

ECONOMIC COMMENTARIES

Greater adaptability in the Norwegian oil service industry

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The Norwegian oil service industry has recently experienced a considerable fall in demand. The effects of this decline on the Norwegian economy will partly depend on the adaptability of the oil service industry. This article examines oil service enterprises' assessments of their own adaptability, measured as the ability to replace lost petroleum-related sales with higher sales in other markets. The analysis is based on a survey of oil service enterprises in Norges Bank's regional network conducted in the periods January–February 2015 and October–November 2015. The share that expected to be able to move into other markets was larger at the end of 2015 than at the beginning of 2016. This supports the hypothesis that the depreciation of the krone exchange rate and the decline in the petroleum industry in 2015 boosted the Norwegian oil service industry's willingness and ability to adapt.

At the end of 2015, the enterprises that currently only service the petroleum industry estimated that they could replace close to 10 percent of the decline in oil-related sales in other markets. The oil service enterprises that are already represented in other markets expected that they could replace close to 20 percent. Most of the enterprises reporting sound prospects for adapting to other markets are in the shipbuilding, offshore shipping and maritime equipment sectors. In the past year, many oil service enterprises in these sectors have won aquaculture, fishing, and offshore wind power contracts.

By Anna Sandvig Brander, Henriette Brekke and Bjørn E. Naug¹

Introduction

Demand from the domestic and foreign petroleum industry rose markedly from 2002 to 2013, driven by a pronounced rise in oil prices. This led to a sharp rise in value added in the Norwegian oil service industry and among other enterprises with oil-related turnover. At the same time, an increasing number of enterprises chose to adapt their production to the petroleum industry to boost turnover and profitability.

This elevated activity also led to a considerable rise in cost levels in the petroleum industry. Costs continued to rise from 2011 to 2013 while oil prices held firm around USD 110. Weakened profitability eventually resulted in oil companies implementing a series of measures to reduce operation, maintenance and investment costs. The fall in oil prices through 2014 and 2015 pulled activity further down. Like most other forecasters, Norges Bank estimates that demand from the domestic and foreign petroleum industry will continue to fall in the coming years. This decline in demand will have considerable negative spillover effects for the wider Norwegian economy and for the oil service industry in particular.

The effects of the decline in the petroleum industry on the Norwegian economy will partly depend on the ability of enterprises to adapt and on labour force mobility across enterprises, sectors and regions. This article takes a closer look at the ability of Norwegian oil service enterprises to adapt, measured by their ability to compensate for lower petroleum-related turnover by increasing sales in other markets. The analysis is

¹ We would like to thank Kjersti Haugland and Per Espen Lilleås for their helpful suggestions and comments.

based on a survey of oil service enterprises that participated in the 1/2015 and 4/2015 regional network surveys, conducted in the periods January–February and October–November 2015.² Thirty-four of these enterprises participated in the 1/2015 survey, while 32 participated in the 4/2015 survey. These enterprises had a total of 40 000 employees in petroleum-related activities at the time of the survey, approximately one fourth of total petroleum-related employment in the Norwegian oil service industry.³ The enterprises were asked about the scale of their petroleum-related turnover and about their perception of to what extent lost sales could be replaced in other markets.

A similar survey conducted in autumn 2012 indicated that oil service enterprises at that time only regarded such adaptation as a limited possibility (see Brander, Brekke and Naug 2013). However, there is reason to believe that the decline in petroleum activity and the depreciation of the krone exchange rate in the past two years has affected oil service enterprises' assessment of their own adaptability. Petroleum industry activity was high and rising in autumn 2012, and there was little reason for oil service enterprises to move into other markets. Most of these oil service enterprises have now experienced a considerable decline in petroleum-related turnover and have, to a greater degree, had to consider alternative sources of revenue. The weak krone exchange rate has facilitated adaptation by (a) boosting activity in other sectors of the Norwegian economy that the oil service industry can supply, and (b) strengthening the international competitiveness of the oil service industry in alternative markets. Since the krone exchange rate and demand from the petroleum industry weakened substantially through 2015, there is also reason to believe that the ability and willingness to adapt was stronger at the end of the year than at the beginning. To examine this, we compare the results of the 1/2015 and 4/2015 surveys.

A number of oil service enterprises have recently won contracts in alternative markets. Most of these enterprises had moved into alternative markets prior to the decline in the oil industry. It seems likely that it is easier for these oil service enterprises to adapt than for those with exclusively petroleum-related turnover. This hypothesis is tested by comparing survey results from enterprises that exclusively service the petroleum industry with those that also service other sectors in Norway and abroad.

Definitions:

Oil service enterprise: An enterprise that provides goods and/or services tailored to the needs of the petroleum industry.

