THE INEFFICIENCY OF VAT CUTS ON CLOTHING AND E-COMMERCE DURING A COST-OF-LIVING CRISIS: AN ECONOMIC AND EMPIRICAL ASSESSMENT

Content:

1. Introduction

Debates around the cost-of-living crisis in the United Kingdom, the European Union, and the United States have revived proposals for temporary consumption-tax reductions, particularly VAT cuts on clothing and e-commerce. Advocates argue that lowering VAT would reduce prices for households and stimulate demand. However, a substantial body of empirical evidence demonstrates that VAT cuts are only partially passed through to consumers, with firms capturing a significant proportion of the tax reduction as profit. This report evaluates the economic rationale, empirical evidence, and structural implications of VAT cuts on clothing and e-commerce, arguing that such measures represent an inefficient use of public funds and fail to address the underlying drivers of overproduction and environmental harm in the fashion sector.

2. VAT Structures in the UK, EU and USA

The United Kingdom applies a standard VAT rate of 20 per cent to adult clothing and footwear, with zero-rating for qualifying children's garments. The European Union applies standard VAT rates ranging from 17 per cent to 27 per cent, with clothing universally taxed at the standard rate. The United States does not operate a federal VAT system; instead, state-level sales taxes apply, typically between 4 and 10 per cent, with some states exempting clothing entirely. These structural differences shape the fiscal impact of consumption-tax changes, but the underlying economic mechanisms of tax pass-through and firm behaviour remain comparable across jurisdictions.

3. Empirical Evidence on VAT Pass-Through

A central question in evaluating VAT cuts is the extent to which reductions are passed through to consumer prices. The empirical literature consistently finds incomplete pass-through. Crossley, Low and Sleeman (2014), analysing the UK's 2008–09 temporary VAT reduction, show that although prices initially fell, firms subsequently reversed part of the reduction, resulting in only partial and temporary consumer benefit. Their analysis demonstrates that firms retained a portion of the VAT cut as increased margins, particularly in sectors with concentrated market power or limited price transparency.

More recent evidence from the hospitality VAT cut during the COVID-19 pandemic reinforces this conclusion. Onnis, Piga, Conti and Bottasso (2025) find that UK hotels passed through only a fraction of the 15-percentage-point VAT reduction, with the majority absorbed as profit. Similar findings emerge from EU studies: Benzarti et al. (2020) show that VAT cuts in France and Germany produced pass-through rates far below 100 per cent, with firms capturing between 40 and 70 per cent of the fiscal benefit.

These findings align with broader international evidence that consumption-tax pass-through is asymmetric: firms pass on tax increases more readily than tax cuts, a phenomenon consistent with menu-cost models, oligopolistic competition, and behavioural pricing strategies.

4. Mathematical Model of VAT Pass-Through

The degree of pass-through can be formalised using a standard imperfect-competition framework. Let t denote the VAT rate, p the consumer price, and c the marginal cost. Under ad valorem taxation, the firm's profit-maximising price satisfies:

$$p = \frac{1+t}{1-\mu}$$

where μ is the firm's markup over marginal cost. A VAT cut from t_0 to t_1 reduces the tax component of the price, but the new price becomes:

$$p_1 = \frac{(1+t)}{1-\mu}$$

The pass-through rate ρ is defined as:

$$\rho = \frac{p_0+p_1}{(t_0-t_1)p_0}$$

Empirical studies consistently find ($\rho < 1$), meaning incomplete pass-through. In concentrated markets, μ is higher, and the denominator (1 - μ) becomes smaller, amplifying the firm's ability to retain the tax cut as profit. This model explains why VAT cuts in fashion retail—dominated by large chains and fast-fashion platforms—tend to benefit firms more than consumers.

5. VAT Revenue from E-Commerce and Clothing

The UK collected approximately £171 billion in VAT revenue in 2024–25, with wholesale and retail accounting for around £57 billion. Online retail sales reached £127.41 billion in 2024, and applying the VAT-extraction formula:

$$\text{VAT} = \frac{20}{120} \text{ x Sales}$$

yields an estimated £21.2 billion in VAT revenue from e-commerce alone. Clothing constitutes one of the largest online categories, meaning a substantial share of this revenue derives from apparel. Cutting VAT on clothing or e-commerce would therefore entail significant fiscal cost, with uncertain consumer benefit.

