What the proposed increase in windfall tax means for Shell

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The 'windfall' tax on the oil and gas industry

Shell PLC is an oil and gas producer, supplier and retailer. It operates in over 70 countries, benefiting from vertical integration to sell both raw and processed goods, such as fuels and lubricants to commercial customers; businesses and the public alike. Shell PLC (referred to as Shell) controls a 10% share of the UK oil and gas market (1), forming a fragmented oligopoly with its rivals. Collusive, cartel-like behavior is strictly prohibited thanks to UK law and regulations. Instead, the market can be described with a Bertrand model, as the firms produce a (near) identical product and must set their prices independently. This imperfect competition is exemplified in the extremely high entry and exit costs, deterring entrants with unviable investment requirements and the threat of predatory pricing. By stooping below marginal cost and potentially operating at a loss, established firms can block out newcomers whilst weakening their opposition.

Almost 80% of Shells' profits (which totaled £9bn and £8.2bn in Q2 and Q3 alone) came from crude oil and gas sales, with less than 4% coming from renewables (2). Their business model in this sector is simple; they extract raw materials, refine them and then sell them on at a price largely dictated by the demand from consumers and by the perceived value from investors for these commodities. Oil and gas production profit margins are volatile, but they are always extremely high and currently some of the highest across all industries (3)(ref. fig.1). This is a direct result of increased demand due to lifting of Covid restrictions worldwide and exacerbated by the Ukraine war posing energy supply concerns.

