Innovation in Norway beyond oil and gas

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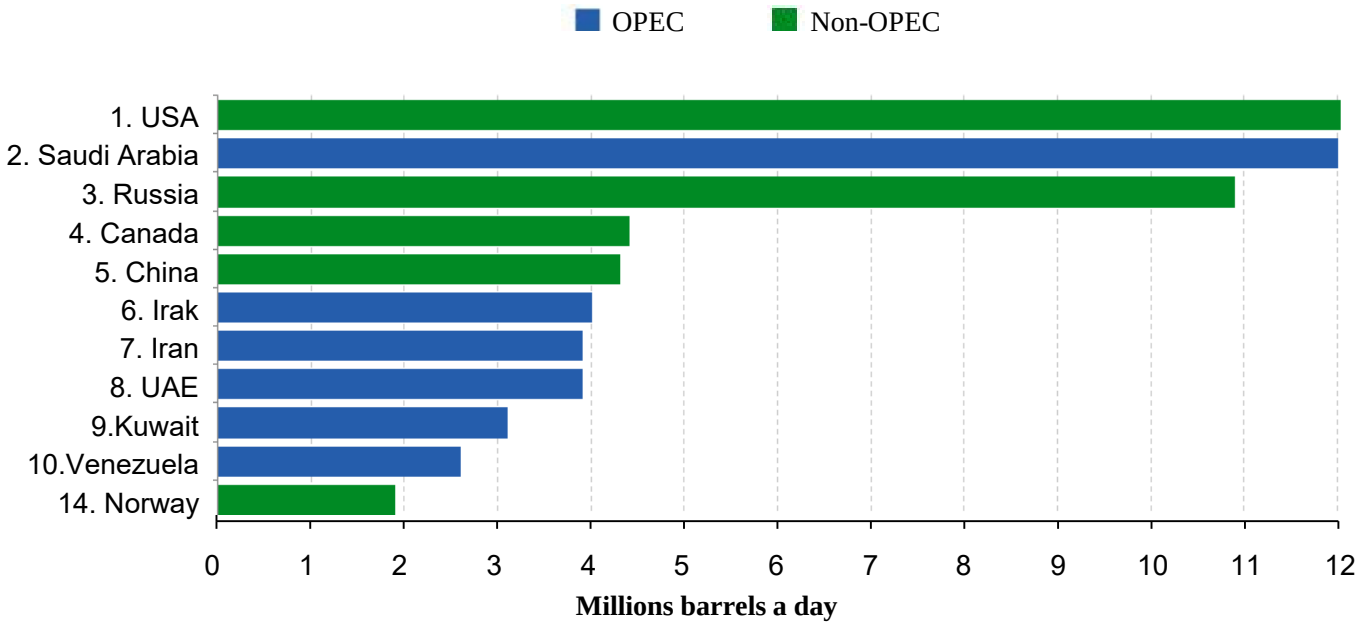
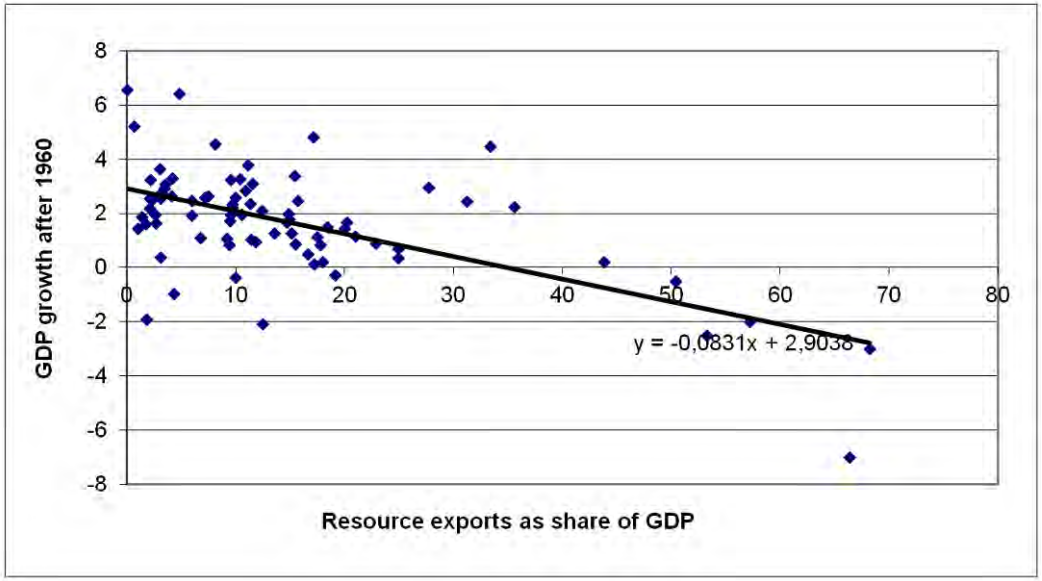
BI NORWEGIAN BUSINESS SCHOOL

