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Agenda

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Responding to declining volumes: can postal operators deliver?

The current economic downturn has seen a significant decrease in mail volumes, and several operators have faced challenges in cutting their costs in response. Using a generated dataset, this article examines the impact of declining mail volumes on costs and efficiency, and shows how benchmarking techniques can be used to identify additional cost savings

Postal operators have grown accustomed to declining mail volumes in recent years as electronic communication takes hold. However, this situation has become more urgent in recent months, with the current economic downturn causing businesses to cut back on direct mail and other postage costs (see Table 1).

Asymmetric cost adjustment

In response to the fall in demand for products and services, various cost-cutting measures and efficiency programmes have been implemented by postal operators as they attempt to reduce their costs in response to this volume decline, in order to maintain any profit margins in the long run.[1] However, postal operators still face a number of challenges if they are to reduce their costs in line with this volume reduction. Chief among these is the time taken to reduce staff numbers and hours, introduce new processes, or close facilities such as sorting centres, delivery offices and post offices. Furthermore, the existence of fixed costs and economies of scale in some elements of the postal network means that, while mail volumes decline by a certain proportion, the cost of processing this mail falls

Table 1 Declining volumes and their impact

Postal operator	Country	Annual change in mail volumes	Impact
United States Postal Service (USPS)	USA	14.7% year-on-year decline in Q2 2009	Net losses of $1.9 billion recorded for Q2 2009
Royal Mail	UK	Mail volumes fell by 5.5% during 2008/09 and are predicted to decline by a further 10% in the current financial year	Royal Mail Letters revenue fell by nearly 2%
Austrian Post	Austria	4.6% year-on-year fall in daily business and direct mail volumes, Q1 2009	2.4% decline in total revenues
Swiss Post	Switzerland	3.1% decline in mail volumes in Q1 2009	13% decrease in profits
An Post	Ireland	2% decline in mail volumes during Q1 2009	2.9% decline in turnover
Itella	Finland	10% decline in first-class letters and a 14% decline in addressed direct marketing in Q1 2009	Substantial decline in profitability
Deutsche Post	Germany	Marked reduction in advertising spending, particularly by mail order companies	Deutsche Post's mail division records 4.5% year-on-year fall in revenues, Q1 2009

Sources: USPS (2009), 'Postal Service Ends Second Quarter with $1.9 Billion Loss', press release, May 6th; Royal Mail Group (2009), '2008–09 Annual Performance Statement', May 14th; Austrian Post (2009), 'Difficult Market Environment in 2009 Due to Economic Recession', press release, May 19th; Swiss Post (2009), 'Group Result Down', press release, May 26th; An Post (2009), 'An Post Reports Record Operating Profit for 2008: Steep Mail Volume Decline in First Quarter 2009', press release, April 20th; Itella (2009), 'Itella Corporation's Results for January–March 2009: Decline in Demand Eroded Profitability', April 30th; Deutsche Post (2009), 'Deutsche Post DHL First-Quarter Earnings: Revenue Decline—Cost Reductions to be Accelerated', press release, May 6th.

by a smaller proportion. If inadequate cost targets have been set, or if areas where additional cost savings could be made have not been fully identified, it is unlikely that a reduction in mail volumes will be met by a proportionate decrease in costs. Subsequently, unit costs will rise.

Impact of declining volumes

Any such increase in unit costs will have a direct impact on an operator's profitability, but will also have an indirect impact on the competitiveness and efficiency of the operator—a particular issue in Europe where adoption of the third EU Postal Directive may intensify competition following full market opening at the end of 2010. Those operators that are not able to reduce their costs sufficiently in response to falling mail volumes may lose market share as more efficient operators enter the market with lower-cost services, further reducing demand for their products and, if further cost reductions cannot be made, their profitability.

Furthermore, regulated postal operators face efficiency targets which they may not be able to meet as a consequence of declining mail volumes. Under some regulatory frameworks, operators that outperform their efficiency target are allowed to keep any additional returns for the duration of the regulatory period.

