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Stamp duty on shares: analysis of its economic impact and the benefits of its abolition

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1 Executive summary

In 2022, the Centre for Policy Studies (CPS) asked Oxera to update its analysis, undertaken in 2007, of the impact of stamp duty on individuals and companies.[1] Subsequently, in 2024, the CPS requested that Oxera update the 2022 version of the analysis.[2]

In the UK, stamp duty is levied on market participants that are not registered as financial intermediaries at a rate of 0.5% of the value of purchases of UK listed companies' equity shares.[3] In the 2022–23 tax year, the tax raised nearly £3.8bn for the Treasury.[4] This study considers the benefits of an abolition of stamp duty.

The main findings based on the research undertaken for this study are as follows.

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[1] Oxera (2007), 'Stamp duty: its impact and the benefits of its abolition', prepared for ABI, City of London Corporation, IMA and London Stock Exchange, May.

[2] For this report, Oxera has undertaken a limited update of the main elements of the analysis, but has not revised all elements of work. We rely on the existing and longstanding academic literature and empirical relationships that remain valid for the current context.

[3] UK government, 'Tax when you buy shares', https://www.gov.uk/tax-buy-shares, accessed 12 February 2024.

[4] This includes stamp duty and stamp duty reserve tax on transactions in shares. Stamp duty paid on property transactions is not considered in this report. See HMRC (2023), 'UK Stamp Tax Statistics', December, https://www.gov.uk/government/statistics/uk-stamp-tax-statistics, accessed 12 February 2024.

1.1   Impact on pensions

Stamp duty constitutes a cost to pensioners throughout the lifetime of their savings, resulting in an effect on the size of total pension savings at retirement.

For an average direct contribution scheme member who starts saving in 2024, stamp duty could reduce their fund at retirement by around 1.0% (1.2% for equity-based portfolios). This is equivalent to a reduction in the pension fund at retirement (in 2024 money) of around £6,051 (increasing to £8,086 for equity-based portfolios).

1.2   Impact on listed companies

The abolition of stamp duty may result in a reduction in the cost of equity of UK listed companies.

We estimate reductions in the nominal post-tax cost of equity of 6.9–8.4% (or 0.65–0.79 percentage points), and in the nominal post-tax cost of capital of 4.5–5.5% (or 0.43–0.52 percentage points).

The abolition of stamp duty may increase the capital expenditure of UK companies.

For example, stamp duty abolition could lead to an increase in the annual fixed business investment of FTSE All-Share index companies of £2.8bn–£6.8bn.[5]

The effect of stamp duty abolition may differ across companies and sectors.

For instance, the abolition of stamp duty may reduce the cost of equity of an average UK retail company by c. 10.9%, while the cost of equity of an average UK healthcare company may be reduced by c. 5.3%.

The abolition of stamp duty may also particularly benefit sectors with high fixed investment intensity and high growth potential, including telecoms, technology, and retail.

1.3   Impact on the wider economy

The abolition of stamp duty may have a significant impact on GDP and the government's tax-take.

A permanent increase in GDP of between 0.2% and 0.7% may be expected. The government's annual tax-take may increase by £2.1bn–£6.8bn (as a result of an increase in GDP), minus a £3.8bn reduction in the annual tax-take due to the loss of stamp duty receipts.

Depending on the degree to which stamp duty is discounted into share prices, its abolition might result in further additional tax receipts associated with higher income tax and VAT.

These benefits would be small compared with the benefits to the Exchequer associated with the increased GDP (as a result of the abolition of the stamp duty).

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[5] Based on investment levels in the 2017–21 period.

Stamp duty abolition may have a temporary effect on the government's capital gains tax receipts.

Based on the historical capital gains tax receipts associated with UK listed equities, the abolition of stamp duty could result in a one-off increase in capital gains tax of around £155m.

Impact on the attractiveness of London as an international financial centre

Within the major financial centres, UK stamp duty stands out as being the highest tax on financial transactions. Therefore, aside from the economic costs measured in this study, stamp duty affects the comparative attractiveness of London as an international financial centre for equity listings and trading.

2 Impact on pensions

2.1 Modelling of the impact on pensions

The objective of this section is to assess the impact of stamp duties on pension savings over the lifetime of a representative UK resident.

Oxera has developed a lifetime saving model which calculates the total size of a pension portfolio at retirement. Stamp duty represents an additional trading cost that reduces the size of pension savings available to UK pensioners. This calculated stamp duty burden represents the size of economic benefit that may be realised if the current stamp duty levy were to be abolished, holding all else equal.

The analysis is undertaken for the two most common UK workplace pension schemes: occupational direct contribution (DC) and direct benefit (DB). The two schemes cover 36.4% and 35.5% of all UK employees participating in a workplace pension plan.[6] It is worth noting that the importance of DC pensions will increase going forward, as most DB schemes are closed to new members.

Asset allocation in pension portfolios depends on the age and preferences of the saver. Therefore, in addition to studying the impact of stamp duty on the DC and DB portfolios with an average asset allocation, we include an analysis of equity-based and balanced portfolios within each scheme to capture a wider range of UK savers. This is illustrated in Figure 2.1.

Figure 2.1   Inputs and assumptions on asset allocations by pension fund
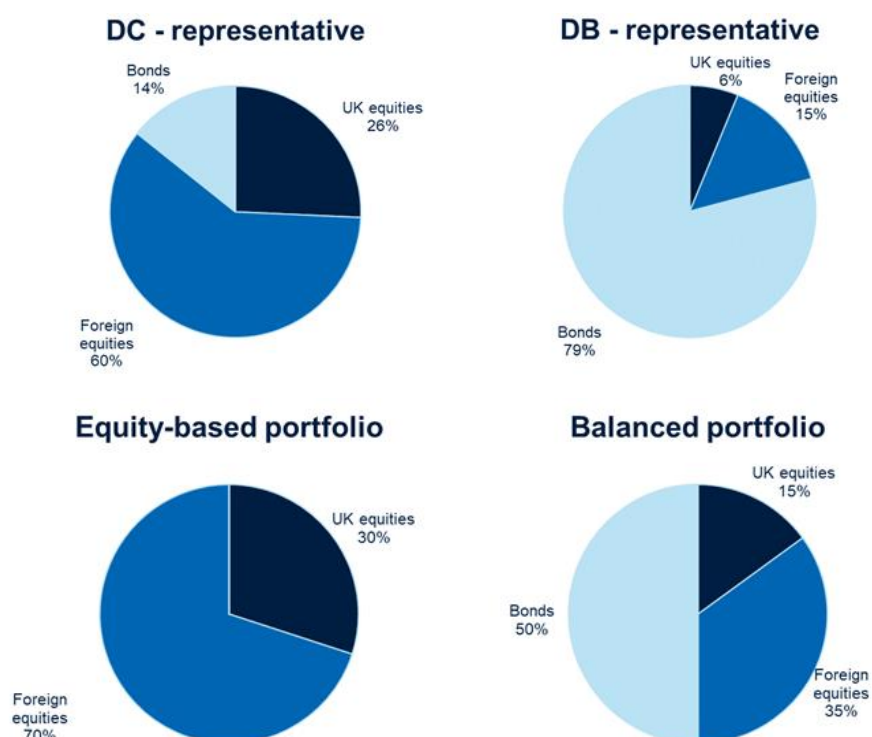
Note: Based on Pension Policy Institute (2020), it is assumed that UK equities represent 30% of the total equity holdings across all portfolios. Representative portfolios are based on the observed industry trends, whereas the split between equity-based and bonds portfolios is

[6] ONS (2022), 'Annual Survey of Hours and Earnings: summary of pension results', 2021 provisional edition of this dataset, Table 1: Employees with workplace pensions: by type of pension, April.

determined arbitrarily: 50% equity in balanced portfolio and 100% equity in equity-based portfolio.

