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Risk Premium in the Asian Case: Drivers' Analysis in a Market Comparison

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Chapter 1: Introduction and Literature Review

Compensation for Risk in a Global Environment

In contemporary world choices, the issue of globalization has become a more and more recognized basis on which individuals, firms and governments interact. It represents a proven, well-established perspective in competition and business environmental valuations, while guaranteeing a wider range of possibilities for consumers as well as investors. In an increasingly globalized world, actions in one edge of it drive estimations in the other, in a system that is not only interdependent within closely related sectors but also between much different circumstances. In this framework, operations of firms in an international environment respond to financial incentives, which are contingent on economics and business performances of actors at a notable geographic distance. The number of variables influencing an investment choice thus increased dramatically in recent years, capturing the interest of researchers; *how and how many information are taken into account in the attempt of reducing uncertainty in operational choices is the main question of this research. We would like to investigate what possibly drives investors' choices among risky investments; the geographic region of interest has been limited to Asian countries and markets.* Looking for a reference point in the domain of risk perception among markets, we can point out an example of this multi-faceted issue by analyzing firms market as well as real economic results in the light of the equity premium.

Such financial indicator is an attempt to define how much should an investor be compensated for taking part in the “average risk” investment; indeed, if risk and return were proportional in every financial model, the expected return on an investment can be expressed as the sum of the risk free rate and a risk premium. This would not be the case if all individuals' attitude toward hazard was that of a neutral entity, merely interested in the evaluation of the expected cash flow of an investment; but this is not what happens in real world.

Actually, recalling that we live in a business world composed by financial assets (as well as firms operational investments) endowed with different levels of risk,

then rational, risk averse investors are willing to pay a lower price for risky cash flow than for riskless ones. The equity risk premium (we will refer to this general concept as “RP”) is to be thought as “the premium that investors demand for the average risk investment, and by extension, the discount that they apply to expected cash flows with average risk”¹.

On the other side, the equity risk premium, in addition to the risk free rate, coincides with the reward a firm has to pay to its stockholders, thus contributing to its opportunity cost of increasing capitalization in the equity market as opposed to the rise of the debt leverage. Cost of equity (the sum of risk free rate and equity premium, the latter weighted by the security’s systematic risk β^2) and cost of debt are indeed used together in a firm’s investment evaluation, as components of the cost of capital.

The link between the high degree of globalization and the equity risk premium, as well as the difficulties in defining and computing the latter, are both hidden in the concepts of risk and uncertainty. In a financial sense, risk is computed and should be intended as a result different from what expected, in a negative or positive sense

(according to the classic standard deviation formula $\sigma_x = \sqrt{\frac{\sum_{i=1}^N (x_i - \bar{x})^2}{N}}$); market risk premium is instead a matter of compensation. It is then straightforward saying that, when dealing with compensation, the loss alone is what worries the investor, bringing us back to a more common definition of risk, rather than its financial meaning. The level of fluctuation in an index, being it macroeconomic or financial, is indeed perceived by investors as a signal of uncertainty, which is what inflates risk premium and what markets are, in a sense, actually compensating for. The number and stability of information, being it expressed in numeric terms, company publications or government trustworthiness is surely taken into account by market agents. Saving-oriented investors notably lean toward safer choices, on which they can create reliable expectations of steady returns and, in worst scenarios, slow and modest losses. The increased globalization and country integration should guarantee a more homogeneous information level throughout geographical regions. Safer choices are then more and more common, and risk premium should actually

¹ Damodaran A., *Equity Risk Premiums (ERP): Determinants, Estimation and Implications, The 2012 Edition*, page 4;

² Ross S., *Corporate Finance Fundamentals, Eighth Edition*, McGraw Hill, page 484;

be compensating for an increasingly moderate hazard.

Nonetheless, differences in markets perception still exist, since the increase in economics and financial interactions causes not only a greater number of information sources, but also a greater need for it.

The whole financial market system is based on the representation of a firm's value and available information, namely the asset's price. Such figure is not only the actualization at rate k of the net cash flows generated by the asset (the first portion of equation 1), but leaves room for the potential growth (g) of the stock over the unplanned future.

$$P = \sum_{t=1}^T \frac{NCF_t}{(1+k)^t} + \frac{NCF_{T+1}}{k-g} \quad (1^3)$$

This term is highly influenced by how people react to oncoming scenarios or what they think it might happen in the near future. This parameter is then comprehensive of company or industry specific prospects as well as wider anticipations of the effects of business cycles. If it were not so, there would be no equity market as we know it: the price at each moment would fully reflect the (discounted) asset value and its available, unambiguous and absolutely true information⁴. Therefore any chance of outperforming other investors in term of return would be not feasible since at each time the price correctly and fully reflects the assets' value. In every moment, I can sell what I have (or buy what I want) at its actual value, with no increase in real wealth.

Practically, expectations are included in parameter g , since the first part of the equation is referred to a time span closer to the present, while $T+1$ are periods beyond the already established business plan. On the latter portion (on the right), windows open on individual's beliefs and broad sense trust on future, resulting in more or less uncertain expectation.

Existent markets are therefore dependent from information on firms, industry

³ Massari M., Zanetti L., *Valutazione. Fondamenti Teorici e Best Practice nel Settore Industriale e Finanziario*, XVII-446 p., 2 ed., The McGraw-Hill Companies, 2008;

⁴ Fama E., *Efficient Capital Markets: A Review of Theory and Empirical Work*, *The Journal of Finance*, Vol. 25, No. 2, Papers and Proceedings of the Twenty-Eighth Annual Meeting of the American Finance Association New York, N.Y. December, 28-30, 1969 (May, 1970), Blackwell Publishing for the American Finance Association, page 388;

performances, research results in all possible fields and so on. We can thus illustrate the fear of risk through uncertainty, to be reduced according to the level of information available; in this process, the point of view that different people have is surely influential. The market risk premium results not only as a function of financial markets' behavior, but also of macroeconomic and social drivers affecting the market in which each firm is operating. For this reason, in analyzing most recent year's equity premium performances in specific countries, a description of the peculiar socio-economic indicators will work as a solid basis on which elaborate on the business environment and financial market structure. In doing so, the degree of influence each country and region has on others is of sure relevance and direct contribution to what the risk premium path has been in the last 10 years. Once the overall framework is defined, it is possible to investigate the market drivers for risk premium and eventually question ourselves on what is the role of information available on the trend of this "index for uncertainty".