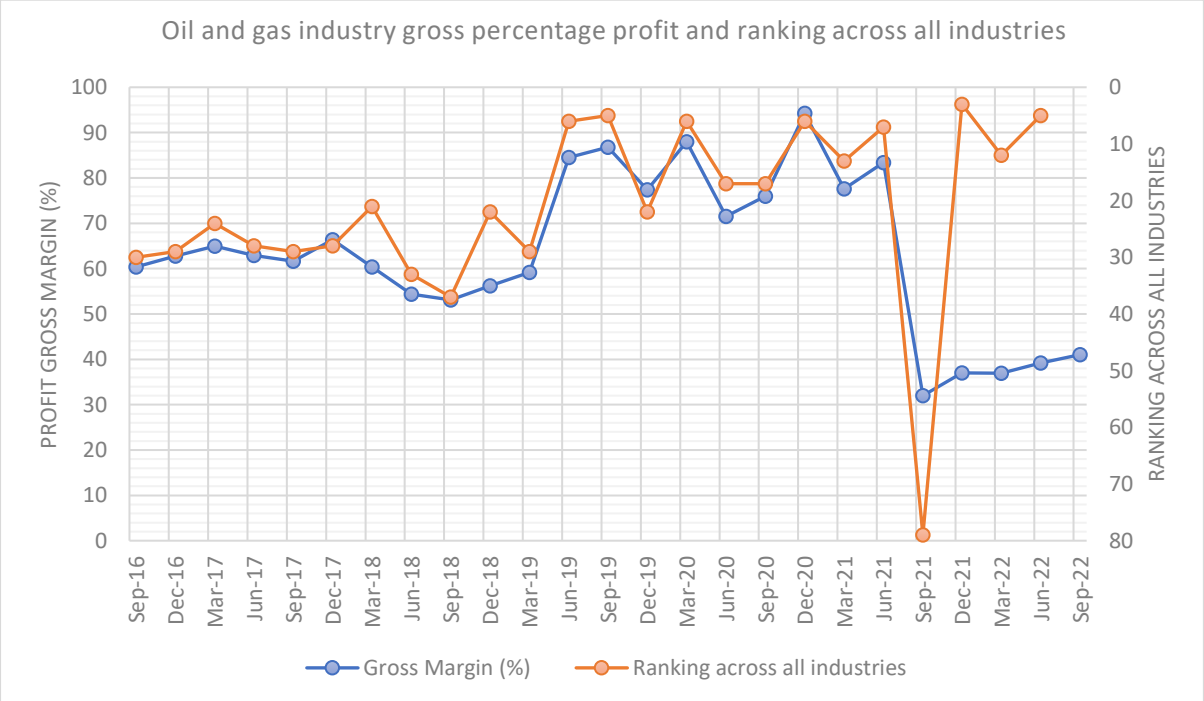

Figure 1 Profitability of Oil and Gas Industry

Despite having always been, and for the foreseeable future being, a lucrative industry, these unexpectedly high profits, along with an ongoing cost of living crisis, has led the UK's Chancellor Jeremy Hunt to increase an already existing 'windfall' tax, as well as doubling the proposed duration by adding an additional 27 months. A 'windfall' tax is a government imposed levy, targeting firms which have undeservingly benefited from exceptional circumstances. Energy companies across the UK are expected to pay a 35% tariff on profits made from extracting UK oil and gas, marking a 10% increase from previous levels. The tax will raise around £40bn, plugging a hole in the UK's budget and helping to support those worst affected (4). Taxation is a method of solving externalities worldwide, and further windfall levies have been implemented by Spain, Greece, Italy and Belgium, showing its promise. The lack of other European powerhouses exemplifies how there are other ways of tackling the situation.

How will this impact Shell?

This proposed fiscal policy is one method of regulating Shells net profits and indirectly, their prices. Oil and gas are assumed to be inelastic commodities, so any change in price will result in a relatively small change in demand. Shell is assumed to be operating at its optimal production level, hence any deviation in price or quantity will likely reduce total revenue (TR). One option to increase profits (Π) would be to reduce prices (P) and increase quantity (Q) sold. Given the marginal costs (MC) per product will remain roughly equal as Shell exercises long-run economies of scale in production, and the fixed operating costs (FC) remain constant, then if Shell can make cuts to the variable cost (VC) at a greater rate to the decrease in total revenue, profits will increase. Shell could minimize existing inefficiencies or re-evaluate existing costs in an effort to reduce OPEX, hence reduce their FC.

$$TR = Q * P$$

$$\Pi = Q * (P - MC) - FC - VC(Q)$$

$$\frac{\delta VC(Q)}{\delta(TR - (Q * MC))} < 1 \quad \Longrightarrow \quad \Pi_{new} > \Pi_{old}$$

As a substitute, the government could explore price ceilings on the industry price of oil and gas. This would allow consumers to purchase at a lower price but create a shortage in the long-term. Alternatively, a laisse-faire approach to regulating the industry relies on competition between companies to keep the prices low for consumers.

In reality, Shell and other oil and gas companies will continue to operate almost as normal. Shell will seek to minimize the amount of tax it pays and exploit the flaws with the proposed levy, three of the main ones being:

1. The windfall tax is only applicable to profits made. As such, Shell are not expecting to pay any tariffs for the year 2022, claiming their investments in the North Sea meant it did not count as having made UK profits (4). Shell will exploit this clause to the fullest, re-investing into the company through R&D or share buybacks (subject to the lower corporation tax) in order to declare minimum profits. It has spent $1 billion and $4 billion (respectively) on this already (5)(6). Shell could go as far as redistributing revenue across their international business in an attempt to 'hide' UK profits. However, repeated years of unprofitability is unsustainable for the company and will discourage future investors, so paying this windfall tax is inevitable.
2. The levy applies solely to the extraction of raw materials. Activities such as the sale of diesel and petrol on forecourts or refining of oil are exempt from this tax. This could prompt Shell

to diversify its business model and adjust its strategy, shifting and evolving across the sectors (ref. fig.2). Ultimately, this has a positive result for the UK consumer and the

