



Bulletin

Water
Energy
Retailing
Transport
Financial services
Healthcare
Telecoms
Media
→ Post
Competition policy
Policy analysis and design
→ Regulation
Strategy
Contract design and evaluation
Dispute support services
Market design and auctions

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Front of the envelope

ESTIMATING THE IMPACT OF SHIFTS IN POSTAL CHARGES

Competition in the delivery of letters may put pressure on incumbents to cut charges to businesses – the most profitable segment of the market – and raise charges to households. What effect does such “rebalancing” have on low-income groups? Frontier has constructed a model that makes it possible to analyse the combined effects of rebalancing on the budgets of different groups of households in the UK.

The tariff structures of monopoly utility providers, distorted over time by political requirements, often bear little relationship to their underlying cost structures. Competition, however, inevitably forces change in the patterns of cross-subsidies that have developed over time. In the UK, the energy and telecommunications industries have already made this transition, and it is under way throughout the European Union.

In postal services, however, change is less far advanced. Under the new EU directive, member states have already had to open the delivery of post weighing more than 100g to →

competition, and that floor will come down to 50g in 2006. The UK postal regulator, Postcomm, has been able to grant licences to bulk mailers since 2003 and is committed to full liberalisation by 2006.

Under their universal service obligations, incumbents are still required to maintain a geographically uniform price. Nonetheless, they are likely to want to rebalance some tariffs, in order to defend against cherry-picking by new competitors. Swedish Post has shown a lead by cutting business tariffs while raising postal prices to households.

ROBBING PETER?

Regulators and policy-makers need to be reassured about the effects of such changes on low-income groups. The direct effects of higher household charges for telecoms and energy have been studied before. But these “first-round” effects are not the end of the story. Lower postal charges to businesses may flow through to households in the form of lower prices for other goods and services. While theoretical models of these “second-round” effects have been developed, no one has attempted a full empirical evaluation, largely because the task would involve analysis of the cost structures, vertical relationships and degree of competition in each sector of the economy.

To fill the gap, Frontier constructed a simple model that enabled us to estimate both kinds of effects, drawing on data from both the UK Expenditure and Food Survey (EFS) and the input-output tables compiled by the Office for National Statistics. By postulating certain extremes of competitive conditions, we then attempted to get some idea of the possible range of effects on household budgets.

Spending on post accounted for little more than 0.1% of total spending in the average EFS household: in money terms, an average of 50p a week. While this suggests that price changes will have a relatively insignificant impact on budgets, an important question is the extent to which postal services are “necessities”. In economic terms, these are traditionally defined as goods and services that account for a lower proportion of expenditure as income rises; price increases for such goods and services have a disproportionate effect on low-income households. The so-called “Engel curve” plotting this relationship is therefore downward-sloping for necessities, upward-sloping for luxuries. A flat Engel curve indicates that expenditure on a particular good or service rises in line with income, in which case price increases affect all households proportionately.

Figure 1 compares the Engel curves for postal and utility services. Expenditure on postal services declines, as a proportion of household income, up to an income level of about £500 a week, then tends to rise again, broadly in line with income. This suggests that there is a small “necessity” level of postal spending with a large discretionary element. Even amongst the lowest income groups, postal spending does not account for much more than 0.2% of total household income. By comparison, the Engel curves for utilities such as gas, electricity, water and telecoms are downward-sloping over a much greater income range and account for much higher proportions of household income. Increases in the prices of these are likely to have much greater distributional effects.

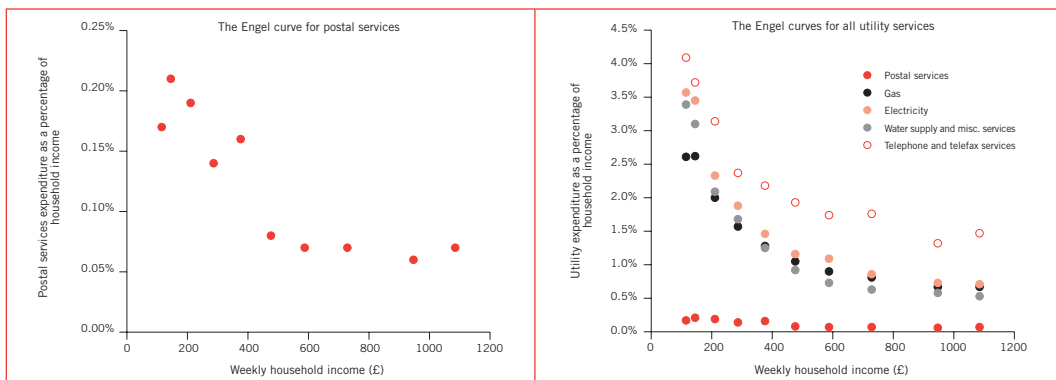


Figure 1: The Engel curves for postal and utility services

BIG SPENDERS

By far the greater part – 86% in 2001-02 – of total demand for postal services is from business, using mail as a medium for advertising, billing and general correspondence with households as well as communications with other companies. Figure 2 shows the shares of the top 20 intermediate consumers of postal services derived from the 2000 Input-Output Supply and Use tables. Between them, these groups account for over 80% of all intermediate demand, while banking and finance alone account for 24%. Together with the next category, insurance and pension funds, these industries would be the greatest beneficiaries of reductions in business postal charges.