The ten largest oil producers and Norway's position in 2016



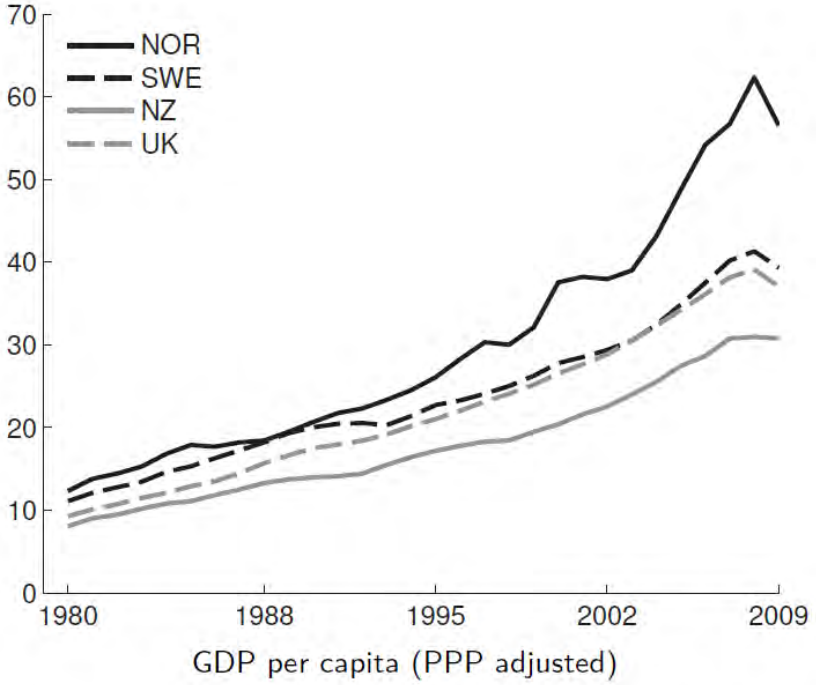
Source: BP Statistical Review of World Energy 2016 and Norwegian Petroleum

Are resources a blessing or a curse?

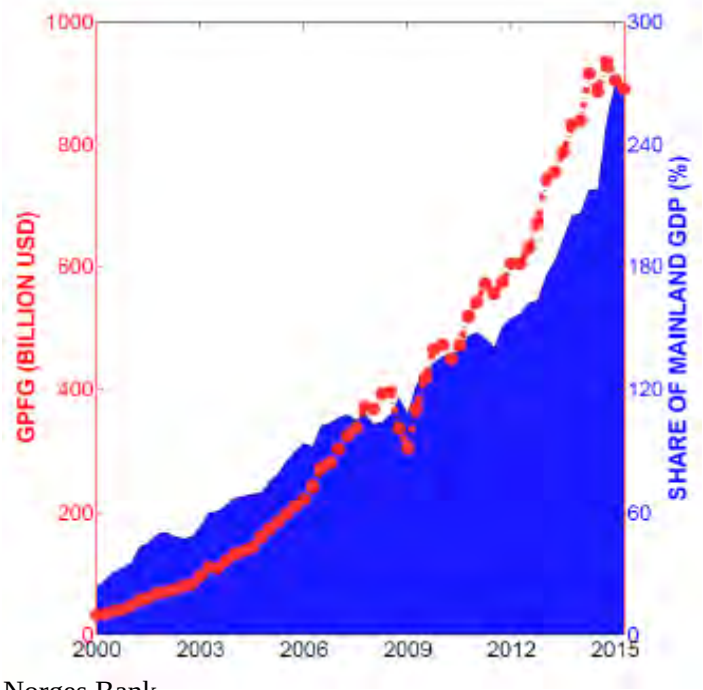


Source: Torvik (2009)