It seems so far reasonable to assume that different firms are required to have a different premium for risk, according to their operational abilities, sector and location. The economy (or economies) where a firm operates is indeed one prominent source of risk, which should be included in the premium for its shareholders. Accordingly, the risk premium can be studied on a local basis, as a country variable: a reliable (but potentially simplistic) way to look at country subgroups and observe aggregate behaviors on risk compensation is that of comparing developed and emerging markets. It might be straightforward expecting a higher risk premium in those markets where the degree of uncertainty is higher (emerging); interestingly, the recent literature on equity risk premium is arguing for the existence of a degree of convergence between countries with different traits (emerging and developing), suggesting that the different rewards for risk are aligning over time and most notably in recent years. This intuition is subjected to a lot of interpretations underlining the contributors to this presumed phenomenon. However, none of those drivers is simple to test, given the intangible nature of equity premium (that will be deepened later in this work).

Stemming from this, *the present research is an attempt to observe the possible drivers of market risk premium, bounding the horizon to a comparison between*

two groups within the “East Asia and Pacific” classification⁵. With our study, we want to test whether the distinction between developed and emerging countries in a world setting is replicated in the Asian boundaries. This would provide both within-case and global evidences, since disparities and common traits both help putting the issue to light. Twelve markets have been divided into two groups according to their absolute capitalization level of listed companies (in U.S. dollars); a sample of stocks has been selected in order to best characterize the countries in the two groups. For this purpose, companies have been chosen with the constraint of belonging to indices particularly representative for the underlying domestic economy. The aggregate data for the two groups are then compared, in order to trace the conduct of main indicators of macroeconomics and social status, firms’ performance and market features. Eventually, with the aim of understanding not only market risk premium drivers, but also the efficacy with which information are processed, a deeper look at the information risk in the two groups might be of help. Our interest is indeed in understanding the market risk premium drivers, but this could not be done without investigating the risk perception of individuals and the impact of information on behaviors.

The present work will be divided as follows: after the introduction to the research topic and presentation of research question, the very first part is dedicated to a literacy review on risk premium. We present the more recent readings that pushed the interest on this topic, up to the pivotal studies of the mid 1980s and 1990s on risk premium puzzle and investors’ consecutions and limits in modeling behaviors. We did not chose to use a chronological order from the beginning of our literature review; we did so to first present the recent theoretical works that most closely resemble the approach and questions of interest in this work. However, the less recent literature presented here is key in fully understanding the issue; papers from mid 80s to mid 90s will be key in interpreting investors’ perceptions. The understandings of both economic and behavioral models interest equally our topic. We then shift the sight to the Asian domain, delineating the two groups subject of the market comparison. An initial presentation of the selection criterion and grouping of countries considered is fundamental in outlining the parallel reasoning. Our discriminant between the two will be the market capitalization for

⁵ World Bank subregion division: <http://www.worldbank.org/en/region/eap> ;

each country; nonetheless, we are not comparing Nations with clearly different statuses. We will then analyze the main trends in real economy, market and macroeconomic measures, in order to enrich our countries' division. The all around observation of the main traits of the two groups will help us in inferring their differences in the eyes of investors and global integration. Once defined what are the impacts of different drivers in the two scenarios, the study will shift to a more quantitative approach. Our aim will be that of confirming what observed so far, basing on econometric results. The analysis will focus on market variables, since they are considered bearing most of the unexplained differences between the two groups. Also, the level of information risk will be investigated, trying to infer the improvements in stock exchanges effectiveness of information processing. The information risk should provide us with a further clue on both markets' abilities and the underlying firms' disclosure requirements. Eventually, we will conclude our focus answering the research question in its different aspects. Even if the subject hardly provides univocal answers, we will apply our variables' analysis to risk premium measures, in order to understand its diverse meanings.

1.1 Peculiarities Of Risk Analysis Through Equity Risk Premium

The fascinating yet controversial aspect of the analysis of risk and compensation lies in the connection between the financial results and investors beliefs. These two are related through the bridge of risk premium, and this is the reason why we first need a deeper explanation of this parameter. A very first insight should be given through its definition in the capital asset pricing model (CAPM) framework. Each market security has indeed an actual level of return, made certain only ex-post; a stock's actual total return is indeed the combination of an expected return $E(R)$, computed on the historical gain of the stock, and an unexpected portion U representing the actual risk of holding a stock: $R_{tot} = E(R) + U$. The CAPM relates return and risk such that the two figures are proportional; to a higher return corresponds higher risk and vice versa, and the assets below or above the security market line (SML) are undesirable or convenient respectively. The unexpected return can be again split in its unsystematic component, namely the portion of uncertainty that simultaneously influences only

one or a small group of assets, and a systematic component, affecting more assets at once and thus known as market risk. Two typical examples could be respectively the introduction of a new product line in a single firm production (with its costs and revenues) as opposed to a general instability over the future GDP or expected inflation index of a country. The unsystematic portion of risk can be easily eliminated through diversification: investors can find different firms to invest in, thus not anchoring to company-specific events. Relying on different firm's performances compensating each other reduces the impact of unexpected portfolio returns; from this, the systematic risk principle states "the expected return on an asset depends only on that asset's systematic risk". To compute the level of systematic risk an asset has with respect to the market where it trades, we use the asset's beta, calculated as $\beta_A = \frac{cov(r_A; r_m)}{var(r_m)}$. Note that the formula for β is equal to one if computed over the market ($\frac{cov(r_m; r_m)}{var(r_m)} = 1$). Recalling that the reward for one unit of risk (the reward to risk ratio) must be constant between different assets, we can derive the slope of the SML as $\frac{E(R_m) - R_f}{\beta_m} = E(R_m) - R_f$. Being all assets on the same SML, the resulting CAPM formula is: $E(R_i) = R_f + \beta_i \cdot (E(R_m) - R_f)$.