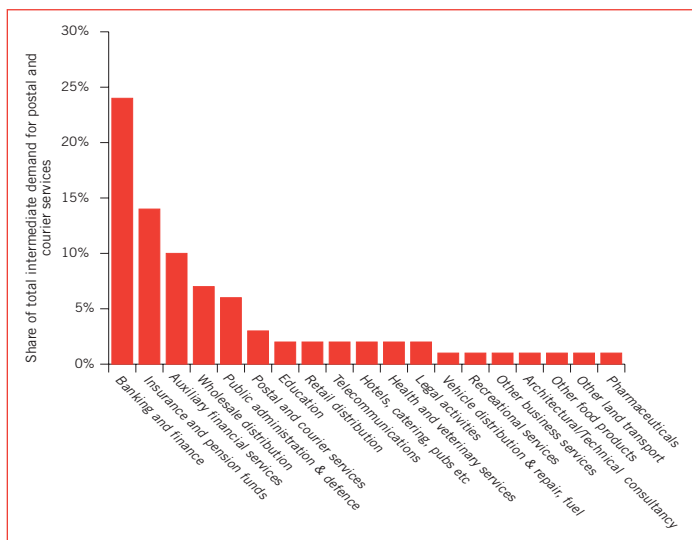


Figure 2: The top 20 intermediate users of postal and courier services

Even so, postal services account for only 6% of the total intermediate demand for goods and services by the “auxiliary financial services” sector and 5% of such demand by banking and finance, while the percentage is even smaller for most other industries. Moreover, intermediate purchases account, in most industries, for only a minority of total input costs. Direct costs, notably labour, are usually more significant.

NOW FOR THE MODEL

To model the effects of changes in postal prices, we first separated household mail volumes from business mail volumes. Then we modelled the reduction in prices to business mailers in general that would leave Royal Mail revenue neutral after a given increase in prices to households. In doing so we assumed that the elasticity of demand for households is -0.11 and for businesses is -0.44 . We found that an increase in prices of 5%, 10% and 30% to households would require a reduction in business prices of 1.4%, 2.9% and 8.1% respectively in order for Royal Mail revenue to remain the same.

Next, we estimated the indirect impact on households of a price reduction in business postal prices. We assumed that the total amount saved was distributed between industries according to their shares of total business consumption of postal and courier services. The extent to which each industry’s savings were then passed on to households depended, in our model, not only on that industry’s weight in final demand but also on the degree of flow-through, for which we selected a range of estimates that depended on our view of the degree of competition in the industry.

Finally, to distribute the resulting savings to different income groups, we had to make assumptions about the mix of non-postal products consumed by these groups. Since it is not possible to map across from the industries in the input-output tables to the components of expenditure in the EFS, we had to assume that the mix did not vary between income groups.

If certain income groups consumed proportionately more or less of the output of those industries that make the greatest use of postal services, such an assumption would

clearly distort the results. Since this was indeed likely to be the case – for example, higher-income groups consume proportionately more of financial services – our modelling work was likely to overstate the benefits of the second-round effect to lower-income households. We understand that the EFS aims to provide a first broad map connecting major household expenditure components and industry input-output tables, which would permit this distortion to be removed. Other refinements to the model might be introduced by, for example, varying our assumptions about price elasticities and modelling a further round of responses to lower input prices.

SMALL CHANGE

Our work suggested the results of rebalancing would be modest. If households were faced with a 5% price rise, they would increase postal spending by 4.4%, amounting to an extra £1.15 on their annual £26 expenditure on post. If faced with a 30% price rise, they would increase postal expenditure by about a quarter, but this would still only raise its share of total household expenditure from 0.126% to 0.158%. Since we had assumed that the price elasticity of demand was the same for each income group, the percentage increases in expenditure were also uniform, although the actual increase varied according to the level of spending.

Equally, the offsetting indirect effect varied according to the level of expenditure on non-postal services. Figure 3 brings these two factors together. It is based on the assumption that flow-through was relatively low (i.e., that competition in the industries affected by lower postal charges was so weak that they were able to retain half the benefit), and therefore almost certainly overstated the negative impact of rebalancing on households.

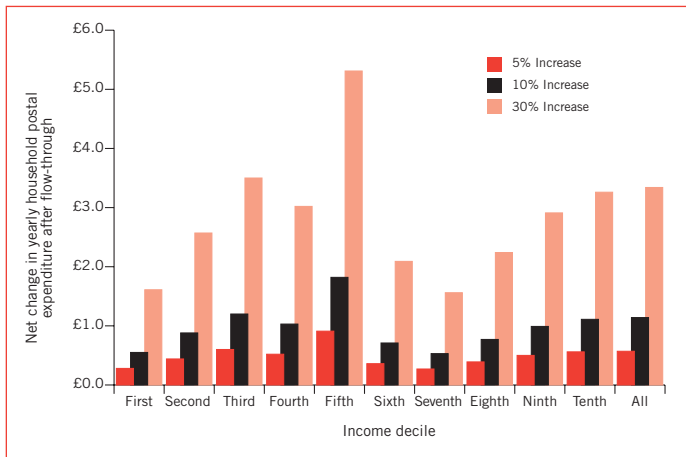


Figure 3: Annual net impact of price changes on postal expenditure by income decile, with flow-through=0.5

This cautious assumption does something to counterbalance the distortion in the analysis identified above, namely that it would be inclined to overstate the benefit to the lowest income groups of the reduction in business costs. A further breakdown by socio-economic group might suggest that the elderly poor, who are relatively large consumers of postal services, are relatively unlikely to be large consumers of financial services, and this may be a point of concern if postal charges were raised very sharply. However, overall, this analysis indicates that even under quite extreme assumptions the possible effects of rebalancing on households were so small as to suggest that distributional concerns should not be a major factor in setting regulatory policy, compared with such other issues as the need to set appropriate conditions for sustainable effective competition.

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