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Titolo tesi

Firm valuation of companies operating in emerging market economies. An analysis of the importance of environment, social and governance factors when valuing an investment in an emerging market economy.

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Introduzione

L'economia dei paesi emergenti ha registrato una forte crescita negli ultimi dieci anni, i mercati dei capitali di tali economie sono cresciuti notevolmente ed i titoli di molte società operanti in tali paesi sono ora quotati sia nelle borse locali che a New York e Londra. Alcune di queste società hanno una alta capitalizzazione di borsa ed hanno acquisito società operanti nelle economie mature, quali Stati Uniti ed Europa.

In questo contesto l'interesse del mondo accademico e professionale per le economie dei paesi emergenti è cresciuto notevolmente e con questo l'importanza di comprendere il funzionamento di tali mercati dei capitali e le loro principali caratteristiche.

Negli ultimi anni è stata prodotta molta letteratura sulle caratteristiche delle economie dei paesi emergenti e sulla valutazione delle società operanti in tali paesi. Particolare enfasi è stata data al maggior grado di rischio connesso con un investimento in un ambiente normativo non molto regolamentato e trasparente, e sulla scarsità e qualità di informazioni disponibili sui mercati e sulle società quotate.

Allo stesso tempo la crescita delle economie emergenti è avvenuta, e sta continuando ad avvenire, attraverso uno sfruttamento non controllato delle risorse naturali, prestando scarsa attenzione alle problematiche ambientali e spesso sfruttando una forza lavoro mal pagata in ambienti lavorativi inadeguati. In questo quadro, l'attenzione alle problematiche ambientali, agli aspetti sociali ed alla *governance* delle società quotate operanti in paesi emergenti, è aumentata notevolmente negli ultimi anni, sollevando il problema dello sviluppo sostenibile e dell'importanza di perseguire investimenti sostenibili.

Nel presente lavoro sono illustrate le sfide e le difficoltà che si incontrano nel valutare le società operanti nei paesi emergenti e sull'importanza di includere l'analisi della gestione dei fattori ESG (*Environment*, *Social and Governance*) nel processo di valutazione delle società operanti nei paesi in via di sviluppo, soprattutto alla luce della recente crisi finanziaria mondiale. In particolare, nel valutare le società operanti nei paesi emergenti è importante (i) comprendere il contesto in cui opera l'impresa all'attraverso un'analisi critica delle principali caratteristiche del mercato; (ii) analizzare i dati economico finanziari della società oggetto di valutazione, ed incorporare gli stessi nel modello di valutazione scelto, sia esso il metodo dei flussi di cassa scontati o il metodo dei multipli di borsa delle società comparabili e delle transazioni comparabili; (iii) analizzare quale è la politica della società oggetto di valutazione riguardo ai fattori ambientali, agli aspetti sociali ed alla *corporate governance.* Una buona gestione della *corporate governance*, della forza lavoro, degli *stakeholders*, il rispetto delle norme in materia ambientale, rappresenta in realtà una buona gestione dell'azienda nella sua interezza.

La letteratura disponibile sull'argomento in analisi ha dimostrato una correlazione tra il valore dell'impresa e la gestione dei fattori ESG. Nonostante tale evidenza, sussiste ancora resistenza nell'includere delle variabili nuove e non quantitative nel processo di valutazione. Inoltre, deve aggiungersi la scarsità di informazioni disponibili su tali aspetti in quanto le società, anche quelle quotate, non sempre informano il mercato circa i rischi ambientali e sociali o sul proprio sistema di *corporate governance*, soprattutto se società operanti in mercati dei capitali poco regolamentati, come i mercati dei paesi emergenti.

Il presente lavoro si propone di capire se il mercato dei capitali ed i prezzi di mercato dei titoli azionari delle società operanti in paesi emergenti riflettano sia la performance economico-finanziaria delle società quotate, sia la politica della società stessa riguardo i fattori ESG. Il lavoro è supportato da un'analisi empirica su un campione di società quotate operanti in alcuni paesi emergenti (Brasile, Russia, China e Korea).

Il lavoro è strutturato in due parti. La prima include i primi tre capitoli e la seconda comprende gli ultimi due. Nella prima parte sono illustrate le principali caratteristiche dei mercati emergenti. Particolare attenzione è stata data a quelle caratteristiche che sono strettamente connesse con il valore del capitale economico di un impresa, quali il livello di liquidità dei mercati, il rischio paese, i fattori macroeconomici, i principi contabili e il grado di accuratezza nell'applicazione di principi contabili internazionali IFRS ed il sistema di *governance* dei mercati e delle società. Nel secondo capitolo è presentata un'analisi delle principali sfide e problemi di applicazione dei principali metodi di valutazione utilizzati, quali il metodo dei flussi di cassa scontati e il metodo dei multipli di borsa delle società comparabili e delle transazioni comparabili.

Nella seconda parte del lavoro è illustrata l'importanza dei fattori ESG sul valore dell'impresa, in particolare come rappresentazione della qualità della gestione della stessa, ed è esaminata la letteratura corrente sull'argomento. E' inoltre fornita un'analisi comparativa delle diverse politiche riguardo i fattori ESG in alcuni paesi emergenti, con particolare attenzione alla prassi valutativa di investitori e *financial advisor* in Cina, India e Brasile. Nel quinto capitolo è illustrata l'integrazione dei fattori ESG nel processo valutativo di società operanti nei paesi emergenti. Un'analisi empirica è inoltre fornita su un campione composto da tre *clusters* di società quotate operanti nel paesi emergenti. Le società del campione sono quelle incluse nella Goldman Sachs Sustain Global Focus List: una lista di società operanti sia in mercati evoluti che in mercati emergenti in cinque settori industriali redatta dalla banca d'affari Goldman Sachs e oggetto di uno studio, redatto dalla stessa banca, sull'importanza dell'inclusione dei fattori ESG nel processo valutativo.

L'analisi empirica presentata nel presente studio è limata alle società operanti nel settore dell'energia e delle risorse naturali. Sono stati osservati i prezzi di mercato di tali società nel periodo che va dal 5 novembre 2007 al 20 gennaio 2010. I risultati dell'analisi dimostrano che, le società che presentano dei ritorni positivi in termini di flussi di cassa e che hanno delle politiche efficaci di gestione dei fattori ESG hanno resistito meglio alla recente crisi finanziaria, recuperando completamente il valore di mercato perso durante il periodo compreso tra novembre 2007 e marzo 2009, dove quest'ultimo rappresenta il picco più basso del valore dei mercati dei capitali mondiali. Il mercato dei capitali riconosce dunque l'importanza di perseguire uno sviluppo sostenibile, e nel lungo periodo soltanto le società che sono in grado di integrare la sostenibilità nelle proprie strategie di business saranno in grado di mantenere valore. I risultati della stessa analisi, svolta invece su società appartenenti agli stessi settori industriali ma in mercati maturi (Europa e Stati Uniti), evidenzia che la tesi del presente lavoro è valida soprattutto per le società operanti in paesi emergenti caratterizzati da una regolamentazione dei mercati dei capitali meno stringente, da un quadro normativo debole e da un rischio paese elevato.

Introduction

Emerging market economies have grown dramatically during the last decade, their financial markets have grown with them with a enormous number of companies that went public. Today, a few of these companies are global player with their shares listed in New York or London, have a large market capitalization, branches and operations outside their domestic markets and have started lately to be active in the Merger & Acquisition market by acquiring companies operating in the developed markets.

In this contest the interest for emerging market economies of academicians and practitioners, such as investors and financial advisors, has increased dramatically and with it has increased the importance of fully understanding such capital markets and their characteristics.

There has been a rapidly developing body of literature about emerging market economies and valuation of firms operating in emerging markets economies, underlining the extra level of risk associated with investments in poorly regulated, not transparent and not truly informative capital markets.

At same time the rapid economic growth of emerging market economies has increased the speed of the depletion of natural resources, has increased the level of pollution connected with the poor attention to the environment, has generated social problems linked to the work conditions inflicted to workers. Given the above, the attention to Environment, Social and Governance factors has increased dramatically and with that the attention and focus on sustainable development and sustainable investments.

In this study it is illustrated the challenged faced when valuing a firm operating in an emerging capital market and the importance of incorporating the analysis of the ESG factors in the valuation process. When estimating the firm value it is essential to: (i) understand the environment in which the company operate thru a complete analysis of the main characteristic of such emerging capital market; (ii) analyse the target company fundamentals, its financial returns and understand the challenges faced when valuing a firm using the Discounted Cash Flow method and the Relative Valuation methods, and (iii) analyse the target company attitude towards Environment, Social and Corporate Governance (ESG). A good management of corporate governance, employees, stakeholders, and the environment represents a good proxy of the quality of company management. Recent literature demonstrates a correlation between firm value and ESG factors. Despite such evidence, there is still reluctance in comprising a new set of variables in the valuation process, which is almost entirely based on quantitative variables. Moreover, companies do not always inform the market about environmental and social risks, and this is particularly true in emerging capital markets.

The question that is addressed in this study is if the capital markets and the stock prices reflect both the financial returns and the quality of ESG factors of firms operating in emerging capital markets. An empirical analysis has been performed on a panel composed by 3 clusters of companies operating in emerging markets.

This study proceeds in two parts. The first part is from Chapter 1 to Chapter 3, and the second part is from Chapter 4 to Chapter 5. In the first part are illustrated the main characteristics of emerging capital markets. Particular attention has been given to the characteristics strictly connected with the firm value such as market liquidity, country risk, macroeconomic factors, market and corporate governance and accounting standards. In chapter 2 is provided an analysis of the main issues and challenges faced when valuing firms in emerging capital markets with particular attention to the issues related to the application of the discounted cash flow method and the relative valuation methods.

In the second part it is illustrated the importance of Environment, Social and Governance (ESG) factors on firm value, particularly as an evidence of the quality of company management. Such thesis is supported by a detailed analysis of current literature, surveys and researches on this matter. A comparative analysis of the attitude of investor and financial advisors towards ESG in China, India and Brazil is also provided in chapter 4. In chapter 5 is illustrated how we can include the ESG factors when valuing a firm operating in an emerging capital market. An empirical analysis has been performed on a panel composed by 3 clusters of companies operating in emerging markets. The companies included in the 3 clusters, have been chosen on the basis of a research done by the investment bank Goldman Sachs on the importance of ESG factors in company valuation. Said research introduce the Goldman Sachs Sustain Global Focus List: a list of companies operating in five industry sectors, classified in leaders, average and laggards, according to their financial performance, industry theme and ESG factor score. The empirical analysis presented in this study is limited to the companies operating in the natural resources industry (steel, aluminium, oil and gas) in emerging markets (Russia, China, Korea and Brazil) and mature markets.

The analysis of these companies' performance, in term of stock price, has been observed in the period between November 2007 and January 2010. The empirical results suggest that companies with strong cash returns and strong ESG policies resisted better to the recent global financial crisis, and were able to recover completely the market value lost during the period between November 2007 and March 2009, the latter identified as the lower pick on capital markets value.

Moreover, the results of same analysis performed on companies operating in mature markets underline the fact that the thesis of this work is particularly true for companies operating in emerging markets economies which are characterized by weak legal system, weak capital market governance, high level of country risk.

1. The emerging market economies

The framework and criteria for classifying countries is based on economic size, size of their financial markets in relation with their economy as a whole and, wealth, quality, depth and breadth of capital markets.

Markets are generally classified as **Developed, Emerging, Secondary Emerging or Frontier**[1]. The main criteria for classifying the market status of countries are the following:

- World Bank Gross National Product ("GNP") per capita
- Market and the regulatory environment (free and well developed equity market, formal stock market regulatory authorities which actively monitor market, fair and non-prejudicial treatment of minority shareholders, non selective incidence of foreign ownership restrictions, non restrictions or penalties applied on the repatriation of capital and income)
- Capital market size

[1] FTSE classifies the capital markets in Emerging, Secondary Emerging or Frontier. FTSE is a company that specializes in index calculation. Although not part of a stock exchange, co-owners include the London Stock Exchange and the *Financial Times*. The FTSE index, best known for the FTSE 100, is an index of blue-chip stocks on the London Stock Exchange.

- Custody and settlement
- Dealing landscape (liquidity, reasonable transaction costs, short sales permitted, efficient trading mechanism, transparency – market depth information/visibility and timely trade reporting process)
- Developed derivative market

In 2009 emerging capital markets played a key role. Many were hit hard by the global financial crisis, especially countries in Eastern Europe. Similar to 2009, emerging markets are expected to play a central role in 2010. On growth side, emerging Asia is likely to pass the baton to Mexico and emerging Europe[2]. Emerging Asia, the Region that led the global recovery, is likely to lead the return to inflation. As recovery matures investors are likely to focus on sustainability. The global financial crisis has raised new questions about medium - term growth.

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2 Bank of America Merrill Lynch, *Emerging market outlook"*, November 2009

1.1 The emerging economies capital market – Main characteristics

Standard & Poors /International Finance Corporation define a market as developed if it is in a country where Gross National Product ("GNP") per capita exceeds the World Bank's upper income threshold for at least three consecutive years and the investable market capitalization to Gross Domestic product ("GDP") ratio is in the top 25% of the emerging market universe for three consecutive years.

Equity markets are seen as an important sources of investments funds in many emerging market economies. Many countries see the development of such markets as a mean to facilitate both foreign equity portfolio investments and Foreign Direct Investment ("FDI"). This through acquisition of shareholdings in domestic companies, which supplements the low levels of funding from domestic savings. Moreover, the relatively low cost of manufacturing in many emerging markets, has generated direct investments from many developed countries by acquisitions or joint ventures.

The investment case in emerging markets rests most heavily on the concept of inefficient markets, where not all the available information is incorporated in the stock price. The main characteristics are the following:

- Illiquidity[3]
- Market depth
- Market governance and legal system
- Corporate governance and protection of minority shareholders
- More concentrated ownership
- Intense group cross holding structure
- Market Openness
- Transparency
- Absence of long term default free bonds
- Availability and quality of information
- Market integration
- Political risks
- Currency risk
- Inflation risk
- Ease of doing business
- Shortage of raw materials
- Social issues and culture

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[3] B. Hear, J. Piesse, R. Strange "*Market liquidity and stock size premium in emerging financial markets*" King's College London, April 2009, pages 10-24

- Banking system

A detailed analysis of the above mentioned characteristics is provided below.

A. **Illiquidity**: The level of liquidity may vary considerable in emerging capital markets, therefore investors should analyse in advance the level of liquidity of the market in which they are willing to invest. Market liquidity can be estimated by a turnover ratios which measures the value traded in a short time (generally a month) to the total market capitalization. The threshold appears to be 5%. For instance NYSE trades almost 10% of its market value during one month. The value of traded share provides an indication of market liquidity as well. In many emerging capital markets only few stocks are liquid. In many emerging markets a large number of listed companies do not have all the requisites for a possible quotation in a developed market. **A considerable number of companies in Emerging Markets are listed**. Except for the UK and USA, which are very large developed markets, developed and emerging markets are quite similar in the number of listings. For instance India has a considerable number of listings, close to the USA, but still classified as emerging market. Suggesting than criteria used to list as company are less stringent in Emerging Market Economies ("EMEs") than in developed markets, and also that the obligations and requirements of a listed company in EME are different from developed world. When comparing the size of listed firms across markets, developed markets have considerably larger market capitalization than emerging market listings.

B. **Market depth** is defined as the ratio of market capitalization to Gross Domestic Product. The average market capitalization in developed countries is close to the value of GDP, while in EM is on average one third.

C. **Market governance** in emerging financial markets is less stringent that the governance of mature financial markets. Generally there is less level of control and it is common that companies with going concern issues or under special administration or with negative equity are listed and their quotation is not suspended[4]. Moreover, the developed countries

[4] An example is represented by the Romanian Stock exchange. Although Romania is part of the European Union since 2007, the are companies listed in the Bucharest Stock Exchange that despite their have going concern issues and

have a well developed legal system to protect the interests of shareholders and the welfare of consumers that differs from many emerging economies that suffer from a poor as well as a weak enforcement of existing law[5].

D. **Corporate Governance** in emerging market companies may differs significantly to that of US and UK firms. The main differences might be in the following:

- the board structure, particularly in the percentage of independent non executive directors, or the CEO/Chairman duality, or
- in the number of family members in the board,
- transparent ownership and
- accounting standards.

Such differences are attributable to the ownership structure, legal system or rule of law. In fact, Corporate governance models developed based on US corporate governance structure may not be applicable to emerging markets. For instance taking Hong Kong as an example, most of the top 100 listed companies

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negative equity, their shares are nor suspended from quotation. The aviation company Avioane Craiova is one of those.

