6th edition • Southern Africa – West Africa – East Africa

An African perspective
Valuation methodology survey 2012

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PwC Corporate Finance is pleased to present the sixth edition of its biennial Valuation Methodology Survey.

We have broadened the reach of the previous South African surveys to include perspectives from our colleagues in East and West Africa for the first time. The South African survey has therefore been expanded to become the PwC Africa Valuation Methodology Survey.

Africa continues to receive more and more interest as an investment destination from investors looking to emerging markets to access their growth potential or from investors looking to secure the natural resources that the continent offers.

In this edition of the survey we have included questions to test our participants' perceptions around Africa as an investment destination. For example we surveyed:

- The reasons for the increased investor interest in Africa;
- The industries in Africa that are attracting the most interest from potential investors;
- The level of cross-border and intra-African interest in the continent;
- General deals activity in African markets;
- Risk perceptions of participants to African markets; and
- The challenges faced in performing valuations in African markets.

In a recent survey around the difficulties of mergers and acquisitions in emerging markets, PwC found that failure to agree on valuation was the single most important cause of uncompleted deals in emerging markets. With valuations being a key input to a successful transaction process, PwC Africa has broadened the South African survey to identify the various valuation assumptions and methodologies that are being used across the continent.

We trust that the technical sections of the new survey will provide a valuable starting point for investment analysis in African markets, and we hope the survey will facilitate discussions across the continent around technical valuation issues.

Areas covered include:

- The most frequently used valuation methodologies;
- The calculation of cost of capital;
- Preferred market multiples; and
- Discounts and premiums.

The sections on East and West Africa have been included for the first time and therefore represent a starting point for the survey in these markets. In future editions we aim to improve the survey in terms of the number of respondents and depth of questions.

The current survey represents the views of 49 financial analysts and corporate financiers. A full list of respondents is included as an appendix to the survey.

We would like to take the opportunity to thank all respondents for their valuable contribution and the time and effort taken to participate in the survey. In this regard, special thanks go to our colleagues in East and West Africa for making their first contributions to the survey.

From the number of enquiries received regarding the launch of this edition, we gather that the survey is meeting its objective of stimulating debate among, and providing guidance to, valuation practitioners in African markets.

We trust that this edition will continue to be of benefit to readers and contribute to the development of valuation practice in a wider African context.

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30 September 2012

Section 2:
Valuations in Africa

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A continent of challenges and opportunities

A key characteristic of the post-2008 recession period has been the increase in prominence of Africa as an investment destination. A consistent stream of publications has highlighted both the opportunities offered by the continent as well as the challenges of doing business in Africa.

A significant number of corporate executives have declared their company's intentions of growing their presence in Africa, and the number of global companies looking to establish a foothold on the continent has increased.

With an already higher than average growth rate, Africa is fast becoming an attractive place to do business – even more so as the vast informal trade sector on the continent means that measured growth over the past decade is likely to have been understated.

In this year's survey we wanted to explore our respondents' perceptions of investment in Africa and the difficulties of valuing businesses in Africa. To achieve this we surveyed:

- The reasons for the increased investor interest in Africa;
- The industries that are attracting the most interest in Africa from potential investors;
- The level of cross-border and intra-African interest in the continent;
- General deals activity in African markets;
- Participants' risk perceptions of African markets; and
- The challenges faced in performing valuations in African markets.

In the section below we provide feedback on these issues from respondents in Southern, East and West Africa.

Reasons for increased investor interest in Africa

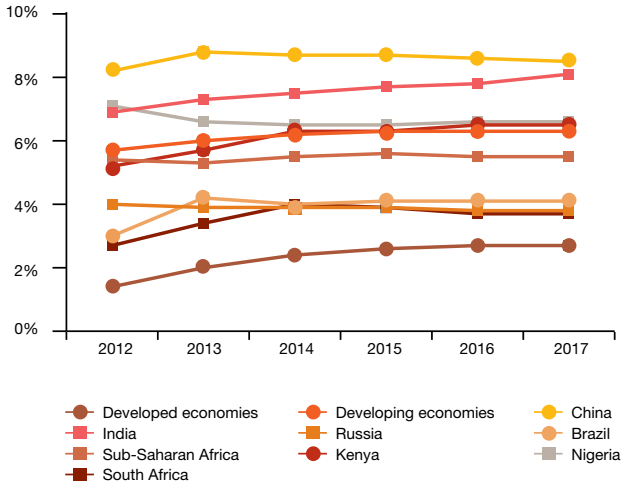
Economic growth in Africa has recently been significantly higher than that in many developed regions, which is often cited as the main reason for investment in Africa. Africa has a lot to offer, particularly the supply of scarce resources into a commodity hungry world. However, there are also a host of factors hindering Africa's success. These include a lack of infrastructure, various barriers to trade, low productivity and skills shortages. The significance of economic growth, therefore, should not be focussed on alone.

It should also be borne in mind that each African country should be considered according to its individual risks and opportunities. Each region and country is sensitive to unique factors, with each country having its own strengths, opportunities, challenges and cultural differences. Companies considering investing on the African continent should therefore consider the challenges and opportunities in each of the individual countries in which they intend investing.

Growth

As already mentioned, growth is often cited as a key factor driving investment. The graph below shows the forecast growth rates for developed and developing economics, BRICS countries (Brazil, Russia, India, China and South Africa) and Kenya, Nigeria and sub-Saharan Africa. The accompanying table shows the five-year compound annual growth rate (CAGR) for these countries and regions.

Figure 2.1: Forecast growth rates by country and region



***Source**: World Economic Outlook. International Monetary Fund, April 2012.*

Forecast growth rates

Country/Region	2012	2013	2014	2015	2016	2017
Developed economies	1.4%	2.0%	2.4%	2.6%	2.7%	2.7%
Developing economies	5.7%	6.0%	6.2%	6.3%	6.3%	6.3%
China	8.2%	8.8%	8.7%	8.7%	8.6%	8.5%
India	6.9%	7.3%	7.5%	7.7%	7.8%	8.1%
Russia	4.0%	3.9%	3.9%	3.9%	3.8%	3.8%
Brazil	3.0%	4.2%	4.0%	4.1%	4.1%	4.1%
Sub-Saharan Africa	5.4%	5.3%	5.5%	5.6%	5.5%	5.5%
Kenya	5.2%	5.7%	6.3%	6.3%	6.5%	6.5%
Nigeria	7.1%	6.6%	6.5%	6.5%	6.6%	6.6%
South Africa	2.7%	3.4%	4.0%	3.9%	3.7%	3.7%

***Source**: World Economic Outlook. International Monetary Fund, April 2012.*

Compound annual growth rates

Country/Region	CAGR
Developed economies	2.5%
Developing economies	6.2%
China	8.7%
India	7.7%
Russia	3.9%
Brazil	4.1%
Sub-Saharan Africa	5.5%
Kenya	6.3%
Nigeria	6.6%
South Africa	3.8%

***Source**: World Economic Outlook. International Monetary Fund, April 2012.*

On average, developing economies have an expected five-year CAGR that is more than twice that of developed economies. Sub-Saharan Africa, Kenya and Nigeria have five-year expected CAGRs of 5.5%, 6.3% and 6.6% respectively. Each of these five-year CAGRs is more than double the average CAGR of developed economies around the world.

The high forecast growth in some African countries provides some indication of why Africa is receiving increased attention as a potential investment destination.

Economic policy has lowered inflation

The pre-recession average interest rates in developed countries were lower than those in developing countries. Since the recession, the rising food and fuel prices caused Africa's median inflation rate to increase to 7.9% in 2011.[1] The higher average interest rates in Africa have given African countries some policy leeway with respect to inflation and interest rates. Developing African countries have been able to use monetary policy to contain inflation and stabilise their currencies by lowering interest rates. As a result of this flexibility, the median African inflation rate is expected to ease in 2012 and 2013.[2]

Increased trade

The recession has had a negative effect on developed economies around the world. This can be seen in the low growth rates experienced by developed countries in the past few years. Lower growth and economic activity in developed countries is leading to declining levels of imports and exports through the borders of these countries. This is resulting in a slowdown in emerging markets with respect to trade.

There are, however, some factors that have a positive influence on trade in the African continent. Recently, trade within the African continent has increased considerably, with a CAGR of around 19% over the past 10 years.[2] Africa therefore has much opportunity with regards to intra-African trade.

Another positive influence on African trade is that Africa has scarce natural resources. Global demand for these commodities remains high, resulting in more regular trade and an increase in investor interest for exposure to businesses involved in the production, transportation and trade in commodities.[2]

The issue with Africa's trade being predominantly in raw materials is that its export earnings are dependent on commodity price fluctuations.

Another hindrance to trade with and within Africa is the often slow and expensive border crossings in Africa and the high tariffs relative to developed and other developing economies.[2]

1 *African Economic Outlook 2012*. African Development Bank, Organisation for Economic Co-operation and Development, United Nations Development Programme, United Nations Economic Commission for Africa, 2012

2 *Equity Research – Fortnightly Thoughts*. Goldman Sachs, March 1, 2012

Improvements in infrastructure and technology

Infrastructure and technology are both improving on the African continent. This increases the ease with which business can be done.

In the past decade, there have been significant improvements in telecommunications across the continent. This has come about thanks to major developments in mobile telecommunications and the laying of a number of submarine fibre-optic cables linking Africa to the rest of the world.[3]

However infrastructure remains a challenge, particularly the lack of road and rail infrastructure. As a result, moving goods around Africa takes longer and costs more than in developed and many other developing countries.

Another hindrance to doing business in Africa is the high incidence of power outages. Many countries are faced with inadequate or aging power infrastructure.[4]

[3] *Africa Progress Report 2012.* Africa Progress Panel, 2012

[4] *Equity Research – Fortnightly Thoughts*. Goldman Sachs, 1 March 2012

Increased demand and consumption

Demand and consumption in Africa have historically been lower than other parts of the world. At present, the level of demand is improving, making Africa a more attractive place to do business.

A significant reason for the unmet demand in Africa has historically related to the availability of products. In developed economies, unmet demand is generally a result of consumers wishing to upgrade their products. In Africa, however, this demand is most often the result of products not being available at all. The lack of availability of products in part relates to the lack of infrastructure with respect to roads, rail and distribution networks.[4]

Growth in demand in Africa can also be partly attributed to the maturing banking sectors in Africa.[3] As the banking sector matures in a country, consumers are able to borrow and transact with banks with greater ease. With easier access to money, the population is able to consume more. An example of the maturing banking sectors in Africa is the implementation of the M-Pesa system in Kenya and Tanzania. The M-Pesa system is a mobile banking system launched in 2007. In Kenya the system currently processes up to two million transactions a day. There are also around nine million subscribers in Tanzania.[4]

The points raised above highlight some of the many reasons for the increased interest in African companies and some of the challenges faced in African markets. We wanted to test our respondents' perceptions of these issues in the context of performing valuations of businesses in Africa.

Q: In recent years, investors have become increasingly interested in making investments in African companies. Various possible reasons for this increased interest are listed below. Please indicate on a scale of 1 to 5 your opinion of the relevance of the factors listed.
(5 – Extremely relevant, 4 – Very relevant, 3 – Moderately relevant, 2 – Slightly relevant and 1 – Not relevant at all).

- African companies have greater growth expectations
- Financial reporting standards have improved
- For African companies, the return expectation relative to risk has improved in recent years
- Investors are seeking to diversify away from low return markets
- Political stability has improved, reducing country risk

Figure 2.2: Reasons for investor interest in African companies

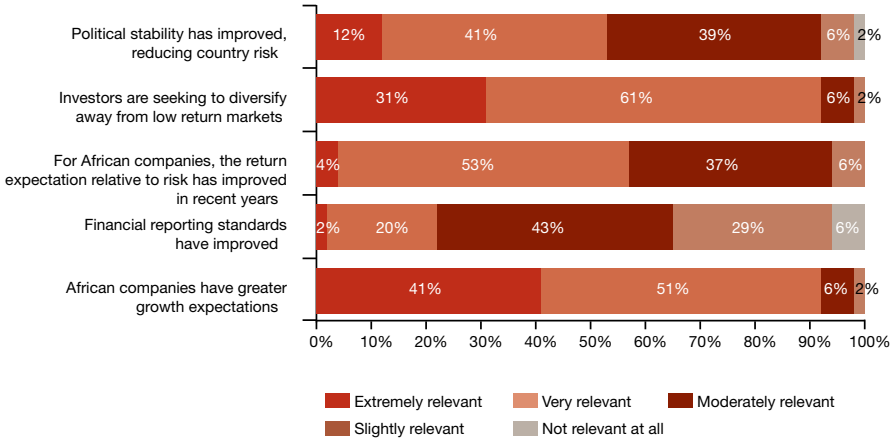


Figure 2.2 highlights a strong perception in the market that African companies have greater growth expectations than those in other markets. No less than 92% of respondents see this as either very or extremely relevant in explaining the increased interest in African companies.

In addition, there is a strong drive to diversify away from low-return markets, with 92% of respondents also seeing this as either very or extremely relevant. This demonstrates investors in developed markets' desire to augment slowing growth in their home markets. On a secondary level, improved political stability and risk-return trade-offs have contributed to a more positive perception of African markets.

Valuations in Africa

Performing valuations in developing economies presents different challenges to performing valuations in developed economies. As part of the survey, we have included questions around performing valuations in Africa:

- What is the general purpose of valuations?
- What industries are receiving the most attention?
- How do you manage the difficulties of doing valuations in Africa?

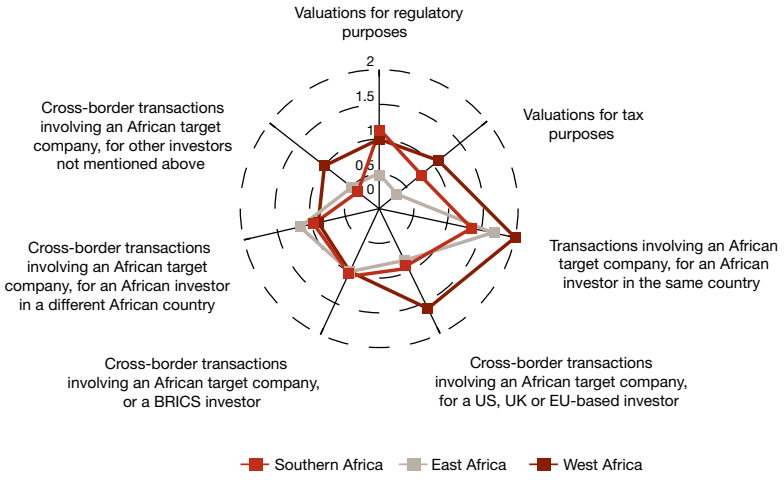
The focus of valuations in Africa

We wanted to establish the key drivers of valuation activity in Africa and included a question regarding the general purposes for which valuations are performed in African markets.

Q: Please indicate the purpose for which you generally value businesses:

- Valuations for regulatory purposes
- Valuations for tax purposes
- Transactions involving an African target company, for an African investor in the same country
- Cross-border transactions involving an African target company, for a US, UK or EU-based investor
- Cross-border transactions involving an African target company, for a BRICS investor
- Cross-border transactions involving an African target company, for an African investor in a different African country
- Cross-border transactions involving an African target company, for other investors not mentioned above

Figure 2.3: Purpose of valuations



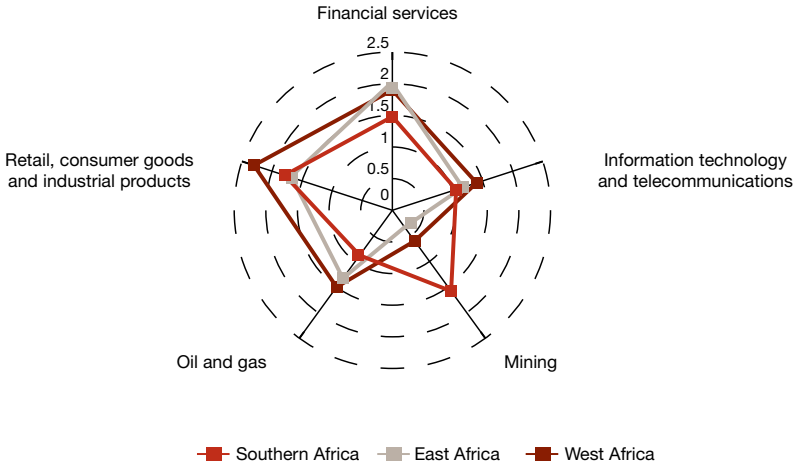
The results of the survey indicate that the majority of valuations are still performed for investors in home markets. However, a significant number of valuations are also being performed for investors from Europe and the United States, which underscores the heightened level of interest from developed market investors seeking exposure to higher expected growth in Africa.

As a next step we wanted to determine the most popular target industries in Africa. The results of our survey are outlined below.

Q: Please indicate industries in which your target companies generally operate:

- Financial services
- Information technology and telecommunications
- Mining
- Oil and gas
- Retail, consumer goods and industrial products

Figure 2.4: Industries in which target companies generally operate



As expected, the level of activity by industry differs between regions. The most predominant target industry in West Africa appears to be the retail, consumer goods and industrial products industry, whereas mining continues to be a key industry within the Southern African market. Financial services is a key focus area for all markets, but is particularly strong in East and West Africa.

Difficulties performing valuations in Africa

In a research paper entitled 'Getting on the right side of the delta: A deal-maker's guide to growth economies' PwC's Deals practice highlights the fact that the failure to agree on valuation was the main reason for failure of transactions that have entered formal due diligence in emerging markets.

The common problems experienced were large gaps in buyer and seller expectations and worse than expected performance. The root causes of these issues could be summarised as follows:

- Uncertainty over future growth, market demand, distribution channels to be used and future actions of competitors;
- Few comparable companies that can form a base for valuation analysis; and
- Significant competition for assets in emerging markets with sellers that have several alternatives available to them.

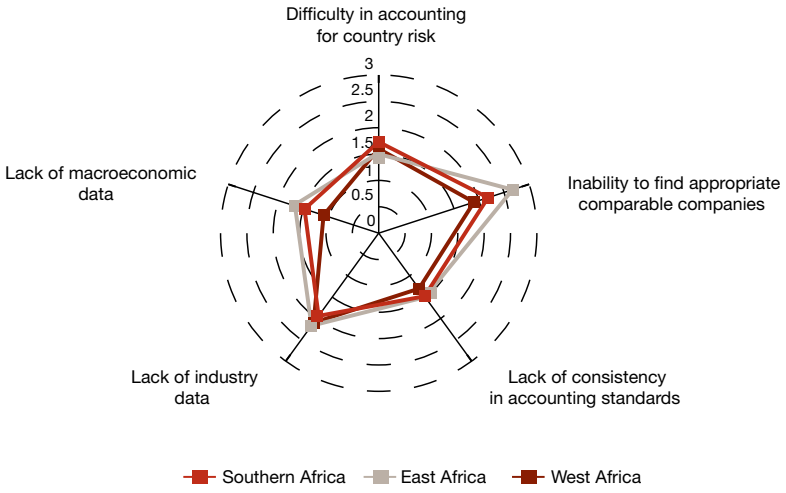
Emerging markets each have their own unique challenges. We encourage clients entering new emerging markets to spend some time researching the prospective markets thoroughly, even more than they would a new developed market.

There are numerous challenges to performing valuations in emerging markets including, for example, accounting for country risk, lack of data and inconsistent accounting standards. The question below summarises respondents' perceptions around the challenges of performing valuations in Africa.

Q: When performing valuations in Africa, which of the following challenges do you generally encounter?

- Difficulty in accounting for country risk
- Inability to find appropriate comparable companies
- Lack of consistency in accounting standards
- Lack of industry data
- Lack of macroeconomic data

Figure 2.5: Common challenges to performing valuations



The lack of data, both about comparable companies that could provide valuation benchmarks in a valuation analysis, as well as industry data (for example around market demand, the competitive environment and growth expectations) that could support cash flow forecasts, are the most common difficulties encountered.

Lack of market information

As indicated above, the main issues around emerging market valuations are the lack of industry data and the inability to find comparable companies. This is as a result of a lack of active markets. The lack of active markets can be divided into two components:

- A general lack of an active market; and
- A limitation in the breadth of active secondary markets in emerging economies.

In some emerging markets active secondary markets and exchanges are not present, or those that are present are so limited that the valuer is unable to gain much use from the information these markets provide.

In addition, in some emerging economies active markets are present, but the breadth of the markets is limited. As a result, the valuer may not be able to find suitable comparable companies on markets to use in his or her analysis.

The implications of a lack of active secondary markets are as follows:

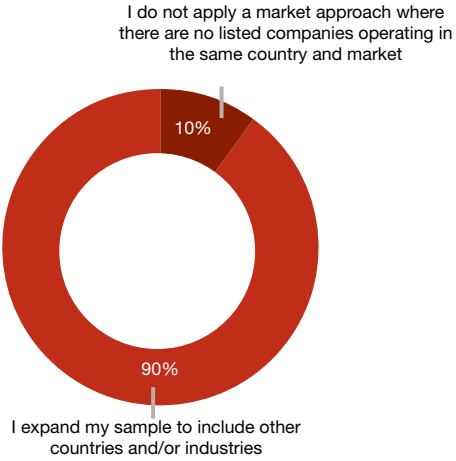
- The majority of subject companies analysed would be private companies. As a result, issues around marketability discounts tend to feature prominently; and
- The lack of listed comparable companies makes the application of a multiple-based approach more difficult and subjective. The lack of an in-country active market or the lack of breadth in the market makes it difficult to infer a valuation multiple from comparable companies as it is unlikely that the valuer will be able to find truly comparable listed entities. In addition, the alternative approach using comparable transactions is also limited by the lack of public disclosure on transactions.

Following from the lack of comparable companies within the same country and industry, the relevant results from the survey are shown below.

Q: In emerging markets, it is often not possible to identify comparable companies that operate in both the same country and same industry as the subject company. When you cannot identify a listed comparable company operating in the same country and industry, which of the following best summarises your approach:

- I do not apply a market approach where there are no listed companies operating in the same country and industry.
- I expand my sample to include other countries and/or industries.

Figure 2.6: Action taken when there are no comparable companies in the same industry and country



When there are not sufficient comparable companies in the same industry and country, 90% of respondents would still pursue a market approach, but would expand their sample to include other countries and/or other industries. When expanding into other countries, further subjectivity is added to the valuation as country risk adjustments are often required for valuations using multiples derived from, for example, developed markets abroad.

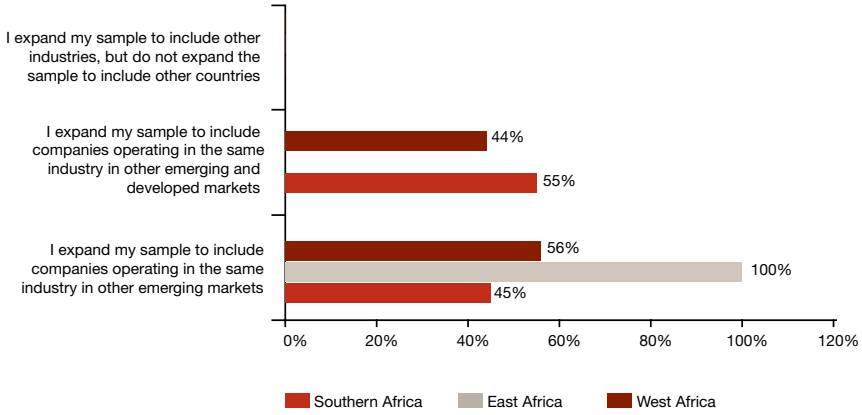
In the event that the valuer no longer utilises a market approach, the income approach or discounted cash flow analysis becomes the primary valuation method in emerging markets. However, these approaches bring their own challenges.

In the survey, we asked the 90% of respondents that indicated that they would expand their sample how they would do so.

Q: When performing a market approach (market multiple) analysis, on what basis do you expand your sample of comparable companies:

- I expand my sample to include other industries, but do not expand the sample to include other countries.
- I expand my sample to include companies operating in the same industry in other emerging markets.
- I expand my sample to include companies operating in the same industry in other emerging and developed markets.

Figure 2.7: Basis on which sample of comparable companies is expanded



None of the respondents indicated that they would include other industries in the same country, but not other countries. All said they would expand their sample to include companies in different countries in the same industry.

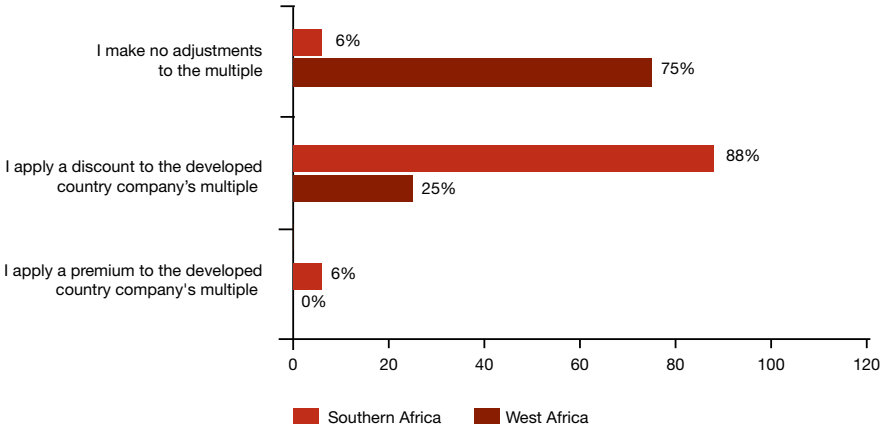
East African respondents consistently include only companies in other emerging markets, while those in Southern and West Africa would consider including companies from both emerging and developed markets.

The uniqueness of each individual African country provides valuation practitioners with a further challenge in the form of diverse country risk profiles that need to be addressed. We therefore asked our respondent whether they consider country risk adjustments to developed country multiples.

Q: When valuing a business in Africa, and you select comparable companies that operate in developed markets, what adjustments, if any, do you typically make to the developed country company's multiple:

- I make no adjustments to the multiple
- I apply a discount to the developed country company's multiple
- I apply a premium to the developed country company's multiple

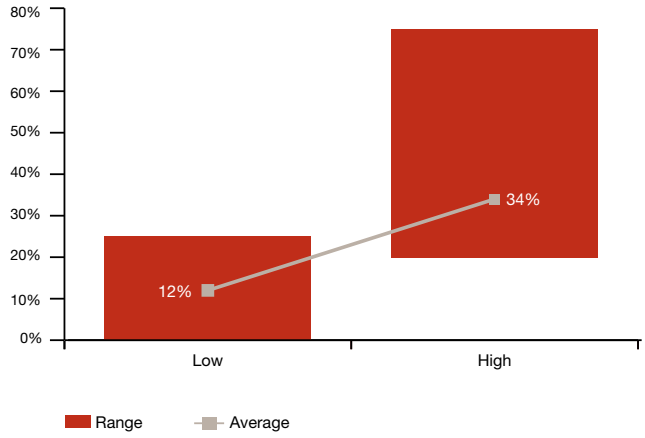
Figure 2.8: Adjustments made when selecting comparable companies that operate in developed markets



The different African regions apply different methodologies when adjusting companies' multiples. West African participants make no adjustments to multiples, while Southern Africa participants prefer to apply a discount to the developed country company's multiple.

Q: What is the range of discount/premium applied to the developed country company's multiple?

Figure 2.9: Range of discounts applied to the developed country company's multiple



Range of discount applied

	2012 average	2nd quartile	3rd quartile
Low	12%	10%	16%
High	34%	30%	36%

The ranges give some indication as to what discounts are applied. However, facts and circumstances of each individual company, the industry and the relative size of the company must be taken into consideration.

The discount ranges from 0-75% with the average low range being 12% and the average high range being 34%. An important observation can be made on the results: valuation practitioners are considering a wider range in their analyses.

In order to eliminate any outliers in the first and fourth quartile, we calculated the second and third quartiles. The lower end of the discount falls between 10% and 16%, and the upper end between 30% and 36%.

Difficulties in determining cash flow forecasts for use in a discounted cash flow analysis

In compiling cash flow forecasts for a discounted cash flow analysis, emerging market practitioners may be limited by the following:

- Limited macroeconomic research and statistics to use as a base for forecasts; and
- Limited industry and market data against which to benchmark management expectations.

Over recent years macroeconomic research in emerging markets has improved significantly and data are now available for many emerging markets. Industry data continue to be limited, but emerging markets are enjoying more focus, and research is likely to improve over the medium term.

Challenges in applying the capital asset pricing model

The application of the capital asset pricing model (CAPM) in emerging markets offers some unique challenges:

- The number of emerging markets in which sufficient government bond data are available to use as a risk-free rate in the application of the CAPM is limited.
- Limited research is available on equity market risk premiums in individual countries, especially in smaller emerging markets.
- When valuing private companies, betas used in the CAPM are calculated by reference to similar listed companies. As a result, beta analysis in emerging markets is subject to the same constraints around lack of active markets and comparable companies as highlighted in the discussion of the market approach above.