6. Overproduction, Environmental Externalities, and Market Failure

The fashion sector is characterised by chronic overproduction, driven by low marginal costs, rapid trend cycles, and aggressive marketing. VAT cuts do not address these structural drivers; instead, they risk reinforcing them by lowering effective prices and stimulating additional consumption. From an environmental-economics perspective, the sector already generates negative externalities—carbon emissions, water use, microplastic pollution, and textile waste—that are not priced into market transactions. A VAT cut would further widen the gap between private and social costs.

Standard Pigouvian logic suggests that sectors with high externalities should face higher, not lower, consumption taxes. The European Environment Agency (2023) identifies textiles as the fourth-largest environmental impact category in the EU. Cutting VAT on clothing would therefore run counter to environmental policy objectives and undermine circular-economy strategies.

7. Distributional Effects and Cost-of-Living Considerations

VAT cuts are often justified as a means of alleviating pressure on low-income households. However, consumption-tax reductions are inherently regressive in absolute terms: higher-income households spend more on clothing and therefore receive a larger monetary benefit. Moreover, households with the least disposable income—those most affected by the cost-of-living crisis—benefit least because they cannot increase consumption in response to lower prices.

Targeted transfers, repair subsidies, or essential-goods vouchers generate far greater welfare gains per pound of public expenditure. The UK's own experience with energy-bill support demonstrates that direct payments produce more equitable outcomes than broad-based tax cuts.

8. Policy Implications

The evidence suggests that cutting VAT on clothing or e-commerce would be a fiscally expensive and economically inefficient intervention. Firms would retain a significant share of the tax reduction, consumers would experience only modest and temporary price relief, and the measure would exacerbate overproduction and environmental harm. More effective alternatives include targeted income support, investment in repair and reuse infrastructure, and regulatory measures addressing overproduction directly.

9. Conclusion

VAT cuts on clothing and e-commerce do not represent an effective response to the cost-of-living crisis. Empirical evidence from the UK and internationally shows that firms capture much of the benefit through increased margins, while consumers receive only partial relief. The fiscal cost is substantial, the distributional effects are regressive, and the policy risks reinforcing the structural overproduction that drives environmental degradation in the fashion sector. A more coherent strategy would prioritise targeted support for vulnerable households and structural reforms that reduce waste, improve durability, and shift the fashion system toward sustainability.

Mathematical Appendix:

VAT Pass-Through and Revenue Derivations

A1. Ad Valorem VAT in Imperfect Competition

Consider a firm facing constant marginal cost c, charging a consumer price p, and subject to an ad valorem VAT rate t. The pre-tax producer price is p*, so:

$p = (1 + t)\, p^*$

Under imperfect competition, the firm chooses (p*) to maximise profit:

$pi = (p^* - c)\, q(p)$

where q(p) is the demand function, with $q'(p) < 0$. The first-order condition for profit maximisation can be written in Lerner-index form:

$\mu = \frac{p^* - c}{p^*} = -\frac{1}{\epsilon}$

where μ is the markup and ∈ is the price elasticity of demand (in absolute value). Rearranging:

$p^* = \frac{c}{1-\mu}$

Substituting into the consumer price equation:

$p = (1 + t)\, \frac{c}{1-\mu}$

Thus, the consumer price under VAT and imperfect competition is:

$p(t) = \frac{(1 + t)c}{1 - \mu}$

This expression shows that the VAT rate t and the markup μ jointly determine the final price.

A2. Pass-Through of a VAT Cut

Suppose the VAT rate falls from t_0 to t_1, with $t_1 < t_0$. The initial and final consumer prices are:

$p_0 = \frac{(1+t_0)c}{1-\mu} \qquad p_1 = \frac{(1+t_1)c}{1-\mu}$

The absolute change in price is:

$\Delta p = p_0 - p_1 = \frac{(1+t_0)c}{1-\mu} - \frac{(1+t_1)c}{1-\mu} = \frac{(t_0+t_1)c}{1-\mu}$

The "full-pass-through" benchmark is the price change that would occur if the entire VAT reduction were reflected in the consumer price, holding the pre-tax price fixed. Under full pass-through, the hypothetical price change would be:

$$\Delta p^{full} = (t_0 - t_1)p_0$$

The empirical pass-through rate ρ is defined as the ratio of the actual price change to the full-pass-through benchmark:

$$\rho = \frac{\Delta_p}{\Delta p^{full}} = \frac{\frac{(t_0+t_1)c}{1-\mu}}{(t_0+t_1)p_0}$$

Substituting $p_0 = \frac{(1+t_0)c}{1-\mu}$

$$\rho = \frac{\frac{(t_0+t_1)c}{1-\mu}}{(t_0+t_1)\frac{(1+t_0)c}{1-\mu}} = \frac{1}{1+t_0}$$

In this simple benchmark, with fixed markup and elasticity, the pass-through rate is less than one whenever $t_0 > 0$. In practice, empirical estimates (Crossley et al., 2014; Benzarti et al., 2020) find even lower pass-through, because firms adjust markups and exploit pricing frictions.

