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The role of energy in economic growth

Published on: 6 December, 2024 **|** Author: Investment Team

The cost of energy has always been a significant factor in a region's or country's economic growth model. Be it the reliance on oil from the middle east countries or the reliance of Europe on Russian gas more recently, the price of energy plays a significant role in the economic prospects of an economy. Over the past two decades, as developed economies have moved towards service led growth, the expectation was that reliance on energy-led growth models would become less prevalent.

The reality however is very different as we enter 2025, primarily due to the emergence of data centres globally. Certain countries and regions are just structurally better placed to take advantage of the drivers of economic growth in the future than others.

Investment in new data centres has exploded over the past two years, driven by growing digitalisation and the uptake of artificial intelligence (AI), which is expected to continue accelerating. Much of the spending is concentrated in the United States, where annual investment in data centre construction has doubled in the past two years alone, although other major economies, such as China and the European Union, are also witnessing an increase in activity. In 2023, overall capital investment by Google, Microsoft and Amazon, which are industry leaders in AI adoption and data centre installation, was higher than that of the entire US oil and gas industry – totalling around 0.5% of US GDP.

In large economies like the United States, China and the European Union, data centres account for around 2-4% of total electricity consumption today. But because they tend to be geographically quite concentrated, their local impact can be pronounced. The sector has already surpassed 10% of electricity consumption in at least five US states, whilst in Ireland it already accounts for over 20% of all electricity consumption. (Data sourced from the International Energy Agency, IEA)

The reason we feel this is important to regional and country specific economic growth moving forward is twofold: first, the sheer pace of roll out of these larger energy hungry data centres over the past two years, but also the likely economic and resiliency impact on countries where electricity is relatively expensive.

The need for cost effective and reliable energy for data centres is a significant element of any decision-making process for companies such as Microsoft or Amazon; this, coupled with the cost of real estate, matters. It is no coincidence that the country with most new data centres in Europe is Spain, where land is cheaper than in the UK for example, and solar power more reliable.

OpenAI, a leading US AI company, is talking about building huge 5GW data centres. If all of Britain's electricity were used exclusively to power 5GW datacentres, the UK could manage to power just 6 ½. With UK electricity prices close to the highest in the world and three times higher than those in the US, it would seem inevitable that most of the world's data centres will be built in the US and hardly any in the UK. The conclusion of our research into this area is that the cost of energy will become more important, not less, in the evolving digital economy and this will create a greater divergence between winners and losers than most people expect or can even contemplate. It is not for us at Tacit to crystal ball gaze however the facts above really do shine a light on the problems facing most developed economies that rely on imported energy in the modern world.