Source: Pension Policy Institute (2020); Mercer (2021); Oxera calculations.

As shown in Figure 2.2, pension income at retirement and total stamp duty costs depend on saving decisions that vary across individuals (e.g. contribution rate, personal income and portfolio choice), economic conditions (e.g. return on assets), and investment industry characteristics (e.g. velocity of trading, trading costs). All of these factors vary over time and determine the total costs that UK savers encounter due to current stamp duty collection.

Figure 2.2   Factors affecting the size of lifetime stamp duty burden
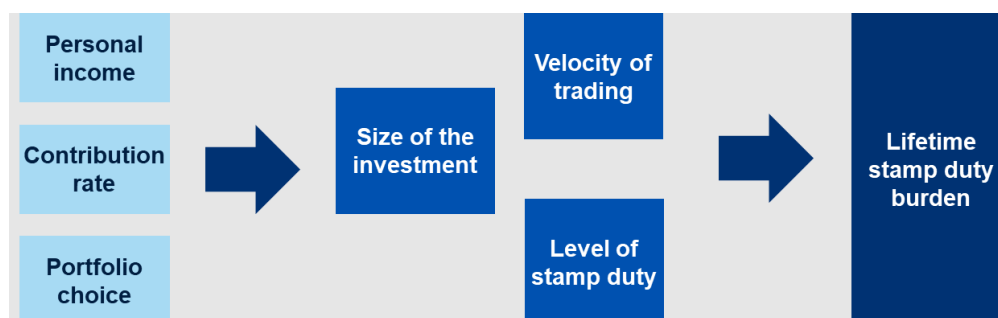
Source: Oxera.

2.2   Stylised model

The stylised model assumes that the average person starts saving at the age of 25 and continues their investments until retirement at the age of 67. Each person is assumed to invest a constant share of their income into the same portfolio until they are 62. Five years prior to retirement, we model a portfolio rebalancing by increasing the share of bonds to gradually reach a bond-only portfolio by the age of 67.[7]

We include three main asset classes for pension funds' investments: bonds, UK equity, and overseas equity. Most importantly, only UK equities are subject to stamp duties. Therefore, savers who invest more in domestic equities face a higher stamp duty burden. Appendix A1 contains a detailed overview of model inputs and assumptions.

2.3   Results

The modelling develops the following metrics, which capture the cost of stamp duty to savers.

- **Total stamp duty payments throughout the lifetime of the fund**—this value is the sum of all stamp duty payments made each year throughout the lifetime of the investment.

- **Size of fund when the investment ends, in today's money**—this value is the size of the individual fund at the end of the investment period (after 42 years). The value is expressed in terms of the prices in the year in which the investment begins (i.e. it is inflation-adjusted).

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[7] We assume that over the period of the model, inflation will average 2%. While in certain years inflation will be higher or lower than 2%, in the long run we assume that it will be on average 2%. See Bank of England (2024), 'Inflation and the 2% target', https://www.bankofengland.co.uk/monetary-policy/inflation, accessed 13 February 2024.

- **Stamp duty cost when the investment ends, in today's money**—this value is the same as above ('stamp duty payments throughout the lifetime of the fund'), but is presented in terms of the prices in the year in which the investment begins (i.e. it is inflation-adjusted).

- **Stamp duty cost as a percentage of the fund when the investment ends**—this value is calculated as the ratio of the 'stamp duty cost when the investment ends' to the 'size of the fund when the investment ends'.

- **Reduction in annual returns due to stamp duty**—this value is the difference in the average of the annual returns across the whole investment period in the case of no stamp duty, minus the average of the annual returns in a fund with stamp duty.

Table 2.1 below summarises the results of modelling the impact of stamp duty on members of DC group occupational pension schemes: for the representative DC portfolio, the balanced debt–equity mix, and the equity-based portfolio asset allocation. The table suggests that stamp duty has a significant effect on the size of the pension fund at retirement. For the representative DC allocation, stamp duty reduces the pension fund by 1.0% (or £6,051 in today's money). At the same time, for the equity-based allocation, stamp duty reduces the pension fund by 1.2% (or £8,086 in today's money).

Beneficiaries of DB schemes face a lower burden of stamp duties that is equal to 0.2% of the total portfolio (or £1,708 in current prices). The difference is driven by the predominance of DB investments in bonds, which reflects the fact that most DB schemes are closed to new members and, hence, serve a population that is closer to retirement or already receiving pension payments. On the other hand, equity-based portfolios (i.e. portfolios with 100% equity investments) of both DB and DC schemes lead to lifetime stamp duty costs equal to 1.2% of the total pension portfolio.

Table 2.1   Workplace pensions stamp duty costs

	DC portfolio scenarios		
	Balanced	Representative	Equity-based
Total stamp duty payments throughout the lifetime of the fund (£)	2,417	**5,123**	6,527
Size of fund when the investment ends, in today's money (£)	462,906	**618,753**	697,269
Stamp duty cost when the investment ends, in today's money (£)	2,522	**6,051**	8,086
Stamp duty cost as a percentage of the fund when the investment ends (%)	0.54%	**0.98%**	1.16%
Reduction in average return on assets due to stamp duty (%)	2bp	**4bp**	4bp

	DB portfolio scenarios		
	Balanced	**Representative**	**Equity-based**
Total stamp duty payments throughout the lifetime of the fund (£)	5,148	1,819	13,906
Size of fund when the investment ends, in today's money (£)	985,895	785,563	1,485,219
Stamp duty cost when the investment ends, in today's money (£)	5,374	1,708	17,228
Stamp duty cost as a percentage of the fund when the investment ends (%)	0.55%	0.22%	1.16%
Reduction in average return on assets due to stamp duty (%)	2bp	1bp	4bp

Source: Oxera.

We note that our estimate of 1.0% lifetime stamp duty costs is lower than the results obtained in Oxera (2007).[8] This is a result of the marked globalisation of UK pension funds' portfolios as well as lower share turnovers. Since UK pension funds have moved away from owning domestic listed companies, they are less exposed to stamp duty payments.

