

ECONOMIC COMMENTARIES

Commercial real estate in Norway

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Norwegian banks' corporate loan exposure is highest in the commercial real estate market. Over the past 40 years, lending to the commercial real estate sector has played an important role in causing bank losses. Commercial real estate prices fluctuate in pace with the business cycle. Prices rose substantially before the banking crisis at the end of the 1980s and before the financial crisis in 2008. This commentary provides an overview of the Norwegian commercial real estate market, banks' exposures and possible factors driving prices. The commentary concludes with an assessment of credit risk developments.

The commercial real estate market

Commercial real estate can be defined as all real estate except user-owned dwellings and holiday homes.² Commercial real estate comprises commercial segments such as office, retail, hotel and logistics, and properties that are mainly publicly owned, such as healthcare, school and sport buildings. There is no comprehensive overview of the value or size of the Norwegian commercial real estate (CRE) market. Information concerning construction activity can provide some indication of the relative sizes of the segments, and transaction figures can shed light on the value.

Since the turn of the millennium, the office, retail and hotel segments have together accounted for around 30 percent of CRE construction, measured in square metres (Chart 1(a)). Approximately 25 percent of construction activity has been in manufacturing and logistics and 20 percent in healthcare, school and sport buildings.³ A substantial share of construction in the office segment has taken place in cities, while in the other segments construction has to a greater extent taken place in areas other than the largest cities (Chart 1(b)). According to the projections of private analysts, the number of square metres of office space in Oslo is higher than in Stavanger, Bergen and Trondheim combined (Chart 2).

¹ We thank Kristine Høegh-Omdal, Haakon Solheim, Kjersti Næss Torstensen, Kjell Bjørn Nordal and Sindre Weme for useful input and comments.

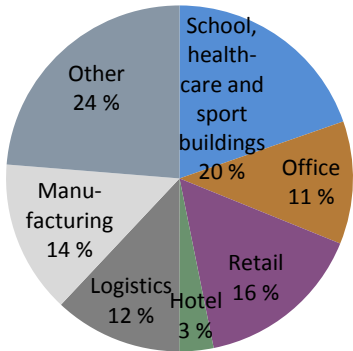
² Commercial real estate can be more specifically defined as income-producing real estate. This definition is also used in the «*Report on commercial real estate and financial stability in the EU. December 2015*», European Systemic Risk Board (ESRB).

³ The individual segments' annual share of total construction activity has remained fairly stable over time.

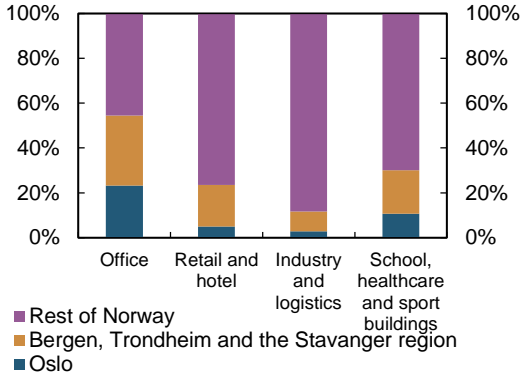
Chart 1

Commercial building starts in square metres 2000-2015.¹

a) By type of commercial property.
Percent



b) By location for selected types of CRE.
Percent



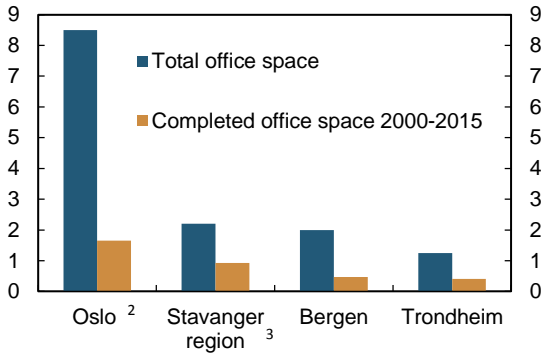
¹ Not including dwellings and holiday homes used for commercial purposes.

² Other includes parking, agricultural, terminal and energy supply buildings, and buildings related to emergency preparedness.

Source: Statistics Norway

Chart 2.

Total¹ and office building completions 2000 – 2015 in the largest Norwegian cities. In millions of square metres.



¹ Total office space at 2015.

² Figures for office building completions in square metres from 2000 to 2015 are for Oslo municipality only, while total office space also includes the Lysaker and Fornebu districts.

³ The Stavanger region includes the municipalities of Stavanger, Sandnes, Sola and Randaberg.

