



False economy?

Second report – The total economic cost of high rebates on NHS medicines – further analysis and sensitivity testing

September 2023

WPI STRATEGY

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Key messages

- The DHSC is currently deciding if historically and internationally high rebates (called 'Payment Rates') on medicine sales to the NHS should continue for the next five years.
- The DHSC and industry agree that higher Payment Rates will reduce life sciences R&D in the UK, but the industry estimates that the negative impact will be much larger than DHSC asserts.
- This matters, because all parties accept that lower R&D today means lower economic output and lower tax revenues in the future.
- Previous analysis demonstrated that if industry projections for the reductions to R&D under high payment rates were correct, then ultimately the direct NHS financial gains from those rates would be more than offset by lower R&D-generated tax revenue, making the policy a false economy.
- Yet that work relied upon survey evidence from across life sciences companies, conducted by the ABPI. DHSC have queried this result, asking whether the anticipated negative impacts of super-high payment rates would hold if company forecasts for resulting reductions in R&D were to prove overstated.
- This new report tests that hypothesis. We look both at direct impacts on HMG finances and at total UK economic benefit, which includes all economic benefits of reinvesting NHS revenue and R&D tax revenue under different Payment Rates back into the health service. We then conduct sensitivity analysis to test the robustness of these results.
- We find that the negative impact on life sciences R&D reported by companies would have to be greatly overstated for the economic costs of continued super-high Payment Rates not to exceed the benefits. Applying such high rates for 2024-28 is found to be net harmful to the economy if R&D impacts are anywhere above 25% of levels reported by companies. Applying such rates for 2024-33 is net harmful if impacts are anywhere above just 10% of those companies report.
- In conclusion, whether looking either in narrow financial terms, or in overall economic terms, lower Payment Rates mean more economic growth, more R&D and more future funding for the NHS. This is true even when heavily dampening the negative impact on R&D suggested by the ABPI survey, to account for the possibility of R&D sensitivity to payment rates being less than estimated by companies.

Background

In recent years, the Department for Health and Social Care (DHSC) has required medicines manufacturers to make rebate payments – determined by what are officially called ‘Payment Rates’ – on the sale of branded medicines. The levels of such payments have escalated to historic and internationally high levels since January 2022, to the extent that life sciences companies will provide as much as £3 billion of subsidy to the NHS in 2023 alone.

The DHSC is currently deciding whether to continue to levy high Payment Rates in the period 2024–28, or return them towards their less burdensome historical norms.

Recent analysis by WPI Strategy demonstrates that, while ostensibly saving the NHS money, high Payment Rates represented a false economy. Billions of investment in UK life sciences R&D would either take place elsewhere in the world or not happen at all, foregoing future economic growth and high-value employment in the UK, and reducing the tax base needed to sustainably fund the NHS.

This paper builds on that work firstly by estimating broader economic (or ‘social welfare’) impacts, under a scenario in which future tax revenue impacts are assumed to be allocated to the NHS. It then provides sensitivity analysis, to test how far these results would hold true even if testimonies from companies regarding the sensitivity of R&D decisions to Payment Rates were to prove overstated.

This is a particularly important issue in the context of the Government’s stated policy aim to support life sciences as one of its five key ‘growth sectors’.

Modelling the economic impact of NHS price controls

The modelling analysis conducted in WPI Strategy's report *False Economy? How NHS medicine procurement threatens the UK's Life Sciences growth engine* was underpinned by a survey of ABPI members. That survey asked how much life sciences companies would invest in R&D under four different Payment Rates:

- <10%
- 10%-15%
- 15%-20%
- 20%-30%

For each of the above Payment Rates, the modelling calculated:

- The additional **economic output** that would be generated from life sciences R&D investment.
- The additional **tax revenues** that would be generated from life sciences R&D investment.

The analysis looked at the economic output and Exchequer revenues generated across different Payment Rates, compared to the NHS revenues that would receive under different Payment Rates.

