

# Net present value critical analysis



**ASSIGN  
BUSTER**

Critics to DCF methods Ducht an UK companies \* However, it is found inappropriate to use DCF methods for investments that have got strategic implications. \* There are various reasons for the use of open approach. Since the outcomes of these projects are highly unforeseen, according one interviewee, the application of quantitative tools is not plausible.

Therefore, companies tend to apply the rule of thumb methods rather than standardized quantitative models. The justification for not applying quantitative models is some times attributed to the nature of a project.

Capital inv appraisal of new technologies: Problems, misconceptions and research directions Specifically, it has been alleged that the traditional appraisal methods of payback, discounted net present value (NPV) and internal rate of return (IRR) undervalues the long-term benefits; that traditional financial appraisals assume a far too static view of future industrial activity, under-rating the effects and pace of technological change; that there are many benefits from investments in newtechnologywhich are difficult to quantify and are often ignored in the appraisal process; and lastly, it is claimed that the systems of management control often employed by large organizations compound the bias against those investments which, although expensive, reap rewards vital for long-term viability. The first issue is a criticism of financial technique; the next two are criticisms of the way in which business operations are modelled; and the last is an issue of organizational control and behavior. \* We show that the criticisms directeda traditional appraisal methods may to some extent be based on misconceptions of the financial models and the ways in which they are best used \* A similar objection is raised to the use ofNPV and IRR. The claim is

that discounting future cash benefits under-emphasizes the future benefits of new technology. This problem may be exacerbated by the application of risk premia to the discount rate. New technology is assumed to be riskier than that which has been well established, Why DCF are bad for business and why business schools should stop using it \* The assumptions related to DCF are increasingly becoming so disconnected from business reality that its continued use should come with the following warning, ' This financial management technique is hazardous to your business. ' \* DCF as a capital investment appraisal tool suffers from a number of major limitations. These limitations include its narrow perspective, exclusion of non-financial benefits, overemphasis on the short-term, faulty assumptions about the status quo, inconsistent treatment of inflation, and promotion of dysfunctional/cheating behaviour.

Previous authors, including Hastie (1974); Ramasesh and Jayakumar (1993); and Adler (2000) have enumerated and discussed the various sins of DCF. \* The objections against the use of DCF for capital investment appraisal have often been objected to themselves. Kaplan (1986), for example, feels that the supposed limitations of DCF are in truth a limitation of the user and not of the technique. For example, the selection of a static discount rate is a failure of the user and not of the technique itself. Likewise, the inconsistent treatment of inflation, the overemphasis on the short-term, faulty assumptions about the status quo alternative, the adoption of a narrow organisational perspective, and manipulative and cheating behaviour are again all mistakes of the user.

Even the difficulty of including non-financial benefits is seen as a lack of the financial analyst's imagination rather than an inherent shortcoming of the technique. To help overcome the problems of DCF for capital investment decision-making, proponents of real options theory have argued for the tandem use of the Black and Scholes' (1973) model and DCF. - The problem with DCF, and which cannot be overcome by its real options complement, occurs when data is not accessible or quantifiable. Not only do these occasions happen quite frequently, but also they become increasingly common as the decision moves from the operationally mundane to the strategically critical.

The misapplication of capital investment appraisal techniques \* Surveys of capital budgeting practices in the UK and USA reveal a trend towards the increased use of more sophisticated investment appraisals requiring the application of discounted cash flow (DCF) techniques. Several writers, however, have claimed that companies are underinvesting because they misapply or misinterpret DCF techniques. \* the only justification we can think of for using the accounting rate of return method is because top management believe that reported profits have an impact on how financial markets evaluate a company. This is further reinforced in many companies by linking management rewards to short-term financial accounting measures. Thus a project's impact on the financial accounting measures used by financial markets would appear to be a factor that is taken into account within the decision-making process. Dimson and Marsh (1994) have expressed concern that many UK companies may be using excessively high discount rates to appraise investments and, as a result, these companies are

in danger of underinvesting. In the USA it has also been alleged that firms use discount rates to evaluate investment projects that are higher than their estimated cost of capital (Porter, 1992). Conclusions: Ducht an UK companies

- \* All the UK case study companies apply combined methods of investment appraisal and most of them combine the DCF techniques with the value based management methods, such as SVA and EVA. The combination among the Netherlands companies, however, is mostly with the accounting based measures. Project decision-making in most of the case study companies is found decentralized, which provides the benefits of teamwork in project management.
- \* In terms of appraisal model selection, however, the result is heterogeneous. Most companies prefer to apply combined methods of appraisal. Uniform methods of evaluation are not applied across all stages of a project, which will make difficult the comparison of project values at different stages. Although research in capital budgeting suggests the use of quantitative models for R&D and ICT projects, the application is not found in practice. In contrary, firms are relying on qualitative and non-standard approaches.