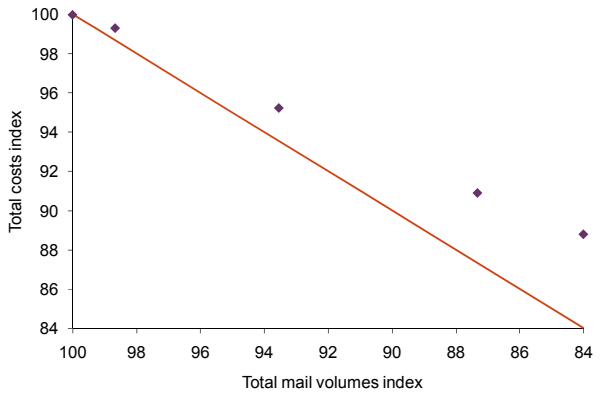
However, if an operator cannot reduce its costs in line with volume reductions and cannot, therefore, meet its efficiency target, the opportunity to earn such returns is diminished and the operator may be subject to tougher efficiency targets in the future, thereby perpetuating the problem.[2] This highlights a potential need for regulators to take into account expected changes in future mail volumes when setting efficiency targets.[3]

Case study

This article illustrates how econometric and benchmarking techniques can be used to estimate the rate at which costs adjust to declines in mail volumes, and to identify the best- and worst-performing mail sorting centres. It also examines how these techniques can be used—from an operational perspective—to identify processes and characteristics that can help reduce costs further. A generated panel dataset (ie, data across units and over time) for a hypothetical postal operator is used to examine the impact that a fall in mail volumes might have on the operating costs and efficiency of mail sorting centres. Figure 1 illustrates the change in total costs and total mail volumes generated over the five-year period in the dataset.

This dataset is based on the assumption that declines in mail volumes are not met by proportionate decreases in total costs, partly as a result of assumed economies of scale in the industry. There has therefore been a steady increase in unit costs over the period.

Figure 1 Cost reductions in line with volumes



Note: The line depicts a proportionate decrease in total costs in response to a fall in mail volumes.
Source: Oxera analysis.

By applying econometric techniques to this data, it is possible to identify the main cost drivers to estimate the impact that they have on costs, and to estimate how quickly costs are reduced in response to volume reductions. Such findings can be useful to postal operators in explaining recent changes in cost levels, and can lead to a better understanding of the expected profile of cost reductions following a fall in mail volumes.

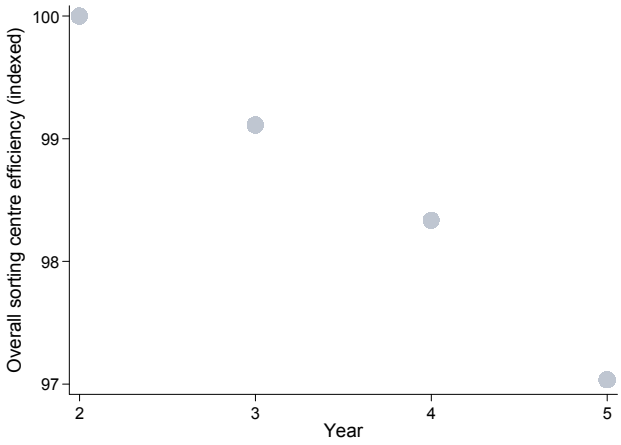
Ability to reduce costs in response to a decline in volumes

Using the generated data and a model which estimates whether there is a lag in the response of costs to changes in mail volume, it is possible to estimate the short- and long-run impacts of volume reductions on costs. This model also controls for sorting centre characteristics, such as population density, which may affect the costs of an individual sorting centre.

The analysis of the generated data indicates that in the short run, a 10% decrease in volumes will lead to a 3% decrease in costs. However, in the longer term the decrease in costs will be 5%. As assumed in the data, this analysis shows that the hypothetical postal operator has not been able to fully adjust to the decline in mail volumes in the short or the long term.

As well as examining the average rate of cost adjustment across mail sorting centres, it is also possible to examine group-specific or individual sorting centre-specific rates of adjustment. This can be combined with an examination of the reasons for any differences in the rates of adjustment in order to draw out operational insights and to suggest approaches for

Figure 2 Overall sorting centre efficiency



Source: Oxera analysis.

operational changes that may improve performance. Analysis of the data generated for this case study indicates that costs adjust at different rates for different groups of sorting centre. Potential reasons for any differences are discussed below.

