

# Oil Intensity:

## The curious relationship between oil and GDP

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# Content

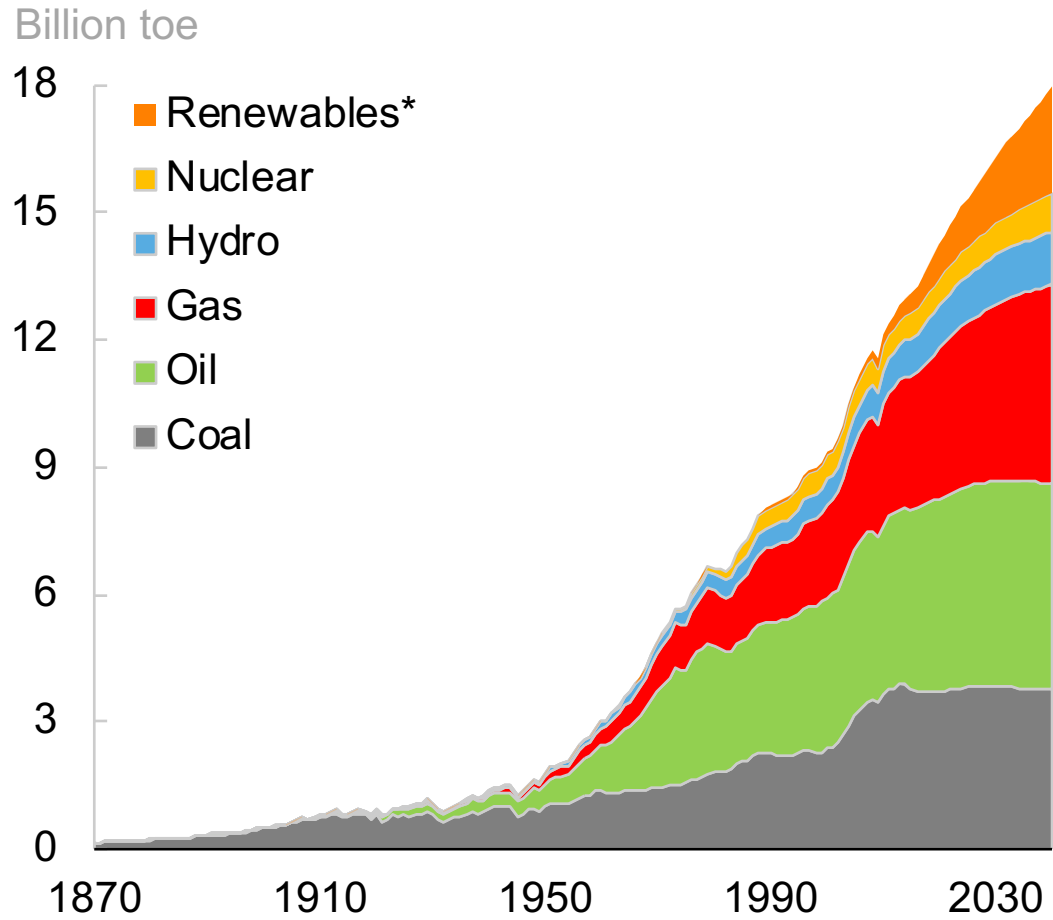
Introduction

Peak Oil: structural and cyclical drivers

Consequences

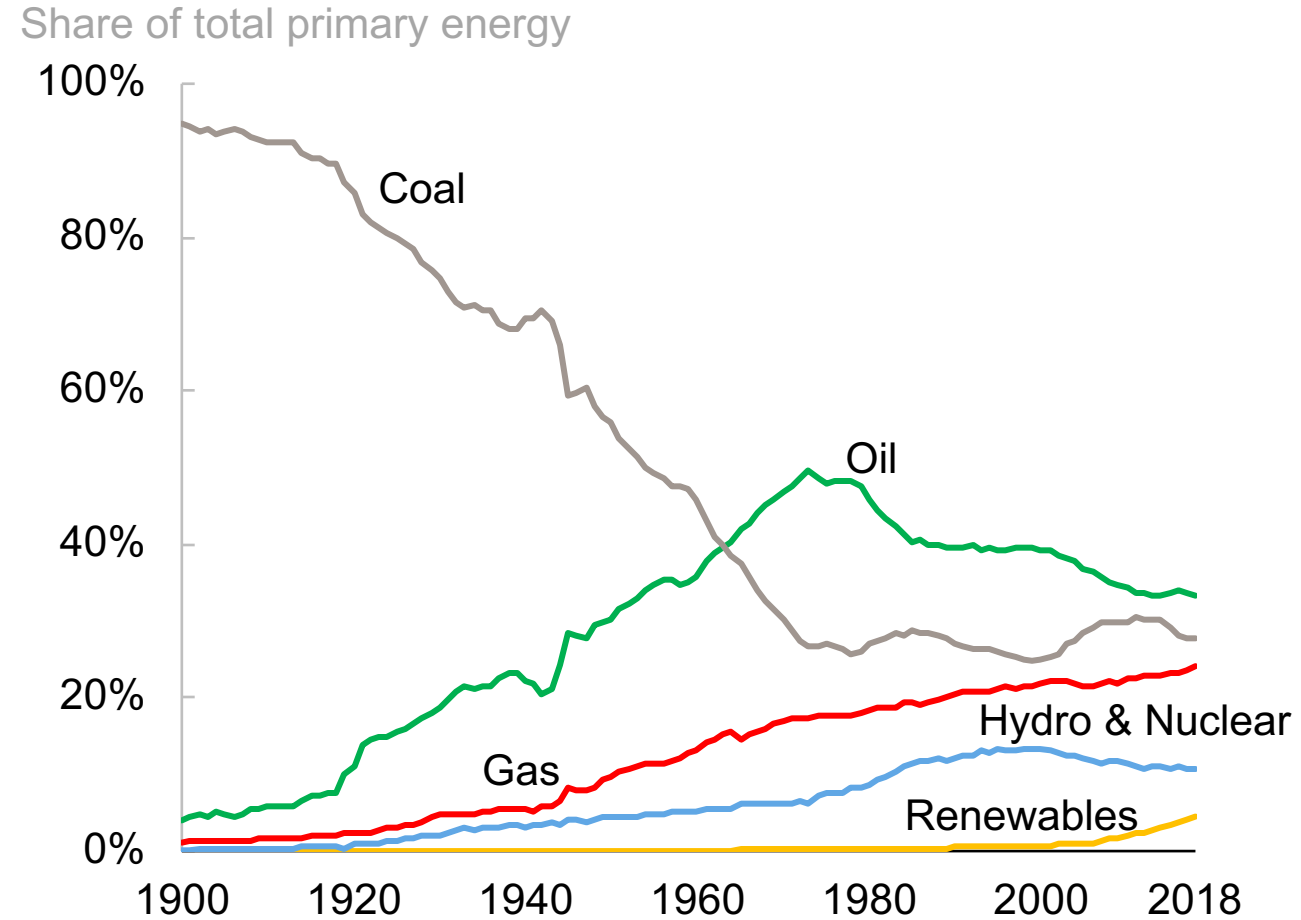
# World energy consumption and fuel mix

## World commercial energy use



Source: BP Energy Outlook 2019

## Fuel shares

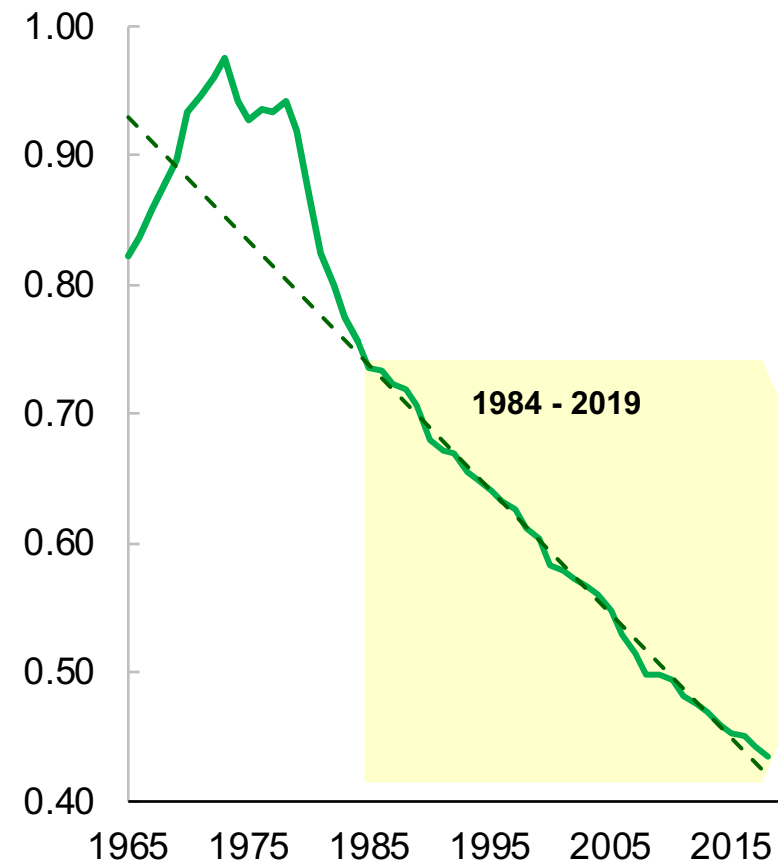


Source: BP Energy Outlook 2020

