
DFID Department for
International
Development

INVESTOR PERSPECTIVES ON EMERGING MARKET INVESTMENTS

STAGE 3 REPORT

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1. Excel workbook: Investment projection model
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Note:

We use the terms “OECD” and “Non-OECD” to differentiate between the major industrialised countries of Western Europe, North America and Japan and countries variously described as “emerging” or “frontier” markets.

We also use the term “MNE” to describe any corporate entity with activities in a number of different countries.

While other terms could be used in each case, these provide a convenient short hand reference for issues which occur throughout this study.

1. EXECUTIVE SUMMARY AND CONCLUSIONS

This report follows Stage 1 and 2 of a research proposal looking into multinational investor perspectives on Fragile and Conflict affected States.

The first report covered the key literature looking into risk and investor behaviour. The following report on stage 2 detailed the key findings from a range of qualitative interviews on how investors consider the investment decision making process.

This report will be looking to test quantitatively the impact of key investor risk factors on investor behaviour. Secondly we'll examine the typical models which investors may use to take into account the impact of risk.

The headline conclusions bear out that:

- There are fundamental differences in how investment environments are perceived based on the types of investor – this has been borne out qualitatively and quantitatively
- Specific improvements therefore in the business environment, or changes in the fundamentals of the market are likely to attract differing types of investors
- In looking at overall modelling of the investment itself we can see that risk modelling often involves a good deal of assumption
- As stated in the previous report – and borne out by the investment model – investment incentives can increase overall returns – but need to be approached with caution from a value for money perspective

2. INTRODUCTION

This Stage 3 Report is the third deliverable under the contract between the Department for International Development (DFID) and GBRW Limited (GBRW) and Investment Consulting Associates (ICA) dated 24th December 2012.

The final version of the Stage 1 Report was submitted to DFID on 26th February and the Stage 2 Report, on 13 December 2013. Earlier drafts of the Stage 2 Report prompted extensive discussion on the approach to Stage 3, in part because of access to data from the fDi Markets database on announced investments from 2003 to 2012 in the original 6 FCAS plus 3 further ones. This is a rich source of data which covers ca. 1,500 transactions over this period, each of which has subsequently been classified under one of the four investment motivation headings.

Following these discussion, it was agreed that this Stage 3 Report would consist of:

- Commentary on the results of the regression analysis of the fDi Markets data carried out by DFID;
Discussion of investment decision making processes within MNEs, with a specific focus on hurdle rate models used in investment analyses

3. REGRESSION ANALYSIS

Linkage between Stage 2 analysis and Stage 3 regression analysis

The MNE interviews which formed the core of the Stage 2 Report provided a series of case studies (in some cases, very detailed) on the perspectives of individual MNEs. In order to test the issues which arose from those interviews, it was agreed that DFID would carry out regression analysis on the full dataset of FDI announcements for the 9 FCAS from 2003-2013 referred to above, which had also been used to identify and select candidates for the MNE interviews. This section describes the results of that exercise.

Approach and methodology

The dataset is based on public announcements by firms, rather than official sources and contains around 1,500 investment announcements, with details of sector, location, nature of investment, amounts to be invested, jobs created and source country/firm.

DFID's quantitative research involved reviewing any statistical relationships between what type of investment took place in a given country and year, and indicators of market potential and risk. They assigned each investment to the country-year in which it was announced¹, and for each country-year took indicators from the World Governance Indicators, World Development Indicators and Global Competitiveness Index that interview respondents reported as relevant. They then divided the investments on a series of criteria: by the four investor types/motives identified in the Stage 1 and 2 Reports; OECD/non-OECD; and large/small investments and compared the average values to see if there were any clear patterns and if they were consistent with what was reported in interviews.

¹ We have had some discussion over the fact that the year(s) of investment may post date the year in which the investment is announced; however, the latter probably represents the most appropriate year to use, as it represents the closest point at which the investment decision is made

While this is a descriptive exercise and can only begin to corroborate/contradict the interview findings, they have derived some clear results for certain areas.

Overview: investment drivers per type of investor

The table overleaf provides a compiled overview of different classes of investors identified in Stage 2 of our study and the 13 investment drivers used in DFID's regression analysis.

