios across sectors and bank groups. The breakdown of bank loans is based on the status at year-end 2019.

3 Breakdown of support schemes

Disbursements from the various schemes were greatest in the initial months following the Covid-19 outbreak, driven by payouts in connection with furloughs[5] and the loan guarantee scheme (Chart 1). The path of payments from the loan guarantee scheme indicates that businesses' liquidity needs were greatest at the beginning of the pandemic, when uncertainty was highest.

**Chart 1:** Support schemes by month of disbursement decision. In billions of NOK
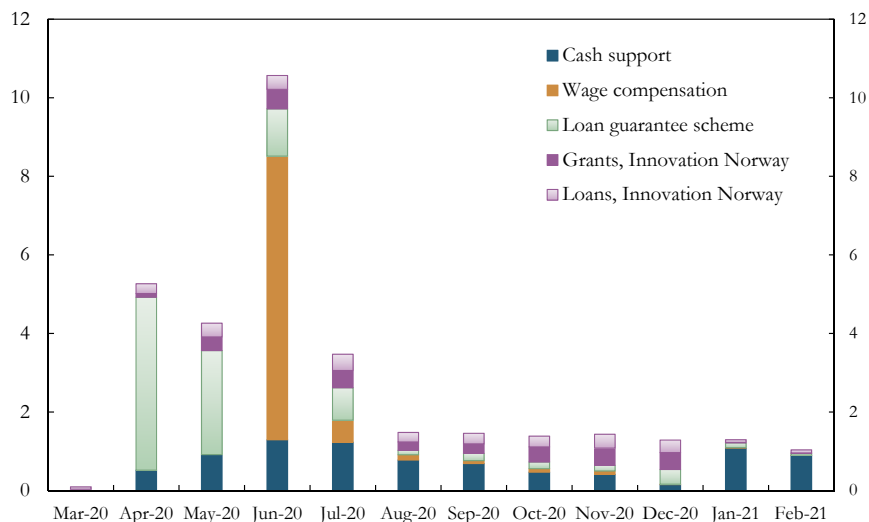
Sources: Innovation Norway, Ministry of Trade, Industry and Fisheries and Norges Bank

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[4]Norges Bank's Brønnøysund Register Centre data are supplied by Bisnode along with Bisnode's credit ratings.
[5]Most of this amount comprises payment of compensation for furloughs in March and April, when the level of furloughs was at its highest.

Chart 2 shows compensation scheme disbursements broken down by the months to which the disbursements pertained. Cash support payments show clear traces of the lockdown in March and April, with high amounts to all sectors. Lower infection rates, an improved economy and lower compensation rates resulted in reduced disbursements through the summer months. Through autumn, infection rates rose, and containment measures were tightened further towards year-end. Grants picked up again in November and December, but the marked increase in disbursements pertained only to tourism and hospitality, personal services and transport.

**Chart 2:** Cash support by period of disbursement. In billions of NOK
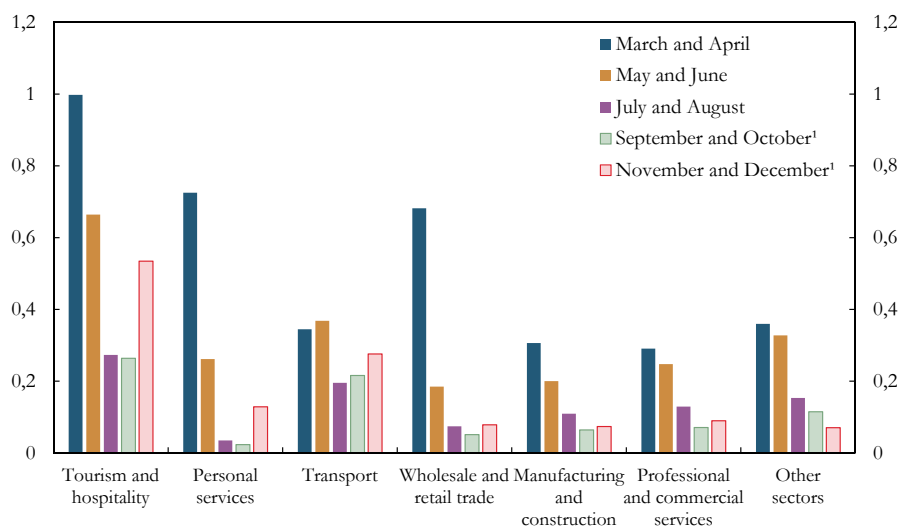
1) Grants awarded up to 15 March 2021.
Sources: Brønnøysund Register Centre, Norwegian Tax Administration and Norges Bank

Most sectors have received substantial grants and loans from the different support schemes (Chart 3). Cash support, wage compensation and the loan guarantee scheme in particular have had a broad reach. Innovation Norway's support schemes are mostly concentrated in professional and commercial services. These are measures that are aimed more at restructuring and innovation. At the same time, extra loans and grants have been given to the tourism and hospitality sector in the form of grants and loans to package tour operators, for instance.