# Oil intensity and peak oil (1984-2019 trend)

## Global oil intensity

Barrels of oil per \$1,000 of 2015 GDP



Source: BP Statistical Review, Oxford Economics, own analysis

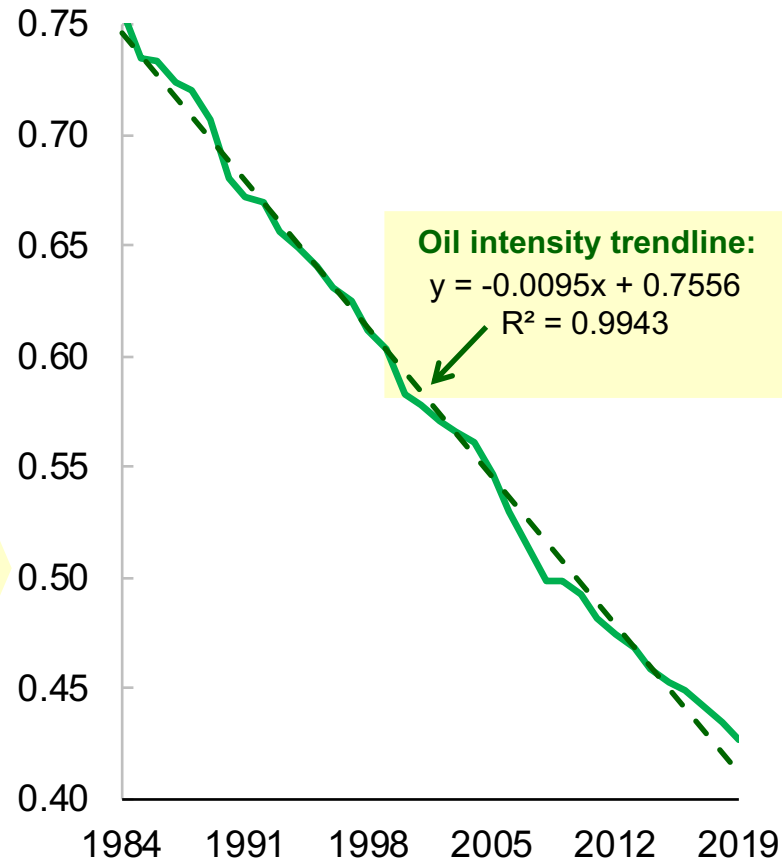
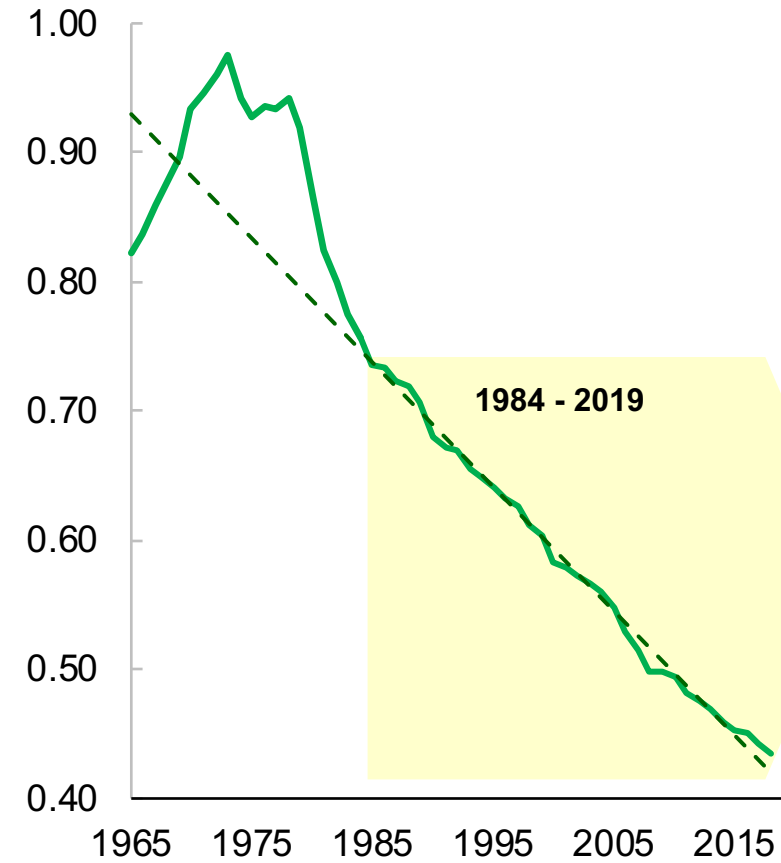
# Oil intensity and peak oil (1984-2019 trend)

## Global oil intensity

## Trend oil intensity decline

Barrels of oil per \$1,000 of 2015 GDP

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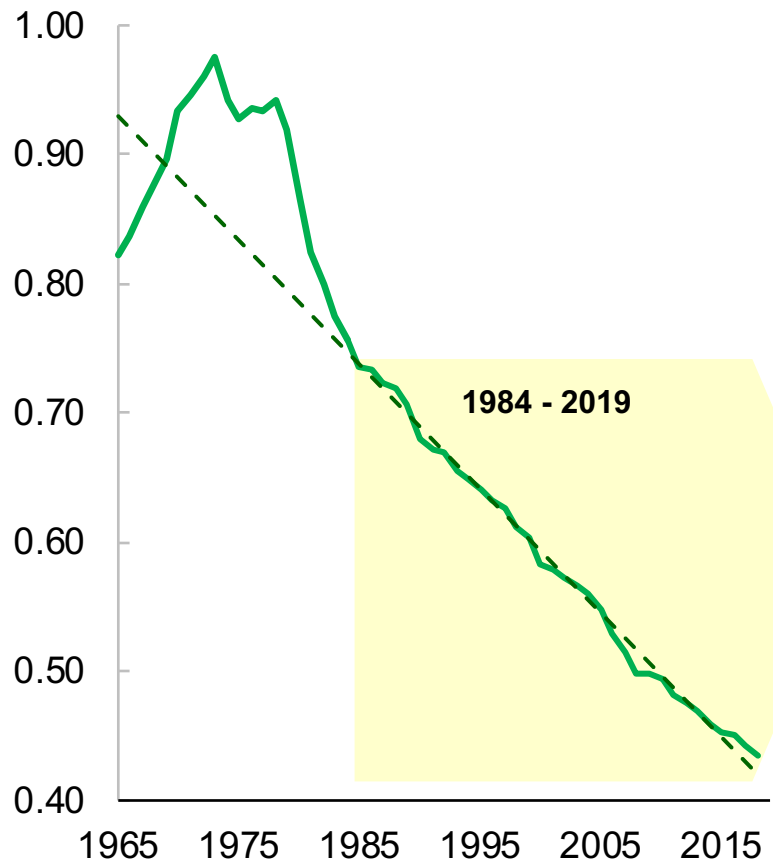