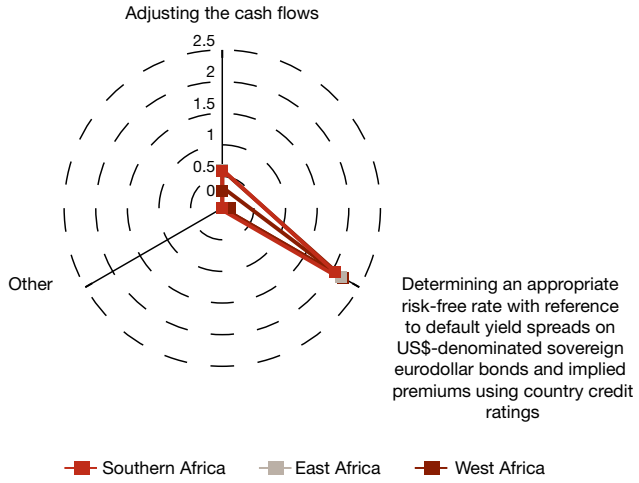
Valuation practitioners typically address these issues through the application of a country risk-based CAPM model. The model takes the view of an investor from a developed market and uses market data from developed markets as a starting point. A country risk premium is used to determine an appropriate risk free rate to be used in the cost of equity calculation.

An important question is whether we should add a country risk premium to the equity market risk premium, and thereby use a higher equity risk premium in some markets than in others. Although it may be instinct to require a higher risk premium in emerging markets than in developed markets, there are some arguments that favour a global equity risk premium.

We asked our respondents to indicate how they approach country risk when performing their valuation analyses.

Q: How do you generally adjust for country risk when valuing an asset in a country where no reliable long-bond yield (i.e. risk-free rate) can be observed?

Figure 2.10: Methods used to adjust for country risk



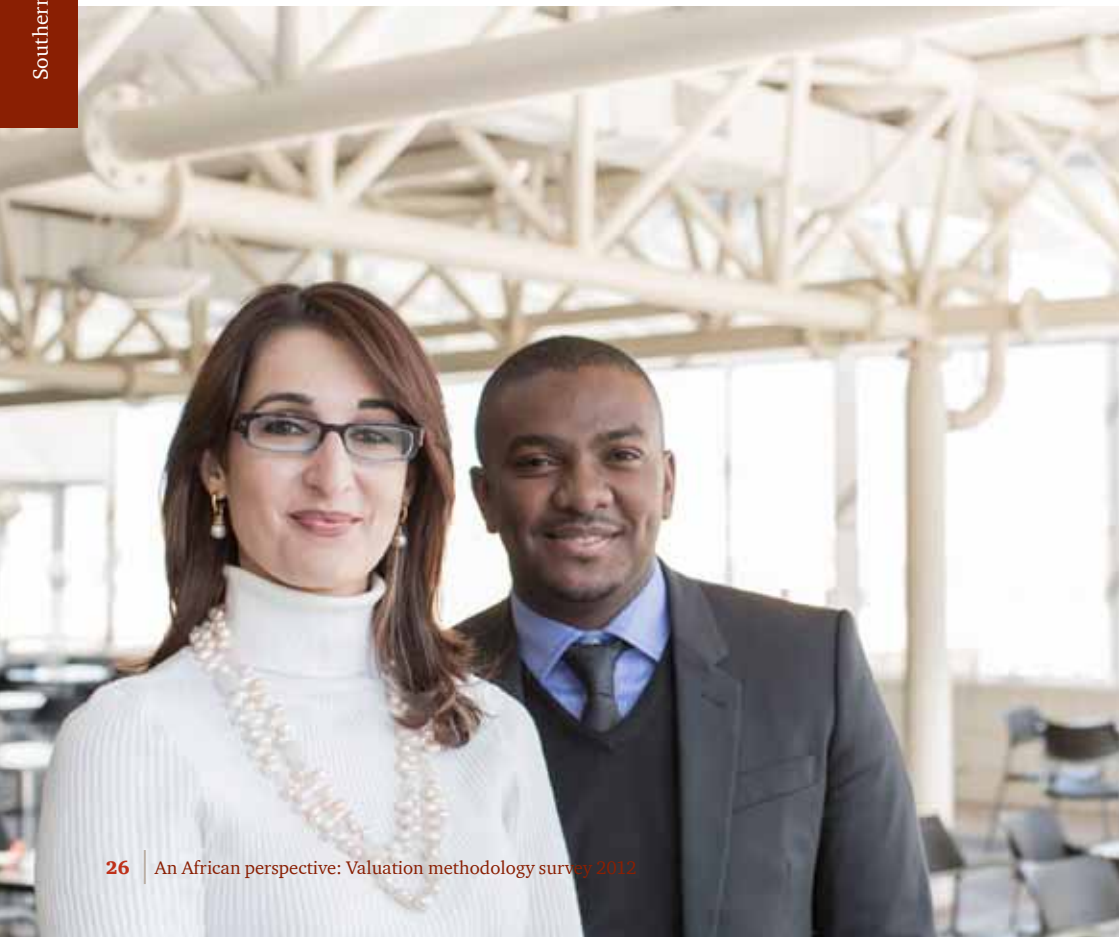
Country risk premiums are typically calculated with statistical models using either:

- The default yield spread between euro or US-dollar-denominated bonds for emerging markets and developed market bonds; or
- The use of inferred yield curves and spreads between emerging and developed markets using credit ratings assigned by rating agencies to specific emerging markets.

The survey results confirm that country risk differentials are recognised mainly through determining an appropriate risk free rate through an analysis of yield spreads on US-dollar-denominated sovereign Eurodollar bonds and/or by determining implied premiums using country credit ratings.

This section has highlighted some of the reasons for the heightened investor interest in companies operating in the African continent, the nature of the valuations being performed, as well as some of the challenges analysts face when performing valuations in emerging markets. The sections that follow contain further questions around the technical valuation issues facing valuation practitioners in the various markets across Africa.

Section 3: Southern Africa



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Valuation approaches

There are a number of methodologies used to value businesses. We have previously found that the approaches most commonly used in Southern Africa are:

- **The income approach**
  This approach determines the market value of the ordinary shares of a company based on the value of the cash flows that the company can be expected to generate in the future. This includes traditional discounted cash flow techniques and also real option valuations, which use option pricing models to measure the value of assets that share option characteristics.
- **The market approach**
  This gauges the market value of the ordinary shares of a company based on a comparison of the company to comparable publicly-traded companies and transactions in its industry, as well as to prior transactions in the ordinary shares of the company using an appropriate valuation multiple.
- **The net assets approach**
  This evaluates the market value of the ordinary shares of a company by adjusting the asset and liability balances on the company's balance sheet to its market value equivalents. The approach is based on the summation of the individual piecemeal market values of the underlying assets less the market value of the liabilities.

There continue to be conflicting views about which approach is best. In private equity and venture capital circles, there is a strong preference for market multiple based valuations. The International Private Equity and Venture Capital Valuation Board Guidelines state:

> *In assessing whether a methodology is appropriate, the valuer should be biased towards those methodologies that draw heavily on market-based measures of risk and return. Fair Value estimates based entirely on observable market data should be of greater reliability than those based on assumptions.*[5]

A similar view is upheld in accounting standards, where greater reliance is placed on market-based measures of value.

The alternate view is that market volatility and lack of directly comparable companies, particularly in emerging markets such as ours, places increased focus on discounted cash flow methodologies. According to this school of thought, short-term fluctuations in the market affect multiples and consequently valuations, as these markets are strongly affected by investor sentiment.

[5] *International Private Equity and Venture Capital Valuation Guidelines*, 2010 edition

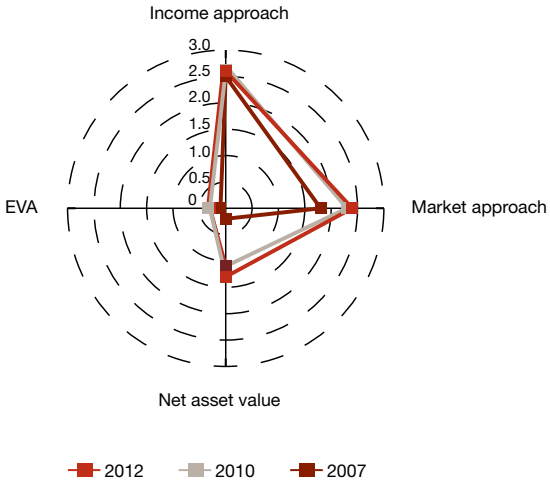
The lack of directly comparable companies of a similar size and growth profile also limits the reliability of observed multiples. The discounted cash flow approach offers an opportunity to capture longer-term value and reflects the company-specific risks and growth profiles more completely.

The aim of this section is to highlight the most popular valuation approaches being used in business enterprise valuations in Southern Africa. We were particularly interested in determining whether any changes have taken place in the choice of approaches followed by market participants since our previous survey in 2010.

Q: Which of the following valuation approaches are most often used to value a going concern?

- Economic value added (EVA)
- Income approach (discounted cash flow)
- Market approach (e.g. price/earnings ratio)
- Net asset approach

Figure 3.1 Valuation approaches



The primary valuation approaches remain the income approach (discounted cash flow) and market approach (based on market multiples). The general indication from respondents is that the income approach remains the primary valuation methodology, while the market approach also remains an important methodology, since no respondents indicated that they never use this approach.

In the Southern African market, where there are relatively few listed companies that can be used as a reliable source for market multiples, it is perhaps not surprising that the Income Approach continues to remain the most favoured methodology. However, the increased usage of alternative approaches supports the view that discounted cash flows should rarely be used in isolation.

Income approach

Cost of capital

From a company's perspective, the weighted average cost of capital (WACC) represents the economic return (or yield) that an investor would have to give up by investing in the subject investment instead of all available alternative investments that are comparable in terms of risk and other investment characteristics.[6]

The WACC is calculated by weighting the required returns on interest-bearing debt, preference share capital and ordinary equity capital in proportion to their estimated percentages in an expected industry capital structure, target or other structure as appropriate.

WACC formula

The general formula for calculating the WACC (assuming only debt and equity capital) is:

WACC = kd x (d%) + ke x (e%)

Where:

WACC = Weighted average rate of return on invested capital

kd = After-tax rate of return on debt capital

d% = Debt capital as a percentage of the sum of the debt and ordinary equity capital (total invested capital)

ke = Rate of return on ordinary equity capital

e% = Ordinary equity capital as a percentage of the total invested capital

There are three related steps involved in developing the WACC:

- Estimating the opportunity cost of equity financing;
- Estimating the opportunity cost of non-equity financing; and
- Developing market value weights for the capital structure.

Estimating the cost of equity is the most subjective and difficult measure to quantify in the WACC formula, which is why we have dedicated a substantial part of this survey to this issue.

[6] Pratt, S and Niculita, A. *Valuing a Business.* McGraw-Hill, 2008.

There are two broad approaches to estimating the cost of equity:

- Deductive models
  Deductive models, such as dividend growth models, rely on market data to determine an imputed cost of equity. The dividend growth model is one such approach, which requires market data that include the current share price, expected dividends and the long-term steady dividend growth rate.
- Risk-return models
  The capital asset pricing model (CAPM) is probably the most widely used of the risk-return models. The CAPM measures risk in terms of the non-diversifiable variance (systematic risk) and relates expected returns to this risk measure. The CAPM derives the cost of equity by adding to the risk-free rate an additional premium for risk. This risk premium is a product of the investment's beta (a measure of relative systematic risk of the particular equity investment) and a market risk premium, being the reward required by investors for investing in an equity investment of average risk. The CAPM is therefore a linear combination of the risk-free rate, the equity risk premium and the company's beta. Its simplicity is attractive and largely explains the popularity of the CAPM.

CAPM formula

$E(Re) = Rf + \beta \times E(Rp)$

Where:

$E(Re)$ = Expected rate of return on equity capital

Rf = Risk-free rate of return

β = Beta or systematic risk

$E(Rp)$ = Expected market risk premium: expected return for a broad portfolio of shares less the risk-free rate of return

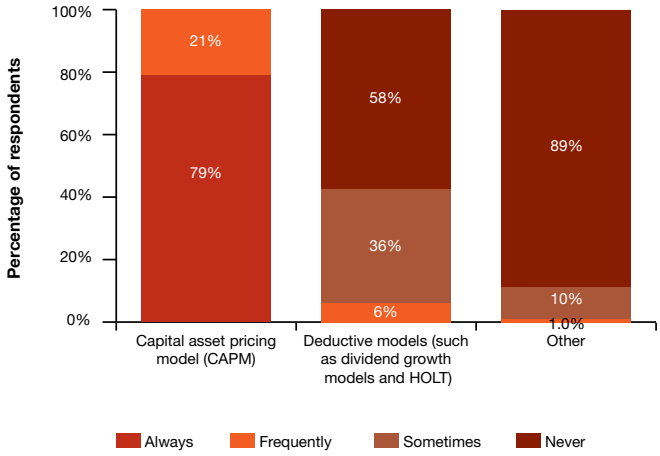
While the CAPM is popular, it is not perfect. A key criticism raised against the CAPM is its inability to account for several equity returns, such as the small firm effect (whereby smaller companies exhibit higher returns) and the value effect (whereby companies with low ratios of book-to-market value have higher expected returns). One response to this empirical questioning is to move away from the traditional CAPM's linear, stationary, and single-factor features.

Given the competing views between deductive models and risk-return models, we included a question in our survey to determine what methodologies are being used by market practitioners.

Q: In calculating an appropriate rate of return to apply to the future cash flows, which of the following methods are being used?

- Arbitrage pricing theory (APT)
- Capital asset pricing model (CAPM)
- Deductive models (such as dividend growth models and HOLT)
- Fama-French three factor model
- Intertemporal capital asset pricing model (ICAPM)
- Other

Figure 3.2: Methods used to calculate the cost of equity



The 2012 survey again confirms the CAPM as the primary methodology used to estimate the cost of equity, with all respondents stating that they either always or frequently use it.

The survey also confirms the preference for risk-return models over deductive approaches to estimating the cost of equity. Survey responses relating to the assumptions made in the application of the CAPM are included in the next section of the survey.

Risk-free rate

Ordinarily, valuation practitioners estimate the cost of equity by assessing its component parts using the CAPM. However, we have found that in the current environment, the risk-free rate and the equity market risk premium are proving volatile.

Historically, many valuation practitioners have taken the view that the current yield on long-dated nominal government bonds for the risk-free rate, combined with an evaluation of a range of historical, market and forward-looking evidence for the market risk premium, results in an overall cost of equity that is appropriate in the context of the risks facing an equity investor.

Since the Eurozone sovereign debt crisis, nominal bond yields in the UK, US and Germany have fallen to record lows, a result of large-scale asset repurchase programmes and the 'flight to quality'. A rise in volatility has therefore led to a mismatch in the short and long-term evidence sources used in CAPM calculations.

As a result, sources for the risk-free rate and evidence for the market risk premium used would, in our view, be critical components of this year's survey.

In South Africa, various government bonds are available as a proxy for the risk-free rate.

South African Government bonds

	Maturity	Time to maturity (years as at 1.01.2012)	Coupon rate (%)	Average Yield (%)	Median 2012 daily volume	Highest 2012 daily volume	Lowest 2012 daily volume
R206	15/01/2014	2.04	7.50	4.95	3 047	18 478	243
R201	21/12/2014	2.97	8.75	4.81	1 538	13 246	10
R157	15/09/2015	3.71	13.50	5.38	22 976	60 989	7729
R203	15/09/2017	5.71	8.25	5.85	3 984	26 620	1175
R204	21/12/2018	6.98	8.00	6.15	2 974	22 802	318
R207	15/01/2020	8.04	7.25	6.43	4 338	33 424	876
R208	31/03/2021	9.25	6.75	6.61	3 705	28 165	589
R186	21/12/2026	14.98	10.50	7.31	9 561	32 492	3286
R213	28/02/2031	19.17	7.00	7.81	2 153	8 925	516
R209	31/03/2036	24.26	6.25	8.03	4 539	35 419	384
R214	28/02/2041	29.18	6.50	8.05	2 250	14 853	265

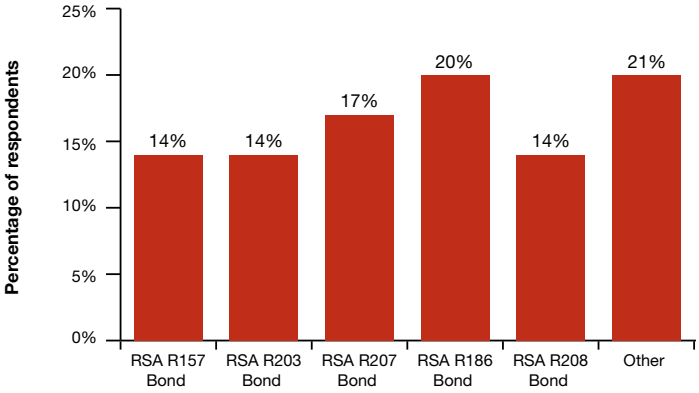
Source: *Bloomberg and Inet Bridge: September 2012*

The R157 remains the most liquid and well traded bond with the R186 in second place. It is interesting to note a general improvement in the liquidity of the market with daily volumes well above levels noted in the 2010 survey. Yields in the current survey have also declined and the gap between shorter and longer-dated bonds has increased.

Q: Which of the following are used as a benchmark for the risk-free rate?

- R206 Bond (maturity date: 15/01/2014)
- R201 Bond (maturity date: 21/12/2014)
- R157 Bond (maturity date: 15/09/2015)
- R203 Bond (maturity date: 15/09/2017)
- R204 Bond (maturity date: 21/12/2018)
- R207 Bond (maturity date: 15/01/2020)
- R208 Bond (maturity date: 31/03/2021)
- R186 Bond (maturity date: 11/12/2026)

Figure 3.3: Proxies used for the risk-free rate



Interestingly, the R186 has increased significantly in popularity, and now appears to be the benchmark choice among market practitioners. Other practitioners use zero-coupon curves based on the yields of RSA bonds and future rates and generally use the 10-year point on that curve.

The yields of South African Government bonds, which are less influenced by the impact of large-scale asset repurchases and the 'flight to quality' effect observed in Germany, the United Kingdom and the United States, continue to be used by market practitioners as a proxy for the risk-free rate.

The risk-free rates in other markets are greatly influenced by short-term factors such as asset repurchases and the flight to quality. PwC has found that in certain markets, adjustments to the risk-free rate are necessary to compensate for the inconsistency of using a short-term measure of the risk-free rate and a long-term estimate of a market risk premium.

Beta

Beta typically measures the sensitivity of a share price to fluctuations in the market as a whole.

Beta formula

Beta is calculated by regressing individual share returns against the returns of the market index. The formula for beta is as follows:

$$\beta = \frac{cov(R_i, R_m)}{\sigma^2(R_m)} = \frac{\rho(R_i, R_m)\sigma(R_i)}{\sigma(R_m)}$$

Where:

$cov(R_i,R_m)$ = Covariance between security i and the market index

$\sigma^2(R_m)$ = Variance of the market index

$\rho(R_i,R_m)$ = Correlation coefficient between security i and the market index

$\sigma(R_i)$ = Standard deviation of returns of security i

$\sigma(R_m)$ = Standard deviation of market returns

Analysts often do not use raw data (e.g. share prices and share returns) to estimate beta based on their programmed regression algorithms. They rather use professional information systems and databases as sources for betas.

Service providers often make adjustments in calculating betas, for example:

- Bayesian adjustments are used to compensate for estimation error; and
- Illiquidity adjustments in respect of thinly traded shares.

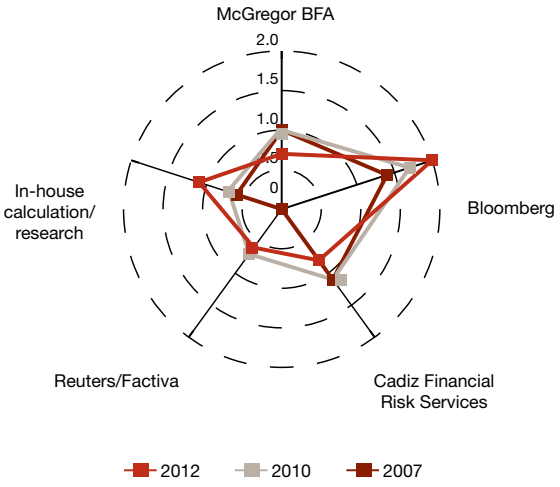
In addition, the frequency of returns (daily, weekly, monthly or quarterly) is one of the major practical issues when estimating beta. The CAPM is based on maximising expected utility and the security returns have to be normally distributed and the distribution must be fully described by standard deviation and the expected return.

Different service providers often use different frequencies, which may or may not be in line with the specific best practice guidelines being followed by financial analysts and corporate financiers.

Q: Which of the following service providers are used as a source of information for the beta?

- Bloomberg
- Cadiz Financial Risk Service
- In-house calculation/research
- McGregor BFA
- MSCI Barra
- Reuters

Figure 3.4: Service providers used to source betas



The survey highlighted a wide variety of sources that are currently used in the determination of betas in the Southern African market. Bloomberg has continued to gain popularity and is still the most popular source for beta estimates. There has also been a shift towards in-house beta calculations.

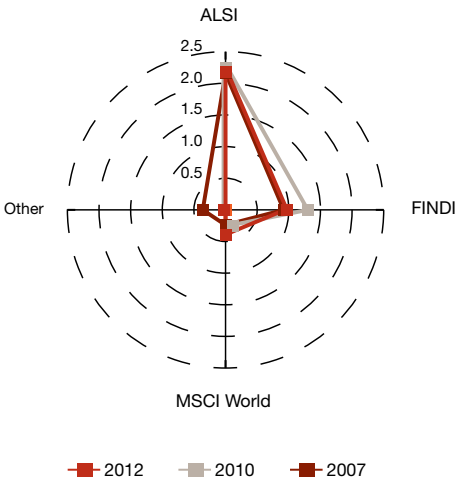
Another key issue relating to the beta calculation is the choice of market index. In practice, there is no index that accurately measures the total return of the market portfolio.

With weekly or monthly return data not being available for all asset classes, market practitioners use equity indices as a proxy for the market. Complicating matters further is the fact that the various indices used by market practitioners may include bias towards certain companies or sectors. We therefore considered it important to gauge how market practitioners are responding to the various practical issues around the selection of a market proxy.

Q: What would you consider to be an appropriate market index to use as a market proxy for a beta calculation in the Southern African market?

- ALSI
- FINDI
- MSCI World

Figure 3.5: Market proxies used for beta calculations in the Southern African market



The most popular index remains the ALSI, with most respondents using the ALSI either frequently or always.

Equity market risk premium

The market risk premium is the single most debated input in a cost of capital calculation. The three broad approaches to estimating a market risk premium include the historic equity bond spread, the survey approach and an implied forward approach.

Historical

The historical approach is the most widely used approach to estimating equity risk premiums. It is based on the assumption that in a well functioning market, arbitrage will ensure that required and achieved returns should be equivalent.

The actual returns earned on stocks over a long time are estimated and compared to the actual returns earned on a default-free (usually government) security. The difference, on an annual basis, between the two returns is computed and represents the historical risk premium.

There are several issues related to the use of this approach in estimating risk premiums. The suitability of the approach depends on whether investor expectations are influenced by the historical performance of the market and whether market conditions and expectations change over time. In some markets the availability of data may be limited or unreliable. This is an issue particularly for emerging markets.

The approach also makes large divergences in risk premiums possible with the use of the same data. There are three main reasons for the divergence in results:

- **Time period**
  The time period on which the data is based will affect the result. Shorter and more recent periods are assumed to provide a more updated estimate. However, the cost associated with using shorter time periods is greater noise in the risk premium estimate.

- **Risk-free security and market index**
  The choice of the risk-free security and the market index will influence the estimate. As already mentioned, the risk-free rate chosen in computing the premium has to be consistent with the risk-free rate used to compute expected returns. In theory, one would want to use the broadest index of stocks, where the index is market-weighted and free of survivorship bias.

- **Averaging approach**
  Averages can be based on arithmetic or geometric averages. The arithmetic average return measures the simple mean of a series of annual returns, whereas the geometric average looks at the compounded return. If annual returns are uncorrelated over time, and our objective was to estimate the risk premium for the next year, the arithmetic average is the best and most unbiased estimate of the premium. However, as there is an indication that returns on stocks are negatively correlated over time, the arithmetic average return is likely to overstate the premium. Also, as the time period increases, the argument for geometric returns increases.

Survey approach

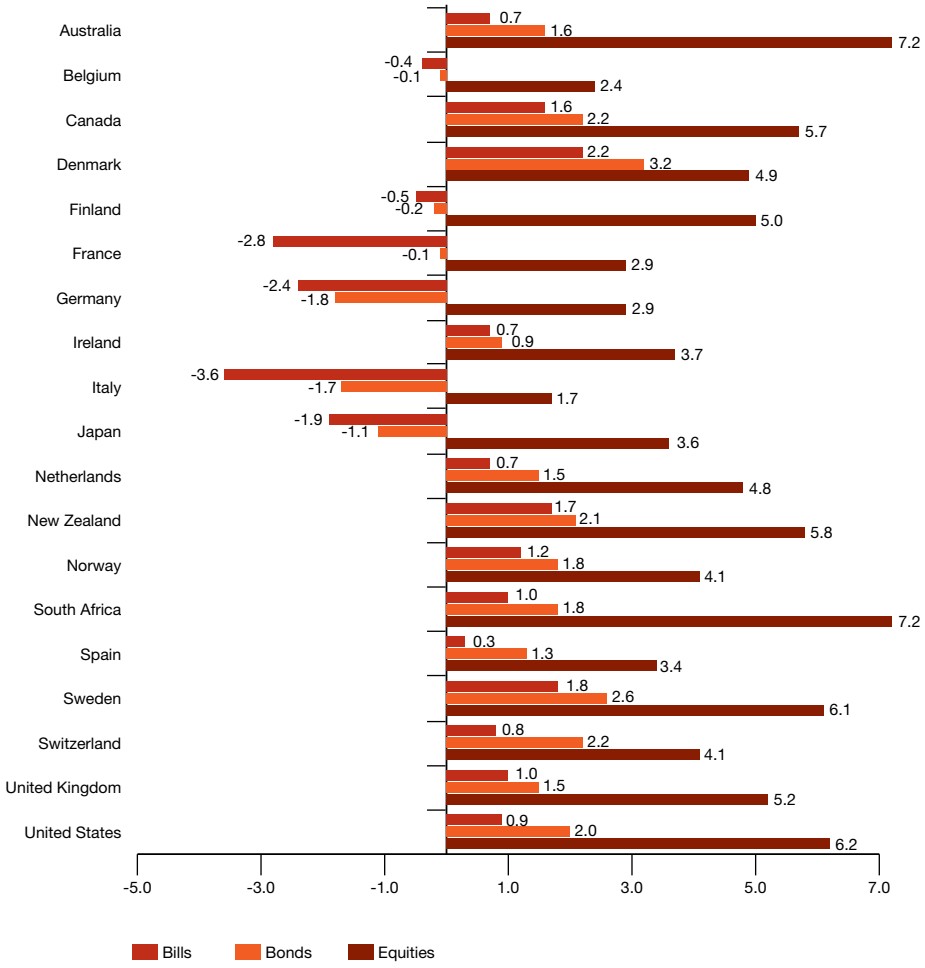
The survey methodology is based on the opinions of market participants. There are several issues with this approach. As with most forecasts, survey risk premiums are responsive to recent stock prices movements. It is therefore possible that survey premiums will be a reflection of the recent past rather than a good forecast of the future. Survey results may also be influenced by the subjective manner in which questions regarding the market risk premiums are posed to respondents.

Forward looking estimate

A forward-looking estimate of the premium is estimated using either current equity prices or risk premiums in non-equity markets. The discounted cash flow approach uses pricing of assets to infer required return or use actual or potential dividends on an index to calculate required return. This approach will not generate a correct estimate if companies do not pay out what they can afford to in dividends or if earnings are expected to grow at extraordinary rates in the short term.

The graph that follows illustrates observed real returns on equities and bonds internationally over the period 1900-2012.

Figure 3.6: Real returns on equities and bonds 1900-2012



Source: *Dimson, E Marsh, P and Staunton, M Credit Suisse Global Investment Returns Sourcebook 2012*

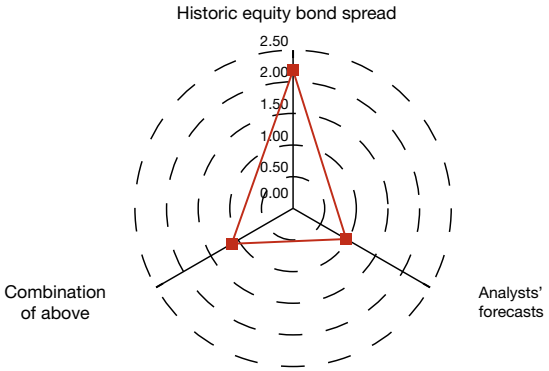
Real returns on equities and bonds 1900-2012

	Equities	Bonds	Bills
Australia	7.2	1.6	0.7
Belgium	2.4	-0.1	-0.4
Canada	5.7	2.2	1.6
Denmark	4.9	3.2	2.2
Finland	5.0	-0.2	-0.5
France	2.9	-0.1	-2.8
Germany	2.9	-1.8	-2.4
Ireland	3.7	0.9	0.7
Italy	1.7	-1.7	-3.6
Japan	3.6	-1.1	-1.9
Netherlands	4.8	1.5	0.7
New Zealand	5.8	2.1	1.7
Norway	4.1	1.8	1.2
South Africa	7.2	1.8	1.0
Spain	3.4	1.3	0.3
Sweden	6.1	2.6	1.8
Switzerland	4.1	2.2	0.8
United Kingdom	5.2	1.5	1.0
United States	6.2	2.0	0.9

Q: Which of the following would you consider to be the rationale behind the estimation of the market risk premium?