If we take into account sector size, we find that hard-hit sectors such as tourism and hospitality, personal services and transport have received the most support by far. Chart 4 shows total grants and total loans as a share of total sector turnover in 2019.

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Chart 3: Support schemes by sector. In billions of NOK
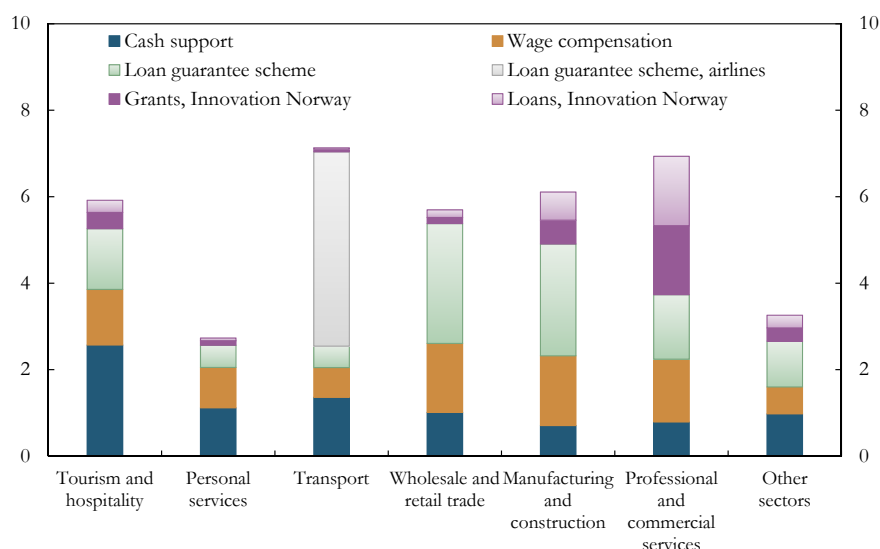
Sources: Innovation Norway, Ministry of Trade, Industry and Fisheries and Norges Bank

Chart 4: Grants and loans as a share of sector turnover in 2019. Percent
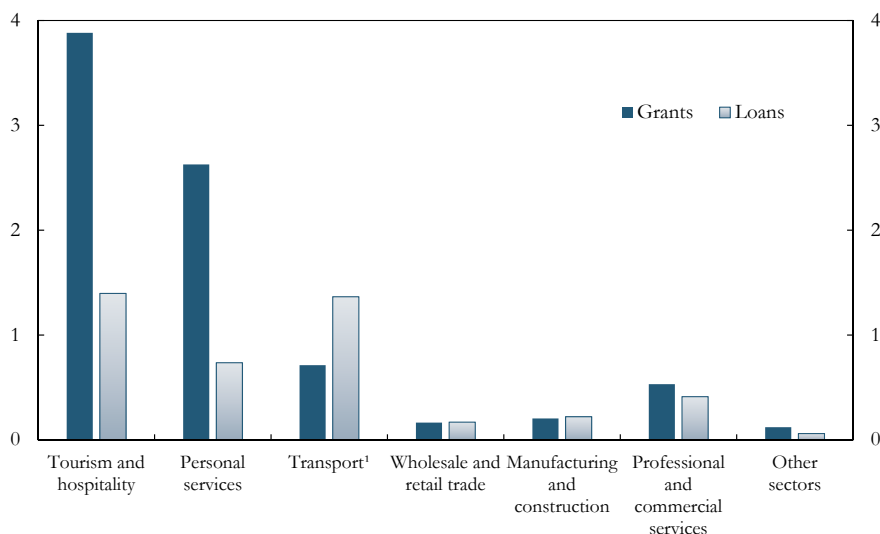
1) Includes loan guarantee scheme for airlines with available annual financial statements for 2019.
Sources: Innovation Norway, Ministry of Trade, Industry and Fisheries and Norges Bank

There was good coverage of cash support and wage compensation schemes among hard-hit sectors, as a large number of businesses have received support (Chart 5). Over 60 percent of the businesses in tourism and hospitality have received cash support for at least one month. Three out of four businesses have also received compensation for wages owing to furloughs.

Compared with cash support and wage compensation, far fewer businesses have borrowed through the loan guarantee scheme, or received support in the form of grants or loans from Innovation Norway. On the other hand, support through these schemes represents on average a larger share

of 2019 turnover for the businesses who have received it (Chart 6). Overall, we may conclude that cash support and wage compensation have meant a little for many, while the loan guarantee scheme and Innovation Norway schemes have meant a lot for a few.