Source: BP Statistical Review, Oxford Economics, own analysis

# Oil intensity and peak oil (1984-2019 trend)

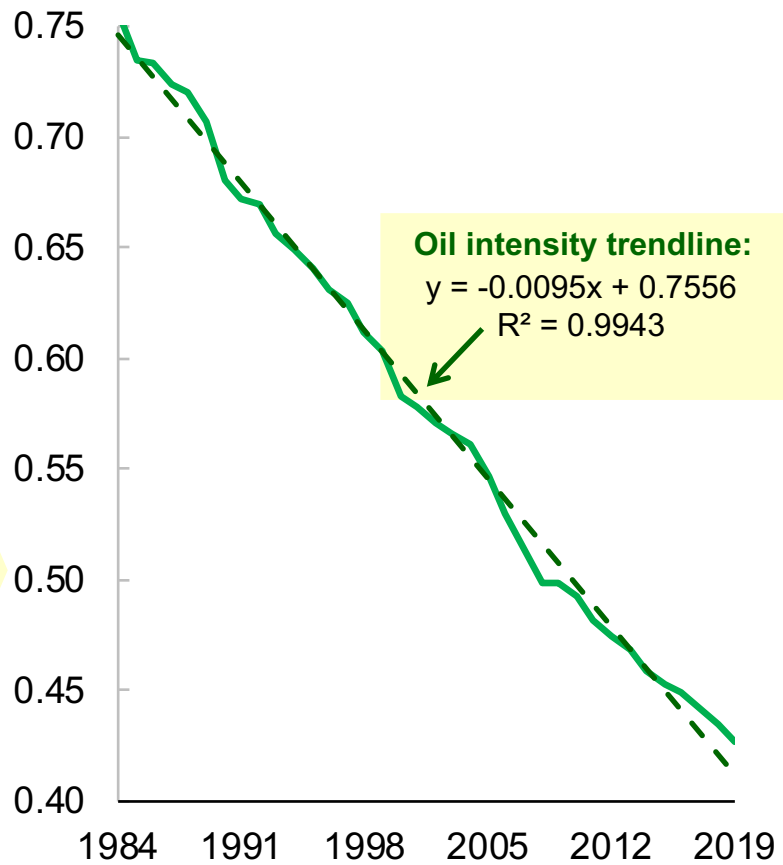
## Global oil intensity

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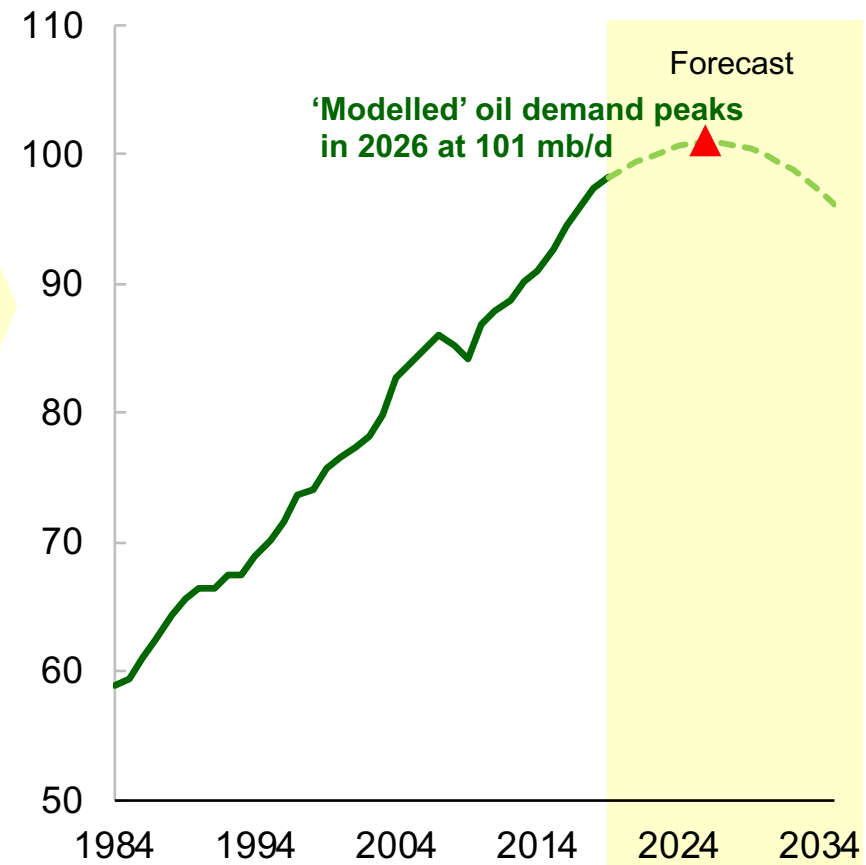
## Trend oil intensity decline

Barrels of oil per \$1,000 of 2015 GDP



## Global demand 'model'

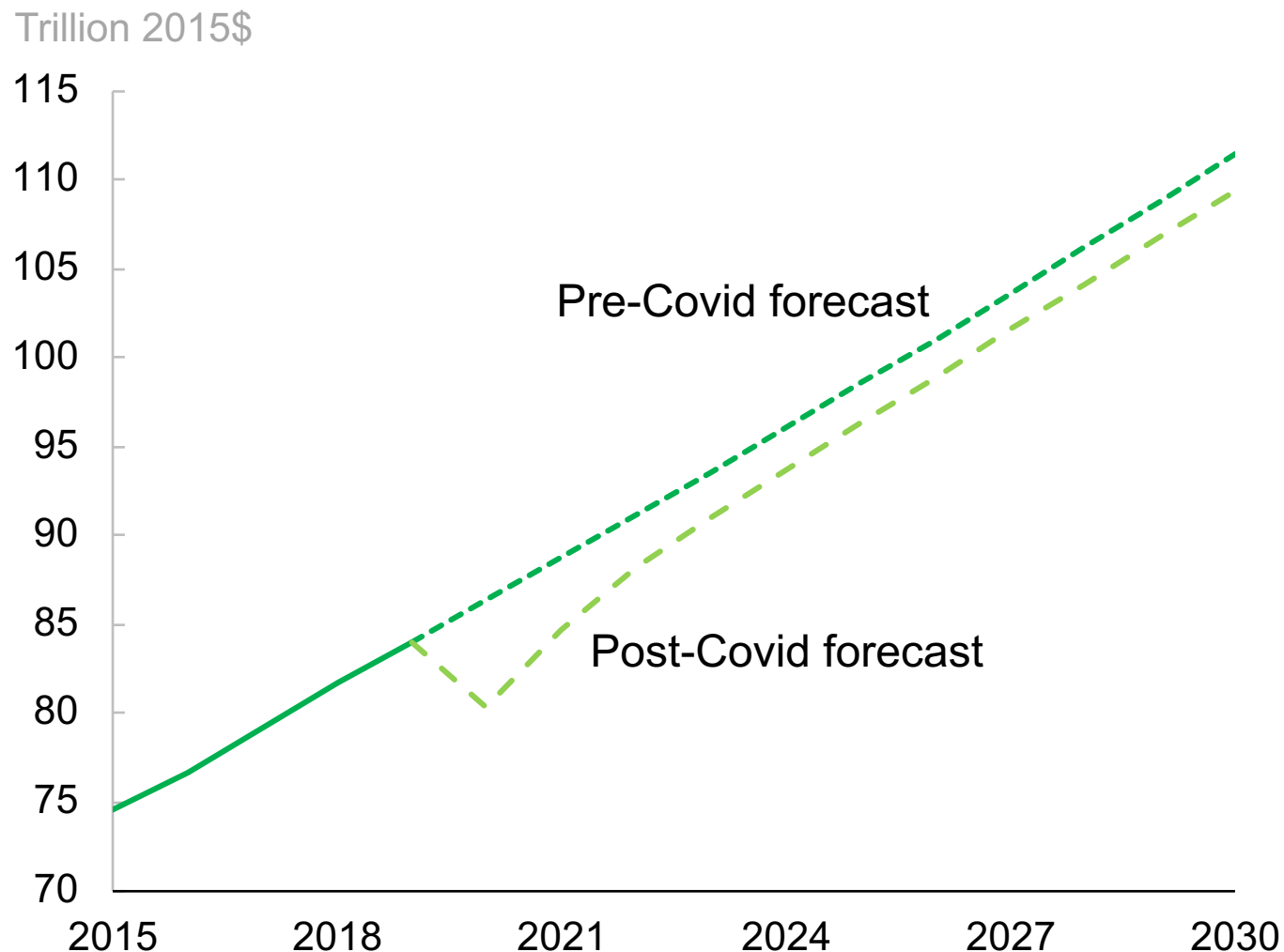
Mb/d



Source: BP Statistical Review, Oxford Economics, own analysis

# Global GDP and Oil demand: Pre- and post-Corona

## Global GDP



Source: Oxford Economics

## The pandemic effect

(Oil demand declines are nearly double the GDP decline)

### GDP decline

(cumulative from Q4 2019)

- Q1 2020 = -3%
- Q2 2020 = -10%
- Q3 2020 = -5%
- Q4 2020 = -2%

### Oil demand decline

(cumulative from Q4 2019)

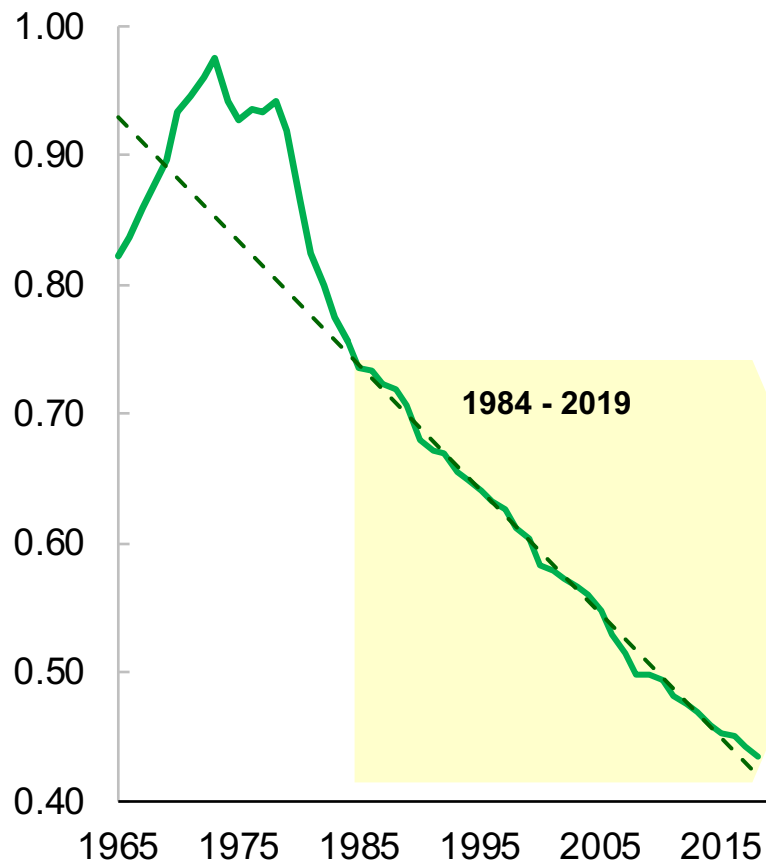
- Q1 2020 = -7%
- Q2 2020 = -16%
- Q3 2020 = -7%
- Q4 2020 = -4%