Petroleum-related turnover: Provision of goods and services by firms in Norway to oil companies and (other) oil service enterprises in Norway and abroad.

What share of sales is petroleum-related?

To investigate whether there are wide differences in adaptability between enterprises that exclusively service the petroleum industry and those that also service other sectors, participants were first asked to estimate the percentage of their sales that are petroleum-related. The possible answer categories were: 0, 1–25, 26–50, 51–75, 76–99 and 100. Answers were weighted by employment in the enterprises. Chart 1 shows the spread of answers for the two surveys combined.

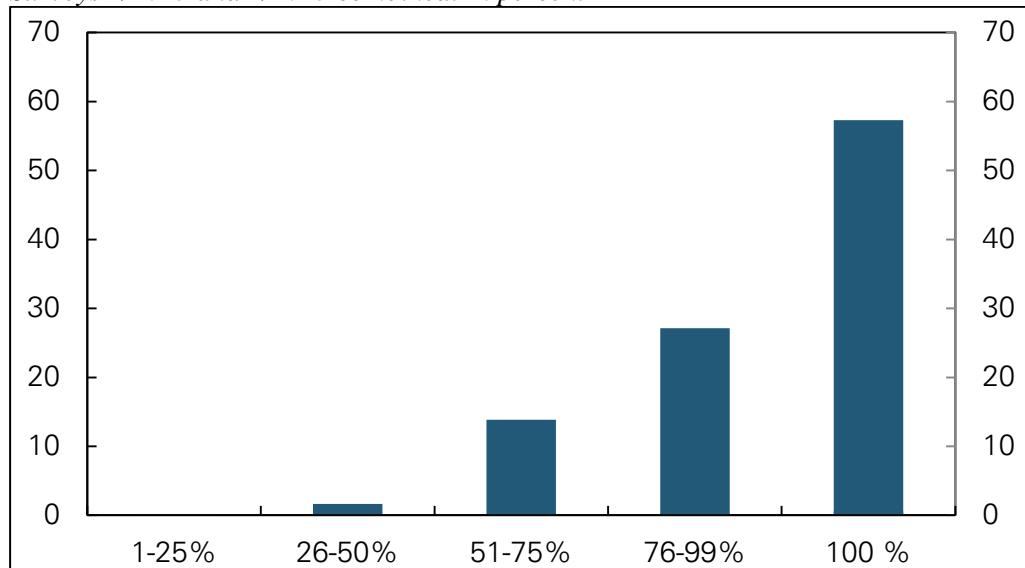
² Norges Bank (2015a, 2015b) provides an overview of all the enterprises that participated in the 1/2015 and 4/2015 regional network surveys.

³ Blomgren et al. (2015) found that 154 000 employees in the oil service industry were engaged in petroleum-related activities in 2014, accounting for 8% of non-public sector employment in mainland Norway.

Most of the oil service enterprises indicated that a substantial share of their turnover was petroleum-related. The enterprises that indicated a 100 percent share accounted for almost 60 percent of employment in the sample. Most of the other enterprises indicated that more than half of their sales were petroleum-related. Petroleum-related sales accounted for an average of around 90 percent of the oil service industry's turnover.⁴ This share was 75 percent among enterprises that also serviced alternative markets.

On average, the share of petroleum-related sales was lower among participants in the 4/2015 survey than participants in the 1/2015 survey, reflecting that (a) there were fewer enterprises that exclusively serviced the petroleum industry in the 4/2015 survey than in the 1/2015 survey and (b) almost all the enterprises with a 51-75 percent petroleum-related turnover participated in the 4/2015 survey. The reduced share of petroleum-related sales in the 4/2015 survey may be attributable to the fall in this turnover through 2015. However, according to the ordinary regional network surveys, other sales picked up through 2015 on the back of the persistent krone exchange rate depreciation. At the same time, a substantial number of the oil service industry reported in the 4/2015 survey that they had actively pursued new markets in 2015.

Chart 1. Share of petroleum-related sales
Surveys 1/2015 and 4/2015 combined. In percent¹⁾



¹⁾ Responses weighted by employment in the enterprises.

Source: Norges Bank's regional network

To what degree can the oil service industry replace declining petroleum-related turnover by increasing sales in other markets?

We have attempted to estimate enterprise adaptability by asking the following question: "If your petroleum-related turnover has fallen in the past year and/or is expected to fall in the coming two years: what percentage of this decline can be replaced by increased sales in non-petroleum related markets over the course of one to two years?" The possible answer categories were 0, 1-25, 26-50, 51-75, 76-99 and

⁴ We multiplied the response percentages in Chart 1 by the respective interval medians before adding them together.