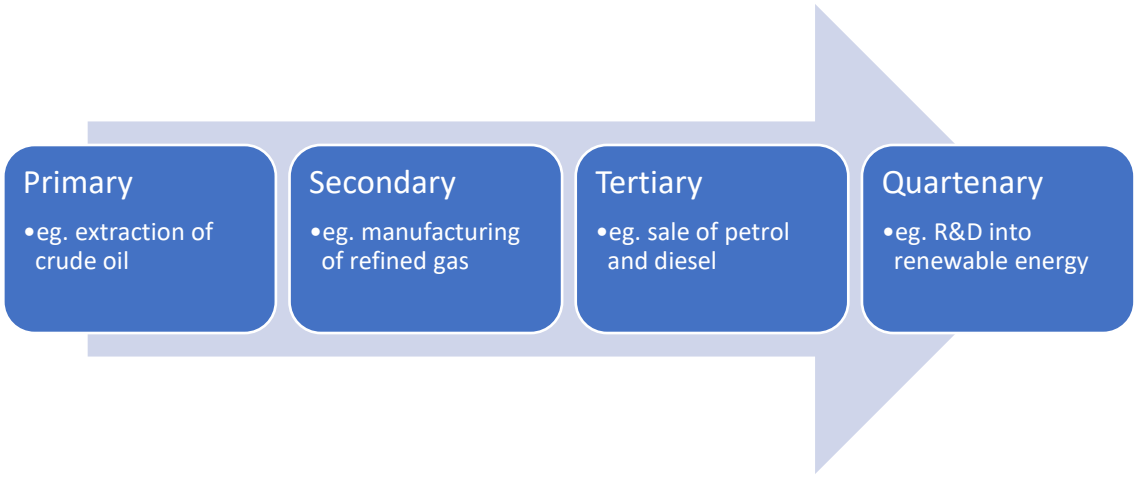

Figure 2 Evolution of Shell's Business Strategy

environment, increasing Shells services capability and promoting sustainable energy.

3. The windfall tax applies to profits made by Shell's UK business. There is concerns of driving energy companies out if government pushes these taxes higher and higher; however with 13 European countries enforcing some form of levy (7) and Shell announcing a £20bn to £25bn spend over the next 10 years on UK energy, this is a somewhat small concern. Nonetheless, Shell could decide to start focusing their efforts in other countries and diversifying their market.

Strategies Shell currently employ and may start to implement

Shell UK's business strategy is complex and confidential, but a high-level explanation can be offered based on their Q3 2022 public report. This suggests their primary income, and hence principle focus, is the exploration, production and retail of crude oil and gas, otherwise referred to as 'upstream'. Recording $12.5bn and accounting for 58% of revenue, upstream returns eclipse takings from the renewables sector, generating a modest $520mn this quarter. However, with the gradual yet inevitable death of high-polluting fuels, compounded with taxes unique to the energy industry, Shell may benefit from adapting their strategy going forward (2).

Shell, likely, exploits block pricing as a form of price discrimination; offering bulk volumes of crude, gas and refined fuel to high consumption companies, such as airlines or a construction business. These sorts of contracts guarantee revenue for Shell, decreasing their operating risk, whilst also benefiting the purchaser who is able to get it at cheaper than market rate. This is one of the benefits of utilizing economies of scale when purchasing.

In-line with the 130% super-deduction imposed by the Government in early March 2021 up till the end of March 2023, companies investing in qualifying new plant and machinery assets (for example oil platforms and wind turbines) can claim a 130% deduction capital allowance on such investments, allowing business to cut their tax bill by up to 25p for every £1 they invest. This was put in place to combat the recession faced during Covid, and Shell will benefit from this to the fullest when investing in new and existing sectors.

Renewables and energy solutions is a sector which Shell is looking to engage more with, demonstrated by their circa £18bn commitment to "low and zero-carbon products and services"

over the next decade. There are government incentives promoting investment in renewable energy which could reduce total payable tax for Shell. Furthermore, the market for clean energy is rapidly expanding, and Shell would benefit from being at the forefront of that enlargement. However, there have been accusations of so-called 'greenwashing', claiming Shell is doing too little, too late. £18bn across the decade is less than 1% of Shell's annual revenue and the exact amount spent versus the amount pledged has been questioned in past years. Whether this is sufficient to outweigh their current carbon footprint is unclear, but doubtful (8)(9).

Determining the price of oil

Focusing on Shell's production and retailing of Brent oil, we can establish an understanding for how oil prices are set and the significance of an increase in windfall tax. Brent Crude oil, or Brent, refers to oil extracted from exploration areas in the North Sea, and is one of three major oil benchmarks used when pricing oil. Similar to any other product, the retail price of oil is dictated by a balance between what suppliers, like Shell, are willing to sell at; and what consumers, businesses or individuals alike, are willing to buy at. Specific to the UK, there are also additional taxes, such as VAT (at the standard 20%) and a more specific 'Fuel Duty', charged at a rate of 52.95 pence per litre (10). If we consider the average price of a litre of petrol to be 191 pence as of June 2022 (11) and estimate a rough profitability in line with modern industry values to be 92% (3)(ref. fig.1), we can have some understanding for the marginal cost of one litre of refined petrol to Shell.