Source: Oxford Economics, EIA

# Oil intensity and peak oil (1984-2019 trend), post-Corona

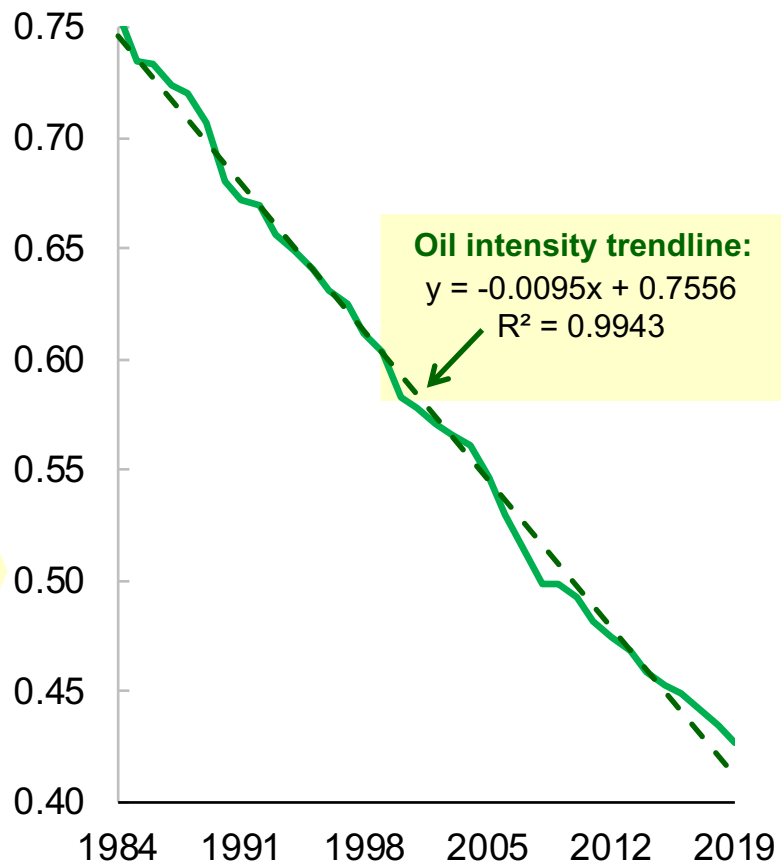
## Global oil intensity

Barrels of oil per \$1,000 of 2015 GDP



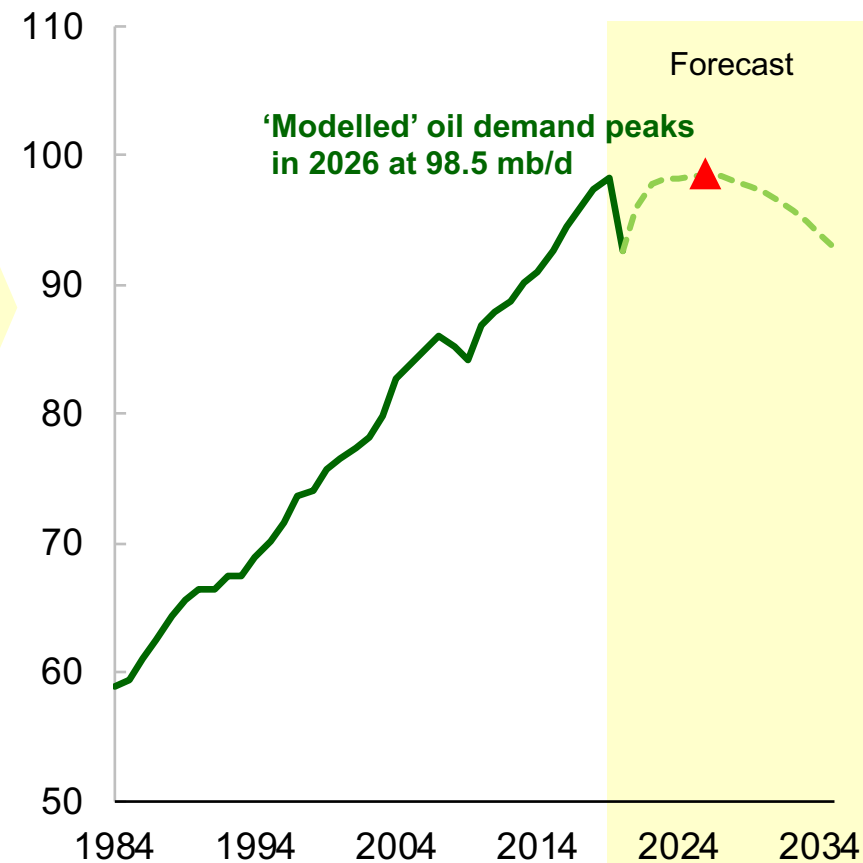
## Trend oil intensity decline

Barrels of oil per \$1,000 of 2015 GDP



## Global demand 'model'

Mb/d



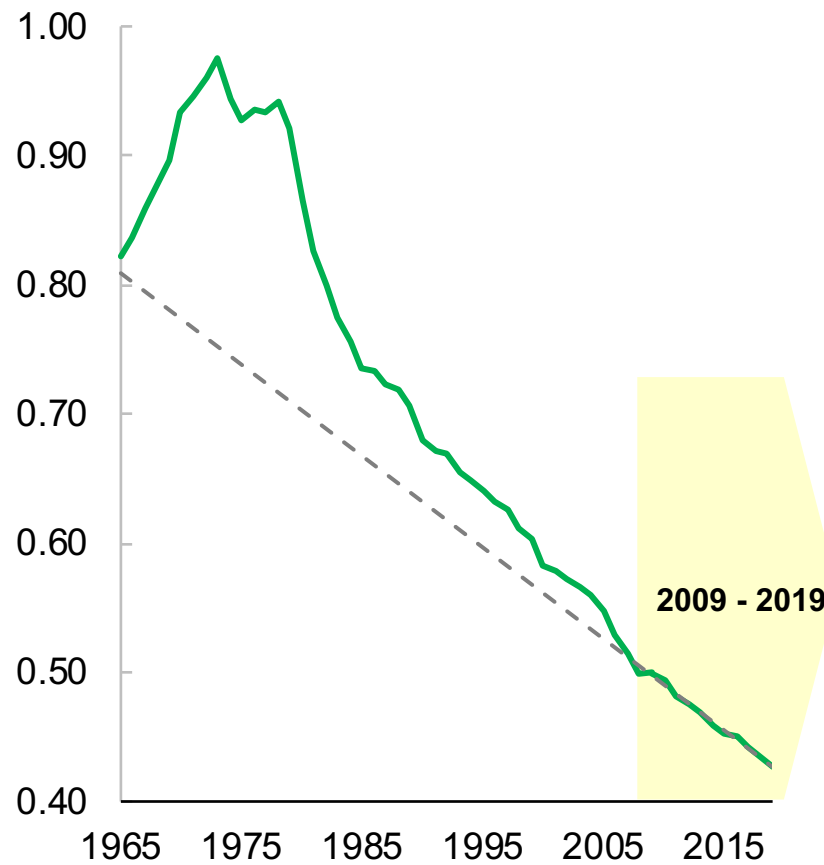
Source: BP Statistical Review, Oxford Economics, own analysis