- Historic equity bond spread
- Analysts' forecasts
- Combination of the above

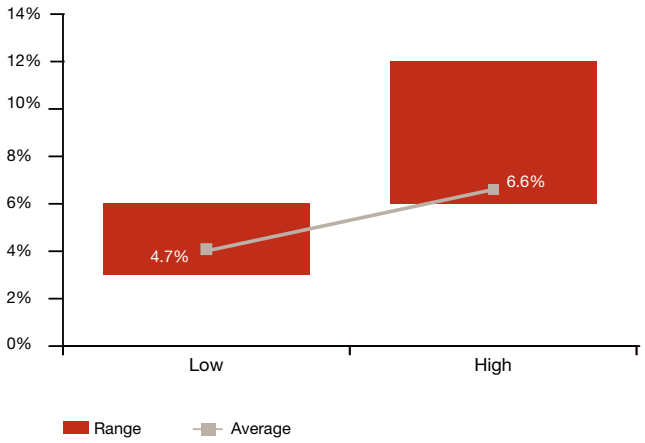
Figure 3.7: Approaches used to estimate the market risk premium



The survey results indicate that most respondents continue to consider historical equity bond spreads in determining equity risk premiums. A large proportion also considers a combination of analyst forecasts and historical spreads.

Q: What range of market risk premiums do you use when making use of the capital asset pricing model? (Please ignore discounts, premiums and the size effect as specific questions are asked in this regard)

Figure 3.8: Range of market risk premiums used in the CAPM



Average market risk premium

	Low	High
2012 average	4.7%	6.6%
2nd quartile	5.0%	6.0%
3rd quartile	5.0%	7.0%

The market risk premium ranges from 3% to 12% with the average low range being 4.7% and the average high range being 6.6%.

Two observations can be made about these results:

- Valuation practitioners are considering a wider range in their analyses; and
- The average at the lower end of the range has fallen from 5.6% to 4.7%, while the average at the upper end has increased from 6.0% in the previous survey to 6.6%.

These results indicate that valuation practitioners are starting to consider a wider range of market risk premiums, possibly a result of market volatility reducing confidence in the market risk premium estimate.

Lastly, we considered the range falling between the second and third quartiles. The lower end of the market risk premium is 5.0%, while the upper end is between 6% and 7%.

Small stock premiums

In computing an equity risk premium to apply to all investments in the capital asset pricing model, we are assuming that betas carry the weight of measuring the risk in individual firms or assets, with riskier investments having higher betas than safer investments. A number of studies such as the *Ibbotson SBBI 2012 Valuation Yearbook* have shown that investments in small companies have experienced higher returns than those predicted by the standard CAPM approach.

In theory, the CAPM would suggest a higher required return for small companies through a higher beta for such companies. The higher betas for small companies can be caused by higher operational and financial leverage, limited access to funding and other factors that makes them more vulnerable to general market fluctuations.

However, the higher betas do not seem to fully explain the higher returns historically achieved by smaller companies. Some have interpreted this as an indication that there are other risks associated with small companies that the CAPM does not address. To adjust for this finding, many practitioners add an additional premium to the cost of equity of companies with smaller market capitalisations.

Survivorship bias is one possible explanation for the observed high returns on small companies. The cash flows associated with small companies are subject to relatively high degrees of risks (both systematic and diversifiable), and their size may make them vulnerable to bankruptcy. In the event of an adverse performance, it is clear that there will be a large number of small companies that fail.

Historical measurements of small-company profitability will therefore be biased upwards as they will include only those companies that continue to operate. The observed higher returns simply demonstrate that such companies are subject to a great deal of diversifiable risk, which means that an analysis of surviving companies will inevitably show that they make high returns (to offset the negative returns on those companies that fail). A series of studies has also argued that market capitalisation, by itself, is not the reason for excess returns but that it is a proxy for other ignored risks such as illiquidity and poor information.

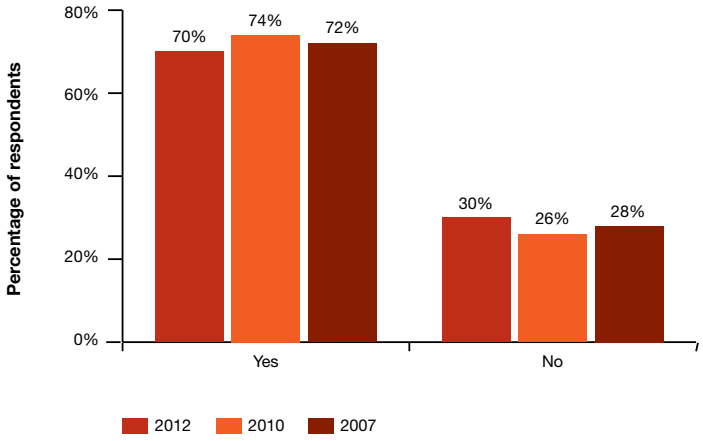
If the notion of the small stock premium (SSP) is accepted, there are two ways in which we can respond to the empirical evidence that small market cap stocks seem to earn higher returns than predicted by the traditional capital asset pricing model. One is to view this as a market inefficiency that can be exploited for profit; the other is to take the excess returns as evidence that betas are inadequate measures of risk and view the additional returns as compensation for the missed risk.

Given that there are two views on the appropriateness of the small stock premium, with various studies both supporting and refuting the notion of the small capitalisation premium, we asked respondents whether they apply small stock premiums in the course of their valuation analyses.

Q: Do you adjust the CAPM rate of return by a premium that reflects the extra risk of an investment in a small company?

- Yes
- No

Figure 3.9: Use of small stock premium

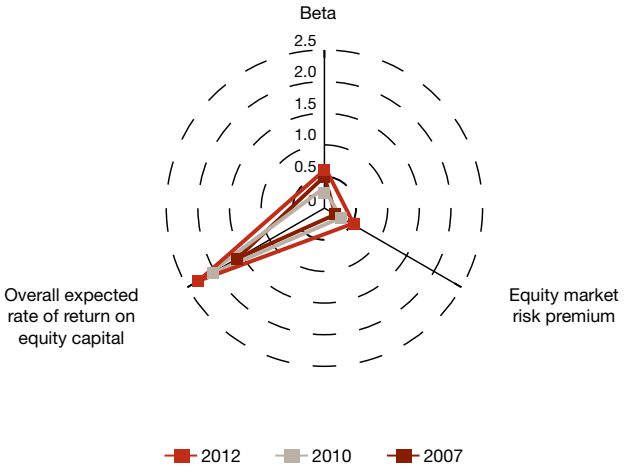


The number of respondents considering a small stock premium has remained relatively stable over the years, with a majority favouring the application of a small stock premium.

Q: What factor do you adjust when adjusting for small stock premiums?

- Beta
- Equity market risk premium
- Overall expected rate of return on equity capital

Figure 3.10: Adjustments made for company size



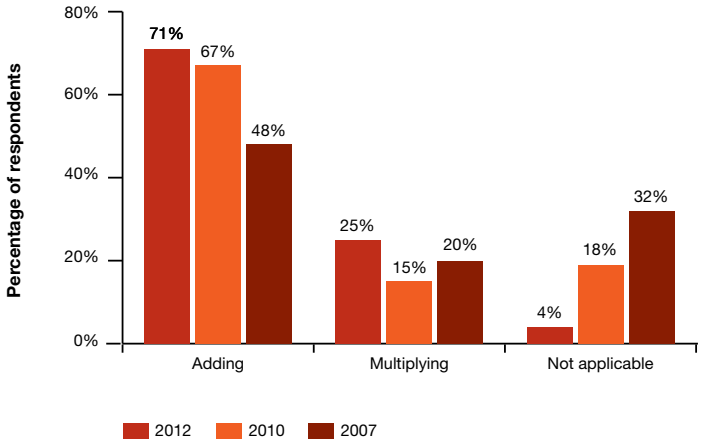
Most respondents indicated that they prefer to adjust the expected rate of return on equity capital to account for an additional risk in a small company.

As the next step in the survey, we wanted to determine the methodology used to effect the adjustment for company size.

Q: Do you adjust by multiplying a factor (i.e. CAPM x (1+SSP)) or adding a factor (i.e. CAPM + SSP)

- Multiplying
- Adding
- Not applicable

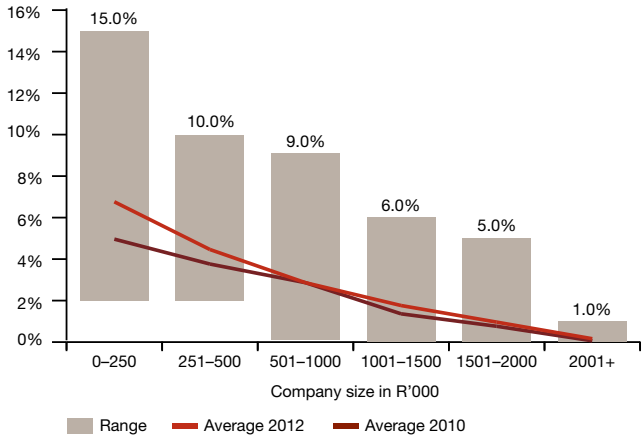
Figure 3.11: Small stock premium inclusion method



The survey results show that most respondents incorporate the small stock premium by adding a factor to the return on equity rather than multiplying.

Q: What is the benchmark small stock premium applied, given the expected size of the company or entity?

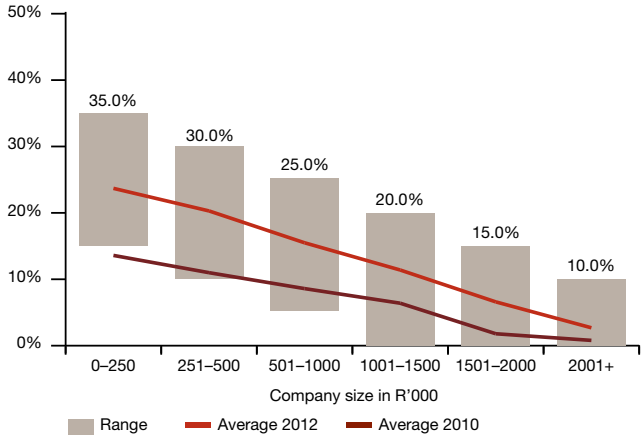
Figure 3.12: Small stock premium – adding



Average small stock premium – adding

Company size in R'000s	0–250	251–500	501–1000	1001–1500	1501–2000	2001+
2012	6.7%	4.4%	2.8%	1.7%	0.9%	0.1%
2010	4.9%	3.7%	2.8%	1.3%	0.7%	0.1%
2007	5.2%	4.0%	2.7%	1.7%	1.3%	0.4%

Figure 3.13: Small stock premium – multiplying



Average small stock premium – multiplying

Company size in R'000s	0–250	251–500	501–1000	1001–1500	1501–2000	2001+
2012	23.5%	20.1%	15.3%	11.2%	6.4%	2.5%
2010	13.4%	10.8%	8.4%	6.2%	1.6%	0.6%
2007	24.2%	20.8%	15.8%	9.2%	8.3%	7.5%

The ranges give some indication as to what small stock premiums are applied. However, as many of the respondents point out, facts and circumstances of each individual company, the industry and the relative size of the company must be taken into consideration.

Specific risk premiums

A key attribute of the CAPM is that investors are rewarded only for systematic risk. Specific risks that are theoretically diversifiable are not included in the CAPM. Standard finance theory states that investors should be compensated only for non-diversifiable risks.

Therefore, if the CAPM is applied, this assumes that the WACC is the same for any investment, regardless of the firm that undertakes it. However, this does not consider the fact that companies do not have unlimited resources to diversify risk.

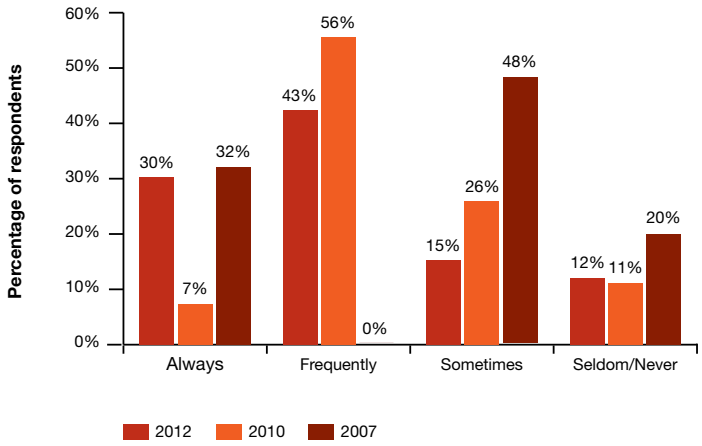
In project appraisal, hurdle rates are therefore frequently applied by managers to account for the specific risks of the project. These hurdle rates are generally higher than the company's WACC to reflect project-specific risks. In addition, investors appear to include risk premiums in their CAPM calculation for company-specific risk that cannot be adequately modelled.

Given that the application of a specific risk premium (SRP) is not consistent with the CAPM, we surveyed market practitioners about whether they apply specific risk premiums, and if so, in what instances. We also asked respondents what premiums are considered for projects at various stages of development.

Q: Do you adjust the CAPM rate of return by a premium that reflects unique risks to the extent that such risks could not be modelled in the forecast cash flows?

- Always
- Frequently
- Sometimes
- Never

Figure 3.14: Use of a specific risk premium

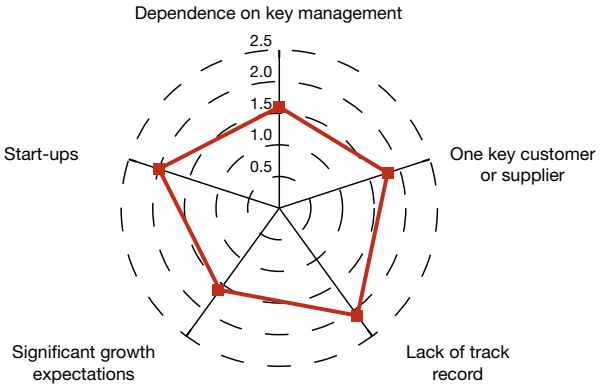


No less than 30% of respondents always adjust the CAPM by applying a specific risk premium, while 58% of respondents regularly or occasionally consider an adjustment to the CAPM for specific risks. This demonstrates that although the use of a specific risk premium is not supported by the CAPM and financial theory, specific risk premiums are widely used in practice.

Q: What are the typical conditions in which you would consider applying a specific risk premium?

- Dependence on key management
- One key customer or supplier
- Lack of track record
- Significant growth expectations
- Start-ups

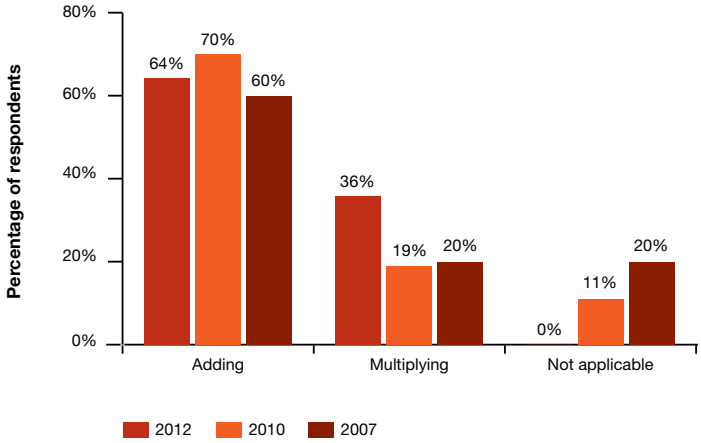
Figure 3.15: Specific risk factors



Respondents indicated that most of the factors listed would at some time be considered as motivation for the inclusion of a specific risk premium.

Q: Do you adjust by multiplying a factor (i.e. CAPM x (1+SRP)) or adding a factor (i.e. CAPM + SRP)?

Figure 3.16: Specific risk premium inclusion method

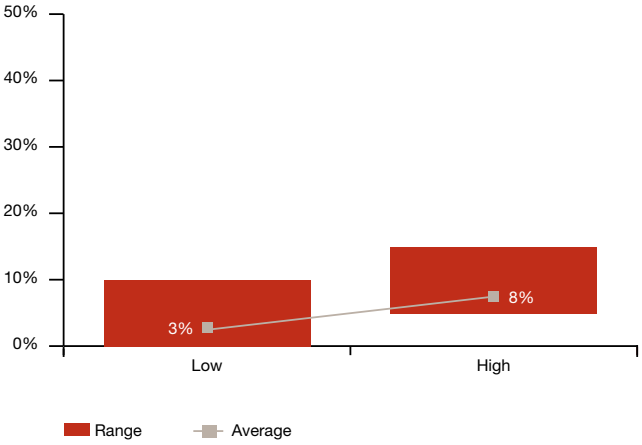


Most of the respondents adjust the overall expected return on equity capital by adding a premium.

This is consistent with the results of previous surveys.

Q: What range of specific risk premiums would you typically apply?

Figure 3.17: Specific risk premium applied – adding



Average specific risk premium – adding

	Low	High
Average 2012	3%	8%
Average 2010	2%	7%
Average 2007	2%	6%

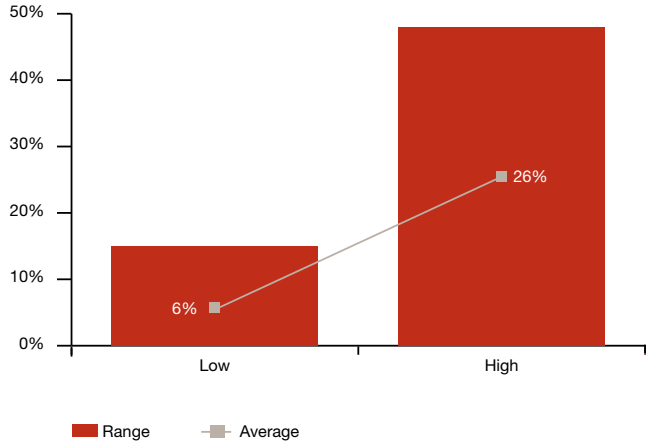
The above results indicate that valuation practitioners are starting to consider a wider range of specific risk premiums.

In order to eliminate any outliers in the first and fourth quartile, the second and third quartile have been calculated below. We considered the average range falling between the second and third quartiles. The lower end of the specific risk premium falls between 1% and 4%, and the upper end between 5% and 10%.

Second and third quartiles – adding

	Low	High
2012 2nd quartile	1%	5%
2012 3rd quartile	4%	10%

Figure 3.18: Specific risk premium applied – multiplying



Average specific risk premium – multiplying

	Low	High
Average 2012	6%	26%
Average 2010	8%	32%
Average 2007	6%	29%

Once again, outliers in the first and fourth quartiles are eliminated in the table below.

Second and third quartiles – multiplying

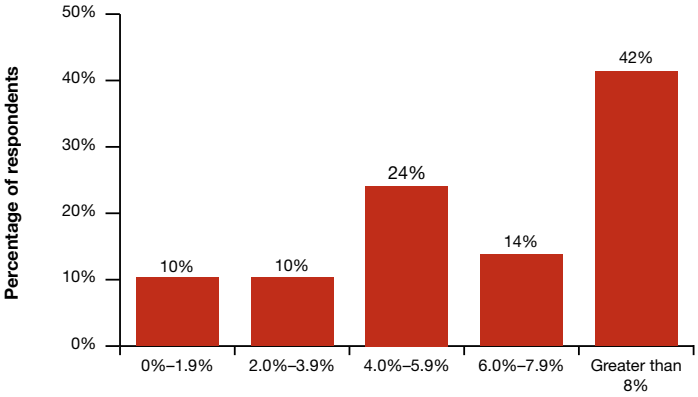
	Low	High
2012 2nd quartile	6%	25%
2012 3rd quartile	10%	38%

As the accompanying graphs indicate, a wide range of specific risk premiums are used, with the upper end of the range likely to be dominated by hurdle rates used to appraise very high-risk projects. The wide range of specific risk premiums added or multiplied to the CAPM is therefore likely to be a result of the variety of risks that specific risk premiums aim to address.

Q: If you apply a specific risk premium for start-up companies, what percentage would you normally add to the cost of equity?

- 0% – 1.9%
- 2.0% – 3.9%
- 4.0% – 5.9%
- 6.0% – 7.9%
- Greater than 8%

Figure 3.19: Specific risk premium for a start-up company



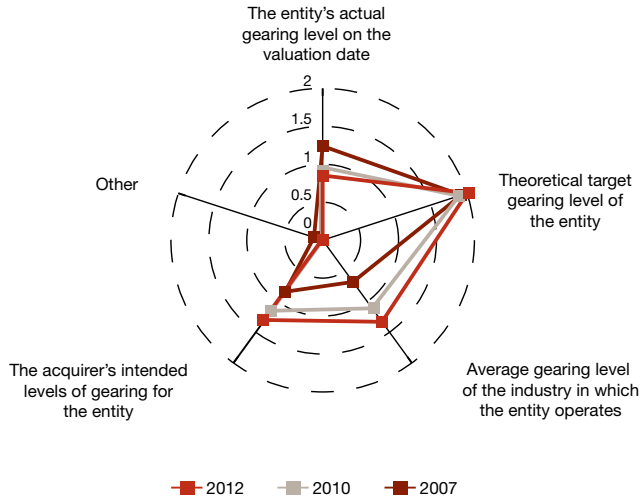
More than half of respondents apply a premium of greater than 6%. However, there is still a wide range of premiums applied, suggesting that specific risk premiums are highly asset specific.

Gearing

Q: Which of the following approaches are used in determining an appropriate level of debt and equity in the cost of capital calculation?

- Average gearing level of the industry in which the entity operates
- Theoretical target gearing level of the entity
- The acquirer's intended levels of gearing for the entity
- The entity's actual gearing level at the valuation date

Figure 3.20: Approaches used in determining the appropriate level of debt and equity



As was the case in previous surveys, the theoretical target gearing of the entity being valued was the approach adopted most frequently. It is also interesting to note that participants are also increasingly considering other indicators, such as average industry gearing levels.

Country risk

When valuing businesses in emerging markets, it is critical that a prospective investor assesses and quantifies the risks inherent in investing in different sovereign territories.

Another important question is whether we should add a country risk premium to the equity risk premium and thereby use a higher equity risk premium in some markets than in others. Although it may appear to be common sense to require a higher risk premium in emerging markets than in developed markets, there are some arguments that favour a global equity risk premium.

The equity risk premium concept is based on the assumption that the investors are fully diversified. Some argue that country risk is diversifiable. However, for this argument to hold, it is necessary for investors to be globally diversified and for there to be low correlation across markets. As investors become more globally diversified, global market integration will increase. The economic slowdown in Europe and its direct impact on Chinese manufacturing output illustrates the level of global integration that has been achieved.

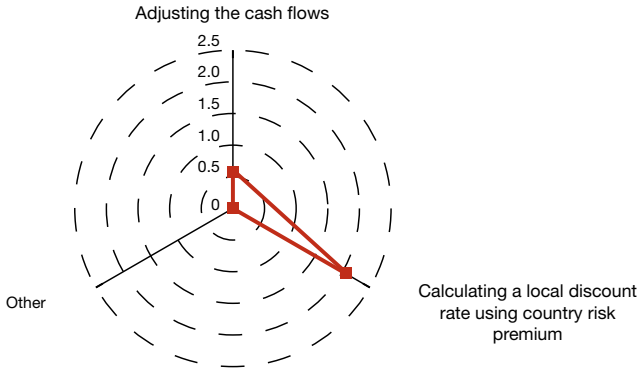
A second argument against a specific country risk premium is based on a global asset pricing view in which differences in risk are captured by differences in betas. Problems relate to the selection of comparable companies and the index the beta is measured against. Measured against the local index, the average beta within each market is one and the beta therefore does not capture country risk.

Global equity indices are normally market weighted and if one measures betas against a global index, smaller companies in emerging markets will report lower betas than mature large companies in developed markets.

Q: How do you generally adjust for country risk when valuing an asset in a country where no reliable long-bond yield (i.e. risk-free rate) can be observed?

- Adjusting the cash flows
- Determining an appropriate risk-free rate with reference to default yield spreads on USD-denominated sovereign Euro-dollar bonds and implied premiums using country credit ratings

Figure 3.21: Country risk premium inclusion method



The survey results indicate that country risk differentials are recognised mainly through adjusting local discount rates with a country risk premium. This is consistent with the results in previous surveys.

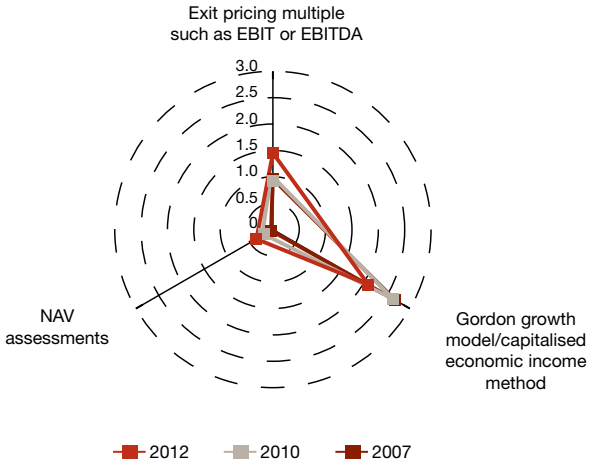
Terminal value

Another technical issue that frequently arises in the income approach is the question of terminal values. Terminal values often contribute more than 50% of the discounted cash flow value. As a result, the terminal value calculation is an area that needs to be considered in detail.

Q: Which of the following approaches are used in calculating the terminal value in a business valuation?

- Exit pricing multiple such as earnings before interest and tax (EBIT) or earnings before interest, tax, depreciation and amortisation (EBITDA)
- Gordon growth model/capitalised economic income method
- Net asset value (NAV) assessments

Figure 3.22: Approaches used in calculating terminal values



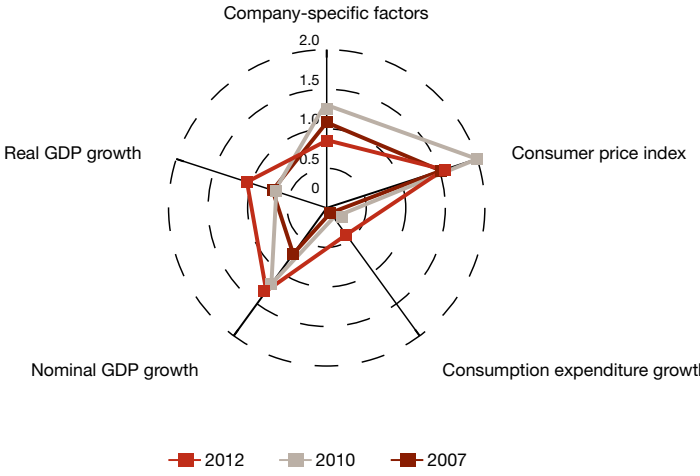
The Gordon growth model remains the most popular methodology used in calculating terminal values. Most respondents use this approach either always or frequently.

Exit multiples are also becoming increasingly popular among respondents, including many who indicated a strong preference for the Gordon growth model.

Q: If you apply the Gordon growth model/capitalised economic income method, on what do you base your long-term growth assumption?

- Company-specific factors
- Consumer price index (CPI)
- Consumption expenditure growth
- Nominal gross domestic product (GDP) growth
- Real GDP growth

Figure 3.23: Basis used for estimating long-term growth rates



The 2012 results indicate a strong preference for macroeconomic factors including CPI and GDP growth, but company-specific factors are also considered by the majority of valuation practitioners.

The results suggest that there is no single factor that can be used to determine a company's long-term growth rate and that a combination of company, industry and macroeconomic factors is generally considered.

Market approach

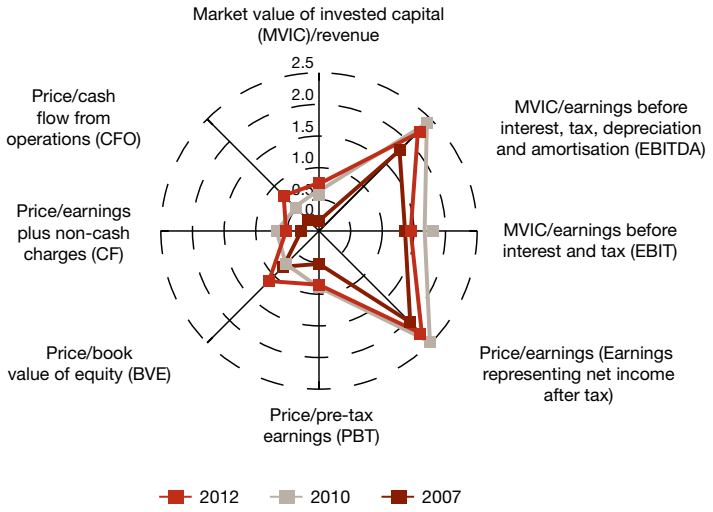
A number of valuation multiples or valuation benchmarks can be used in the application of the market approach.