Sources: Statistics Norway, Akershus Eiendom, Kyte Næringsmegling, EiendomsMegler 1 Midt-Norge and EiendomsMegler 1 Rogaland

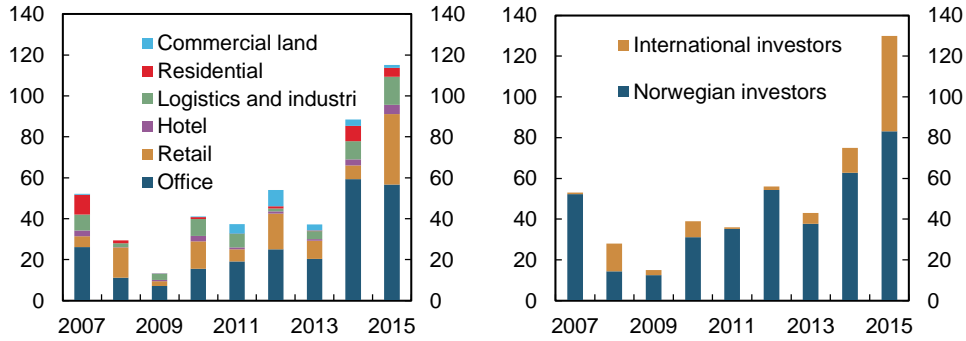
Some segments of the CRE market are closely monitored by a number of private analysts, with most attention focused on the office market in the largest cities. In the past ten years, the office segment has accounted for around half of the total value of transactions in the CRE market (Chart 3(a)). CRE investors in Norway include property companies, property funds, syndication companies, life insurance and pension fund companies, private investors and companies that are wholly or partially publicly owned. Over the past two years, a considerable volume of commercial real estate in Norway has been purchased by foreign investors (Chart 3(b)).

Chart 3.

Transaction volume in CRE market.^{1,2} Annual figures. In billions of NOK. 2007 – 2015.

a) By type of commercial property

b) By investor, Norwegian/ international



¹ Transactions of minimum NOK 50 million.

² There are some discrepancies between Chart 3(a) and 3(b) in the figures for total transaction volume as the charts are based on different sources.

Source: Akershus Eiendom

Source: DNB Næringsmegling

Balance sheets of commercial property companies

Over half of commercial property companies’ assets consist of buildings and land (Chart 4(a)).⁴ Current assets account for approximately one quarter and the remainder consists of other tangible fixed assets and financial fixed assets. Since a large share of the balance sheet consists of buildings and land, a fall in real estate values can have substantial consequences. For other non-financial enterprises, buildings and land account for a smaller share of total assets, while other tangible fixed assets account for a larger share (Chart 4(b)).

For commercial property companies, equity accounts for a third of total funding and bank debt for somewhat more than a third. The remaining share consists of other debt⁵ and a small volume of bond debt. Bank debt as a share of total funding is twice as high for commercial property companies as for other non-financial enterprises, probably because banks consider real estate to be solid collateral.

Chart 4.

Consolidated balance sheets, Norwegian companies. Percent. 2014

a) Commercial property companies

b) Other non-financial enterprises
(excluding Statoil)



Source: Norges Bank

⁴ We have used consolidated figures in this commentary. Commercial property companies that are not part of a corporate group were excluded from the analysis. We estimate that the consolidated figures account for approximately two thirds of the total for the balance sheet items buildings, land etc. and bank debt. The consolidated figures will therefore likely provide an accurate picture of the balance sheet of an average commercial property company in Norway. In the analysis “Credit risk in commercial real estate and construction” in *Norges Bank’s Financial Stability Report 2015* figures for all commercial property companies were used in order to identify vulnerable companies by, for example, comparing the figures with bankruptcy statistics.

⁵ Other debt is a balance sheet item for miscellaneous debt including intragroup liabilities, allocations and other debt.

Banks' exposure

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Banks losses on loans to commercial property companies have historically been high.⁶ Banks are directly exposed to this sector through CRE lending. At the end of 2015, CRE lending accounted for just over 40 percent of banks' lending to non-financial enterprises (Chart 5(a)).

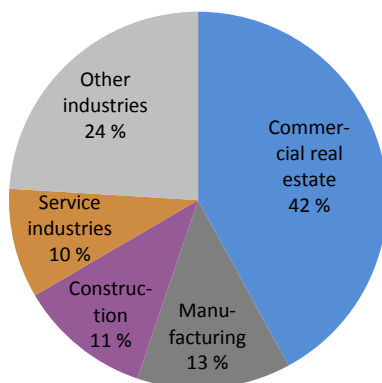
DNB accounts for approximately 30 percent of total bank lending to the CRE sector (Chart 5(b)) and the office segment makes up half of DNB's total exposure (Chart 6(a)). The SpareBank 1 banks, Handelsbanken and Nordea each have a share of around 15 percent of total bank lending to the CRE sector. Handelsbanken has a higher share of lending to the CRE sector than the other large banks (Chart 6(b)).