# Oil intensity and peak oil (2009-2019 trend)

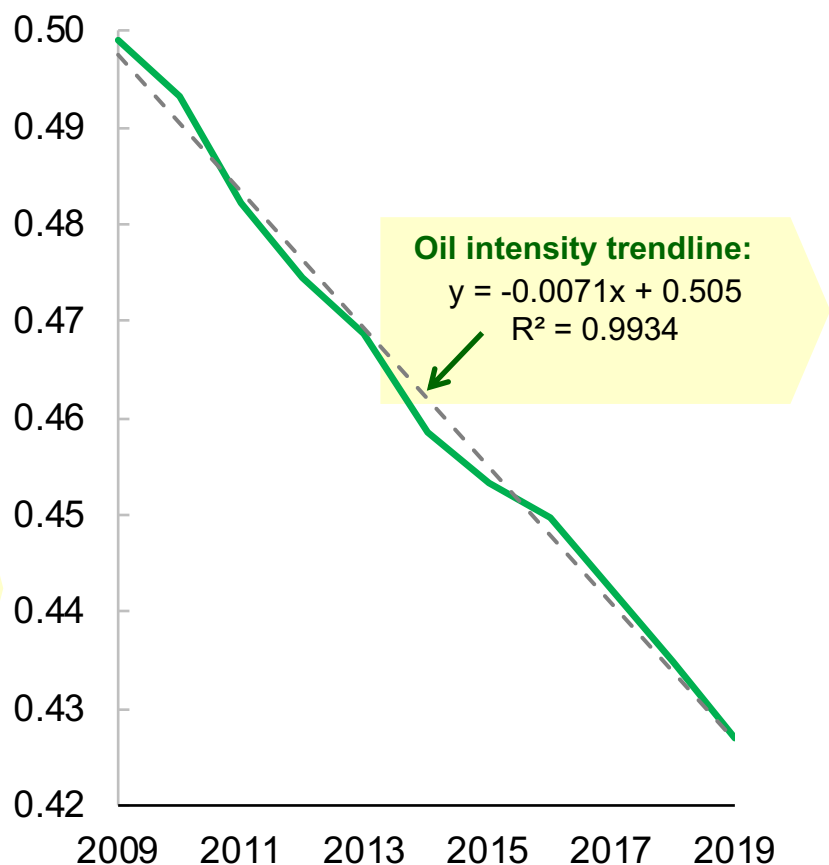
## Global oil intensity

Barrels of oil per \$1,000 of 2015 GDP



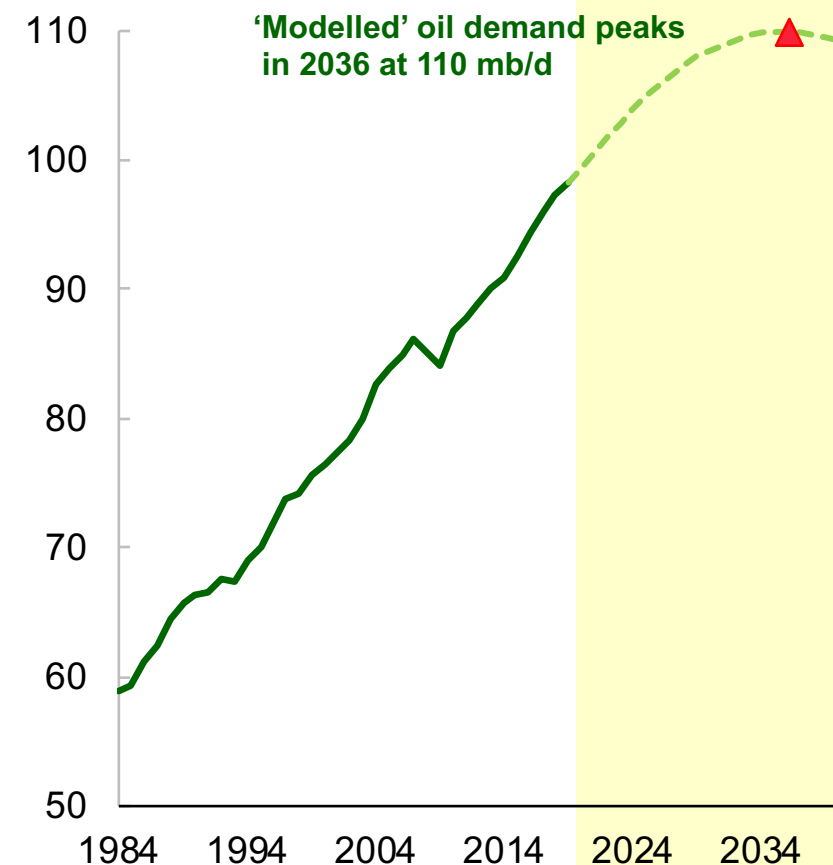
## Trend oil intensity decline

Barrels of oil per \$1,000 of 2015 GDP



## Global demand 'model'

Mb/d

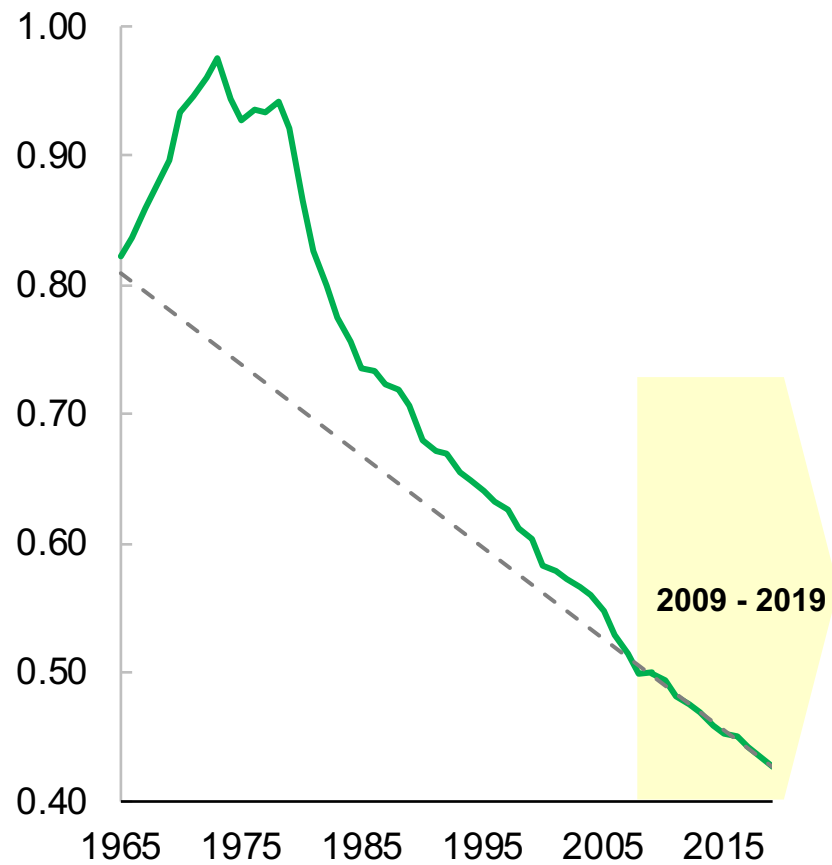


Source: BP Statistical Review, Oxford Economics, own analysis

# Oil intensity and peak oil (2009-2019 trend), post-Corona

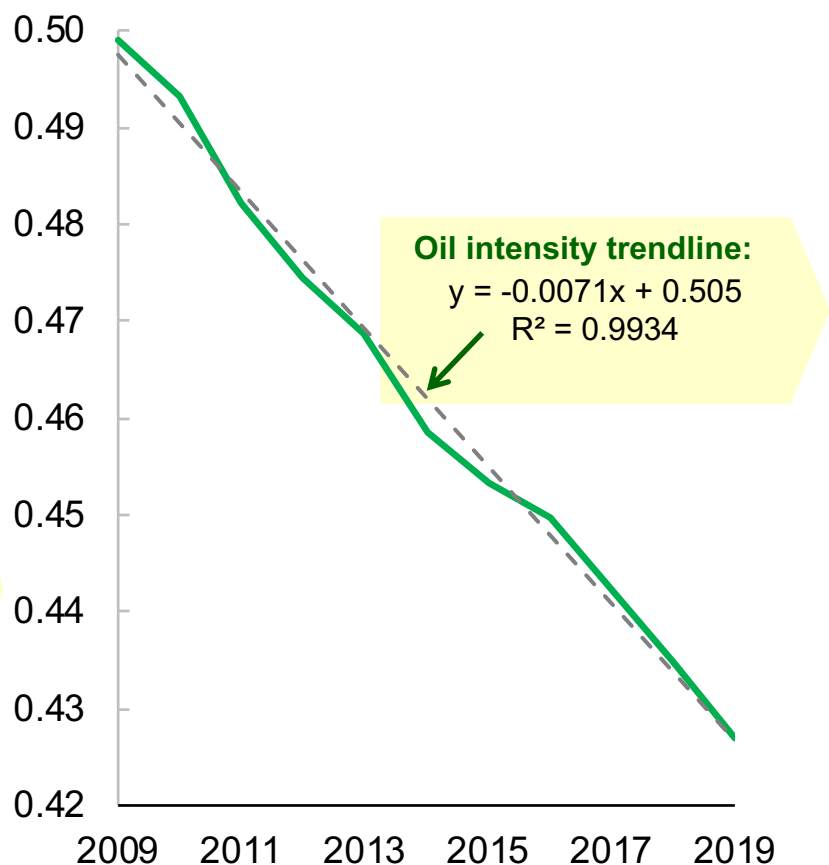
## Global oil intensity

Barrels of oil per \$1,000 of 2015 GDP



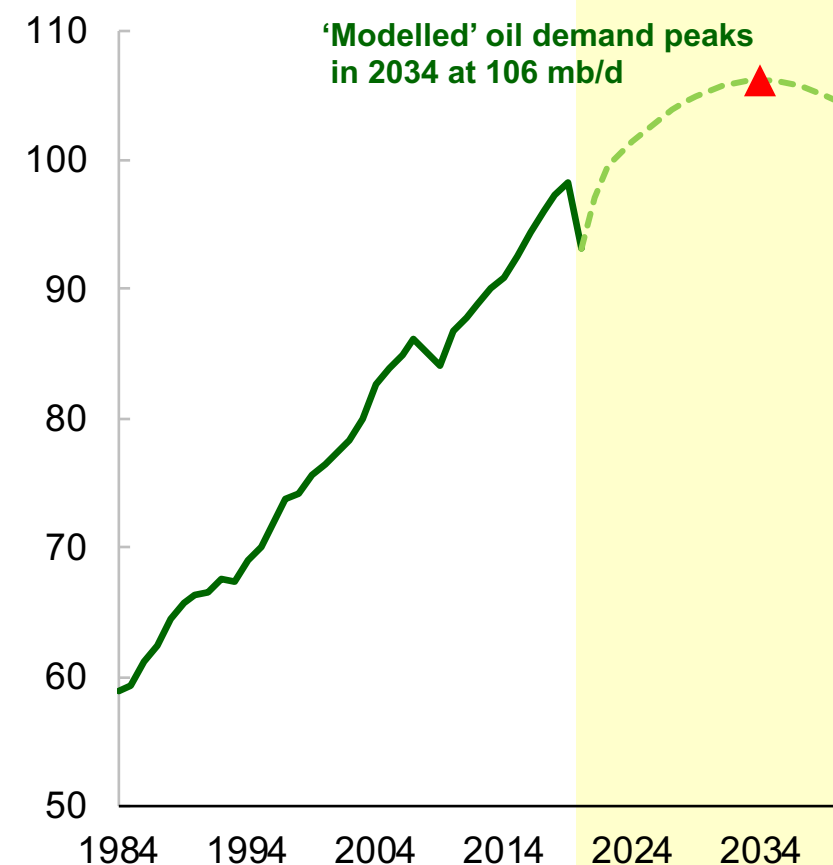