5 R. La Porta, F. Lopez-de-Silanes, A. Shleife, and R. Vishny, *"Corporate Ownership around the World"* 1999

are family owned, and 25 of the highest market capitalization companies are controlled by ten big families[6]. Substantial shareholders' family relationship severely weaken external forces to monitor.

Recent literatures find a positive correlation between firm corporate governance and firm value for both firms operating in developed and emerging market economies. For instance a recent paper [7] analyses the impact of corporate governance on value in emerging markets. Said paper examines how changes in corporate governance ratings impact firm valuation and provides evidence that improvements in corporate governance result in significantly higher valuation. Good corporate governance increase the market valuation of companies by improving their financial performance, reducing the risk that boards will make self-serving decisions, and generally raising investor confidence. Better governed firms have higher interest

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6 F. M. Song "Corporate Governance Family Ownership, and Firm Valuations in Emerging Markets: Evidence from Hong Kong Panel Data" – University of Hong Kong, 2008, pages 5-11

7 A. Gottesman - Pace University, and E. Baker and B. Godridge - Alliance Bernstein "*Does better Corporate governance result in higher valuations in emerging markets? Another examination using a new data set*", January 2008, pages 18, 19

coverage ratios[8] and provide a higher return on net worth and capital employed, and their profit margins are also relatively more stable[9].

E. **More concentrated ownership** even in the case of listed companies with large market capitalization. Moreover, in many cases ownership and management are represented by one healthy family, also causing corporate governance issues.

F. In many emerging markets corporations are characterized by intense **cross holding structures.** This phenomena decreases the level of transparency on ownership, governance and firm profitability. Moreover, it facilitates transfer pricing.

G. **Market Openness:** foreign investors in some markets are not permitted to invest in all listed companies, and ownership stake might be limited as well. For instance in The Philippines, foreign investors can only own up to 40% stake of a domestic firms. Oman is a closed market, since this market is completely closed to foreign investors. Other limits are represented by

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8 Interest coverage ratio is a ratio used to determine how easily a company can pay interest on outstanding debt. The interest coverage ratio is calculated by dividing a company's earnings before interest and taxes (EBIT) of one period by the company's interest expenses of the same period

9 Publication on the Journal "Investment Adviser", author Anonymous "*Corporate governance is key driver in valuation*", London, October 2009

restriction on special classes of shares for foreign owners, limits on ownership held by a single foreign shareholder, company-imposed limits that differ from national law, national limits on aggregate foreign ownership[10].

H. **Market Transparency** refers to the degree to which the price of a security reflects all the known information about the underlying security. In some markets there might not be available public information regarding specific firm, therefore in markets without much reliable firm-specific information, the only information available is likely to be for the market as whole. Therefore, the market component of the total risk should be higher.

Two indicators have been developed to track the degree of transparency across countries:

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[10] R. Hoyer-Ellefsen and W. Li "*Investing in emerging markets: valuation in emerging markets*", University of Virginia, 2004 pages 2, 6, 7,

- Price Waterhouse Coopers (PWC) Opacity Index[11]: such index is composed by 5 dimensions: corruption, economics, legal, accounting and regulatory. It is determined by the average of this five dimensions and it is built on data collected during interviews with CFO's, bankers, equity analysts and PWC employees.
- Corruption Perception Index (CPI): it is an annual index provided by Transparency International that ranks 100 countries on the level of perceived corruption.

I. **Long term default-free bond**: In many financial markets classified as emerging, governments might be on default and therefore long term government bonds are not risk-free investments[12]. For instance, the yields on Philippines fixed-rate debt reached 13%, indicating high risk levels and the risk of government being on default. However, this is still an indicator: situation is worst in countries where there are not tradable long

11 Price Waterhouse Coopers Web site

12 For a complete analysis of Risk-free investments please refer to recent literature: Aswath Damodaran, Stern School of Business, "*Estimating Risk free Rates*", 2009

term fixed-rate instruments. Markets with only floating rate government debt reveals that investors are unwilling to commit to a fixed rate for long periods of time, especially if the country/government needs financing, thus indicating lack of information about future prospects.

J. The **General investment environment** includes all the intangible characteristics of a particular market that affect the risk of investing in it.

Particularly, it is essential the information environment and the availability of accurate and reliable information. Typical sources of information are financial statements and financial projections. Companies operating in emerging markets offer less information and there is a wide differences among emerging markets. In addition to determining the amount of road market information available in a given market, there is also a need to determine the availability and relevance of firm-specific information. One method that can be used to test the amount of firm specific information available is to break down the total return variability of firms' stock prices into "firm specific" and "market" components. One would expect that markets with a significant amount of firm specific information available would have a substantial amount of the total variance attributable to firm specific factors. However, in markets without much reliable firm –specific information, the only information available is likely to be for the market as a whole. Therefore, in the latter case, the market component of total risk should be much higher.

K. **Market integration:** The degree of local market integration with global markets is important because affects one of the fundamental assumptions in valuation: investor can engage in arbitrage thereby driving returns toward a global equilibrium. If arbitrage is not possible the reference point for investor will be the local, rather than global, cost of capital. Thus integration affect the discount rate used for valuation in emerging markets.

L. **Political risk:** the extent to which local government intervene in the activities and macro-economic environment can have a material effect on the value of corporate assets.

M. **Social issue and culture**: some business cultures endorse such practices as nepotism, paternalism (support for employees families) discrimination, tax evasion, official corruption.

Investors should consider the costs (hidden) imposed by such practices.

N. **Currency risk:** The adoption of more flexible exchange rate regimes by many emerging economies in the late 80's and early 90's is likely to have affected the foreign currency denomination, an important element in the overall portfolio decision. Currency risk is an important factor when explaining the stock returns of emerging equity markets.

O. **Inflation,** since emerging markets are characterized by high and quite fluctuant inflation rate. Inflation should be carefully considered and estimated and should be taken into account when analysing company's fundamentals.

P. **The ease of doing business** in many developing countries is not par with the developed world (dealing with licenses, employing workers, finding qualified workers, registering property, getting credit, enforcing contracts, closing a business, etc).

Q. **Shortage of raw materials** might be the case in many emerging economies, and can cause extra costs derived from transportation costs, custom duties and lack of purchasing power.

R. **Banking system**: banking and financial complexes might be immature, freshly privatized, government run or closely held by a few families[13].

S. **Intellectual Property Rights**: in many emerging markets companies are exposed to the risk of piracy and other intellectual property violations.

Analyst should adjust their valuation approach to account for the various attributes of emerging markets. An analysis of the main issues faced by analysts when valuing a firm operating in emerging market economies is provided in chapter 2.

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[13] Edward *"Capital mobility and economic performance: are emerging markets different?"* 2001

1.2 Emerging Market Economies external financing

Private inflows represent the most important source of external financing in emerging markets. The table below illustrates the external financing in emerging markets; data are as of October 2009.

Table 1: External Financing in EMEs

EMEs external financing *In USD Billion*	2007	2008	2009E	2010E
Current account balance	529	541	372	334
External financing net:				
Private inflows, Net	**1.252**	**650**	**348**	**672**
Equity investment Net	**602**	**431**	**425**	**533**
Direct Investments, Net	500	513	343	459
Portfolio Investment, Net	102	-82	82	74
Private Creditors, Net	**650**	**219**	**-77**	**139**
Commercial Banks, Net	431	103	-83	49
Non Banks, Net	219	116	6	90
Official inflows, Net	**43**	**56**	**64**	**43**
IFIs	4	27	44	26
Bilateral creditors	39	29	20	17
Equity investment abroad, By resident, Net	-285	-222	-139	-226
Resident lending /Other, Net	-483	-555	-118	-271
Reserves (increase) decrease	-1057	-469	-526	-552

Source: The Institute of International Finance – capital flows to EME, October 3, 2009

Strong equity flows is projected resilience in foreign direct investment inflows. Inflows of foreign direct investment almost inevitably weaken during business cycle downturns since a portion is accounted for by reinvested earnings, which will do poorly in recession periods. Given this, the observed decline in net inward FDI through 2009Q1 for a number of countries for which data are available is surprisingly modest in the midst of the worst global recession in 60 years.

Net inflows from commercial banks show sharp decline in net bank flows to emerging economies in 2008 and 2009 and it is expected a relatively meagre rebound in 2010. For obvious reasons, banks are in balance sheet retrenchment mode, so the supply curve of cross border bank lending available to borrowers in emerging market economies has shifted significantly leftwards over recent quarters. While a global recovery might normally be expected to push the curve outwards again, it is likely that banks, in aggregate, will be quite cautious about emerging market exposures, especially in an environment where there is likely to be a significant tightening in risk-weighted bank capital requirements[14].

By region, bank lending in emerging Europe will be the weakest. Emerging Europe is the most affected by the current crisis and has become more dependent on official financing[15]. Bank lending in emerging Asia will be weak as well in 2010.

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14 Bank of International Settlements, Monetary and Economic Department "*Financial globalisation and emerging market capital flows*", December 2008

15 Bank of International Settlements Papers "*Transmission mechanisms for monetary policy in emerging market economies*" January 2008

Net lending by nonblank creditors (which includes net purchases of local currency securities by non bank investors) will pick up to 90 USD Billion in 2010 , from about USD 6 billion in 2009.

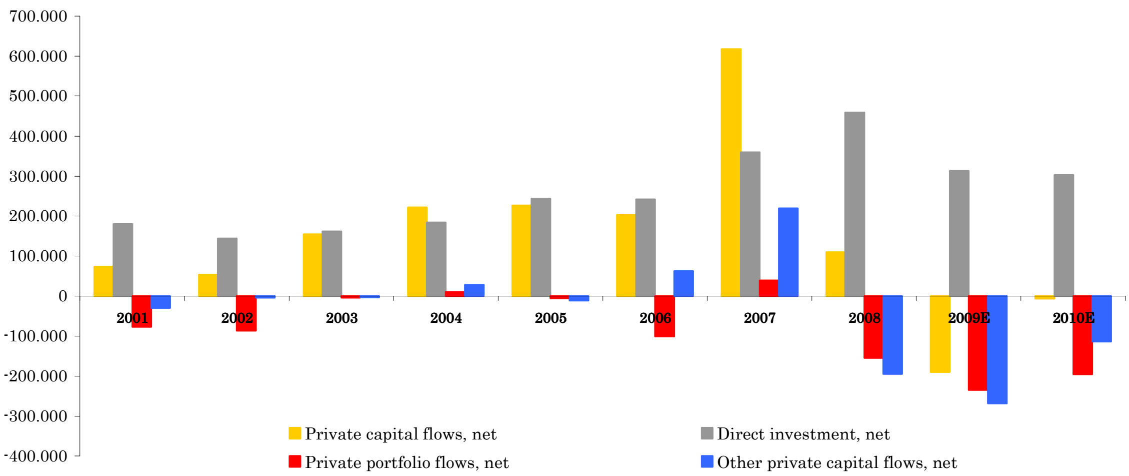
Emerging Asia is the leader of the global business cycle and this leadership extends to the private capital flow cycle. Net private flows to the region hit a low of USD 171 billion in 2008, and are forecast to rise to USD 191 billion in 2009 and USD 273 billion in 2010. The main turnaround has occurred in portfolio equity flows, which have shifted from sizable net outflows in 2008 (USD 57 billion) to net inflows in 2009 (USD 51 billion). As elsewhere, net banking flows will remain very subdued. Local banking systems are very liquid, and have little need to raise financing in international markets.

Private capital flows and Emerging Market Economies

The following graph illustrates the private capital flows in emerging markets registered during the period from 2001 to 2010. "Capital Inflows" means the purchase by non-residents of domestic assets less their sales of such assets. "Capital Outflows" means the purchase by residents of foreign assets less their sales of such assets. Inflows and outflows can be either negative or positive. Capital Net Flows means inflows minus outflows.

Chart 1: Private Capital Net Flows

Data in billion USD



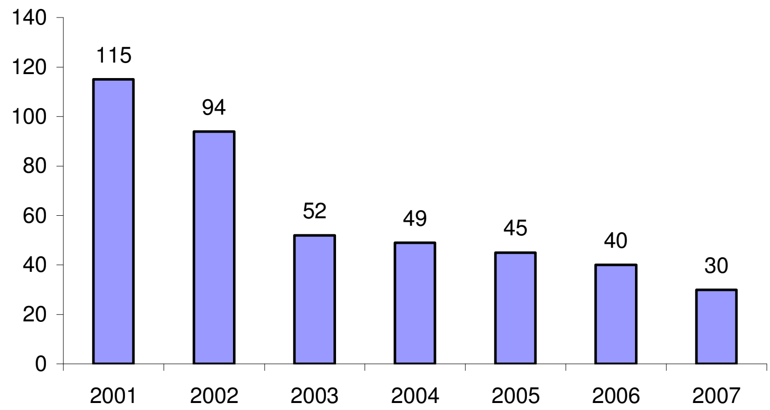
Source: IMF, World Economic Outlook Database, April 2009

The recent wave of gross capital inflows of private capital to the emerging market economies started around 2002 and accelerated in the past years. What is peculiar is that the current wave of capital inflows, as compared to the previous ones, is taking place against the background of much stronger external current account position and accumulation of official foreign exchange reserves. The aggregate current account balance of EMEs switched from a deficit to a surplus.

The following graphs illustrate the composition (FDI, Portfolio, and other investment) of Gross Private Capital Inflows expressed in percent of gross capital inflows.

Chart no. 2: Foreign Direct Investment inflows

(Composition of gross private capital inflows in % of gross capital inflows, emerging markets totals)



Source: IMF, Bank for International Settlements (Mihaljek), December 2008

Foreign Direct Investments - FDI

A recent paper[16], underlines the importance of FDI as a method to achieve sustainable development, and the unique problems of risk and accountability that are associated with it. FDI is the activities of private investors who are investing in the private sector of a foreign

16 A. L. Masser *"The nexus of Public and private in foreign direct investment: an analysis of IFC, MIGA and OPIC"*, 29 May, 2009

host state. It is a key element of development. The liberation of the global trade has mostly accrued to the richest countries and the middle – income countries. The private sector, as the key force behind a country ability to trade internationally, is the obvious starting point to allow the advantages of trade to flow to LDCs, and a prerequisite to effective trade liberalization measures[17]. Innovation in Information and communication technology, innovations in agribusiness are providing new and less costly solutions to improve standards of living. Innovative financing structures, such as micro-credit, has been proven to be a successful financing structure. However, the private sector has proven to be more effective in contributing to development: smaller private-funded enterprises are better equipped to determine and service the needs of populations, and foreign direct investment is a key way of bringing together the capital and expertise to deliver such solutions[18]. FDI also provide correlated benefits such as: can lead to direct stimulus of local economies, beyond employees compensation (local suppliers) increase the demand of local goods,

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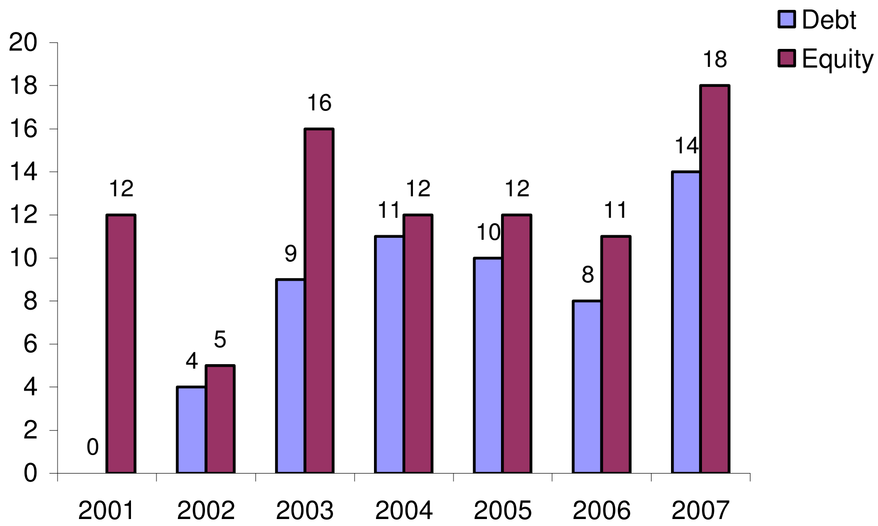
17 Carkovic, M&L Levine *"Does foreign direct investments accelerate economic growth?"* 2005

18 L Alfaro, A. Chanda, S. Sayek *"Foreign direct investments and economic growth: the role of local financial markets"* 2004

offers new economic possibilities for host state entrepreneurs. Moreover, it increases tax proceeds to the host State[19].