This section of the survey tested the frequency of use of a range of common market multiples.

Q: When using the market multiple approach, which of the following valuation multiples are used?

- Market value of invested capital (MVIC)/revenue
- MVIC/earnings before interest, tax, depreciation and amortisation (EBITDA)
- MVIC/ earnings before interest and tax (EBIT)
- Price/earnings (Earnings representing net income after tax)
- Price/pre-tax earnings (PBT)
- Price/book value of equity (BVE)
- Price/earnings plus non-cash charges (CF)
- Price/cash flow from operations (CFO)

Figure 3.24: Valuation multiples used



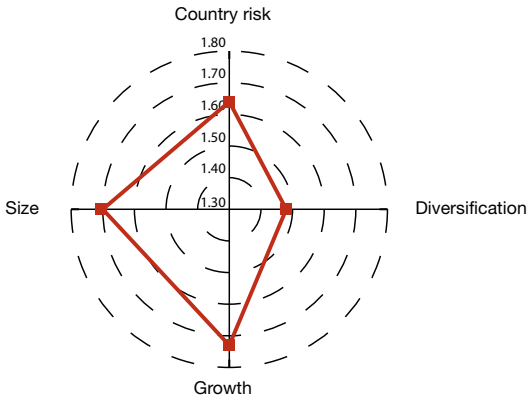
The price/earnings ratio remains the most used valuation multiple in the application of the market approach.

However, this was by a very small margin, with the MVIC/EBITDA multiple remaining popular.

Q: If applicable, which of the following adjustments to observed comparable company multiples would you consider in applying the market multiple approach?

- Country risk
- Diversification
- Growth
- Size

Figure 3.25: Adjustments to valuation multiples



All respondents indicated that they consider making adjustments in determining appropriate multiples in terms of the market approach. Although the adjustments are frequently or always considered, whether an adjustment will be applied will depend on the facts and circumstances of the specific valuation.

Discounts and premiums

Minority discount

The minority discount relates to the lack of control over the operation and corporate policy for a given investment by its minority shareholders. The minority shareholders can generally not direct the size or timing of dividends or control the selection of management.

A minority shareholder can also not veto the acquisition, sale or liquidation of assets. Minority discounts are therefore usually applied when valuing a non-controlling stake to discount the value for lack of control.

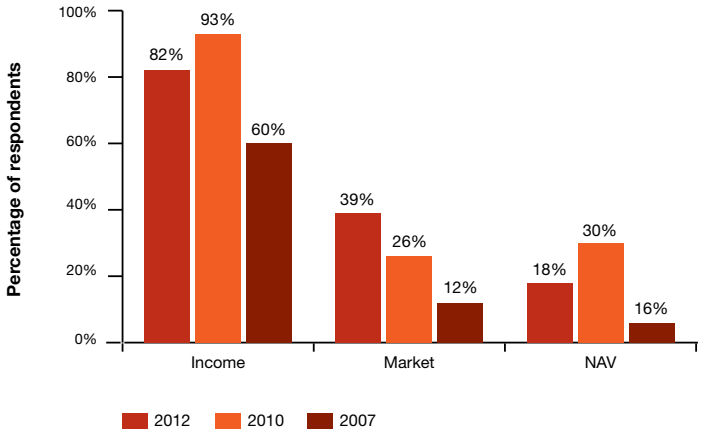
Several factors can influence the level of input and control that a minority shareholder has in an investment. The following are characteristics of control that may be considered in assessing the influence a minority shareholder has in a business:

- The ability to revise the articles of incorporation and bylaws;
- Influence over the election of directors and management and the ability to establish remuneration policies;
- Ability to influence the selection of suppliers and customers and enter into agreements with them;
- Level of control over dividend policy;
- Ability to set corporate strategies, including the ability to acquire or liquidate assets and control the sale of the company or public offerings; and
- Ability to liquidate, dissolve, or recapitalise the company.

Q: Do you generally apply a minority discount when using any of the following approaches?

- Income approach
- Market multiple approach
- Net asset value (NAV)

Figure 3.26: Approaches in which minority discounts are applied

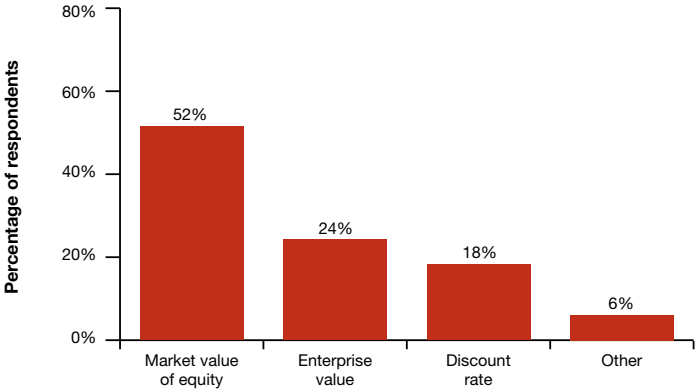


The majority of respondents will consider a minority discount in the income approach.

Q: Where do you apply the above discounts/premiums?

- Market value of equity
- Enterprise value
- Discount rate
- Other

Figure 3.27: Application of minority discounts

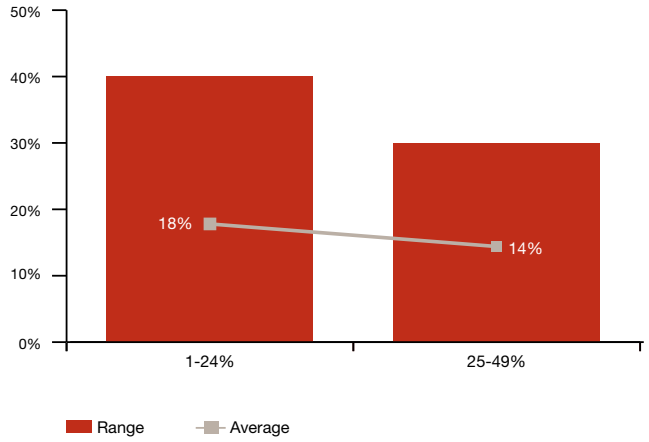


When asked where the minority discounts are applied, respondents replied that they prefer to apply the minority discount to the market value of equity.

Given that most respondents acknowledge the appropriateness of the minority discount, we asked our respondents for an indication of the range of minority discounts normally applied in their valuation analyses.

Q: Please indicate the benchmark minority discount normally applied given the size of the stake being valued.

Figure 3.28: Average Minority Discount – equity value



Size of discount applied

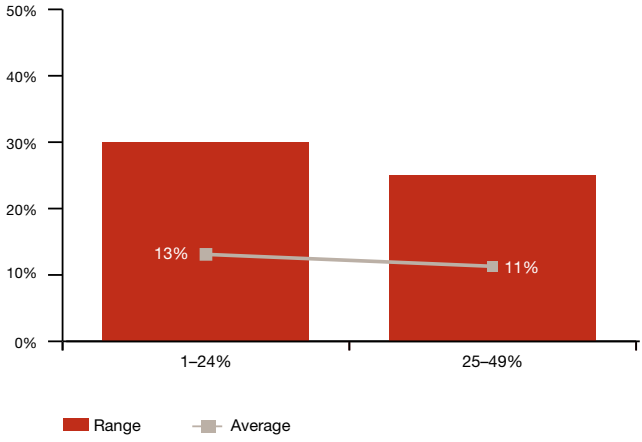
Size of interest	1-24%	25-49%
Average 2012	18%	14%
Average 2010	22%	15%
Average 2007	20%	16%

Second and third quartiles

Size of interest	1-24%	25-49%
2012 2nd quartile	20%	15%
2012 3rd quartile	20%	20%

The average minority discount applied to the market value of equity for a stake in the range 1%-24% is 18% and 14% in the range 25%-49%. The 2010 survey averages were 22% and 15% respectively for these two categories.

Figure 3.29: Average minority discount – enterprise value



Size of discount applied

Size of interest	1-24%	25-49%
Average 2012	13%	11%
Average 2010	17%	15%
Average 2007	27%	19%

Second and third quartiles

Size of interest	1-24%	25- 49%
2012 2nd quartile	10%	10%
2012 3rd quartile	21%	16%

The average minority discount applied to the enterprise value for a stake in the range 1%-24% is 13% and 11% in the 25%-49% range. The 2010 averages were 17% and 15% respectively.

The average discount falls within the second and third quartile as seen in the table alongside.

It is worth noting that the number of respondents applying a minority discount to enterprise value is relatively small. The results are therefore very sensitive to individual responses and may therefore exhibit greater fluctuations from year to year.

Control premium

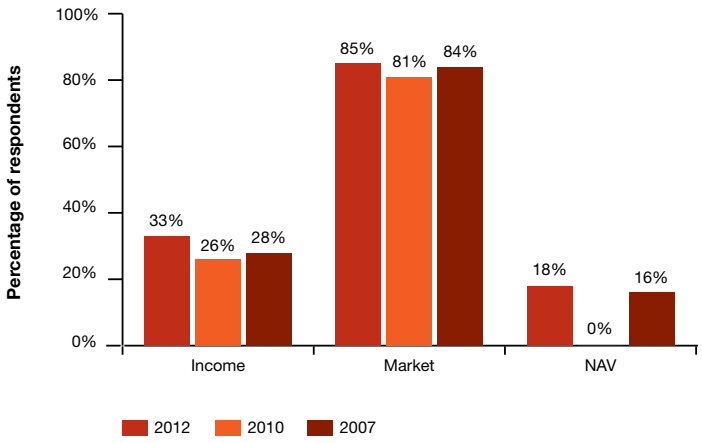
The control premium is the inverse of the minority discount and similar issues will have to be considered in calculating a control premium. To summarise, a control premium relates to the additional value associated with the ability to control the distribution of cash generated by the company, which includes the ability to influence the timing and size of the dividend distribution.

There is also a premium that relates to the ability to influence the direct policy and hiring of management. A controlling interest can also direct the company in a direction that enhances the value derived by it, for example by choice of suppliers and markets it competes in relative to other ownership interests the controlling owners may have.

Q: Do you generally apply a control premium when using any of the following approaches?

- Income approach
- Market multiple approach
- Net asset value (NAV)

Figure 3.30: Approaches in which control premiums are applied



Most respondents consider the control premium to be implied in the income approach and will only apply the control premium in a market approach. However, if the control premium relates to synergies not built into the cash flows, a control premium may in some cases be applied to the income approach.

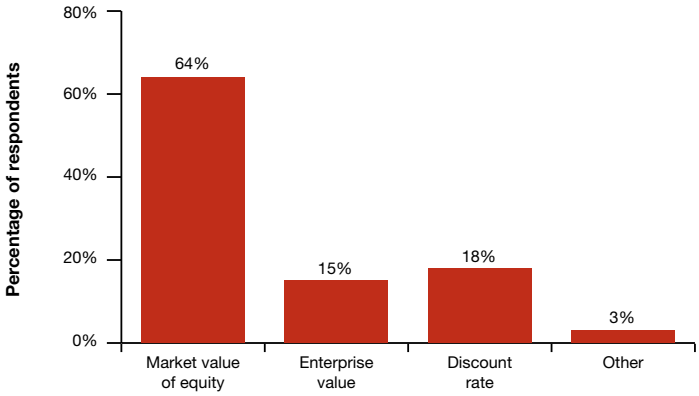
In general, however, it is not common to apply a control premium to the discounted cash flow valuation. The majority of respondents apply the control premium to the market value of equity, just as they would for the minority discount.

Given that most respondents acknowledge the appropriateness of the control premium, we asked them to indicate how they go about applying control premiums in their valuation analysis.

Q: Where do you apply the above discounts/premiums?

- Market value of equity
- Enterprise value
- Discount rate
- Other

Figure 3.31: Application of control premiums

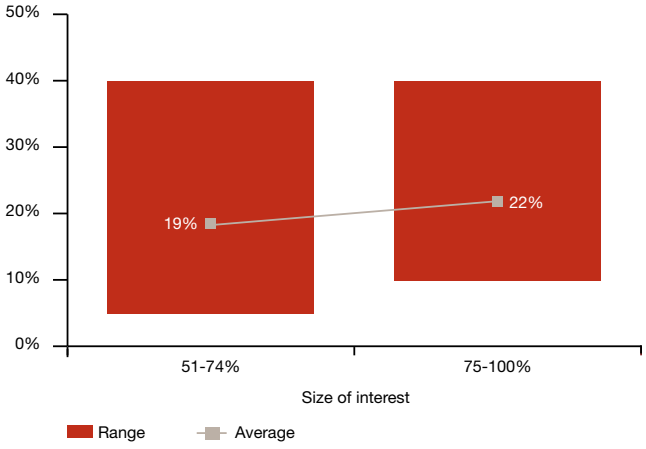


The majority of respondents apply control premiums to the market value of equity. Some practitioners apply a premium to enterprise value. Differences are therefore expected to exist between the sizes of the premiums applied by the two sets of practitioners.

We then sought to quantify the benchmark control premiums that are typically applied.

Q: Please indicate the benchmark control premium normally applied given the size of the stake being valued.

Figure 3.32: Average control premium – equity value



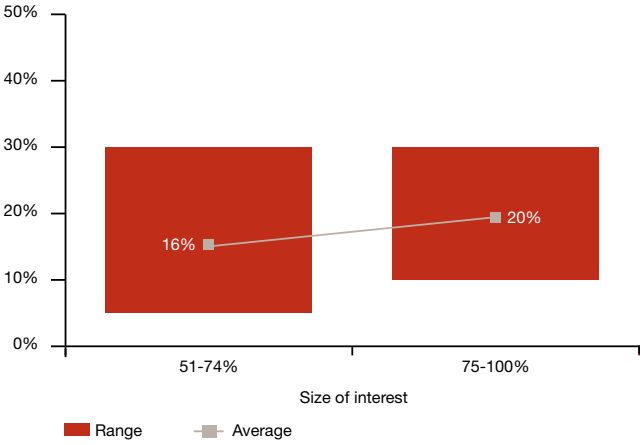
Size of premiums applied

Size of interest	51-74%	75-100%
Average 2012	19%	22%
Average 2010	18%	22%
Average 2007	18%	23%

Second and third quartiles

Size of interest	51-74%	75-100%
2012 2nd quartile	17%	20%
2012 3rd quartile	20%	25%

Figure 3.33: Average control premium applied – enterprise value



Size of premium applied

Size of interest	51-74%	75-100%
Average 2012	16%	20%
Average 2010	14%	17%
Average 2007	24%	26%

Second and third quartiles

Size of interest	51-74%	75-100%
2012 2nd quartile	15%	20%
2012 3rd quartile	21%	26%

Marketability discount

Marketability can be defined as the "the ability to convert the business ownership interest (at whatever ownership level) to cash quickly, with minimum transaction and administrative costs in so doing and with a high degree of certainty of realising the expected amount of net proceeds".[7]

It is important to distinguish the marketability discount from the minority discount. The lack of ownership control captured by the minority discount addresses the limited ownership and lack of operational control, whereas the marketability discount deals with how quickly and certainly the ownership share can be converted to cash.

There is, however, an expected relationship between the marketability and the ownership share. Even after we discount a minority interest for a lack of control, it is usually harder to sell a non-controlling stake than a controlling ownership interest. The marketability discount is therefore expected to decrease with the size of the ownership share.

There are two types of empirical studies aimed at quantifying the valuation impact related to lack of marketability on non-controlling ownership interests:

- Discounts on the sale of restricted shares to publicly traded companies; and
- Discounts on the sale of closely held company shares – compared with prices of subsequent initial offerings of the same company's shares.

There are various factors that will influence the size of the marketability discount. The first to consider is whether the asset is privately held or publicly traded. Furthermore, a consideration of any restrictions on the sale of the investment is appropriate. Any shareholder agreements or company bylaws might put restrictions on timing of sale, the pricing of assets or the characteristics of the purchaser of the ownership stake.

One also has to consider whether there is a market for the sale of the asset and how active the market is. A satisfactory history of transactions in closely held shares will reduce the marketability discount and prospects for achieving an IPO and the lower the costs of listing, the lesser the need for a marketability discount.

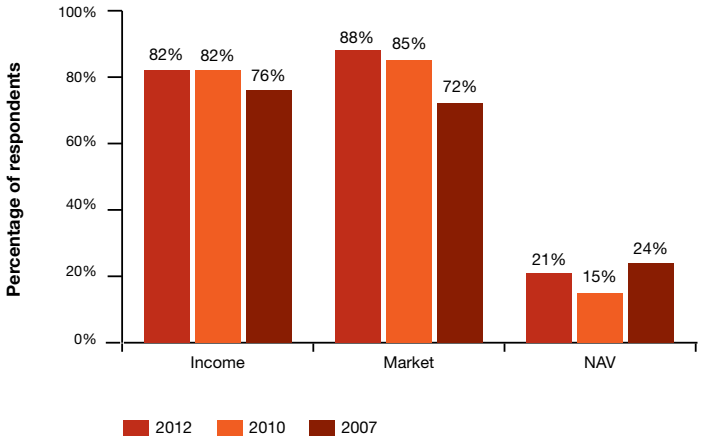
Even controlling ownership interests will be subject to some form of illiquidity discount. Factors that can affect the illiquidity discount include the cost to prepare for and execute the sale and the uncertainty around the time it will take to complete the transaction. There is also uncertainty related to the final sale price and the non-cash and deferred transaction proceeds.

[7] Pratt, S, Reilly, R and Schweighs, R. *Valuing a Business*. McGraw-Hill, 2000.

Q: If the entity is not listed, do you apply a marketability discount to any of the following approaches?

- Income approach
- Market multiple approach
- Net asset value (NAV)

Figure 3.34: Approaches in which marketability discounts are applied

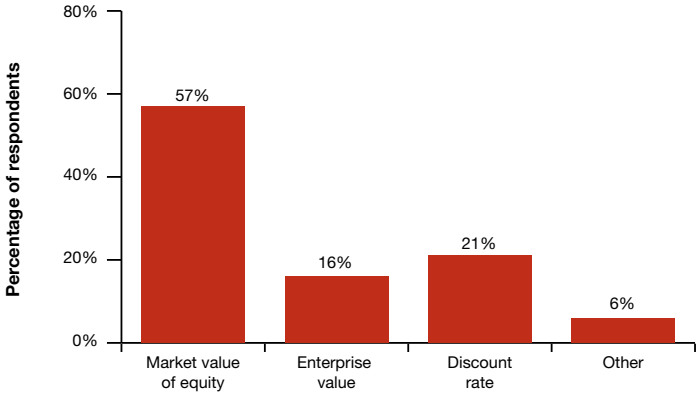


Respondents recognise the need to adjust for marketability in all valuation approaches. The remainder of this section therefore deals with how respondents apply marketability discounts in their valuation analyses.

Q: Where do you apply the above discounts?

- Market value of equity
- Enterprise value
- Discount rate
- Other

Figure 3.35: Application of marketability discounts

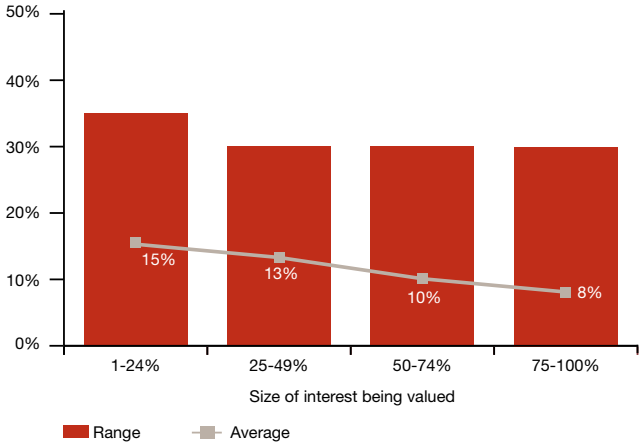


The majority of respondents apply marketability discounts to the market value of equity.

We subsequently asked them to quantify the benchmark discounts that are typically applied.

Q: Please indicate the benchmark marketability discount normally applied given the size of the stake being valued.

Figure 3.36: Average marketability discount applied – equity value



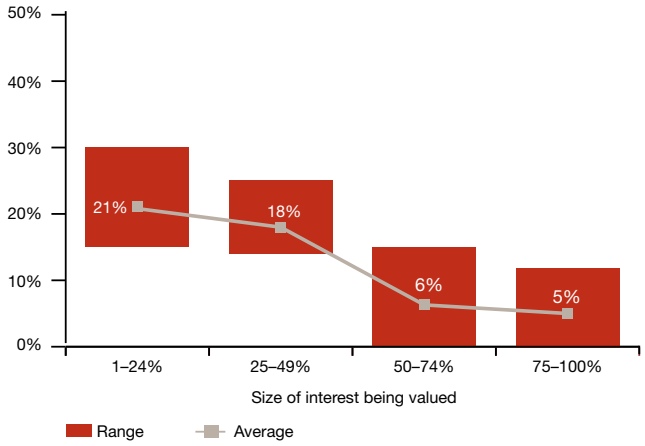
Size of discount applied

Size of interest	1-24%	25-49%	50-74%	75-100%
Average 2012	15%	13%	10%	8%
2012 2nd quartile	15%	15%	10%	8%
2012 3rd quartile	20%	15%	15%	10%

The ranges provide an indication of the size of the marketability discounts that are applied by respondents. As shown in the table above, we considered the ranges falling between the second and third quartiles.

Some respondents have pointed out that it also important to consider the connection between minority and marketability discounts as well as any specific facts and circumstances relating to the individual company or industry as described earlier in this section.

Figure 3.37 Average marketability discount applied – enterprise value



Size of discount applied

Size of interest	1-24%	25-49%	50-74%	75-100%
Average 2012	21%	18%	6%	5%
2012 2nd quartile	19%	17%	5%	4%
2012 3rd quartile	23%	20%	11%	9%

Discounts and premiums – BEE considerations

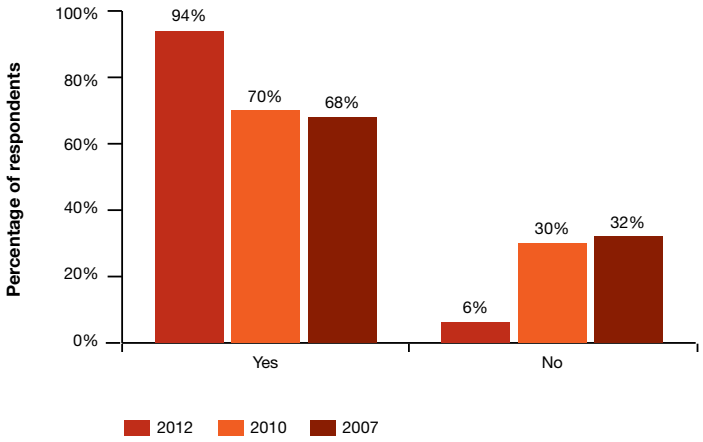
Black economic empowerment (BEE) remains an integral part of South Africa's transformation process. With restructurings, consolidations and refinancing of BEE deals, the complexities surrounding valuations of BEE transactions continue to be particularly relevant and topical.

A particularly contentious issue in valuing BEE investments is the issue of lock-in discounts, so our questions were focused on obtaining the market's view on whether these discounts are appropriate, and if so, what the quantum is of these lock-in discounts that the market is applying.

Q: For a BEE transaction involving a listed share, would you apply a discount to the observed share price for the lock-in agreed between the parties?

- Yes
- No

Figure 3.38: Application of a BEE discount



Most respondents consider a discount to the observed market price to be necessary. These results are broadly consistent with the results of our previous surveys.

Typical BEE structures include lock-in periods whereby BEE entities are required to remain invested in the structure for a number of years, or where other restrictions are placed on the transferability of the shares held by the BEE entity.

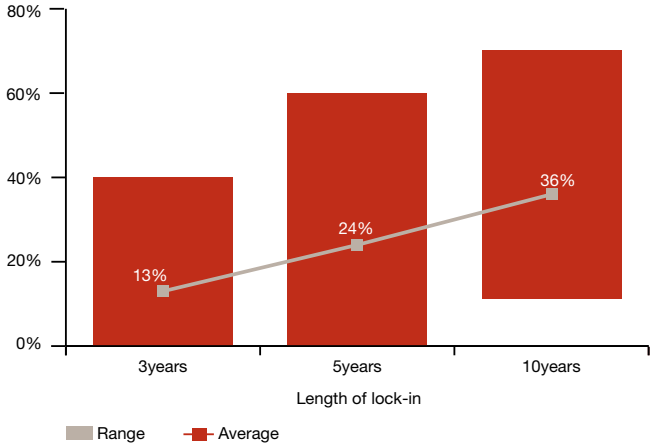
The discount applied in the market is likely to be correlated with the length of lock-in periods being considered by market practitioners.

Consequently, we attempted to gauge the impact of varying lock-in periods by asking respondents how they consider lock-ins of varying lengths from a valuation perspective.

Q: What is the average discount you would apply for the respective lock-in periods?

- 3 years
- 5 years
- 10 years

Figure 3.39: Average lock-in discount applied



Average lock-in discount

	3 years	5 years	10 years
Average 2012	13%	24%	36%
Average 2010	9%	20%	33%
Average 2007	8%	16%	29%

The discount level increases significantly as the lock-in period increases. The average discount relating to a 10-year lock-in was 36% in 2012. In comparison, discounts of 13% and 24% were applied for three and five year lock-ins, respectively.

Second and third quartiles

	3 years	5 years	10 years
2012 2nd quartile	11%	21%	31%
2012 3rd quartile	20%	31%	41%

The average range falls within the second and third quartiles shown above.

Section 4:
West Africa

Contents

Valuation approaches

There are a number of methodologies used to value businesses. We have previously found that the approaches most commonly used in West Africa are:

- **The income approach**
  This approach determines the market value of the ordinary shares of a company based on the value of the cash flows that the company can be expected to generate in the future. This includes traditional discounted cash flow techniques and also real option valuations, which use option pricing models to measure the value of assets that share option characteristics.
- **The market approach**
  This gauges the market value of the ordinary shares of a company based on a comparison of the company to comparable publicly-traded companies and transactions in its industry, as well as to prior transactions in the ordinary shares of the company using an appropriate valuation multiple.
- **The net assets approach**
  This evaluates the market value of the ordinary shares of a company by adjusting the asset and liability balances on the company's balance sheet to its market value equivalents. The approach is based on the summation of the individual piecemeal market values of the underlying assets less the market value of the liabilities.

There continue to be conflicting views about which approach is best. In private equity and venture capital circles, there is a strong preference for market multiple based valuations. The International Private Equity and Venture Capital Valuation Board Guidelines state:

> *In assessing whether a methodology is appropriate, the valuer should be biased towards those methodologies that draw heavily on market-based measures of risk and return. Fair Value estimates based entirely on observable market data should be of greater reliability than those based on assumptions.*[8]

A similar view is upheld in accounting standards, where greater reliance is placed on market-based measures of value.

The alternate view is that market volatility and lack of directly comparable companies, particularly in emerging markets such as ours, places increased focus on discounted cash flow methodologies. According to this school of thought, short-term fluctuations in the market affect multiples and consequently valuations, as these markets are strongly affected by investor sentiment.

[8] *International Private Equity and Venture Capital Valuation Guidelines*, 2010 edition

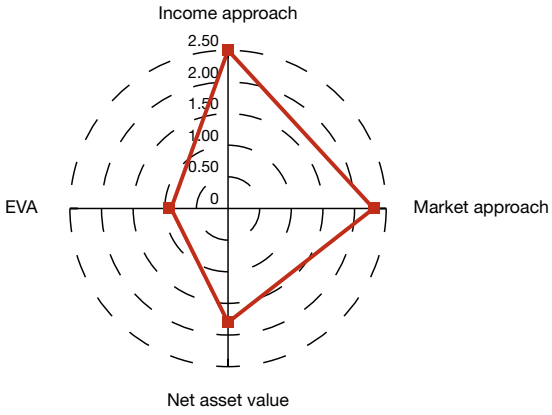
The lack of directly comparable companies of a similar size and growth profile also limits the reliability of observed multiples. The discounted cash flow approach offers an opportunity to capture longer-term value and reflects the company-specific risks and growth profiles more completely.

The aim of this section is to highlight the most popular valuation approaches being utilised in business enterprise valuations in West Africa.

Q: Which of the following valuation approaches are most often used to value a going concern?

- Economic value added (EVA)
- Income approach (discounted cash flow)
- Market approach (e.g. price/earnings ratio)
- Net asset approach

Figure 4.1 Valuation approaches



The primary valuation approaches are the income approach (discounted cash flow) and market approach (based on market multiples). No respondents indicated that they never use these approaches.

The use of alternative approaches to the income approach supports the view that discounted cash flows should rarely be used in isolation.

Income approach

Cost of capital

From a company's perspective, the weighted average cost of capital (WACC) represents the economic return (or yield) that an investor would have to give up by investing in the subject investment instead of all available alternative investments that are comparable in terms of risk and other investment characteristics.[9]

The WACC is calculated by weighting the required returns on interest-bearing debt, preference share capital and ordinary equity capital in proportion to their estimated percentages in an expected industry capital structure, target or other structure as appropriate.

[9] Pratt, S and Niculita, A. *Valuing a Business*. McGraw-Hill, 2008.