The impact on efficiency

Econometric techniques can also be used to measure the impact of falling mail volumes on an operator's estimated efficiency. This article applies stochastic frontier analysis (SFA) to the generated dataset to measure the effect of a fall in mail volumes on the estimated efficiency of mail sorting centres over time, and the impact on individual sorting centres in the case study.[4] The findings can be used by operators to highlight the best-performing centres, and hence best practice that can be spread to the worst-performing sorting centres.

The analysis can also identify poorly performing mail sorting centres which may be driving the increase in unit costs. The results from the SFA indicate a decrease in the overall efficiency of the mail sorting centres over time (see Figure 2), and show that changes in mail volumes are having a direct impact on the efficiency of individual sorting centres. The impact of other factors on efficiency, such as the experience of the sorting centre manager or the influence of trade unions, may also be examined.

Measuring changes in efficiency over time

In this example, the frontier mail sorting centre (ie, the most efficient sorting centre) has not changed throughout the period being examined. However, care must be taken when interpreting the relative efficiency of the sorting centres over time as the frontier may shift due to productivity changes in the industry as a whole.

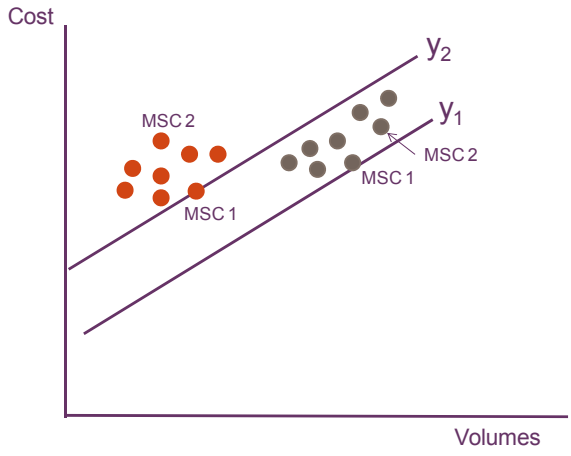
Efficiency estimates are made relative to the most efficient sorting centre in the particular year under analysis. In a cross-sectional analysis (ie, analysis of a single period), efficiency estimates are likely to be relatively stable if the mail sorting centres make similar efficiency improvements from year to year. However, an overall productivity decline in the industry as a whole would not be identified, as data for each year is examined separately.

Some modelling approaches that use historical data (eg, pooled panel models) may estimate a decrease in efficiency where this is not the case by failing to account for frontier shift. For example, if the frontier has regressed compared with previous years (see Figure 3), perhaps as a result of a reduction in mail volumes, these models will estimate a larger inefficiency gap (ie, scope for catch-up to the frontier) compared with the equivalent cross-sectional models, as a result of using the frontier in Year 1 (y_1) as the benchmark. However, sophisticated modelling techniques can account for these issues by decomposing the efficiency estimates into frontier shift and catch-up.[5] These models can also explicitly simulate the impact of the asymmetric response of costs to volume changes on efficiency (as has been done in this case), as well as other factors that may affect efficiency.

Operational insight

In this case study, while the frontier mail sorting centre (MSC1) has not changed throughout the period being examined, a number of mail sorting centres have experienced a decline in their performance, while others have improved theirs. By examining the characteristics of those sorting centres whose relative efficiency declined over the period under examination, it may be possible to identify the reasons behind the overall decline in sorting centre efficiency—for

Figure 3 Impact of frontier shift



Source: Oxera analysis.

example, relative increases in the sickness absence rate in particular sorting centres. Similarly, further details of the characteristics and operations of those sorting centres whose relative performance has improved over the period may provide useful insights into ways to reduce overall costs across the sorting centre network. Empirical modelling of these factors could establish their relative importance or the strength of the impact that each factor has on cost adjustments. Characteristics that could be empirically examined to provide further insight into the reasons behind improvements or declines in efficiency performance include the following.

- **Recent changes in mail volumes at the level of individual sorting centres**. A sorting centre which has experienced a relatively small decline in mail volumes (or even an increase) may find it easier to maintain its efficiency than a sorting centre which has experienced a significant decline in volumes.

- **The proportion of agency staff relative to full-time employees**. A sorting centre with a high proportion of non-permanent staff may find it easier to reduce staff hours (and thereby costs) in response to a volume decline than a sorting centre with a high proportion of full-time employees.

- **The historical influence of trade unions**. This may directly affect the efficiency of a sorting centre, as well as its ability to reduce staff hours and numbers following a reduction in mail volumes.