Chart 5: Share of businesses that have received support in each sector. Percent

Sources: Innovation Norway, Ministry of Trade, Industry and Fisheries and Norges Bank

Chart 6: Support as a share of turnover in 2019 for businesses that have received support, by type of support scheme. Percent
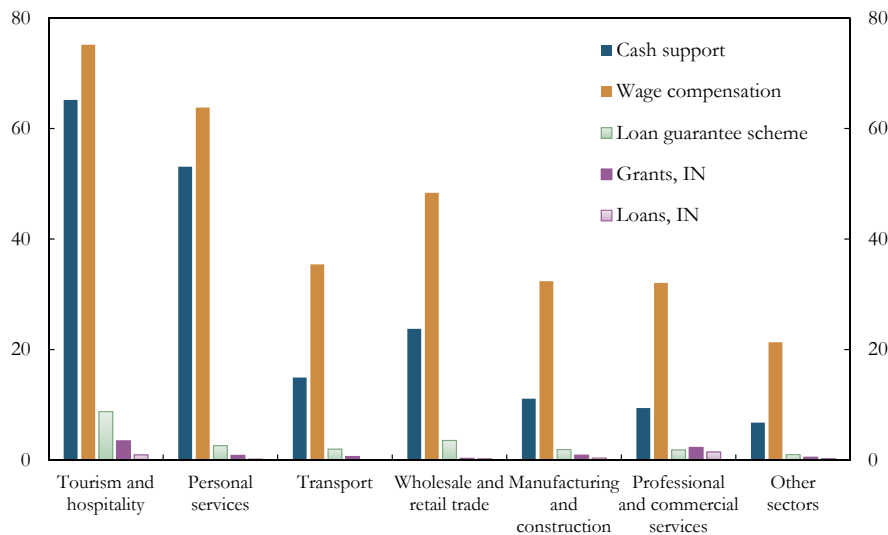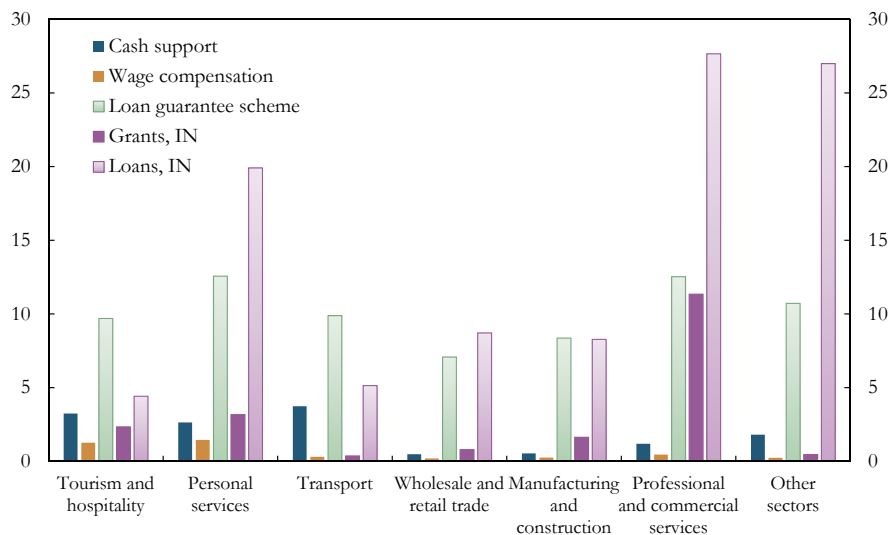

Sources: Innovation Norway, Ministry of Trade, Industry and Fisheries and Norges Bank

Despite the fact that many businesses have received cash support, the amounts disbursed are highly concentrated. The 1 percent (362 businesses) with the largest disbursements have received 50 percent of the cash support. The wage compensation scheme is somewhat less concentrated.

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There, the 1 percent (611 businesses) largest recipients account for 31 percent of the total amount disbursed. Table 2 in the appendix shows the ten largest recipients in each support scheme category.

4 Signs that viable businesses receive relatively more support than non-viable businesses

A possible concern is that support measures act as artificial life-support for non-viable businesses. We do not find it probable that a disproportionately high share of non-viable businesses have received support through the pandemic. We use the lowest credit rating, C, at year-end 2019 as an indicator that the business was non-viable at the beginning of the pandemic and look at disbursements to such businesses through the cash support and wage compensation schemes.[6] 3.8 percent (NOK 301 million) of the cash support and 4.0 percent (NOK 294 million) of the wage compensation has been given to businesses with a credit rating of C prior to the beginning of the pandemic.

Simple logit estimates of each support scheme, where we control for sector group, primarily show that there is not a greater probability for non-viable companies to receive support compared with viable companies (see Appendix for regression results from the estimates). In some sectors, there is a significantly lower probability of receiving support if the business has a credit rating of C (Chart 7).[7] In other sectors, there are non-significant differences.

The results are clearest for the cash support scheme. This may reflect requirements for direct and indirect taxes and withholding tax due prior to the end of February 2020 to have been paid in order to be eligible for cash support.

For the wage compensation scheme, there was, in the hardest hit sectors and wholesale and retail trade, a somewhat lower probability or non-significant differences for businesses with a credit rating of C to have received wage compensation. For the remaining sectors as a whole,

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[6]These schemes are the most interesting in this connection, because they are both grant-based schemes and not loan-based schemes. Moreover, the cash support and wage compensation schemes are largely automated schemes, while Innovation Norway grants are largely based on individual assessments.

[7]To better distinguish significant from non-significant results, we have chosen a slightly different sector breakdown in this part of the analysis.

however, there is a somewhat higher probability that businesses with a credit rating of C have received wage compensation.