This does not have rigorous theoretical basis, and hence, the decision-making process may not get an acceptable yardstick for its rationality.

Capital inv appraisal of new technologies: Problems, misconceptions and research directions

- \* Payback methods are inadequate appraisal techniques and should never be used alone. NPV and IRR are appropriate ways of valuing future cash-flows. Any bias in their application will be due to a systematic use of too high a discount rate, but this can be avoided by correct analysis. Assumptions about the future can lead to bias if an over-optimistic

picture of the no-investment position is taken, but again this is an avoidable pitfall. As for the benefits ignored, many of these can be quantified and brought formally into the analysis.

Where benefits cannot be quantified, they should nevertheless be stated so that they can be given proper consideration when a final judgement is made.

The bias due to the use of short-term financial criteria can be removed by the use of measures reflecting the longer-term benefits of present investments. In principle, then, the biases of capital-investment appraisals are avoidable, but one difficulty remains. New technology invariably leads to greater complexity, and any unwillingness to face this complexity in the capital-investment process is likely to lead to bias against change. \* NPV, IRR and PB undervalue long term benefits \* Benefits from investing in technology very difficult to quantify and often are ignored in the appraisal process. DCF analysis places too little weight on the future due to the magnitude of the discount rate (too high). Reasons for a too high discount rate: 1. 2. to compensate non-profit projects 3. - To calculate the required rate of return we use the CAPM - Managers' interests different from shareholders' ones so higher rate or return determined. Then, again, the critic/problem is not of the appraisal method but of its application or understanding Theory-practice gap in .. : UK The survey results indicate that UK corporations have increasingly adopted prescribed textbook financial analysis. The stage has now been reached where only a small minority do not make use of discounted cash flows, formal risk analysis, appropriate inflation adjustment and post-auditing. However, managers continue to employ simpler rules-of-thumb techniques. There has not, in general, been a replacement of one set of methods with

another, but rather, a widening of the range of ways of analysing a financial decision. Why DCF are bad for business and why business schools should stop using it It has been said, ' Life must be lived forward but can only be understood backwards. ' There is no denying that DCF is wonderful at looking backwards and calculating, for example, the actual NPV a project has earned. Sometimes, generally when commonplace, operational decisions are involved, DCF can even work as a forward-looking tool.

To work in this manner, however, requires the relevant cash flow data to be either present or, perhaps with a bit of work, discoverable. DCF does not work well when the decision at hand is strategic in nature. In these situations, the data is often neither present nor discoverable in time for an ex ante evaluation. Only after the decision is made does useful data likely become available. The condition described here is well captured in the lyrics of the Rolling Stones' song ' You Can't Always Get What You Want': You can't always get what you want But if you try sometimes, well you might find You get what you need. When it comes to matters that really matter, DCF and real options theory fail to enlighten us.

Instead, they sap managers' energy by focusing their attention on Pareto's trivial many at the expense of his vital few. In the end, managers end up missing the forest in their search for the non-existent trees. It is time that as educators, we rediscovered the vital few and culled out the trivial many topics that have crept into our course outlines. DCF should be one of the first topics we drop or at a minimum drastically prune back. It is not only a prime example of the trivial many, but it is a potential hazard to firms that use it for decisions that affect firm strategy. Do I hear any other offers? The

missapplication of capital investment appraisal techniques The use of conservative cash flow forecasts, combined with the incorrect treatment of inflation and excessive discount rates observed in the survey suggests that many UK organizations may be rejecting profitable investments. Given these problems it could be argued that DCF procedures should be abandoned or given little weight in long-term investment decisions. We strongly disagree. DCF procedures should not be ignored or relegated in importance merely because they might be used incorrectly. Instead, decisionmakers should recognize potential problems and be careful to ensure that the financial appraisal is performed correctly. CRITICS TO PAYBACK PERIOD Capital investment appraisal of new technologies: Problems, misconceptions and research directions

The objection to payback methods is that they ignore all cash flows after the desired payback period, which may be as short as 2 or 3 years. Thus they take no account of the long-term advantages that many large investments in new process technology bring, so the use of payback criteria is worthy of comment. 5 Payback can be insensitive to considerable variation among projects (in terms of their cash flows). 6 Payback methods are simple rules of thumb. Their attraction is their simplicity, and robustness for making judgements on possibly optimistic costings and uneasily quantified business risks. However, they do ignore medium- and long-term cash flows, and it is perhaps surprising that they seem to be regarded as serious tools of financial analysis.