HealthManagement
Promoting Management and Leadership

Volume 10 - Issue 2, 2010 - Features: Practice Management

Financial Ratios in Radiology

This article investigates how financial ratios can serve as performance indicators or guide investment decisions. Performance indicators are used to guide short to midterm controlling and monitoring. In contrast, investment decisions have a longer time horizon, and involve financial planning over a couple of years. In the first case, financial ratios help budget monitoring by actively looking at deviations from ideal or forecast figures, while financial ratios can inform investment decisions by simplifying assumptions and thus take advantage of, for example, averaging.

Different Costing Methods

There are different types of costing methods. The most complete method is called the "full cost approach", and this accounts for both fixed and variable costs. For example, maintaining an imaging scanner on a daily basis is classed as a fixed cost, while printing images after an exam can be regarded as variable costs. Step-fixed costs are halfway between variable and fixed costs and occur stepwise with increasing scale, e.g. switching on a second scanner during peak time.

Marginal Costing
Another costing method is marginal costing. This accounts for the perfectly variable costs incurred by the next unit. While the full cost approach is likely to be used for planning reasons and determining transfer prices ex ante, marginal costing can be used to determine the contribution margin of further activity. A radiological entity cannot determine the actual price of exams by only accounting for variable costs. However, once fixed costs are incurred, an additional exam contributes to the margin as soon as the price is above the marginal cost.

Lifecycle Costing
By increasing the time horizon, one arrives at "lifecycle costing". This accounts for costs incurred during the time of active usage, procurement cost and upfront payments of instalments, for all maintenance activities to the extent they are not regarded as fixed costs and also cost of disposal, etc. In radiology this is especially important when determining the cost associated with scanners, but it also applies to personnel costs and overheads.

Differences in a projected versus an actual cost are driven by the distinction between calculated versus actual cost. While actual costs refer to the cash flow incurred, calculative costs are an estimation to mirror the economic cost per unit. Thus, calculative cost may also include opportunity cost and utilise allocation mechanisms for different cost objects; thus when a radiological department orders butterflies for the coming months, the actual cost is the amount payable per shipment. However, the calculative costs are zero at this time and are incurred proportionally over the time of use.

The problem of redistributing fixed and step-fixed costs is that this is only an attempt to make them variable. The result, crucially, depends on the choice of cost objects. It might seem reasonable to redistribute the power bill to the examined patients, but this implies that for fewer exams the cost per exam rises - yet patients cannot affect the power bill. Obviously, the differentiation between fixed vs. variable cost alters among cost objects. For example, while payroll costs are fixed per patient, they are perfectly variable per employee.

From Target Costing to Financial Ratios

Radiological entities deal with a large amount of fixed or step-fixed costs, especially regarding personnel and machines. Scanners can be regarded as fixed costs since the main cost drivers are depreciation and maintaining a ready-to-use state. The actual examination hardly bears additional costs, once the scanner is switched on anyway. Further, a large fraction of the costs per exam is borne prior to the actual scan such as time used to schedule the appointment, the examiners effort to familiarise themselves with the case, and upfront expenses for e.g. tracers. These costs are not recoverable if the actual exam is not conducted (patient not showing up, medical conditions not fulfilled, etc.).

Given these two issues of fixed cost and upfront expenses, neither the full cost approach (distorted by workload) nor the marginal cost approach (neglecting significant cost) seem appropriate. Rather, target costing can be used. This method calculates the economic cost per cost object ex ante based on a forecast utilisation and determines a price per unit on these plan figures. Any deviations such as peak loads or underutilisation then unravel gaps in different cost categories. This allows the controller to identify the cause for the deviation and use counter measures. A cancelled exam for example should not increase the price of future exams to cover fixed costs, but also unravels upfront expenses. Based on such experience the radiological entity can either claim these expenses against the referring entity or adjust target costs for future periods by an expected failure rate.

Financial Ratios as Performance Indicators

The financial ratios we have explained can be used as performance indictors. First, lets identify an appropriate cost object. Since the exam process comprises different steps, one can break down the process cost to sub-parts such as the physician's salary or the use of the scanner. Furthermore, it is necessary to define an objective before monitoring the figures. In general, one distinguishes between profit centres, service centres and performance centres. Profit centres obviously maximise surplus over cost and thus generate profit. This is only applicable to private radiological entities as public entities are non-profit. Performance centres only regard the utilised input as the output is constant. This cannot be applied to radiological entities, as the quality of the deliverable highly varies independently of cost. Thus, radiological entities are treated as service centres. Thereby for financial planning, the goal should be to optimise output given a certain input. Regardless of the costing method, volatility in workload is another issue. Obviously, only the reimbursement for each exam can cover expenses, which are mainly of a fixed nature. Thus, careful planning and reasonable buffering methods are necessary to estimate the costs per exam best. One issue here is to identify cycles

of workload and adjust the controlling period to even out the volatility. When it comes to using financial ratios for investment decisions, the relevant time horizon can take into account planning for up to several years. The upside is that any volatility in utilisation levels resolves and the quasi-variable redistribution of fixed cost now is more applicable.

To make the right investment decision, one needs to account for the whole lifecycle cost, including instalment of infrastructure, maintenance and disposal. Especially issues like training or idle time are highly likely to be underestimated. With regard to scanners, there are alternatives to purchasing, such as leasing contracts. To compare alternatives one needs to figure out the correct economic depreciation of a machine and include the same items in all calculations. Because small distortions will occur, this might only be suitable for favourability analysis (planning the pros of investing in something, for example), while profitability analysis will need to account for all costs borne over the whole lifecycle. Hence, financial ratios can be used to answer both questions: whether the instalment of a new piece of equipment or increase in service is profitable and what mode of instalment is more favourable.

Conclusions

The main challenge for practitioners is to find the right figures to answer their particular questions. Instead of ignoring this powerful tool, a good place to start is to use it to answer long-term planning questions as this pays off for years. To do this, firstly it is important to identify the relevant cost drivers. Second, these costs have to be related to appropriate cost objects. Third, one has to attribute these figures to the appropriate carrier who can actually influence them, if they are to be used for controlling matters. If the numbers are used for investment decisions it is crucial to know the sensitivity of the result to altering the underlying assumptions as the smoothing will not occur in practice.

Published on : Sun, 10 Oct 2010