Indeed, the importance of UK equity inside a pension portfolio is a key factor determining the amount of stamp duty costs faced by savers. The table below demonstrates the sensitivity of DC schemes' stamp duty costs to the share of UK equity inside a portfolio. Whereas portfolios with 20% UK equity share have stamp duty costs that are equal to 0.8% of the total portfolio at retirement (or £4,705 in today's money), portfolios that allocate 50% of their assets to UK equity face stamp duty costs that are equal to 1.9 % of the total portfolio (or £11,778 in today's money).

Table 2.2   Workplace DC schemes' sensitivity to UK equity allocations

	Proportion of assets allocated into UK equities (%)			
	20%	**30%**	**40%**	**50%**
Total stamp duty payments (£)	3,987	5,974	7,957	9,935
Total fund size at retirement (£)	619,299	618,344	617,392	616,441
Stamp duty cost (£)	4,705	7,061	9,418	11,778
Total stamp duty cost at retirement (%)	0.76%	1.14%	1.53%	1.91%
Reduction in average return on assets due to stamp duty (%)	3bp	4bp	6bp	7bp

Source: Oxera.

Table 2.3 and Table 2.4 below show what happens to the stamp duty burden when other key assumptions are changed for the representative asset allocation case. All other characteristics are consistent with the base case documented in Appendix A1. Table 2.3 shows that reducing the length of the investment has a significant effect on the size of stamp duty costs. For instance, a reduction in the savings period from 40 to 30 years lowers the stamp duty cost from £4,985 to £1,730 (expressed in today's prices).

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[8] In 2007, Oxera estimated that an occupational DC scheme faced a 1.52% lifetime stamp duty cost and a 7 basis point annual return reduction. See Oxera (2007), 'Stamp duty: its impact and the benefits of its abolition', prepared for ABI, City of London Corporation, IMA and London Stock Exchange, May, p. 9.

Table 2.4 shows the impact of changes in the velocity of trading of UK equity investments. This is particularly relevant when considering differences in stamp duty costs between passive and active investment strategies. The table shows that changes in the velocity of trading have a significant effect on stamp duty costs. For instance, with a reduction in the velocity of trading from 0.45 to 0.15 (the level commonly observed in passive investment strategies), stamp duty costs decrease from £8,718 to £2,953 (expressed in today's prices).

Table 2.3   Workplace DC schemes' sensitivity to the length of saving

	Investment length (years)			
	20	**30**	**40**	**50**
Total stamp duty payments (£)	416	1,488	4,224	10,715
Total fund size at retirement (£)	124,103	272,657	542,739	1,030,603
Stamp duty cost (£)	468	1,730	4,985	12,619
Total stamp duty cost at retirement (%)	0.38%	0.63%	0.92%	1.22%
Reduction in average return on assets due to stamp duty (%)	4bp	4bp	4bp	4bp

Source: Oxera.

Table 2.4   Workplace DC schemes' sensitivity to velocity of trading

	Velocity of trading of UK equity shares (%)			
	0.15	**0.30**	**0.45**	**0.70**
Total stamp duty payments (£)	2,498	4,960	7,389	11,361
Total fund size at retirement (£)	625,064	619,145	613,291	603,672
Stamp duty cost (£)	2,953	5,859	8,718	13,379
Total stamp duty cost at retirement (%)	0.47%	0.95%	1.42%	2.22%
Reduction in average return on assets due to stamp duty (%)	2bp	4bp	6bp	9bp

Source: Oxera.

2.4   Contribution of pension funds, insurance firms and individuals

This element of the analysis provides top-down estimates of stamp duty contributions across investor classes, based on UK equity ownership data and the velocity of trading estimates. For the purposes of this analysis, velocity of trading is defined as one-half of turnover, where turnover is the total value of securities traded (i.e. bought and sold) by a given group of investors over the total value of securities in their portfolios.

Table 2.5 below summarises the results. Stamp duty payments of pension funds, insurance firms, individuals, and unit and investment trusts are estimated based on their equity holdings and assumed velocity of trading. The stamp duty payments of 'other investors' are estimated as the difference between total stamp duty payments and estimates of stamp duty payments of pension funds, insurance firms, individuals and unit and investment trusts.

As shown in the table, UK pension funds are estimated to pay directly around £61m in stamp duties annually. In addition, insurance firms are estimated to pay £85m.

Table 2.5   Estimates of stamp duty contributions by different investor classes (2021)

	Estimated value of UK equity holdings (£m)	Estimate of stamp duty burden (£m)
Pension funds	39,300	61
Insurance firms	54,900	85
Individuals	261,200	405
Unit and investment trusts	182,600	283
Other	410,000	636

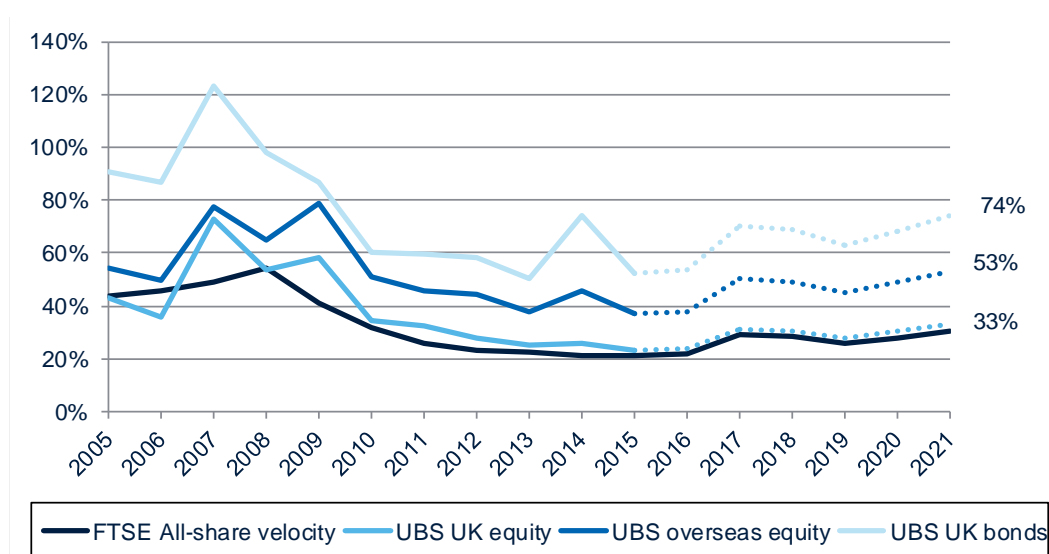Source: ONS (2020c); UBS (2016); Datastream; Oxera calculations.

The estimates of stamp duty payments by different investor classes are based on the following assumptions.