The expression of the SML slope as well as the systematic risk in the CAPM formula ultimately is the market risk premium measuring the excess gain (or loss) over a riskless asset. The compensation from accepting one unit of risk is thought and computed with respect to a security such as a long-term government bond (10 years) supposedly endowed with no risk. Governments should hold the lower possible level of risk in their operations, hence a country default is thought as less likely than a corporate bankruptcy. However, recent years figures about economies (for example inflation, unemployment, sovereign debt, others) undermine the stability of risk free rates as well, and consequently their complete "riskless" reputation. A final note on the CAPM has to be made in order to achieve a comprehensive empirical analysis. The assumptions under which such model is derived are not necessarily and fully respected in real life markets and among real investors⁶. Some of these assumptions are implied by the Harry Markowitz approach to portfolio maximization (1952,1959), that underlies the CAPM model

⁶ Tuck School of Business at Dartmouth, *Understanding Risk and Return, the CAPM and the Fama-French Three-Factor Model*, Case 03-111, page 4;

and which investors are supposed to apply in their portfolio choice. The first assumption of CAPM requires investors to care only of maximizing utility, which is possible in two distinct ways: either picking the highest achievable expected return for a given level risk, or minimizing the risk for a fixed expected return, choosing the less risky asset available. Investors are indeed assumed risk averse and mean-variance optimizers. One possible discussion would be on what is the most appropriate measure of risk, but this is not in the focus of this research. Moreover, even if utility maximization seems rational, there are evidences in behavioral economics studies of failure of such assumption and overall rationality of individuals. The home country bias and preference reversal are two examples of the violation of the mean variance criterion implied in this first assumption⁷. Also, in the maximization process, the criterion used could take into account different parameters for different individuals: correlation of investment with labor income is one of the non-considered terms. The CAPM also relies on homogeneity of investors' belief on the aforementioned reward to risk ration. In the risk premium framework and more generally in financial markets, investors' beliefs are one big driver, as formalized in equation 1. All investors should have same belief on the probability distribution of an asset's return, and such belief is the correct one; it is indeed driven by the same information for each investor. Homogeneity of views would however dramatically reduce any discussion on an assets' risk and return to its historical records, and no puzzle on risk premia would arise. According to a study for the National Bureau of Economic Research, the failure of this assumption can be linked to an increase in the equity premium⁸: this evidence might have a notable impact on the Asian case we will focus on and the role of information risk. The remaining assumptions are more closely connected with the Markowian portfolio optimization: there should be no taxes or transaction costs; investors should be able to choose from the same basket of assets and their interactions are in competition, meaning each individual is a price taker, without the ability of influence prices with her actions alone; fractions of assets and short selling are both allowed; borrowing and lending are at risk free rate R_f .

⁷ Tversky A. et al., *The Causes of Preference Reversal*, The American Economic Review, Vol. 80, No. 1, pp. 204-217, March 1990;

⁸ Abel A., *Asset Prices Under Heterogeneous Beliefs*, Wharton School of the University of Pennsylvania and National Bureau of Economic Research, January 1988;

Pointing out these strict conditions, as well as future references to behavioral explanations in this study, are not intended to disprove the quality of underlying theories, but rather explain their fallacy in specific cases⁹. As will be briefly presented through market risk premium definitions, the more individuals' expectations are directly involved in investment choices, the more each investor's peculiarity influences the final decision. Eventually, Fama and French studies on CAPM point out that firms' ratios influence CAPM performances in the same way through 12 different markets. The authors explain that the source of anomalies lies either in the field of behavioral economics, as already mentioned, or in the need of a more comprehensive pricing model which they propose in the "Three-Factor Model"¹⁰. Without trying to formalize a model for asset pricing and risk premium, the aim of this research is instead that of analyzing drivers and understanding of information processing by investors and markets. Of the two CAPM weak points proposed by Fama and French, we will observe a higher incidence of the "perceptions factor" when applied to our analysis of risk premium. This is not intended to free the CAPM of part of the imprecisions in assets' prices, but rather concentrate on the consequences of expectation on risk, and its compensation. We are indeed more interested in the investors' attitude toward risk rather than in testing the efficiency of existing models.

Once defined the financial meaning of the RP and the imperfections on its most known model, we can shift the sight to its interpretations. Recalling latest years behavior of RP according to Professor **Aswath Damodaran** work, the hypothesis of a degree of convergence in risk compensation between markets throughout the world is supported by accounting data on productivity, even if notable country differences exist. Damodaran researches on this field highlight the increase in efficiency of emerging countries, using the trend of P/E ratio¹¹; still, this study is intended to observe the trend itself and does not provide deep justifications of it.

⁹ Curtis G., *Modern Portfolio Theory and Behavioral Finance*, The Journal of Wealth Management, Fall 2004;

¹⁰ Fama E, French K., *The CAPM: Theory and Evidences*, Amos Tuck School of Business at Dartmouth College, Working Paper No. 3-26, Center for Research in Security Prices (CRSP) University of Chicago, Working Paper No. 550, August 2003;

¹¹ <http://aswathdamodaran.blogspot.it/2013/07/developed-versus-emerging-markets.html> ;

One of the difficulties of dealing with the market risk premium in emerging and developed markets relies in its ex post nature. The computation of RP ex post is undeniably subject to the survivor bias: computations are indeed made over markets with a sufficiently long history. “Survivors market” such as the United States have a long time series of historical data available; moreover, the US have been shown being the best market in the world from 1921 in term of performances. Firms listed there have therefore a much longer life in the equity market, and the historical premium results shifted upward with respect to present performances¹³. This does not suit the risk profile of much more recent but yet growing emerging markets, in less developed countries. Presenting the empirical method for RP derivation surely gives an understanding of its role as a financial index; however its nature as a measure of uncertainty goes beyond what past data suggest.

For this reason the issue of equity risk premium is apt to multiple evaluation methods and interpretations: even considering the historical data on return and risk free rate has some drawbacks and does not provide information correctly representing investor’s viewpoint.

Only a deep analysis of each scenario can lead us to a correct perception of the threats of a specific market; however, being too specific on the topic of risk aversion and focusing too much on individuals may lead to a loss of generality. Therefore, our focus on “East Asia and Pacific” will be analytical in observing possible drivers of risk perception. The matter at issue yet needs some cautions in term of conceptual meanings of RP.

As professor **Pablo Fernandez** states, “the equity premium (also called market risk premium, equity risk premium, market premium and risk premium) is one of the most important and discussed, but elusive parameters in finance. Part of the confusion arises from the fact that the term equity premium is used to designate four different concepts¹⁴”.