WACC formula

The general formula for calculating the WACC (assuming only debt and equity capital) is:

WACC = kd x (d%) + ke x (e%)

Where:

WACC = Weighted average rate of return on invested capital

kd = After-tax rate of return on debt capital

d% = Debt capital as a percentage of the sum of the debt and ordinary equity capital (total invested capital)

ke = Rate of return on ordinary equity capital

e% = Ordinary equity capital as a percentage of the total invested capital

There are three related steps involved in developing the WACC:

- Estimating the opportunity cost of equity financing;
- Estimating the opportunity cost of non-equity financing; and
- Developing market value weights for the capital structure.

Estimating the cost of equity is the most subjective and difficult measure to quantify in the WACC formula, which is why we have dedicated a substantial part of this survey to this issue.

There are two broad approaches to estimating the cost of equity:

- Deductive models
  Deductive models, such as dividend growth models, rely on market data to determine an imputed cost of equity. The dividend growth model is one such approach, which requires market data that include the current share price, expected dividends and the long-term steady dividend growth rate.
- Risk-return models
  The capital asset pricing model (CAPM) is probably the most widely used of the risk-return models. The CAPM measures risk in terms of the non-diversifiable variance (systematic risk) and relates expected returns to this risk measure. The CAPM derives the cost of equity by adding to the risk-free rate an additional premium for risk. This risk premium is a product of the investment's beta (a measure of relative systematic risk of the particular equity investment) and a market risk premium, being the reward required by investors for investing in an equity investment of average risk. The CAPM is therefore a linear combination of the risk-free rate, the equity risk premium and the company's beta. Its simplicity is attractive and largely explains the popularity of the CAPM.

CAPM formula

$E(Re) = Rf + \beta \times E(Rp)$

Where:

$E(Re)$ = Expected rate of return on equity capital

Rf = Risk-free rate of return

β = Beta or systematic risk

$E(Rp)$ = Expected market risk premium: expected return for a broad portfolio of shares less the risk-free rate of return

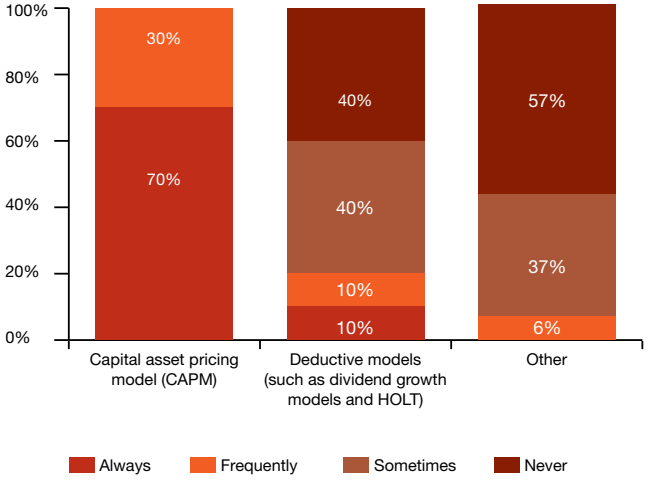
While the CAPM is popular, it is not perfect. A key criticism raised against the CAPM is its inability to account for several equity returns, such as the small firm effect (whereby smaller companies exhibit higher returns) and the value effect (whereby companies with low ratios of book-to-market value have higher expected returns). One response to this empirical questioning is to move away from the traditional CAPM's linear, stationary, and single-factor features.

Given the competing views between deductive models and risk-return models, we included a question in our survey to determine what methodologies are being used by market practitioners.

Q: In calculating an appropriate rate of return to apply to the future cash flows, which of the following methods are being used?

- Arbitrage pricing theory (APT)
- Capital asset pricing model (CAPM)
- Deductive models (such as dividend growth models and HOLT)
- Fama-French three factor model
- Intertemporal capital asset pricing model (ICAPM)
- Other

Figure 4.2: Methods used to calculate the cost of equity



The 2012 survey confirms the CAPM as the primary methodology used to estimate the cost of equity, with all respondents stating that they either always or frequently use it.

The survey also confirms the preference for risk-return models over deductive approaches to estimating the cost of equity. Survey responses relating to the assumptions made in the application of the CAPM are included in the next section of the survey.

Risk-free rate

Ordinarily, valuation practitioners estimate the cost of equity by assessing its component parts using the CAPM. However, we have found that in the current environment, the risk-free rate and the equity market risk premium are proving volatile.

Historically, many valuation practitioners have taken the view that the current yield on long-dated nominal government bonds for the risk-free rate, combined with an evaluation of a range of historical, market and forward-looking evidence for the market risk premium, results in an overall cost of equity that is appropriate in the context of the risks facing an equity investor.

Since the Eurozone sovereign debt crisis, nominal bond yields in the UK, US and Germany have fallen to record lows, a result of large-scale asset repurchase programmes and the 'flight to quality'. A rise in volatility has therefore led to a mismatch in the short and long-term evidence sources used in CAPM calculations.

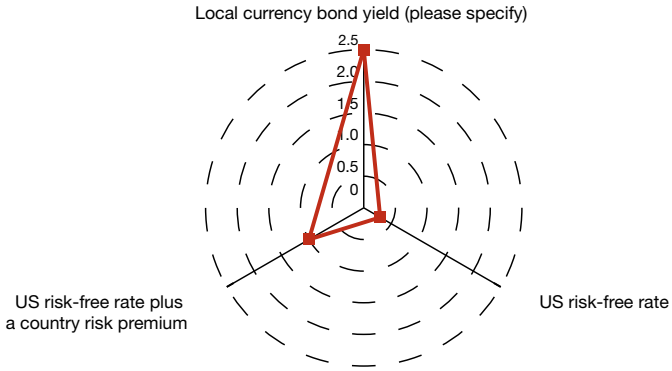
As a result, sources for the risk-free rate and evidence for the market risk premium used would, in our view, be critical components of this year's survey.

We asked respondents in West Africa for the approach used by them in selecting an appropriate risk free rate.

Q: Please specify what you use as the risk-free rate in your country:

- Local currency bond yield (please specify)
- US risk-free rate
- US risk-free rate plus a country risk premium

Figure 4.3: Proxies used for the risk-free rate



In West Africa, various government bonds are available as a proxy for the risk free rate. The table below is a list of FGN bonds in Nigeria.

Federal Government of Nigeria Bonds

FGN bonds	Maturity	Time to maturity (years)	Coupon rate (%)	Yield (%)	Tenor
10.5% FGN Nov 13	28 November 2013	1.14	10.50	11.50	5
10.50% FGN MAR 2014	18 March 2014	1.44	10.50	11.91	3
10.75% FGN MAR 2014	30 March 2014	1.47	10.75	11.95	7
9.20% FGN JUN 2014	29 June 2014	1.72	9.20	12.29	7
9.25% FGN SEP 2014	28 September 2014	1.97	9.25	12.16	7
4.00% FGN APR 2015	23 April 2013	2.54	4.00	13.40	5
15.10% FGN APR 2017	27 April 2017	4.55	15.10	13.86	5
9.35% FGN AUG 2017	31 August 2017	4.90	9.35	13.93	10
10.70% FGN MAY 2018	30 May 2018	5.64	10.70	13.85	10
16.00% FGN JUN 2019	229 June 2019	6.73	16.00	13.38	7
7.00% FGN OCT 2019	23 October 2019	7.04	7.00	13.00	10
16.39% FGN JAN 2022	27 January 2022	9.31	16.39	13.48	10
15.00% FGN NOV 2028	28 November 2028	16.15	15.00	12.72	20
12.49% FGN MAY 2029	22 May 2029	16.63	12.49	12.61	20
8.50% FGN NOV 2029	20 November 2029	17.13	8.50	12.61	20
10.00% FGN JUL 2030	23 July 2030	17.80	10.00	12.54	20

Source: *Federal Market Dealers Association of Nigeria, 8 October 2012*

The local currency bond yield appears to be the most popular benchmark choice for the risk free rate among market practitioners in valuing businesses in West Africa. In Nigeria, the FGN bonds are a common benchmark.

Most respondents have indicated that they never apply a US risk-free rate without considering a country risk premium and that country risk premiums are generally applied when no local currency bond yield is available.

Beta

Beta typically measures the sensitivity of a share price to fluctuations in the market as a whole.

Beta formula

Beta is calculated by regressing individual share returns against the returns of the market index. The formula for beta is as follows:

$$\beta = \frac{cov(R_i, R_m)}{\sigma^2(R_m)} = \frac{\rho(R_i, R_m)\sigma(R_i)}{\sigma(R_m)}$$

Where:

$cov(R_i,R_m)$ = Covariance between security i and the market index

$\sigma^2(R_m)$ = Variance of the market index

$\rho(R_i,R_m)$ = Correlation coefficient between security i and the market index

$\sigma(R_i)$ = Standard deviation of returns of security i

$\sigma(R_m)$ = Standard deviation of market returns

Analysts often do not use raw data (e.g. share prices and share returns) to estimate beta based on their programmed regression algorithms. They rather use professional information systems and databases as sources for betas.

Service providers often make adjustments in calculating betas, for example:

- Bayesian adjustments are used to compensate for estimation error; and
- Illiquidity adjustments in respect of thinly traded shares.

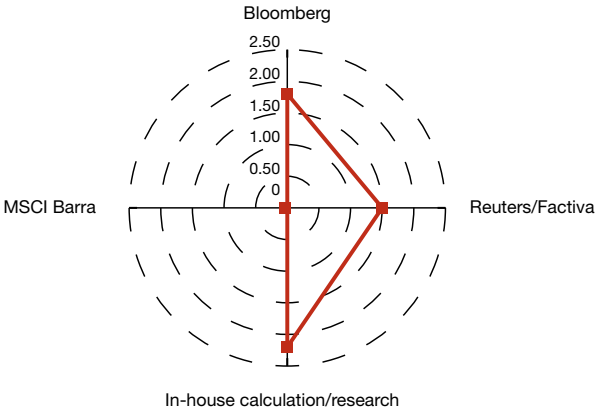
In addition, the frequency of returns (daily, weekly, monthly or quarterly) is one of the major practical issues when estimating beta. The CAPM is based on maximising expected utility and the security returns have to be normally distributed and the distribution must be fully described by standard deviation and the expected return.

Different service providers often use different frequencies, which may or may not be in line with the specific best practice guidelines being followed by financial analysts and corporate financiers.

Q: Which of the following service providers are used as a source of information for the beta?

- Bloomberg
- In-house calculation/research
- MSCI Barra
- Reuters

Figure 4.4: Service providers used to source betas



The survey highlighted a wide variety of sources that are currently used in the determination of betas in the West African market. In-house calculations are the most popular source for beta estimates, followed by Bloomberg.

Equity market risk premium

The market risk premium is the single most debated input in a cost of capital calculation. The three broad approaches to estimating a market risk premium include the historic equity bond spread, the survey approach and an implied forward approach.

Historical

The historical approach is the most widely used approach to estimating equity risk premiums. It is based on the assumption that in a well functioning market, arbitrage will ensure that required and achieved returns should be equivalent.

The actual returns earned on stocks over a long time are estimated and compared to the actual returns earned on a default-free (usually government) security. The difference, on an annual basis, between the two returns is computed and represents the historical risk premium.

There are several issues related to the use of this approach in estimating risk premiums. The suitability of the approach depends on whether investor expectations are influenced by the historical performance of the market and whether market conditions and expectations change over time. In some markets the availability of data may be limited or unreliable. This is an issue particularly for emerging markets.

The approach also makes large divergences in risk premiums possible with the use of the same data. There are three main reasons for the divergence in results:

- **Time period**
  The time period on which the data is based will affect the result. Shorter and more recent periods are assumed to provide a more updated estimate. However, the cost associated with using shorter time periods is greater noise in the risk premium estimate.

- **Risk-free security and market index**
  The choice of the risk-free security and the market index will influence the estimate. As already mentioned, the risk-free rate chosen in computing the premium has to be consistent with the risk-free rate used to compute expected returns. In theory, one would want to use the broadest index of stocks, where the index is market-weighted and free of survivorship bias.

- **Averaging approach**
  Averages can be based on arithmetic or geometric averages. The arithmetic average return measures the simple mean of a series of annual returns, whereas the geometric average looks at the compounded return. If annual returns are uncorrelated over time, and our objective was to estimate the risk premium for the next year, the arithmetic average is the best and most unbiased estimate of the premium. However, as there is an indication that returns on stocks are negatively correlated over time, the arithmetic average return is likely to overstate the premium. Also, as the time period increases, the argument for geometric returns increases.

Survey approach

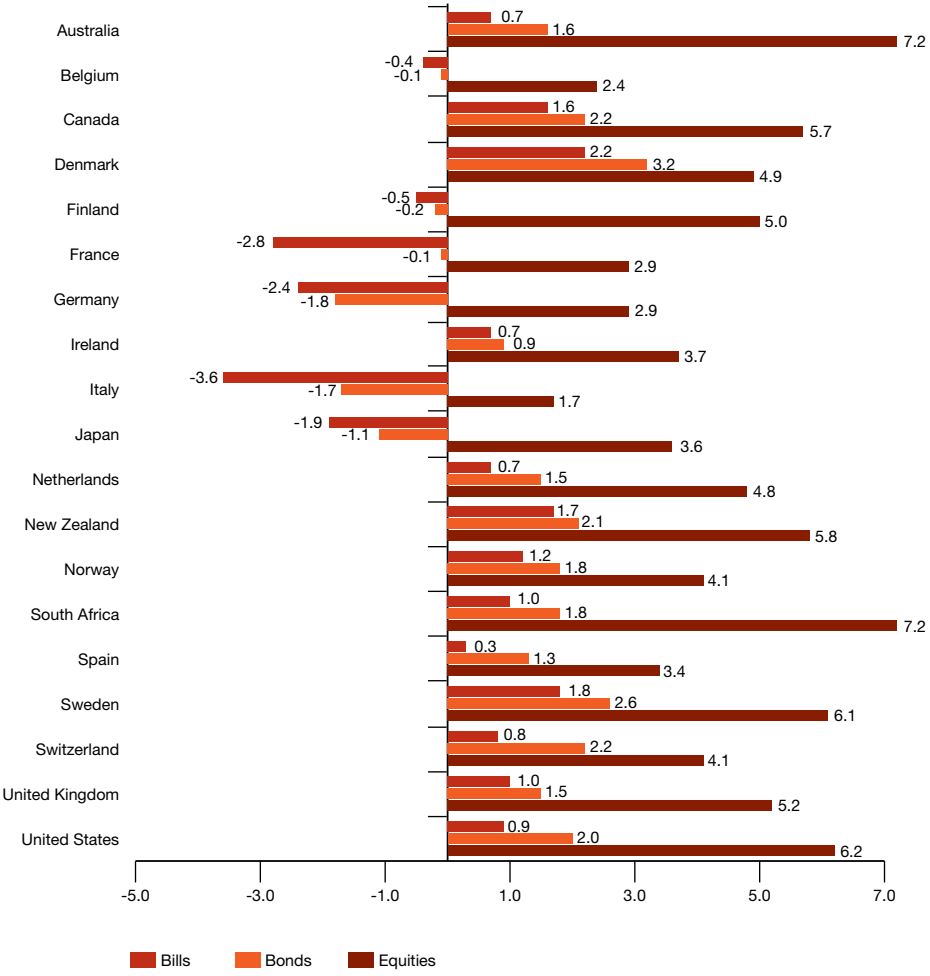
The survey methodology is based on the opinions of market participants. There are several issues with this approach. As with most forecasts, survey risk premiums are responsive to recent stock prices movements. It is therefore possible that survey premiums will be a reflection of the recent past rather than a good forecast of the future. Survey results may also be influenced by the subjective manner in which questions regarding the market risk premiums are posed to respondents.

Forward looking estimate

A forward-looking estimate of the premium is estimated using either current equity prices or risk premiums in non-equity markets. The discounted cash flow approach uses pricing of assets to infer required return or use actual or potential dividends on an index to calculate required return. This approach will not generate a correct estimate if companies do not pay out what they can afford to in dividends or if earnings are expected to grow at extraordinary rates in the short term.

The graph that follows illustrates observed real returns on equities and bonds internationally over the period 1900-2012.

Figure 4.5: Real returns on equities and bonds 1900-2012



Source: *Dimson, E Marsh, P and Staunton, M Credit Suisse Global Investment Returns Sourcebook 2012*

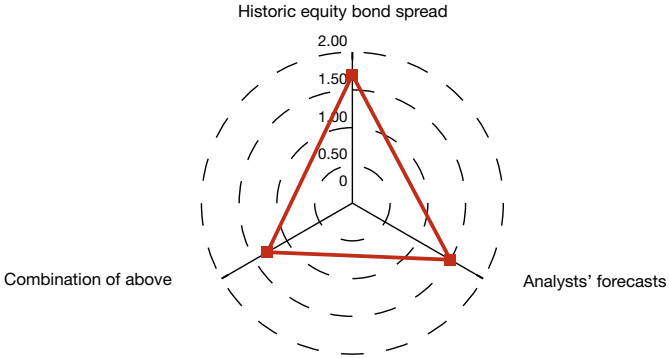
Real returns on equities and bonds 1900-2012

	Equities	Bonds	Bills
Australia	7.2	1.6	0.7
Belgium	2.4	-0.1	-0.4
Canada	5.7	2.2	1.6
Denmark	4.9	3.2	2.2
Finland	5.0	-0.2	-0.5
France	2.9	-0.1	-2.8
Germany	2.9	-1.8	-2.4
Ireland	3.7	0.9	0.7
Italy	1.7	-1.7	-3.6
Japan	3.6	-1.1	-1.9
Netherlands	4.8	1.5	0.7
New Zealand	5.8	2.1	1.7
Norway	4.1	1.8	1.2
South Africa	7.2	1.8	1.0
Spain	3.4	1.3	0.3
Sweden	6.1	2.6	1.8
Switzerland	4.1	2.2	0.8
United Kingdom	5.2	1.5	1.0
United States	6.2	2.0	0.9

Q: Which of the following would you consider to be the rationale behind the estimation of the market risk premium?

- Historic equity bond spread
- Analysts' forecasts
- Combination of the above

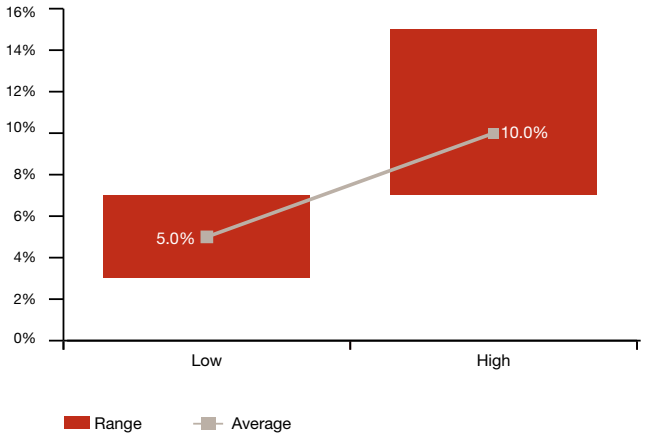
Figure 4.6: Approaches used to estimate the market risk premium



The survey results indicate that a large proportion of participants consider a combination of analyst forecasts and historical spreads.

Q: What range of market risk premiums do you use when making use of the capital asset pricing model? (Please ignore discounts, premiums and the size effect as specific questions are asked in this regard)

Figure 4.7: Range of market risk premiums used in the CAPM



Average market risk premium

	Low	High
2012 average	5.0%	10.0%
2nd quartile	5.0%	10.0%
3rd quartile	5.0%	10.0%

The market risk premium ranges from 3% to 15% with the average low range being 5% and the average high range being 10%.

Small stock premiums

In computing an equity risk premium to apply to all investments in the capital asset pricing model, we are assuming that betas carry the weight of measuring the risk in individual firms or assets, with riskier investments having higher betas than safer investments. A number of studies such as the *Ibbotson SBBI 2012 Valuation Yearbook* have shown that investments in small companies have experienced higher returns than those predicted by the standard CAPM approach.

In theory, the CAPM would suggest a higher required return for small companies through a higher beta for such companies. The higher betas for small companies can be caused by higher operational and financial leverage, limited access to funding and other factors that makes them more vulnerable to general market fluctuations.

However, the higher betas do not seem to fully explain the higher returns historically achieved by smaller companies. Some have interpreted this as an indication that there are other risks associated with small companies that the CAPM does not address. To adjust for this finding, many practitioners add an additional premium to the cost of equity of companies with smaller market capitalisations.

Survivorship bias is one possible explanation for the observed high returns on small companies. The cash flows associated with small companies are subject to relatively high degrees of risks (both systematic and diversifiable), and their size may make them vulnerable to bankruptcy. In the event of an adverse performance, it is clear that there will be a large number of small companies that fail.

Historical measurements of small-company profitability will therefore be biased upwards as they will include only those companies that continue to operate. The observed higher returns simply demonstrate that such companies are subject to a great deal of diversifiable risk, which means that an analysis of surviving companies will inevitably show that they make high returns (to offset the negative returns on those companies that fail). A series of studies has also argued that market capitalisation, by itself, is not the reason for excess returns but that it is a proxy for other ignored risks such as illiquidity and poor information.

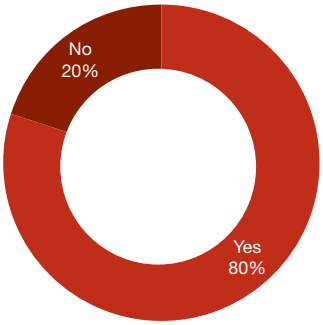
If the notion of the small stock premium (SSP) is accepted, there are two ways in which we can respond to the empirical evidence that small market cap stocks seem to earn higher returns than predicted by the traditional capital asset pricing model. One is to view this as a market inefficiency that can be exploited for profit; the other is to take the excess returns as evidence that betas are inadequate measures of risk and view the additional returns as compensation for the missed risk.

Given that there are two views on the appropriateness of the small stock premium, with various studies both supporting and refuting the notion of the small capitalisation premium, we asked respondents whether they apply small stock premiums in the course of their valuation analyses.

Q: Do you adjust the CAPM rate of return by a premium that reflects the extra risk of an investment in a small company?

- Yes
- No

Figure 4.8: Use of small stock premium

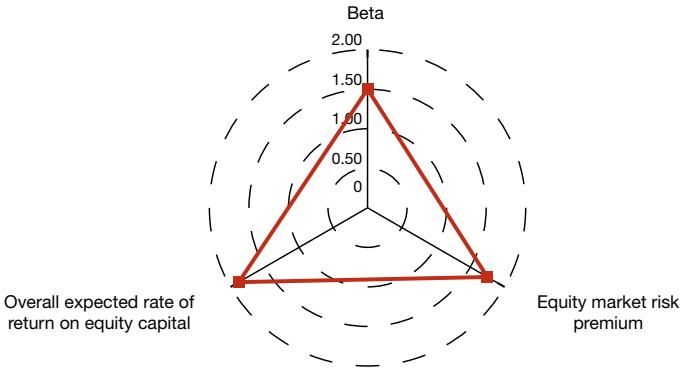


The majority of respondents favour the application of a small stock premium.

Q: What factor do you adjust when adjusting for small stock premiums?

- Beta
- Equity market risk premium
- Overall expected rate of return on equity capital

Figure 4.9: Adjustments made for company size



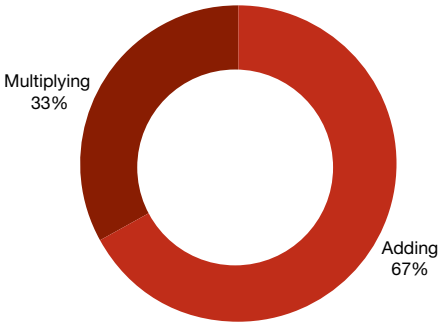
Most respondents indicated that they prefer to adjust the expected rate of return on equity capital to account for an additional risk in a small company.

As the next step in the survey, we wanted to determine the methodology used to effect the adjustment for company size.

Q: Do you adjust by multiplying a factor (i.e. CAPM x (1+SSP)) or adding a factor (i.e. CAPM + SSP)

- Multiplying
- Adding

Figure 4.10: Small stock premium inclusion method



The survey results show that most respondents incorporate the small stock premium by adding a factor to the return on equity rather than multiplying.

On average, participants apply an additive multiple of 9% and a multiplicative multiple of 17% when applying a small stock premium.

Average small stock premium

	Adding	Multiplying
Average 2012	9%	17%

The ranges give some indication as to what small stock premiums are applied. However, as many of the respondents point out, facts and circumstances of each individual company, the industry and the relative size of the company must be taken into consideration.

Specific risk premiums

A key attribute of the CAPM is that investors are rewarded only for systematic risk. Specific risks that are theoretically diversifiable are not included in the CAPM. Standard finance theory states that investors should be compensated only for non-diversifiable risks.

Therefore, if the CAPM is applied, this assumes that the WACC is the same for any investment, regardless of the firm that undertakes it. However, this does not consider the fact that companies do not have unlimited resources to diversify risk.

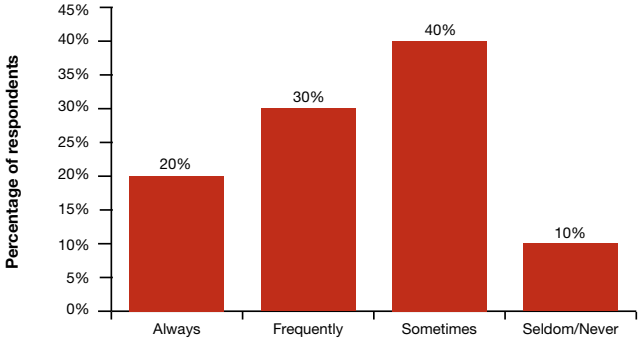
In project appraisal, hurdle rates are therefore frequently applied by managers to account for the specific risks of the project. These hurdle rates are generally higher than the company's WACC to reflect project-specific risks. In addition, investors appear to include risk premiums in their CAPM calculation for company-specific risk that cannot be adequately modelled.

Given that the application of a specific risk premium (SRP) is not consistent with the CAPM, we surveyed market practitioners about whether they apply specific risk premiums, and if so, in what instances. We also asked respondents what range of specific risk premiums they typically consider.

Q: Do you adjust the CAPM rate of return by a premium that reflects unique risks to the extent that such risks could not be modelled in the forecast cash flows?

- Always
- Frequently
- Sometimes
- Never

Figure 4.11: Use of a specific premium

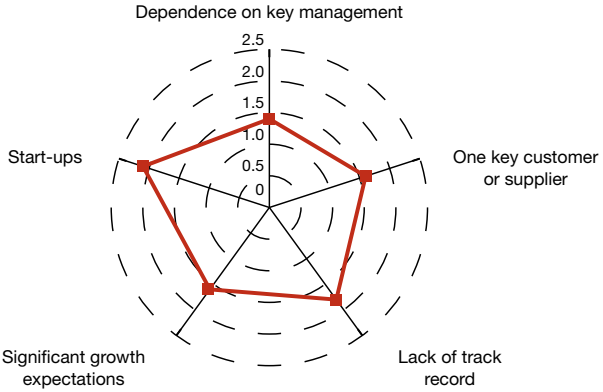


20% of respondents always adjust the CAPM by applying a specific risk premium, while 70% of respondents frequently or sometimes consider an adjustment to the CAPM for specific risks. This demonstrates that although the use of a specific risk premium is not supported by the CAPM and financial theory, specific risk premiums are widely used in practice.

Q: What are the typical conditions in which you would consider applying a specific risk premium?

- Dependence on key management
- One key customer or supplier
- Lack of track record
- Significant growth expectations
- Start-ups

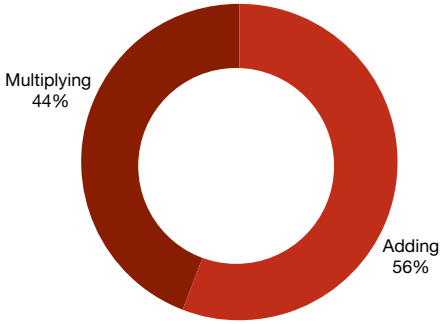
Figure 4.12: Specific risk factors



Respondents indicated that most of the factors listed would at some time be considered as motivation for the inclusion of a specific risk premium.

Q: Do you adjust by multiplying a factor (i.e. CAPM x (1+SRP)) or adding a factor (i.e. CAPM + SRP)?

Figure 4.13: Specific risk premium inclusion method



Most of the respondents adjust the overall expected return on equity capital by adding a premium.

Respondents were asked what the typical range of specific risk premiums applied is. In the case of applying an additive premium, the average low range applied is 3% with the average high range being 8%.

Respondents who apply a multiplicative factor apply an average low premium of 9% and an average high of 16%.

Average specific risk premium – adding

	Low	High
Average 2012	3%	8%

Average specific risk premium – multiplying

	Low	High
Average 2012	9%	16%

As the results indicate, specific risk premiums are used for a wide variety of reasons, with the upper end of the range likely to be dominated by hurdle rates used to appraise very high-risk projects.

