

**U.Burkhanov.,  
Kh.Khudaykulov**

## **INVESTMENT VALUATION IN EMERGING MARKETS: OPPORTUNITIES & SPECIFIC FACTORS**

*Несмотря увеличению инвестиционного потока быстро в развивающихся странах, присутствие многих негативных факторов как отсутствие прозрачности, низкий уровень ликвидности, коррупция, волатильность рынков, плохое управление, налоговая нестабильность и высокие транзакционные расходы затрудняют формирование универсальных методов оценки активов. В исследовании анализированы 5 моделей и в результате показана возможность использование в Узбекистане модели CAPM с коррекциями на политические риски, а также кредитная модель страны.*

*Тез суръатларда ривожланаётган мамлакатларда инвестиция оқими кенгаяётган бўлишига қарамадан, шаффофлик, ликвидлик, коррупция, волатиллик, бошқарув, солиқлар ва транзакция харажатлари каби омиллар активларни баҳолашининг “энг яхши” усулларини шакллантиришни қийинлаштирмоқда. Тадқиқотда активларни баҳолашининг беи модели таҳлил этилган. Ўзбекистон шароитида активларни баҳолашда мамлакатнинг кредит модели ҳамда сегментация ва сиёсий тузатиши киритилган CAPM дан фойдаланиши мумкинлиги тадқиқотлар натижасида кўрсатиб берилган.*

*Key words: emerging markets, valuation, discount, risk, cash flow.*

### **Introduction**

The global economy faces a dilemma. Attempts to boost growth have lowered rates in advanced economies. The resulting hot money has moved exchange rates out of line with fundamentals, creating inflation and asset appreciation in the developing world<sup>1</sup>[1]. Also, emerging markets will continue to draw the attention of the world’s investors in the context of continuing rescission in some parts of Europe. The roughly 30 emerging countries widely followed by investors grow at real rates two or three times higher than developed countries<sup>2</sup>. As emerging markets continue to grow economically and leave their footprint on the global economy, valuing companies from such nations will be an important part of building a truly global portfolio. To many, valuing firms from an emerging market seems much too difficult to undertake.

### **Investment valuation: the case of Uzbekistan**

While the idea of placing a value on an emerging market firm may seem difficult, it really is not much different than valuing a company from developed economy. Valuation in emerging markets is important for the following reasons [2]:

*First*, despite the fact that in developed markets, best practitioners and scholars seem to converge on mainstream valuation practices (Bruner et al., 1998, Graham and

<sup>1</sup> The world’s corporations with \$3.8 trillion in cash holdings at the end of 2009, have access to cheap capital, with the long-term interest rates languishing near 1.5 percent.

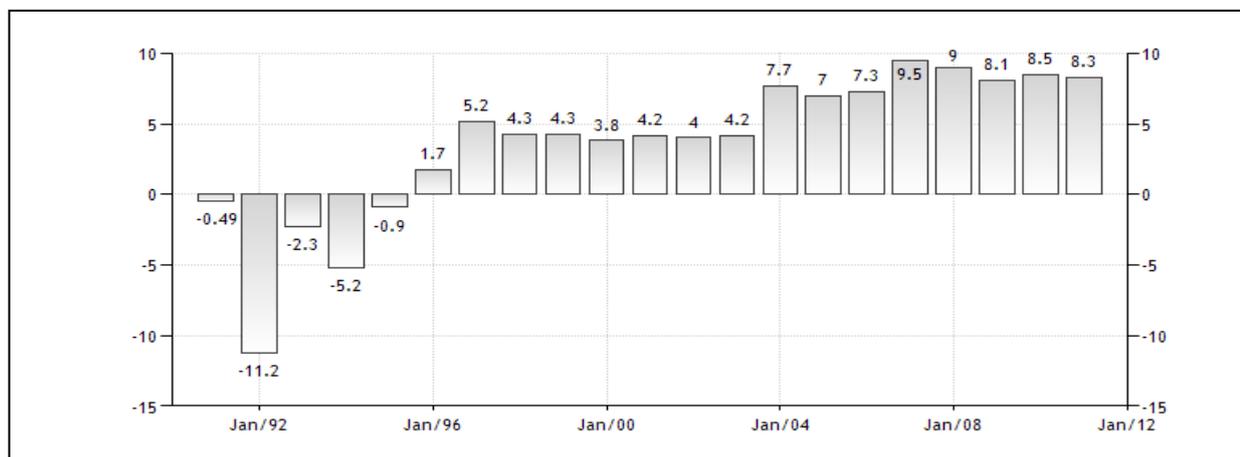
<sup>2</sup> Indeed, as developing economies continue to pick up the pace of urbanization, the prognosis for companies that can tap into the growth over the next decade looks promising.