Oil and gas – an engine for growth in Norway



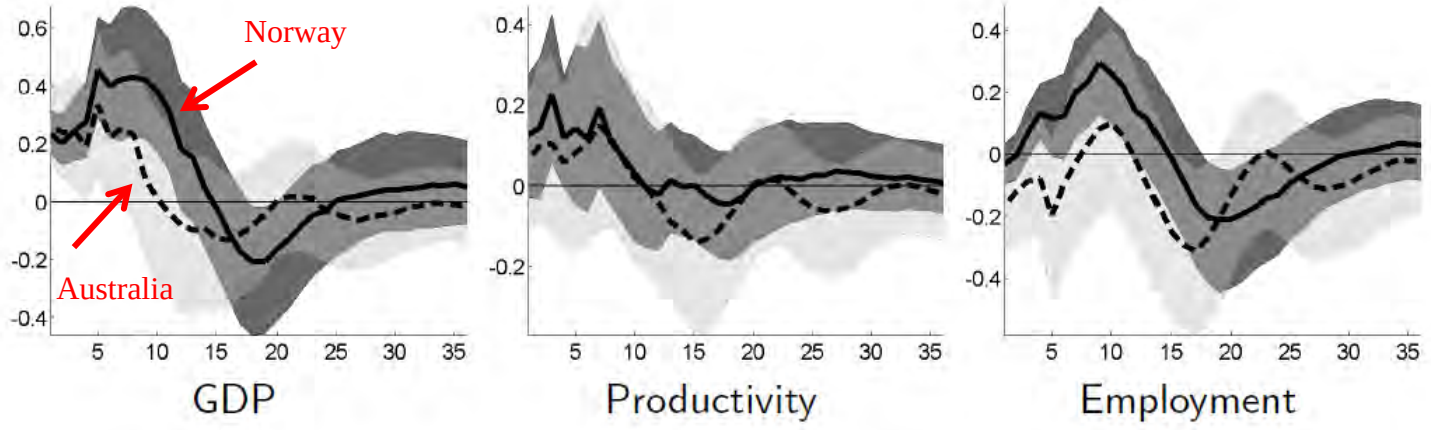
(I) Government Pension Fund Global (GPFG) and the spending rule



- **Invest in 9,000 companies in 78 different countries**
- **Spending rule (3-4% of GPFG)**

Source: Norges Bank

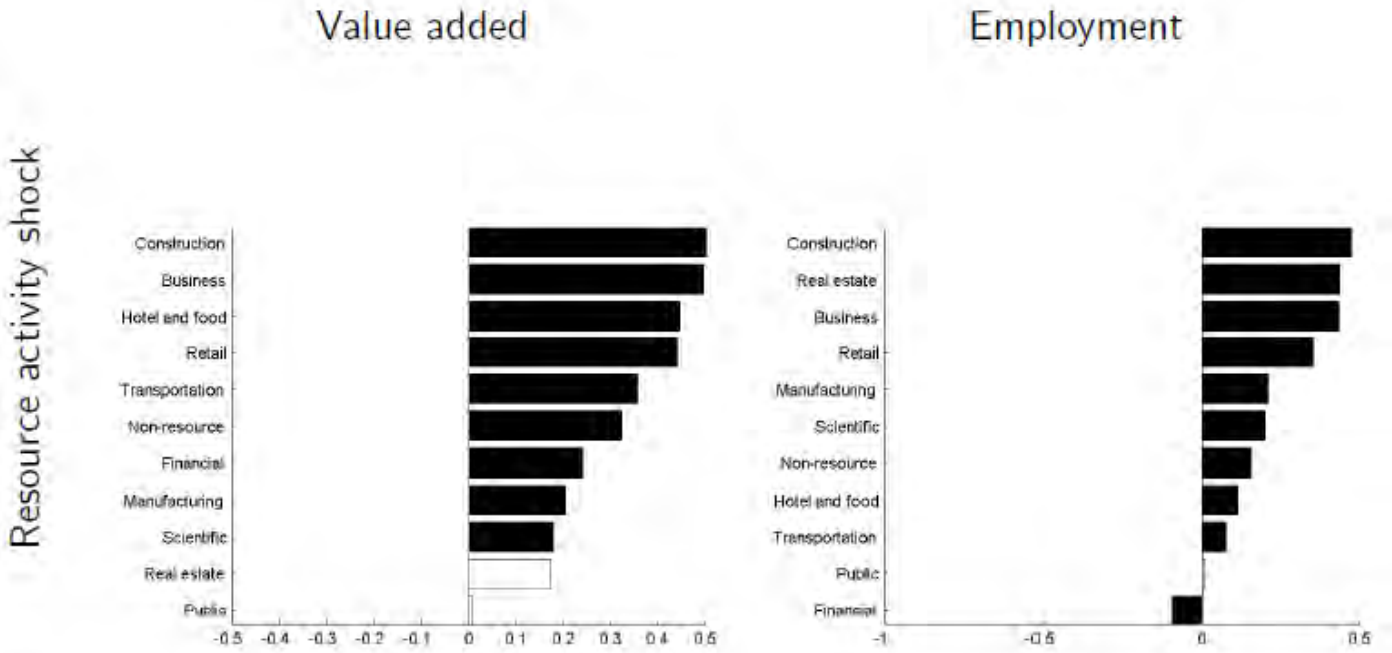
(II) Spillovers from oil and gas – aggregate effects
Effects after 1 pct. increase in petroleum activities