- UK equity ownership data is from the Office for National Statistics (ONS). The ONS's UK equity ownership dataset provides a breakdown of UK equity ownership into pension funds, insurance firms, individuals, and a number of other classes.[9]

- Velocity of trading of 31% is estimated based on the historical data reported by UBS and FTSE All-Share turnover data from Datastream.[10]

- In 2007, a velocity of trading of 43%, as reported by UBS, was used to proxy the frequency of stamp duty payments.[11] Since 2007, UBS has reported a marked decrease in the turnover figures of UK pension funds. This reduction in velocity has been correlated with the lower turnover values for the FTSE All-Share index as a whole (see the figure below). We therefore use a five-year average of UK equity velocity of trading estimates to proxy the trading frequency of different investor classes. Using estimates from 2017 to 2021, we obtain a point estimate of 31%, which we use in our analysis.

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[9] ONS (2020c), 'Ownership of UK shares', Table 2: Total market value of UK quoted shares by sector of beneficial owner with pooled and excluded shareholdings allocated across the other sectors, December.
[10] UBS (2016), 'The right ingredients: Pension Fund Indicators 2016', July; Datastream; Oxera calculations.
[11] UBS (2006), 'Pension Funds Indicators 2006'.

Figure 2.3   Evolution of velocity of trading in the UK (2005–21)

Note: UBS data is for UK pension funds only, whereas FTSE All-Share is the average value of the index (aggregating all ownership types). Dotted lines represent estimated values.

Source: UBS (2016); WM; Datastream; Oxera calculations.

It is difficult to know how much UK equity pension and insurance funds are holding indirectly (e.g. through third-party passively or actively managed funds). Therefore, we also compare the domestic equity holdings with those of 26 EU countries. Based on IMF and ECB data, pension and insurance funds in these centres hold c. 28% of the total domestic equity.[12] If we assume that the aggregate ownership proportion is similar in the UK, that would bring the total value of UK pension and insurance funds' UK equity holdings to £607bn. Therefore, given the assumptions above, UK pension and insurance funds may face a stamp duty burden as large as £0.9bn annually.[13]

3   Potential impact on the cost of capital of listed companies

This section sets out the results of the assessment of the potential impact of stamp duty on companies, focusing on the way in which stamp duty might be affecting the cost of equity, the cost of capital, share prices and fixed business investment, as well as differences in the potential impact across different sectors and companies.

3.1   How does stamp duty affect share prices and the cost of capital of companies?

Stamp duty and other transaction costs directly affect the gross return that investors require from their investments. If it is assumed that investors require minimum rates of return, net of all taxes and other transaction costs, there is a direct relationship between transaction costs and the required pre-tax return. In particular, in any given year, investors receive a final return that is a function of the pre-tax earnings of the company, corporation and personal taxes, and

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[12] Note, no data was available for Croatia. See Oxera (2020), 'Primary and Secondary Markets in the EU', November.
[13] Estimated value of UK equity holdings is £2,169bn based on ONS (2020c). £2,169bn * 28% = £607bn. Estimate of stamp duty burden follows the same methodology as in Table 2.5, £607bn * 0.31 (velocity of trading) * 0.50% (stamp duty) = £0.9bn. See ONS (2020c), 'Ownership of UK shares', Table 2: Total market value of UK quoted shares by sector of beneficial owner with pooled and excluded shareholdings allocated across the other sectors, December.

transaction costs. Assuming that the riskiness of the security stays the same, investors will want to receive identical final earnings, independent of tax rates and transaction costs. Transaction costs that investors bear in any particular year will therefore directly influence the post-corporation tax return that they require in this year, and hence the pre-tax return that firms need to earn.[14]

A simple example serves to illustrate the mechanics of the impact of transaction costs on share prices. Consider a stock that is traded once every year, with transaction costs of 1p per transaction. Assume that the value of a share of the stock that is traded without any transaction costs is £1. Assume, further, that the present value of the transaction costs (discounted, say, at an 8% cost of capital) is 13.5p.[15] In other words, the transaction costs reduce the stock price from £1 to £0.865. Now, if the trading cost declines by 0.25p to 0.75p per transaction, the present value of the costs of trading will decline to 10.1p, and the stock price will rise to £0.899, an increase of about 4%. Thus, as this example suggests, a seemingly small reduction in transaction costs can generate a substantial increase in stock prices.

3.2   Impact on equity valuation

Stamp duty abolition may result in a significant share price appreciation and an increase in the valuations of UK listed companies, other things being equal. The potential level of the share price increase is estimated using a methodology from the academic literature.[16] This methodology relates the tax change, the level of velocity and the dividend yield to the changes in share prices by estimating the net present value of all future stamp duty payments:

$$PV = (t - t') \times P_0 \times \sum_{i=1}^{\infty} \frac{1}{(1+d/s)^i}$$

where PV is the present value, d represents the dividend yield, and s represents the velocity of trading.

Following the same reasoning as in the pension modelling section, we assume that velocity of trading of UK shares is approximately 31%.[17] In other words, on average UK equity shares change hands every 3.2 years. Based on market data, the dividend yield is estimated to be c. 4% per annum.[18] It is also assumed that institutional investors are 'marginal'—in the context of trading costs, this implies that the equilibrium share prices and the cost of equity are determined by the trading costs faced by this investor class. If, however, valuations of stocks were driven by a wider cross-section of investors, the impact of stamp duty could still be potentially significant, although somewhat more ambiguous.

Based on the above assumptions, if stamp duty were to be abolished, the UK total equity market might expect a one-off increase of 4.0% in valuation. Given a total market capitalisation of £2.5trn,[19] this could represent a £99.8bn one-off capital gain for UK investors as well as significant capital gains tax revenue for the UK Treasury (see section 4.4 for further discussion).

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[14] Note that as a result of the intermediary tax relief, only part of the trading activity in UK listed companies is subject to stamp duty. The analysis does not consider this directly.

[15] The present value of the trading costs is calculated as the discounted value of perpetual annual expected transaction costs.

[16] Jackson, P. and O'Donnell, A. (1985), 'The Effects of Stamp Duty on Equity Transactions and Prices in the UK Stock Exchange', Bank of England Discussion Paper No. 25.

[17] UBS (2016); Datastream; Oxera calculations.

[18] This is calculated as the 2019–23 average dividend yield of companies that are part of the FTSE All-Share index. Oxera calculation using Bloomberg data.

[19] This is the market capitalisation of companies that are part of the FTSE All-Share index as of 29 December 2023. Oxera calculation using Bloomberg data.

3.3   Impact on the cost of equity

Alternatively, the impact of stamp duty abolition can be considered in terms of the cost of equity and cost of capital. The relationship between trading costs and cost of capital is illustrated in Figure 3.1.