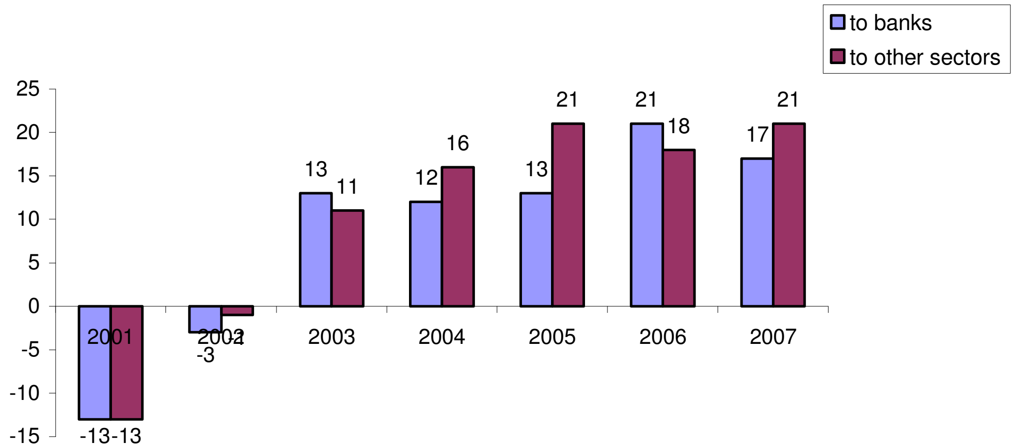
Chart no. 3: Portfolio Inflows



Source: IMF , Bank for International Settlements (Mihaljek), December 2008

19 Hermes, Nard R. Lensink *"Foreign direct investments financial development and economic growth"* 2003

Chart no. 4: Other Investment inflows



Source: IMF , Bank for International Settlements (Mihaljek), December 2008

2. An analysis of main issues in valuing firms operating in emerging market economies

Emerging markets such as Asia and Latin America countries are becoming larger players in the global economy as well as candidates for investment portfolio. Analysts face everyday the issue of valuing companies operating in emerging markets. Moreover, few of these companies are now global player, with large market capitalization and operations outside their home country. These companies are not only target investments from developed economy corporations, but also acquirers of developed market companies. In early 2009 the three largest banks in the world in terms of market capitalization were all Chinese. Unthinkable only twenty years ago !

As illustrated in the previous chapter, emerging markets are characterized by unstable currencies, inflation, country risk, not truly informative financial statements, weak corporate governance and unreliable market measures.

When valuing a company operating in an emerging market economy, analysts should take into consideration some estimation challenges, particularly regarding the following:

- Macroeconomic factors such as exchange rate, inflation and tax rate
- Time of remittance
- Accounting principles
- Corporate governance rules
- Country risk and capital markets inefficiency

2.1.Macroeconomic factors

Emerging capital markets are characterized by high and quite fluctuant **currency exchange rate**. Therefore, currency rate should be taken into consideration when valuing an investment in emerging markets[20].

Many analysts estimate the discount rates for local companies in US dollars or in Euros, which is defensible if the cash flows of these companies are also in US dollars or in Euros. In many valuations, the cash flows either remain in the local currency or are converted into dollars using today exchange rate, which means that the financial projections do not consider the possible fluctuation of the local currency[21].

Inflation rate can be very different in different markets. Particularly, emerging markets show very high and materially fluctuant inflation rates. Investors need to be explicit about their inflation assumptions

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20 This work does not intend to provide a complete analysis of the currency exchange rate factor. For a more detailed analysis of the currency exchange rate issue please refer to relevant literatures: M. Feldstein "*Economic and financial crisis in Emerging markets*", 2002; S. Edwards "*Preventing currency crisis in emerging markets*", 2002; M.P. Dooley, J.A. Frankel "*Managing Currency crisis in emerging markets*", 2002

21 A. Damodaran "*The Dark Side of Valuation*", 2009

for both the cash flow and the discount rate. Moreover, inflation rate can fluctuate materially even in the short term and therefore inflation rate estimates may vary quite often.

2.2. Estimating the cost of capital

When estimating the cost of capital it is essential to consider the country risk[22]. In doing so there might be the following problems:

- Miscounting and double counting country risk :
    - many analyst often decide to switch currencies and value in Euros or USD. Unfortunately, some of them follow up by then ignoring country risk, arguing that the switch to a developed market currency should make this risk go away. It is not that easy to eliminate country risk and valuations based on this assumption will generate values that are too high for emerging market economies[23].

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22 Country risk is a collection of risks associated with investing in a foreign country. These risks include political risk, exchange rate risk, economic risk, sovereign risk and transfer risk, which is the risk of capital being locked up or frozen by government action. Country risk varies from one country to the next. Some countries have high enough risk to discourage much foreign investment.
Country risk can reduce the expected return on an investment and must be taken into consideration whenever investing abroad. Some country risk does not have an effective hedge. Other risk, such as exchange rate risk, can be protected against with a marginal loss of profit potential.
The United States is generally considered the benchmark for low country risk and most nations can have their risk measured as compared to the U.S. Country risk is higher with longer term investments and direct investments, which are investments not made through a regulated market or exchange.

23 *"The Dark Side of Valuation"* A. Damodaran, 2009

- Mistaking expected cash flows for risk–adjusted cash flows: building in the cash flows the possibility and consequences of bad outcomes does not mean that specific country risk has been properly taken into account. Either the cash flow or the discount rate has to be explicitly adjusted to reflect risk.
- Another common mistake is to assume that the *Beta*[24] captures country risk. Since Beta is generally the measure of firm-specific risk, there are some analyst who believe that it is the best place to reflect country risk. The problem is that there is not easy way to incorporate country risk into the betas. If *betas* are estimates against the

24 Beta is a measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole. Beta is used in the capital asset pricing model (CAPM), a model that calculates the expected return of an asset based on its beta and expected market returns. Also known as "beta coefficient". Beta is calculated using regression analysis, and you can think of beta as the tendency of a security's returns to respond to swings in the market. A beta of 1 indicates that the security's price will move with the market. A beta of less than 1 means that the security will be less volatile than the market. A beta of greater than 1 indicates that the security's price will be more volatile than the market. For example, if a stock's beta is 1.2, it's theoretically 20% more volatile than the market.
Many utilities stocks have a beta of less than 1. Conversely, most high-tech Nasdaq-based stocks have a beta of greater than 1, offering the possibility of a higher rate of return, but also posing more risk.

local index, the average beta across stocks in that market should be one. If *Betas* are estimated against a global index it is unlikely that the beta reflect country risk, given the small size of emerging market companies.

- Double counting risks: If analyst use higher risk-free rates (incorporating the default risk spread for the country in the risk-free) higher equity risk premiums or reduce expected cash flows (to reflect the same country risk). Their outcomes are that they find many EM companies overvalued[25]

- Assessing risk parameters
  - When estimating the Cost of equity capital **s**hould the *Beta* be calculated against a global index or against a local index? The choice depends on the purpose of the valuation. If the marginal investor is a local mutual fund then the

[25] Financial analysts of emerging market companies sometimes estimate the WACC having in mind a certain value, but tend to double count risk parameters such as including the country risk in the risk free rate, and to ignore other factors such as >Small cap premium or illiquidity discount. This determine their estimate an overall estimate, compounded doing certain mistakes that sometimes can lead to a wrong valuation results

local index should be used, if it is an institutional investor who holds primarily US stocks than the S&P is more adequate, whether the valuation was in local currency or USD. However, the regression against a sector beta appear to be the best choice.

- Estimating the cost of debt can be challenging since in many emerging markets there is absence of ratings and companies to not issue market traded corporate bonds. A wrong *escamotage* often used is to consider the ratio interest expenses/book value of debt. This is dangerous since the book interest can change significantly if an emerging market company borrows in Euros or USD or in local currency, especially if there is high inflation. Interest rate can be lower for Euros and USD and therefore reduce the book interest rate; using the interest rate for a local currency cost of debt will yield to a too low number. Moreover the debt in EME tends to be short term, which can bias the book interest rate downwards, since long term cost of debt will tend to be higher.

When approaching the valuation of company incorporated in an emerging market economy it is important to analyse where the company actually operates and realizes its revenues. There might the case of companies incorporated in a EME, but actually producing and selling the most in developed market. In this case it is wrong to approach the valuation of such company as an EME company.

2.3. Company management

The track record, skills, experience and level of involvement in the project of the company's management is key when valuing an investment in an emerging market, especially in the case of private medium to small size firms. In this case, the absence of reliable financial statements, financial projections and company's information, including the track record of its activities, make the company's management one of the key factors, or sometimes the only one, to be taken into account when making an investment decision. For example multilateral development banks, when investing in the equity capital of small size, but growing potential firms operating in EMEs, tend to give strong importance to the target company management skills, reputation and commitment in the firm business[26]

[26] This is based on the analysis of European Bank for Reconstruction and Development (EBRD) and European Investment Bank (EIB) policies.

2.4. Corporate Governance

Recent literature finds that the laws that protect investors differ significantly across countries, in part because of differences in legal origins. Moreover, literatures finds that cross-country differences in laws and their enforcement affect ownership structure, dividend payout, availability and cost of external finance, operating performance, and market valuation and are more likely to make acquisitions. Literature also shows that better Corporate Governance[27], and therefore investor protection increase investors' willingness to provide financing and should be reflected in lower costs and greater availability of external financing, suggesting that firms with the greatest needs for financing in the future will find the most beneficial to adopt better governance mechanisms. As

[27] The subject of Corporate Governance is not the subject of this work, for a more detailed analysis of Corporate Governance characteristics in emerging market economies, please refer to recent literature by R. La Porta, F. Lopez-de-Silanes, A. Shleifer, and R. Vishny (2002); B. Black, K. Woochan, S. Jang, *"How Corporate Governance affects firm value. Evidence on channels from Korea"* March 2009; B. Black, I. Love, Rachinsky *"Corporate Governance Indices and firm market value: time series evidence from Russia"*, 2006; H. Daouk, C. M. C. Lee, David *"Capital market Governance: how do security law affect market performance? "* February 2006; Kaufmann, Kraay, Mastruzzi *"Governance matters "* 2005; P. A. Gompers, J. L. Ishii, M. Andrew "*Corporate Governance and Equity Prices*" , February 2003

previously illustrated, countries in emerging markets are characterized by weak legal system and poor corporate governance systems. However, recent literature finds that there are well-governed firms in countries with weak legal system and badly governed firms in countries with strong legal system28. Literature results suggest that firms can partially compensate for ineffective laws and enforcement by establishing good corporate governance and providing credible investor protection. Moreover, good corporate governance matters more in counties with weak shareholders' protection and judicial efficiency. Therefore, given the proven effect of good corporate governance system on firm value, it is essential when valuing a firm operating in emerging market, to analyse the corporate governance mechanism of such firm.

According to A. Damodaran[29], an arbitrary of fixed discount applied to all companies misses the difference across companies and will not reflect differences across companies within the same country and changes in the corporate governance rules in the market.

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[28] L. F. Klapper, I. Love *"Corporate Governance, Investor protection, and Performance in Emerging Markets"*, The World Bank, 2002

[29] A. Damodaran "The Dark Side of Valuation" 2009

3. Firm valuation methods and their application when valuing an investment in an Emerging Market Economy

This chapter illustrates the most applied firm valuation methods: the Discounted Cash Flow Method and the Relative Valuation Methods and analyses some of the main issues faced when applying such methods in valuing firms operating in emerging market economies.

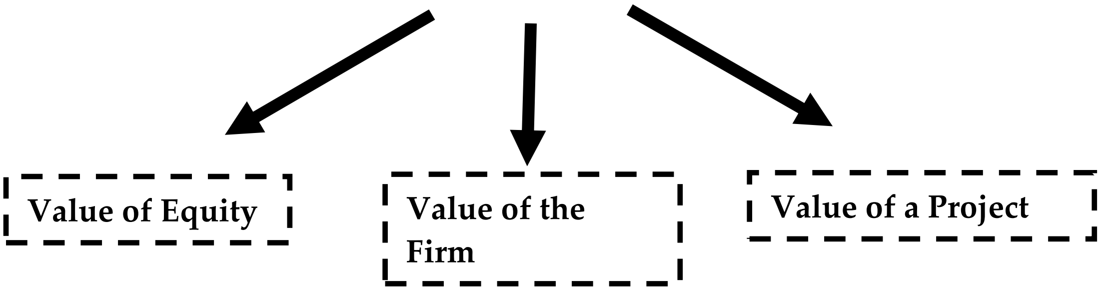
3.1. The Discounted Cash Flow Method

The Discounted Cash Flow Method is one of the most used method in estimating the firm value and it is based on the economic theory that the value of any resources equals the present value of the cash flows expected from the resource, discounted at a rate that reflects the risk inherent in those expected returns.

$$\text{Value} = \sum \text{Cash Flows}_t / (1+r)^t$$

Investors buy financial assets for the cash flows they expect to receive from those assets. According to the Discounted Cash Flow Method, perception of value implies that the price paid for any asset should reflect the cash flows that the asset is expected to generate.

$$\text{Value of investment} = \frac{\sum \text{Cash flows}_t}{(1+r)^t}$$



Equity Value is the value of the equity stake in the business. Shareholders are interested in equity value.

Firm value is the value of the entire business, which includes besides shareholders, the other claimholders.

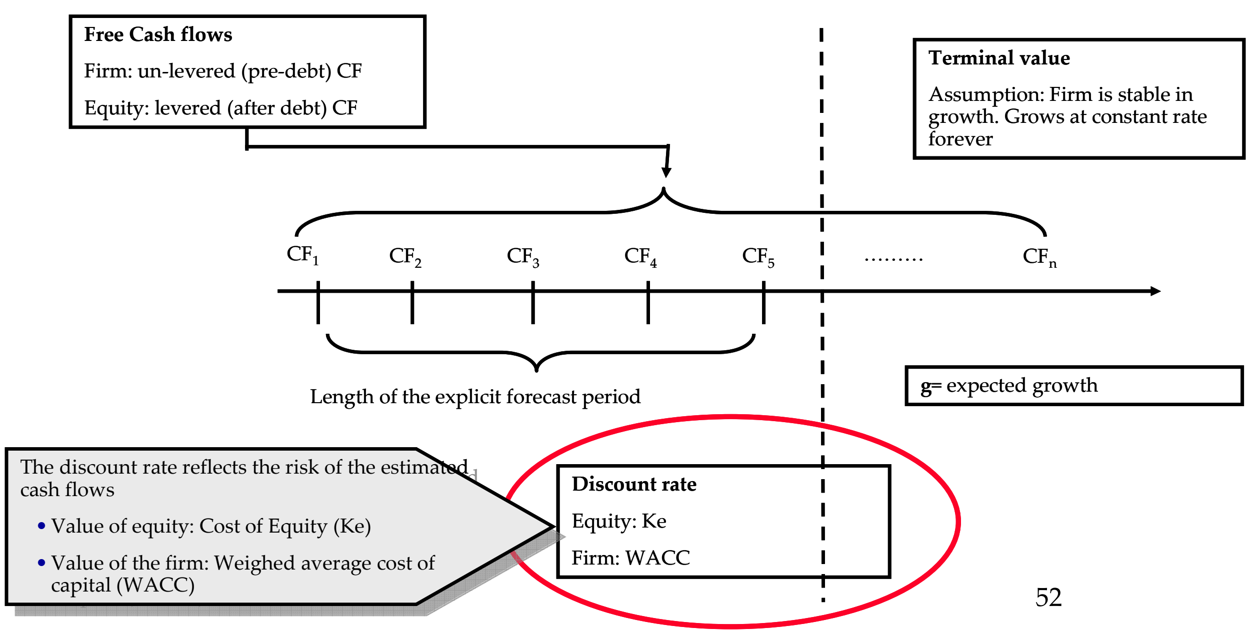
Equity valuation is applied to value the equity stake into the business. The value of equity is obtained by discounting expected free cash flows to equity: the residual cash flows after meeting all expenses, tax obligations and interest and principal payments, at the cost of equity.

$$\sum_{t=1}^{n} \frac{\text{FCF to Equity}}{(1+K_e)^t}$$

Firm valuation is applied to value the entire firm, which includes, beside equity the other claimholders in the firm (bond holders, preferred stockholders).