Banks are also indirectly exposed to the CRE sector through lending to other sectors. Lending to the construction sector will sometimes also be related to commercial real estate development projects. In addition, enterprises in other sectors can raise loans secured on real estate.

Since the end of the 1990s, banks' exposure to the CRE sector has gradually become more direct.⁷ At the same time, indirect exposure has likely fallen as an increasing number of companies have sold or spun off their real estate operations as separate companies. This means that loans secured on real estate, which were previously classified under other sectors, are now to a greater extent classified as commercial real estate.

Chart 5(a).

Distribution of lending to enterprises.¹ Percent. At 30 April 2016.

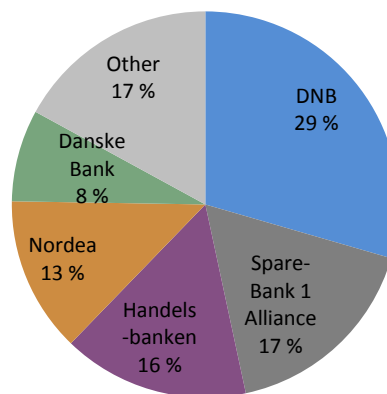


¹ Domestic credit to Norwegian non-financial enterprises from all banks and mortgage companies.

Sources: Statistics Norway and Norges Bank

Chart 5(b).

Lending market shares to enterprises in CRE sector.¹ Percent. At 30 April 2016.



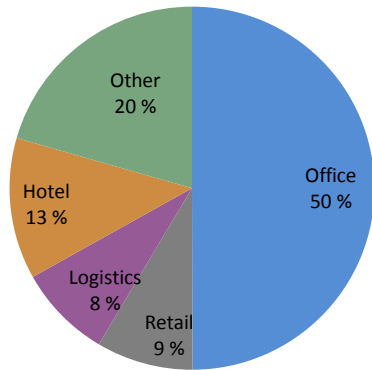
¹ Domestic credit to Norwegian non-financial enterprises in CRE sector from all banks and mortgage companies.

Sources: Statistics Norway and Norges Bank

⁶ See «What do banks lose money on during crises?», Staff Memo 3/2014, K. Kragh-Sørensen and H. Solheim, Norges Bank.

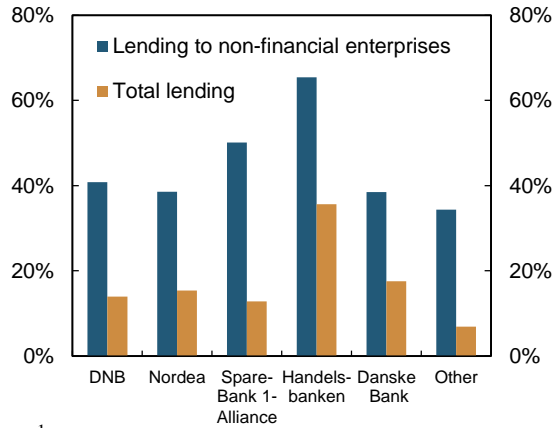
⁷ See «Transmission channels from high household debt to bank losses», Staff Memo 9/2014, K. Kragh-Sørensen and H. Solheim, Norges Bank. Lending for building project development is included under commercial real estate here. Figures are for all banks and mortgage companies in Norway except branches of foreign banks in Norway.

Chart 6(a).
DNB's exposure at default¹ to commercial property segments. Percent. At 31 March 2016



¹Exposure at default consists of lending and off-balance sheet items included according to specific rules.
Source: DNB

Chart 6(b).
CRE lending as a share of lending to enterprises¹ and as a share of total lending.² Percent. At 30 April 2016



¹Non-financial enterprises.

²Domestic credit.

Sources: Statistics Norway and Norges Bank

Commercial property prices

Property prices depend on the cash flow generated by the property and investors' required rate of return. There are a number of statistical sources for commercial property prices and values (see Box 1). A common measure of the required rate of return in this sector is yield (see Box 2). The relationship between selling prices, rental income and yield can be expressed by (1):

$$\text{Selling price}_0 = \frac{\text{Net rental income year ahead}}{\text{Yield (as measure of required rate of return)}} \quad (1)$$

Selling prices increase when rental income grows or the required rate of return falls. Up to 2004, real selling prices for high-standard offices in central Oslo rose fairly closely in line with rental prices⁸ (Chart 7(a)). Since 2004, the rise in selling prices has fluctuated substantially, reaching a very high level in some periods, driven for the most part by a lower required rate of return. Rental prices have risen at a more moderate pace.