Figure 3.1   Benefit of stamp duty abolition on the cost of capital and private investment
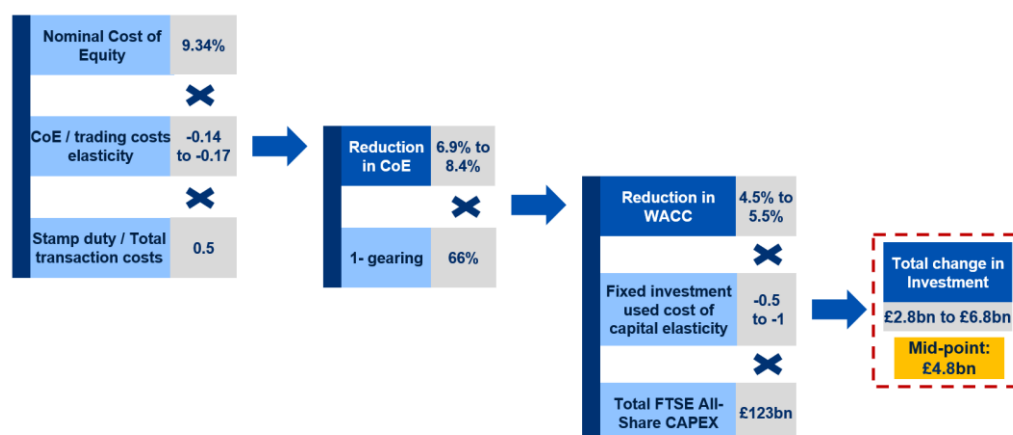
Source: Oxera.

The effect on the cost of equity is calculated by building on the elasticity between trading costs and the cost of equity as estimated in academic literature.[20] The literature finds the elasticity figure to be in the range of 0.14 to 0.17, meaning that a 10% reduction in the costs of trading securities would lead to a 1.4% to 1.7% reduction in the cost of equity.

Trading costs can be broken down into three main components: 1) commission fees; 2) implicit costs (i.e. slippage between the arrival price and execution price); and 3) taxes associated with the transaction. According to data provided by Virtu Financial, the average commission fees per transaction averaged 5 basis points and implicit costs averaged 45 basis points over the period 2017–21 in the UK.[21] Therefore, stamp duties constitute 50% of financial transaction costs when trading UK equity shares.

Assuming the current cost of equity of UK listed companies is 9.34% in nominal terms (or 7.20% in real terms),[22] the abolition of stamp duty might result in a reduction in the nominal post-tax cost of equity of UK listed companies of 6.9–8.4%. This is equivalent to a reduction in the post-tax cost of equity of 0.65–0.79 percentage points.

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[20] Domowitz, I. and Steil, B. (2001), 'Innovation in Equity Trading Systems: The Impact on Transaction Costs and Cost Of Capital', in B. Steil, D. Victor and R. Nelson (eds) (2002), *Technological Innovation and Economic Performance*, Princeton University Press.

[21] Virtu Financial (2022), 'Global Cost Review Q4 2022'; Oxera calculations.

[22] 7.20% is the midpoint of the Oxera low (6.70%) and high (7.70%) estimates of total market return CPIH-real. See Oxera (2023), 'Cost of capital for PR24: Final report for Yorkshire Water Services Limited', August, p. 4. To calculate the nominal figure, we assume that over the period of the model, inflation will average 2%. While in certain years inflation will be higher or lower than 2%, in the long run we assume that it will be on average 2%. See Bank of England (2024), 'Inflation and the 2% target', https://www.bankofengland.co.uk/monetary-policy/inflation, accessed 13 February 2024. The calculation of 9.34% is (1+7.2%)*(1+2%)-1.

The current average gearing level of UK listed companies is around 34%.[23] Based on this, stamp duty abolition might result in a reduction in the nominal post-tax cost of capital of 4.5–5.5% (or 0.43–0.52 percentage points). This cheaper funding opportunity could result in an additional £2.8bn to £6.8bn in fixed asset investment by FTSE All-Share companies, with a mid-point estimate of £4.8bn (see the discussion in section 4.3).

A reduction in the stamp duty rate might have a significant effect on the cost of capital of UK listed companies. The nature of the effect in a case of reduction could be similar to that observed in the case of full abolition, although, in the case of a stamp duty reduction, some of the benefits could be offset due to the increase in trading activity that is subject to stamp duty. Therefore, for example, a reduction in the stamp duty rate from 0.5% to 0.25% could deliver benefits that are similar to around 50% of the benefits observed in the case of abolition, although increases in trading activity that is subject to stamp duty might, other things being equal, reduce these benefits to less than 50% of those observed in the case of abolition.

The precise nature of the impact could, however, depend on factors such as the impact of a reduction in the stamp duty rate on investors' expectations (i.e. expectations of future changes in the stamp duty rate), and on the trading behaviour of investors (e.g. the attractiveness of the cash equity route compared with the derivatives route for gaining exposure to the UK equity markets).

Note that the impact of abolishing stamp duty on cost of equity and cost of capital is based on a high-level estimation from past empirical research and there is limited read-across to specific companies or sectors, where the cost of financing is determined by prevailing market conditions. The impact of abolishing stamp duty may be limited in cases where stamp duty is not yet priced in by investors into stock returns and company valuations, as well as cases where a company is privately held and/or not subject to liquidity constraints and mis-pricing on the stock market.

3.4   Differences across sectors

This section sets out the results of our analysis of the impact of stamp duty across different sectors. The analysis focuses on estimating the differences in the cost of equity impact across sectors, as well as differences in other characteristics (e.g. fixed investment intensity) that might determine the impact of stamp duty on a given sector. We use the definitions provided in the table below.

Table 3.1   Definitions

Velocity of trading	Number of shares traded/number of shares outstanding
Velocity of trading subject to stamp duty	Velocity of trading × proportion of trading that is subject to stamp duty
Fixed investment intensity	Fixed-business investment/total assets
Market to book value	Market value of equity/book value of equity
Industry classification	Datastream Level 3 industry classification

[23] Gearing is estimated as the ratio of net debt (total debt minus cash and cash equivalents) to the sum of net debt and the value of equity, calculated as the 2019–23 simple average of companies that are part of the FTSE All-Share index. Oxera calculations using Bloomberg data.

Cost of equity impact	(Cost of equity after the abolition of stamp duty - cost of equity before the abolition of stamp duty)/cost of equity before the abolition of stamp duty

Source: Oxera.

To account for the heightened volatility in trading activity due to COVID-19, this analysis uses five-year average values (i.e. 2017–21).[24]

3.4.1   Velocity subject to stamp duty

The cost of equity impact of stamp duty on a particular company depends on the amount of stamp duty that investors expect to pay when trading in shares of that company in the future. The impact therefore depends on both the velocity of trading in shares of the company and the proportion of trading that is subject to stamp duty.[25] Greater velocity of trading implies a greater cost of equity impact, and a greater proportion of trading subject to stamp duty also implies a greater impact on stamp duty. In other words, stocks where investors pursue high-velocity strategies and where a high proportion of trading originates from the direct investments of institutional investors (and therefore is not exempt from stamp duty through an intermediary relief), are likely to see the strongest impact of stamp duty.

Table 3.2 below summarises the results at the industry level. The table shows the value-weighted velocity of trading subject to stamp duty observed across different sectors over the period 2017–21. The table suggests that there are significant differences across sectors, which implies that, other things being equal, the abolition of stamp duty might have different impacts across sectors.