These are grouped under two headings, traditional and political, showing which factors are considered as important or unimportant by which group of investors. Green indicates that an individual investment driver is perceived as more important by the specific investor group than all other investors, whereas red points to the fact that the particular investment driver is not considered as more important.

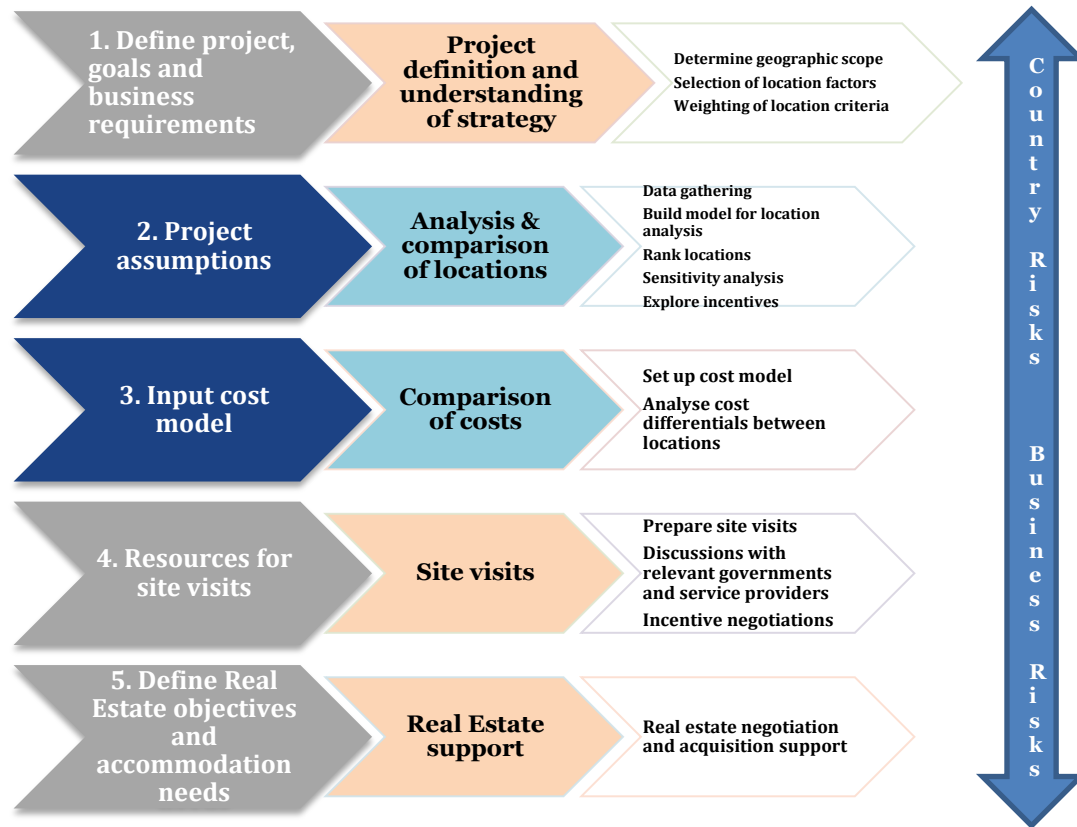
Type of Investor	OECD	Non-OECD	Resource Seeking	Market Seeking	Efficiency Seeking	Large-Scale	Small-Scale
Investment Driver							
Household Consumption	Red	Green	Red	Green	Red	Red	Green
Population	Red	Green	Green	Green	Red	Green	Red
Market Size	Red	Green	Green	Green	Red	Red	Green
Logistics Performance	Red	Green	Green	Red	Red	Red	Green
Efficiency of Goods Market	Red	Green	Green	Red	Green	Red	Green
Infrastructure	Red	Green	Green	Red	Green	Red	Green
Labour	Green	Red	Red	Red	Green	Green	Red
Political risk	Green						
Political Stability	Green	Red	Red	Red	Green	Green	Red
Control of Corruption	Green	Red	Red	Green	Red	Green	Red
Rule of Law	Green	Red	Red	Red	Green	Green	Red
Regulatory Quality	Green	Red	Green	Red	Green	Green	Red
Government Effectiveness	Green	Red	Green	Red	Red	Green	Red
Voice and Accountability	Red	Green	Green	Red	Green	Green	Red