The rise in selling prices has historically undergone swings in tandem with the business cycle (Chart 7(b)). The rise in prices was particularly strong prior to the banking crisis at the end of the 1980s and before the financial crisis in 2008.

Chart 7(a).

Real commercial property rental and selling prices.^{1,2} Annual change based on semi-annual figures. Percent. 1982 H2 – 2015 H2

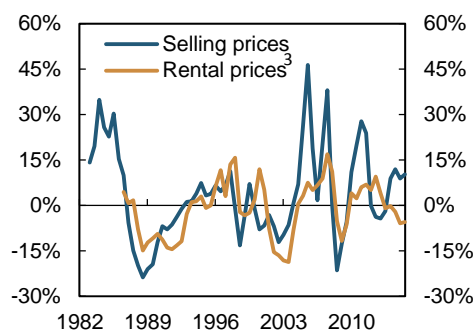
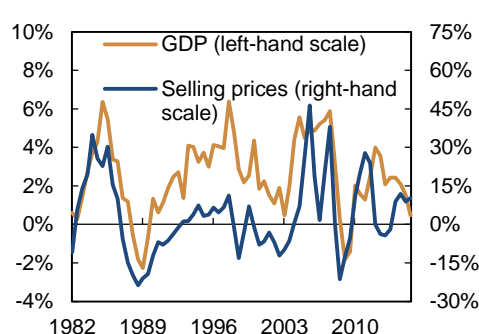


Chart 7(b).

Real commercial property selling prices^{1,2} and mainland GDP. Annual change based on semi-annual figures. Percent. 1982 H2 – 2015 H2



¹ High-standard office space in central Oslo.

² Deflated by the GDP deflator for mainland Norway.

³ Figures from 1986 H2.

Sources: Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank

⁸ Rental price refers to rent per square metre.

Rental prices

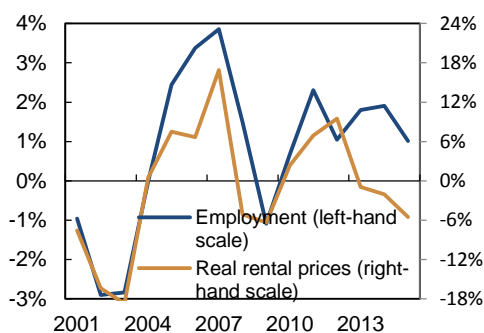
In the short term, changes in rental prices will mainly be driven by changes in demand. The supply of commercial real estate space is usually regarded as constant in the short term. Because planning and building are long-term processes, it can take several years to erect or convert a building for other purposes.

The demand for office space is influenced by factors such as changes in employment and expected economic growth. In the longer term, demand will also depend on long-term structural factors such as changes in average office space per office worker.⁹

Firms that increase the number of staff will normally seek larger premises. Higher demand pushes up rental prices. In Oslo, employment growth and rental price inflation have tracked each other closely (Chart 8(a)). Chart 8(b) shows the correlation between employment growth and the rise in real rental prices (less their historical averages for each city in the period 2001-2015) in selected Norwegian cities. The chart shows that the correlation has been strong and positive throughout.

Chart 8(a).

Employment¹ and real rental prices² in Oslo. Annual change. Percent. 2001-2015



¹ Office workers in Oslo at Q4.

² Rental prices for high-standard office space in central Oslo, deflated by the GDP deflator for mainland Norway.

Sources: Dagens Næringsliv and Statistics Norway

Chart 8(b).

Employment and real rental prices for office space in Norwegian cities.¹ Annual change less historical average for each city. Percent. 2001-2015



¹ Oslo, Bergen, Stavanger, Trondheim, Kristiansand and Tromsø.

Sources: Dagens Næringsliv and Statistics Norway

There is a distinctly negative correlation between the rise in real rental prices and the office vacancy rate in Oslo (Chart 9(a)). Changes in rental prices seem to lead changes in the vacancy rate. This may be because agents are forward-looking and base their rental price negotiations on the expected vacancy rate. Another possible explanation is that the rental price level reacts immediately to changes in the market, while the office vacancy rate adjusts somewhat more slowly because of the time needed to relocate.¹⁰

Chart 9(b) shows the correlation between the rise in real rental prices and the vacancy rate in Norwegian cities six months later, less their historical averages for each city. There seems to be a fairly clear correlation: higher-than-average (lower-than-average)

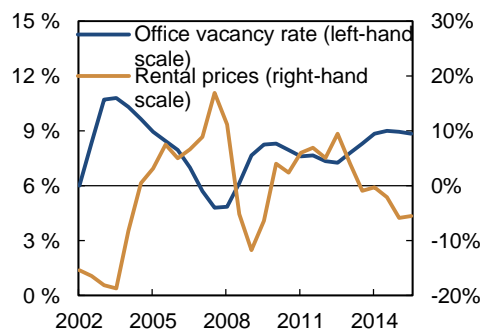
⁹ In *Overview of Financial Stability*, De Nederlandsche Bank (2015), a decline in the use of office space per office worker and an increase in online shopping are highlighted as long-term structural factors.