As shown in Table 3.2, stocks in the retail sector change hands while being subject to stamp duty the most often, whereas owners of stocks in banking and the energy sector tend to be subject to stamp duty less frequently. As a result, one could expect companies in the retail sector to benefit from the abolition of stamp duties the most.

Table 3.2   Velocity of trading subject to stamp duty, 2017–21

Industry	Velocity of trading subject to stamp duty	Industry	Velocity of trading subject to stamp duty
Retailers	0.26	Construction	0.17
Travel & Leisure	0.25	Telecommunications	0.17
Consumer Products and Services	0.24	Insurance	0.15
Technology	0.22	Financial Services	0.15
Chemicals	0.20	Health Care	0.13
Basic Resources	0.20	Food, Beverages and Tobacco	0.13
Industrial Goods & Services	0.20	Energy	0.12
Media	0.20	Banks	0.12
Real Estate	0.19		

Source: Oxera calculations.

For the purposes of this study, it is assumed that differences in the cost of equity impact across companies are approximately proportional to the

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[24] The analysis is based on data from Datastream and the London Stock Exchange.
[25] As a result of the intermediary tax relief, only part of the trading activity in UK listed companies is subject to stamp duty.

differences in the velocity of trading subject to stamp duty. In other words, it is assumed that the effect of stamp duty abolition on the cost of equity in industries with a velocity of trading that is subject to stamp duty equal to the median observed across all sectors would equal the cost of equity impact observed in the market as a whole. Meanwhile, it is assumed that the cost of equity impact on industries with a velocity of trading that is subject to stamp duty that is, for instance, 20% higher than the median would be 20% higher than that observed in the market as a whole.

Table 3.3 sets out the average cost of equity impact for different business sectors. For example, given that the estimated average cost of equity impact on all UK listed companies is 7.7%,[26] UK firms in the retail sector could benefit from a 10.9% reduction in required return on equity, whereas the reduction could be more limited for companies in the insurance (6.3%) sector.

Table 3.3   Cost of equity impact across sectors

Industry	Cost of equity impact (%)	Industry	Cost of equity impact (%)
Retailers	10.9%	Construction	7.1%
Travel & Leisure	10.4%	Telecommunications	6.9%
Consumer Products and Services	9.9%	Insurance	6.3%
Technology	8.9%	Financial Services	6.0%
Chemicals	8.4%	Health Care	5.3%
Basic Resources	8.3%	Food, Beverages and Tobacco	5.2%
Industrial Goods & Services	8.2%	Energy	5.1%
Media	8.2%	Banks	5.0%
Real Estate	7.7%		

Note: The impact of abolishing stamp duty on cost of equity and cost of capital is based on a high-level estimation from past empirical research. The impact of abolishing stamp duty may be limited in cases where stamp duty is not yet priced in by investors into stock returns and company valuations, as well as cases where a company is privately held and/or not subject to liquidity constraints and mis-pricing on the stock market.
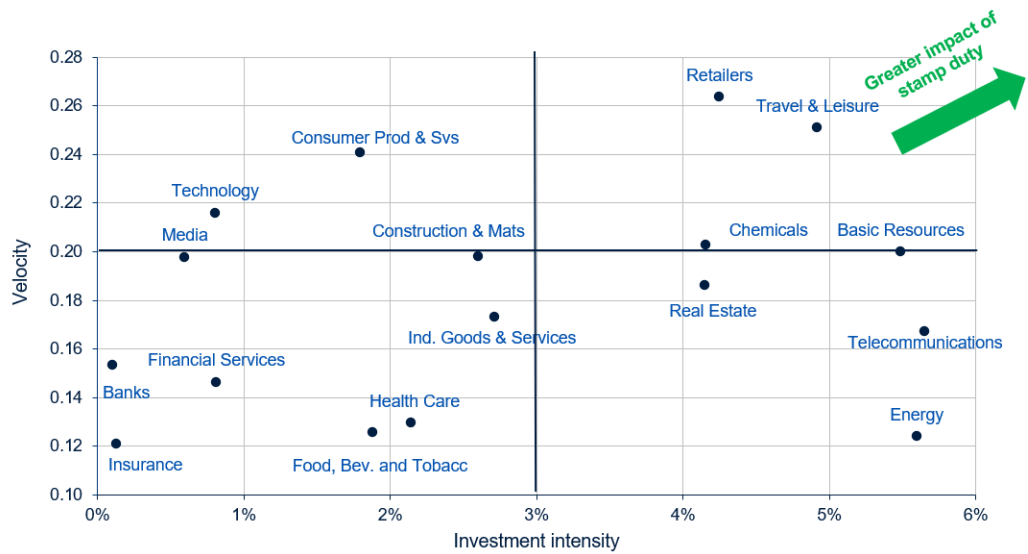
Source: Oxera calculations.

3.4.2   Fixed investment intensity

As fixed investment activity is particularly sensitive to changes in the cost of capital, sectors with companies that have high capital intensity may be more affected by stamp duty. Therefore, the distribution of fixed-investment intensity across sectors provides an indication of which sectors may be more affected. In the context of this study, fixed investment intensity is computed by dividing fixed business investment figures (or capital expenditure data) by the total assets on a firm's balance sheet.

Figure 3.2 below illustrates which sectors have both high fixed investment intensity and high velocity of trading. Industries with a high value in both variables could benefit in the event of the abolition of stamp duty. For example, companies operating in the basic resources sector have both a high velocity of trading and a significant fixed investment intensity.

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[26] The mid-value of the estimated 6.9–8.4% range in section 3.3.

Figure 3.2   Fixed investment intensity and velocity of trading, 2017–21
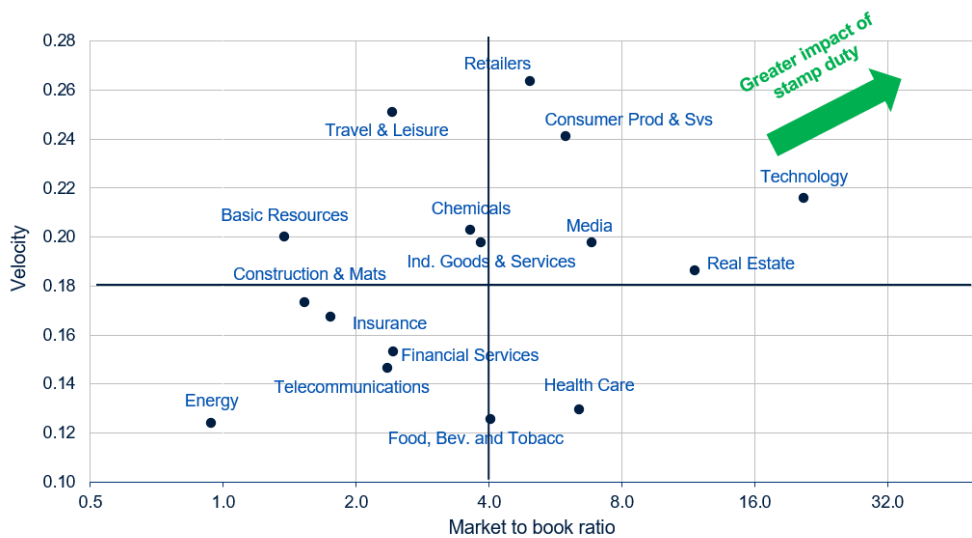

Source: Oxera calculations.