Recap of initial findings – lower R&D, lower output, lower tax revenue

The results of the ABPI survey suggest that the higher the Payment Rate, the lower the investment in UK life sciences R&D. A Payment Rate of 20-30% would equate to a loss of £1.9bn of UK life sciences R&D in 2028 alone, and a cumulative £5.7bn of life sciences R&D investment foregone over 2024-28. Indeed, if the ABPI survey results played out in reality, investment in life sciences R&D is only expected to increase in the period 2024-28 under a <10% Payment Rate.

Using these figures, the modelling analysis in our previous report found that:

- **Economic output will be lost under higher Payment Rates.** When comparing a 20%-30% payment rate to a <10% Payment Rate, the resulting loss in economic output over 30 years is worth over £50bn. Retaining high Payment Rates for the five subsequent years (2029-2033) would mean foregoing a further £90bn of economic output.
- **Tax revenue will be lost under higher Payment Rates.** When comparing a 20%-30% Payment Rate to a <10% Payment Rate in the period 2028-2032, the long-term losses in tax revenue are forecast to be worth £18bn. Retaining high Payment Rates for the five subsequent years (2029-2033) would mean foregoing around £30bn in long-term lost tax revenues.¹

Lost R&D, economic output and tax revenue would also happen under the 10%-15% Payment Rate and 15%-20% Payment Rate. Hence, the previous analysis found, should a policy of higher Payment Rates be maintained, the losses would grow disproportionately as UK life sciences adjusted to a new, lower growth equilibrium.

These losses, however, come alongside certain benefits. The NHS would receive more revenue from pharmaceutical companies with higher Payment Rates. Seen in the most narrow financial terms, the policy trade-off could be framed as whether the revenue gain to the NHS is more than the lost tax revenue from reduced R&D. Our analysis found that, when comparing a <10% Payment Rate with a 20%-30% Payment Rate, there would be a net loss of £6bn to the UK economy over 30 years – the NHS gains around £12bn from a higher Payment Rate, but the tax loss is £18bn.

Further findings – looking at total economic benefit

We now extend this analysis beyond these narrow financial terms, calculating the total economic benefit that could be expected across different Payment Rates. The total economic benefit is defined here as the sum of:

- **The economic benefit if the NHS revenues generated from Payment Rates and the tax revenue generated from life sciences R&D** are reinvested into the health service. Government economists assume that every £1.00 invested in the health service brings £4.67 worth of economic benefits.²
- **The economic output that is generated from investment in life sciences R&D.** There is established economic evidence demonstrating that R&D adds to economic activity.³

In addition, we conduct sensitivity analysis to test what total economic benefit would be **in the event that the survey projections for life sciences R&D investment under higher Payment Rates prove too pessimistic**. While higher Payment Rates have now been in place for 21 months, the full effects will yet to have played out given the lag times involved with investment decisions as well as company expectations that they may only be a temporary aberration. Maintaining such rates into the medium term would therefore represent a novel R&D environment and accurately predicting behaviours may be challenging.

We test for net financial and economic impacts under five scenarios – those in which negative R&D impacts under 20-30% payment rates are 20%, 40%, 60%, 80% or 100% of those projected by companies. We take the conservative approach of assuming that negative R&D impacts will not be greater than those projected by companies, though this possibility cannot be ruled out.

Note that we assume that the **ABPI survey results for life sciences R&D investment under <10% Payment Rates are accurate**. The rationale being that life sciences companies have historically faced a <10% Payment Rate, making it a known environment to perform R&D and therefore relatively easy to predict.

We find:

- **First, that should R&D impacts be in line with company projections, then the <10% Payment Rate would deliver much greater total economic benefit than a 20-30% Payment Rate.** Over the period 2024-28 these greater benefits would total around £63bn. See Table One and Chart One.
- **Second, that projections of negative impacts from high Payment Rates are highly robust to alternative assumptions regarding R&D impact.** See the results in Table One. For example, if the year-on-year falls in life sciences R&D investment were just 60% of those suggested by the ABPI survey at the 20-30% Payment Rate, the total economic benefit would be still £30bn below that generated under the <10% Payment Rate in the period 2024-28. For the total economic benefit of the 20-30% Payment Rate to match that of the <10% Payment Rate in the period 2024-28 – i.e. for high payment rates not to have a net negative impact – the fall in life sciences R&D resulting from higher Payment Rates life sciences R&D would

have to be just 25% of that implied by the ABPI survey; over the period 2024–33 the fall in life sciences R&D would have to be 10% of that implied by the ABPI survey. See Chart Two.