Source: Bjørnland and Thorsrud (2016)

(III) Spillovers from oil and gas – Disaggregate effects

Effects after 1 pct. increase in petroleum activities



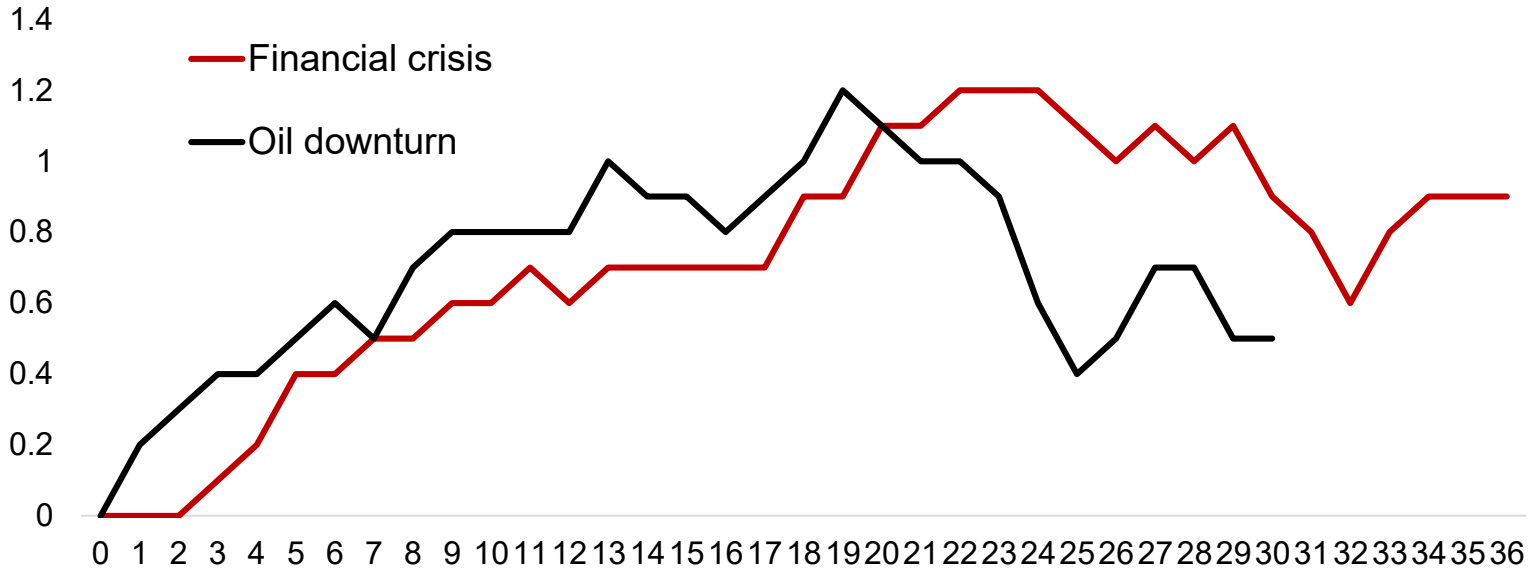
Source: Bjørnland and Thorsrud (2016)

Then the sign turned!