Key findings from regression analysis:

- OECD investments are strongly correlated with better governance environments. Perhaps due to the heterogeneity of the types of investments from OECD countries there is no strong relationship with market drivers.
- Non-OECD countries seemed to be focused more on traditional investment drivers – which could indicate a larger number of investments in market seeking businesses
- Surprisingly Resource seeking investors seem to be investing in contexts with relatively large populations and market sizes. This may well be due to the distorting impact of certain large population oil-rich economies – e.g. Nigeria, Pakistan. Understandably logistics and infrastructure is stronger in areas with heavy extractives investment, and strong governance is not correlated to new investments in this area.
- The Market seeing firms are clearly investing more in countries with high populations, significant consumption and high market size. From a governance perspective, they are more likely to invest in contexts with a high control of corruption.
- Efficiency seeking is equally predictable based on previous analysis – showing that efficiency of exports, infrastructure and labour are critical determinants to the investment occurring. Equally interestingly governance indicators matter more for this group than any other group – showing the sensitivity of this investor class
- Lastly we can see that larger investments are more likely to occur in more stable environments.

4. INVESTMENT DECISIONS TAKEN BY MNES

Our Stage 1 Report discussed the five characteristic stages in the investment appraisal process carried out by MNEs, as shown in the figure below:



We focus in this section on the steps by which MNEs move from general strategic decisions on new FDI to analysing and approving specific investment decisions. This stage is covered by the dark blue shaded Phases 2 and 3 shown above.

In general terms, Phase 2 can be described as the process of moving from long-listing to short-listing of specific new FDI locations, while Phase 3 involves a more detailed validation of the assumptions underpinning Phase 2.

Investment decisions within MNEs

Corporate finance theory states that large companies will be willing to make investments which produce a return exceeding their Weighted Average Cost of Capital (WACC). The WACC is a blended rate which reflects the company's cost of equity (the return expected by its shareholders) and its cost of financing (the rate required by lenders, which should normally be lower than the cost of equity).

This is an iterative process, since a company's cost of financing will increase as it raises increasing amounts of debt. As a result, there is an equilibrium point where the diminishing Return on Investment as additional investment opportunities are considered meets the increasing WACC as a company's leverage increases. At this point, the company is making the optimum use of its financial structure.

In practice, the process is far less clear cut, for a number of reasons:

- The projected Return on Investment on new opportunities will be subject to varying degrees of uncertainty, since revenues are generally much more difficult to predict than expenses.
- Shareholders will look at the quality of earnings from major new investments; a higher yielding investment in a FCAS will be perceived as a riskier investment than a lower yielding investment in a core market such as North America or Western Europe. If the portfolio mix moves materially from the latter to the former, investors will “re-rate” the company’s shares and lenders will reassess its credit risk as a borrower, so both the equity and debt components of the WACC will become more expensive.
- Qualitative decisions are required when choosing between an investment which produces a return of x% in the short to medium term versus one which may be marginal or even loss making over the same period but which has the potential to become a major profit generator over a longer term horizon.
- Individual division heads will have greater or lesser degrees of influence within the company, so may be able to push through investments which are less attractive than some alternatives (for example, by using arguments from the previous bullet point).
- In some cases, smaller investments may be approved so as to establish a presence in a new market and gauge its potential. This was confirmed in a number of our MNE interviews, which gave examples of division heads being able to take such decisions.
- In other cases, decisions on new investments will be driven by the ambitions of the company’s chief executive or senior management team, with investment analysis being used to rationalise a decision which senior management wishes to take. Major acquisitions are notoriously prone to this risk.
- Finally, some companies (especially those which are privately owned) may take a more unstructured approach to new investment, using a back of the envelope approach – in some cases, literally.

While we therefore describe the theoretical approach to decision making, DFID staff dealing with FDI investors should be aware that actual practice may vary widely.