In summary, the negative impact on life sciences R&D would have to be just a fraction of the level testified to by respondents to the ABPI survey, for the total economic benefit of a 20–30% Payment Rate to be greater than the total economic benefit of the <10% Payment Rate.

Chart One: Incremental impact on GDP over 30 years of 20–30% PR versus <10% Payment Rate, applied for 2024–28

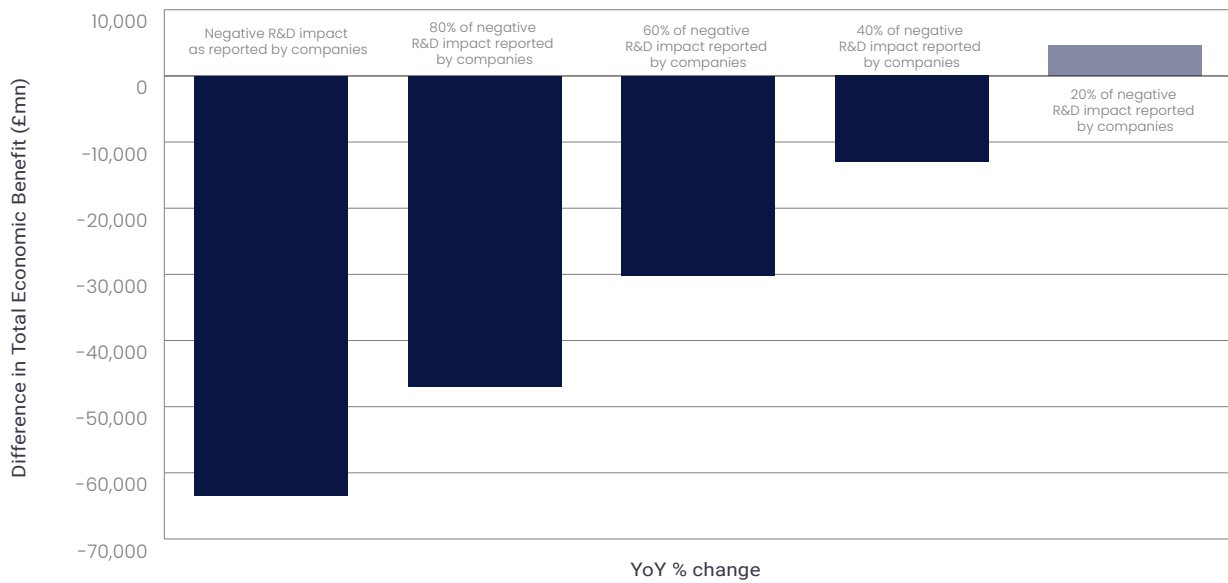


Chart Two: Incremental impact on GDP over 30 years of 20–30% PR versus <10% Payment Rate, applied for 2024–28