Professor Fernandez describes the first of the multiple faces of this index, the historical equity premium (HRP), as the difference between stock market and treasury return in historical data. This is the sense in which we intended it so far,

¹³ Damodaran A., *Equity Risk Premiums (ERP): Determinants, Estimation and Implications – The 2012 Edition*, page 30;

¹⁴ Fernandez P., “The Equity Premium in 150 Textbooks”, November 2013, IESE Business School, ch 13, page 2;

while explaining the CAPM model and the “survivor bias”. It has more objective traits than others, but drawbacks as well. Besides survivor bias, HRP only refers to the results ex post, explaining few about the impact of drivers on future RP.

The expected equity premium (ERP) is the expected difference between equity and government bond assets. The key question is: whose expectations are being described? Loosely speaking, investors are those called to infer how future results of their choices might be; however, the standpoint changes if we are firms or savers. Diverse standpoints may generate diverse reactions to the same information set, or non-coincidence of the information sets themselves. Whoever shoes we put ourselves in, defining other players' expectation is a result with no benchmark; their influence is nonetheless relevant in the ex post result on risk premium, thus worth studying through surveys (as Professor Fernandez does on a yearly basis publication) or behavioral models. Such models can produce valuable results in describing the relations between investors putting themselves in a hierarchical context with respect to their available information sets and inference capability. We will briefly elaborate on this topic and the behavioral component of risk premium after the description of the main measurable drivers of RP.

The third definition contributing to the elusiveness of risk premium is the required RP (RRP). It is the “incremental return of the market over a risk free asset required by an investor”: as already mentioned, the risk premium has consequences on firms choices as well. This is the angle where required premium stands in observing the equity market: the required return to equity of an investment is often computed using RRP inside the CAPM model. For this purpose, note that required and expected premium are used equivalently¹⁵. Although most textbooks use these different concepts with no distinction, the only measurable unit of premium is the HRP; ERP is indeed an individual expectation on the market, while RRP is the amount of premium each single investor requires from its portfolio.

Moreover, the RRP through the required return to equity in the weighted average cost of capital (WACC) for a company, influences decision on average risk investments. Return to equity computed with RRP is indeed the benchmark to which an investment net present value (NPV) is compared. If NPV is zero, return

¹⁵ Fernandez P., *Market Risk Premium: Required, Historical and Expected*, working paper, october 2004, IESE Business School, page 3;

to equity and cost of equity coincide; a higher RRP would increase the cost of equity, thus flowing into an higher likelihood of NPV to be positive.¹⁶ Eventually, an implied equity premium (IRP) exists; it is the one resulting from the mathematical computation assuming the market price is actually correct. From the price formula with dividends discounted at the required rate k and supposed to grow at rate g , the IRP is derived as:

$$IRP = \frac{d_1}{P_0} + g - R_f \quad (2).$$

As the procedure clears out itself, expected growth plays a crucial role, thus making IRP subjective also in the ideal case of correct price P_0 for all inventors.

Among these four meanings of risk premium, the “expected” one results being the most interesting in our approach to the issue. It is comprehensive of people’s beliefs on all risk drivers and has no direct involvement in a specific investing position. Overall, the relations between implied, required and expected risk premium are not the same within individuals and they of course individually differ among them. The above overview of four RP definitions together with the CAPM derivation come helpful in understanding the variable meaning of the risk premium, the difficulties in application and the consequences of using a different concept when studying investment possibilities.

An example of this hurdle is provided by another interesting research by Fernandez. The study consists in an annual survey collecting information on the RP used by three different agents in their working environment, namely professors, analysts and companies¹⁷. According to these enquiries, most developed countries persuade all agents in believing in a limited range for RP: views

¹⁶ Brealey R., Myers S., Allen F., *Principles of Corporate Finance*, tenth edition, McGraw Hill, page 474;

¹⁷ Fernandez P. et alia, *Equity Premium: Historical, Expected, Required and Implied*, Chapter 12, IESE Business School, University of Navarra, November 25th, 2013; *Market Risk Premium Used in 56 countries in 2011: a Survey with 6014 Answers*, Working Paper 920, IESE Business School, University of Navarra, May 2011.

Professor Fernandez surveys are annually presented in his working papers; such works are freely available and display variable sample sizes and participants from year to year (professors, analysts, companies, etc.). Often questionnaires are specifically addressed to professors, companies, analysts or specific agents in the field of finance and investing-related activities. Despite we only mention here two of them, data used in the present work are based on several of professor Fernandez surveys;

generally do not differ of more than 1% (which is not negligible anyway). However, for some developed countries and most of the emerging one, agents have a much greater disagreement on what should be the compensation for risk. These evidences provide us with additional clues on the uneasy tractability of RP. In first instance, despite few emerging countries display, over time, a closer agreement on what the premium should be, the disparity prevails in both magnitude and frequency. Secondly, for all three groups, equity premia are high; according to Fernandez work, professors use high RP in their academic activity. The remaining agents and investors frequently use professor's advice or historical data for their investment choices: ex-ante RP are overvalued, prices calculated result low and the consequent gain much higher. This leads to an ex-post (historical) overvalued RP. Once more, for this reason, in the focus about Asia presented here, the choice is to describe the common drivers of all these viewpoints and not RP alone. This hopefully allows us to observe different trends and apply them, evaluating financial and behavioral consequences freeing from the mere CAPM risk premium computation. Also, observing the influence of drivers may enlighten the different information process in the big and small markets.

It must be said that, even if the uncertainties presented so far are those actually encountered when following the clues to explain equity risk premium path, they are not the whole range of questions arisen on the matter. Existing literature presents a much wider set of notes on the apparently irrational behavior of RP. Most studies try to adapt widely known models for investment choices, striving to explain past premia; this is not the procedure we will apply to our analysis. Yet, the doubts arisen on HRP provide an insight on the role of elements influencing risk. To begin with, **Mehra and Prescott** investigate the equity premium in 1985 (through the Arrow-Debreu model) and define the "equity premium puzzle". It refers to the fact that risky assets have an extraordinarily high premium for risk¹⁸. RP in time has been consistently higher than the risk free rate of return; high premia for risk are linked to a level of risk aversion not explained by economic theory. One intuition that motivates this singularity is provided by the already discussed work of Fernandez, meaning the professors, analysts and companies survey. Among other possible explanations proposed, the different definitions of