Grouped by sector, the results for both schemes are the most striking for food and beverage service activity. This is a low-margin sector, with the highest share of businesses with a credit rating of C of all sectors. In food and beverage services, there was a significant and clearly lower probability of having received support for businesses with a credit rating of C.[8]

Chart 7: Probability of receiving cash support by businesses with turnover exceeding NOK 1.5 billion in 2019 and probability of receiving wage compensation by businesses with more than three employees. Percent

Cash support / Wage compensation

■ Probability when business does not have a credit rating of C

■ Change in probability when the business has a credit rating of C, percentage points[1]
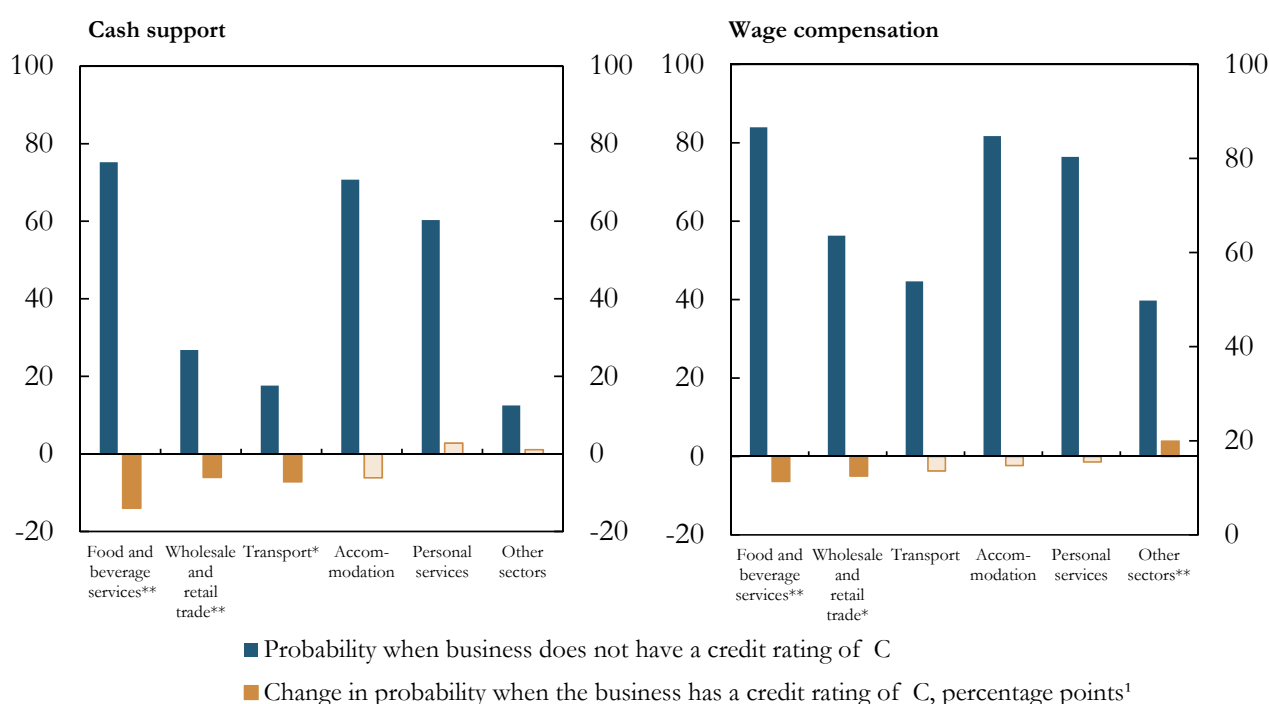
1) * indicates significance level below 5%, ** indicates significance level below 1%. Light bars indicate non-significant differences.
Sources: Innovation Norway, Ministry of Trade, Industry and Fisheries and Norges Bank

5   Challenges associated with phasing out support measures

Liquidity in the business sector as a whole has risen sharply through the pandemic (Chart 8), for several reasons. The various support schemes have made substantial contributions to improving liquidity. In addition, a number of businesses have received principal repayment deferrals on

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[8]Note that we have no grounds to test whether support has been disbursed to businesses that do not meet the schemes' requirements. Another question is whether support was necessary for the business to avoid bankruptcy, which is also difficult to assess before the financial statments for 2020 are available.

their loans for a period and enjoyed the benefits of lower lending rates, and some had lower payroll and travel expenses. Moreover, many businesses' turnover the previous year was good.

Concerns have been raised by business owners and politicians that bankruptcies would begin to pick up if support measures are lifted before the economy has recovered and the effects of the pandemic markedly dampened. So far, the authorities have met these concerns by extending many of the support measures until the end of June 2021.[9] There may be reason for particular concern for businesses that have used the scheme to defer payment of direct and indirect taxes and that have thus amassed a tax liability. In normal times, demands for payment from the Norwegian Tax Administration are one of the chief causes of bankruptcy. According to press reports, tax liabilities amounted to around NOK 5 billion at the end of February 2021. However, we do not have access to data broken down by sector for these tax liabilities.