¹⁰ Market participants normally define vacant office space as space that is vacant today plus space that will become vacant over the next three to 12 months. This means that the vacancy statistics adjust to a certain extent for the time it takes tenants to relocate.

rental price inflation is followed by a lower-than-average (higher-than-average) office vacancy rate six months later.

Chart 9(a).

Office vacancy rate and annual change in real office rental prices in Oslo¹. Annual change in rental prices is based on semi-annual figures. Percent. 2002 H1 – 2015 H2

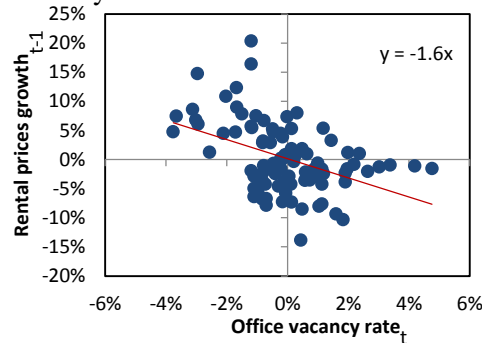


¹ High-standard office space in central Oslo.

Sources: Dagens Næringsliv and DNB

Chart 9(b).

Office vacancy rate and annual change in real office rental prices in Norwegian cities.^{1,2} Annual change in rental prices is based on semi-annual figures. Both series minus their historical averages for each city. Percent. 2004 H1 – 2015 H2



¹ The sample comprises Oslo, Stavanger, Trondheim and Bergen. There is some variation across cities in the definition of vacancy.

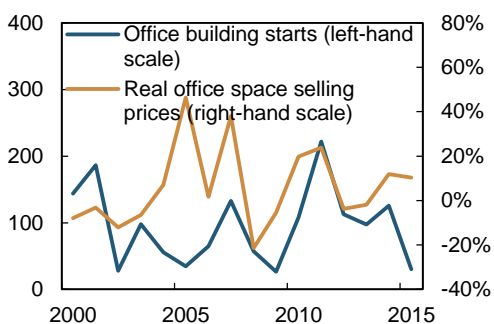
² The change in real rental prices is lagged one period.
Sources: Dagens Næringsliv, DNB and Akershus Eiendom

In the long term, changes in rental prices will also be influenced by changes in the supply of rental property. Changes in the supply are determined by construction activity and net conversion of office property into other types of property.

In periods of rapidly rising selling prices, it will normally be more profitable to build new offices. Figures for Oslo show that construction activity has to some extent fluctuated in step with the rise in selling prices (Chart 10(a)).

Chart 10(a).

Office building starts in Oslo. In thousands of square metres. Annual change in real office space selling prices.¹ Percent. Annual figures. 2000 – 2015

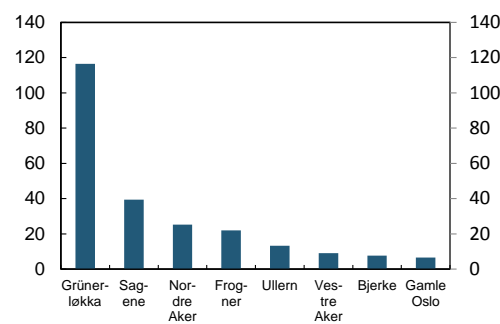


¹ High-standard office space in central Oslo.

Sources: Statistics Norway and Dagens Næringsliv

Chart 10(b).

Selected conversions from commercial real property to residential 2011 – 2017¹ in selected districts of Oslo. In thousands of square metres.



¹ Figures for parts of 2016 and 2017 are estimates.

Sources: Dagens Næringsliv and Akershus Eiendom

In periods when house prices are rising more rapidly than commercial real estate prices, it will be more attractive to convert commercial property into residential, and vice versa. The conversion rate is high in the Grünerløkka, Sagene and Nordre Aker

districts of Oslo (Chart 10(b)).¹¹ Large conversion projects have increased the housing stock in urban areas, while space-demanding commercial activity has moved out. This has occurred in parallel with high house price inflation in these areas. Over time, commercial real estate prices and house prices will converge to some extent as a result of the possibility of conversion.

Box 1. Statistics on selling prices and values for Norwegian commercial real estate (CRE)

OPAK and the Investment Property Databank (IPD) are two commonly used sources of statistics on selling prices and values for CRE in Norway.