Setting the hurdle rate for FDI in FCAS

The MNE interviews suggested that the following factors are incorporated in setting hurdle rates for investments in higher risk emerging market countries:

- Equity returns for local companies operating in similar industries in the target country, which provide an indicator of way in which other external investors price the range of risk factors associated with the investment. (However, in a FCAS the data may not be robust where equity markets do not exist, are illiquid, are weighted heavily in favour of specific sectors (e.g. natural resources) or where the quality of information available to investors is poor).
- A “bespoke” risk model factoring in country risk and/or other risk indices which the MNE considers relevant to its own activities
- Specific issues affecting the sector in which the MNE operates (for example, large energy companies have some ability to impose their own preconditions where an investment is key for the target country)
- Management’s experience of actual vs projected outcomes from prior investments in similar countries
- Shareholder feedback on the additional return they expect to see where a significant part of the business involves investment in and earnings from high risk countries

- A mix of the above

As we discussed in the Stage 2 report, some MNEs apply a standard hurdle rate across all potential investments, but use higher contingencies in higher risk countries. In effect, the analysis and evaluation process is the same, but the evaluations of investment risk are reflected in more conservative contingencies rather than in a higher required IRR.

The hurdle rate for a specific country may be used in one of two ways, each achieving the same end result: as a yardstick against which actual IRR is measured, or as a discount rate applied to cash flows to calculate the Net Present Value (NPV) of inflows and outflows, with a positive NPV indicating that the rate of return on the investment exceeds the hurdle rate.

Decision making bodies

The Stage 2 Report described in Section 6 the feedback received from MNE interviews on decision making processes.

In most cases, larger investments require Board or Executive Committee approval while smaller investments can be approved at divisional management level.

In many cases, a separate committee will have analysed proposals before presentation to the decision making body, integrating inputs from various parts of the MNE.

Examples of two typical Approval Committee structures are shown in the side panel.

Two typical Approval Committee structures

European Cement Company

New investments (historically above €20-30 mn, but now above €10 mn) are approved by an Investment Committee, whose membership would include:

- CEO
- CFO
- EVP Strategy & Development
- EVP, Operations
- Head of Region

An investment in a new country would also involve a Risk Committee, whose membership includes the Legal Department (dealing with foreign legal issues and judicial systems) and the Security and Safety Department.

Diageo

For smaller investments, Regional President, Africa and FD Africa

For larger investments, CEO, CFO and Board, with inputs from:

- Corporate Finance/M&A team (both global and locally embedded units)
- Security Division (including external resources if required)
- Legal

5. FINANCIAL MODELLING

The financial modelling of proposed investments is a key stage in the investment approval process.

Each large company will have a specific format for the preparation of business plans and financial projections. The following general comments discuss the way in which such business plans and their associated financial projections are built up, together with the issues which will be considered relevant to an investment proposal. The significance and weighting attached will vary very materially from industry to industry.

The approach set out below forms the starting point for the analysis of different investment location options. The example is focused on manufacturing companies, as these tend to illustrate the widest range of issues facing an FDI investor. The elements which go into the comparative study will depend on the nature of the business activity of the planned FDI.

We attach as Appendix 1 extracts from an Excel workbook, which can be used to model investment returns for new FDI under a number of different scenarios. A soft copy of the workbook accompanies this report.

Profit & Loss (P&L) Account

The starting point for most financial projections is preparation of Profit & Loss Account (P&L) projections. The table below shows the major categories, describes how they are built up and comments on relevant issues.

Most projections will be run on a base case, with alternative scenarios incorporating more optimistic or pessimistic assumptions. Another approach is to model the specific impact of discrete assumptions over the projection period (e.g. local currency falls by 15% over period, sales 20% higher than base case in years 3, 4 and 5), then compare the impact of each of these on the picture shown by the base case.

Category	Description	Comments
1. Revenues	Built up from projections of unit volumes x unit sales prices	Where export sales are being made to parent or other group companies (especially relevant for Efficiency seeking investments), transfer pricing may be an issue
2. Cost of goods sold	Direct costs of production (raw materials, manufacturing overheads, cost of production staff, depreciation on manufacturing assets)	May also include licensing fees payable to parent or other group companies, or goods and services purchased from them
3. Gross profit (1-2)		Gross profit margin reflects dynamics and efficiency of manufacturing process
4. Operating costs ²	Costs associated with administration and sales, including salaries for staff in those areas and depreciation on associated assets)	May also include management fees payable to parent or other group companies or costs of secondment of staff
5. Operating profit (3-4)		Operating profit margin reflects overall profitability after inclusion of other costs of operating business.