The value of the firm is obtained by discounting expected free cash flows to firm: the residual cash flows after meeting all operating expenses and taxes, but prior to debt payments, at the weighted average cost of capital, which is the cost of different components of financing used by the firm, weighted by their market value proportion.

$$\textbf{Value}\ \text{Firm/ Equity} = \underbrace{\left[\sum_{t=1}^{t=5} \frac{\textbf{FCF}}{\mathbf{(1+r)^5}}\right]}_{\textbf{PV of explicit period cash flows}} + \underbrace{\left[\frac{\textbf{Normalized CF}}{\mathbf{(r-g)}} \Big/ \mathbf{(1+r)^5}\right]}_{\textbf{PV Terminal value}}$$



Cost of Equity (K_e) is the minimum return on investment requested by a shareholder. The cost of equity should be higher for riskier investments and lower for safer investments. Risk is usually defined in terms of the variance of actual returns around an expected return. The most used method to calculate the K_e is the Capital Asset Pricing Model (CAPM)[30]. The CAPM measures risk by considering the return of non risky investments and the premium for investing in equity:

$$K_e = R_f + \beta(MR_p)$$

Where: R_f is the return of risk-free investment

MR_p reflects the risk in investing in equity in a specific country

Beta (ß) reflects the specific firm or systematic risk Beta gives a measure of the risk in a specific firm and it is expressed by the volatility of its returns versus the market returns.

Risk free rates must be in the same currency as cash flows and defined in the same terms (real or nominal) as the cash flows.

30 A. Damodaran "*Investment valuation*" 2001

Beta is the covariance[31] of the historical asset returns with return on a market index. It is compounded by regressing the historical returns on an asset against a stock index, with the slope of the regression being the ß of the asset over a reasonable time period.

The equity investor demands a return greater than the return he can get from a risk-free investment. The premium for such risk depends on the type of investment.

K_e is the rate of a risk-free investment plus a premium to remunerate the risk of investing in equity. The premium for the risk depends on the country and on the target firm.

The explicit period cash flow is generally of 3 to maximum 7 years. Therefore, when estimating the target company enterprise value, it is key to estimate the expected cash flows beyond the explicit forecast period, commonly defined as the terminal value. Academicians and practitioners have developed several alternative approaches to estimate terminal value, some of them are the following:

- Multiple approach
- Stable growth model

31 Covariance is a non standardized measure of the degree to which two data series move together, and it is estimated by taking the product of the deviations from the mean for each variable in each period.

The Multiple approach: For example P/E approach assumes that the company will be worth some multiple of its future earnings. It is an easy approach but makes the valuation a relative valuation.

The Stable growth model[32] requires judgments about the ability of the firm to grow at a stable rate forever, and the excess returns (if any) that it will earn during the period. When a firm's cash flows grow at a "constant" rate forever, the present value of those cash flows can be written as:

$$\text{Value} = \text{Expected Cash Flow Next period} /(r-g)$$

Where,

r = Discount rate (K_e or WACC)

g = expected growth rate

This "constant" growth rate is called a stable growth rate and cannot be higher than the growth rate of the economy in which the firm operates. While companies can maintain high growth rates for extended periods, they will all approach "stable growth" at some point in time.

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[32] L. Guatri, M. Bini, *"Nuovo Trattato sulla Valutazione delle aziende"*, 2005

Valuation under the discounted cash flow method therefore involves the following three steps:

- Forecast free cash flows available to equity holders (or to debt and equity holders) over a finite forecast horizon (usually 5 to 10 years)
- Forecast free cash flows beyond the explicit period cash flows based on some simplifying assumptions
- Discount free cash flows to equity holders (debt plus equity holders) at the cost of equity (weighted average cost of capital). The discounted amount represents the estimated value of free cash flows available to equity (debt and equity holders as a group).

3.2. The application of the Discounted Cash Flow Method when valuing an investment in a emerging market economy

As described, firms operating in emerging markets are exposed to various risks. These risks may include high level inflation, macroeconomic volatility, capital controls, political changes, war or civil unrest, regulatory change, poorly defined or enforced contract or investor rights, lack accounting control and corruption. Different assessments of these risks can lead to very different estimates of firm value. Macroeconomic volatility is a minefield in Asia[33], where in the late 90's, the financial collapse and subsequent recession generated a mountain of nonperforming bank loans. Indeed, expertise in the valuation of nonperforming loans became an essential element of Asian banking M&A. Even the best analysis and modelling can't anticipate all possible risks, especially political ones. In Malaysia, for example, several financial institutions were negotiating an alliance. Typically, an assessment of nonperforming loans would have been central to the valuation of the bank in this deal, but soon after they

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[33] M. Feldstein "*Economic and Financial Crises in Emerging Market Economies*" , 2002, pages 11-23

had been assessed (in Sept 1998), Malaysia government unexpectedly imposed capital controls. The move raised questions about the accuracy of the bank's valuation, and the analysis had to be redone with the new environment taken into account[34]

Companies operating in EMEs have their Financial Statements not always informative and even if drafted under International Financial Reporting Standards ("IFRS") accounting, the full compliance with IFRS accounting is not granted, corporate governance is often weak, in most cases there is not any social security, and companies operate without considering environmental issues.

First of all, finance theory states that the cost of capital should reflect only non-diversifiable risk, diversifiable risk is better handled in the cash flows.

Second, many risks in a country are idiosyncratic: they do not apply equally to all industries or even to all companies within an industry. Banks for instance, are more likely than retailers to be nationalized. And some companies (raw materials exporters) may benefit from a devaluation, while others (raw materials importers) will be hurt by it.

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[34] M. James, T.M. Koller *"Valuation in emerging Markets"*, McKinsey Quarterly, 2000, pages 80-82

Applying the same extra risk premium to all companies in a nation would overstate the risk for some and understate it for others.

Third, using the credit risk of a country as a proxy for the risk faced by corporations overlooks the fact that equity investments in a company can often be less risky than investments in government bonds. The bonds of company operating in an emerging economy can carry lower yields than the government debt, because a company's financial rating can be higher than that of a government.

In this contest, when applying the Discounted Cash Flow Method it is essential to take into account these characteristics and issues in order to avoid common errors.

3.2.1. Availability of information and accounting standards

Much less information is disclosed in emerging markets than in developed ones. For instance the Notes to The Financial Statement may not include all the information regarding the company's commitments, or the Financial Statement does not include the Cash Flow Statement and therefore data on capital expenditures are not illustrated and therefore must be computed. Analysts should ignore this lack on information and produce their best estimate, using market parameters, and industry average.

Sometimes due to inaccuracy of the accounting, a company may classify as trade payables, debt that are indeed financial, such as long term due to tax authority.

A precise estimate of net financial position of the target company is a key step in approaching firm valuation when applying both DCF and relative valuation methods. When valuing a company operating in EMEs, considering the lack of information and the quality of accounting, it may be not an easy task to estimate the net financial position of the target company.

Moreover, in many EMEs accounting standards differs significantly from IFRS or US GAAP. Some public companies operating in emerging markets report under IFRS accounting (e.g. The Philippines, Indonesia, Malaysia, etc.). Although these countries have decided for the adoption of IFRS, the level of compliance may vary significantly. In general, it has been observed a very high degree of non-compliance with IFRS, therefore financial statement analysis and restatement adjustments are key when analysing the target company's historic financial data.

3.2.2. Currency used in the financial model

Firm valuation can be done in local currency or in hard/strong currency (EUR or USD). It is important that there is consistency in currency used. If the valuation is done in local currency, it is important that the discount rate and the cash flow estimation are done in local currency too. This implies that in estimating the discount rate in local currency, the risk-free rate must be default free and the market risk premium must be consistently defined, reflecting the market risk premium in that specific local country. When estimating the cash flows in local currency it is important that the growth rate includes the expected inflation in that currency.

Therefore if the valuation is in local currency, both the discount rate and the cash flows must be estimated in foreign currency incorporating the inflation rate in that currency in the growth rate. Alternatively the cash flows can be estimated in the local currency and then converted in foreign currency using expected exchange rate for the explicit forecast period. Or valuation can be done in real terms.

To move consistently from one currency to another and from nominal to real term numbers is key to use the same expectations of inflation built into the cash flows and the discount rate.

3.2.3. Macroeconomic factors – inflation, GDP growth, exchange rates and interest rates

In developed market macroeconomic performance will be less variable. Since values in emerging markets are often more volatile, it is advisable developing several scenarios. The major macroeconomic variables that have to be forecast are inflation rates, growth in gross domestic product, foreign exchange rates and interest rates. GDP growth and inflation, for instance, are important drivers of foreign – exchange rates. When constructing a high-inflation scenario, it is important to verify that the foreign exchange rates reflect inflation in the long run, because of purchasing power parity. Then it should be determined how changes in macroeconomic variables drive each component of the cash flow. Cash flow items likely to be affected are revenues, expenses, working capital, capital spending, and debt instruments. These should then be linked in the model to the macroeconomic variables so that when the macroeconomic scenario changes, cash flow items adjust automatically. An hypothesis about industry scenarios should be built as well. Although industry scenarios are constructed in similar ways in emerging and developed markets, industries in the former may be more driven by government action and intervention and are more likely to depend on foreign markets for either revenues and inputs.

3.2.4. Market governance – unreliable market measures – estimating the cost of equity and the cost of debt

As illustrated before in chapter 1, listed companies in emerging market economies are in general less liquid of listed companies in developed markets. In EMES, only the top tier of stocks are liquid and widely traded, while the majority of listed companies are small companies are often illiquid and closely held. Beta, computed regressing the stocks returns against a market index is used to estimate the cost of equity and corporate bonds ratings to estimate the cost of debt. In many emerging markets, both these measures are less useful if the financial markets are less liquid and companies borrow from banks instead of issuing market-traded bonds.

The Beta issue can be solved by regressing the stock returns against a sector index.

Cost of Equity (Ke):

K_e= R_f + beta (mature market equity risk premium) + x (country risk)

The risk free rate is the theoretical rate of return of an investment with zero risk. The risk-free rate represents the interest an investor would expect from an absolutely risk-free investment over a specified period of time. In practice, however, the risk-free rate does not exist because even the safest investments carry a very small amount of risk. Thus, the interest rate on a three-month U.S. Treasury bill is often used as the risk-free rate.

In some emerging markets long term government bonds are not risk-free investments, since government can be on default. Therefore, in estimating the risk- free, we should subtract from the 10 y government bond yield the country risk.

When estimating the cost of equity is important to calculate beta, by regressing the stock returns against a sector index.

When choosing comparable listed companies for beta calculation, it is important to consider that beta is a relative measure of risk and there is no currency attached to it. Country risk premium, rather than beta, is used to consider the country risk differences. Therefore, when choosing comparable companies it is key to consider not only companies operating in the same business in the same country, but also companies listed in other markets. If the sample will include companies operating in emerging or mature capital markets, depends on the target company business and its exposure to country risk.

How to best estimate the country risk premium for a specific emerging market and the exposure of the target company to this country risk.

According to A. Damodaran[35] there are three different ways of estimating the premium for country risk:

- The default spread for bonds issued by the emerging market government
- The volatility of the emerging market relative to the US market
- A composite measure that scales up the bond default spread by the relative volatility of the equity market (relative to the government bond)

Not all companies operating in an emerging market are exposed at the same level to the country risk. Companies that operate globally, such as aerospace companies, are less exposed to the country risk while companies operating in the mass consumer market, such as telephone companies or food companies, are more exposed to the country risk.

[35] A. Damodaran "*The Dark Side of Valuation*" 2009

The remedies is to identify the level of company exposure to country risk by using parameters such as the percentage of revenues generated locally, or location of the production facilities, or use of risk management products (insurance against specific contingencies and derivatives).

Revenues represent a direct measure of a single company exposure to country risk. It is therefore possible to estimate the following ratio which measure the company exposure to country risk in terms of revenues:

$$\% \text{ of revenues generated locally}_{\text{(Company)}} / \% \text{ of revenues generated locally}_{\text{(average company in the market)}}$$

Cost of Debt (K_d)

K_d: Risk-free + Company Default Spread + Country Default Spread

Company default spread depends on the synthetic ratings, since the latter represents the basis for computing the cost of debt. Since company synthetic rating may be not available, it is possible to estimate it by using the interest coverage ratio.

Table 2: Interest coverage ratios and relevant ratings

For large manufacturing firms					**For financial service firms (default spreads are slighty diff**			
If interest coverage ratio is					*If long term interest coverage ratio is*			
>	*≤ to*	*Rating is*	*Spread is*		greater than	≤ to	Rating is	Spread is
-100000	0,199999	D	20,00%		-100000	0,049999	D	20,00%
0,2	0,649999	C	15,00%		0,05	0,099999	C	15,00%
0,65	0,799999	CC	12,00%		0,1	0,199999	CC	12,00%
0,8	1,249999	CCC	10,00%		0,2	0,299999	CCC	10,00%
1,25	1,499999	B-	8,50%		0,3	0,399999	B-	8,50%
1,5	1,749999	B	7,25%		0,4	0,499999	B	7,25%
1,75	1,999999	B+	6,00%		0,5	0,599999	B+	6,00%
2	2,2499999	BB	5,00%		0,6	0,749999	BB	5,00%
2,25	2,49999	BB+	4,25%		0,75	0,899999	BB+	4,25%
2,5	2,999999	BBB	3,50%		0,9	1,199999	BBB	3,50%
3	4,249999	A-	3,00%		1,2	1,49999	A-	3,00%
4,25	5,499999	A	2,50%		1,5	1,99999	A	2,50%
5,5	6,499999	A+	2,25%		2	2,49999	A+	2,25%
6,5	8,499999	AA	1,75%		2,5	2,99999	AA	1,75%
8,50	100000	AAA	1,25%		3	100000	AAA	1,25%
For smaller and riskier firms								
If interest coverage ratio is								
greater than	≤ to	Rating is	Spread is					
-100000	0,499999	D	20,00%					
0,5	0,799999	C	15,00%					
0,8	1,249999	CC	12,00%					
1,25	1,499999	CCC	10,00%					
1,5	1,999999	B-	8,50%					
2	2,499999	B	7,25%					
2,5	2,999999	B+	6,00%					
3	3,499999	BB	5,00%					
3,5	3,9999999	BB+	4,25%					
4	4,499999	BBB	3,50%					
4,5	5,999999	A-	3,00%					
6	7,499999	A	2,50%					
7,5	9,499999	A+	2,25%					
9,5	12,499999	AA	1,75%					
12,5	100000	AAA	1,25%					

Source: A. Damodaran

As illustrated in the table above, company default spread expressed by the synthetic rating computed using the interest coverage ratio, depends on sector and size of the target company. Financial service firms are more exposed to debt than large manufacturing firms, and it is advisable to be more stringent with smaller and riskier firms.

The extra level of risk that characterizes many emerging markets can be incorporated into the WACC or in the cash flows[36].

By analysing specific risks and their impact on value permits managers to make better plans to mitigate them. If regional infrastructure and energy supply risk is were a major concern, for example, a manufacturer might decide to build several smaller plants rather than a single large one, even though that course might cost more initially. To incorporate risks into cash flows properly, start by using macroeconomic factors to construct scenarios, because such factors affect the performance of industries and companies in emerging markets. Then align specific scenarios for companies and industries with those macroeconomic scenarios.

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36 M. James, T.M. Koller "*Valuation in emerging Markets*", McKinsey Quarterly, 2000, pages 80-82

3.3 Relative valuation when valuing an investment in an emerging market economy

Relative valuation is one of the most used valuation methods.

When applying relative valuation on firms operating in emerging markets, we have to deal with some issues.

First of all, there might be only **few listed local company** in the relevant sector. Therefore the panel of comparable companies should include companies operating in the same economic chain, or in other emerging market economies. The latter implies a further analysis on the differences in risk and growth expectations across countries. Moreover, as illustrated in not all companies in an emerging market are exposed to same extent to country risk, and this often depends in the sector in which they operate.

Second, choosing comparable firms might be quite challenging. As illustrated, emerging markets are characterized by **illiquid listed firms**. It means that only top tier listed companies are liquid, while the rest, even if numerous, are often quite illiquid. It means that a control for differences in liquidity should be done by using trading volume or bid ask spread as proxies.

Many analysts do not trust capital emerging market prices and the multiples they observe in those markets. Therefore, they **apply multiple of comparables companies operating in developed markets only**. In doing so it is essential to keep in mind all the characteristic of firm operating in emerging markets, being the most significant one the following:

- **Risk differences**, which is reflected in the higher discount rates. This should cause emerging market firms to trade at a lower multiples of earnings, revenues and book value than similar companies operating in mature markets. As illustrated the main component is represented by country risk. There are two ways to adjust for country risk. One is to bring country risk into the comparison explicitly, using country ratings or default spread[37]. Or by clustering in two groups the sample of comparables: mature markets and emerging one, and observing what the market is charging as a discount for emerging market risk.
- **Macroeconomic factors differences,** since interest rates and inflation rate are in general higher in emerging markets than in

[37] A. Damodaran "*The Dark Side of Valuation*", 2009

mature one and they also fluctuate more, these differences must be taken into consideration when valuing emerging market firms using multiples of comparables operating in mature economies. In general, we would expect companies to trade at much higher multiples of earnings, in low interest rate environment, than in high interest rate environments, as reflected in the chart below.