Economist 2013:
Rich cousin in the North

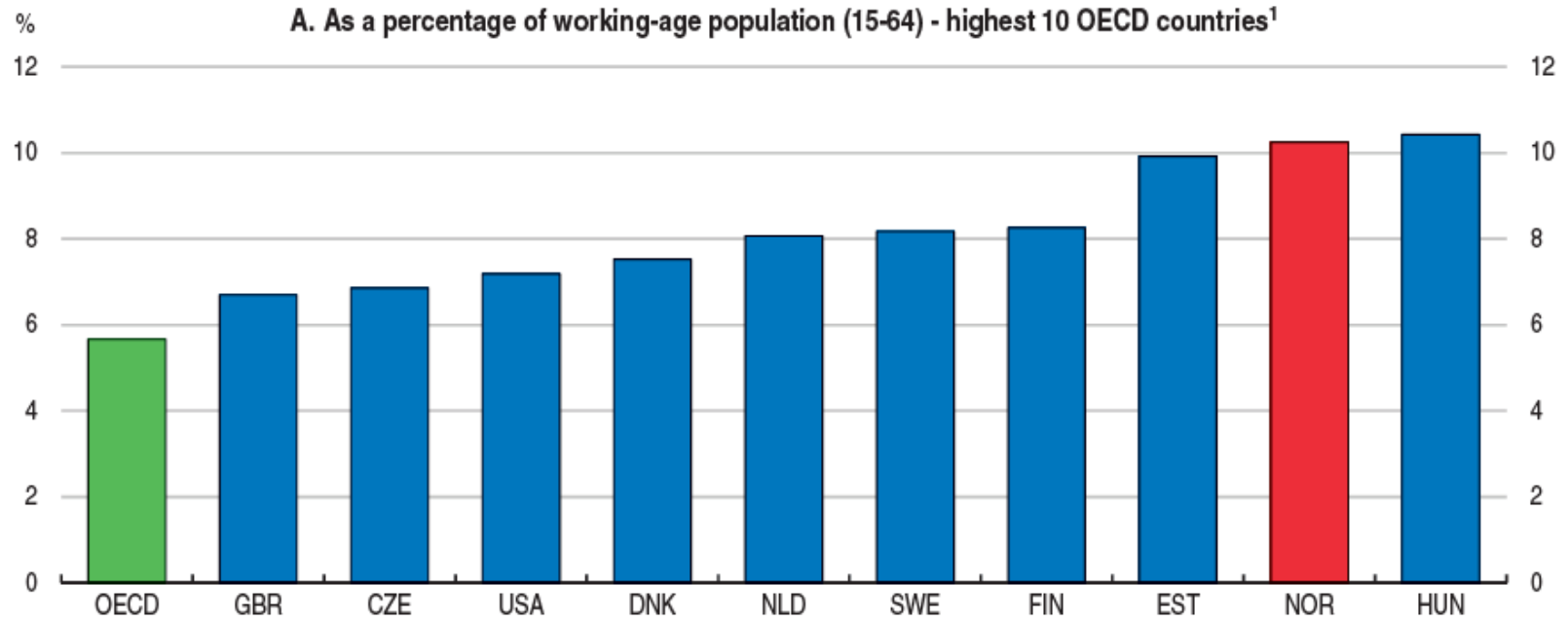
Economist 2015:
Norwegian Blues

Unemployment - Accumulated change (pp.) since December 2014 (Oil downturn) compared to July 2008 (Financial crisis)



Source: Bjørnland and Torvik (2018)

A sizeable minority of the population are on disability benefit



Source: OECD (2014)

Made in Norway

After the oil downturn…. What do we have left that is unique? What is our ‘*Made in Norway´?*