## Trend oil intensity decline

Barrels of oil per \$1,000 of 2015 GDP



## Global demand 'model'

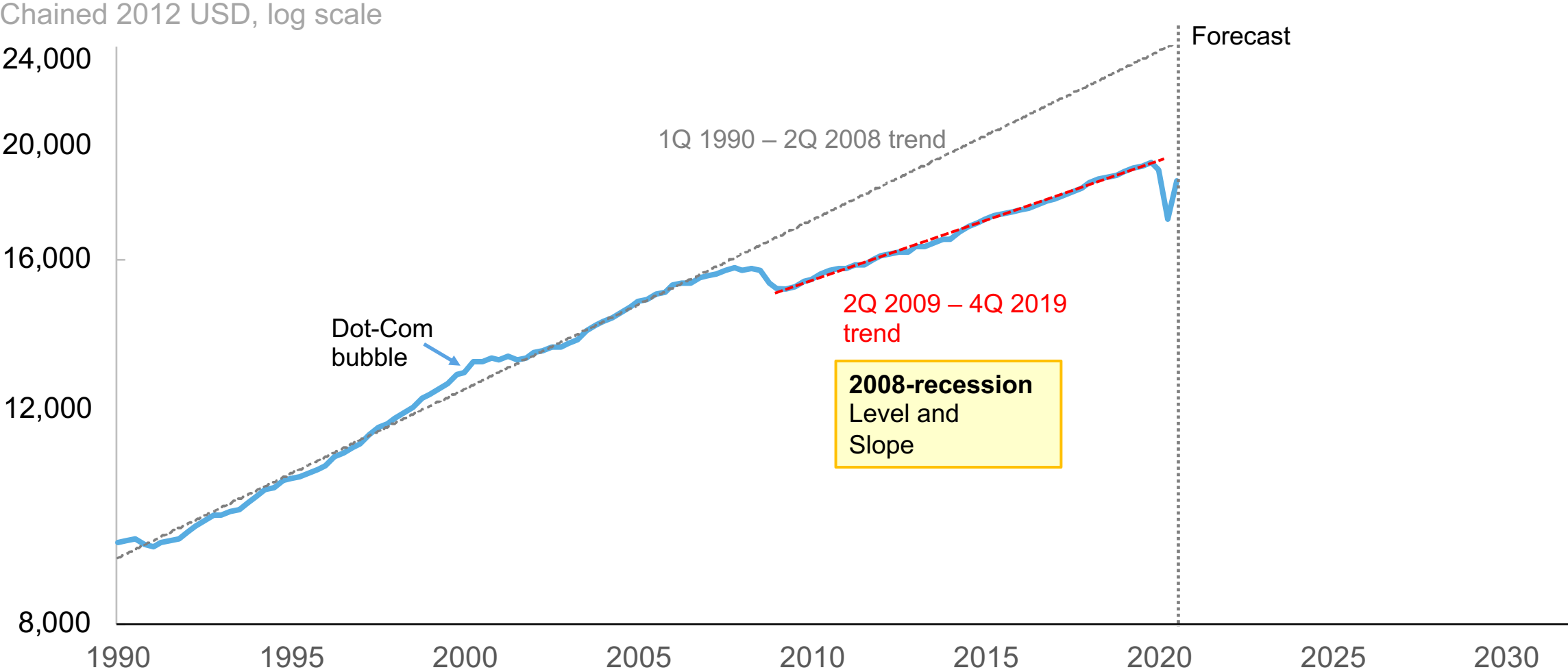
Mb/d



Source: BP Statistical Review, Oxford Economics, own analysis

# Why are they doing this?

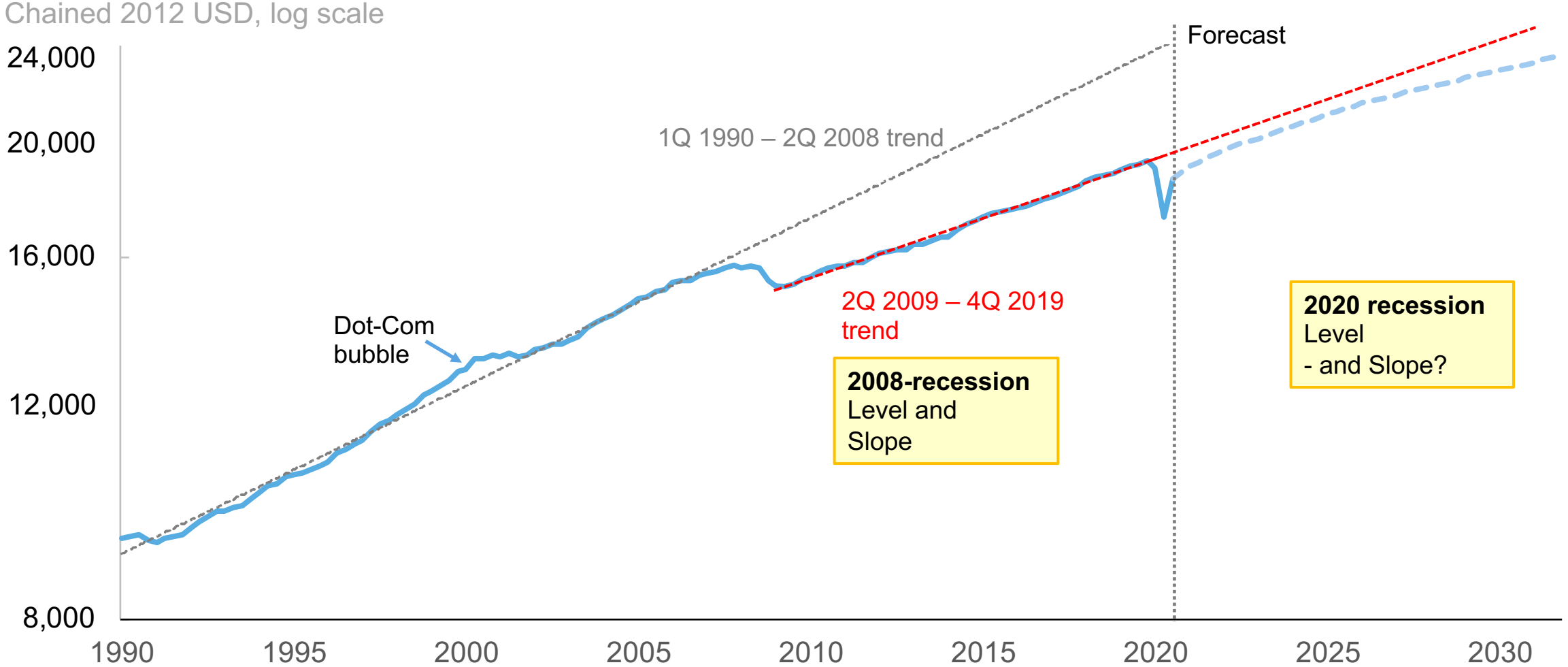
**US GDP (quarterly)**  
(1990 – 2020 3Q: actuals and 2020 4Q – 2031 4Q: CBO forecasts)



Source: FRED

# Why are they doing this?

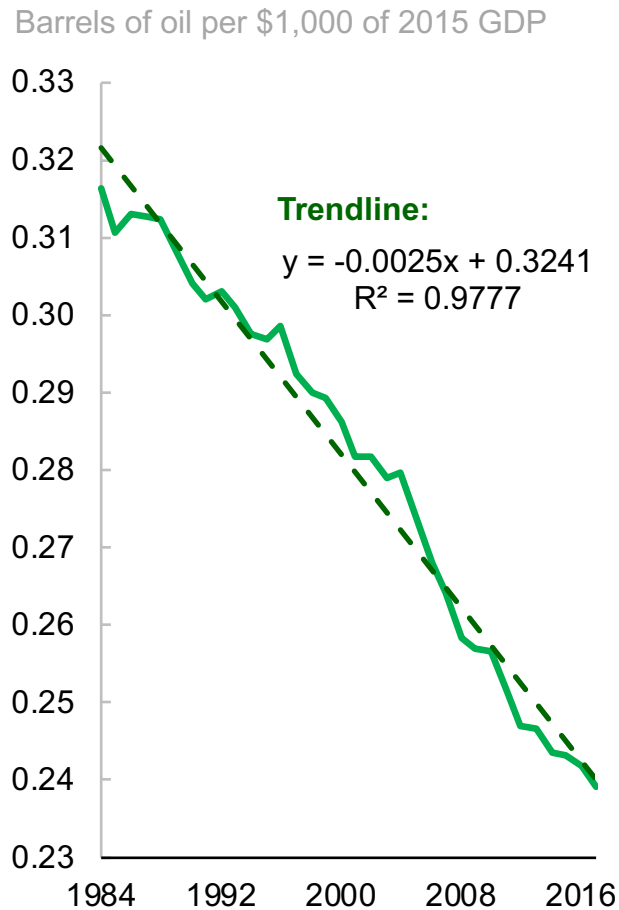
**US GDP (quarterly)**  
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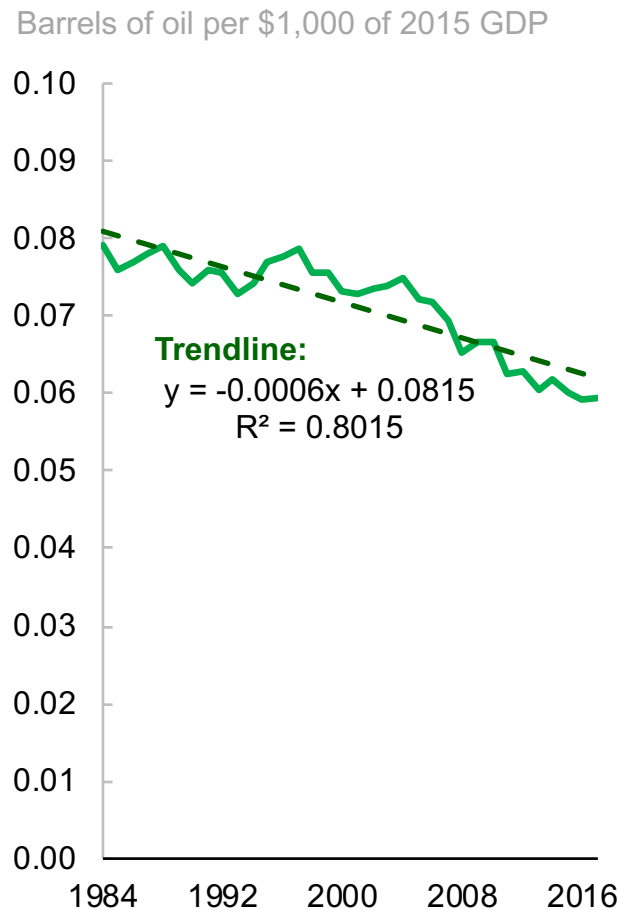
Source: FRED