Harvey, 2001) there is currently no clear single ‘best practice’ for the valuation of assets and securities in emerging markets. However, in emerging markets, practice differs more widely (Bohm et al. 2000). There are substantial disagreement about fundamental issues, such as estimating the cost of capital for discounting cash flows in emerging markets. *Second*, emerging markets differ from developed markets in areas such as accounting transparency, liquidity, corruption, volatility, governance, taxes, and transaction costs. Surely, these differences affect firm valuation. *Third*, investment flows into emerging markets are material. Also humanitarian consideration not to be ignored is: better valuation practices may enhance the flow of investment capital, the allocation of resources, and thereby increase social welfare in emerging markets.

The Economist’s analytical division - Economist Intelligence Unit - a respected British magazine has published a list of countries economies with the fastest economic growth in the world. According to this report GDP growth rate of top ten countries are the following: Qatar 15.8%, Ghana 12%, Mongolia 12%, Eritrea 9.3%, Ethiopia 9%, China 8.9%, India 8.6%. In 2011 Uzbekistan was in the top ten with the annual growth rate of 8.3% [3].

How valuation can be practiced in uzbek economy in the absence of proved models? Economic growth in Uzbekistan has accelerated from around 4% to over 9% while the inflation rate has stabilized [4]. The country possesses unique local advantages which could support the long-term growth of the economy and increase the welfare of the population. Among the local factors are a relatively low cost and educated labor force, considerable natural resources and a central location in the Central Asian market.

**Figure 1: GDP growth (annual %) in Uzbekistan**



Source: <http://www.afs-research.com/eng/article/5294/>

More than 40 laws on privatization, entrepreneurship and investment promotion have been passed. Recent regulatory reforms, liberalization and the privatization of large state enterprises have had a positive effect on economic growth and investment, particularly foreign direct investment. Other economic factors that make Uzbekistan attractive to foreign investors include: *undervalued assets, investment incentives, adequate infrastructure, low cost of energy/utilities, large internal market of about 30 million people, and free trade zone with 11 CIS member-*

states forming a regional market of over 277 million people. There are many project opportunities in the current investment program in oil and gas, coal, mining, electric power generation, chemical, food processing, and tourism.

2007 has been marked by a great number of deals with the participation of foreign investors in Uzbekistan. Most of investments were in the telecommunication, mining, chemical and transportation sectors. The volume of foreign direct investments in 2007 grew to USD 1,013.6 million from USD 683.8 million in 2006.

**Table 1: The largest transactions with participation of foreign investors in Uzbekistan realized in 2006-2008.**

Year	Object of Investment, Industry	Investors	Purchased %of shares	Amount of investment MlnUSD
2006	Investment commitment within 4 years in oil and gas (2006-2010)	“Gasprom” (Russia)	-	400
2006	“Unitel LLC“ and “Buztel LLC”, Telecom’s	“Vimpelkom” (Russia)	100%	200 and 60 correspondingly
2006	JSC “Ahangaran Cement”, Constr/n materials	“Eurocement Group”	75.5%	Transaction is not disclosed
2006	JSC “Khorazm Shakar” (“Khorezm Sugar”), Food	”SEID Handelsgesellschaft m.b.H“ Austria)	99.43%	17.6
2006	Construction of brewery plant in Tashkent, Food	“Baltic beverages Holding AB (BBH)” (Sweden)	-	€38 Mln
2007	Uzdunrobita, Telecom’s	“Mobile Tele Systems” (Russia)	100%	250
2007	COSCOM, Telecom’s	“TeliaSonera” (Sweden-Finland)	73.97%	151
2007	Oxus Gold Plc, Mining	“ZeroMax LLC” (Switzerland)	30%	83.6
2007	OJSC “Electrohimprom”, Chemical	“MAXAM Corp. S.A.U.” (Spain)	49%	22.4, investment obligations - 53
2007	East Telecom, Telecom’s	“KT Corp.” (S.Korea)	51%	Transaction is not disclosed
2007	Ammofos, Chemical	“MAXAM Corp. S.A.U.” (Spain)	49%	18, investment obligations - 30
2008	SNG Holdings, Oil and gas	“Lukoil” (Russia)	100%	580
2008	Yo’lrefrans, Transportation	“Shindong Enercom Inc” (Korea)	47%	17.5
2008	Spinning and weaving factory #2 of Bukharatex, Textile	“SIS Sayilgan Iplik Tekstil A.S.” (Turkey)	100%	12.42

Source: UNDP. Investment opportunities in Uzbekistan. Catalogue. 2009.