¹⁸ Mehra R., Prescott E., The Equity Premium: a Puzzle, Journal of Monetary Economics 15, 1985;

risk premium come into play, since an ex-ante approach (the ERP) adjusts for cyclical bull and bear markets. In the field of expectations, behaviors are corrected for all assets, independently from their risk levels. The result is a subjective scale of risk perception, correctly tuned on each investor. With a similar logic used for the overvalued historical RP, the ERP would delete the difference between short-term historical results and the present market state, resulting in no puzzle whatsoever¹⁹. This explanation easily reminds us of the survivor bias: a modern approach on risk premium should not forget that the long-term analysis is lean toward winners. However, most writers focus on the formalization of pricing or behavioral model explaining the available RP numbers. **Thomas Rietz** (1988) provides a further reason for the conduct of RP and its high value²⁰. Again manipulating the model of Mehra and Prescott, the author adds a state of the economy for “possible but unlikely market crashes” (to the two already present in the model: the good and the bad state). The high risk premium is thus explained by the fear of a strong drop in the assets’ values (the market crash state) which needs to be compensated. All this solutions to the equity premium puzzle have the claim of being almost fully explanatory; for the purpose of our analysis, we will consider together the different contributions they give in understanding RP, and apply them to the interpretation of drivers.

In most recent times, the field of behavioral economics becomes more and more explored. The failure of assumptions on individuals and misperception of risk are proposed as solution to the puzzle and reading keys for risk premium. Still building on the 1985 paper by Mehra and Prescott, **Benartzi and Thaler** (1993), elaborate on myopic risk aversion. Myopic risk aversion refers to the risk perception each individual possess; it is not only built on their degree of loss aversion, but also on the impact of the short time period used for evaluation of performances, and the role of timing in such perception²¹. The authors find that one year is the frequency with which an investor should evaluate its portfolio in order to be indifferent between stocks and bonds. Indeed, for a long-term

¹⁹ Mehra R., *The Equity Premium Puzzle*, University of California Santa Barbara and University of Chicago, April 2001, page 6;

²⁰ Rietz T., *The Equity Risk Premium, a Solution*, Journal of Monetary Economics 22, 117-31, full version received November 1987;

²¹ Benartzi S., Thaler R., *Myopic Loss Aversion and the Equity Premium Puzzle*, Working Paper No. 4369, National Bureau of Economic Research, May 1993;

investment horizon, the risky assets results more appealing, if the investment is not frequently evaluated. With a constant check for gains and losses, the perception of risk (not biased by the long-run gain of stocks) is closer to the value expressed by the risk measure (i.e. standard deviation). This solution to the equity premium puzzle, though reasonable to some extent, would be useless in the study of risk in Asian markets. It would actually be hard to justify a different behavior among investors operating in big and small markets, according to the frequency of portfolio checking. A higher degree of financial knowledge could upkeep a more correct portfolio management, but this is just partly of use: market players are far from local only. The international pool of investors would bring much different degrees of financial expertise, thus not allowing a “by country” separation. Nonetheless, a different use of the markets by agents could attract distinctive types of investors with peculiar portfolio management techniques; in the comparison between big and small markets, this might end up being reasonable if supported by consistent clues.

Constantinides and Duffie (1996) explore theoretically the assumption of homogeneity of agents including more functions for individual consumption growth and intertemporal preferences: in this way, asset pricing is subject to a “set” of representative consumers²². Observed dividends and prices are explained relaxing the assumption we first introduced for CAPM: as said in that circumstance, the failure of homogeneous beliefs increases RP; this would solve the puzzle. In the focus on Asia, the issue of homogeneity might play a relevant role in the interpretation of macroeconomic determinants: the two groups of countries (big and small) may display a much different ability in spreading information and molding belief. As a result, smaller countries might loosen the assumption on agents’ uniformity of views. Furthermore, reliability of information sources also impact investors’ confidence on expectations, making it hard to have a unique, trustworthy opinion on the future. As initially stated, pricing models are mined by such uncertainty through parameter g in formula (1), and RP varies consequently.

An anchor to human rationality, but still assuming individuals’ rationality is bounded, is that of **Cecchetti, Mark and Lam** (1998). The researchers believe that most investors use quick and simple rules, though not strongly founded, to

²² Constantinides G., Duffie D., *Asset Pricing with Heterogeneous Consumers*, The Journal of Political Economy, Volume 104, Issue 2, April 1996, page 219-240;

infer the direction of the economic cycle. They indeed depict their approach as one where a “local departure from full rationality hold promise in solving empirical puzzles”²³. Starting from Lucas model for representative agent endowment economy, the paper adds distorted beliefs for individuals. Such device brings in probability measure for future states of the economy (or better, a shift from the current state to the other, or the persistence of the first). Probabilities are built with no need of complex econometric procedures, to represent the median, inexperienced stock buyer. Interestingly, according to the calibration of the model, individuals believe that the “by eye” duration of a state of the economy (bull or bear) will be shorter than more sophisticated computations display; secondly, the transition probability among investors (the probability of shifting from a state to the other) has stochastic variation over time. This is one notable result when looking for the difficulties of standard models describing attitude toward risk and its trend over time. Eventually, the impact of recessions on individuals’ risk aversion has been the interest of **J. Campbell and J. Cochrane** research in 1999. They assume that individuals increase their aversion to hazard in harsh times, while they are more prone toward risk in bull market periods, hence respectively increasing and reducing prices and RP on the basis of habits, driven by the market state²⁴. What can be held from this approach for the benefit of our analysis is that consumption and risk aversion are related and both linked to the economic cycle. If a decrease in consumption brings along an increase in return volatility and compensation for bearing risk, this should be surely observed in both markets analyzed. The impact of habit, which adapt slowly to the changing environment, causes an increase in the curvature of the utility function when consumption decreases (recession). This makes people more risk averse, and prices of stocks (hazard) rises.

For a deeper understanding of the consumption-return relation, the high correlation between consumption growth and stock return is documented in the

²³ Cecchetti S., Lam P., Mark N., Asset Pricing with Distorted Beliefs: Are Equity Returns Too Good to Be True?, National Bureau of Economic Research, Working Paper No 6354, January 1998;

²⁴ Campbell J., Cochrane J., *By Force of Habit: a Consumption Based Explanation o Aggregate Stock Market Behavior*, The Journal of Political Economy, Volume 107, Issue 2, April 1999, page 205-251;

paper itself²⁵. The magnitude of the change of consumption in time can help us in interpreting people's behavior in the light of Campbell and Cochrane theory. A comparison could be available for the two groups (of countries), thus inferring on the investor's perception toward the two markets. We should once more recall that, from this perspective, we are not observing only some countries' investors, but the world's expectation on the selected markets. For this purpose, the term to be observed is not China's or Vietnam's consumption levels; it should be rather assumed an overall decrease in consumption during recession, expecting consequences on risk aversion and financial choices.