# Sectoral oil intensity

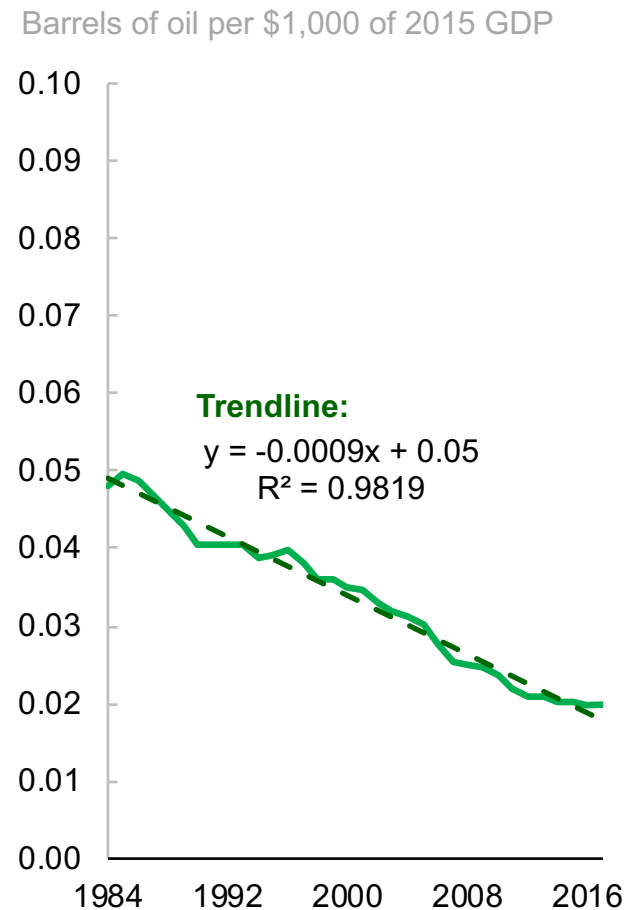
**Transport oil intensity**  
(65% of total oil demand)



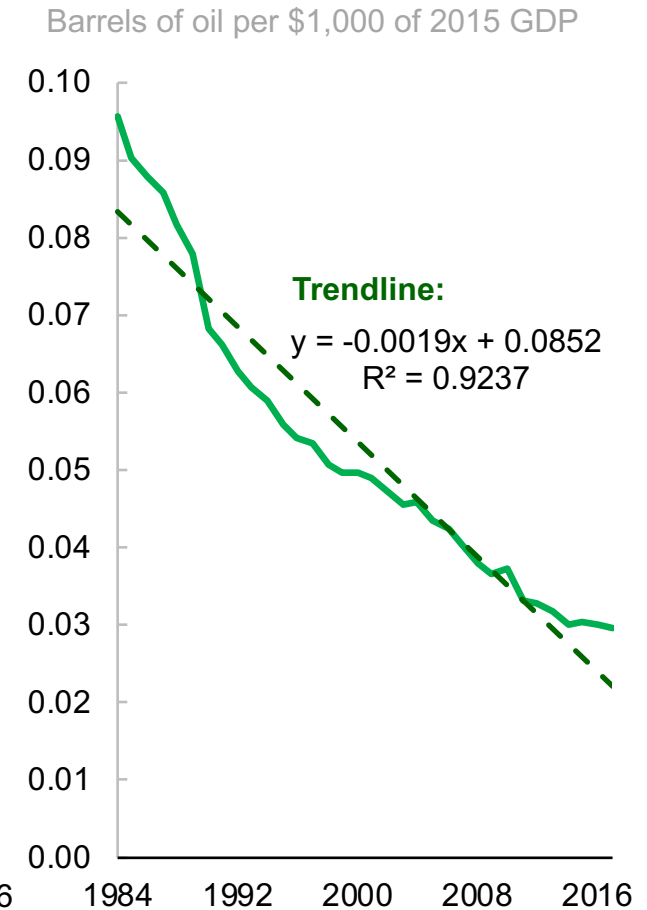
**Petchem oil intensity**  
(16% of total oil demand)



**Residential oil intensity**  
(8% of total oil demand)



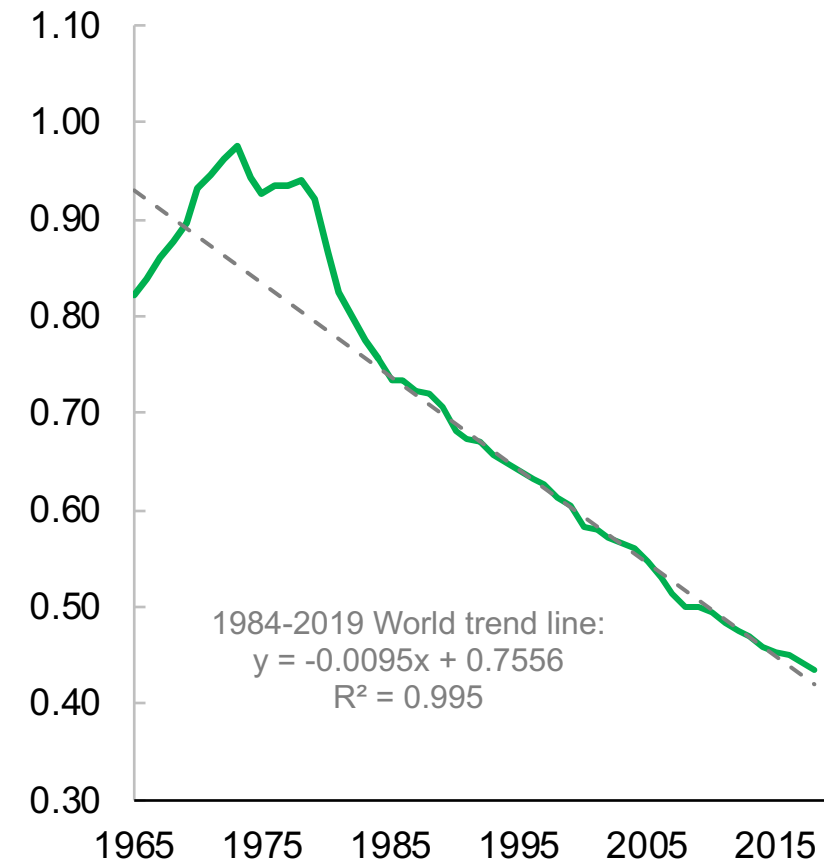
**Industry oil intensity**  
(5% of total oil demand)