² Also known as Selling, General and Administrative Expenses

Category	Description	Comments
6. Financing costs	Cost of borrowings from banks or other lenders plus other forms of finance such as leasing of assets	May include financing from parent or other group companies, or charges for provision of parent guarantees to lending banks
7. Pre-tax profit (5-6)		Pre-tax profit reflects profitability after all relevant costs apart from tax. Effective tax rates may vary materially from one country to another.
8. Tax	Corporation tax on profits of company after all relevant expenses shown above.	Tax payable by company on its profits. Note that some other taxes paid, such as payroll or property taxes, will normally be included in Cost of goods sold or Operating costs. Revenues and expenses may be stated net of other types of taxes, such as excise duties or sales tax/VAT. Preparation of corporate tax returns usually involves adjustments to reflect provisions of local tax legislation. Parent company accounts may also require separate adjustments when accounts are consolidated.
9. Net profit (7-8)	Profit available for distribution to shareholders in business, i.e. parent company.	Also known as After-tax or Post-tax profit
10. Dividends	Payments of accumulated profits to shareholders. These reduce the level of Shareholders' funds (also known as Equity or Capital), since they represent a distribution of assets to shareholders in the form of cash.	Dividends paid to shareholders may be subject to further deductions such as withholding taxes when paid to another country. Where there is a significant level of trading with parent or other group companies, transfer pricing may be used to extract profits without such deductions and/or to reduce taxable profits in the subsidiary. National Revenue/Tax authorities tend to have provisions in place to prevent this, but their effectiveness varies widely.

Balance sheet

The Profit & Loss Account projections are then used to create pro forma Balance Sheets reflecting the impact of the parent company's initial investment. The next table again shows the major categories and the factors which affect them.

Category	Description	Comments
1. Current assets	Cash Trade debtors (accounts receivable) Stock (inventory) Other short term amounts receivable	As sales grow, the company has to fund what are known as "current assets". These are the assets involved in the "cash conversion cycle" i.e. the process in which cash is converted into stock then into debtors through the sales process, and then back into cash. Projections are based on the time and costs involved in converting raw materials to finished products for sale; the period for which finished goods are held before sale; and the time required for customers to settle their invoices after purchase.
2. Fixed assets	Plant and machinery Property (real estate)	Known as fixed assets because these are the assets required for the manufacturing process. Individual items of plant and machinery are written down (depreciated) over their economic life and the resulting depreciation cost is charged to the P&L. Real estate values are reviewed at periodic intervals and increases or decreases shown as an adjustment to shareholders' funds
3. Intangible assets	Assets which are not tangible, but have a definable economic value and so have to be reflected in the company's accounts.	Examples might include brand names, intellectual property such as publishing titles or production licences. Values are reviewed at periodic intervals and upward or downward adjustments are shown in the P&L.
4. Total assets (1+2+3)		The "Assets" side of the balance sheet, which has to balance to the "Total liabilities and equity" side (hence the term "balance sheet").

Category	Description	Comments
5. Current liabilities	Short term bank overdrafts Trade creditors (accounts payable) Other short term liabilities	Known as “current liabilities” because these are the liabilities involved in the cash conversion cycle. Trade creditors and other short term liabilities arise through the purchase of materials and services for use in the manufacturing process. The sum of Current assets <u>less</u> Current liabilities is known as “Working Capital”. Since Current liabilities are normally lower than Current assets, the net amount has to be financed from shareholders’ funds or from borrowings. As sales increase, Working Capital requirements also increase as a result.
6. Long term liabilities	Medium term bank debt Medium term intercompany loans Leasing agreements	The general rule for treating a liability as Current or Long tem (sometimes Medium term) is maturity of less than or greater than 12 months.
7. Total liabilities (5+6)		Amounts owed to external creditors of the company
8. Shareholders’ funds	Subscribed capital + accumulated profits (or – accumulated losses) – dividends paid.	The value of the company’s assets attributable to its shareholders. It is equal to Total assets - Total liabilities, so sometimes also known as “Net assets”.
9. Total liabilities and equity (7+8)		Has to balance to the “Assets” side of the balance sheet.