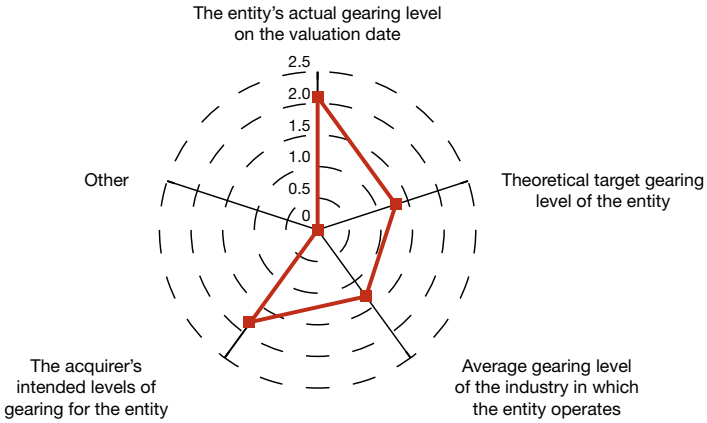
The wide range of specific risk premiums added or multiplied to the CAPM is therefore likely to be a result of the variety of risks that specific risk premiums aim to address.

Gearing

Q: Which of the following approaches are used in determining an appropriate level of debt and equity in the cost of capital calculation?

- Average gearing level of the industry in which the entity operates
- Theoretical target gearing level of the entity
- The acquirer's intended levels of gearing for the entity
- The entity's actual gearing level at the valuation date

Figure 4.14 Approaches used in determining the appropriate level of debt and equity



The actual gearing level of the company being valued was the approach adopted most frequently.

Country risk

When valuing businesses in emerging markets, it is critical that a prospective investor assesses and quantifies the risks inherent in investing in different sovereign territories.

Another important question is whether we should add a country risk premium to the equity risk premium and thereby use a higher equity risk premium in some markets than in others. Although it may appear to be common sense to require a higher risk premium in emerging markets than in developed markets, there are some arguments that favour a global equity risk premium.

The equity risk premium concept is based on the assumption that the investors are fully diversified. Some argue that country risk is diversifiable. However, for this argument to hold, it is necessary for investors to be globally diversified and for there to be low correlation across markets. As investors become more globally diversified, global market integration will increase.

The economic slowdown in Europe and its direct impact on Chinese manufacturing output illustrates the level of global integration that has been achieved.

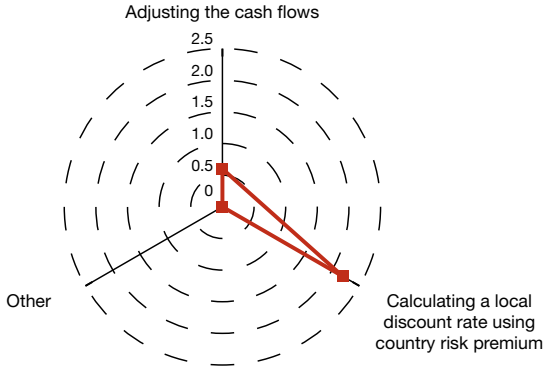
A second argument against a specific country risk premium is based on a global asset pricing view in which differences in risk are captured by differences in betas. Problems relate to the selection of comparable companies and the index the beta is measured against. Measured against the local index, the average beta within each market is one and the beta therefore does not capture country risk.

Global equity indices are normally market weighted and if one measures betas against a global index, smaller companies in emerging markets will report lower betas than mature large companies in developed markets.

Q: How do you generally adjust for country risk when valuing an asset in a country where no reliable long-bond yield (i.e. risk-free rate) can be observed?

- Adjusting the cash flows
- Determining an appropriate risk-free rate with reference to default yield spreads on USD-denominated sovereign Euro-dollar bonds and implied premiums using country credit ratings

Figure 4.15: Country risk premium inclusion method



The survey results indicate that country risk differentials are recognised mainly through adjusting local discount rates with a country risk premium.

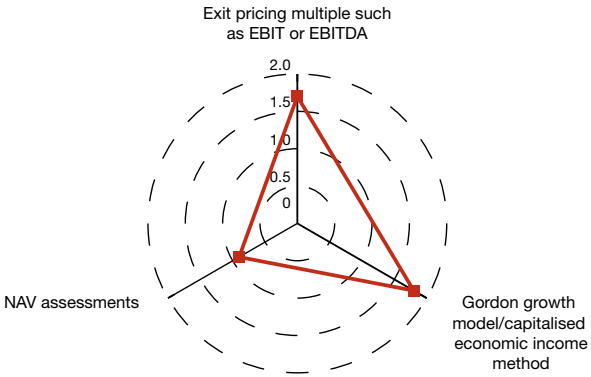
Terminal value

Another technical issue that frequently arises in the income approach is the question of terminal values. Terminal values often contribute more than 50% of the discounted cash flow value. As a result, the terminal value calculation is an area that needs to be considered in detail.

Q: Which of the following approaches are used in calculating the terminal value in a business valuation?

- Exit pricing multiple such as earnings before interest and tax (EBIT) or earnings before interest, tax, depreciation and amortisation (EBITDA)
- Gordon growth model/capitalised economic income method
- Net asset value (NAV) assessments

Figure 4.16: Approaches used in calculating terminal values



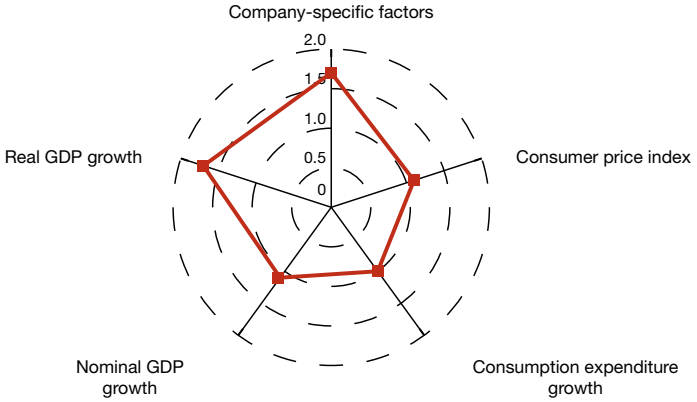
The Gordon growth model is the most popular methodology used in calculating terminal values. Most respondents use this approach either always or frequently.

Exit multiples are also popular among respondents.

Q: If you apply the Gordon growth model/capitalised economic income method, on what do you base your long-term growth assumption?

- Company-specific factors
- Consumer price index (CPI)
- Consumption expenditure growth
- Nominal gross domestic product (GDP) growth
- Real GDP growth

Figure 4.17: Basis used for estimating long-term growth rates



The results indicate a strong preference for macroeconomic factors including inflation and GDP growth, but company-specific factors are also considered by the majority of valuation practitioners.

The results suggest that there is no single factor that can be used to determine a company's long-term growth rate and that a combination of company, industry and macroeconomic factors is generally considered.

Market approach

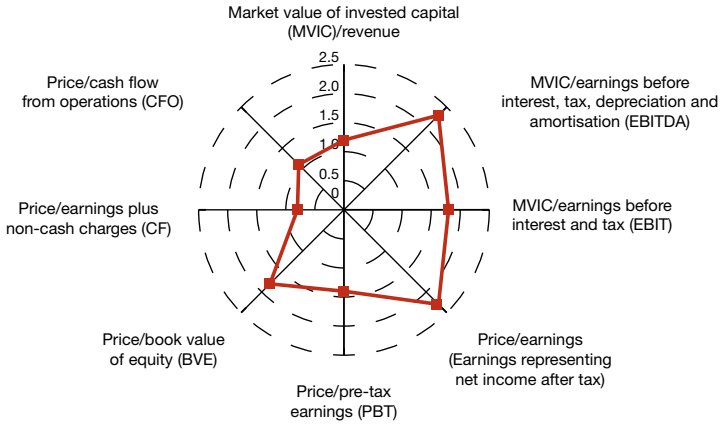
A number of valuation multiples or valuation benchmarks can be used in the application of the market approach.

This section of the survey tested the frequency of use of a range of common market multiples.

Q: When using the market multiple approach, which of the following valuation multiples are used?

- Market value of invested capital (MVIC)/revenue
- MVIC/earnings before interest, tax, depreciation and amortisation (EBITDA)
- MVIC/ earnings before interest and tax (EBIT)
- Price/earnings (Earnings representing net income after tax)
- Price/pre-tax earnings (PBT)
- Price/book value of equity (BVE)
- Price/earnings plus non-cash charges (CF)
- Price/cash flow from operations (CFO)

Figure 4.18 Valuation multiples used

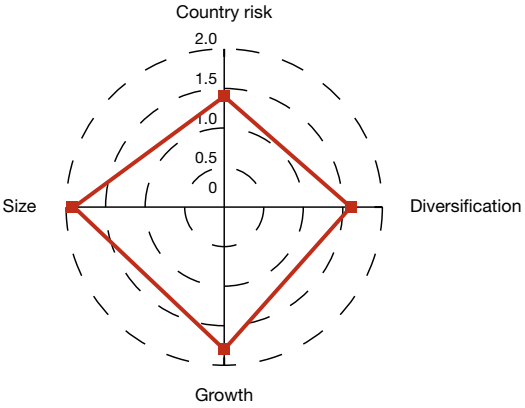


The price/earnings ratio and MVIC/EBITDA multiple are the most used valuation multiples in the application of the market approach.

Q: If applicable, which of the following adjustments to observed comparable company multiples would you consider in applying the market multiple approach?

- Country risk
- Diversification
- Growth
- Size

Figure 4.19: Adjustments to valuation multiples



All respondents indicated that they consider making adjustments in determining appropriate multiples. Although the adjustments are frequently or always considered, whether an adjustment will be applied will depend on the facts and circumstances of the specific valuation.

Discounts and premiums

Minority discount

The minority discount relates to the lack of control over the operation and corporate policy for a given investment by its minority shareholders. The minority shareholders can generally not direct the size or timing of dividends or control the selection of management.

A minority shareholder can also not veto the acquisition, sale or liquidation of assets. Minority discounts are therefore usually applied when valuing a non-controlling stake to discount the value for lack of control.

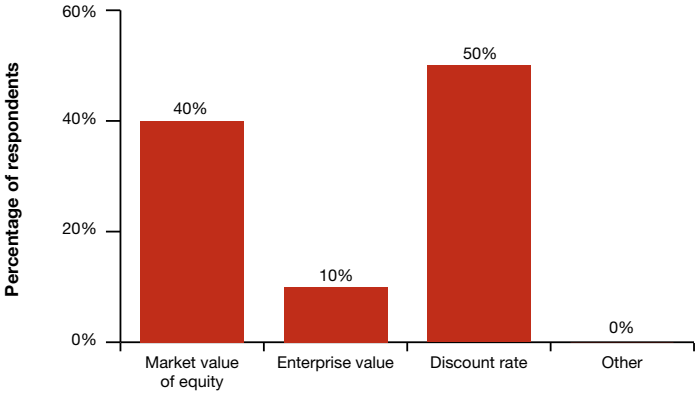
Several factors can influence the level of input and control that a minority shareholder has in an investment. The following are characteristics of control that may be considered in assessing the influence a minority shareholder has in a business:

- The ability to revise the articles of incorporation and bylaws;
- Influence over the election of directors and management and the ability to establish remuneration policies;
- Ability to influence the selection of suppliers and customers and enter into agreements with them;
- Level of control over dividend policy;
- Ability to set corporate strategies, including the ability to acquire or liquidate assets and control the sale of the company or public offerings; and
- Ability to liquidate, dissolve, or recapitalise the company.

Q: Where do you apply the above discounts/premiums?

- Market value of equity
- Enterprise value
- Discount rate
- Other

Figure 4.20: Application of minority discounts



When asked where the minority discounts are applied, respondents appear to be divided, with 50% applying a discount to either the market value of equity or enterprise value, and the other 50% indicating that they adjust the discount rate.

Given that most respondents acknowledge the appropriateness of the minority discount, we asked our respondents for an indication of the range of minority discounts normally applied in their valuation analyses.

On average, participants apply a 14% minority discount to the market value of equity and a 21% minority discount to the enterprise value.

Size of discount considered

	Market value of equity	Enterprise value
Average 2012	14%	21%

Control premium

The control premium is the inverse of the minority discount and similar issues will have to be considered in calculating a control premium. To summarise, a control premium relates to the additional value associated with the ability to control the distribution of cash generated by the company, which includes the ability to influence the timing and size of the dividend distribution.

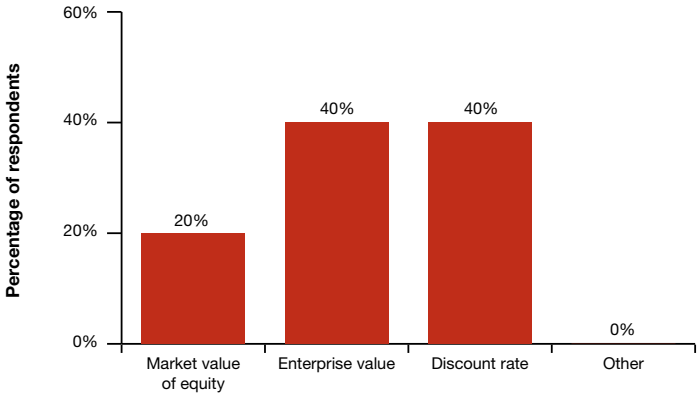
There is also a premium that relates to the ability to influence the direct policy and hiring of management. A controlling interest can also direct the company in a direction that enhances the value derived by it, for example by choice of suppliers and markets it competes in relative to other ownership interests the controlling owners may have.

Given that most respondents acknowledge the appropriateness of the control premium, we asked them to indicate how they go about applying control premiums in their valuation analyses.

Q: Where do you apply the above discounts/premiums?

- Market value of equity
- Enterprise value
- Discount rate
- Other

Figure 4.21: Application of control premiums



Almost two-thirds (60%) of respondents apply control premiums to either enterprise value or equity value. Differences are therefore expected to exist between the sizes of the premiums applied by the two sets of practitioners.

We then sought to quantify the benchmark control premiums that are typically applied.

The average control premium applied to the market value of equity is between 34% and 44% to the enterprise value.

Size of premium applied

	Market value of equity	Enterprise value
Average 2012	34%	44%

Marketability discount

Marketability can be defined as the "the ability to convert the business ownership interest (at whatever ownership level) to cash quickly, with minimum transaction and administrative costs in so doing and with a high degree of certainty of realising the expected amount of net proceeds".[10]

It is important to distinguish the marketability discount from the minority discount. The lack of ownership control captured by the minority discount addresses the limited ownership and lack of operational control, whereas the marketability discount deals with how quickly and certainly the ownership share can be converted to cash.

There is, however, an expected relationship between the marketability and the ownership share. Even after we discount a minority interest for a lack of control, it is usually harder to sell a non-controlling stake than a controlling ownership interest. The marketability discount is therefore expected to decrease with the size of the ownership share.

[10] Pratt, S, Reilly, R and Schweighs, R. *Valuing a Business*. McGraw-Hill, 2000.

There are two types of empirical studies aimed at quantifying the valuation impact related to lack of marketability on non-controlling ownership interests:

- Discounts on the sale of restricted shares to publicly traded companies; and
- Discounts on the sale of closely held company shares – compared with prices of subsequent initial offerings of the same company's shares.

There are various factors that will influence the size of the marketability discount. The first to consider is whether the asset is privately held or publicly traded. Furthermore, a consideration of any restrictions on the sale of the investment is appropriate. Any shareholder agreements or company bylaws might put restrictions on timing of sale, the pricing of assets or the characteristics of the purchaser of the ownership stake.

One also has to consider whether there is a market for the sale of the asset and how active the market is. A satisfactory history of transactions in closely held shares will reduce the marketability discount and prospects for achieving an IPO and the lower the costs of listing, the lesser the need for a marketability discount.

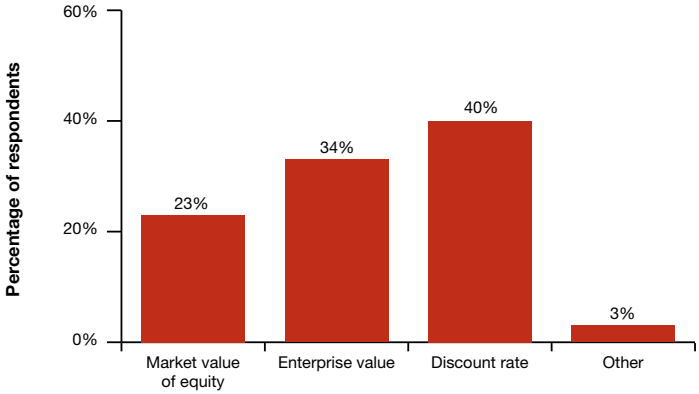
Even controlling ownership interests will be subject to some form of illiquidity discount. Factors that can affect the illiquidity discount include the cost to prepare for and execute the sale and the uncertainty around the time it will take to complete the transaction. There is also uncertainty related to the final sale price and the non-cash and deferred transaction proceeds.

Respondents recognise the need to adjust for marketability in all valuation approaches. The remainder of this section deals with how respondents apply marketability discounts in their valuation analysis.

Q: Where do you apply the above discounts/premiums?

- Market value of equity
- Enterprise value
- Discount rate
- Other

Figure 4.22: Application of marketability discounts



Just over half of respondents (57%) apply marketability discounts to either the market value of equity or enterprise value.

On average, participants apply a 10% marketability discount to the market value of equity and 25% to the enterprise value.

Size of discount applied

	Market value of equity	Enterprise value
Average 2012	10%	25%

Section 5:
East Africa

Contents

Valuation approaches

There are a number of methodologies used to value businesses. We found that the approaches most commonly used in East Africa are:

- **The income approach**
  This approach determines the market value of the ordinary shares of a company based on the value of the cash flows that the company can be expected to generate in the future. This includes traditional discounted cash flow techniques and also real option valuations, which use option pricing models to measure the value of assets that share option characteristics.
- **The market approach**
  This gauges the market value of the ordinary shares of a company based on a comparison of the company to comparable publicly-traded companies and transactions in its industry, as well as to prior transactions in the ordinary shares of the company using an appropriate valuation multiple.
- **The net assets approach**
  This evaluates the market value of the ordinary shares of a company by adjusting the asset and liability balances on the company's balance sheet to its market value equivalents. The approach is based on the summation of the individual piecemeal market values of the underlying assets less the market value of the liabilities.

There continue to be conflicting views about which approach is best. In private equity and venture capital circles, there is a strong preference for market multiple based valuations. The International Private Equity and Venture Capital Valuation Board Guidelines state:

> *In assessing whether a methodology is appropriate, the valuer should be biased towards those methodologies that draw heavily on market-based measures of risk and return. Fair Value estimates based entirely on observable market data should be of greater reliability than those based on assumptions.*[11]

A similar view is upheld in accounting standards, where greater reliance is placed on market-based measures of value.

The alternate view is that market volatility and lack of directly comparable companies, particularly in emerging markets such as ours, places increased focus on discounted cash flow methodologies. According to this school of thought, short-term fluctuations in the market affect multiples and consequently valuations, as these markets are strongly affected by investor sentiment.

[11] *International Private Equity and Venture Capital Valuation Guidelines*, 2010 edition

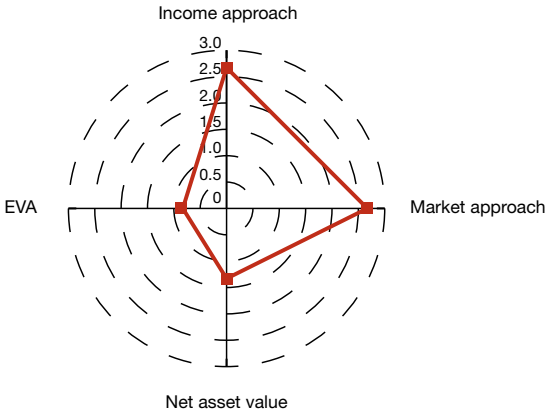
The lack of directly comparable companies of a similar size and growth profile also limits the reliability of observed multiples. The discounted cash flow approach offers an opportunity to capture longer-term value and reflects the company-specific risks and growth profiles more completely.

The aim of this section is to highlight the most popular valuation approaches being utilised in business enterprise valuations in East Africa.

Q: Which of the following valuation approaches are most often used to value a going concern?

- Economic value added (EVA)
- Income approach (discounted cash flow)
- Market approach (e.g. price/earnings ratio)
- Net asset approach

Figure 5.1: Valuation approaches



The primary valuation approaches are the income approach (discounted cash flow) and market approach (based on market multiples). No respondents indicated that they never use these approaches.

The use of alternative approaches to the income approach supports the view that discounted cash flows should rarely be used in isolation.

Income approach

Cost of capital

From a company's perspective, the weighted average cost of capital (WACC) represents the economic return (or yield) that an investor would have to give up by investing in the subject investment instead of all available alternative investments that are comparable in terms of risk and other investment characteristics.[12]

The WACC is calculated by weighting the required returns on interest-bearing debt, preference share capital and ordinary equity capital in proportion to their estimated percentages in an expected industry capital structure, target or other structure as appropriate.

[12] Pratt, S and Niculita, A. *Valuing a Business*. McGraw-Hill, 2008.

WACC formula

The general formula for calculating the WACC (assuming only debt and equity capital) is:

WACC = kd x (d%) + ke x (e%)

Where:

WACC = Weighted average rate of return on invested capital

kd = After-tax rate of return on debt capital

d% = Debt capital as a percentage of the sum of the debt and ordinary equity capital (total invested capital)

ke = Rate of return on ordinary equity capital

e% = Ordinary equity capital as a percentage of the total invested capital

There are three related steps involved in developing the WACC:

- Estimating the opportunity cost of equity financing;
- Estimating the opportunity cost of non-equity financing; and
- Developing market value weights for the capital structure.

Estimating the cost of equity is the most subjective and difficult measure to quantify in the WACC formula, which is why we have dedicated a substantial part of this survey to this issue.

There are two broad approaches to estimating the cost of equity:

- Deductive models
  Deductive models, such as dividend growth models, rely on market data to determine an imputed cost of equity. The dividend growth model is one such approach, which requires market data that include the current share price, expected dividends and the long-term steady dividend growth rate.
- Risk-return models
  The capital asset pricing model (CAPM) is probably the most widely used of the risk-return models. The CAPM measures risk in terms of the non-diversifiable variance (systematic risk) and relates expected returns to this risk measure. The CAPM derives the cost of equity by adding to the risk-free rate an additional premium for risk. This risk premium is a product of the investment's beta (a measure of relative systematic risk of the particular equity investment) and a market risk premium, being the reward required by investors for investing in an equity investment of average risk. The CAPM is therefore a linear combination of the risk-free rate, the equity risk premium and the company's beta. Its simplicity is attractive and largely explains the popularity of the CAPM.

CAPM formula

$E(Re) = Rf + \beta \times E(Rp)$

Where:

$E(Re)$ = Expected rate of return on equity capital

Rf = Risk-free rate of return

β = Beta or systematic risk

$E(Rp)$ = Expected market risk premium: expected return for a broad portfolio of shares less the risk-free rate of return

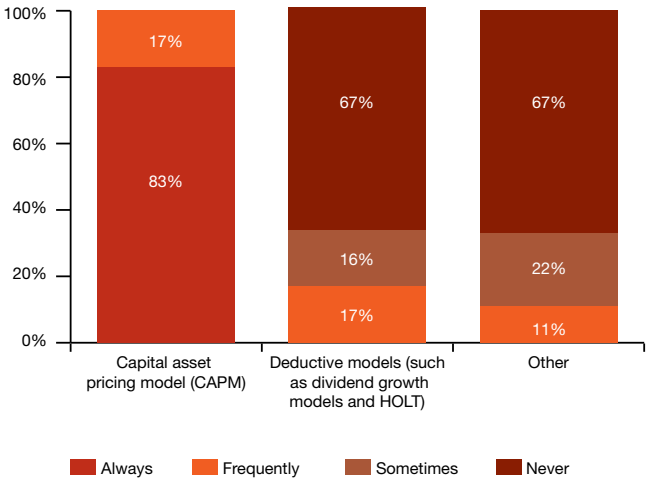
While the CAPM is popular, it is not perfect. A key criticism raised against the CAPM is its inability to account for several equity returns, such as the small firm effect (whereby smaller companies exhibit higher returns) and the value effect (whereby companies with low ratios of book-to-market value have higher expected returns). One response to this empirical questioning is to move away from the traditional CAPM's linear, stationary, and single-factor features.

Given the competing views between deductive models and risk-return models, we included a question in our survey to determine what methodologies are being used by market practitioners.

Q: In calculating an appropriate rate of return to apply to the future cash flows, which of the following methods are being used?

- Arbitrage pricing theory (APT)
- Capital asset pricing model (CAPM)
- Deductive models (such as dividend growth models and HOLT)
- Fama-French three factor model
- Intertemporal capital asset pricing model (ICAPM)
- Other

Figure 5.2: Methods used to calculate the cost of equity



The 2012 survey confirms the CAPM as the primary methodology used to estimate the cost of equity, with all respondents stating that they either always or frequently use it.

The survey also confirms the preference for risk-return models over deductive approaches to estimating the cost of equity. Survey responses relating to the assumptions made in the application of the CAPM are included in the next section of the survey.

Risk-free rate

Ordinarily, valuation practitioners estimate the cost of equity by assessing its component parts using the CAPM. However, we have found that in the current environment, the risk-free rate and the equity market risk premium are proving volatile.

Historically, many valuation practitioners have taken the view that the current yield on long-dated nominal government bonds for the risk-free rate, combined with an evaluation of a range of historical, market and forward-looking evidence for the market risk premium, results in an overall cost of equity that is appropriate in the context of the risks facing an equity investor.

Since the Eurozone sovereign debt crisis, nominal bond yields in the UK, US and Germany have fallen to record lows, a result of large-scale asset repurchase programmes and the 'flight to quality'. A rise in volatility has therefore led to a mismatch in the short and long-term evidence sources used in CAPM calculations.

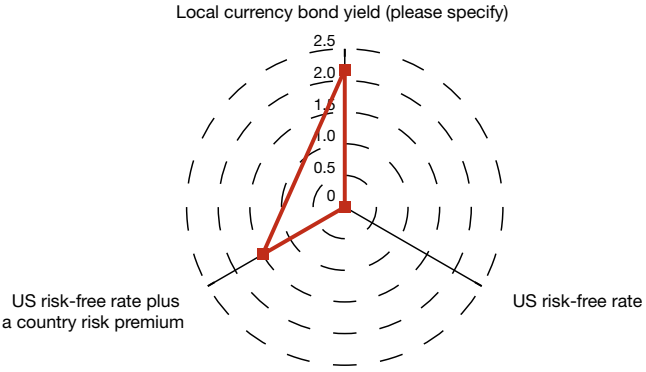
As a result, sources for the risk-free rate and evidence for the market risk premium used would, in our view, be critical components of this year's survey.

We asked respondents in East Africa for the approach used by them in selecting an appropriate risk free rate.

Q: Please specify what you use as the risk-free rate in your country:

- Local currency bond yield (please specify)
- US risk-free rate
- US risk-free rate plus a country risk premium

Figure 5.3: Proxies used for the risk-free rate



In some East African countries, such as Kenya, various government bonds are available as a proxy for the risk-free rate.

The table below is a list of 15 long-term treasury bonds available in Kenya.

Kenyan Treasury bonds

Month, Year	Issue No	Tenure	Maturity date	Coupon rate (%)	Redemption yield
Aug 2011	SDB1/2011/30(R2)	30	21/01/2041	12	16.40
Mar 2011	SDB1/2011/30(R1)	30	21/01/2041	12	13.52
Feb 2011	SDB1/2011/30	30	21/01/2041	12	12.96
Jul 2010	FXD1/2010/25(R1)	25	28/05/2035	11.25	9.84
Jun 2010	FXD1/2010/25	25	28/05/2035	11.25	10.44
Jun 2011	FXD1/2011/20(R1)	20	05/05/2031	10	14.82
May 2011	FXD1/2011/20	20	05/05/2031	10	13.97
Dec 2009	FXD1/2008/20(R2)	20	05/06/2028	13.75	13.69
Jun 2009	FXD1/2008/20(R1)	20	05/06/2028	13.75	14.61
Jun 2008	FXD1/2008/20	20	05/06/2028	13.75	14.74
Apr 2011	FXD2/2010/15(R1)	15	08/12/2025	9	12.39
Dec 2010	FXD2/2010/15	15	08/12/2025	9	10.92
Mar 2010	FXD1/2010/15	15	10/03/2025	10.25	9.98
Oct 2009	FXD1/2009/15	15	07/10/2024	12.50	13.71
May 2009	FXD3/2007/15(R1)	15	07/11/2022	12.50	13.53

***Source**: Central Bank of Kenya, October 2012*

The local currency bond yield appears to be the most popular benchmark choice for the risk free rate among market practitioners in valuing businesses in East Africa. In Kenya, the most liquid, longest-term government bonds are a common benchmark.

Most respondents have indicated that they never apply a US risk-free rate without considering a country risk premium and that country risk premiums are generally applied when no local currency bond yield is available.

Beta

Beta typically measures the sensitivity of a share price to fluctuations in the market as a whole.