Made in Italy

Made in Norway

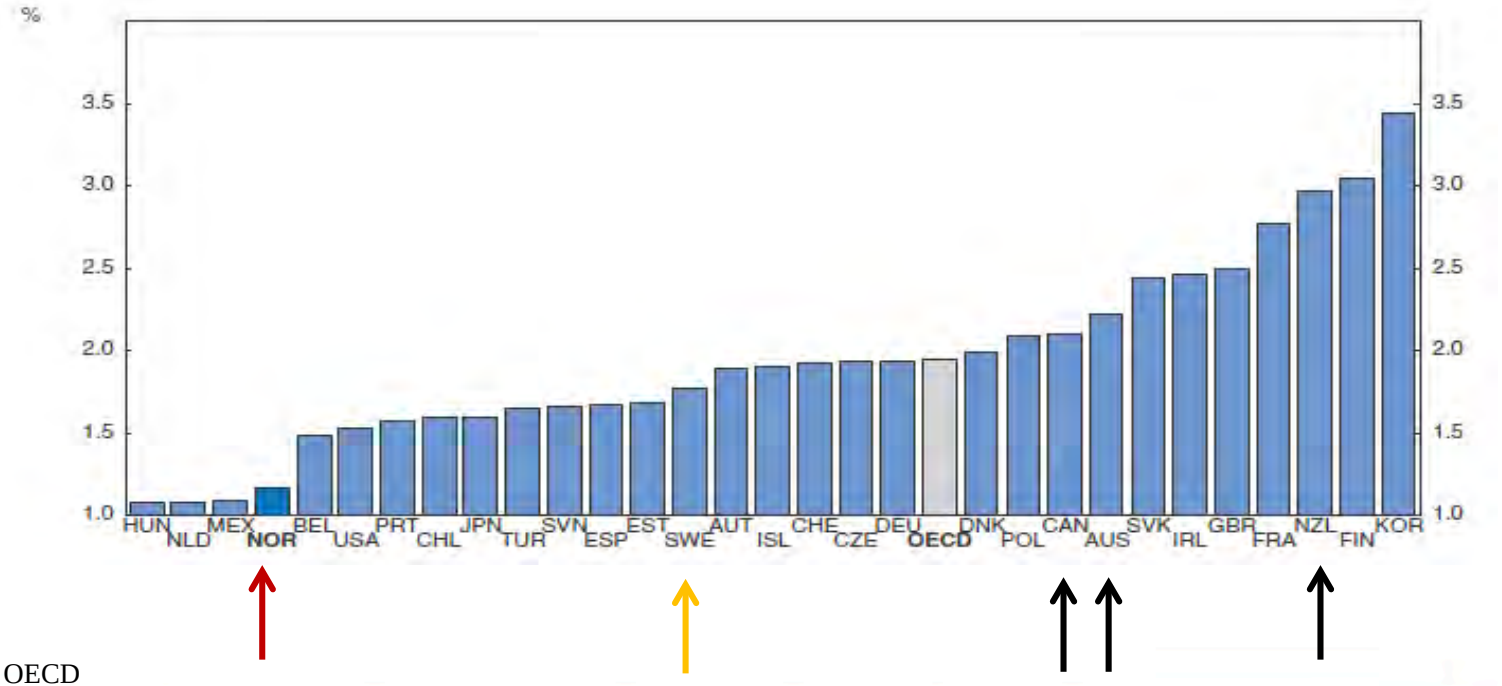
Made in Norway…!

- **We have knowledge and technology!**
- **We have discovered and extracted raw materials that demand technical competence at a very high level**
- **Knowledge transfer to other parts of the society**
- **Innovation in Norway beyond oil and gas: Sea windmills, offshore fish farming, health equipment, simulators, consultancies etc.…**

Technology spillovers!

Is Norway ready for a technology-rich world?

Share of students majoring in science



Source: OECD

The future is knowledge and technology

- **Routine and repetitive jobs will be automated … (manufacturing, accounting, health)**
- **Do workers today have the skills they need for the transition?**
- **Will they be able to find good jobs in the age of digitalization and robotization (second machine age)**
- **Need to learn coding skills and work with large amounts of data.**

Executive at a new crossroad

- **Digital society - Teaching and memorizing facts is irrelevant today**
- **Being able to learn, analyze, think critically and make an argument is what matters**
- **Working in teams and with other people, across disciplines is an important skill.**
- **Management of knowledge and technology**

No time to rest - Change is the new normal!

Thank you!