### Valuation models can be used

The use of different valuation methods is the crucial element of any investment decision making. Five types of widely known models — the CAPM, international

CAPM, CAPM adjusted for political risk and segmentation, multifactor models, and the country credit model — that the investor can use when estimating a return rate in emerging markets. The choice depends on the investor's perception of the quality of the information environment and the segmentation between the emerging market and the investor's local market. For emerging markets that are integrated with global markets and for which quality information can be obtained useful asset-pricing approaches include the CAPM, the international CAPM (ICAPM) and, multifactor model. On the other hand, the CAPM adjusted for political risk and segmentation is a useful approach when the investor considers that the market analyzed is not integrated with the home market. Finally, when quality information cannot be obtained the credit model can be used.

The point of departure is the familiar *CAPM*, which embodies the risk-return relationship fundamental to finance. The simplest starting point for asset pricing uses the home country risk-free rate and market premium with a beta appropriate for the target – for example, a beta selected from an average of company betas in the home country. Thus,

$$R_e = R_f + \beta_i \times (R_{\text{market}} - R_f)$$

Where  $R_f$  is the risk-free rate prevailing in the home country,  $\beta_i = \sigma_{i\text{market}} / \sigma_{\text{market}}^2$  is the beta appropriate for the target, and  $R_{\text{market}} - R_f$  is the home equity market risk premium.

Several authors have argued that, as the world becomes more integrated and more investors hold globally diversified portfolios, the relevant measure of a stock's risk is its covariance with the world market. Thus, the traditional CAPM model should be modified with substitute parameters that reflect risk and return in world markets/ accordingly, the formula for the *ICAPM* is:

$$R_e = R_f + \beta_i^w (R_m^w - R_f)$$

Where  $R_f$  is the world risk-free rate,  $\beta_i^w$  is the world beta of asset  $i$ , and  $R_m^w - R_f$  equity risk premium (in dollars).

The ICAPM assumes that markets are integrated and the reliable information can be obtained for feeding the model.

Lessard (1996) described the country risk premium method. This method adjusts *the CAPM to account for segmentation and political risk*:

$$R_e = R_f^{US} + \pi + (\beta_i^{US} \times \beta^{\text{country}} (R_m^{US} - R_f^{US}))$$

where  $\pi$  is country credit spread, measured by yield differentials between U.S. government bonds and U.S. dollar denominated sovereign bonds of the same tenor;  $\beta_i^{US}$  is the domestic beta of asset  $i$  in the US; and  $\beta^{\text{country}}$  is the beta of the target country market vs. U.S. market.

Because the country credit spread is calculated directly from yields on dollar-denominated bonds rather than from local currency bonds, it does not incorporate any currency  $R_f^{US} + \pi$ , then measures the sovereign risk-free rate denominated in US dollars [5].

Various researchers argued that the risks in international investing are not adequately modeled by the ICAPM model and thus have suggested using more fully specified econometric models. Under this approach, the required return on a security is equal to a risk-free rate plus the exposure of the stock to various factors, which could be

macroeconomic factors (such as economic growth, inflation, and consumer confidence) or company factors (such as size, leverage, and earnings volatility):

$$R_e = R_f + \beta_i + RP_1 + RP_2 + \dots + \beta_k \times P_k$$

The main advantage of *multifactor models* is the explicit inclusions of different factors that can be affect the required rate of return requested by investors. As a result, multifactor models display higher power than other models. Furthermore, because one of these factors can be market integration, the multifactor model can be used regardless of the assumption about the degree of global integration of a particular market. On the other hand, multifactor models require a great amount of data and computational analysis. They also require including the right factors but not to suggest which ones they should be. Finally, the information that feeds the models must be reliable (or at least systematically unreliable) in order for investors to have confidence in the output.