IPD series are based on accounting data from a number of property companies and indicate the average rise in value for Norwegian commercial real estate. The IPD data can be decomposed based on type of commercial property and geographical location. Changes in value will depend on factors such as contractual rent, market rent, required rate of return and the investments made. Both existing rental agreements and the expected rental price level in new contracts are taken into account in these statistics. The statistics are annual and start in 1999.

OPAK estimates selling prices for high-standard offices in central Oslo and good-standard offices in central Bergen. The estimates are based on the full rental value of the building at current market rents and an assessment of investors’ required rate of return. The series start at the beginning of the 1980s.

The OPAK series for price developments in Oslo has both fluctuated to a greater extent and has overall risen considerably more than the comparable IPD series (Charts A and B). The IPD figures will normally show more moderate developments than the OPAK figures. This is partly because the IPD estimates are based on actual rental income, where contracts may have been entered into several years previously, while the OPAK estimates are based on current market rents. In addition, the sample used by IPD is broader and the statistics do not distinguish between buildings based on standard.

This article primarily uses OPAK statistics as these statistics have a greater frequency of data over a longer period than the IPD statistics.

Chart A.
Real commercial property prices, central Oslo.¹ Various sources. Index. 1999=100

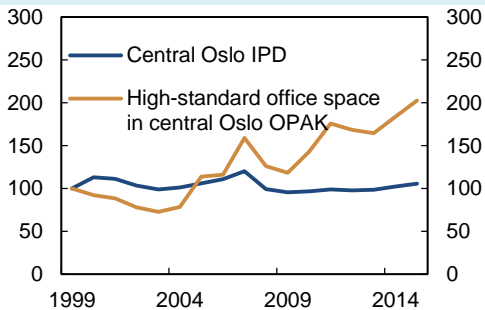
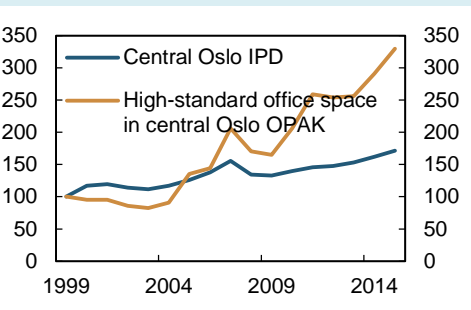


Chart B.
Nominal commercial property prices, central Oslo.¹ Various sources. Index. 1999=100



¹ Deflated by the GDP deflator for mainland Norway.
Sources: OPAK, IPD, Dagens Næringsliv, Statistics Norway and Norges Bank

¹¹ For a list of the largest conversions of commercial property into residential property in the Oslo region 2011-2017, see <http://www.dn.no/nyheter/finans/2015/06/08/2156/Eiendom/gjr-kontorer-til-leiligheter> (in Norwegian only).

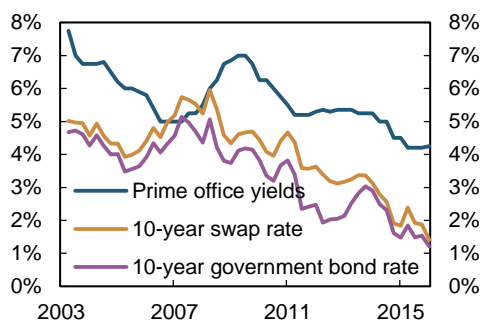
Required rate of return

Investors assess the rate of return on real estate compared with the return on other investment options. In theory, the required rate of return will be equal to the best rate of return an investor can achieve on alternative investments with the same risk. The required rate of return is usually divided into the risk-free rate of return and a risk premium. Real estate investors often use the interest rate on government bonds or swap rates as a benchmark for the risk-free rate.¹² We use yield as a measure of the required rate of return (see Box 2).

Prime office real estate yields in Oslo and long-term interest rates have tracked each other closely over a long period (Chart 11(a)). Disregarding the years immediately prior to the financial crisis, the risk premium has been relatively stable since 2003 (Chart 11(b)).

Chart 11(a).

Prime office real estate yields in Oslo and long-term interest rates. Percent. 2003 Q2 – 2016 Q1



Sources: Norges Bank, Bloomberg and CBRE

Chart 11(b).

Prime office real estate risk premium in Oslo.¹ Percent. 2003 Q2 – 2016 Q1



¹ The risk premium is estimated as the difference between the yield on prime office real estate and the 10-year swap rate.