# Global and regional oil intensities

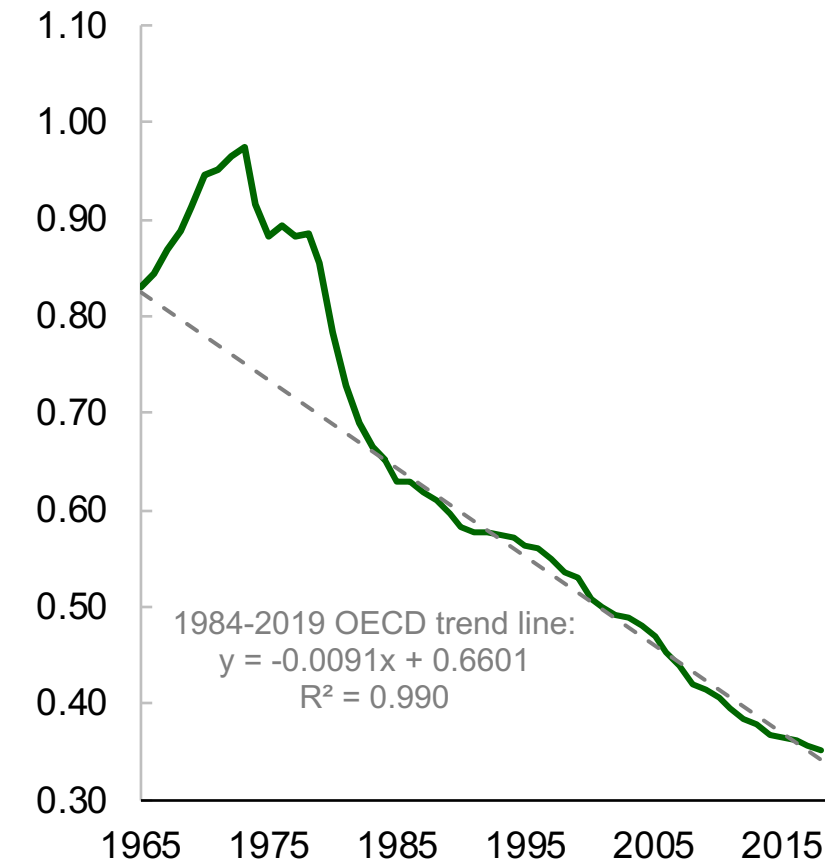
## Global oil intensity

Barrels of oil per \$1,000 of 2015 GDP



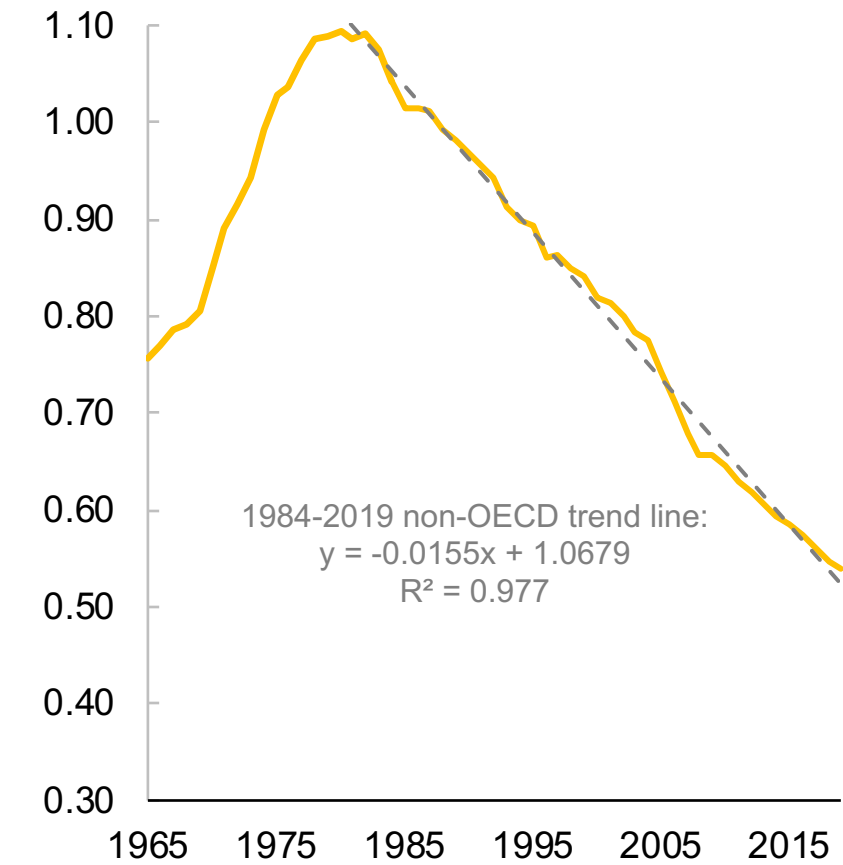
## OECD oil intensity

Barrels of oil per \$1,000 of 2015 GDP



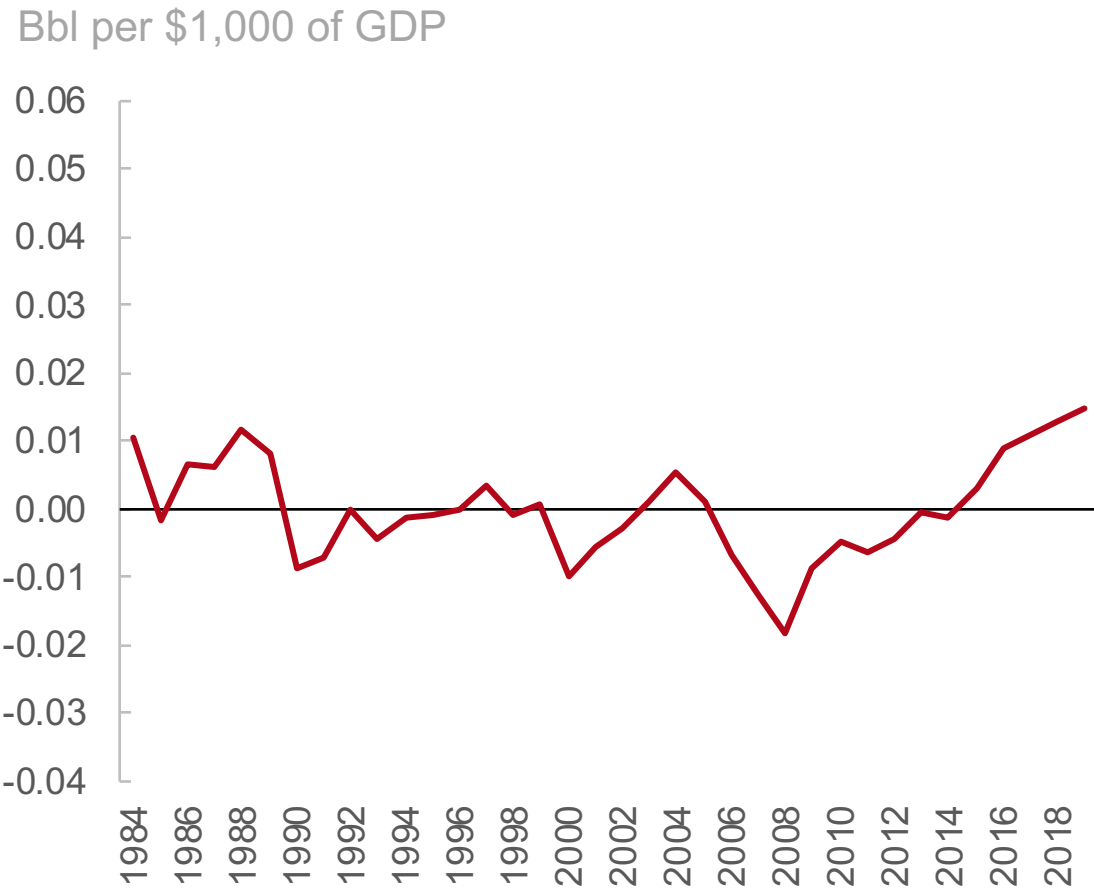
## Non-OECD oil intensity'

Barrels of oil per \$1,000 of 2015 GDP



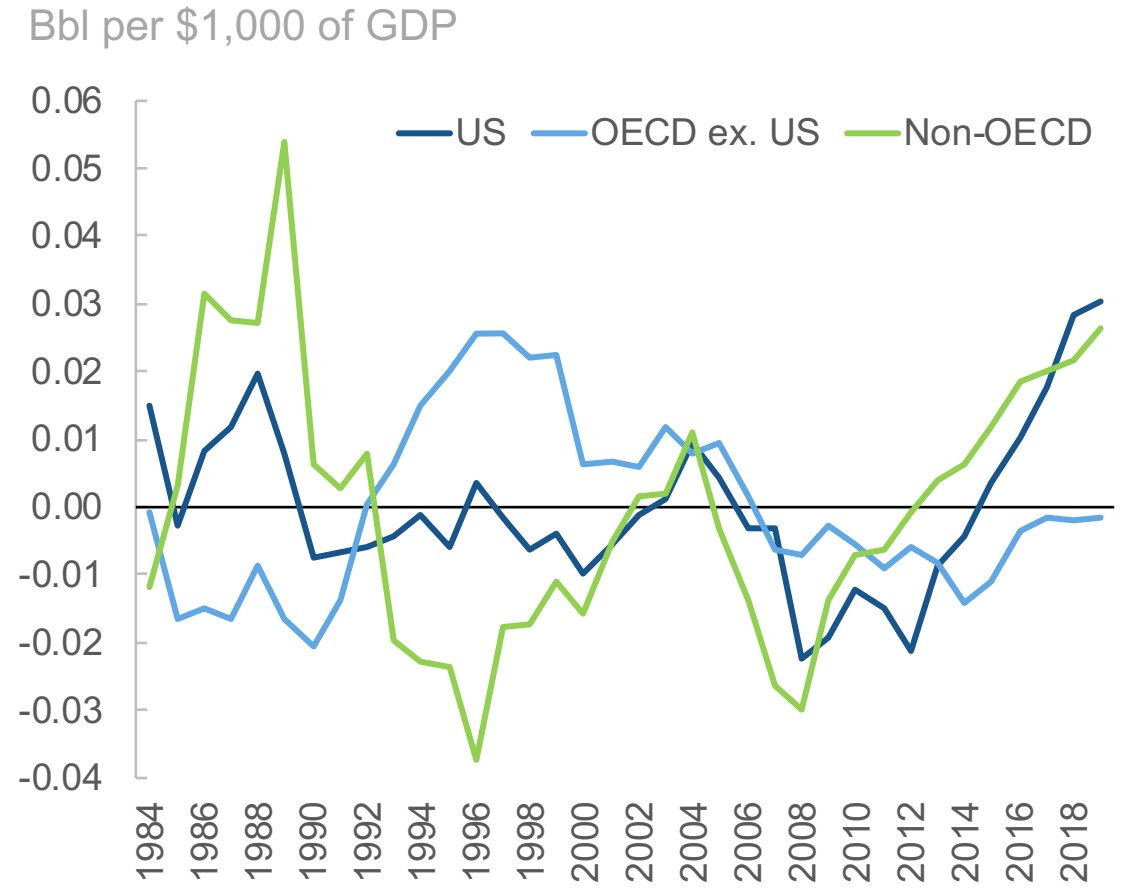
# Oil intensity deviation around the trend – US shale plays a role

## Global oil intensity deviations around the trend



Source: BP Statistical Review; World Bank (2020); Oxford Economics (2020); own calculations

## Regional oil intensity deviations around the trend



Source: BP Statistical Review; World Bank (2020); Oxford Economics (2020); own calculations