The so far mentioned explanations of RP are of sure interest for the equity puzzle cause; however, in more recent period, the disappointment for unrealistic risk premia took the scene to the attempt to find a solution. A perfectly fitting paper that explains RP anomalies is the work by **Arnott and Bernstein** (2002)²⁶. In their investigation for a "normal" risk premium, they want to understand what should have been investors' expectation in the past and why those expectations should reasonably decline with respect to the future.

The authors focus on the difference between expected and observed RP, and try to identify an upper and lower bound for equity excess returns over bond. Since we should not expect stock, as risky assets, to have the same return of a risk free, the bottom RP should reasonably be 0%. On the opposite side, even if an upper bound for RP is estimated at around 5% in the long time, shorter periods of recession may call for extremely high premia for risk. In the first quarter of the twentieth century however, expectations on returns were far less than a 5% in the long run. Stocks were born has short term assets, allowing a participation to the firm operation in exchange of liquid returns and the sharing of losses in case of bad results. Though, according to the paper at issue, a number of historical and economic facts altered the reasonable expected returns: postwar inflation, rise in stock valuation in dividends terms, introduction of reforms, economic growth are some of the supposedly unrepeatable events. Moreover, the authors points at "the pirate

²⁵Despite the paper by Campbell and Cochrane leaves this intuition and its derivation to the understanding of the reader, the most evident proof is given by the Arrow-Pratt-De Finetti work. They define as relative risk aversion a measure that is not subject to the convexity of the utility function;

²⁶ Arnott R. D. et al., *What Risk Premium is "Normal"?*, Journal of Portfolio Management, January 2002;

capitalism era” for a discrepancy between dividends paid and actual enterprise growth and an average non-optimal reinvestment policy. All these happenings had equity returns to skyrocket, inflating expectations for risk premium. As the paper concludes, “Today, investors are loathe to recall that the real total returns on stocks were negative over most 10-year spans during the two decades from 1963 to 1983, or that the excess return of stocks relative to bonds was negative as recently as the ten years ended August 1993”. Undeniably, it seems not reasonable to expect a similar conduct of events in oncoming years, thus making expectation of high RP irrational. However, what Fernandez calls “the elusiveness” of this financial parameter bounces between expectations and financial estimates, but this is not done without influencing present investment choices.

Once accepted the puzzle of high RP, wherever it originates, and the many but far from univocal solutions to it, most recent literature has been dedicated to comments and observation of risk premium. The most recent swings in risk compensation among markets encouraged researchers in finding possible links between RP and macroeconomics policies or economic conditions. One already mentioned example is the possible clue of convergence in RP between developed and emerging countries studied by professor Damodaran. While the intent of past studies was at least partly that of clarify an anomalous behavior, we see here a shift in purpose, somewhat anticipated by Fama and French.

The already cited **Fama and French** three-factor model (1993) sets a reference point in asset evaluation and hint at a wider framework for estimating stocks returns. The two authors identify a size risk and a value risk, which jointly influence the stocks’. SMB (small minus big) accounts for the first, and is computed as the additional return historically gained by investing in small size firms over big size ones. HML (high minus low) represent the second factor: value risk is calculated as the difference between high and low book-to-market value stocks returns. The third factor is the already established market risk premium²⁷. Even though the three-factor model is not a specification for RP, it entails a multidimensional approach. Investors can choose how much weight to give to each source of risk according to $r_A = r_f + \beta_A(r_M - R_f) + s_A(SMB) + h_A(HML)$; we can then

²⁷ Fama E., French K., *Common Risk Factors in the Returns on Stocks and Bonds*, Journal of Financial Economics 33, 1993 and *Understanding Risk and Return the CAPM, and the Fama-French Three-Factor Model*, Tuck School of Business at Dartmouth, Case 03-111,;

solve for RP as $r_A - r_f = \alpha + \beta_A(r_M - R_f) + s_A(SMB) + h_A(HML)$.

The “multidimensionality” is hence transferred to the computation of risk premium; this is a more comprehensive model than the CAPM one, and constitute a logical framework through we can account for as much drivers as demanded. Though the primary purpose of this method was the testing on historical data, most recent studies include multiple drivers’ impact on RP in a less theoretical fashion. The following decade, period in which Fernandez publishes his surveys, is characterized by a more “descriptive” approach, with the attempt to observe and rationalize RP values, in its different definitions. Most authors put their effort in contextualize the premium for risk in all in all the surrounding sources of uncertainty. Econometric and statistic tests are used to determine what are the main drivers of it and more descriptive papers track the performances of the market, including the important influence of business cycles.

Goyal and Welch (2006) present a far-reaching investigation on the impact of different drivers for risk compensation. Their aim was to check for the significance of the different information available to agents when choosing where to invest. Through the application of a set of OLS regressions, possible drivers’ efficiency is tested in and out of sample. The dependent variable is held fixed as the equity premium. The analysis over the last 30 years results surprisingly ineffective; the paper concludes: “evidence suggests none of the academic models we reexamined warrants a strong investment endorsement” and that the equity prediction models are not econometrically robust²⁸. The difficulty in dealing with this fundamental of modern finance strikes again; however, the method proposed does not leave any room for behavioral interpretation. In our focus on Asian markets, the central idea is not far from the one leading the Goyal and Welch paper. Without the claim of checking for a model able to estimate the equity risk premium, we will observe its possible drivers and try to infer investors’ behavior. For this purpose, the use of two geographically near markets, but with much different peculiarity, helps us in understanding what drive agents’ choice. The inability of the tested models to provide investors with evidence on the premium must not be confused with the usefulness of the drivers generating such information.