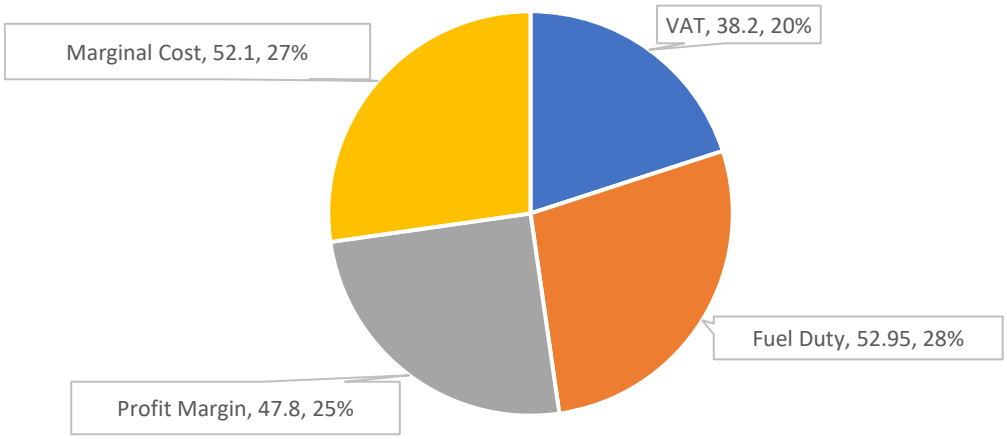

Figure 3 Price breakdown of litre of petrol (values in pence)

This would bring production costs for a UK barrel of Brent to around £80, which is within 15% of the current trading price of $83.24 (29/11/2022) (12). This gives us a guideline for the true marginal cost of crude oil to Shell. Assuming a simplified model, we can try to explain fluctuations in the price of oil.

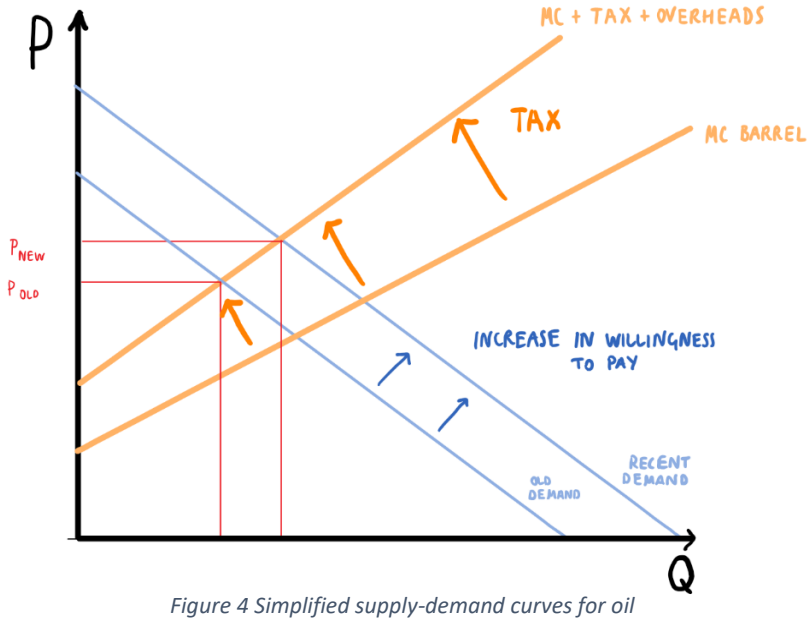

Figure 4 Simplified supply-demand curves for oil

The recent shift in the demand can be explained as an increase in the willingness to pay for oil, this is a direct result of the lifting of Covid restrictions. Compounding this with the ongoing energy crisis and fuel shortage due to the war in Ukraine, and rapidly rising living costs in the UK, we find an increase in price as well as quantity sold. The unequal gradients on the supply curves can be explained by the proportional relationship between overheads and quantity sold; as companies get bigger, their profits increase too. Taxation must be conducted in a stable way as to not impact consumers overtly negative, nor manipulate the market too extremely.

The impact of the windfall tax

Despite what it may bring in the future, for now the windfall tax is a minor factor when evaluating oil (and gas) prices compared to the rising inflation from tackling Covid and the energy scarcity posed by the war. Nonetheless, it may lead to Shell and other energy companies reassessing and adapting their strategies in the future, promoting a shift to green(er) energy without scaring away UK business. The reality is Shell will continue to grow as a company, re-investing in themselves and improving their technology, minimizing the taxes it pays and increasing its self-valuation, for the foreseeable future, but competition and regulation will keep prices to a just-about-affordable level.

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