Whereas the previous methods assume that reliable data can be found, the *credit model* relaxes this assumption and tries to substitute for lack of information (although it can also be used with reliable information). For instance, given market imperfections, beta may have little meaning in an emerging market setting, and some local market settings simply may not have a stock market. Erb, Harvey, and Viskanta (1996) offered a model based on the country credit risk rating:

$$R_e = R_f + 0.989 - 0.177 \times \ln(IICR)$$

where IICCR is the country's Institutional Investor Country Credit Rating.

By relying on non-equity market measures, the model can circumvent estimation difficulties related to the lack of market information. Also, measures of country risk impound assessments of political, currency, segmentation, and other types of risks to which an enterprise might be subject. Furthermore, estimates of cost of capital may be obtained from sources and do not require a large volume data analysis. Because this model estimates an average required equity return for a country, however, adjusting the estimate for company-specific risk is necessary[6]. The lack of data for investment analysts and relatively weak financial markets make the country credit model more valid in the case of Uzbekistan.

**Table 2: Applicability of valuation models**

Information environment	Target country integrated	Target country segmented
Foreign capital market information is easily obtained and believed to be reliable (e.g. the foreign capital market is relatively competitive and efficient and financial performance reporting is relatively transparent and reliable).	<ul style="list-style-type: none"> <li>• CAPM</li> <li>• Multifactor model</li> </ul>	<ul style="list-style-type: none"> <li>• Multifactor model</li> <li>• Credit model</li> <li>• CAPM adjusted for political risk and segmentation</li> </ul>
Foreign capital market information is not easily obtained and/or is unreliable (e.g. the foreign capital market is relatively less competitive and	<ul style="list-style-type: none"> <li>• CAPM</li> </ul>	<ul style="list-style-type: none"> <li>• CAPM adjusted for political risk and segmentation</li> </ul>

inefficient, and/or financial performance reporting is relatively opaque and unreliable).		• Credit model
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### Obtaining the DCF inputs

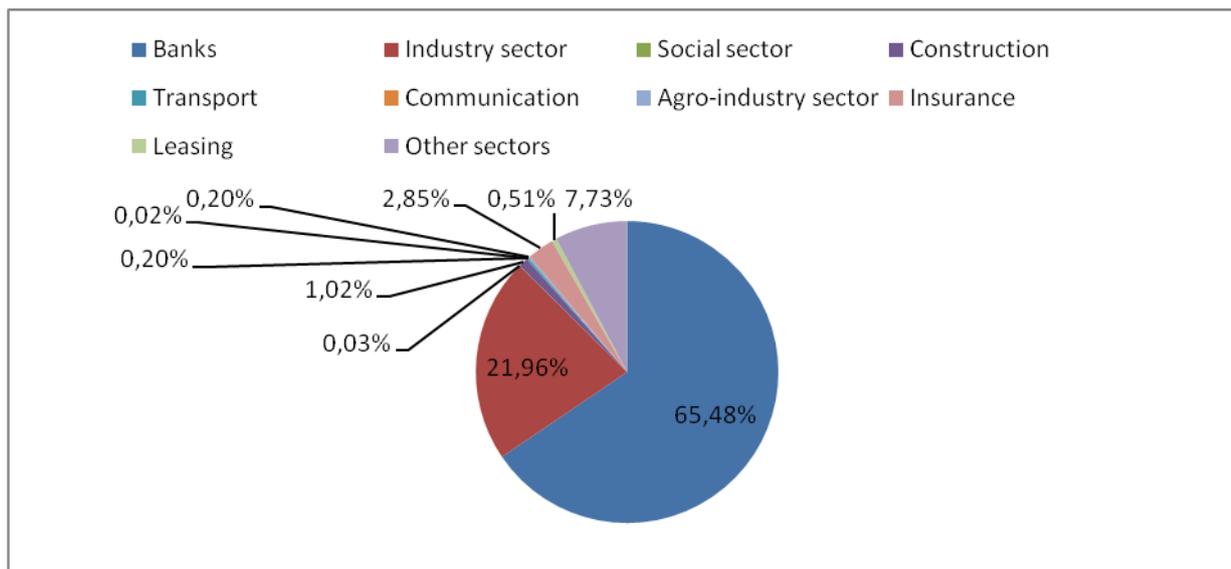
A major difficulty in deriving free cash flow estimates in emerging markets is estimating the *cost of capital* for a firm. Both a firm's cost of equity and cost of debt, along with the actual capital structure itself have inputs that are a challenge to estimate in emerging markets. The biggest difficulty in estimating the cost of equity will inherently be deciding on the risk-free rate, since emerging market government bonds cannot be considered riskless investments. Therefore, adding the inflation rate differential between the local economy and a developed nation and using that as a spread on top of that same developed nation's long-term bond yield is the method used by the most of practitioners.

