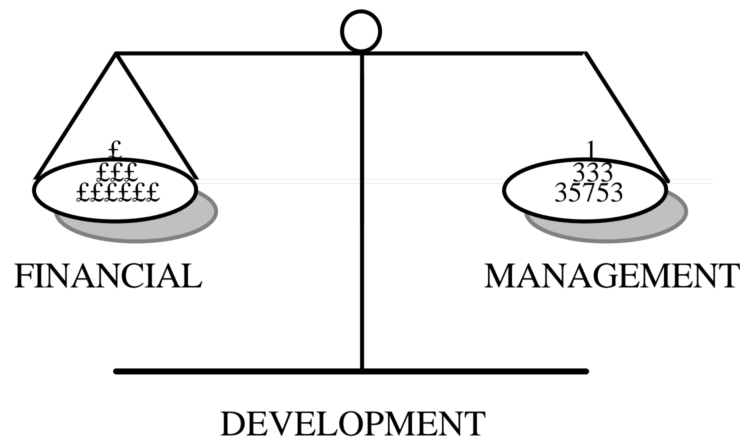
FINANCIAL MANAGEMENT DEVELOPMENT

Decision Making

Capital Expenditure

NO 335

RISK AND SENSITIVITY



ONE OF A SERIES OF GUIDES FOR

FINANCIAL MANAGEMENT DEVELOPMENT

FROM

www.FinancialManagementDevelopment.com

This is one of a series of documents produced by David A Palmer as a guide for managers on specific financial topics to assist informed discussion. Readers should take appropriate advice before acting upon any of the issues raised.

RISK AND SENSITIVITY

Business is about taking an acceptable level of risk. A risk can only be defined as acceptable if the outcome of the particular risk can be reasonably calculated. This paper deals with the identification of Risks and the calculation of the outcomes. A separate paper deals with uncertainty and how the outcomes and their probability can be used to help consider strategy. It is a commonly accepted wisdom that the key assumptions in any project should be tested by evaluating changes in the outcome of the project caused by using data in which the assumptions are varied from those in the base case. This is a vital part of the investment appraisal as it allows the reviewer to evaluate the potential risk against potential rewards.

A recent survey of UK companies revealed the following general level of risk (defined as the proportion of projects which were subsequently deemed to have achieved their original objectives.)

PROJECT TYPE	**RISK FACTOR** (1 = Low 5 = High)
Labour Cost Savings	1
Other Cost Saving	2
Expansion of Existing Products	3
New Product Launches	4
Acquisitions	5

Unfortunately no studies have yet been done on the relative rewards of the different project types. However, anecdotal evidence suggests that while new product launches can and often do produce returns that justify the higher level of risk, acquisitions rarely do.

A framework for risk assessment is often a useful guide to the process and versions of this are frequently found in capital expenditure procedures manuals.

1. **IDENTIFY THE BASE CASE**

   It is a vital part of risk analysis that a base case is agreed and that the outcome is reasonably calculated. The definition of the Base Case is the "Most Likely Outcome". Inclusion of contingencies, fudge factors, allowances for luck etc. at this stage merely serve to corrupt the process. The purpose of risk evaluation is to help make an informed decision based on alternative assumptions. If the Base Case contains data which is not the most likely outcome then variations from it will not yield true results. Contingencies should be added after the risk appraisal process since they are a by product of the process. Including them in the Base Case is pre-empting the results.

 © David A Palmer 2000

2. IDENTIFY SIGNIFICANT FACTORS

These are in three types:

High Risk Items
Large Value Items
Major Influences

High Risk Items - include Sales Values, Prices, Foreign Exchange, Interest Rates etc. which are potentially outside the control of the organisation and whose outcome is known to be uncertain.

Large Value items - include up front capital costs, sales values, large running costs etc. whose impact on the project's outcome are greater merely because of their relative size.

Major Influences - are sales volumes, timescales, capacity constraints, wage rates etc. whose effects on the project are large because they impact on a number of areas and therefore require evaluation.

At this stage a note should be kept of all potential factors so that they can be evaluated or discounted - Failure to note that a factor has been considered and deemed to have no material impact runs the risk of a subsequent reviewer raising a version of the same factor at a later stage in the process. At best this is duplication, at worst approval for the project is delayed while the question is asked again.

3. CONSIDER THE IMPLICATIONS

For informal review it is vital to consider the Best/Worst case - even if they are unlikely. Death, Bankruptcy, or Corporate Failure is a high price to pay even if the potential rewards are great. The risk may be very low but still unacceptable. Often no one is prepared to state the potential downside or the project champions refuse to acknowledge the possibility of failure. Typical Worst Cases that have gone ignored include -

Lloyds Names (Last Cufflink)
Euro Disney (Rain)
Euro Tunnel (Cost, Revenues, Timescale etc.)

The number of "acquisitions" too far are too numerous to mention.

However, it is just as important to identify the Best Case. This not only helps the reviewer put the risks in perspective but may help identify potential actions to increase the likelihood of the Best Case. It may also force consideration of time and capacity constraints.

 © David A Palmer 2000

Although Best/Worst cases must be considered the main risk evaluation is carried out on reasonable fluctuation in the key parameters identified in Step 2. Sales Volume plus or minus 10% or timescale under/overrunning by 6 months being typical examples. Often this process helps to redefine the base case. If on consideration there is no possibility of a project coming on stream early but a high probability of it being late are you sure the Base Case is "The Most Likely Outcome". Inclusions of a reasonable estimate for time delay etc. in the base case is important - not a "Let's add a bit of Luck" but a "typically projects of this size overrun their original timescale by 10% (say)." Therefore the most likely outcome includes this and risk assessment quantifies variations from the Base Case including an allowance for overruns etc.