Table 3: Average Multiples of Earnings by geographic areas

Valuation	P/E			P/CF		P/B		DY	
	2009	2010	5 yr. avg.	Current	5 yr. avg.	Current	5 yr. avg.	Current	5 yr. avg.
EMEA	12,9	10,6	12,3	8,2	8,5	1,7	2,1	2,4	2,5
Asia	17,7	13,6	13,9	11,9	8,3	2,1	2,0	1,9	2,6
Latin America	16,9	13,6	13,2	9,2	8,1	2,3	2,4	3,3	2,9
Emerging Markets	16,2	12,8	13,4	10,2	8,4	2	2,1	2,3	2,6
MCSI World	18,1	14,3	15,8	9,4	9,4	1,8	2,2	2,6	2,5

EMEA is an abbreviation for Europe, the Middle East and Africa. P/E is Price/Earnings, P/CF is Price/Cash Flow, P/B is Price/Book, DY is Dividend Yield.

Source: Emerging market monthly report, ROBECO Bank, October 2009

– **Accounting standard** differences might bring to very different results in terms of EBITDA, EBIT, Net Income, and therefore might bring to very different multiples. It is key before applying a relative valuation using multiple comparables of mature market firm to adjust the variables to reflect accounting differences, at least the biggest ones. It is also essential to focus on cash rather than earnings: amount of invested cash is independent of amortization policies, economic return on invested cash, adjusted for exceptional and non-cash items, capital structure, cost of capital, and evaluation of the corporate entity, not just the equity component. As all these components are included in the equation, this methodology captures the major financial elements of a company's performance. It also links valuation to relative competitive advantages and corporate strategy.

4. The Importance of Environment, Social and Governance factors on firm value

The world is facing a change, which started a decade ago. Particularly, globalization and a changed political landscape are combined with significant changes in populations, urbanization, resource utilization, climatic patterns, and employee and consumer attitudes[38]. These factors are having a strong impact on the environment and social issues, determining an increasing attention to sustainability investments. In this contest, investors are becoming more active: there has been a dramatic increase in the number of investors seeking to incorporate sustainability - Environment, Social and Governance ("ESG") factors - into their portfolio. More than 180 institutions representing USD 8 billion have signed up to initiatives such as UNEP FI (United Nations Environment Program Finance Initiative) and UN PRI (United Principles for Responsible Investment)[39].

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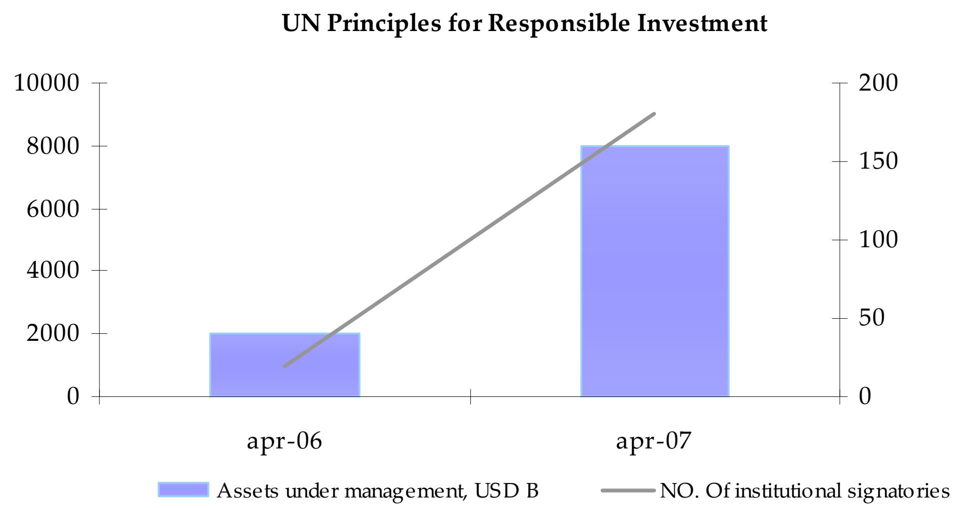
38 Goldman Sachs Investment Research, "*Integrating ESG into investment research*", June 2006

39 Goldman Sachs Investment Research, "*Introducing to GS sustain*" 2007

Chart 5: Sustainable investments by value of assets under management and number of institutions



Source: United Nations Principles for Responsible Investments

The definition of Environment, Social and Governance includes the key metrics of a firm's non financial performance; intangibles that help make valuation beyond traditional financials.

I. **Environment**

- Inputs – Energy, Water
- Outputs – Climate Change, Emissions, Waste

II. **Social**

- Leadership – Accountability, Reporting, Development
- Employees – Diversity, Training, Labour relations
- Customers – Product safety, Responsible marketing

- Communities – Human rights, Social investments, Transparency

III. **Governance**

- Transparency
- Independence
- Compensation
- Shareholder rights

Companies must manage ESG factors properly. **A good management of corporate governance, employees, stakeholders and the environment represents a good proxy of the quality of company management.**

The accounting scandals and the current crisis have taught us risks connected with poor corporate governance and risk controls[40].

A company ESG profile will include a range of executive and workforce behaviours, track record of corporate and product/brand reputation, nature of compliance with local and national laws, the manner in which the company is governed by its managers and board, the responsiveness to stakeholders, disclosure and

[40] Goldman Sachs "*Integrating ESG into investment research*" 2007

transparency and other elements relating to environmental, social and governance factors important to investors.

The current economic environment is evolving at a speed not experienced in the past. Globalization and a shifting political landscape are combining with significant changes in populations, urbanization, resource utilization, climate change, and employee and consumer attitudes. We are not sure if the planet is ready to accept this rapid industrial growth. Industrialization of Europe occurred in 200 years, industrialization of USA in 50 years while the industrialization of China occurred in a decade[41]!

Concern on the environment has grown significantly recently and climate change is a sad reality already.

Goldman Sachs presented an analysis on companies and sectors at the United Nations Compact Leaders Summit (July 2007)[42] which included a new analytical tools for picking capital market winners and offered a short list of mostly large capitalization companies that are leaders in ESG policies and are leading price performance by an

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[41] H. Boerner "*Your company's ESG factors are mattering more now to institutional investors*" Corporate Finance Review, New York, Sept/October 2007

[42] Goldman Sachs "*Integrating ESG into investment research*", 2007

average premium of 25%. The analysis was performed in the period 2006 - 2007.

The analysis was performed on more than 120 ESG leaders from five different industries: energy, metals and mining, food and beverage, pharmaceuticals and European media.

The poor performance of indexes such as Dow Jones Sustainability Index and FTSE4Good (both -10% since 2000) suggests that a simplified approach of picking stocks on an ESG basis alone will not lead to stock market out-performance[43].

When investing in equity is key to consider three factors:

- Financials
- Industry performance
- ESG

"Given that firm's activities influence first of all the economy as a whole, in particular a specific industry, the society and environment in valuing a specific stock market performance it is key not to focus only on cash returns, but to analyse how the company is managed, and therefore the quality of its

[43] H. Boerner *"Your company's ESG factors are mattering more now to institutional investors"* Corporate Finance Review, New York, Sept/October 2007

management by analysing how the company manage its employees, its stakeholder and the environment in which it operates"[44].

The companies in Goldman's analysis were also reviewed for competitive advantage across peers, including financial returns and industry drivers.

"We're at a point where socially responsible investing is evolving beyond avoidance strategies - eliminating companies that are involved in tobacco, for example—to ones that take an integrated look at ESG," says Paul Hilton[45]*, "This is all part of the same movement to understand how to harness this information for better returns."*

In this work have been analysed the following ESG factors:

- **Corporate governance:**

  Independence of the board and leadership, Transparency of audit and stock options, CEO compensation, Minority share-holders' rights;

- **Social - leadership:**

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44 Goldman Sachs "Integrating ESG into investment research", 2007

45 Paul Hilton is Interim Director Social Investment Strategy at Calvert, a leading socially responsible investing firm.

Leadership responsibility for and compensation links to environmental and social performance, environmental and social reporting and assurance;

- **Social - Employees:**

Compensation, productivity, health and safety, gender diversity;

- **Social – Stakeholders:**

Consumers, suppliers, communities, government and regulators, investors;

- **Environment:**

Energy use and carbon emissions, management of water, waste, recycling, suppliers and sourcing, biodiversity;

- **Industry themes and company valuation**

Sector-specific industry drivers of competitive advantage, cash return spreads.

4.1. Sustainable Investments – Some Data

A sustainable investment is based on the premise that companies that ignore social and environmental concerns, and that fail the test of good governance, are unluckily to be good long-term investments, regardless their ability to generate cash flows in the short term.

Sustainable investments (SI) which entails integrating environmental, social and corporate governance factors into investment processes, has gradually evolved from a specific category of investors practise into a more spread technique to pick up shares which present the same level of financial returns. An example is ROBECO bank, an asset management firm which operate massively in emerging markets, who is planning to apply the ESG factor analyses to all its investment screening[46]. Therefore in this contest, integrating ESG factors in stock analysis in evolving in emerging markets too.

From June 2003 to June 2008 the MSCI emerging markets index increased by around 400% while the MSCI World Index rose by only 70%. In part this accounts for the difference between the growth rates

[46] Equity sales department – ROBECO Bank

in funds that invest all their assets in emerging markets and funds that invest a portion of their assets in emerging markets.

In order to analyse investors approach in respect to ESG factors, IFC/Mercer conducted a survey in March 2009 on a panel of investors operating in emerging markets. According to IFC/Mercer's survey, SI in emerging markets has grown up to USD 300 billion over the past five years. IFC/Mercer's research revealed that the growth of SI was primarily driven by investors in developed markets investing in emerging markets. According to Mercer, USD 50 billion of said USD 300 billion are specifically branded as socially responsible or sustainable.

Sustainable investing need not to incorporate ethical considerations, it simply requires uncovering and incorporating into a company's valuation the ESG factors that influence the magnitude and volatility of future cash flows[47].

According to IFC/Mercer's research, there is a positive correlation between ESG performance and financial performance. Evidence of that comes also from a publication of last March 2009 titled "Green

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[47] AT Kearney "*Sustainability goes far beyond the narrow definition of being environmentally friendly*"

winners: The performance of sustainability Companies in the financial crisis": the research examines the performance of 99 companies from the Sustainability index and the Goldman Sachs sustain focus list. The companies categorised in 18 industries, were headquartered in both developed and emerging markets. The research demonstrates that even in a tough economic climate, firms committed to sustainability generally out performed their peers.

Integrating ESG factors into financial valuations is a challenge even in mature capital markets. A recent survey performed by McKinsey [48] illustrate that ESG programs create shareholder value, but neither CFOs nor professional investors fully include them when evaluating business projects or companies. Moreover, said survey illustrate that the contribution to shareholder value of ESG will increase dramatically in the long term The impact of unsustainable practises on future cash flows is typically felt over the long term. **Although this is questionable, it is sure that the metrics available to valuate ESG factor is weak**.

The farther into the future an event occurs, the more difficult is to predict. Valuation metrics such as earnings per share tend to be used

48 S. Bonini, M. Brun, M. Rosenthal, Mc Kinsey Global Survey "*Valuing Social Responsibility*", February 2009

for short term forecasts, which fail to reflect the impact on value of factors like climate change, energy disruptions or emerging skills shortages.

Another challenge was highlighted in a February 2009 McKinsey survey[49] of Chief Financial Officers ("CFOs") and investment professionals on how ESG **programs crate value.** Findings suggest that, while most CFOs already believe in the importance of ESG, they could increase the value of their companies in the eyes of the investors by taking ESG activities more seriously. In particular, they should make improvements in governance – and particularly transparency – of paramount importance. CFOs should also strive to integrate the financial value of ESG activities into financial reports using transparent methodologies, quantifying financial impacts and measuring business risks and opportunities. These actions can add value in themselves, suggests the research, as well as indicating the ability of executives to mange their overall business effectively.

The results of the Mc Kinsey survey indicate agreement that environmental, social, and governance programs do create

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[49] S. Bonini, T.M. Koller, P.H. Mirvis, " *Valuing Corporate Social Responsibility"* McKinsey Quarterly February 2009

shareholder value, though the current economic turmoil has increased the importance of governance programs and decreased that of environmental and social programs.

The experience in the USA confirm this. “*The biggest gains came as major corporations, such as General Electric, realised that there was profit to be gained by paying more attention to the environment. It became much easier to make a dramatic shift*“ Says James Harmon[50].

[50] James Harmon is chairman of Harmon & CO in New York, a financial advisory firm

4.2. ESG in emerging market economies

Over the past five years, phenomenal economic growth in emerging markets has increased the speed of the depletion of natural resources and created tensions with sustainable development. Relative to the size of their economies, emerging market sell few services and more raw materials and manufactured goods, which are potentially more environmentally disruptive, as illustrated in Chapter 1. EMEs tend to be less regulated in a variety of ways.

In the near future the number of new consumers from emerging market economies will increase dramatically because of the increase in the number of people earning a middle-class income.

Of the top 20 companies by market capitalization in the energy industry, for example, 35% are from BRICs[51] countries.

The start of the recovery from the recent global financial crisis is largely priced into financial markets, however, high-growth economies like China and India still appear relatively cheaper when one year forward equity valuations are scaled by growth

[51] BRIC: Brazil, Russia, India, China

expectations[52]. **This support the view of this work which is that focus will be on sustainable growth in the near future.**

Given the higher levels of both risks and returns in emerging markets, investors who make an effort to understand the impact of ESG have a better chance of reducing risk and boosting returns.

In EMEs corporate governance is a well understood concept as compared with Environmental and social issues. Corporate Governance is regarded as important by investment managers even if they might have difficulties in obtaining clarity on company's governance structures in EMEs.

According to a study conducted by IMF/Mercer[53], many investment managers tend to investigate governance standards in their meetings with invested companies, and considered it material at a stock selection stage. Although has been proven a correlation between ESG and firm value, governance is seen as an important issue, while environment and social issues are not yet perceived at the same level.

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52 Bank Of America Merrill Lynch, 25 November 2009

53 International Finance Corporation ("IFC") and Mercer *"Gaining Ground Integrating environmental, social and governance (ESG) factors into investment processes in emerging markets* ", March 2009

4.3. Integration of ESG as a driver of long term value. Evidence from recent researches and surveys

Evidence of the growing importance of doing SI according to certain ESG practice is represented by the relatively recent cases of divestiture when "investee" companies were not respecting the good ESG practice: Dutch pension fund PGGM divested a USD 54 Million stake in PetroChina in 2008 in response to the Chinese Company activities in Sudan. A Norway's sovereign wealth fund, which in November of 2007 sold its stake in Vedanta resources PLC, an Indian mining company citing environmental and human rights violation[54].

There is a lack of comprehensive research coverage in emerging markets in general and a dearth of ESG related analysis in particular. Given the higher levels of both risk and return in emerging markets, investors who make an effort to understand the impact of ESG have a better chance of reducing risk and boosting returns. Because information is scarcer, fund managers see sustainability criteria as a way to make superior investment decisions.

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54 H. Boerner "*Your company 's ESG factors are mattering more now to institutional investors*"Corporate Finance Review, New York, September/October 2007

According to IFC/Mercer's survey, emerging market investment managers demonstrated some level of awareness of ESG issues bit primarily as a risk management tool. In contrast only a few managers were pursuing active ownership policies or considering the integration of ESG as a driver of long term value. Out of the 177 managers investing in EMEs surveyed by Mercer in 2008, 46% have a policy regarding the integration of ESG factors into their investment process. When asked if they raise ESG issues when meeting up with investee management 18% of them answered yes, 21% mainly CG, and 58% did not provide an answer

Social issues, such as Health and safety of workers, are seen as an important indicator of quality of management and are best addressed by local investment managers than global ones because they can best assess the most pressing social issues in their local market and they have a better perceptions of them.

The recent global financial crisis increased the awareness of the need of integrating of ESG factors into traditional investment practices.

According to the survey made by The Economist Intelligence Unit[55] for IFC, the percentage of investment managers and consultants who use ESG principles when valuing investments in emerging market economies increased from 34% in 2007 to 37% in 2009.

The **investment horizon** is a key driver in considering ESG when investing in EMEs: managers with shorter horizons (with portfolio turnover in excess of 100% pa) are less concerned with ESG issues.

Many empirical studies have found a correlation between ESG factors and firm value/performance[56]. Despite such evidence there are obstacles to quantifying such factors and therefore including them in the valuation process.