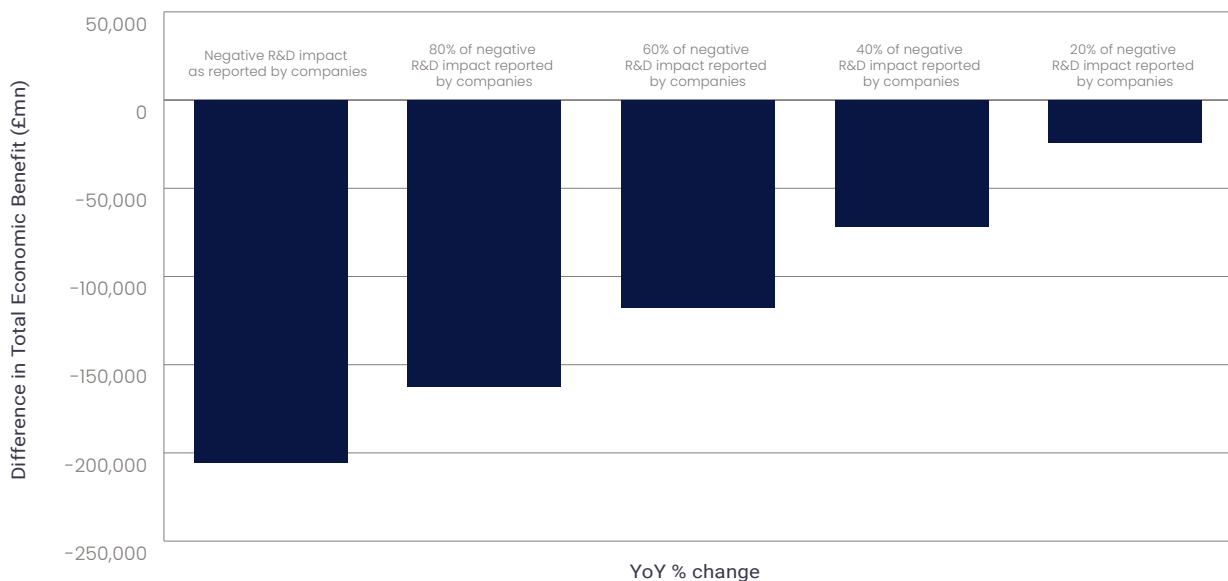


Table One: Total economic benefit comparing survey-implied results with year-on-year change assumptions, £mn

Revenue implications	Payment Rate	BCR with NHS Revenue (2024-28)	BCR with R&D Tax Revenue (2024-28)	R&D-Generated Growth (2024-28)	Total	BCR with NHS Revenue (2024-33)	BCR with R&D Tax Revenue (2024-33)	R&D-Generated Growth (2024-33)	Total
R&D YoY % change implied by Survey	<10%	21,283	527,299	225,824	774,406	43,672	1,070,568	458,487	1,572,727
R&D YoY % change implied by Survey	20-30%	77,112	443,816	190,071	711,000	158,231	846,318	362,449	1,366,997
R&D YoY % change 80% implied by Survey	20-30%	77,112	455,303	194,991	727,406	158,231	876,670	375,448	1,410,348
R&D YoY % change 60% implied by Survey	20-30%	77,112	467,062	200,026	744,200	158,231	907,995	388,863	1,455,088
R&D YoY % change 40% implied by Survey	20-30%	77,112	479,098	205,181	761,391	158,231	940,317	402,705	1,501,253
R&D YoY % change 20% implied by Survey	20-30%	77,112	491,418	210,457	778,987	158,231	973,661	416,985	1,548,877

Conclusions

Higher Payment Rates mean higher NHS revenues from the sale of medicines. Hence the policy trade-off is increased short-term revenues for the NHS, versus reduced life sciences R&D, reduced future economic output and reduced future tax revenues.

While lower Payment Rates mean lower NHS revenues, the results of the ABPI survey suggests that lower Payment Rates would mean higher future tax revenue from greater R&D expenditure. This means higher overall revenue for public services and higher overall economic growth. Not only this, but this higher overall revenue could all be redirected to the NHS, generating the social welfare benefits that are derived from NHS spending.

Crucially, the total economic benefit – which takes account of social welfare benefits – would be greater under lower Payment Rates than higher Payment Rates *even if the negative impacts of high Payment Rates on R&D were much less than suggested by the evidence provided by company experts.*

This is in the context that the ABPI and DHSC are in agreement that higher Payment Rates will reduce UK life sciences R&D. The difference in opinion is by over how much it will be reduced. As the analysis in this paper demonstrates, even very conservative projections for the sensitivity of life sciences R&D investment to Payment Rates are consistent with the conclusion that the economic cost to the UK of higher Payment Rates do outweigh the benefits.

Endnotes

- 1 The economic output and tax revenue implications are calculated 30 years into the future.
- 2 These economic benefits technically represent 'social welfare' benefits across society as a whole.
- 3 NB: the economic output benefit is net of R&D generated-tax revenue highlighted in the above bullet to avoid double counting.



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September 2023

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