100.⁵ Answers were weighted by estimates for petroleum-related employment in the enterprises.⁶

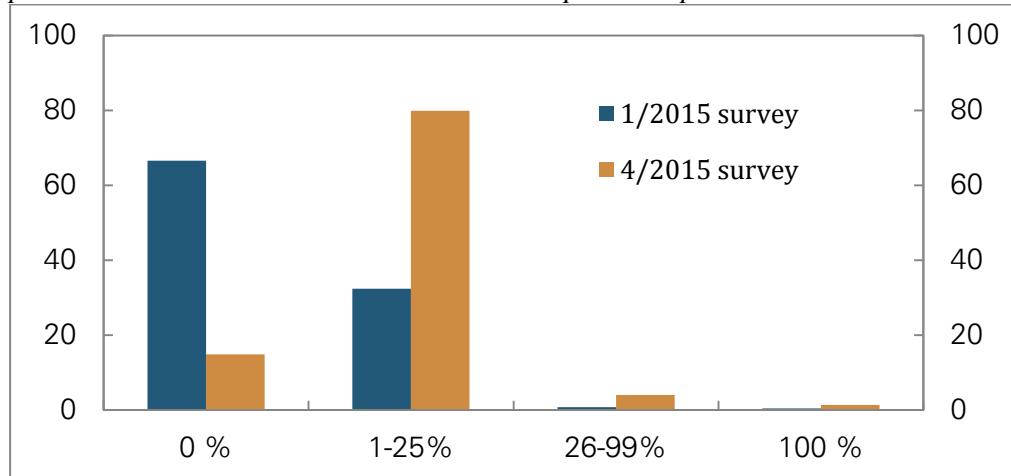
At the beginning of 2015, only a third of the oil service industry reported that they could replace a portion of lost petroleum-related sales by increasing sales in other markets. By the end of 2015, 85 percent of the enterprises reported that they could move into other markets to some degree. Very few enterprises reported that they could replace more than 25 percent.

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Chart 2. Share of lost petroleum-related sales that can be replaced by sales in non-petroleum related markets. All oil service enterprises. In percent¹⁾



¹⁾ Responses are weighted by employment and the share of enterprises' sales that are petroleum-related.

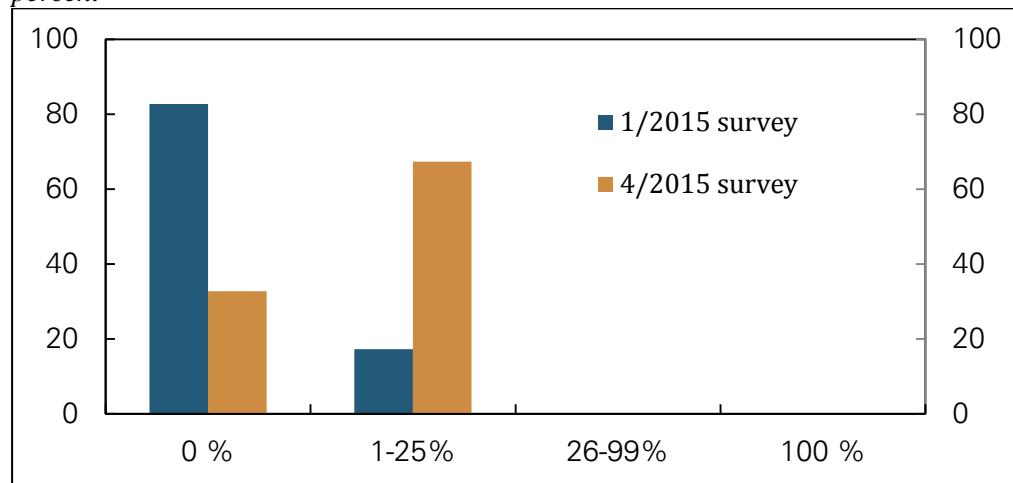
Source: Norges Bank's regional network

The difference between the two surveys may reflect that enterprises exclusively servicing the petroleum industry, which may face greater challenges in adapting than enterprises that are already represented in other markets, accounted for a greater share of the sample in the 1/2015 survey than in the 4/2015 survey. We examined this more closely by looking at the adaptability of the two oil service categories separately.

⁵ In Brander, Brekke and Naug (2013), we used 0-20, 20-40 etc. as possible answer categories. The 2015 survey results are therefore not directly comparable with the results of the previous survey.

⁶ First, petroleum-related employment in each enterprise was calculated as total employment in the enterprise multiplied by the median of the range for the share of petroleum-related sales. Then we calculated the proportion of petroleum-related employment (in the enterprises that replied to the survey) for each of the possible answer categories.

Chart 3. Share of lost petroleum-related sales that can be replaced by sales in non-petroleum-related markets. Enterprises with exclusively petroleum-related sales. In percent¹⁾



¹⁾ Responses weighted by employment and the share of enterprises' sales that are petroleum-related.