Problems are the following:

- Reluctance in considering non financial factors in their valuation

55 International Finance Corporation ("IFC") and The Economist Intelligence Unit *"Sustainable investing in emerging markets: unscathed by the financial crisis"*, March 2009

56 International Finance Corporation ("IFC") and The Economist Intelligence Unit "*Sustainable investing in emerging markets: unscathed by the financial crisis*", March 2009

- Insufficient disclosure by corporation on such issue and in general lack of transparency
- Lack of qualified staff who can conduct such analysis

According to a survey conducted by the International Finance Corporation and The Economist Intelligence Unit, 82% of surveyed asset owners say that ESG assessment will become significantly more important in their research, portfolio management and manager-selection process over the next three years.

EGS criteria simply comprise a new set of variables to incorporate into discounted cash flow (DCF) valuations. However, the DCF model depends entirely on the availability of information about the company, and companies don't always inform the market about environmental and social risks. **Lack of transparency was the main obstacle to incorporating ESG principles into investment decisions regarding emerging market equities.**

Sustainability factors can be incorporated into either the numerator or the denominator of the DCF equation. To the extent that the analyst can estimate the effects on the timing and magnitude of future cash flows, the numerator can be adjusted. Alternatively, sustainability issues could affect the discount rate to account for higher or lower perceived risk arising from company sustainability's profile.

In a report Credit Lyonnais Asia calculated an index with corporate governance rankings for 495 firms across 25 emerging markets and 18 sectors, based on a Questionnaire (April 2001). Companies that ranked high on corporate governance index had better operating performance and higher stock returns. A growing firm with large needs for outside financing has more incentive to adopt better governance practises in order to lower its cost of capital. These growth opportunities would also be reflected in the market valuation of the firm , thus inducing a positive correlation between governance and Tobin's Q. The Credit Lyonnais questionnaire give a 10% weight to "Social Awareness ". The latter includes questions on: explicit policy on ethical behaviour, policy that prohibits the employment of under-aged, equal employment policy, guidelines on sourcing of materials, if the company is explicitly environmentally conscious.

4.4. ESG – Evidence of differences among countries

There is a close link between those companies that lead in terms of corporate governance and those that score well on social and environmental issues. There are notable geographic differences. Anglo-American, Chinese and, specifically, American companies score much higher on corporate governance than they do for social, and especially environmental issues. This is not surprising, given the bias of metrics used in terms of assessing corporate governance. At the other extreme, Scandinavian and certain European companies score highly for social and environmental issues compared with corporate governance. In these cases it may well be that issues such as ownership structure, which bring down corporate governance scores, do not actually impact on the long-run competitive position of the company.

Disclosure remains an issue, in particular for Chinese and Russian companies. In general their performance on all measures is notably poor, especially compared with competitors from countries such as Brazil.

There is a high correlation across all sectors in terms of cash flow generated relative to payroll per employee: “the more you pay the more you get”. This raises questions about the theory of cost control and downsizing as the key to success. It is maybe not surprising when taken in conjunction with the fact that most returns come from companies with above-average CROCI[57]. Companies with above cost of capital returns tend to generate value when their strategy revolves around holding returns and generating growth.

[57] CROCI: Cash Return on Capital Invested: EBITDA/Total value of Equity

4.4.1. ESG in China, India and Brazil

This section illustrates how asset management companies and investor in general operating in China, India and Brazil, consider ESG factors when stock screening and stock picking.

China

The **China Securities and Regulatory Commission (CSRC)** introduced its Code of Corporate Governance for listed companies in China in 2001. Listed companies are required to comply with this code and report on their compliance in their annual reports (page 23 of mercer IFC study). In China the corporate management compliance with various government policies and regulations is driven more by fear of sanction than by genuine belief that good ESG practice enhance profit shareholder value. As a result, investment managers in China faces many challenges in assessing ESG issues in their process in a pro-active way.

According to IFC Mercer study[58], one of the biggest local names in asset management in China - China International Capital Corporation - considers the ESG factors in both passive stock screening and active stock picking. CICC has also developed an internal manual to guide ESG research. **The mangers gives a 10-20% target price premium to stocks with EGS related "catalyst"**. While the **methodology looks arbitrary**, it is a positive sign that CICC tries to reflect ESG ideas into stock valuation. Their portfolio construction is a combination of top-down views from the investment committee and bottom up stock selection from the research team. This model is based only on qualitative analysis. They also demonstrated an eagerness to learn more about best practice amongst European and US investment managers on ESG integration.

At the Bank of China Investment Management (BOCIM) the investment team evaluates five factors at macro level and five factors at the company level, including business strategy, financials, corporate governance, social and environmental issues (pollution disposal and social activities) as well as talent/employee reserves.

[58] International Finance Corporation and Mercer – *Integrating Environmental, Social and governance (ESG) factors into investment processes in emerging markets* - March 2009

These are the key parameters for the investment team 's scoring system on potential *investee* companies. Valuation models are also used to identify the "long term economic value".

The IFC/Mercer's survey[59] report that the IFMC (Industrial Fund Management Company) – China equity SRI Fund has a good understanding of ESG issues and is aware of the ESG investment methodologies used by international peers. However, IFMC does not have a specialised ESG investment team , demonstrating that there are multiple models for integrating ESG into the core investment process.

<u>India</u>

Indian company are not very well represented in global sustainability funds and overall India lags behind other emerging markets in attracting sustainable investment. There are few regulations around corporate governance .

Corporate governance specialists routinely attend scheduled one-to-one meetings in the UK and Europe alongside analysts and portfolio

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[59] International Finance Corporation ("IFC") and Mercer *"Gaining Ground Integrating environmental, social and governance (ESG) factors into investment processes in emerging markets* ", March 2009

managers, as well as convene dedicated meetings, to discuss areas of concern. These processes do not exist in India.

Brazil

In December 2005, The Sao Paolo Stock Exchange, BM&F BOVESPA, launched Latin America's first sustainability index, the BOVESPA Corporate Sustainability Index in Latin America. The index, developed with the support of IFC, consists of up to 40 local companies selected according to their ability to meet specific standards for environmental, social and corporate governance.

Brazil has also a Corporate Governance Stock market Index, set up in the year 2000 and is composed of companies that have demonstrated high governance standards. Financial disclosure is an issue in Brazil, since only a small number of companies provide a cash flow statement and a consolidated financial statement.

Among the Brazilian equity investors, HSBC is the one who consider the most the ESG factors when valuing an investment. HSBC Brazil has an SRI analyst who is responsible for implementing and developing practises relating to SRI factors in Brazilian companies.

Corporate Governance is included in the company valuation process of HSBC, and the team is working on adjusting its model in order to incorporate environmental and social factors. Depending on the results of the ESG analysis, the expected value of the target company may be discounted or increased for a premium. Moreover, HSBC manager will not hold companies in their portfolio if they have serious ESG issues, however they do not select stocks just because the company receives a favourable ESG analysis [60].

[60] International Finance Corporation and Mercer "*Sustainable investment practices in Brazil*", March 2009

5. How we can include the ESG factors when valuing a firm operating in an emerging market economy

As illustrated in previous chapters, it is evident that the majority of companies operating in emerging market economies, do not have stringent rules in terms of governance, environment, social aspects, employees' health and safe. In the European Union ("EU") recent accession countries the compliance with the EU regulation is delayed, therefore there are many corporations operating in countries which are part of the European Union, but not yet following the EU rules in terms of environment, governance, social factors, employees' health and safe. An example is represented by Romania, which is part of the European Union since 2007. Despite Romania being part of the EU, the legal framework regarding ESG factors is quite different from that of the other EU countries. The majority of local listed firms only comply with the Romanian law. However, in the near future Romanian will be called to comply with the EU regulations, determining a strong impact on local enterprises operations and costs structure.

When a corporation operating in a developed country is willing to buy a majority stake of a company operating in an emerging market economy, usually performs a due diligence on target company operations and financials, including an environmental due diligence. This is done in order to assess the target potential liabilities arising from health, environment, social and safe issues. Usually the acquirer tends to keep these liabilities with the vendor or to limit its responsibilities or to insure from them. In any case, the acquirer is aware of those risks and usually covers them. When those companies become a branch of a multinational group based in a developed country, they have to comply with the rules of the developed country. Therefore, the target company or the parent company, will invest to improve its facilities, working conditions, and industrial waste management etc.

When an institutional investor[61] is considering investing in a company operating in an emerging market, he has to take into account, in estimating the target value, the risks arising from EGS issues. Particularly he has to take into account that the legal framework might change and companies might be called in the near future to respect those rules by investing in state of art facilities, by respecting the environment and assuring a safe working environment for his employees. In any case, analysts have to take into account the target value might decrease, when those issues, today ignored and not evident, will arise.

Together with the country risks, inflation and currency fluctuations, corporate governance, accounting standards analysts should start

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[61] **Institutional investors** are organizations which pool large sums of money and invest those sums in companies. They include banks, insurance companies, retirement or pension funds, hedge funds and mutual funds. Their role in the economy is to act as highly specialized investors on behalf of others. For instance, an ordinary person will have a pension from his employer. The employer gives that person's pension contributions to a fund. The fund will buy shares in a company, or some other financial product. Funds are useful because they will hold a broad portfolio of investments in many companies. This spreads risk, so if one company fails, it will be only a small part of the whole fund's investment. Institutional investors will have a lot of influence in the management of corporations because they will be entitled to exercise the voting rights in a company. They can engage in active role in corporate governance. Furthermore, because institutional investors have the freedom to buy and sell shares, they can play a large part in which companies stay solvent, and which go under. Influencing the conduct of listed companies, and providing them with capital are all part of the job of investment management.

considering the fact that many companies operating in emerging market economies do not have the same attitude towards environment and social issue than developed country corporations do, and they will be called in the future to improve their standards.

As underlined several times, investors cannot rely on ESG factors alone, but need to integrate them into an industrial framework and valuation methodology to pick up stocks. Economic returns, not growth, have had by far the greatest predictive power of out-performance as the market pays for sustainable returns. There is little correlation between multiples and growth. Growth is far less durable then returns. Therefore, the companies under evaluation have to be chosen based on the cash returns and ESG policy.

5.1. Empirical analysis on the importance of incorporating ESG factors when valuing firms operating in emerging capital markets

The investment bank Goldman Sachs in the year 2007[62] presented a study regarding the importance of ESG factors in picking up stocks. Such analysis was performed on listed companies operating in five industry sectors (energy, mining, food and beverage, pharmaceutical and media) in both emerging markets and mature markets. The panel of companies under such analysis, includes listed companies with large market capitalization, and leaders in their local capital markets. These companies have been classified by Goldman Sachs according to their ESG factor score, financials and industry theme in leaders, average and laggards and are part of the Goldman Sachs Sustain Global Focus List.

On the basis of said research has been built the empirical analysis of this work. Particularly, have been built 3 clusters of listed companies, by choosing from Goldman Sachs Sustain Global Focus List the

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[62] Goldman Sachs in the year 2007 presented an analysis on companies and sectors at the United Nations Compact leaders Summit, July 2007, which included a new analytical tools for picking up stocks. Goldman Sachs produced a list of companies operating in five industry sectors (energy, mining, food and beverage, pharmaceutical and media) and classified them based on their ESG factor score, financials and industry theme.

companies operating in the natural resources industry (steel, aluminium, oil and gas) in emerging markets (Russia, China, Korea and Brazil) and mature markets.

The clusters keep the same classification done by Goldman Sachs:

A. Companies that presents good cash returns and good policy on ESG factors
B. Companies that presents good cash returns, but are weak in terms of ESG factors
C. Companies that present not very high cash returns and are weak in terms of ESG factors

Cluster A includes the following:

- Emerging capital markets
    i. Petrobras
    ii. Posco
- Developed capital markets
    i. Statoil
    ii. BG

Cluster B is composed of the following companies:

- Emerging capital markets

i. GazProm
ii. CNOOC
iii. PetroChina
iv. China Steel

– Developed capital markets

i. Exxon
ii. BP
iii. Total

Cluster C is composed of the following companies:

– Emerging capital markets

i. Lukoil
ii. Sinopec
iii. Chalco

– Developed capital markets

i. Occidental
ii. Repsol
iii. OMV

Profile of the companies included in Cluster A Emerging markets[63]:

- **Petrobras**

  Despite the Brazilian government owns 51% , Petrobras has an above average corporate governance system, with an independent chairman and wholly independent board. The Company shows attention to environment and social issues: is leader in developing bio-fuels infrastructure and technology, has good performance on gas flaring, water use and oil spills. It has a good management system that could however be improved.

- **Posco**

  Posco is a Korean mining and steel company which operates globally. It is an efficient company, has technology driven production, highest cash returns versus its peers and is a leader in ESG.

  In particular in terms of governance the audit and compensation committees are fully independent , there is no major block holdings. Regarding social issues the company has low fatalities, injuries, high level of hours of training per employee and high

[63] All data and information about the company under analysis are taken form the companies' web site and Datastream

level of community investments. In term of environment, it has low dust pollution per tonne of steel produced, low water consumption, non environmental provisions or rehabilitation costs reported.

Profile of the companies included in Cluster B Emerging markets[64]

– **Gazprom**

Gazprom is the largest extractor of natural gas in the world and the largest Russian company. Gazprom was created in 1989 when the Ministry of Gas Industry of the Soviet Union transformed itself into a corporation, keeping all its assets intact. The company was later privatized in part, but currently the Russian government holds a controlling stake.

In 2008, the company produced 549.7 billion cubic meters (BCM) of natural gas, amounting to 17% of the worldwide gas production. In addition, the company produced 32 million tons of oil and 10.9 million tons of gas condensate. Gazprom's

[64] All data and information about the company under analysis are taken form the companies' web site and Datastream

activities accounted for 10% of Russia's gross domestic product in 2008.

The major part of Gazprom's production fields are located around the Gulf of Ob in Yamalo-Nenets Autonomous Okrug in Western Siberia, while the Yamal Peninsula is expected to become the company's main gas producing region in the future. Gazprom possesses the largest gas transmission system in the world, with 158.2 thousand kilometers of gas trunk-lines. Major new pipeline projects include North Stream and South Stream.

The company possesses subsidiaries in many different industry sectors, including finance, media and aviation. In addition, it controls majority stakes in various companies.

– **CNOOC Limited**

CNOOC LTD is a Chinese oil company with operations in China, Indonesia and Nigeria. It focus on the exploitation, exploration and development of crude oil and natural gas offshore of China. Its listed arm CNOOC Ltd shares are traded in Hong Kong and New York. China Oilfield Services (COSL) is a fellow subsidiary of CNOOC Limited listed in Hong Kong.

CNOOC is a state-owned oil company, 70% of whose shares are owned by the Government of the People's Republic of China, and the State-Owned Assets Supervision and Administration Commission of the State Council performs the

CNOOC claims that it maintains rigorous standards for health, safety and environment (HSE) care, based on its philosophy, adopted in the 1980s, of safety that "relying on people and putting life in the first place" in its operations. However, CNOOC has been accused of abuses of Human rights in Burma. The campaign group Arakan Oil Watch stated in a report that “left behind such a trail of abuses and environmental contamination on Ramree Island that outraged locals attacked their facilities.

- **Petrochina**

Petrochina is one of the largest producer and distributor of oil and gas in China and in the world. The American Depositary Shares (ADS) and H shares of PetroChina were listed on the New York Stock Exchange on April 6, 2000 (stock code: PTR) and the Stock Exchange of Hong Kong Limited on April 7, 2000 (stock code: 857) respectively. It was listed on Shanghai Stock Exchange on November 5, 2007 (stock code: 601857). By the end of 2007, China National Petroleum Corporation possessed 86.29% of PetroChina shares. It engages in wide range of activities related to oil and natural gas, including: exploration, development, production and marketing of crude oil and natural gas; refining, transportation, storage and marketing of crude oil and oil products; the production and marketing of primary petrochemical products, derivative chemicals and other chemicals; transportation of natural gas, crude oil and refined oil, and marketing of natural gas.

In 2007, PetroChina won wide recognitions in the international capital market for its excellent corporate governance and high profitability. It ranked seventh in "2005 Global Top 50 Petroleum Companies" published by the American Petroleum Intelligence Weekly, first in "2006 Top 50 Asian Enterprises" announced by Business Week, and sixth in "2006 Global Top 250 Energy Companies" publicized by Platts, an authority in global energy sector, first in Asia-Pacific region for past 5 years. It was honoured as “the First Most Profitable Company in Asia in 2006” by Finance Asia.

– **China Steel**

China Steel is the largest integrated steel maker in Taiwan with a market share of about 50%. Its main steel mill is located in Siaogang District, Kaohsiung. The corporation and its sister companies are administrated under the CSC Group. According to the International Iron and Steel Institute (IISI), China Steel is the 25th largest steel producer in the world in 2006. CSC was started as a non-governmental company. It once transformed into a state-owned company in July 1, 1977 and subsequently re-privatized in April 12, 1995. Although CSC is a *de jure* non-governmental company at present, the Government of Taiwan still owns a large portion of its stocks, thus the chairman of company is appointed by the government. Its shares are listed on the Taiwan stock exchange since 1974.