4. CALCULATION OF IMPACTS

With the widespread availability of spreadsheet applications there is now no excuse for not expressing the impact of changes in basic assumptions as £ changes in Net Present Values or % changes in Internal Rate of Return. It is important to show both the monetary amount and the relative size of the impact of the change. The Process leads to consideration of the further information required. Often the evaluation shows that certain factors have a disproportionate effect on the project's outcome. If so it may be important to consider if the project should be restructured; or even broken down into smaller projects - a feasibility study or test site to confirm that one factor.

5. STATE REMEDIAL ACTION

Some risks can be bought out in advance:

Fixed Rate Borrowing
Forward Foreign Exchange Contracts
Fixed Price Sales agreements/Purchase agreements
Penalty Clauses

The above are all ways of mitigating the risk by paying extra to reduce it. A fixed price contract to sell avoids the future risk of a fall in sales prices and/or volumes. The price may be acceptance of a lower than normal price or a payment of a discount - both of which will reduce the project return. Alternatively the cost may be the loss of a potential benefit e.g. inability to sell at a higher price. Again consideration of these should be documented together with the decision taken.

Some risks cannot be bought out but can be mitigated by appropriate action. Increasing advertising spend may reduce the risk of low sales. If the NPV is particularly sensitive to sales volume then a direct comparison between the cost of extra advertising and the impact on the Base Case NPV can be calculated.

 © David A Palmer 2000

In some cases the action can be linked to future events e.g. if we are running late we will bring in contractors, if demand is higher than capacity we will buy in partly finished goods etc. Such statements do more than focus the attention of the reviewer, they provide a clearly thought out action plan which avoids the M25 problem - if three lanes isn't enough we will build four but its a pity about all the three lane bridges!

6. **CONSIDER CRAWL OUT COSTS**

Very often Investment Appraisal Systems only show the initial Capital Investment as the "Risk Capital". It is important to consider to what extent the project becomes too big to stop. The investment in the Channel Tunnel will never be recovered - but even when it was recognised five years after it was started, no one could stop it and future cashflows made it worth finishing (probably!)

Time, Commitments, diversion of resources are all part of the project investment. Once started they cannot be recovered. A feasibility study is not money wasted if it prevents a project starting which was doomed anyway. Explicit statement of the maximum cost to date at specific stages in the project helps focus attention on key issues and assists decision taking both now and in the future.

7. **SHOW DECISION POINTS**

A clear timetable - including the approval process should be set up showing when key decisions on spending or commitment to spend will occur.

"This project will have a NPV of £1 million if approved by 31 December but only £0.6 million if approval is delayed". (The cost of delay and subsequent approval is therefore £0.4 million).

Such statements can help the reviewer focus on the purpose of the review, rather than repeat the evaluation process. They can then concentrate on assessing the validity of the decisions in terms of risks and rewards. At this stage outlines of alternative approaches should be included and key assumptions and dependencies noted. In some cases these can be positively beneficial. One project dependant on low interest rates and another dependent on high interest rates may both be approved. (The financial equivalent of a deck chair and umbrella manufacturer) even though independently they might have been too risky.

NOTES:

1 The purpose of investment appraisal and within it, risk evaluation is to help decision making. Ignoring risks because it is politically expedient to do so is not a helpful activity. Only Governments with unlimited access to other people's money to spend can afford to make decisions whilst ignoring the risks. Even then it normally catches up with them later.

2 Risk evaluation is not an exact science, nor it is a one off process. Post Implementation Reviews help future decisions.

 © David A Palmer 2000

DAVID A. PALMER BA (Financial Control) FCA ATII MCIPD

David is an experienced financial professional who has devoted his skills to management training in practical understanding and utilisation of financial information. A Graduate, Chartered Accountant, and Associate of the Institute of Taxation, he is also a Member of the Chartered Institute of Personnel and Development.

He has worked as a Financial Controller and Company Secretary in the Finance Industry and as a Director of Finance and Administration in the Computer Services industry. Since 1990 he has conducted management development programmes for over thirty major organisations including Blue Circle, BP, CSC Computer Sciences, Conoco, Ernst & Young, Lloyds Bowmaker, The Post Office, Rothmans and Zeneca. International training experience includes work in Denmark, Kenya and the Czech Republic for Unilever, in Dubai for Al Atheer, in Holland and the U.S. for Avecia and Zeneca and in Bahrain and Saudi Arabia for Cable & Wireless.

He specialises in programmes in financial management for both tactical and strategic decision making. A key output from the training is demonstrable use of the knowledge and skills acquired to enhance corporate profitability. In addition he has run courses in acquisition evaluation (The Economist, Blue Circle and Hays Chemicals) and in post-acquisition management (Unilever). He has also developed material for delivery by in house personnel (Royal Mail, Lloyds Bowmaker and Conoco) and computer based training packages (The Post Office, Unilever and BP).

He is a prolific writer of case studies, role plays and course material, he has also published articles on the financial justification of training, financial evaluation of IT investment proposals, the use of Activity Based Costing and Customer Profitability statements, commercial considerations for consultants and the need for taxation awareness training for general managers.

He is married with one grown up daughter and his outside interests include being The Treasurer of the Hospice of St. Francis (Berkhamsted), and a member of the Catholic Alpha Training Team (Promoting the Alpha course on Basic Christianity). He was a Governor of Luton University for nine years and a school Governor for four years.

This series of papers is designed to help managers by providing a basic understanding of key financial concepts to assist them in their work. It is provided at no cost since this knowledge is a Gift from God and thus to be shared (Matthew 10:8).

 © David A Palmer 2000