3.4.3   Growth versus value

Similar to the fixed investment intensity, sectors with high growth potential are, other things being equal, more sensitive to changes in the cost of capital, and are therefore potentially disproportionately affected by stamp duty. Market to book ratios across sectors provide an indication of which sectors may be more affected.

As depicted in Figure 3.3, the technology and real estate sectors have the highest market to book ratios in the UK. Given the real estate sector's above-average velocity of trading subject to stamp duty value, this industry could benefit significantly in the event a of stamp duty reduction.

Figure 3.3   Market to book ratios and velocity of trading, 2017–21

Note: Market to book ratios are presented on a natural logarithmic scale.

Source: Oxera calculations.

# 4 Impact of stamp duty abolition on the wider economy

This section presents the results of the assessment of the impact of stamp duty abolition on the economy, focusing on the impact of the abolition of stamp duty on fixed business investment, GDP and government tax-take.

4.1 Framework

The impact of stamp duty abolition on GDP and the government's tax-take can be estimated by considering the way in which stamp duty abolition affects the cost of capital and fixed business investment of UK listed companies.

First, the abolition of stamp duty might result in a reduction in the cost of capital of UK listed companies. Analysis in section 3 above summarises the results of the assessment of the reduction in the cost of capital of UK listed companies that might arise in the case of stamp duty abolition. Second, a reduction in the cost of capital of UK listed companies might result in increased fixed business investment. Third, an increase in the fixed business investment might result in an increase in the level of GDP in the UK. Finally, higher GDP might result in a higher tax-take by the UK government. This is shown in Figure 4.1. While the exact split between different types of tax income is difficult to establish, we compute the additional tax receipts from capital gains taxation that could be enabled by the increased valuation of UK listed companies.

Figure 4.1   Impact of stamp duty on the UK economy and Treasury
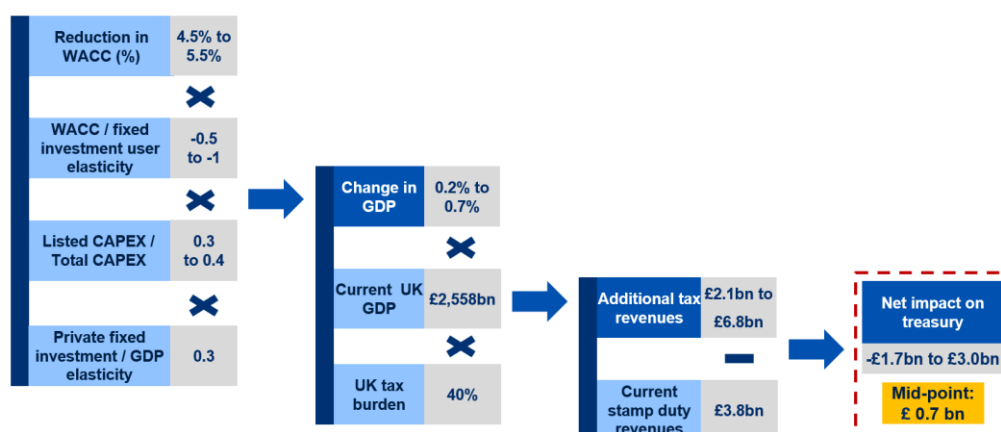
Source: Oxera.

4.2 Estimates of relevant parameters

Over the years, the links between the cost of capital, capital stock and GDP have been assessed in considerable detail in academic studies. Evidence from these studies is used to assess the impact of the potential reduction in the cost of capital of UK listed companies as a result of the abolition of stamp duty on GDP and the government tax-take. In other words, based on the various elasticities developed in the academic literature, it is possible to estimate the elasticity of the UK GDP level to the changes in the cost of capital of UK listed companies.

There is a large body of literature surrounding the link between the cost of capital and fixed investment expenditure. While there is a consensus about the negative relationship between the two variables, the exact magnitude is more

difficult to determine. Nevertheless, the key strand of literature established a range of elasticities between -0.5 and -1.[27]

As described in the previous section, the change in cost of capital is estimated using market and economic data as well as elasticities estimated in the empirical economics literature.[28]

The key parameters used in these calculations are set out in the table below.

Table 4.1   Key inputs for economic effect estimation

Parameter	Estimate	Source
Impact of stamp duty abolition on the cost of capital	4.5% to 5.5%	Oxera calculations
Fixed investment user cost of capital elasticity	-0.5 to -1	Hassett and Hubbard (1996); Cummins, Hassett and Hubbard (1994); Cummins, Hassett and Hubbard (1996); Dwenger (2014); Schaller and Voia (2017); and other studies
Ratio of UK fixed business investment of UK publicly listed companies to total UK private fixed business investment	0.3 to 0.4	Oxera (2007)
GDP per capita private fixed investment elasticity	0.3	Oxera (2007), based on Bassanini and Scarpetta (2001)

Source: Oxera.

4.3   Impact on GDP level and government tax-take

The framework and assumptions set out in sections 4.1 and 4.2 allow the link between the cost of capital of UK listed companies and GDP to be estimated directly. In particular, based on the assumptions set out in Table 4.1, the abolition of stamp duty might result in an increase in the UK GDP level by between 0.2% and 0.7%.[29] In other words, as a result of stamp duty abolition, UK GDP could be permanently higher by around 0.2% to 0.7%,[30] although this effect would materialise in full only in the long run.[31]

Given the Q2 2022–Q1 2023 UK GDP of £2,557,576m,[32] this is equivalent to a permanent increase of between £5,237m and £16,956m. The long-term impact on the government's tax-take can then be estimated by considering the total tax burden relative to GDP. In particular, assuming an overall tax burden of 40%,[33] the abolition of stamp duty could be predicted in the long run to increase the government's annual tax-take by £2,095m to £6,783m (minus the

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[27] Hassett, K.A. and Hubbard, R.G. (1996), 'Tax policy and investment', NBER working paper No. W5683; Cummins, J.G., Hassett, K.A. and Hubbard, R.G. (1994), 'A reconsideration of investment behavior using tax reforms natural experiments', Brookings Papers on Economic Activity, 2, pp. 1–74.

[28] Other important inputs are taken from earlier studies from Oxera (2007) and Bassanini and Scarpetta (2001).

[29] The low case is estimated as a multiple of the low-case estimates for the individual parameters, while the high case is estimated as a multiple of the high-case estimates for the individual parameters.