Profile of the companies included in Cluster C Emerging markets[65]

– **Lukoil**

Is one of the biggest oil companies in Russia Headquartered in Moscow, Lukoil is the second largest public company (next to ExxonMobil) in terms of proven oil and gas reserves. In 2008, the company had 19.3 billion barrels of oil equivalent per SPE standards. This accounts to some 1.3% of global oil reserves. The company has operations in more than 40 countries around the world.

Lukoil carries out exploration and/or production of oil and gas in Russia and (as of 2008) thirty other countries: Kazakhstan, Azerbaijan, Uzbekistan, Egypt, Iran, Iraq, Colombia, Venezuela, Belgium, Saudi Arabia and more.

In September 2004, ConocoPhillips purchased a 7.6 percent stake in Lukoil and signed an agreement that could increase

[65] All data and information about the company under analysis are taken form the companies' web site and Datastream

this figure in the future to up to 20 percent. The two oil companies have agreed to develop jointly an oil and gas field in the northern Timan-Pechora area of Russia (Komi Republic) and intend to secure the rights to develop the West Qurna Field in Iraq, one of the country's largest.

– **Chalco**

Aluminium Corporation of China limited was established as a joint stock limited company in the People’s Republic of China on September 10, 2001 by way of promotion by Aluminium Corporation of China (CHINALCO), Guangxi Investment (Group) Co., Ltd. and Guizhou Provincial Materials Development and Investment Corporation. It was listed on the New York Stock Exchange, Inc. and the Hong Kong Stock Exchange on December 11 and 12, 2001, respectively (stock code: Hong Kong: 2600, New York: ACH). CHALCO stock is listed in the Hong Kong Hang Seng Composite Index, FTSE Index and USX China Index. CHALCO is China’s largest alumina and primary aluminium producer and the world’s second largest alumina producer. CHINALCO is the controlling shareholder of the company. China Cinda Asset Management Corporation, China Orient Asset Management Corporation, China Development Bank and China Construction Bank are holders of the domestic shares of the company.

– **Sinopec**

China Petroleum & Chemical Corporation ("Sinopec Corp.") is an integrated energy and chemical Company with principal businesses of exploration production and trading of petroleum and natural gas refining and sales of petroleum products and production, exploration, gas, sales of chemical products. Sinopec Corp. is listed in Hong Kong, New York, London and Shanghai. The Company's competitive strengths are mainly reflected in: its leading market position in the production and sales of refined oil products in China; its status as the largest petrochemical producer in China; its strategic market position in China's highest economic growth areas; its well-established, highly efficient and cost effective sales and distribution network; its integrated business structure with strong resistance against industry cyclical risks; its well-recognised brand and its excellent reputation. The Company intends to fully implement strategies that are well balanced between the Company's development, return to shareholders, and reward to society and to its employees, so that the Company will achieve sustained, effective and harmonious growth, and realise the goal of becoming a multinational energy and chemical corporation with strong competitiveness.

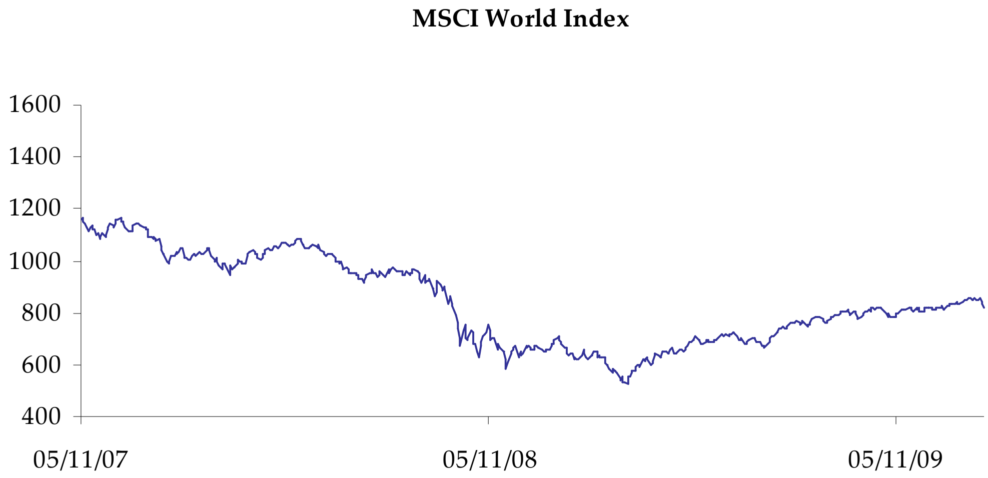
5.2. Empirical analysis: results

The performance - stock market prices and financials - of the companies included in the Clusters A, B and C, have been analysed. The observation period is included in the following time frame: 5 November 2007 – 20 January 2010. Said period has been identified as the period during which the effects of the recent global financial crisis and the subsequent recovery, which started after March 2009, were fully reported in the global capital markets.

The charts below illustrates the trend of the MSCI[66] during the observation period.

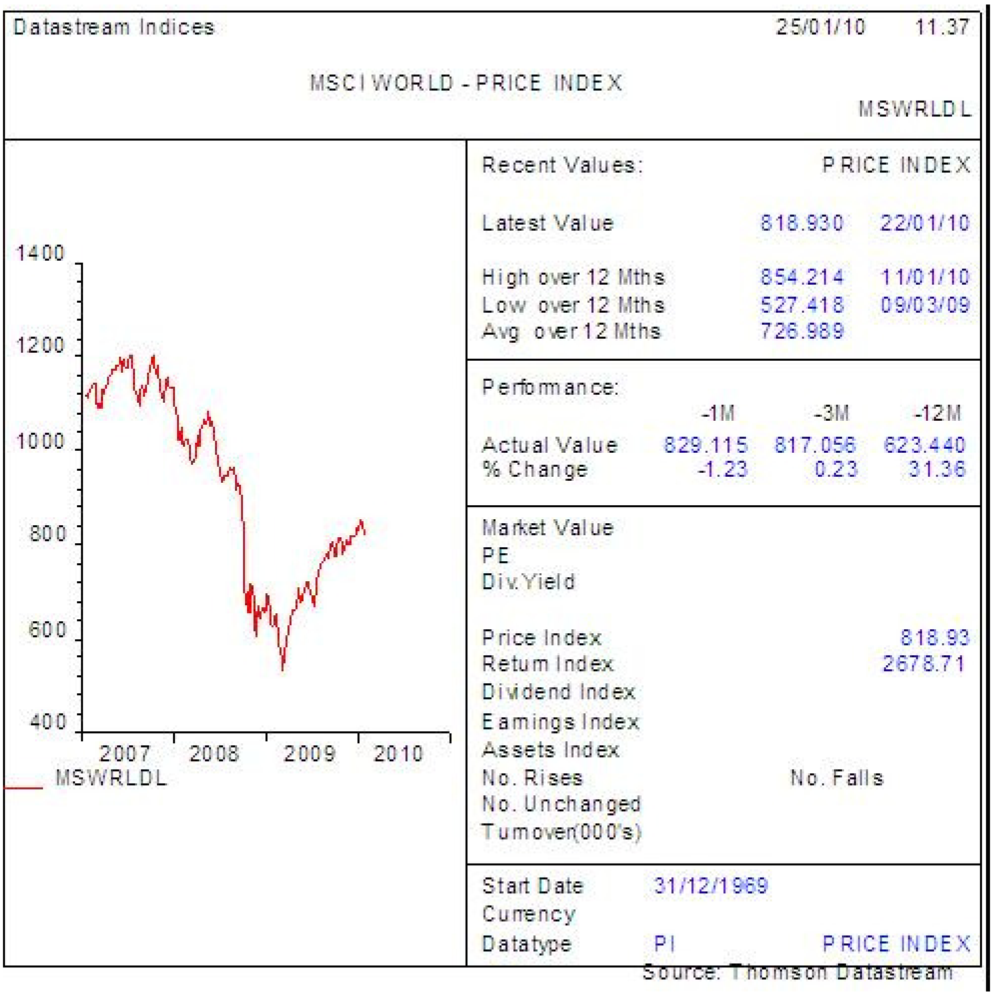
[66] Morgan Stanley Composite Index

Chart no. 6: The trend of the MSCI World Index in the period between 5 November 2007 and 20 January 2010



Source: Datastream

Table no. 4: Value and trend of the MSCI World Index in the period between 5 November 2007 and 20 January 2010



The tables below illustrate the closing prices of the companies part of Cluster A, B and C as of 5 November 2007 and as of 20 January 2010 and their relative change reported in that period.

Table no. 5 : Cluster A, Emerging Market Companies - Stock market price - Closing price

Market price	Cluster A: Good ESG Good Financials EMEs					
Start	05/11/2007					
End	20/01/2010					
Frequency	D					
Name	**PetroBras PN**			**Posco**		
CURRENCY				KW		
Date	**closing price**	**change vs previous day**	**% change**	**closing price**	**change vs previous day**	**% change**
05/11/2007	34,05			608.000		
20/01/2010	35,45	-2,56%	4,11%	622.000	2,98%	2,30%

Source: Datastream

Table no 6: Cluster B Emerging Market Companies - Stock market price - Closing price

Market price	Cluster B: Average ESG, good financials - Emerging markets							
Start	05/11/2007							
End	20/01/2010							
Frequency								
Name	**Gazprom**		**CNOOC**		**Petrochina**		**China Steel**	
CURRENCY					CH		TW	
Date	closing price	% change	closing pricek USD	% change	closing price	% change	closing price	% change
05/11/2007	307,92		14,8		43,96		41,8	
20/01/2010	185,98	-39,60%	12,08	-18,38%	13,67	-68,90%	34,2	-18,18%

Source: Datastream

Table no. 7: Cluster C, Emerging Market Companies - Stock market price - Closing price

Market price	Cluster C: Bad cash returns, Weak ESG EMEs					
Start	05/11/2007					
End	20/01/2010					
Frequency						
Name	**Lukoil**		**Chalco**		**Sinopec**	
CURRENCY	USD		CH		CH	
Date	closing price	% change	closing price	% change	closing price	% change
05/11/2007	85		44,36		18,86	
20/01/2010	58	-31,76%	13,91	-68,64%	10,35	-45,12%

Source: Datastream

By analysing these companies' performance, in term of stock price, in the period between November 2007 and January 2010, it is evident how companies with strong cash returns and strong ESG policies resisted better to the recent global financial crisis, and were able to recover completely the market value lost during the period between November 2007 and March 2009, the latter identified as the lower pick on capital markets value. As of the date of the observation (January 2010) companies in Cluster A were able to go back to the market value they had in November 2007, when the MSCI world index was still at a value comprised in the range 1000- 1200.

This is not the case for companies in Cluster B and Cluster C. As reflected in the table illustrated above, companies in Cluster B report as of the 20 January 2010 a market price which is still lower the value reported as of November 2007. Particularly this is the case for Gazprom (-39,6%) and Petrochina (-68,9%). The empirical results reported on Cluster C , confirm the thesis: all of companies of the Cluster reported a loss greater than 30% during the observation period.

The analyses demonstrates that companies that decided to be ESG factor conscious resisted the global financial crisis better than companies operating in the same market, same country but not respecting ESG factors, even if reporting good financials and above average ROE[67].

The analyses demonstrates, that in the long period, the market rewards companies' policy which pay attention to important factors such as the environment in which companies operate, social issue and corporate governance. The analysis demonstrate that, this is true especially in emerging market economies, where the regulatory frame is not that stringent in these matters. In fact, the same analysis performed on companies operating in developed markets less

[67] Return of Equity

dramatically confirmed the results reported in emerging market companies.

The empirical analysis done on emerging market companies was in fact performed on companies taken from the Goldman Sachs Sustain Focus List operating in mature markets.

Table no. 8: Cluster A: Developed Market Companies - Stock market price - Closing price

Market price	**Cluster A: Good ESG Good Financials DMs**			
Start	05/11/2007			
End	20/01/2010			
Frequency				
Name	**Statoil**		**BG**	
CURRENCY	NK		£	
Date	closing price	% change	closing price	% change
05/11/2007	176,7		890	
20/01/2010	141,2	-20,09%	1201	34,94%

Source: Datastream

Table no. 9: Cluster B, Developed Market Companies - Stock market price - Closing price

Market price	Cluster B: Average - Developed Markets					
Start	05/11/2007					
End	20/01/2010					
Frequency						
Name	**Exxon**		**BP**		**Total**	
CURRENCY	£		£		Euro	
Date	closing price	% change	closing price	% change	closing price	% change
05/11/2007	87,66		632		54,37	
20/01/2010	68,03	-22,39%	619,5	-1,98%	44,39	-18,36%

Source: Datastream

Table no. 10: Cluster C, Developed Market Companies - Stock market price - Closing price

Market price	**Cluster C: Bad cash returns, Weak ESG - DMs**					
Start	05/11/2007					
End	20/01/2010					
Frequency						
Name	**Occidental**		**Repsol**		**Omv**	
CURRENCY	USD		Euro		Euro	
Date	closing price	% change	closing price	% change	closing price	% change
05/11/2007	70,74		27,15		49,36	
20/01/2010	78,21	10,56%	18,09	-33,37%	31,61	-35,96%

Source: Datastream

The empirical results on the Clusters of companies operating in developed markets confirmed the validity of the thesis, with some exceptions:

- Statoil – cluster A - whose price is still lower then the price registered as of 5 November 2007,
- Occidental – Cluster C – which recovered the market capitalization lost during the bitter part of the global financial crisis.

6. Conclusions

The emerging markets growth, and the subsequent wave of gross capital inflows of private capital towards such markets started around the years 2001-2002 and accelerated dramatically in recent years. The fast economic growth experienced by those economies, together with the global financial crisis and the global warming, raised a new issue: the sustainability of such growth.

This brought new challenges in the valuation processes, connected with:

- dealing with companies operating in a less regulated and more risky environment
- understanding the sustainability of their growth

There is evidence that there is a strong link between financial performance and commitment to sustainability, especially in long term.

According to literature, improvements in corporate governance result in significantly higher valuation. There is evidence that social and environmental issues are taken more and more in consideration when valuing an investment in an emerging market.

This study, trough an analysis of recent literature and an empirical analysis on a sample of listed companies operating in emerging markets, demonstrates that companies who are conscious of the importance of the ESG factors will be the tomorrow winner. This is particularly true in emerging markets, where the lack of market governance, and the high risky environment increase the mistrust of investors and therefore companies ESG factors conscious are rewarded by the market.

However, there is a certain level of reluctance in including the analysis of the Environment, Social and Governance factors in the valuation process. This is due to the reluctance on including in the valuation process qualitative elements and to the scarcity of information on this matter, especially in emerging markets economies.