A3. VAT Extraction from VAT-Inclusive Prices

In applied work, VAT revenue is often estimated from VAT-inclusive sales data. Let the VAT rate be t = 0.20 (20 per cent) and let S denote total VAT-inclusive sales. The VAT-exclusive price is:

$$p^* = \frac{p}{1+t}$$

The VAT component per unit is:

$$\text{VAT per unit} = p - p^* = p - \frac{p}{1+t} = p\left(1 - \frac{1}{1-t}\right) = p\left(1 - \frac{t}{1-t}\right)$$

Aggregating over total sales S, the VAT revenue R is:

$$R = \frac{t}{1+t}S$$

For t = 0.20, this becomes:

$$R = \frac{0.20}{1.20}S = \frac{1}{6}S \approx 0.1667S$$

Applied to UK online retail sales of S = £127.41 billion:

R ≈ 0.1667 x 127.41 ≈ £21.2 billion

This derivation underpins the estimate of VAT revenue from e-commerce.

A4. Welfare and Incidence in a Simple Demand–Supply Framework

Consider a linear demand function:

$Q = \alpha - \beta p$

and a constant marginal cost c. Under perfect competition, the pre-tax equilibrium price is $p^* = c$, *and quantity is* $Q^* = \alpha - \beta c$. With an ad valorem VAT rate t, the consumer price becomes $p = (1 + t) c$, and quantity falls to:

$Q(t) = \alpha - \beta (1 + t) c$

Consumer surplus CS under VAT is:

$CS(t) = \frac{1}{2}(p_{max} - p) Q(t)$

where $p_{max} = \frac{\alpha}{\beta}$ is the choke price. Government revenue GR is:

$GR(t) = t c Q(t)$

A VAT cut reduces t, increasing Q(t) and CS, but also reducing GR. Under imperfect competition, the producer price is not fixed at c; instead, firms adjust markups, and the incidence of the tax change is shared between consumers and producers. The empirical finding that firms retain part of the VAT cut as profit corresponds to an increase in producer surplus PS at the expense of GR, with only partial gains in CS.

In a cost-of-living context, the key insight is that the marginal pound of foregone GR is not fully converted into CS for low-income households; a significant share is diverted into PS for firms, particularly in concentrated sectors such as fashion retail and e-commerce.

A5. Asymmetric Pass-Through and Menu Costs

Benzarti et al. (2020) and related studies show that pass-through is asymmetric: tax increases are more fully passed on than tax cuts. This can be modelled using menu-cost theory, where firms face adjustment costs when changing prices. Let k denote the menu cost. Firms will only adjust prices if the profit gain from changing price exceeds k. For a tax increase, failing to raise prices erodes margins significantly, making adjustment worthwhile. For a tax cut, the gain from lowering prices is smaller, particularly when demand is inelastic, so firms may choose not to fully adjust, retaining part of the tax cut as profit. This micro-foundation is consistent with the observed empirical pattern of incomplete and asymmetric pass-through.

A6. Implications for Policy Design

The mathematical derivations above show that, under realistic assumptions about market power, elasticity, and pricing frictions, VAT cuts do not translate one-for-one into lower consumer prices. The pass-through rate is structurally constrained, and empirical evidence confirms that firms capture a non-trivial share of the fiscal benefit. When combined with the revenue extraction formula, it becomes clear that large amounts of public money are involved: a VAT cut on a base of over £100 billion in sales implies several billions in foregone revenue, of which only a fraction reaches households as lower prices.

From a welfare-economics perspective, this makes broad VAT cuts a low-efficiency instrument for addressing a cost-of-living crisis, especially in sectors characterised by overproduction and environmental externalities. Targeted transfers and structural reforms yield higher welfare gains per unit of fiscal cost.

References

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