Sources: Bloomberg and CBRE

The risk premium can be divided into a premium for market risk and a premium for specific risk. Market risk comprises risk factors that can affect all segments of the CRE market¹³ and can include risks related to economic developments, funding conditions, structural changes or legislative changes.¹⁴

Specific risk factors are risk factors related to the individual property. These factors can include the risk of tenants failing to make payments, a property left vacant when the rental contract expires or changes in ownership costs. For well-diversified investors, this risk should, in principle, be negligible. According to the property management and development company Basale, the average real estate investor in Norway is probably not well-diversified.¹⁵ This may reflect the limited transparency of the CRE market.¹⁶ In addition, investment in commercial real estate is often capital-intensive.¹⁷

¹² See *Basale (2013)* (in Norwegian only).

¹³ Market risk can also be defined as risk factors that only affect some segments of the CRE market. The market can for example be divided into segments according to geographical location or type of CRE.

¹⁴ See *RICS Valuation Standards – Global and UK (2011)* for a list of systematic and specific risk factors.

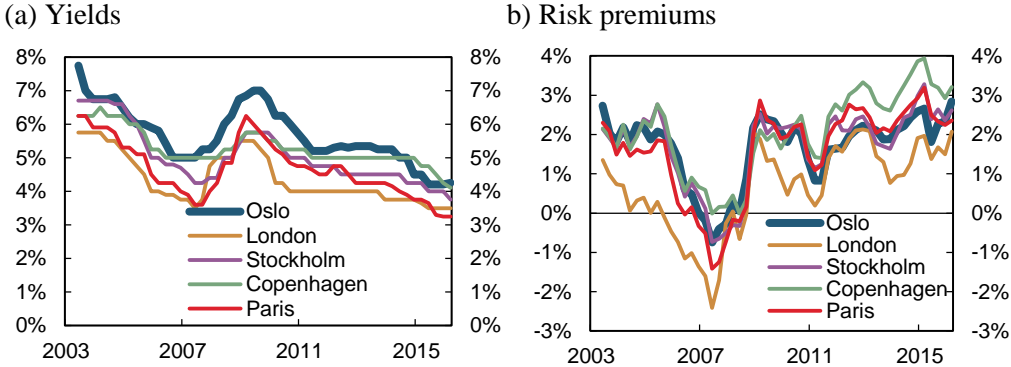
¹⁵ See *Basale (2013)* (in Norwegian only).

¹⁶ See *ESRB(2015)* and *The Financial Supervisory Authority of Norway (2010)* (in Norwegian only).

¹⁷ A distinction is usually made between direct and indirect investments and between listed and unlisted investments. In Norway and other countries, listed companies own a relatively small share of total real estate assets (see

Developments in prime office real estate yields and risk premiums have been fairly similar across European cities (Charts 12(a) and 12(b)). The risk premium level has been relatively stable except in the years prior to the financial crisis.

Chart 12.
 Yields and risk premiums¹ for prime real estate in selected European cities. Percent.
 2003 Q2 – 2016 Q1



¹ Risk premiums are estimated as the difference between prime yields and 10-year swap rates in each country. Sources: Bloomberg and CBRE

NBIM(2015) and *Akershus Eiendom (2014)* (in Norwegian only). Investment in unlisted companies can either be direct through the purchase of individual properties or indirect through the purchase of equities and/or fund units in property companies. Direct investments are normally the most capital-intensive.

Box 2. From a general valuation theory to commercial real estate yields

A common method of estimating the value of a company is by calculating the total discounted free cash flow¹ generated by the company. Assuming that the cash flow will remain constant to infinity and using the formula for the sum of an infinite series,

$$Value_0 = \frac{K}{1+A} + \frac{K}{(1+A)^2} + \dots + \frac{K}{(1+A)^\infty} = \frac{K}{A} \quad (1),$$

where $K =$ Free real cash flow, $K_1 = \dots = K_\infty$ and $A =$ Real required rate of return

A key figure commonly used by market participants to estimate CRE values is *yield*. In the real estate market, the yield is usually net rental income² for the year ahead divided by the property's selling price. Turning this relationship around gives

$$Selling\ price_0 = \frac{Net\ rental\ income\ year\ ahead}{Yield} \quad (2)$$

The main difference between (1) and (2) is that yield has replaced the required real rate of return and net rental income has replaced the free cash flow. When using yield for pricing purposes, two factors in particular should be noted:

- In periods when rental prices are expected to rise more rapidly, yield based on rental income for the year ahead will underestimate the actual required rate of return. This was probably the case prior to the financial crisis when the estimated risk premium was negative for a period (Chart 11(b)).
- Net rental income will not necessarily be a good measure of a company's free cash flow as it does not include investments or payable tax, for example. As a result, it may be challenging to compare yield across properties.