Beta formula

Beta is calculated by regressing individual share returns against the returns of the market index. The formula for beta is as follows:

$$\beta = \frac{cov(R_i, R_m)}{\sigma^2(R_m)} = \frac{\rho(R_i, R_m)\sigma(R_i)}{\sigma(R_m)}$$

Where:

$cov(R_i,R_m)$ = Covariance between security i and the market index

$\sigma^2(R_m)$ = Variance of the market index

$\rho(R_i,R_m)$ = Correlation coefficient between security i and the market index

$\sigma(R_i)$ = Standard deviation of returns of security i

$\sigma(R_m)$ = Standard deviation of market returns

Analysts often do not use raw data (e.g. share prices and share returns) to estimate beta based on their programmed regression algorithms. They rather use professional information systems and databases as sources for betas.

Service providers often make adjustments in calculating betas, for example:

- Bayesian adjustments are used to compensate for estimation error; and
- Illiquidity adjustments in respect of thinly traded shares.

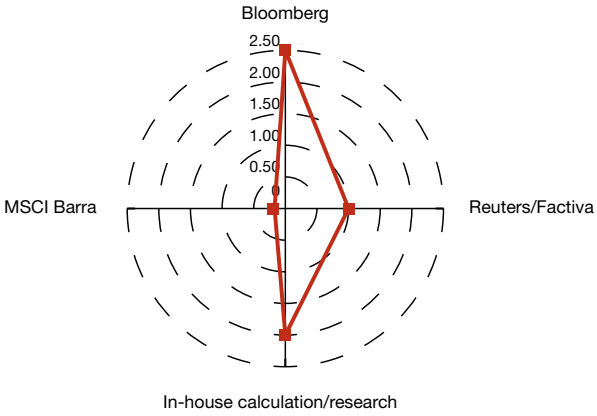
In addition, the frequency of returns (daily, weekly, monthly or quarterly) is one of the major practical issues when estimating beta. The CAPM is based on maximising expected utility and the security returns have to be normally distributed and the distribution must be fully described by standard deviation and the expected return.

Different service providers often use different frequencies, which may or may not be in line with the specific best practice guidelines being followed by financial analysts and corporate financiers.

Q: Which of the following service providers are used as a source of information for the beta?

- Bloomberg
- In-house calculation/research
- MSCI Barra
- Reuters

Figure 5.4: Service providers used to source betas



The survey highlighted a wide variety of sources that are currently used in the determination of betas in the East African market. Bloomberg is the most popular source for beta estimates, followed by in-house beta calculations.

Equity market risk premium

The market risk premium is the single most debated input in a cost of capital calculation. The three broad approaches to estimating a market risk premium include the historic equity bond spread, the survey approach and an implied forward approach.

Historical

The historical approach is the most widely used approach to estimating equity risk premiums. It is based on the assumption that in a well functioning market, arbitrage will ensure that required and achieved returns should be equivalent.

The actual returns earned on stocks over a long time are estimated and compared to the actual returns earned on a default-free (usually government) security. The difference, on an annual basis, between the two returns is computed and represents the historical risk premium.

There are several issues related to the use of this approach in estimating risk premiums. The suitability of the approach depends on whether investor expectations are influenced by the historical performance of the market and whether market conditions and expectations change over time. In some markets the availability of data may be limited or unreliable. This is an issue particularly for emerging markets.

The approach also makes large divergences in risk premiums possible with the use of the same data. There are three main reasons for the divergence in results:

- **Time period**
  The time period on which the data is based will affect the result. Shorter and more recent periods are assumed to provide a more updated estimate. However, the cost associated with using shorter time periods is greater noise in the risk premium estimate.

- **Risk-free security and market index**
  The choice of the risk-free security and the market index will influence the estimate. As already mentioned, the risk-free rate chosen in computing the premium has to be consistent with the risk-free rate used to compute expected returns. In theory, one would want to use the broadest index of stocks, where the index is market-weighted and free of survivorship bias.

- **Averaging approach**
  Averages can be based on arithmetic or geometric averages. The arithmetic average return measures the simple mean of a series of annual returns, whereas the geometric average looks at the compounded return. If annual returns are uncorrelated over time, and our objective was to estimate the risk premium for the next year, the arithmetic average is the best and most unbiased estimate of the premium. However, as there is an indication that returns on stocks are negatively correlated over time, the arithmetic average return is likely to overstate the premium. Also, as the time period increases, the argument for geometric returns increases.

Survey approach

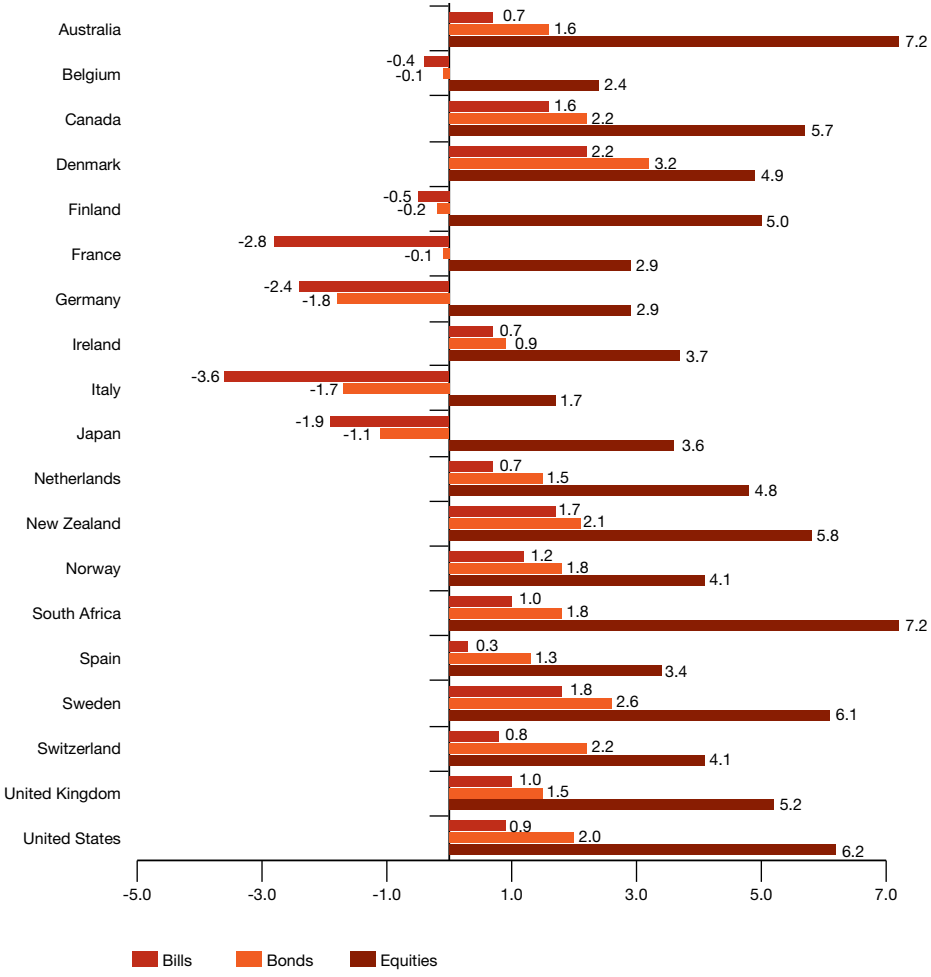
The survey methodology is based on the opinions of market participants. There are several issues with this approach. As with most forecasts, survey risk premiums are responsive to recent stock prices movements. It is therefore possible that survey premiums will be a reflection of the recent past rather than a good forecast of the future. Survey results may also be influenced by the subjective manner in which questions regarding the market risk premiums are posed to respondents.

Forward looking estimate

A forward-looking estimate of the premium is estimated using either current equity prices or risk premiums in non-equity markets. The discounted cash flow approach uses pricing of assets to infer required return or use actual or potential dividends on an index to calculate required return. This approach will not generate a correct estimate if companies do not pay out what they can afford to in dividends or if earnings are expected to grow at extraordinary rates in the short term.

The graph that follows illustrates observed real returns on equities and bonds internationally over the period 1900-2012.

Figure 5.5: Real returns on equities and bonds 1900-2012



***Source**: Dimson, E Marsh, P and Staunton, M Credit Suisse Global Investment Returns Sourcebook 2012*

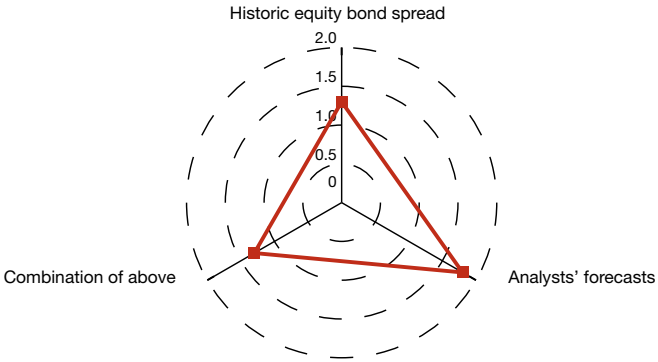
Real returns on equities and bonds 1900-2012

	Equities	Bonds	Bills
Australia	7.2	1.6	0.7
Belgium	2.4	-0.1	-0.4
Canada	5.7	2.2	1.6
Denmark	4.9	3.2	2.2
Finland	5.0	-0.2	-0.5
France	2.9	-0.1	-2.8
Germany	2.9	-1.8	-2.4
Ireland	3.7	0.9	0.7
Italy	1.7	-1.7	-3.6
Japan	3.6	-1.1	-1.9
Netherlands	4.8	1.5	0.7
New Zealand	5.8	2.1	1.7
Norway	4.1	1.8	1.2
South Africa	7.2	1.8	1.0
Spain	3.4	1.3	0.3
Sweden	6.1	2.6	1.8
Switzerland	4.1	2.2	0.8
United Kingdom	5.2	1.5	1.0
United States	6.2	2.0	0.9

Q: Which of the following would you consider to be the rationale behind the estimation of the market risk premium?

- Historic equity bond spread
- Analysts' forecasts
- Combination of the above

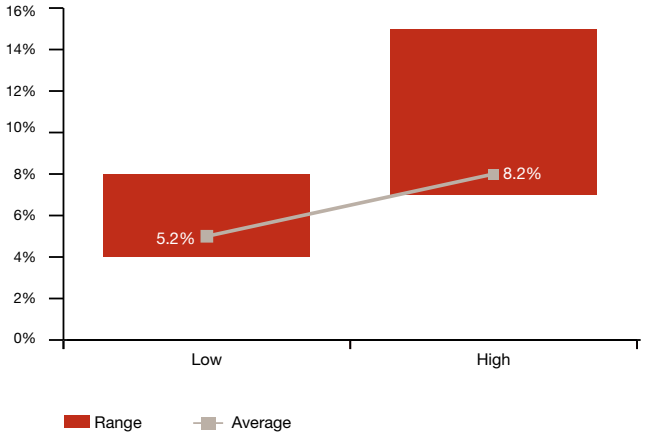
Figure 5.6: Approaches used to estimate the market risk premium



The survey results indicate that most respondents consider analysts' forecast in determining equity risk premiums. A large proportion also considers a combination of analyst forecasts and historical spreads.

Q: What range of market risk premiums do you use when making use of the capital asset pricing model? (Please ignore discounts, premiums and the size effect as specific questions are asked in this regard)

Figure 5.7: Range of market risk premiums used in the CAPM



Average market risk premium

	Low	High
2012 average	5.2%	8.2%
2nd quartile	5.0%	8.0%
3rd quartile	5.0%	8.8%

The market risk premium ranges from 4% to 10% with the average low range being 5% and the average high range being 8%.

Small stock premiums

In computing an equity risk premium to apply to all investments in the capital asset pricing model, we are assuming that betas carry the weight of measuring the risk in individual firms or assets, with riskier investments having higher betas than safer investments. A number of studies such as the *Ibbotson SBBI 2012 Valuation Yearbook* have shown that investments in small companies have experienced higher returns than those predicted by the standard CAPM approach.

In theory, the CAPM would suggest a higher required return for small companies through a higher beta for such companies. The higher betas for small companies can be caused by higher operational and financial leverage, limited access to funding and other factors that makes them more vulnerable to general market fluctuations.

However, the higher betas do not seem to fully explain the higher returns historically achieved by smaller companies. Some have interpreted this as an indication that there are other risks associated with small companies that the CAPM does not address. To adjust for this finding, many practitioners add an additional premium to the cost of equity of companies with smaller market capitalisations.

Survivorship bias is one possible explanation for the observed high returns on small companies. The cash flows associated with small companies are subject to relatively high degrees of risks (both systematic and diversifiable), and their size may make them vulnerable to bankruptcy. In the event of an adverse performance, it is clear that there will be a large number of small companies that fail.

Historical measurements of small-company profitability will therefore be biased upwards as they will include only those companies that continue to operate. The observed higher returns simply demonstrate that such companies are subject to a great deal of diversifiable risk, which means that an analysis of surviving companies will inevitably show that they make high returns (to offset the negative returns on those companies that fail). A series of studies has also argued that market capitalisation, by itself, is not the reason for excess returns but that it is a proxy for other ignored risks such as illiquidity and poor information.

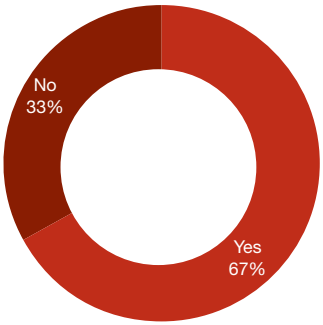
If the notion of the small stock premium (SSP) is accepted, there are two ways in which we can respond to the empirical evidence that small market cap stocks seem to earn higher returns than predicted by the traditional capital asset pricing model. One is to view this as a market inefficiency that can be exploited for profit; the other is to take the excess returns as evidence that betas are inadequate measures of risk and view the additional returns as compensation for the missed risk.

Given that there are two views on the appropriateness of the small stock premium, with various studies both supporting and refuting the notion of the small capitalisation premium, we asked respondents whether they apply small stock premiums in the course of their valuation analyses.

Q: Do you adjust the CAPM rate of return by a premium that reflects the extra risk of an investment in a small company?

- Yes
- No

Figure 5.8: Use of small stock premium

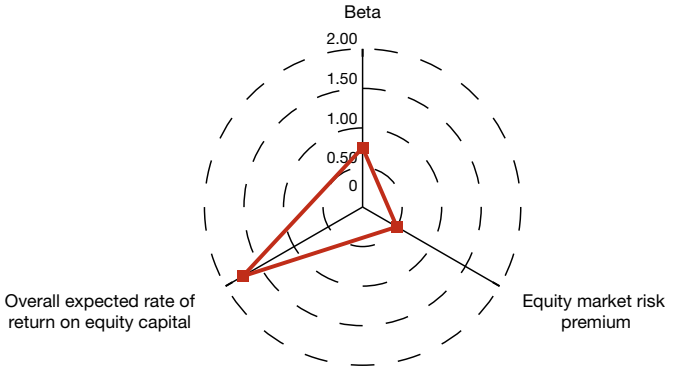


The majority of respondents favour the application of a small stock premium.

Q: What factor do you adjust when adjusting for small stock premiums?

- Beta
- Equity market risk premium
- Overall expected rate of return on equity capital

Figure 5.9: Adjustments made for company size



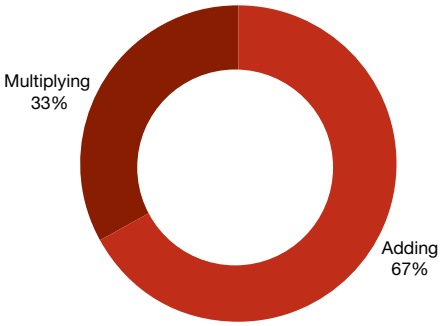
Most respondents indicated that they prefer to adjust the expected rate of return on equity capital to account for an additional risk in a small company.

As the next step in the survey, we wanted to determine the methodology used to effect the adjustment for company size.

Q: Do you adjust by multiplying a factor (i.e. CAPM x (1+SSP)) or adding a factor (i.e. CAPM + SSP)

- Multiplying
- Adding

Figure 5.10: Small stock premium inclusion method



The survey results show that most respondents incorporate the small stock premium by adding a factor to the return on equity rather than multiplying.

On average, participants apply an additive multiple of 3% and a multiplicative multiple of 13% when applying a small stock premium.

Average small stock premium

	Adding	Multiplying
Average 2012	3%	13%

The ranges give some indication as to what small stock premiums are applied. However, as many of the respondents point out, facts and circumstances of each individual company, the industry and the relative size of the company must be taken into consideration.

Specific risk premium

A key attribute of the CAPM is that investors are rewarded only for systematic risk. Specific risks that are theoretically diversifiable are not included in the CAPM. Standard finance theory states that investors should be compensated only for non-diversifiable risks.

Therefore, if the CAPM is applied, this assumes that the WACC is the same for any investment, regardless of the firm that undertakes it. However, this does not consider the fact that companies do not have unlimited resources to diversify risk.

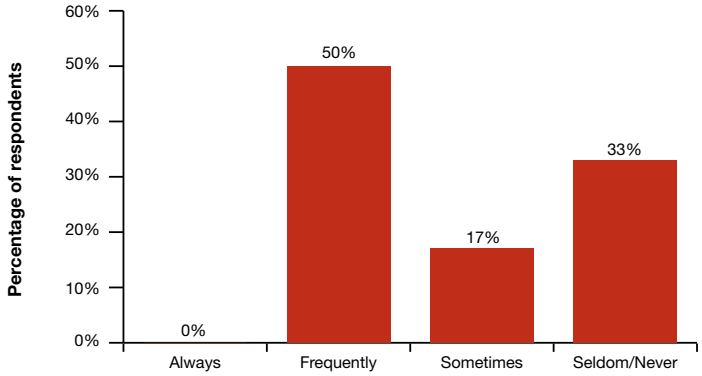
In project appraisal, hurdle rates are therefore frequently applied by managers to account for the specific risks of the project. These hurdle rates are generally higher than the company's WACC to reflect project-specific risks. In addition, investors appear to include risk premiums in their CAPM calculation for company-specific risk that cannot be adequately modelled.

Given that the application of a specific risk premium (SRP) is not consistent with the CAPM, we surveyed market practitioners about whether they apply specific risk premiums, and if so, in what instances. We also asked respondents what range of specific risk premiums they typically consider.

Q: Do you adjust the CAPM rate of return by a premium that reflects unique risks to the extent that such risks could not be modelled in the forecast cash flows?

- Always
- Frequently
- Sometimes
- Never

Figure 5.11: Use of a specific risk premium

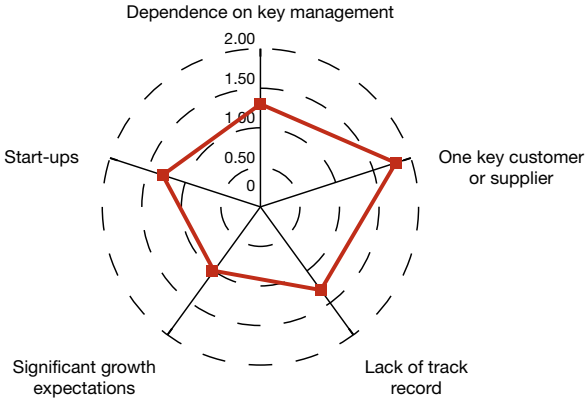


67% of respondents frequently or sometimes consider an adjustment to the CAPM for specific risks. This demonstrates that although the use of a specific risk premium is not supported by the CAPM and financial theory, specific risk premiums are widely used in practice.

Q: What are the typical conditions in which you would consider applying a specific risk premium?

- Dependence on key management
- One key customer or supplier
- Lack of track record
- Significant growth expectations
- Start-ups

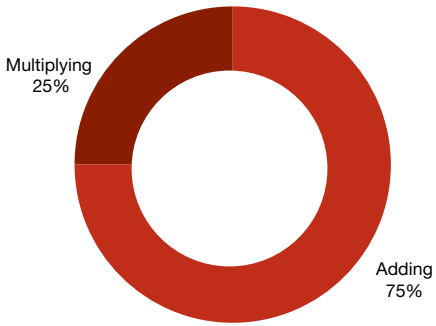
Figure 5.12: Specific risk factors



Respondents indicated that most of the factors listed would at some time be considered as motivation for the inclusion of a specific risk premium.

Q: Do you adjust by multiplying a factor (i.e. CAPM x (1+SRP))

Figure 5.13: Specific risk premium inclusion method



Most of the respondents adjust the overall expected return on equity capital by adding a premium.

Respondents were asked what the typical range of specific risk premiums applied is. In the case of applying an additive premium, the average low range applied is 1% with the average high range being 10%.

Respondents who apply a multiplicative factor apply an average low premium of 5% and an average high of 9%.

Average specific risk premium – adding

	Low	High
Average 2012	1%	10%

Average specific risk premium – multiplying

	Low	High
Average 2012	5%	9%

As the results indicate, specific risk premiums are used for a wide variety of reasons, with the upper end of the range likely to be dominated by hurdle rates used to appraise very high-risk projects.

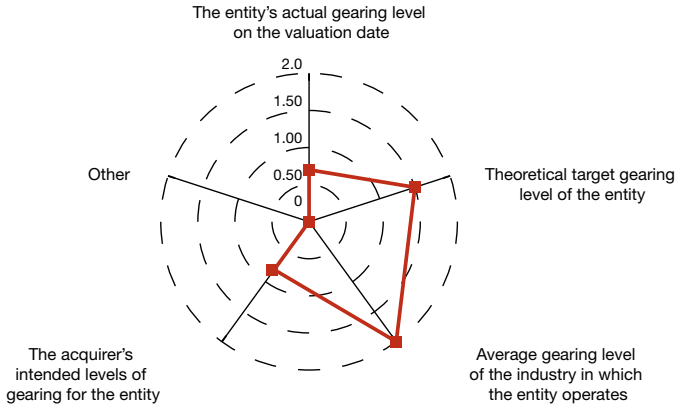
The wide range of specific risk premiums added or multiplied to the CAPM is therefore likely to be a result of the variety of risks that specific risk premiums aim to address.

Gearing

Q: Which of the following approaches are used in determining an appropriate level of debt and equity in the cost of capital calculation?

- Average gearing level of the industry in which the entity operates
- Theoretical target gearing level of the entity
- The acquirer's intended levels of gearing for the entity
- The entity's actual gearing level at the valuation date

Figure 5.14: Approaches used in determining the appropriate level of debt and equity



The average industry gearing level was the approach adopted most frequently. It is also interesting to note that a large number of participants consider indicators such as the theoretical target gearing level.

Country risk

When valuing businesses in emerging markets, it is critical that a prospective investor assesses and quantifies the risks inherent in investing in different sovereign territories.

Another important question is whether we should add a country risk premium to the equity risk premium and thereby use a higher equity risk premium in some markets than in others. Although it may appear to be common sense to require a higher risk premium in emerging markets than in developed markets, there are some arguments that favour a global equity risk premium.

The equity risk premium concept is based on the assumption that the investors are fully diversified. Some argue that country risk is diversifiable. However, for this argument to hold, it is necessary for investors to be globally diversified and for there to be low correlation across markets. As investors become more globally diversified, global market integration will increase.

The economic slowdown in Europe and its direct impact on Chinese manufacturing output illustrates the level of global integration that has been achieved.

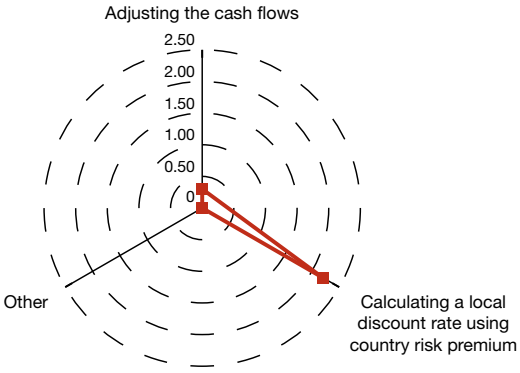
A second argument against a specific country risk premium is based on a global asset pricing view in which differences in risk are captured by differences in betas. Problems relate to the selection of comparable companies and the index the beta is measured against. Measured against the local index, the average beta within each market is one and the beta therefore does not capture country risk.

Global equity indices are normally market weighted and if one measures betas against a global index, smaller companies in emerging markets will report lower betas than mature large companies in developed markets.

Q: How do you generally adjust for country risk when valuing an asset in a country where no reliable long-bond yield (i.e. risk-free rate) can be observed?

- Adjusting the cash flows
- Determining an appropriate risk-free rate with reference to default yield spreads on USD-denominated sovereign Euro-dollar bonds and implied premiums using country credit ratings

Figure 5.15: Country risk premium inclusion method



The survey results indicate that country risk differentials are recognised mainly through adjusting local discount rates with a country risk premium.

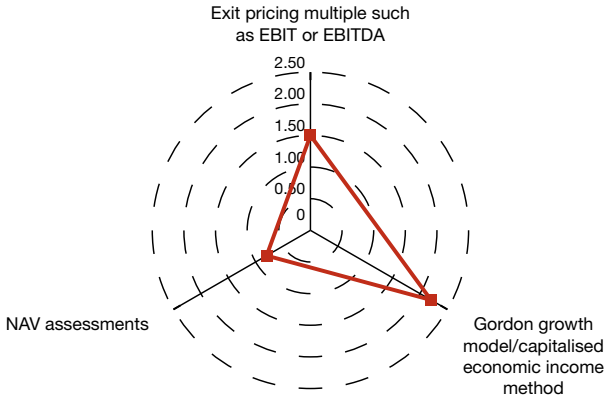
Terminal value

Another technical issue that frequently arises in the income approach is the question of terminal values. Terminal values often contribute more than 50% of the discounted cash flow value. As a result, the terminal value calculation is an area that needs to be considered in detail.

Q: Which of the following approaches are used in calculating the terminal value in a business valuation?

- Exit pricing multiple such as earnings before interest and tax (EBIT) or earnings before interest, tax, depreciation and amortisation (EBITDA)
- Gordon growth model/capitalised economic income method
- Net asset value (NAV) assessments

Figure 5.16: Approaches used in calculating terminal values



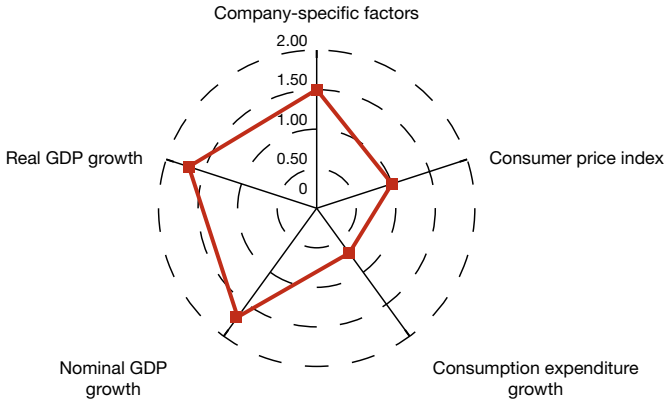
The Gordon growth model is the most popular methodology used in calculating terminal values. Most respondents use this approach either always or frequently.

Exit multiples are also popular among respondents.

Q: If you apply the Gordon growth model/capitalised economic income method, on what do you base your long-term growth assumption?

- Company-specific factors
- Consumer price index (CPI)
- Consumption expenditure growth
- Nominal gross domestic product (GDP) growth
- Real GDP growth

Figure 5.17: Basis used for estimating long-term growth rates



The results indicate a strong preference for macroeconomic factors including inflation and GDP growth, but company-specific factors are also considered by the majority of valuation practitioners.

The results suggest that there is no single factor that can be used to determine a company's long-term growth rate and that a combination of company, industry and macroeconomic factors is generally considered.

Market approach

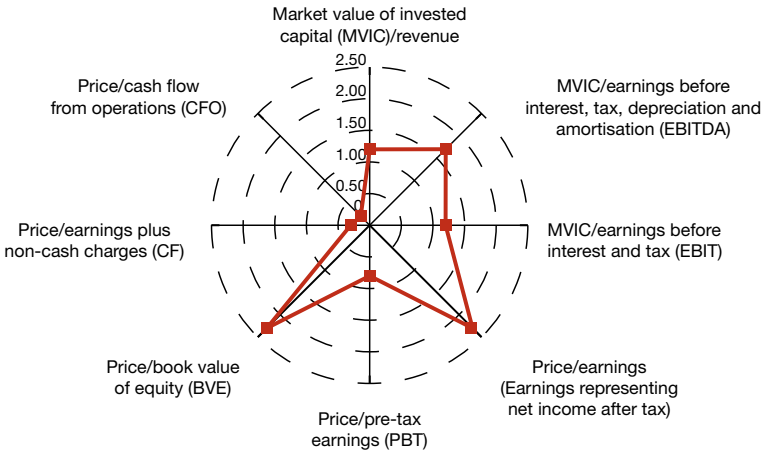
A number of valuation multiples or valuation benchmarks can be used in the application of the market approach.

This section of the survey tested the frequency of use of a range of common market multiples.

Q: When using the market multiple approach, which of the following valuation multiples are used?