In the case of estimating the cost of debt, using comparable spreads from developed nations on similar debt issues to that of the firm in question, and adding that on to the derived risk-free from above will give an acceptable pre-tax cost of debt. Finally, to choose an appropriate capital structure, it is best to use an industry average. If no local industry average is available, using a regional (global) average will work as well. Another key to arriving at a usable value via the DCF method is including a country risk premium to the firm's weighted average cost of capital (WACC). The reason for this is to be sure we are using an appropriate discount rate when using nominal figures in discounting the firm's future cash flows. There is hard and fast rule to choosing a country risk premium, quite often the premium is overestimated. A good method suggested by the CFA Institute is making sure that the historical returns of a company's stock is taken into account<sup>3</sup>[7].

The last piece of the valuation puzzle, much like with forms from developed economies, is to compare the firm to its industry peers on a multiple basis. Evaluating the company against similar emerging market firms on multiples, namely the enterprise multiple, will help give a clearer picture of how the firm stacks up relative to others within its industry, especially if said peers compete within the same emerging economy. The given structure of Tashkent stock exchange is example of how developing country's stock exchange is risky, where practicality of using CAPM based approach is almost equal to zero.

<sup>3</sup>A further issue needs consideration here – what is the “risk-free” rate which should be used as a base for any of these calculations? There are several methods: the current market rate for government bonds (Ireland, the Netherlands and the US); or a fixed rate based on the historical average for government bonds; or the “social time preference rate”, the rate which private investors expect to receive for foregoing present consumption in favor of future consumption assuming is a risk-free transaction. (E. Yescombe, 2007).

**Figure 2: The structure of UZSE by sectors**



Source: <http://uzse.uz/new/analyt/files/stat/1.doc>, P.8

### FACTORS SPECIFIC TO EMERGING MARKETS

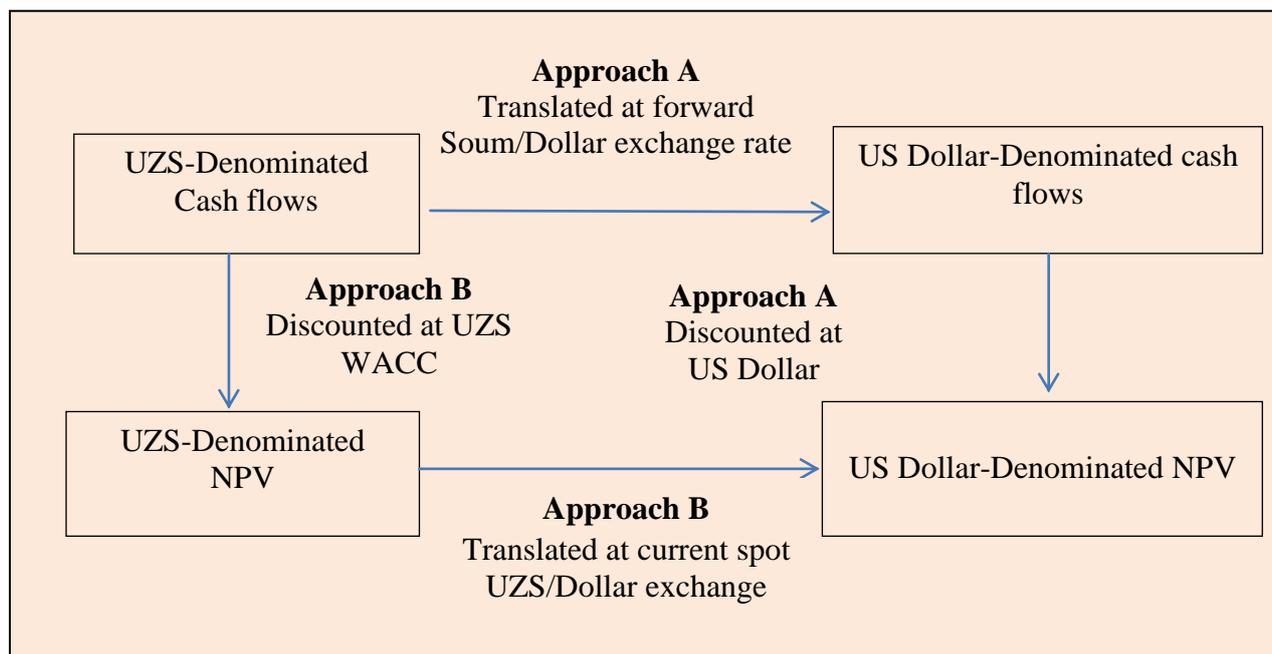
The effect of *exchange rates, interest rates and inflation* are few factors specific to emerging markets that must be dealt with. Exchange rates are regarded as relatively unimportant by most analysts, since although the local currencies of emerging market countries can vary wildly in relation to the nation's purchasing power parity (PPP). Nonetheless, a sensitivity analysis can be performed to determine the foreign exchange impacts due to local currency fluctuations. However, inflation plays a larger role on valuation, especially for firms operating in a potentially high inflation setting. In order to neutralize the effects of inflation on the DCF estimate, it is necessary to estimate future cash flows in both nominal (ignoring inflation) and real (adjusting for inflation) terms. Making the appropriate adjustments to the numerator and denominator of the DCF equations removes the impact of inflations. To estimate a discount rate appropriate for foreign cash flows, differences in inflation must be accounted for. One can use the concept of PPP to solve for foreign capital costs from home capital costs. Assuming constant real rates of return among countries, the ratio of the capital costs between two counties is equal to the ratio of the inflation rates between them. Rearranging these ratios yields this useful formula:

$$R_{\text{foreign}} = (1 + R_{\text{home}}) \times \frac{1 + \text{Inf}_{\text{foreign}}}{1 + \text{Inf}_{\text{home}}} - 1,$$

where  $R_{\text{foreign}}$  is a foreign cost of capital,  $R_{\text{home}}$  home coat of capital,  $\text{Inf}_{\text{foreign}}$  foreign inflation rate  $\text{Inf}_{\text{home}}$  home inflation rate.

The classic CAPM would be appropriate for valuation across borders of two highly integrated country economies, such as the United States and Canada. For instance, a U.S. investor could use U.S. based betas with the U.S. risk-free rate and equity premium to discount flows of Canadian dollars translated into U.S. dollars. There can be used different approaches to estimate cash flows. Two of them given as example that foreign investor can use in Uzbekistan.

**Figure 3: The approaches from deriving a US Dollar NPV from Uzbek soums (UZS) free cash flows**



**Table 3: The difference of A and B approach**

Characteristic	Approach A	Approach B
Key features/key bets	PPP holds Inflation forecasts in UZS and dollars are appropriate. Country risk premium estimate is appropriate.	Local capital market has good availability and quality of data. Local capital costs are free-market yields
Strengths	Theoretical rigor Can use (more reliable) capital market information from developed countries	Simplicity Translation at current spot rates
Weaknesses	PPP does not hold in all markets at all times  Long-term forecasting of inflation is extremely difficult Implicitly assumes US interest rates are consistent with forward UZS/dollar exchange rates.	Availability and quality of local capital market data  Betas simply not available for many stocks in emerging markets. Investors must estimate their own betas. Many interest rates are heavily administered by central banks and do not reasonably reflect inflation expectations or required real rates of return.

Translate those local cash flows to home currency at forward exchange rates as estimated from the IRP formula:

$$FWD_{UzS/Dollar} = (SPOT_{UzS/Dollar}) \times \frac{1 + Inf_{UzS}}{1 + Inf_{Dollar}}$$

To use this formula, the investor needs a view about the long-term inflation rates in the foreign and home currencies. Discount local cash flows at a rate consistent with a local currency-based estimate of foreign country inflation, country political risk, country beta, and industry beta.

### **SUMMARY**

To sup up, as emerging markets continue to grow economically, valuing companies from such nations will be an important for building a global portfolio. Despite the fact that in developed markets, best practitioners and scholars seem to converge on mainstream valuation practices there is currently no clear single ‘best practice’ for the valuation of assets and securities in emerging markets.

The five types of models: the CAPM, international CAPM, CAPM adjusted for political risk and segmentation, multifactor models, and the country credit model — that the investor can use when estimating a return rate in emerging markets.

A major difficulty in deriving free cash flow estimates in emerging markets is estimating the cost of capital for a firm. The effect of exchange rates, interest rates and inflation are few factors specific to emerging markets that must be dealt with. Among other factors, inflation plays a larger role on valuation.

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