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Annex 1: Financial data of the companies included in the empirical analysis

DATASTREAM EQUITIES | 25/01/10 10.20

PETROBRAS PN

Mnemonic - BR:POB	Geography Code - BR	Industry Group - OILIN
Local Code - BRPETR4	Exchange - Sao Paulo	Sector - OILGP

Current Price		34.75	22/01/10
12 Mth Range	High	39.79	1/12/09
	Low	23.59	23/ 1/09

Price Change	1mth	3mth	12mth
(C)	-5.3%	-4.8%	47.3%
(E)	-6.7%	-4.5%	72.7%
Relative to BRBOVES	-3.4%	-6.5%	-15.2%

Market Value (C)	128600.3M
Adjusted to (E)	50092.91M

	Fin.Yr 12/08	LocStd 09/09	I/B/E/S 12/09	I/B/E/S 12/10
EPS	3.76K	3.53	3.02	3.45
PE	0.0	9.9	11.5	10.1
PE Rel.		68.5%		
P/Cash	0.01	(%=Rel to DS Index)		

Dividend Rate (C)	0.70
Dividend Yield	2.01
Dividend Cover	5.0
Div Last Fin Year	1130.00
Last Div Paid	N/A
Pay Date	N/A

(C)	12/06	12/07	12/08
Total sales	158B	171B	215B
Pre-Tax Prof.	39409M	34527M	46860M
Publ. EPS	2954	2452	3760
Cash EPS	5089	4782	6521
Mkt to Bk Val	2.24	3.41	1.45
ROE (%)	29.40	20.35	26.16

No. Shares in Issue	3700728(000s)
Volume	19025.1(000s)
Percentage of free float	61%
Volatility	5
Beta	1.276
Correlation	0.817

Price and Index (rebased)

Source: Thomson Datastream

DATASTREAM EQUITIES — 07/01/10 12.19

POSCO

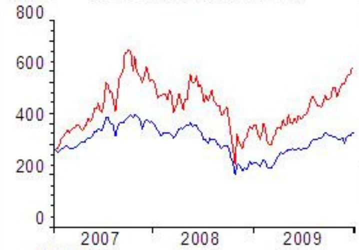
Mnemonic - KO:PIS	Geography Code - KO	Industry Group - STEEL
Local Code - K005490	Exchange - Korea	Sector - INDMT

Current Price		606000.00	07/01/10
12 Mth Range	High	619000.00	28/12/09
	Low	303000.00	2/ 3/09

Price Change	1mth	3mth	12mth
(KW)	4.7%	25.7%	40.9%
(E)	9.3%	32.0%	51.9%
Relative to KORCOMP	1.5%	19.3%	2.8%

Market Value (KW)	52835180M
Adjusted to (E)	32277.01M

000'S Price and Index (rebased)



POSCO
KOREA SE COMPOSITE (KOSPI) (PI)

	Fin.Yr LocStd		I/B/E/S	
	12/08	06/09	12/09	12/10
EPS	58.0K	35.5K	37.9K	56.0K
PE	10.4	17.1	16.0	10.8
PE Rel.		87.1%		
P/Cash	6.01	(%=Rel to DS Index)		

Dividend Rate (KW)	9000.00
Dividend Yield	1.49
Dividend Cover	3.9
Div Last Fin Year	10000.00
Last Div Paid	N/A
Pay Date	N/A

(KW)	12/06	12/07	12/08
Total sales	25842B	31608B	41743B
Pre-Tax Prof.	4285B	4899B	6096B
Publ. EPS	42115	46854	58002
Cash EPS	71547	81446	100909
Mkt to Bk Val	1.23	2.05	1.20
ROE (%)	16.01	15.34	16.79

No. Shares in Issue	87187(000s)
Volume	170.8(000s)
Percentage of free float	95%
Volatility	8
Beta	0.934
Correlation	0.667

Source: Thomson Datastream

DATASTREAMEQUITIES 25/01/10 10.24

GAZPROM

Mnemonic - RS:GAZ | Geography Code - RS | Industry Group - OILIN
Local Code - RS:GAZP | Exchange - Micex | Sector - OILGP

Current Price		182.64	13:08
12 Mth Range	High	200.45	14/10/09
	Low	101.49	23/ 1/09

Price Change	1mth	3mth	12mth
(UR)	0.2%	-5.6%	80.0%
(E)	1.0%	-2.7%	80.5%
Relative to RSMICEX	-3.5%	-8.6%	-29.4%

Market Value (UR)	4323731M
Adjusted to (E)	102437.1M

	Fin.Yr	LocStd	I/B/E/S	
	12/08	06/09	12/09	12/10
EPS	31.5	19.6	0.85	1.02
PE	5.8	9.3	7.2	6.0
PE Rel.		66.3%		
P/Cash	3.80	(%=Rel to DS Index)		

Dividend Rate (UR)	0.36
Dividend Yield	0.20
Dividend Cover	54.6
Div Last Fin Year	0.37
Last Div Paid	N/A
Pay Date	N/A

(UR)	12/06	12/07	12/08
Total sales	2152B	2390B	3519B
Pre-Tax Prof.	830B	900B	1048B
Publ. EPS	26.90	28.07	31.49
Cash EPS	30.70	24.09	48.01
Mkt to Bk Val	2.25	2.05	0.56
ROE (%)	21.28	18.43	17.37

No. Shares in Issue	23673500(000s)
Volume	62923.8(000s)
Percentage of free float	51%
Volatility	7
Beta	1.019
Correlation	0.931

Price and Index (rebased)

GAZPROM
RUSSIAN MICEX INDEX (PI)

Source: Thomson Datastream

DATASTREAMEQUITIES 25/01/10 10.27

CNOOC

Mnemonic - K:CNOO | Geography Code - HK | Industry Group - OILEP
Local Code - HK883 | Exchange - Hong Kong | Sector - OILGP

Current Price		11.440	25/01/10
12 Mth Range	High	13.240	11/ 1/10
	Low	6.080	6/ 3/09

Price Change	1mth	3mth	12mth
(K$)	-5.1%	-11.3%	76.0%
(E)	-3.9%	-8.1%	58.8%
Relative to HNGKNGI	-0.9%	-2.7%	7.5%

Market Value (K$)	511015.3M
Adjusted to (E)	46472.26M

	Fin.Yr	LocStd	I/B/E/S	
	12/08	06/09	12/09	12/10
EPS	1.11	0.74	0.66	0.89
PE	10.3	15.5	15.1	11.3
PE Rel.		83.7%		
P/Cash	8.30	(%=Rel to HNGKNGI)		

Dividend Rate (K$)	0.40		
Dividend Yield	3.50		
Dividend Cover	1.8		
Div Last Fin Year	0.40		
Last Div Paid	INT (K$)	0.20	Tax-G
Pay Date	30/09/09	XD Date	09/09/09

(K$)	12/06	12/07	12/08
Total sales	86839M	93349M	142B
Pre-Tax Prof.	42763M	43824M	64648M
Publ. EPS	0.71	0.74	1.11
Cash EPS	0.92	0.93	1.38
Mkt to Bk Val	2.98	4.10	1.77
ROE (%)	33.91	25.66	30.63

No. Shares in Issue	44669170(000s)
Volume	54874.8(000s)
Percentage of free float	36%
Volatility	8
Beta	1.306
Correlation	0.809

Price and Index (rebased)

CNOOC
HANG SENG (PI)

Source: Thomson Datastream

DATASTREAM EQUITIES 25/01/10 10.31

PETROCHINA 'A'

Mnemonic - CN:PCL	Geography Code - CH	Industry Group - OIL IN
Local Code - CH601857	Exchange - Shanghai	Sector - OIL GP

Current Price		13.39	25/01/10
12 Mth Range	High	16.38	27/ 7/09
	Low	10.35	2/ 2/09

Price Change	1mth	3mth	12mth
(CH)	1.3%	-3.2%	29.1%
(E)	2.9%	2.9%	17.1%
Relative to CHSASHR	2.8%	-2.7%	-16.8%

Market Value (CH)	2168136M
Adjusted to (E)	224721.3M

	Fin.Yr 12/08	LocStd 09/09	I/B/E/S 12/09	I/B/E/S 12/10
EPS	0.63	0.55	0.65	0.80
PE	21.3	24.4	20.6	16.7
PE Rel.		88.8%		
P/Cash	11.17	(%=Rel to DS Index)		

Dividend Rate (CH)	0.27
Dividend Yield	2.04
Dividend Cover	2.0
Div Last Fin Year	0.28
Last Div Paid	N/A
PayDate	N/A

(CH)	12/06	12/07	12/08
Total sales	689B	835B	1071B
Pre-Tax Prof.	197B	197B	158B
Publ. EPS	N/A	0.81	0.63
Cash EPS	N/A	1.19	1.20
Mkt to Bk Val	N/A	7.73	2.30
ROE (%)	25.81	22.06	15.01

No. Shares in Issue	161922000(000s)
Volume	20194.6(000s)
Percentage of free float	2%
Volatility	5
Beta	N/A
Correlation	N/A

Price and Index (rebased)

Source: Thomson Datastream

DATASTREAM EQUITIES 25/01/10 10.33

CHINA STEEL

Mnemonic - TW:CST	Geography Code - TA	Industry Group - STEEL
Local Code - T2002	Exchange - Taiwan	Sector - INDMT

Current Price		32.30	25/01/10
12 Mth Range	High	35.30	11/ 1/10
	Low	20.13	9/ 3/09

Price Change	1mth	3mth	12mth
(TW)	1.6%	7.3%	49.1%
(E)	4.1%	15.6%	41.8%
Relative to TAIWGHT	2.9%	4.3%	-19.6%

Market Value (TW)	422952.8M
Adjusted to (E)	9362.78M

	Fin.Yr 12/08	LocStd 09/09	I/B/E/S 12/09	I/B/E/S 12/10
EPS	1.95	0.00	1.00	2.39
PE	16.6		32.3	13.5
PE Rel.				
P/Cash	5.60			

Dividend Rate (TW)	1.30
Dividend Yield	4.02
Dividend Cover	0.0
Div Last Fin Year	1.30
Last Div Paid YR (TW)	1.2464 Tax-G
Pay Date 25/08/09	XD Date 24/07/09

(TW)	12/06	12/07	12/08
Total sales	279B	331B	385B
Pre-Tax Prof.	56017M	71812M	33282M
Publ. EPS	3.23	4.18	1.95
Cash EPS	4.78	5.95	5.77
Mkt to Bk Val	1.89	2.25	1.22
ROE (%)	19.54	24.03	10.39

No. Shares in Issue	13094520(000s)
Volume	47213.0(000s)
Percentage of free float	90%
Volatility	6
Beta	0.834
Correlation	0.607

Price and Index (rebased)

Source: Thomson Datastream

DATASTREAM EQUITIES 25/01/10 10.57

SINOPEC SHAI.PETROCH.'A'

Mnemonic - CN:SPO	Geography Code - CH	Industry Group - CHEMS
Local Code - CH600688	Exchange - Shanghai	Sector - CHMCL

Current Price		10.42	14:59
12 Mth Range	High	12.31	14/ 9/09
	Low	5.61	2/ 2/09

Price Change	1mth	3mth	12mth
(CH)	-5.4%	-5.8%	88.1%
(E)	-3.9%	0.0%	70.3%
Relative to CHSASHR			
	-3.9%	-5.3%	21.1%

Market Value (CH)	50745.34M
Adjusted to (E)	5253.80M

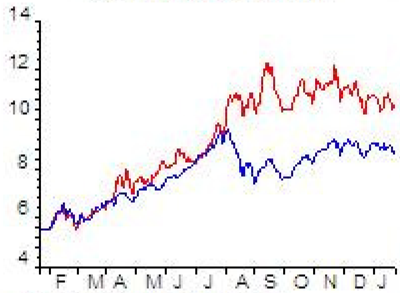
	Fin.Yr LocStd		I/B/E/S	
	12/08	09/09	12/09	12/10
EPS	-0.87	0.00	0.24	0.18
PE	-12.0		43.8	58.2
PE Rel.				
P/Cash	-13.39			

Dividend Rate (CH)	0.00
Dividend Yield	-
Dividend Cover	-
Div Last Fin Year	N/A
Last Div Paid	N/A
Pay Date	N/A

(CH)	12/06	12/07	12/08
Total sales	49918M	54255M	59330M
Pre-Tax Prof.	388M	1485M	-8016M
Publ. EPS	0.12	0.23	-0.87
Cash EPS	0.30	0.31	-0.78
Mkt to Bk Val	2.31	5.87	2.95
ROE (%)	4.47	8.25	-36.54

No. Shares in Issue	4869998(000s)
Volume	4178.3(000s)
Percentage of free float	18%
Volatility	10
Beta	0.944
Correlation	0.717

Price and Index (rebased)



SINOPEC SHAI.PETROCH.'A'
SHANGHAI SE A SHARE (PI)

Source: Thomson Datastream

DATASTREAM EQUITIES 25/01/10 10.47

ALUMINUM CORP.OF CHINA 'A'

Mnemonic - CN:ACR | Geography Code - CH | Industry Group - ALUMN
Local Code - CH601600 | Exchange - Shanghai | Sector - INDMT

Current Price		13.51	14:59
12 Mth Range	High	19.93	5/ 8/09
	Low	6.96	23/ 1/09

Price Change	1mth	3mth	12mth
(CH)	-4.1%	-8.9%	94.1%
(E)	-2.7%	-3.3%	75.7%
Relative to CHSASHR	-2.6%	-8.4%	25.0%

Market Value (CH)	129432.8M
Adjusted to (E)	13397.02M

	Fin.Yr 12/08	LocStd 09/09	I/B/E/S 12/09	I/B/E/S 12/10
EPS	0.001	0.00	-0.21	0.31
PE	19.9K			43.0
PE Rel.				
P/Cash	60.03			

Dividend Rate (CH)	0.00
Dividend Yield	-
Dividend Cover	-
Div Last Fin Year	0.05
Last Div Paid	N/A
Pay Date	N/A

Price and Index (rebased)

ALUMINUM CORP.OF CHINA 'A'
SHANGHAI SE A SHARE (PI)

(CH)	12/06	12/07	12/08
Total sales	61896M	76180M	76726M
Pre-Tax Prof.	16687M	14171M	113M
Publ. EPS	N/A	0.82	0.00
Cash EPS	N/A	1.18	0.23
Mkt to Bk Val	N/A	9.51	1.51
ROE (%)	30.56	20.05	0.02

No. Shares in Issue	9580520(000s)
Volume	11071.2(000s)
Percentage of free float	23%
Volatility	9
Beta	1.465
Correlation	0.929

Source: Thomson Datastream

DATASTREAMEQUITIES 25/01/10 10.39

LUKOIL OAO (XSQ)

Mnemonic - LKOH	Geography Code - RS	Industry Group - OILIN
Local Code - UK:LKOH	Exchange - Seaq Internation	Sector - OILGP

Current Price		58.00	22/01/10
12 Mth Range	High	65.88	13/10/09
	Low	43.00	27/ 3/09

Price Change	1mth	3mth	12mth
(US)	-0.8%	-11.1%	28.9%
(E)	0.5%	-5.9%	16.2%
Relative to FTALLSH			
	-1.2%	-11.3%	-18.7%

Market Value (US)	49332.63M
Adjusted to (E)	34784.81M

	Fin.Yr LocStd	I/B/E/S	
	09/09	12/09	12/10
EPS	147.3	9.19	8.77
PE	11.9	6.3	6.6
PE Rel.	63.8%		
P/Cash	(%=Rel to FTALLSH)		

Dividend Rate (UR)	50.00
Dividend Yield	2.65
Dividend Cover	2.9
Div Last Fin Year	N/A
Last Div Paid	N/A
Pay Date	N/A

Price and Index (rebased)

LUKOIL OAO (XSQ)
FTSE ALL SHARE (PI) (US)

Total sales
Pre-Tax Prof.
Publ. EPS
Cash EPS
Mkt to Bk Val
ROE (%)

NO COMPANY ACCOUNTS DATA FOR THIS STOCK

No. Shares in Issue	850563(000s)
Volume	10.6(000s)
Percentage of free float	100%
Volatility	7
Beta	N/A
Correlation	N/A

Source: Thomson Datastream

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DATASTREAM EQUITIES 25/01/10 10.38

LUKOIL OAO (XSQ)

Mnemonic - LKOH	Geography Code - RS	Industry Group - OILIN
Local Code - UK:LKOH	Exchange - Seaq Internation	Sector - OILGP

Current Price		58.00	22/01/10	
12 Mth Range	High	65.88	13/10/09	
	Low	43.00	27/ 3/09	

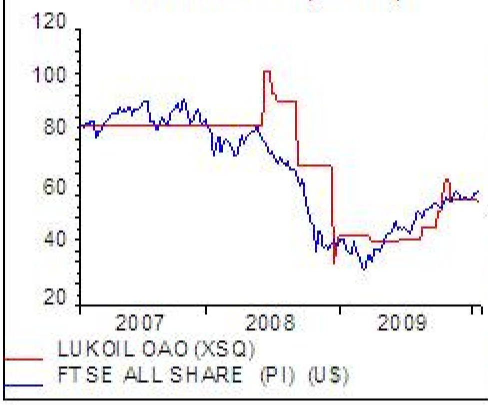
Price Change	1mth	3mth	12mth
(US)	-0.8%	-11.1%	28.9%
(E)	0.5%	-5.9%	16.3%
Relative to FTALLSH	-1.1%	-11.3%	-18.7%

Market Value (US)	49332.63M
Adjusted to (E)	34789.98M

	Fin.Yr LocStd	I/B/E/S	
	09/09	12/09	12/10
EPS	147.3	9.19	8.77
PE	11.9	6.3	6.6
PE Rel.	63.8%		
P/Cash	(%=Rel to FTALLSH)		

Dividend Rate (UR)	50.00
Dividend Yield	2.65
Dividend Cover	2.9
Div Last Fin Year	N/A
Last Div Paid	N/A
Pay Date	N/A

Price and Index (rebased)



Total sales	NO COMPANY ACCOUNTS DATA FOR THIS STOCK
Pre-Tax Prof.	
Publ. EPS	
Cash EPS	
Mkt to Bk Val	
ROE (%)	

No. Shares in Issue	850563(000s)
Volume	10.6(000s)
Percentage of free float	100%
Volatility	7
Beta	N/A
Correlation	N/A

Source: Thomson Datastream