Chart 8: Commercial market's bank deposits in the Norwegian banking sector. In billions of NOK
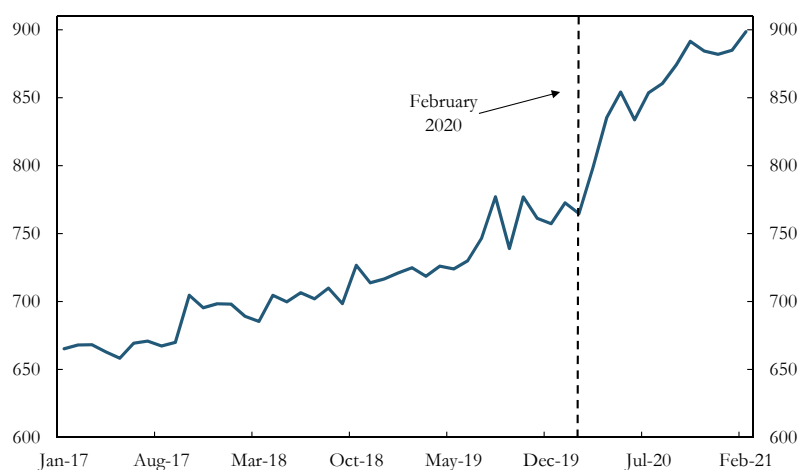
Source: Norges Bank

6   Bank loans to businesses that have received support

Support scheme disbursements may help improve the debt-servicing capacity of hard hit bank customers. We have linked support scheme information with data for the eleven largest banks' loan engagements at year-end 2019. We only look at loans to Norwegian non-financial corporations. In the Norwegian banking system as a whole, loans to non-financial corporations account for

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[9]The stimulus and compensation scheme for culture, volunteer organisations and sports has been extended to 1 September 2021 (otherwise see Norwegian Government (2020) (Norwegian only)).

around 25 percent of total lending. The overall results indicate that around 15 percent of these loans are to businesses that have received support from at least one of the schemes we examine.

We find that bank loans to the tourism and hospitality sector have the most support scheme coverage (Chart 9). Over 30 percent of volume of loans to tourism and hospitality is to businesses that have received cash support. For wage compensation, the share is over 50 percent. Coverage is also high in personal services, transport and wholesale and retail trade. The schemes are therefore important for the risk of losses in this part of the portfolio, at least in the short term.[10] But these sectors account for only around 10 percent of bank loans to Norwegian non-financial corporations (Chart 9).

Chart 9: Loans to businesses that have received support as a share of total lending to the sector at 31 December 2019 (left chart) and loans to the different sectors as a share of total lending to Norwegian non-financial corporations at 31 December 2019 (right chart). Percent
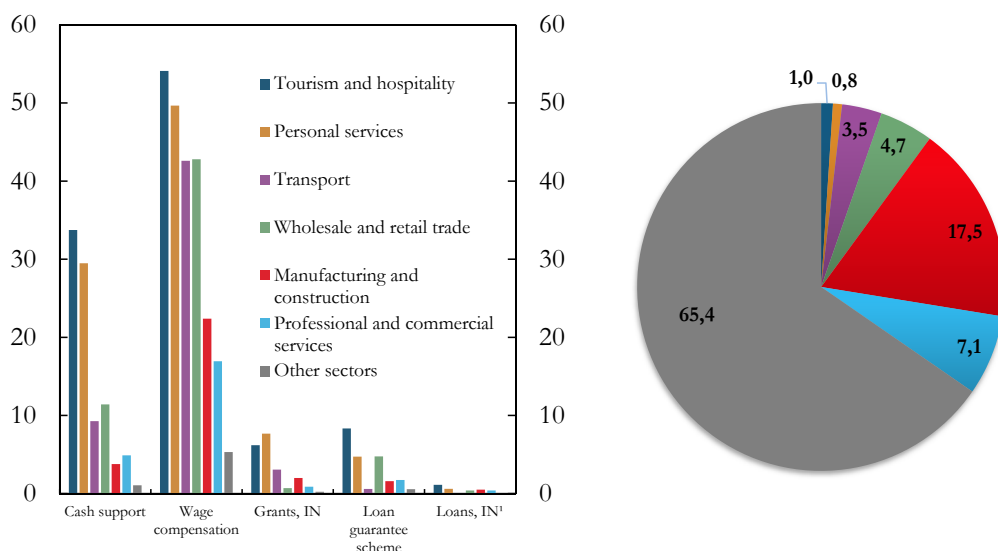
1) Low shares because risk loans are intended for businesses unable to meet their financing needs in the market and are therefore normally granted to businesses without bank loans.
Sources: Innovation Norway, Ministry of Industry, Trade and Fisheries, Norwegian Export Credit Guarantee Agency (GIEK) and Norges Bank

We see from Chart 9 that a far greater share of the loan volume in the various sectors are covered by the cash support and wage compensation schemes than by the other schemes. Chart 10 shows the ratio of the support amounts received to loans held at year-end 2019 by businesses that received support. Wage compensation, which is large in overall scope, but spread over a large number of companies, shows the smallest share, while the loan schemes, which are more concentrated, account for a substantial share. Note that the purpose of risk loans from

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[10]For a discussion of the risk of bank losses during the pandemic, see Hjelseth et al. (2020).