As we have seen for the solutions of the equity premium puzzle, slight

²⁸ Goyal A., Welch I., *A Comprehensive Look at the Empirical Performance of Equity Premium Prediction*, January 11, 2006;

modifications to distinct models can provide reasonable results. The mere econometric application does not account for such need when treating human perceptions. Other scholars present a more loose methodology on risk premium tracking. **Graham and Harvey** (2003) conduct a survey through CFOs of U.S. corporations to record short and long term expectation on risk premium. They choose the CFO category since it represents the most “operative” and frequent use of RP, thus closer to investor’s needs (if compared to the academic or analytic point of view of professors and analysts). The survey extends from 2000 to 2003 and stresses several peculiarities of ERP (ex-ante risk premium), even if the U.S. focus represents a “safer” environment in term of market risk, especially in historical terms²⁹. The first outcome presented is in terms of market volatility of expectations: the degree of disagreement between individuals is much smaller than the within individual volatility. Disagreement increases for more extreme excess return, being it positive or negative. However, past yields seem to directly influence expectations mostly for the short run. Expectation on 10 years from the moment of asking are much more stable and inversely related to past returns. This evidence of risk aversion conduct is consistent with a mean reverting RP. This is something we should take care of, when applying the literature presented so far in the comparison among Asian big and small markets. The sinusoidal trait of RP, also in relation to business cycle should not be confused with short period converging behavior and this can only be inferred interpreting the effect of RP determinants. Past data do not work for the purpose: the authors have indeed mixed finding when relating reward to expected risk in different time frame. However, the study of drivers is not a comfortable issue to deal with, since the survey itself presents ambiguous results on the impact of economic determinants. The other main insight of this paper is the importance of the time horizon in expectation: it seems much of interest to use a deep look in the past in order to determine what investors built as ERP. For this purpose, the same authors widen the time horizon in a more recent survey, and present observations and comments including the 2009 crisis. According to the survey and despite the much stronger magnitude of the recent recession, the comparison with 2001 is not striking. Up to

²⁹ Graham J., Campbell H., *Expectations of Equity Risk Premia, Volatility and Asymmetry from a Corporate Finance Perspective*, National Bureau of Economic Research, Working Paper 8678, December 2001;

2009, the premium for risk has been only slightly higher in the latter recession. However, we have here evidence that uncertainty not only increases RP, as expected, but also widens disagreement between interviewed CFOs.

Bringing back the focus on the time evolution of risk premium, it's worth citing here a type of analysis we executed on the Asian case, although with no successful results, due to the characteristics of the analysis. **Abdesselam, Lecarpentier-Moyal and Renou-Maissant** (2002) operate a principal components analysis (PCA) to see how determinants' relevance changed in time. The PCA consists in a variable reduction procedure usually applied in case of management of an elevate number of variables; it indeed has the ability to group those variables to explain the in-sample variance. However, it has no clue whatsoever on the error present in the population (as econometric regression do, allowing for inference) and, more importantly, the variable grouped together may or may not have a logical consistency. In the here mentioned work³⁰, the efforts are on the treatment of the three classical components of RP: returns (logarithmic), dividend yield and risk free rate according to $RP = \log\left(\frac{P_{t+1}}{P_t}\right) + DY - r_f$. The result is pretty clear since the RP relation is simple and the variables are only three. In the more intricate scenario of the Asian case discussed below, the PCA approach might have been more coherent with the number of variables. This is not free of consequences in term of complexity of results' interpretation. Most of the variance in RP is here explained by the two main (principal) components, with weights that change over time, between 1984 and 2000. With a complex path, RP variance is increasingly represented by the fluctuations of growth rate, rather than the component including together the dividend and risk free influence.

As anticipated, most recent literature, recognizing the limits of past approaches, tries to include the macroeconomic effects on markets. The geographic outlook goes more and more global: the local attempt in demonstrating the relation between the economy and business cycle to the RP are encouraging but not satisfactory. **Bätje and Menkhoff** (2013) adjust the factor model, including a risk premium to account for the underlying economy (called "momentum"). This research proofs macroeconomic variables to be useful in a non-straightforward way: they are

³⁰ Abdesselam R., Lecarpentier-Moyal S., Renou-Maissant P., *International Equity Risk Premium Convergence*, Centre de Recherche en Economie et Management (CREM), 2002;

indeed relevant in long-term prediction models, and especially effective for bull market periods. Despite the analysis should not include only country data, since they are not the sole influencer of the market, the impact is non negligible. In our study, the aggregation of countries in two macro-regions should to some extent limit this problem, even though a true, all rounded perspective is not provided. We indeed expect smaller markets to be more dependent on big countries shocks, even far located ones. A particularly illustrative example is described in **Guesmi and Teulon** paper on Japanese integration and risk premium convergence. Using ARCH and GARCH models, the authors take into consideration the impact of past events through the conditional variance and covariance components. Though not describing the latest recession, the 1997-2007 time span let us include the recent openness of Japanese market and the decreasing variation in prices from 2003 on (after financial crisis). The research also points at a fundamental role of different markets within the Asian economy. Even not deepening the issue, there is a reference to the possibility of substitution strategies between classes.³¹ This opens a window on hedging, with consequence on the risk-reward relation in pricing. As will be more extensively presented later on, the “big versus small” Asian comparison points in a similar direction, but in a market sense. Differences between markets certainly allow investing strategies that alter risk premium; such strategies might depend on the economic state, and modify investment preferences. The complex web of links between macroeconomic determinants, real economy performances and market peculiarities is what we will try to unravel in our analysis. As already said, this study will begin from the effect that variables have in individual’s risk aversion.