[30] These calculations assume that there will be no change in the capital depreciation schedule, and it is assumed that the change in capital to labour ratio will not result in a non-linear growth in labour productivity.

[31] Bassanini and Scarpetta (2001) estimates suggest that it generally takes four to five years for the economic output to come half-way towards the new steady-state output per capita equilibrium following a change in a GDP determinant. See Bassanini, A. and Scarpetta, S. (2001), 'The driving forces of economic growth: panel data evidence for the OECD countries', OECD Economic Studies No. 33.

[32] Q2 2022–Q1 2023 was chosen to align with the 2022–23 tax year. See ONS (2023b), 'GDP at current prices – real-time database (YBHA)', Q3 2023 quarterly national accounts edition, December.

[33] House of Commons Library (2024), 'Tax statistics: an overview', January, p. 4, https://researchbriefings.files.parliament.uk/documents/CBP-8513/CBP-8513.pdf, accessed 12 February 2024.

£3.8bn reduction in the annual tax-take due to the loss of stamp duty receipts).[34]

At the same time, a gradual abolition of stamp duty could have a somewhat different impact on the overall tax-take of the UK government. However, a firm commitment by the government to abolish stamp duty over, for instance, a five-year period might deliver a significant reduction in the cost of capital of UK companies at the time of the announcement. Therefore, the long-run benefits (and timing of those benefits) associated with the increased fixed investment and increased GDP could be similar to those observed in the case of immediate abolition.[35]

4.4 Focusing on additional government revenues from capital gains tax

One of the sources of additional tax revenues that could replace part of the stamp duty receipts would be capital gains tax. Section 3.2 demonstrates how the abolition of stamp duty might lead to an increase in market valuations of UK listed companies through the reduction in trading costs. In section 3.2, the potential uplift in share prices was estimated to be as large as 4.0%.

Figure 4.2 shows the key inputs that determine the size of additional capital gains tax revenues.

Figure 4.2   One-off increase in capital gains tax
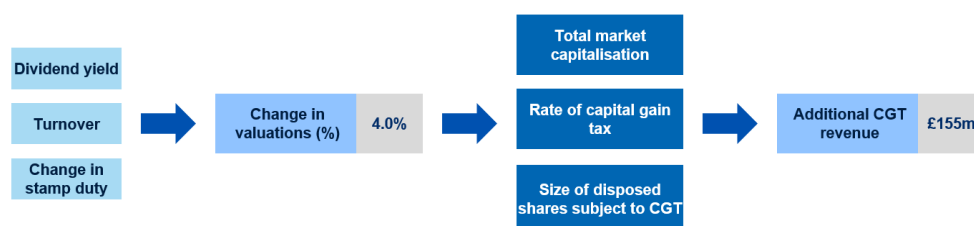
Note: CGT: capital gains tax.

Source: Oxera.

We estimate the disposal value of shares listed in the UK that are subject to capital gains tax to be equal to £7.9bn.[36] Moreover, based on HMRC data, the effective capital gains tax rate is c. 15%.[37] Therefore, a 4.0% increase in the value of holdings associated with the stamp duty abolition could result in a one-off increase in capital gains tax revenues of around £155m.

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[34] These calculations assume that the government's tax-take would increase in line with the increases in economic growth. It is, however, possible that the effective tax rate associated with the economic growth driven by increases in the fixed business investment could be somewhat different from the overall effective tax rate.

[35] Oxera (2007), 'Stamp duty: its impact and the benefits of its abolition', prepared for ABI, City of London Corporation, IMA and London Stock Exchange, May.

[36] Based on the value in Oxera (2007), uplifted by an amount proportional to the total increase in the FTSE All-Share index from 2006 to 2023. See Oxera (2007), 'Stamp duty: its impact and the benefits of its abolition', prepared for ABI, City of London Corporation, IMA and London Stock Exchange, May, p. 30; London Stock Exchange (2024), 'FTSE ALL-SHARE', February, https://www.londonstockexchange.com/indices/ftse-all-share, accessed 12 February 2024.

[37] The effective capital gains tax rate is calculated by dividing the total capital gains tax revenue by the total capital gains. See HMRC (2021), 'National Statistics- Capital Gains Tax statistics', Table 1: Estimated number of taxpayers, amounts of gains and tax liabilities by year of disposal, 5 August.

5   Conclusions

This study suggests that the abolition of stamp duty could have substantial positive effects on investors and pension savers, listed companies, and the wider economy, as follows.

- The current stamp duty regime constitutes a burden on the UK pension system by reducing the size of portfolios available to pensioners at retirement. The abolition of stamp duty might increase the return on investments to all savers, especially those who rely heavily on UK equity holdings.

- The abolition of stamp duty could reduce the cost of capital of UK listed companies, potentially resulting in greater growth and higher capital expenditure. Moreover, the effect of stamp duty abolition might differ across companies and sectors. Industries with a high trading velocity of shares, significant fixed investment intensity and high market to book ratios might benefit the most from an abolition or reduction of stamp duty.

- Finally, stamp duty abolition could result in increased aggregate fixed investment, higher GDP and an associated increase in the tax-take. In the long run, the tax-take increases associated with increased fixed business investment and economic activity could offset the loss of the direct stamp duty receipts.

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A1   Pension modelling inputs and assumptions

Section	Factor	DC	DB	Source
Contributions	Earnings at age 25	29,120	29,120	ONS (2023a)
	Average nominal earnings growth rate	2.8%	2.8%	ONS (2024); Bank of England (2024)
	Employee contribution rate	4.0%	6.0%	ONS (2020a)
	Employer contribution rate	6.4%	16.4%	ONS (2020b)
Asset allocation	UK equity proportion	25.7%	6.3%	Pension Policy Institute (2020); Oxera calculations
	Bonds proportion	14.3%	79.2%	Mercer (2021)
Asset returns	Return on bonds (nominal)	6.0%	6.0%	iBoxx £ Non-Financials BBB 10+ index
	Return on equity (nominal)	9.3%	9.3%	Oxera (2023)
Velocity of trading in average fund	UK equity	31.0%	31.0%	UBS (2016); Datastream; Oxera calculations
	Non-UK equity	49.0%	49.0%	UBS (2016); Datastream, Oxera calculations
	Bonds	69.0%	69.0%	UBS (2016); Datastream, Oxera calculations
Costs	AMC	0.48%	0.48%	Department for Work and Pensions (2021)
	Trading Costs on bonds	0.54%	0.54%	Schultz (2001)
	Trading costs on equity	0.51%	0.51%	Virtu Financial (2022)
Other	Inflation	2.0%	2.0%	Bank of England (2024)
	Age of investor at start of investment period	25	25	
	Investment length (years)	42	42	
	Tax relief	20% lower, 40% higher	20% lower, 40% higher	UK government
	Tax thresholds	£12,570 lower, £50,270 higher	£12,570 lower, £50,270 higher	UK government
	Life styling begins (years)	5	5	