Innovation Norway is to lend to businesses with great potential, but which are unable to meet their financing needs in the market. For that reason, the Innovation Norway's loan schemes amount to very low shares of bank loans (Chart 9), but a high share of the loans to businesses that have received support of this scheme (Chart 10).

Chart 10: Support as a share of existing loans at 31 December 2019 to businesses that have received support from each support scheme. Percent
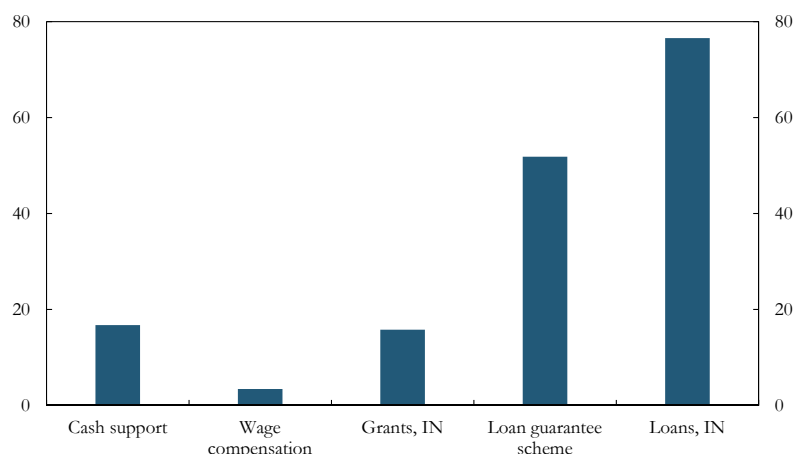
Sources: Innovation Norway, Ministry of Trade, Industry, Norwegian Export Credit Guarantee Agency (GIEK) and Norges Bank

DNB's share of loans to businesses that have received support is somewhat larger than the shares of the regional savings banks and branches of foreign banks (Chart 11). However, the saving banks hold the highest share of loans to businesses that have received support from the loan schemes. The savings banks have lent the most by far through the loan guarantee scheme relative to total loan volume.

Chart 11: Loans to businesses that have received support by bank category. As a share of total corporate lending at 31 December 2019. Percent
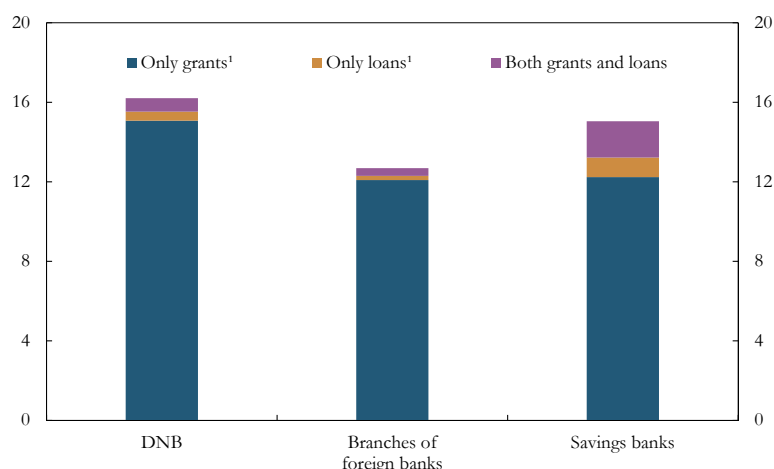
1) Only grants (loans): loans to businesses that have received support from at least one grant (loan) scheme.
Sources: Innovation Norway, Ministry of Trade, Industry and Fisheries, Norwegian Export Credit Guarantee Agency (GIEK) and Norges Bank

6.1 Banks have provisioned for credit losses on oil service exposures in particular

Banks entered the pandemic with solid earnings and high capital adequacy. In 2020, however, banks' credit loss provisions were the highest in nearly 30 years. These impairment charges were largely related to increased expected credit losses on oil service exposures. After the oil price fall in 2014, oil services faced considerable challenges that remained unresolved at the beginning of the pandemic. Hopes for improvements in this industry were pinned on an expected rebound in petroleum investment. The oil price fall that accompanied the Covid-19 pandemic made it likely that such investment growth would be deferred. A large number of banks chose to increase the impairment charges on these exposures. We estimate that over 2/3 of total credit loss provisions on corporate exposures in 2020 were related to this industry.

Oil service companies also received some support under the various support schemes. In addition, the Storting (Norwegian parliament) approved a scheme for giving oil companies an incentive to bring forward investment on the Norwegian shelf, which has helped underpin petroleum investment. Nevertheless, the underlying vulnerabilities in the industry and uncertainty surrounding oil price movements may have made it appropriate to recognise losses in this situation. The losses might have been even higher if the government had not taken action.