- Market value of invested capital (MVIC)/revenue
- MVIC/earnings before interest, tax, depreciation and amortisation (EBITDA)
- MVIC/ earnings before interest and tax (EBIT)
- Price/earnings (Earnings representing net income after tax)
- Price/pre-tax earnings (PBT)
- Price/book value of equity (BVE)
- Price/earnings plus non-cash charges (CF)
- Price/cash flow from operations (CFO)

Figure 5.18: Valuation multiples used

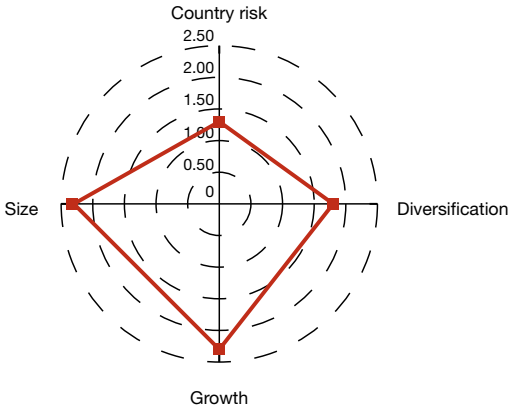


The price/earnings ratio and price/book value of equity multiple are the most used valuation multiples, in the application of the market approach.

Q: If applicable, which of the following adjustments to observed comparable company multiples would you consider in applying the market multiple approach?

- Country risk
- Diversification
- Growth
- Size

Figure 5.19: Adjustments to valuation multiples



All respondents indicated that they consider making adjustments in determining appropriate multiples in terms of the market approach. Although the adjustments are frequently or always considered, whether an adjustment will be applied will depend on the facts and circumstances of the specific valuation.

Discounts and premiums

Minority discount

The minority discount relates to the lack of control over the operation and corporate policy for a given investment by its minority shareholders. The minority shareholders can generally not direct the size or timing of dividends or control the selection of management.

A minority shareholder can also not veto the acquisition, sale or liquidation of assets. Minority discounts are therefore usually applied when valuing a non-controlling stake to discount the value for lack of control.

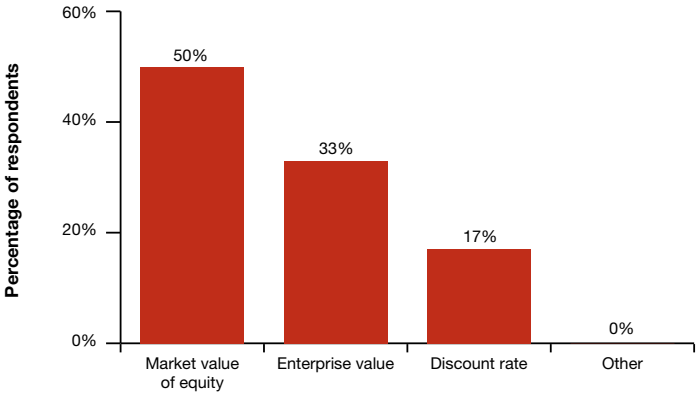
Several factors can influence the level of input and control that a minority shareholder has in an investment. The following are characteristics of control that may be considered in assessing the influence a minority shareholder has in a business:

- The ability to revise the articles of incorporation and bylaws;
- Influence over the election of directors and management and the ability to establish remuneration policies;
- Ability to influence the selection of suppliers and customers and enter into agreements with them;
- Level of control over dividend policy;
- Ability to set corporate strategies, including the ability to acquire or liquidate assets and control the sale of the company or public offerings; and
- Ability to liquidate, dissolve, or recapitalise the company.

Q: Where do you apply the above discounts/premiums?

- Market value of equity
- Enterprise value
- Discount rate
- Other

Figure 5.20: Application of minority discounts



When asked where the minority discounts are applied, most respondents replied that they prefer to apply the minority discount to the market value of equity.

Given that most respondents acknowledge the appropriateness of the minority discount, we asked our respondents for an indication of the range of minority discounts normally applied in their valuation analyses.

On average, participants apply a 14% minority discount to the market value of equity and a 21% minority discount to the enterprise value.

Size of discount applied

	Market value of equity	Enterprise value
Average 2012	14%	21%

Control premium

The control premium is the inverse of the minority discount and similar issues will have to be considered in calculating a control premium. To summarise, a control premium relates to the additional value associated with the ability to control the distribution of cash generated by the company, which includes the ability to influence the timing and size of the dividend distribution.

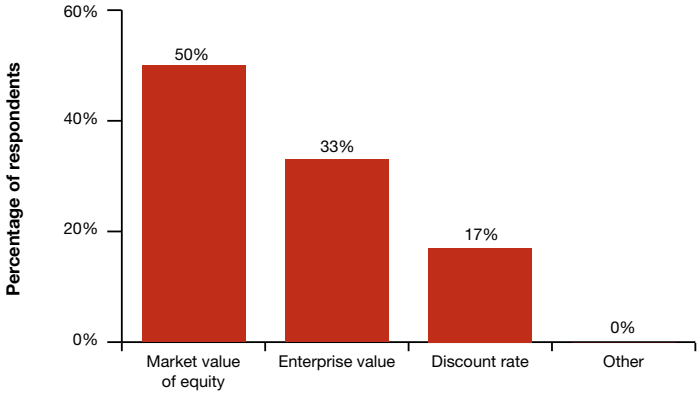
There is also a premium that relates to the ability to influence the direct policy and hiring of management. A controlling interest can also direct the company in a direction that enhances the value derived by it, for example by choice of suppliers and markets it competes in relative to other ownership interests the controlling owners may have.

Given that most respondents acknowledge the appropriateness of the control premium, we asked them to indicate how they go about applying control premiums in their valuation analyses.

Q: Where do you apply the above discounts/premiums?

- Market value of equity
- Enterprise value
- Discount rate
- Other

Figure 5.21: Application of control premiums



The majority of respondents apply control premiums to enterprise value or equity value. Differences are therefore expected to exist between the sizes of the premiums applied by the two sets of practitioners.

We then sought to quantify the benchmark control premiums that are typically applied.

The average control premium applied to the market value of equity is between 16% and 30% to the enterprise value.

Size of premium applied

	Market value of equity	Enterprise value
Average 2012	16%	30%

Marketability discount

Marketability can be defined as the "the ability to convert the business ownership interest (at whatever ownership level) to cash quickly, with minimum transaction and administrative costs in so doing and with a high degree of certainty of realising the expected amount of net proceeds".[13]

It is important to distinguish the marketability discount from the minority discount. The lack of ownership control captured by the minority discount addresses the limited ownership and lack of operational control, whereas the marketability discount deals with how quickly and certainly the ownership share can be converted to cash.

There is, however, an expected relationship between the marketability and the ownership share. Even after we discount a minority interest for a lack of control, it is usually harder to sell a non-controlling stake than a controlling ownership interest. The marketability discount is therefore expected to decrease with the size of the ownership share.

[13] Pratt, S, Reilly, R and Schweighs, R. *Valuing a Business*. McGraw-Hill, 2000.

There are two types of empirical studies aimed at quantifying the valuation impact related to lack of marketability on non-controlling ownership interests:

- Discounts on the sale of restricted shares to publicly traded companies; and
- Discounts on the sale of closely held company shares – compared with prices of subsequent initial offerings of the same company's shares.

There are various factors that will influence the size of the marketability discount. The first to consider is whether the asset is privately held or publicly traded. Furthermore, a consideration of any restrictions on the sale of the investment is appropriate. Any shareholder agreements or company bylaws might put restrictions on timing of sale, the pricing of assets or the characteristics of the purchaser of the ownership stake.

One also has to consider whether there is a market for the sale of the asset and how active the market is. A satisfactory history of transactions in closely held shares will reduce the marketability discount and prospects for achieving an IPO and the lower the costs of listing, the lesser the need for a marketability discount.

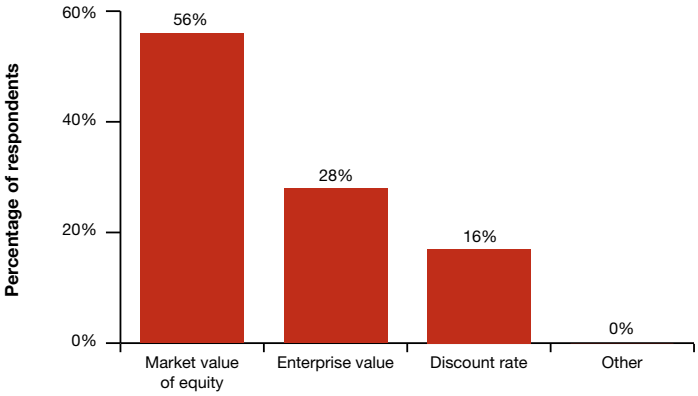
Even controlling ownership interests will be subject to some form of illiquidity discount. Factors that can affect the illiquidity discount include the cost to prepare for and execute the sale and the uncertainty around the time it will take to complete the transaction. There is also uncertainty related to the final sale price and the non-cash and deferred transaction proceeds.

Respondents recognise the need to adjust for marketability in all valuation approaches. The remainder of this section deals with how respondents apply marketability discounts in their valuation analysis.

Q: Where do you apply the above discounts/premiums?

- Market value of equity
- Enterprise value
- Discount rate
- Other

Figure 5.22: Application of marketability discounts



The majority of respondents apply marketability discounts to the market value of equity.

On average, participants apply an 11% marketability discount to the market value of equity and 7% to the enterprise value.

Size of discount applied

	Market value of equity	Enterprise value
Average 2012	11%	7%

Appendices

Contents

Appendix 1

Overview of survey methodology

The survey was conducted via an electronic questionnaire. The responses from various financial analysts and corporate financiers were analysed for each question and the results of the analysis are presented in the sections of this report. The questionnaire contained the following basic types of questions:

- Frequency-type questions in which the respondent had to indicate whether they always, frequently, sometimes or seldom used the particular methodology, variable or source;
- Alternative-type questions in which the respondent had to indicate whether or not a certain procedure is being followed; and
- Range-type questions in which the respondent had to indicate the value or value range normally used for a particular variable.

Frequency-type questions

The objective of the frequency-type questions was to determine the relative importance of each of the items tested. The frequency questions were analysed based on the following matrix:

Value	Description
3	Item tested is always used/ considered by respondents
2	Item tested is frequently used/ considered by respondents
1	Item tested is sometimes used/considered by respondents
0	Item tested is seldom or never used/considered by respondents

Alternative-type questions

Respondents were required to make a choice between two or more alternative responses. The result of the alternative-type questions was presented as a percentage of total respondents.

Range-type questions

Respondents were required to provide the value(s) for certain variables, for example, the market risk premium. Respondents had the option to include either a single value or a range of values. In cases where a range was provided, the data was analysed utilising the midpoint of the range to calculate, for example, average/median values.

Appendix 2:
List of respondents

- Absa Capital
- Acorn Private Equity
- Anglo American
- Argentil Capital Partners
- BDO
- Bravura
- Brimstone
- Cadiz
- Coast2Coast
- Co-operative Bank
- Deloitte
- Deutsche Bank Group
- Ernst & Young
- Ethos Private Equity
- Grindrod Bank
- HSBC Bank
- I Capital advisers
- Investec Corporate Finance
- Java Capital
- JP Morgan
- KPMG
- Lead Capital
- Liberty Group Limited
- Nedbank Capital
- NIC Capital
- NM Rothschild & Sons
- Old Mutual Investment Group (SA)
- PricewaterhouseCoopers Corporate Finance
- PSG Capital
- Rand Merchant Bank
- Remgro
- Renaissance Capital
- Sanlam
- Sasfin Corporate Finance
- Stanbic Bank
- Standard Bank
- Standard Chartered
- UAC of Nigeria

Appendix 3:
List of abbreviations

Abbreviation	*Description*
ALSI	JSE All-share Index
APT	Arbitrage pricing theory
β	Beta or systematic risk
BEE	Black economic empowerment
BRICS	Brazil, Russia, India, China and South Africa
BVE	Book value of equity
CAGR	Compound annual growth rate
CAPM	Capital asset pricing model
CF	Cash flows (earnings + non-cash charges)
CFO	Cash flow from operations
CPI	Consumer price index
EBIT	Earnings before interest and tax
EBITDA	Earnings before interest, tax, depreciation and amortisation
E(Re)	Expected rate of return on equity capital
E(Rp)	Expected market risk premium
EVA	Economic value added
FINDI	JSE Financial and Industrial Index
GDP	Gross domestic product
ICAPM	Intertemporal capital asset pricing model
IFRS	International Financial Reporting Standards

IPO	Initial public offering
JSE	Johannesburg Stock Exchange
M&A	Mergers and acquisitions
MSCI World Index	Index of 1 500 world stocks
MVIC	Market value of invested capital
NAV	Net asset value
PBT	Price/pre-tax earnings
PE	Price/earnings
Rf	Risk-free rate of return
SRP	Specific risk premium
SSP	Small stock premium
WACC	Weighted average cost of capital

Appendix 4

PwC Deals

PwC Deals provides comprehensive commercial, financial, economic and strategic advice to companies facing significant business growth opportunities. We have developed a reputation for excellent advice, strong relationships and high levels of independence. These attributes, coupled with a vast range of experience, have made PwC Deals a key corporate adviser in the South African market and our position has been reinforced through the completion of a number of notable local and cross-border deals.

Our range of specialist advisory services across critical areas of corporate finance and transaction services includes:

- **Valuation advice**
  We provide independent expert valuation advice to businesses and evaluate the financial implications of, amongst others, acquisitions, investments, mergers and joint ventures.
- **Mergers and acquisitions**
  We focus on the deal process from strategy through to post-deal integration, accessing the capital markets and valuing, negotiating and structuring deals. Our specialists also help clients to complete and extract the maximum value from transactions.

- **Business Recovery Services (BRS)**PwC's Business Recovery Services assists underperforming and distressed companies to stabilise, fund and fix their troubled operations through restructuring of their strategy, capital structure, organisation and operations.
- **Infrastructure, government and utilities**
  We advise governments, state-owned enterprises and private sector investors in project financing, public-private partnerships and privatisations. We provide counsel on the deal process from strategy to financial closure, including the raising of debt.
- **Transaction services**
  We assist companies involved in acquisitions, divestitures and strategic alliances to access local and global capital markets. Our services include financial and tax due diligence, sell-side due diligence, vendor assistance, no-access due diligence, bid support, carve-out and post-deal services. We help our clients maximise the return on their deals and identify and manage associated transaction risks.
- **Delivering Deal Value**
  Our Delivering Deal Value Service offering is focussed on working with our clients to ensure that the value they receive from their transactions is maximised.

Valuation & Economics

For organisations that need an independent valuation of their business, PwC draws on vast international expertise and research to provide a comprehensive service. We also offer independent advice on a variety of value-related matters, such as advising on the cost of capital and evaluating the financial implications of restructurings, investments, mergers and joint ventures. PwC helps clients to evaluate their options by putting an exact price on shares, debt instruments, goodwill, brands and other intangible assets in their organisation.

Whether a client requires advice on cross-border deals, an expert opinion for the local merger regulations or the countries' stock exchange, advice or assistance in price negotiations, or in addressing IFRS valuation issues, we understand that complex valuations require specialist resources. PwC has a dedicated team specialising in performing large, complex and technically challenging valuations. The team is part of an international network of valuation experts, with access to global best practice and top-quality international research. They can assist in these areas:

- Valuation consulting;
- Independent expert opinions;
- Financial reporting valuations; and
- Tax valuations

Valuation consulting

Our valuation specialists assist businesses to achieve an in-depth understanding of the value of each business or asset in a transaction. Our technical knowledge combined with our in-depth industry knowledge allows us to understand the specific factors driving each deal.

Examples

- In the event of a merger, acquisition or alliance, it is vital to understand the value likely to be created through the transaction.
- In the event of a dispute, an independent valuation is likely to help resolve issues swiftly.
- Multinational operations make an understanding of the issues driving valuations in different countries essential. Applying a common methodology across all countries generates a more reliable view of an international business's value.
- Achieving a reliable valuation of a business or asset is a critical driver of a successful transaction for buyers and sellers in acquiring or selling a business.

Independent expert opinions

There are a wide range of circumstances in which an independent opinion of value is required and each scenario requires specialist knowledge and the application of specific skills.

Courts, regulators, tax authorities, shareholders and businesses may, at different times, all need an objective specialist to provide a valuation of an asset or business. In the instance of shareholder disputes, an opinion is often required by shareholders. The context and purpose of the valuation determines the approach that needs to be taken to provide an appropriate opinion.

In cases where boards of directors are required by regulations to obtain appropriate external advice on an offer, a fair and reasonable opinion is required. Related-party transactions may also give rise to the need for a fairness opinion in terms of the local stock exchange's listings requirements.

Increasingly, non-executive directors and audit committees bear a significant responsibility for corporate governance and this has numerous implications in the realm of independent valuations. PwC's Valuation & Economics team has the required experience to provide a robust and credible independent expert valuation.

Financial reporting valuations

International Accounting Standards and International Financial Reporting Standards (IFRS) have introduced significant changes to the way in which accounts must be prepared and presented and require a wider range of assets to be valued on an annual basis.

IFRS 3 governs the accounting treatment for business combinations. A fair value exercise for assets and liabilities is required, whereby all assets (tangible and intangible) from a merger or acquisition have to be included in the balance sheet of the acquirer at their current market value and are depreciated over the term of their useful economic life.

Goodwill is tested for impairment annually, and is marked down for any impairments calculated during the annual review process.

These requirements call for specialist valuation services that both understand the specific accounting implications and the wider commercial context in which those financial reporting valuations will apply.

PwC's valuation services draw on considerable technical and financial specialisation provided by our valuation team in combination with firm's accounting specialists to deliver integrated advice to our clients.

Tax valuations

Valuations often lie at the heart of disputes and negotiations with tax authorities. The specific demands of the tax authorities require specialist advice and detailed knowledge of their working methods and practices.

PwC's Valuation & Economics team is able to assist with tax valuations, including valuations for capital gains tax, stamp duty, estate duty and exchange control purposes.

Mergers and Acquisitions

As a leading corporate adviser in the African market, our dedicated and highly experienced Mergers and Acquisitions (M&A) team can identify opportunities, assist in deal structuring, lead negotiations for mergers and acquisitions, disposals, corporate listings, management buy-ins and management buyouts. Our position has been reinforced through the completion of key local and cross-border deals and we are also highly experienced in advising companies on the introduction of local partners transactions and finance raising.

We enjoy high levels of independence in relation to advisory and mergers and acquisitions (M&A) mandates, since our advice is distinct and independent from financing.

For those pursuing growth opportunities or divestitures, our dedicated and exclusive merger and acquisitions research resources can identify opportunities locally and internationally through our global network, as well as providing input on global trends to assist clients with their transactions.

For every deal, we can leverage the strength of our International transactions network, and we are also able to draw on the full range of PwC services – including due diligence, tax and other specialised advisory services.

Mergers and acquisitions advisory

When organic growth does not satisfy the needs of stakeholders, or when businesses decide to dispose of non-core assets, PwC's Corporate Finance team can assist.

The first challenge for any company seeking to expand is to identify the right business to acquire. At the same time, companies wishing to restructure by disposing of non-core assets at the highest possible prices require similar support. Our highly dedicated and exclusive mergers and acquisitions research resources are able to identify opportunities, locally and internationally, as well as provide input on trends and global transactions.

Our direct line to both our African and worldwide network immediately extend clients scope of opportunity. Specialist advice at each critical stage of the transaction – from target identification, investigation, structuring and financing, to facilitating and negotiating the purchase of target companies – ensures that clients gain maximum advantage.

Our integrated worldwide Corporate Finance network, structured in industry groups, facilitates the identification of potential deals in the international arena. Supporting clients through every step of a transaction, we will review and value their business, identify prospective purchasers, and negotiate a transaction most suited to their requirements and one that will maximise the value to their business.

South African Black economic empowerment (BEE)

The planning and implementation of a black economic empowerment (BEE) transaction is a unique and complex process that requires a significant investment of time and resources from corporate entities, BEE partners, financiers and advisers. PwC is uniquely placed in having comprehensive experience in advising both entities seeking an appropriate empowerment partner and empowerment groups on strategic issues, and offering support in structuring negotiations with prospective targets or partners.

Our credentials speak for themselves and over the years we have advised numerous leading South African and multinational companies to successfully implement long-term, sustainable empowerment initiatives. In addition, as corporate adviser to some of the most respected BEE individuals and consortiums in South Africa, we have built up a wide network of potential empowerment partners for corporate South Africa.

As an independent adviser we are able to take our clients through the process of deciding the most appropriate empowerment strategy, designing and structuring the partnership, identifying and negotiating with the best partners fitting the selected strategy, assisting in the design and implementation of a sustainable funding structure, and delivering an appropriate, value enhancing empowered organisation. As we do not lend money into transactions, we offer independent advice as to the optimum finding, appropriate for the transaction.

Corporate lead advisory

PwC Corporate Finance proactively assists, advises and supports the development and implementation of corporate strategies. Many companies and individuals turn to us for help in shaping their business and reviewing strategic objectives. We assist with developing financial models, conducting industry research, and determining optimal financial structures.

Advice is geared to our clients' needs – whether to implement acquisition or rationalisation strategies, to operate effectively within regulatory regimes, or to sharpen defences against hostile bids.

In the current economic environment a number of enterprises are discovering that they require advice on restructuring, reorganisation, unbundling, as well as attracting strategic equity partners. We have an experienced team to advise on the strategic, commercial and legal aspects of these issues. Inward and outward investment opportunities are also advised on and we have significant capacity to apply the power of multidisciplinary international resources comprising industry and service line experts, to contribute in this regard.

Business Recovery Services (BRS)

The survival of a business can be threatened by any sudden shift in environment, finances or competency. There are many factors (such as market changes, strategic errors, banking facility changes and technological disruptions) that can contribute to a financial crisis, which may be characterised by:

- Severe underperformance;
- Ineffective management;
- Declining earnings; and
- Cash-flow blockages

PwC's Business Recovery Services assists underperforming and distressed companies to stabilise, fund and fix their troubled operations through restructuring of their strategy, capital structure, organisation and operations.

PwC's specialist advisers can identify the problem areas affecting a business and resolve them quickly and efficiently. The solutions offered are sensitive to the business and its employees, and aim to gain the co-operation of everyone involved. Through an independent business review, we can provide stakeholders of troubled companies with independent and objective appraisals of:

- The company's business;
- Its prospective viability;
- Causes of difficulty/crisis;
- Issues facing the business; and
- The range of options available to various stakeholders.

The range of interventions we can offer extend from making firm recommendations to preparing business and turnaround plans, as well as assisting in monitoring turnaround plans and their implementation. In aiming to preserve, enhance and realise value in distressed businesses, we provide:

- Independent business reviews;
- Turnaround directors and chief restructuring advisers;
- Restructuring advice;
- Optimised exits;
- Working capital management;
- Crisis stakeholder management; and
- Business administrators

Infrastructure, Government and Utilities (IGU)

The IGU team provides leading-edge advice, from strategy through to transactions, in the areas of:

- Public-private partnerships;
- Project finance;
- Privatisations; and
- Smart procurement

We provide independent financial advice, ensuring a balance between conflicting objectives and the best structured and most competitive transactions for our clients.

We focus on providing advice to either government or private sector participants that achieves the objective of getting the transaction completed, while optimising the benefit to our clients.

Our local and international advisory experience covers numerous sectors, including:

- Hospitality;
- Health;
- Education;
- Power, mining, oil and gas;
- Information and communications technology, including telecommunications and convergence;
- Transport (road, rail, ports and public transport); and
- Water and waste.

Public-private partnerships

Governments are under significant pressure to improve public services and develop infrastructure. This places an undue burden on government resources and public sector capital. Increasingly, the private sector is asked to provide capital and resources through public-private partnerships (PPPs), which take on many forms, including concessions and joint ventures.

PPPs allow the public sector to achieve value for money by accessing private sector capital, resources and skills, thereby obtaining the benefits of innovation, risk transfer and improved quality and service levels.

PPPs allow the government sector to develop in ways that are usually only associated with the private sector, while private businesses that enter into PPPs are opening themselves up to new growth opportunities and are increasing their capacity for development.

We help governments undertake feasibility studies by scoping and developing projects and evaluating the appropriate procurement methodology. By managing the procurement process, including negotiations assistance, we ensure a timely financial close in accordance with legal and regulatory requirements. We also advise governments on the principles and implementation of PPPs.

We assist the private sector in PPPs by structuring deals, developing and modelling the commercial and financial structures for transactions, arranging finance and providing advisory assistance from bid submissions and clarification through to financial close. In addition, we provide specialist commercial advice to BEE investors participating in PPPs.

Privatisations

In order to privatise an asset successfully, governments often seek a reliable methodology. This may include:

- Recognising local, cultural and economic conditions;
- Learning from international experience and best practices;
- Developing an appropriate strategy and structure; and
- Ensuring the procurement process is competitive and fair.

PwC reconciles investors' profit motives with the governments' requirements for political and financial transparency. For governments, PwC can assist in ensuring that these requirements are met and by offering support and advice on developing the appropriate strategy and structure for the privatisation transaction.

Similarly, we advise private sector investors, management and employees on acquiring assets being privatised and assist in developing structures that access international and local funds, allowing for a competitive bid.

Smart procurement

We provide procurement transaction structuring and advice to the public sector for large and complex procurement transactions that are not being procured through PPPs, but which still require value-adding commercial structuring.

We provide advice and assistance during all aspects of the procurement process:

- Process development, including adopting the most appropriate procurement strategy for the relevant transaction. This also includes determining the commercial structure of the transaction and the risk allocation and mitigation strategies;
- Documentation development, including an expression of interest (EOI), request for qualification (RFQ) and request for proposal (RFP) as appropriate for the chosen procurement strategy;
- Development of the evaluation criteria and the contract term sheet;
- Process administration, including managing the bid process in such a manner that the outcomes of the process are able to withstand legal challenge;
- Bid evaluation by assisting with providing evaluation commentary and assessments; and
- Contract negotiations.

Project finance

Project finance relates to the limited recourse financing of public or private infrastructure projects. Increasingly, governments and companies want to shelter their balance sheets and prefer to finance major projects on a stand-alone basis. This is especially true for PPPs, but can be used for all types of infrastructure projects.

Funding for infrastructure projects is complex and presents specific challenges that require specialist knowledge and understanding to create appropriate finance structures to ensure that risks are dealt with effectively. The increasing need for public sector infrastructure means that funding from the private sector is in high demand. Investors are required to use sophisticated financial engineering to secure PPPs with the public sector, requiring increasing levels of innovation.

We provide independent advice and assistance in developing and modelling the commercial and financial structures for transactions, arranging the most appropriate and efficient mix of financing and closing each transaction by supporting the negotiations to financial close.

Transaction Services

PwC Transaction Services assists companies with acquisitions, divestitures, strategic alliances and access to local and global capital markets.

We see ourselves as deal process managers that help clients get deals done faster, with less disruption and at a more attractive price. Using cross-functional teams, we bring together all the relevant expertise from across the firm, including tapping into the firm's vast industry sector knowledge, both locally and globally.

We help our clients maximise the return on their deals and manage associated risks. Our services add value by:

- Assessing the target business, relative to the economic and operational objectives of the client, and the assumptions underpinning the deal;
- Assessing the basis of the transaction and providing clients with analyses that support their negotiations. We cover areas such as issues affecting pricing, sustainability and synergies; and
- Assessing risk factors and providing guidance on the way the deal should be structured.

We work with clients to leverage due diligence findings in deal negotiations and help them to maximise the benefits of their deals while managing risk effectively. We can assist with:

- Mergers and acquisitions;
- Divestitures/disposals;
- Carve-outs;
- Strategic alliances; and
- Providing access to local and global capital markets.

Delivering Deal Value

Our Delivering Deal Value Service offering is focussed on working with our clients to ensure that the value they receive from their transactions is maximised.

Our service offering comprises post merger integration, divestiture and post acquisition improvements.

Post merger integration

The primary aim of our post merger integration service offering is to ensure that our clients achieve a timely and effective business integration.

The post deal integration process is about how synergies will be attained, how the combined business will be stabilised to preserve current value and ensure that the acquirer achieves the required return from the transaction.

Our services, on a high level, include:

- Planning an integration in order to achieve Day 1 readiness;
- Drawing up of integration plans (First 100 day plans) applying a holistic multi-work stream approach (including Finance and tax structuring, HR and change management, IT, Operations and Legal);
- Challenging management on their integration plans;
- Project managing the planning and implementation of the plan;
- Coordinating the use of specialist skills such as HR/Change Management and IT specialists from PwC; and.
- Identifying the critical path of an integration process.

Our post merger integration methodology can also be adopted and applied for restructurings, disposal assistance, Day 1 readiness assessments and integration health checks.

Divestiture (Carve out)

The preparation of carve-out financial statements can be challenging as there is limited guidance covering their composition. Moreover, the seller's financial statements and the carve-out financial statements may treat the same item differently. As a result, the preparation of carve-out financial statements requires special attention to ensure that all of the assets and liabilities of the separate business have been properly identified, and that all relevant costs of doing business have been reflected in the carve-out financial statements.

We assist our clients in following a structured carve out approach giving specific attention to identification of what is "in" and what is "out", the treatment of shared assets and services as well as identifying dependencies on the larger entity or group.

Post acquisition improvements

Our post acquisition improvement service offering is aimed at attaining as well as preserving deal value after transaction process has been concluded by ensuring potential issues identified during the transaction process are timeously and appropriately dealt with .

We assist our clients with the provision of appropriately skilled specialist resources to address potential issues while management focuses on business as usual.

Appendix 5

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