Cash flows

A company’s management will be highly concerned to ensure that it always has sufficient access to cash, so P&L and balance sheet projections are used to calculate its projected cash flows. It is important to understand that profitable trading does not always create positive cash flow or vice versa – over a given period, a company may be trading profitably while it has to increase its borrowings or run down its cash balances, or it may be trading at a loss while generating significant amounts of cash.

The next table lists the major categories of cash flow items.

Category	Description	Comments
1. Cash flows from operating activities	Net profit + Depreciation -/+ increase/decrease in Working Capital	This calculates the cash produced from the company's net profit after adding back Depreciation (which is not a cash cost) and adjusting for cash absorbed by increases in (or freed up by decreases in) Working Capital.
2. Cash flows from investing activities	Cash required to invest in new fixed assets or to maintain existing ones. May also include costs of acquisition of another company	Acquisition of a major asset for £10 mn which is depreciated over 10 years, will involve a depreciation charge of only £1 mn to the P&L each year, but the company has to pay the full £10 mn to the supplier of the plant in Year 1.
3. Cash flows from financing activities	New loans from lenders and further injections of equity by shareholders increase cash. Repayments of existing loans and dividends paid to shareholders decrease cash.	Where major repayments of bank loans are scheduled to occur, new debt facilities will usually be used to refinance these unless Cash flows from operating activities are high enough to meet the payments.
4. Net (decrease)/increase in cash and cash equivalents (1+2+3)	Cash flows from financing activities can be normally be used to offset requirements arising under 10 and 11. A very sharp decrease in cash and cash equivalents may therefore be a signal of unexpected problems.	A company's Treasury Department will be responsible for ensuring that the company always has enough cash available from existing cash balances, new borrowings or other sources to meet its liabilities as they fall due.

Performance ratios

The approaches normally used to measure investment returns are:

- Return on Equity (RoE)
- Return on Investment (RoI)
- Internal Rate of Return (IRR)
- Net Present Value of cash flows (NPV)

Return on Equity

Return on Equity is calculated by dividing Net profit by Shareholders' Funds. The higher the resulting percentage, the greater the return on the amount invested by the parent company. Most large companies will include an RoE target for each significant subsidiary as part of their budgeting process.

RoE for each operating division or subsidiary can be measured against a company's Weighted Average Cost of Capital (WACC). The WACC is a blended rate which reflects the company's cost of equity (the return expected by its shareholders) and its cost of financing (the rate required by lenders, which is normally lower than the cost of equity). Where RoE exceeds WACC, the operating division or subsidiary is increasing shareholder value; where it is below WACC, the converse is true.

Return on Investment

While RoE works well as a performance yardstick for established businesses, Return on Investment is used to assess a specific new investment such as a new manufacturing plant or a new FDI decision. Profits are projected based on increased revenues and/or decreases in operating expenses using the approach set out above. Projected RoI normally has to meet a specific hurdle rate set by parent company management; if it does not, capital will be allocated to investments elsewhere which do meet the required rate. The assumptions used in a RoI calculation can create major variances in outcomes and can often be manipulated to create higher or lower outcomes, so most companies will have a detailed template which sets out the specific approach to be adopted.

Internal Rate of Return and Net Present Value

Where cash flows are erratic, or where an extended investment period is involved (for example, in the case of a startup investment), an Internal Rate of Return (IRR) approach may be more appropriate. Cash inflows and outflows are modelled using the approach set out above and the IRR is derived from these. It is important to note that IRR calculations can be highly sensitive to the terminal value attached to the investment at the end of the cash flow series; the terminal value calculation can be calculated in a number of ways and the result will either increase or decrease calculated IRR over the investment period. In the attached example, we have used a simple Price/Earnings ratio, in which the value of the business is expressed as a multiple (in this case, 8x) of its most recent Net Profit.