Around 35–40 percent of banks' total corporate exposures are related to commercial real estate. These are loans with relatively low risk weights and low interest rates in normal times. However, typical banking crises are characterised by substantial losses on these loans.[11]

Commercial real estate has received little direct support from the support schemes. Nevertheless, it must be assumed that the support schemes have had a stabilising effect on this sector. Several large tenants have received substantial amounts of support over the past year, which has helped them cover fixed expenses, such as rent. The support schemes have also held down bankruptcy rate, which ensures that more businesses maintain their leases. Without contributions from such support, we must assume that more commercial real estate companies would have had payment problems.

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[11]See Kragh-Sørensen and Solheim (2014).

7 Conclusion

During the Covid-19 pandemic, the authorities have introduced extensive support measures for the business sector. We have reviewed the support schemes and how funds have been disbursed over time and distributed among sectors. The support schemes appear primarily to have benefited those sectors expected to be hardest hit by the pandemic. Our analyses indicate that businesses that were weak at the beginning of the crisis have received support to a lesser extent than other businesses.

So far, the pandemic has not led to a banking crisis, owing in large part to government support schemes. Around 15 percent of banks corporate loans are to businesses that have received support under these schemes. Without such transfers, there is reason to believe that many banks would either have had to provide larger liquidity loans or had to accept higher impairment provisions to ensure against losses. Moreover, there is reason to believe that the support schemes have helped enable many customers to pay fixed expenses such as rent - which in turn has reduced the vulnerabilities of loans to commercial real estate, which have received little direct transfers.

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Appendix

Table 2: Overview of the ten businesses receiving the highest amounts of support in each support scheme category. Based on information available at 15 March 2021

	Cash support				Wage compensation		
Org.no	Name	Sector	NOK m	Org.no	Name	Sector	NOK m
953149117	Scandic Hotels AS	Tourism and hospitality	335	953149117	Scandic Hotels AS	Tourism and hospitality	74
974526689	Hurtigruten Pluss AS	Transport	321	914791723	ISS Facility Services AS	Professional and commercial services	46
960563085	PGS Geophysical AS	Other (geological surveys)	284	991779434	Color Line Crew AS	Transport	45
910310895	Fjord Line AS	Transport	269	985979456	Hurtigruten Sjø AS	Transport	45
982410614	Strawberry Group AS	Other (commercial real estate)	202	961510740	SAS Denmark-Norway-Sweden	Transport	39
991779493	Color Line Transport AS	Transport	155	996086321	Ventor Construction AS	Professional and commercial services	27
931531018	Radisson Hotels Norway AS	Tourism and hospitality	99	912056228	SAS Ground Handling Norway A	Transport	26
892625522	SATS Norway AS	Personal services	80	887209812	Travel Retail Norway AS	Wholesale and retail trade	25
948181150	Radisson Blu Plaza Hotel	Wholesale and retail trade	75	912618900	H&M Hennes & Mauritz AS	Wholesale and retail trade	25
887209812	Travel Retail Norway AS	Wholesale and retail trade	64	935333156	Adecco Norge AS	Professional and commercial services	23
Sources: Brønnøysund Register Centre and Norwegian Tax Administration		**TOTAL**	**1884**	Sources: Innovation Norway and Ministry of Trade, Industry and Fisheries		**TOTAL**	**375**
		Share of scheme	21 %			Share of scheme	5 %

	Grants, Innovation Norway				Loans, Innovation Norway		
Org.no	Name	Sector	NOK m	Org.no	Name	Sector	NOK m
991457429	Norsk Titanium AS	Manufacturing	35	915894151	Ving Norge AS	Tourism and hospitality	102
915108598	Ably Medical AS	Professional and commercial services	27	978706843	Talgø Møretre AS	Manufacturing	62
916981880	Kongsberg Digital AS	Professional and commercial services	24	996638812	Arctic Nutrition AS	Manufacturing	50
913915062	Aker Biomarine AS	Other (ocean and coastal fishing)	22	979397720	Nordnes AS	Other (ocean and coastal fishing)	30
970028935	Geno SA	Other (animal husbandry services)	21	966681454	Escape Travel AS	Travel and tourism	29
915596711	Akvafresh AS	Professional and commercial services	19	995475383	Documaster AS	Professional and commercial services	28
993467049	Oslo Universitetssykehus HF	Other (hospital services)	15	914542928	Arba Follum AS (fusjonert)	Manufacturing	25
989750186	Elliptic Laboratories AS	Professional and commercial services	15	913514874	Disruptive Technologies Research AS	Professional and commercial services	25
897757222	4Human HRM AS	Professional and commercial services	15	916752628	Xplora Technologies AS	Professional and commercial services	25
915666450	Blueye Robotics AS	Professional and commercial services	15	918075070	Hjelvik Matfisk	Other (production of fish for food)	25
Sources: Innovation Norway and Ministry of Trade, Industry and Fisheries		**TOTAL**	**208**	Sources: Innovation Norway and Ministry of Trade, Industry and Fisheries		**TOTAL**	**401**
		Share of scheme	7 %			Share of scheme	13 %