Yield can also be estimated in other ways, for example based on contractual rent, market rent or a combination of the two.³ Market participants usually base their analyses of general developments in the CRE market on a representative office building that is fully rented out for the year ahead at the current market rent. Assessments of individual transactions will also take account of contractual rent.

¹ The free cash flow is the available cash flow a company can use to pay debt and equity investors after deduction of the cash flow required to maintain growth at the current rate.

² Net rental income is rental income minus property-related expenses that the owner cannot pass on to the tenant, such as insurance, maintenance, auditing, administration, consultancy fees and other operating costs (see [Basale \(2012\)](#) (in Norwegian only).

³ Yield is usually estimated based on net rental income, but can also be estimated based on gross rental income.

CRE credit risk

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Losses on lending arise when the property owner is not able to service interest and principal and the market value of the property is lower than the outstanding debt and selling costs.¹⁸ A fall in market rents and/or a rising vacancy rate will exert pressure on property companies and the probability of default will increase. As real estate is regarded as solid collateral, it will be possible to increase the debt for a given loan-to-value ratio when real estate prices rise, as the property will rise in value. If persistently high inflation coincides with higher debt growth, these companies' vulnerability to a loss of earnings, higher funding costs and a fall in real estate prices will gradually increase.

The debt service coverage (DSC) ratio can be defined as the share of a company's debt that can be covered by net operating income. At the beginning of the 2000s, the DSC ratio of commercial property companies rose before falling sharply during the financial crisis (Chart 13(a)). In recent years, the DSC ratio has remained fairly stable at a level somewhat below the historical average. Estimation of the DSC ratio is based on Norwegian companies' annual financial statements, and the most recent observation is from 2014. In 2015, the office vacancy rate in the CRE market rose in Stavanger, Bergen and Trondheim.¹⁹ A higher vacancy rate in isolation reduces earnings and can thus be an early warning of lower capacity to service debt. In the Stavanger region, office construction activity has also been particularly high for a long period. As a result of the combination of a rising vacancy rate, falling market rents and a high construction rate in recent years, CRE companies in this region are particularly vulnerable.

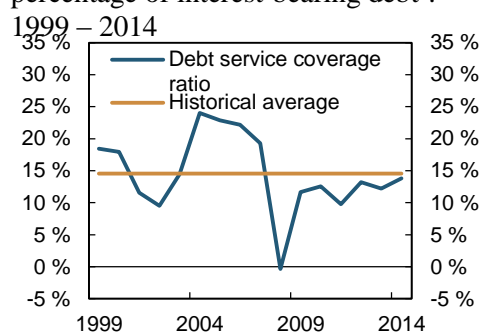
Prices for high-standard office space in central Oslo have risen considerably since summer 2013 (Chart 7(a)). This has previously been a good indicator of a build-up of financial imbalances. At the same time, the indicator measures a narrow segment of the CRE market in Oslo. The UK company Investment Property Databank (IPD) uses accounting data to estimate developments in average values for all Norwegian commercial real estate (see Box 1). According to the IPD estimates, there has been some rise in commercial property values in Norway in recent years (Chart 13(b)). The IPD figures also show that the rise in the value of office space has been higher in Oslo than in other cities.

¹⁸ Another source of losses is in the event a borrower cannot refinance the loan at maturity and the market value of the property is lower than the outstanding debt.

¹⁹ See *Akershus Eiendoms Market Report spring 2016* or *DNB's Market Report for the first half of 2016*.

Chart 13(a).

Debt service coverage ratio for commercial real estate and historical average. Operating income¹ as percentage of interest-bearing debt².



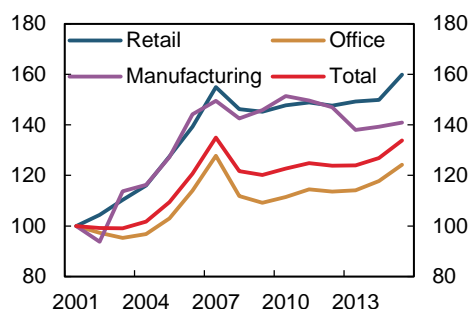
1) Defined as pre-tax earnings before depreciation and amortisation.

2) Defined as the sum of other long-term debt, short-term convertible loans, short-term paper and short-term debt to credit institutions.

Source: Norges Bank

Chart 13(b).

Value of selected CRE segments and total. Index. 2001=100. 2001 – 2015



Source: IPD

Overall, developments indicate that commercial property companies' vulnerability has increased in recent years. Rising prices have increased the vulnerability of commercial properties in the office segment in Oslo to a fall in prices and a reduction in earnings, while a higher office vacancy rate and a weaker rental market has probably contributed to higher credit risk in the other cities.

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