The IRR calculated can be cross-checked by running a Net Present Value calculation on the cash flow series. If the IRR is used as the discount rate, NPV should be zero. A lower discount rate than the IRR will produce a positive NPV and a higher rate, a negative one.

Currency issues

While accounts for a subsidiary operating in a specific country will be prepared in the currency of that country, they will also have to be converted to the currency of the parent company when consolidated accounts are prepared. From the perspective of a shareholder in, say, a UK MNE, the performance of the company in its base currency is what matters.

To take a simplified example, a subsidiary in a FCAS may have doubled its profits, but if the currency has depreciated by 60% against Sterling, then the parent company accounts will show a 20% decrease in profits³ for this operation. In addition, a further loss also may need to be recorded for the diminution in value of the parent company's investment in the equity of its subsidiary, which is also worth less when translated to Sterling at the new rate.

6. REFLECTING COUNTRY RISK ISSUES IN AN INVESTMENT MODEL

While MNEs will incorporate numerous inputs on the risk areas covered by the Structured Questionnaire used in Stage 2, it can be seen from the models shown above that these have to be quantified as they feed into the model used to calculate revenues and expenses on a specific investment. One of the key issues for DFID has been to obtain as clear an understanding as possible as to how this is done.

There is, unfortunately, no simple answer to this question. It can be seen from the model above that the headings under which assumptions on local risk factors can be input are fairly limited, as follows:

³ Year 1 profits: 100; Year 2 profits 200 -60%, or 80

Profit & Loss Account	Revenues Cost of goods sold Operating costs Financing costs Tax rates
Balance Sheet	Fixed assets External financing available Subscribed capital

It follows from this that a high degree of subjective judgement is involved in translating specific risk factors into the components used to build up these lines in the financial projection model. Some specific examples from our of approaches used by MNEs illustrate this:

- **European cement company:** Contingencies for cost overruns on investments could run at around 10-12% in developed markets, 15-20% in medium risk countries and 30-40% in SSA. These contingencies translate to a pro rata increase in the level of fixed asset investment and the debt or share capital required to finance it.
- **Rio Tinto:** RT works on a baseline of 7,000 operational hours per annum for assets (80% average utilisation, assuming 24hrs x 365 days). Assumed employee efficiency is usually lower in emerging countries and is modified for issues such as required training, labour unrest and even nutrition levels, so too many negatives feed into higher cost levels (more employees per tonne of production). This is particularly the case where there is only a limited mining industry and significant levels of training are required.
- **European oil company:** Security in Pakistan was not an issue until post 2001. The company initially had 40 expatriates with families in the country, but higher security costs mean that there are now only 5 expatriates and the workforce is almost 100% Pakistani.
- **Brewing company:** A brewery entered Tanzania in the late 1990s on the back of its good experience in Uganda. Competitors ran a highly negative campaign against their initiative, involving price cutting, negative advertising and sometimes physical intimidation. Very high levels of corruption were a further factor. The brewery had projected a target market share of between 12% (minimum breakeven) and 40%, but only ever achieved 10%.

While risk indices are available from a number of sources⁴, their specific impact on the proposed FDI will vary significantly from one business to another (as well as on potential investments in different regions of a single country). The example of a notional brewery investment overleaf sets out a number of ways in which this may affect just the Profit & Loss Account.

Investment incentives

In addition to the revenue and cost factors discussed above, incentives may be offered by the investee country for a new investment. Two of the most common are investment subsidies and tax holidays and the impact of these is also illustrated in the example overleaf in red text.