	Loan guarantee scheme				All schemes		
Org.no	Name	Sector	NOK m	Org.no	Name	Sector	NOK m
910310895	Fjord Line AS	Transport	135	974526689	Hurtigruten Pluss AS	Transport	443
974526689	Hurtigruten Pluss AS	Transport	117	953149117	Scandic Hotels AS	Tourism and hospitality	409
937270062	Norsk Gjenvinning AS	Other (waste collection)	108	910310895	Fjord Line AS	Transport	406
924542292	Drammen Bilutleie AS	Professional and commercial services	108	960563085	PGS Geophysical AS	Other (geological surveys)	286
890832482	Seadream AS	Other (commercial real estate)	94	982410614	Strawberry Group AS	Other (commercial real estate)	202
923957413	Fjordlaks AS	Manufacturing	90	991779493	Color Line Transport AS	Transport	156
920165931	Kristiansand Dyrepark AS	Other (botanical and zoological gardens)	90	931531018	Radisson Hotels Norway AS	Tourism and hospitality	115
912536270	More Holdco Giba AS	Wholesale and retail trade	90	937270062	Norsk Gjenvinning AS	Other (waste collection)	112
935487242	Q-Free ASA	Professional and commercial services	74	915894151	Ving Norge AS	Tourism and hospitality	111
984414307	Gumpens Auto AS	Wholesale and retail trade	72	924542292	Drammen Bilutleie AS	Professional and commercial services	109
Sources: Innovation Norway and Ministry of Trade, Industry and Fisheries		**TOTAL**	**978**	Sources: Brønnøysund Register Centre, Innovation Norway, Ministry of Trade, Industry and Fisheries and Norwegian Tax Administration		**TOTAL**	**2349**
		Share of scheme	9 %			Share of scheme	7 %

Logit-models for probability of receiving support

We estimate two logit models for probability, p, that a business receives support, S, where S=cash support or wage compensation. Both logit models are given by:

$$\ln(p^S/(1-p^S)) = \beta_1^S n + \beta_2^S (n * c) + \mu^S \tag{1}$$

where n is a category variable indicating the sector ("Other sectors" is a reference category in the regression results), $n * c$ is an interaction term between sector and credit rating C (the regression results show coefficients for when the business has credit rating C), and μ is the constant term.

Regression results Cash support

Logistic regression						
			Number of observations	=	92,165	
			Wald chi2(11)	=	13883.55	
			Prob > chi2	=	0.0000	
Log pseudolikelihood = -43014.906			Pseudo R2	=	0.1557	

(Std. Err. adjusted for 92,165 clusters in Fnr)

p(cash support)	Coef.	Robust Std. Err.	z	$P > |z|$	(95% Conf.	Interval)
Sector						
Accommodation	2.83	0.05	52.67	0.000	2.73	2.94
Personal services	2.37	0.03	87.38	0.000	2.31	2.42
Transport	0.41	0.04	9.16	0.000	0.32	0.49
Wholesale and retail trade	0.94	0.02	45.79	0.000	0.90	0.98
Food and beverage services	3.06	0.04	77.83	0.000	2.98	3.14
Sector*Credit rating C						
Other sectors*C	0.10	0.07	1.31	0.190	-0.05	0.24
Accommodation*C	-0.28	0.24	-1.17	0.241	-0.75	0.19
Personal services*C	0.12	0.15	0.78	0.434	-0.18	0.41
Transport*C	-0.61	0.26	-2.34	0.019	-1.12	0.10
Wholesale and retail trade*C	-0.34	0.08	-3.98	0.000	-0.50	0.17
Food and beverage services*C	-0.65	0.10	-6.44	0.000	-0.85	0.45
Constant term	-1.95	0.01	-144.99	0.000	-1.98	-1.92

Regression results Wage compensation

Logistic regression						
			Number of observations	=	67,147	
			Wald chi2(11)	=	5108.67	
			Prob > chi2	=	0.0000	
Log pseudolikelihood = -43497.392			Pseudo R2	=	0.0653	

(Std. Err. adjusted for 67,147 clusters in Fnr)

p(wage compensation)	Coef.	Robust Std. Err.	z	$P > |z|$	(95% Conf.	Interval)
Sector						
Accommodation	1.91	0.07	27.30	0.000	1.77	2.05
Personal services	1.59	0.04	44.84	0.000	1.52	1.66
Transport	0.20	0.04	5.21	0.000	0.13	0.28
Wholesale and retail trade	0.67	0.02	34.71	0.000	0.63	0.71
Food and beverage services	2.01	0.04	46.76	0.000	1.98	2.15
Sector*Credit rating C						
Other sectors*C	0.16	0.06	1.87	0.005	-0.05	0.27
Accommodation*C	-0.15	0.32	-0.47	0.642	-0.77	0.48
Personal services *C	-0.08	0.18	0.03	0.679	-0.44	0.28
Transport*C	-0.15	0.18	-1.94	0.411	-0.51	0.21
Wholesale and retail trade*C	-0.20	0.08	-2.37	0.013	-0.36	-0.04
Food and beverage services*C	-0.41	0.12	-6.51	0.000	-0.64	-0.18
Constant term	-0.42	0.01	-38.08	0.000	-0.44	-0.39