- **The degree of automation in each sorting centre**. Sorting centres may be under-utilising machinery, and therefore incurring a higher unit cost than if machines were operating at full capacity. Moreover, mail sorting centres with a high degree of automation also have higher fixed costs, making it more difficult to reduce costs in response to a decline in volumes. As a result, there may be a need to reallocate mail volumes, as far as possible, around the network in the short term in order to optimise the utilisation of machinery. In the medium to long term, the network may need to be reconfigured and the number of sorting centres reduced.

- **The experience of the sorting centre manager**. More experienced managers may be better able to control costs than less experienced staff. Moving these managers to less efficient sorting centres may lead to an improvement in the performance of these centres.

An empirical examination could enable the estimation of the benefits of operational changes for costs and efficiency, and provide a useful input when assessing an investment case. Econometric modelling (including SFA and other benchmarking techniques) can also be used to estimate the impact on the overall efficiency of merging several sorting centres. This may provide useful insight for operators seeking to rationalise their network.

Conclusions

This article has used generated data for a hypothetical postal operator to illustrate the potential effects of a decline in mail volumes on sorting centre costs and efficiency. The econometric model developed can be used to estimate that, even in the long term, the operator is not able to reduce its costs by the same proportion as the decline in mail volumes, although it is able to achieve greater reductions than it would otherwise effect in the short run. This could have significant implications for the competitiveness, profitability and efficiency performance of the operator.

Using the SFA benchmarking technique, sorting centre efficiency is estimated to decline over the period examined, partially as a result of the changes in mail volumes. This approach may also be used to examine the impact of other factors on the efficiency of sorting centres.

The results from this analysis can offer operational teams insight into the main cost drivers and the current lag between cost and volume reductions. These techniques can also be used to identify examples of best practice that can then be disseminated across the mail sorting centre network, and can highlight sorting centres that are not performing as well as others and may be contributing significantly to the increase in unit costs. By examining the characteristics of the best- and worst-performing sorting centres, it may be possible to identify the best approach to pursue in responding to the decline in mail volumes, and the impact of operational strategies on the efficiency of sorting centres.

[1] For example, the United States Postal Service has achieved a reduction of 58m work hours in the first half of the 2009 financial year, and has set itself a target reduction of more than 100m work hours for the full year. See USPS (2009), 'Postal Service Ends Second Quarter with $1.9 Billion Loss', press release, May 6th. Other postal operators have attempted to make cost savings by reducing their overheads, fixing the salaries of their employees and closing post offices. For example, Austrian Post has announced that it will start replacing 300 of its unprofitable company-owned branches with partner-owned postal service points during the second half of 2009. See Austrian Post (2009), 'Difficult Market Environment in 2009 Due to Economic Recession', press release, May 19th.

[2] Analysis of historical data may (because of inflated economies of scale) suggest to the regulator that there are larger economies of scale than actually exist. The efficiency target (and therefore the price the postal operator can charge for its services) would then be based on this inflated assumption. In reality, at least some of the economies estimated may be the result of a failure of the operator to adjust costs fully in response to the fall in volumes. If volumes continue to fall, this is not likely to be an issue. However, if volumes increase in subsequent periods, costs would not be expected to rise as much as they might do. The allowed revenue would thus be based on an assumption of larger economies of scale than actually exist, and the operator might not, therefore, earn a sufficient return.

[3] For example, the French postal regulator ARCEP sets an efficiency target for La Poste based on a formula that incorporates historical annual changes in universal service product volumes. For the 2006–08 price control period, the La Poste efficiency target assumed that mail volumes would decline by 0.35% per annum, based on historical data. However, the decline in mail volumes during the period exceeded this estimate and led to an upward revision of the price cap. See Bouin, B., Curien, N. and Lacroix, G. (2009), 'Price Control Regulation: The French Experience', paper presented at the 17th Conference on Postal and Delivery Economics, Bordeaux, May 27th–30th.

[4] For more details of this approach, see Kumbhakar, S. and Knox Lovell, C. (2000), Stochastic Frontier Analysis, Cambridge University Press; and Oxera (2006), 'The Art of Noise: Recent Regulatory Developments in Measuring Efficiency', Agenda, October, available at www.oxera.com.

[5] Relevant modelling techniques and software are being developed by Oxera Associate Professor Subal Kumbhakar.