⁴ See Section 7 of the Stage 2 Report

Example: Impact of different factors on a brewery investment

Category	Model elements	Projected quantifiable inputs	Other factors
1. Revenues	Built up from projections of unit volumes x unit sales prices Normally involves a number of brands	Production volumes Sales volumes by product line Export sales Sales of imported items (e.g. spirits) Projected FX rate movement against parent company base currency Projected inflation	Market size (in this sector, driven by analysis of population and GDP/capita). Strength of competition Local tastes Attitude to alcohol (e.g. Muslim countries) Proximity to other parent company operations
2. Cost of goods sold (COGS)	Raw materials Manufacturing overheads Cost of production staff Depreciation on manufacturing assets	Cost of inputs (grain, other raw materials) Cost of water, energy, other utilities Excise duties Cost of expat production management Salary levels skilled and unskilled production staff Salary levels production staff Amount of initial investment in manufacturing plant and annual depreciation and maintenance costs Licence fees paid to parent for use of brands Projected FX rate movement against parent company base currency Projected inflation	May be adjusted in early years to reflect impact of any investment incentives or other forms of support
3. Operating costs	Administration and sales staff Transportation costs Advertising and marketing Depreciation on office and transport facilities	Cost of expat management Salary levels office staff Advertising and promotion Initial investment in office facility and annual operating costs Cost of subcontracts (e.g. transportation, distributors)	It is often corporate policy to allocate a management charge to the subsidiary for Head Office support or expat secondments

Category	Model elements	Projected quantifiable inputs	Other factors
4. Financing costs	Cost of borrowings and other forms of finance Investment subsidy will reduce amount of additional debt finance and/or capital injection, thus reducing interest costs. Where capital injection can be reduced, Return on Investment will increase pro rata.	Interest rates on local borrowings Interest rates on other borrowings Cost of leasing or other forms of finance	If parent guarantee is required for local borrowings, the Head Office may charge the local subsidiary
5. Tax	Corporation tax on profits of company after all relevant expenses shown above.	Corporation tax rate Reduced by amount of whole or partial tax holiday, thus increasing after-tax profit and reducing financing required over relevant period	If there is no double tax treaty between the parent company country of incorporation and the investee country, effective tax rate may be higher than corporation tax rate in the investee country

Sensitivity analysis

To illustrate the impact of various factors, we have run four scenarios in the attached workbook:

- A Base Case, using the assumptions shown in the green shaded cells
- A Pessimistic Case, assuming that direct and operating costs are 10% higher than anticipated (changes to the original Base Case are yellow shaded in this and the other scenarios)
- A tax holiday scenario (100% tax holiday for first 4 years of operation)
- An investment grant scenario (taxable investment incentives equal to 10% of initial fixed asset investment, or £500,000)

The results are summarised in the table overleaf, which compares the size of the original capital investment required, the cash balance outstanding at the end of year 10, after-tax profits at the end of year 10 and the Internal Rate of return on the original capital investment.

£000s	Base Case	Pessimistic Case	Tax Holiday	Investment Grant
Equity invested by parent (£000s)	£6,000	£6,000	£4,000	£5,000
Cash at end Year 10 (£000s)	£319	£307	£378	£500
After tax profits in Year 10 (£000s)	£3,290	£1,645	£3,056	£3,173
Internal Rate of Return	21.9%	11.1%	30.3%	25.6%
After-tax value of incentive (£000s)	£0	£0	£2,552	£325

Both the tax holiday and the investment grant reduce the size of the required equity investment. Both also allow more dividends to be paid while maintaining a given level of cash.

An MNE investor will normally pay considerable attention to the mix of debt and equity required so as to achieve a balance between ensuring financial stability and maximising return on the equity capital invested. The riskier the investee country, the more prepared an MNE will be to look at ways of minimising its equity exposure.

Where a parent or fellow subsidiaries trade with a subsidiary, transfer pricing is often used to extract profits as an alternative to payment of dividends. This also can have the advantage of reducing taxable profits in the subsidiary, as costs of goods or services are tax deductible, while dividends are not. National Tax authorities tend to have provisions in place to prevent this, but their effectiveness varies widely, even in the UK.

7. CONCLUSIONS

This report and the analysis it details have further corroborated the hypothesis in the analysis that investor perceptions are based on a range of characteristics internal to the firm – and a clear understanding of the firm, the opportunity – and the risks – are key to understanding the investment attractiveness of the context DFID is operating in.

As reflected in the investment model above; risk is factored into a range of areas in the financial model – and is often based on rules of thumb, and experience in other contexts. Similarly the subsidy of an investment by a development actor, or a tax break, can make some difference to an investment decision – but we have to be careful about simply reducing the overall investment of an investor, and subsidising a business which would have occurred in any case.