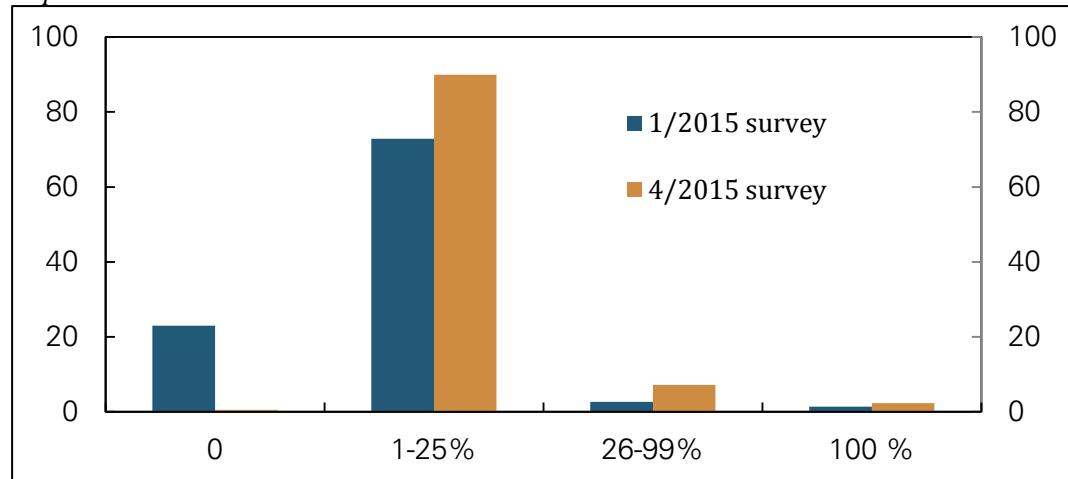
Source: Norges Bank's regional network

In the 1/2015 survey, over four fifths of the enterprises that exclusively serviced the petroleum industry reported that lost petroleum-related sales could not be replaced at all in other markets (Chart 3). This group appears to have seen increasing opportunities for adapting production in the course of the year. In the 4/2015 survey, only one third of enterprises exclusively servicing the petroleum industry reported that lost petroleum-related sales could not be replaced at all in alternative markets. The remaining two thirds reported that they expected to be able to replace between 1 percent and 25 percent.

Oil service enterprises where the customer base is more varied also appear to have improved their adaptability in 2015 (Chart 4). While slightly more than a fifth of the enterprises in the group saw no possibility of replacing lost petroleum-related sales at the beginning of 2015, this share had dropped to close to zero at the end of 2015. Nine of ten enterprises in this group expected at that time to be able to replace between 1 percent and 25 percent of lost petroleum-related sales in other markets.

Most of the enterprises reporting sound prospects for diversifying into new markets are in the shipbuilding, offshore shipping and maritime equipment sectors. A number of oil service enterprises in these sectors have won contracts in aquaculture, fishing, and offshore wind power in the past year.

Chart 4. Share of lost petroleum-related sales that can be replaced in non petroleum-related markets. Oil service enterprises that also have non petroleum-related turnover.
In percent¹⁾



¹⁾ Responses weighted by employment and the share of enterprises' sales that are petroleum-related.

Source: Norges Bank's regional network

Even though expected adaptability appears to have increased in 2015, opportunities for adaptation are still considered limited. In October-November, a weighted average of all oil service enterprises expected to be able to replace 13 percent of lost petroleum-related sales by increasing sales in other markets (Table 1). The enterprises that exclusively service the petroleum industry expected to be able to replace nearly 10 percent, while the remaining oil service enterprises saw opportunities for replacing almost 20 percent of lost sales.

Table 1. Share of lost petroleum-related sales that can be replaced by sales in other markets. Estimates based on Charts 2-4. Employment-weighted. In percent¹

	Survey 1	Survey 4
All oil service enterprises	5	13
- Enterprises with exclusively petroleum-related turnover	2	8
- Enterprises that also have non-petroleum related turnover	13	18

¹Percentages are calculated by multiplying the response percentages by the medians of the respective ranges before adding them together.

Conclusion

In this article, we have taken a closer look at the ability of the oil service industry to replace falling petroleum-related sales by increasing sales in other markets. We have conducted a survey of enterprises in Norges Bank's regional network in two stages: one at the beginning of 2015 and one at the end of 2015. Enterprises in the survey at the end of the year reported better adaptability than enterprises in the survey at the beginning of the year. However, adaptability remained at a relatively low level for the oil service industry as a whole. The enterprises that exclusively service the petroleum industry reported lower adaptability than oil service enterprises already represented in other markets. Both groups reported that opportunities had increased through 2015.

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