The mentioned studies trying to explain the equity premium puzzle suggest a number of variants of the classical theory on agents and pricing models. Papers on macroeconomic determinants study the impact of a wide range of diversified drivers. Timing is taken into account for people to form expectations and adapt in their portfolio choices. However, besides being an issue of expectation, the risk premium is not the individuals’ capability in handling information alone. A degree of responsibility is indeed transferred to the market as a whole, which is able to absorb investors’ behaviors and informational shocks, and eventually summarize

³¹ Guesmi K.,Teulon F., *Regional Equity Risk Premium Convergence: The Case of Japan*, Ipag Business School, Working Paper Series, 2013-006;

them into a correct representation of the financial asset. In this process, it is recognized an amount of hazard due to the effect of information on prices, applied by the market. This is known as information risk (IR); the comparison between Asian big and small markets in term of IR might let us better understand the substitutability between the two. IR is a far-reaching concept, since the informational component of most situations is crucial in limiting and managing hazard. Within the topic of risk related to the informational level, we need to separate two distinct fields. The first one treats IR in a broad sense, through models able to deal with different situations in their complexity, such as factor analysis for information risk (FAIR)³². These model can be used in most framework, and decompose IR into the type of threat, the degree of vulnerability and embedded risk; this is the perspective we want to keep while thinking about investors. In managing all drivers for risk and thus evaluating a personal RRP, we would like to analyze the overall information risk using the principles proposed in FAIR. Unlikely, the model is most suited for evaluating the possibility of a loss, rather than measuring a variation in returns due to an informational shock and going through each variable applying FAIR would be a too descriptive approach. Still, a proxy for IR that can be computed on market returns is that proposed by **Mantovani** (2004) and explained and applied in the paper by **Bertinetti and Mantovani** (2012)³³. Through a substitution based on the standard deviation of returns computed in a long and short time window, the authors are able to identify the faculty of some developed markets in capturing information shocks. We would like to submit our case to this examination. While the interest of the paper is the behavior of IR in period of crisis, we want here to compare the two Asian markets created. Such analysis could help us in understanding not only the time trend direction of information risk, but also if and how this aspect influences investors preferences between the two markets.

Overall, we have here mentioned the most influential theories allowing us to gain a standpoint in the interpretation of the Asian case. Damodaran questions on

³² Jones J., *An Introduction to Factor Analysis of Information Risk (FAIR)*, Risk Management Insight, released under Creative Commons Attribution-Noncommercial-Share Alike 2.5, 2005;

³³ Bertinetti G., Mantovani G., *The Information Risk in the Latest Crisis: A Driver or a Driven Factor for Global Financial Markets Equilibrium?*, Journal of Modern Accounting and Auditing, ISSN 1548-6583, May 2012, Vol. 8, No. 5, 702-732;

convergence are the first driving forces for our research. It will be first checked whether the presumed convergence is present in the Asian submarkets created. We will thus initially consider historical values for risk premium as well, even if the absolute values displayed will not be a covered by themselves. We do not want indeed to provide an explanation for the high or low level of RP, thus investigating the equity premium puzzle. Nonetheless, the puzzle solutions proposed above will be used as a framework where to set the underlying RP trend, better explaining its drivers.

Historical risk premium is not a point of view we want to keep throughout the whole analysis. Certainly, the behavior of RP, whatever trend will display, will be read analyzing the factors for uncertainty. The multidimensional approach by Fama and French will not be reconciled into a single model; we will try to have three dimensions held separate, and observe their effects on risk premium.

After this initial presentation, *the second chapter* will be devoted to the introduction of the considered measures of RP as well as the different variables. After an overview on the selection methodology for our two groups in the Asian case and the relative risk premia, features of the two groups will be presented. Firms' performances and macroeconomic data guarantee an effective ground made up by country indicators and real economy results. The individual's opinion on the future of the economies at issue is indeed supposed to stem from the available measures of firms' and countries' performances. Additionally, the markets in which agents operate will be analyzed; the market indices might depend on the behavior of investors or the peculiarities of listed firms. They however have a notable role, since the compensation we are looking for is essentially based on equity returns.

When dealing with investors' beliefs, expected or required risk premium will then mostly substitute the historical counterpart. This is not a choice free of cautions. We must pay attention to not misinterpret the risk premium meaning according to the definition used. Together with the state of the economy, behavioral justification and analytical techniques will help us supporting or questioning what data suggest. *Chapter three* will then test visual evidences through empirical tools. Despite we strive to obtain a limited number of effects on the behavior of agents within these markets, the Asian case presented is not an attempt to outline a model neither for RP definition nor prediction. The matter would indeed be too broad and the two poles in our case too close to one another to bring along few

distinctive traits.

We will thus focus on what will likely represent a quantitative difference between the two: market liquidity, turnover and information processing are some example of elements attracting or keeping investors away.

Overall, it must be said that the result will hardly be a univocal combination of businesses, macroeconomics and market factors, but rather a complex portrait of RP. Given the recent years' peculiarities, it will hopefully be rich in details on the different aspects taking part to the analysis.

The fourth and last chapter of the present work will summarize the entire research in the perspective of RP measures considered. For this purpose, we will retrace the analysis seen so far and try to adapt it to investors' risk perception.

For the sole goal of creating a reference point for investors' choices, we will quickly present macroeconomic models describing the saving allocation in risky assets. We will then empower our theoretical investor with the choice of a risky and a riskless asset, in order to observe her optimal quantity choice. The aim is still that of having a formal framework over which discuss investment preferences throughout recession and how risk premium affects it.

The chapter concludes the research, answering the initial questions and tracing possible enhancement in order to outline this vast topic.

Chapter 2: Two poles for risk premium: the Asian case

Preliminary Considerations

The literature review presented so far opens up numerous windows on the issue of risk premium. The present research will focus on the analysis of the Asian small and big markets, grouped together in two poles. Before presenting in details the reason for such grouping, it is worth to deeper explain what led to this research's configuration.

This thesis stems from the very fundamental idea of a “big versus small” RP comparison; the already mentioned professor Damodaran suggests it in a 2013 article on his blog³⁴, debating emerging market risk. He indeed observes that, despite the degree of convergence in RP that approach developing and advanced countries (with respect to risk), the first are weaker in front of economic shocks. Emerging markets indeed gained some of the “bad traits” of developed economies. This makes them, in period of crisis, no more quick pools for positive-return investment, but rather riskier choices, implying a higher risk premium. On the other hand, developing economies grow faster in bull periods, which is what attracted investments between 2002 and 2006. However, players in those markets are to a larger extent subject to the underlying economic condition, with shifts in risk aversion that are much quicker than in established ones. This would let us take a stand on country risk, meaning the risk comprised in any asset related to a specific State. Emerging countries are then thought as riskier, since their political, economical and even more financial structure is sometimes far from being established, others completely absent (see Sub-Saharan Africa), others simply too strictly related to developed nations that influence and exploit them. Damodaran's opinion suggests that the risk level of a country is not to be found in sovereign bond, too slow in adapting to changes, but rather in Credit Default Swaps (CDS). The CDS is a financial derivative with the characteristic of allowing the owner to switch cash flows with a counterpart, hence transmitting the implied risk and adapting much faster to mirror uncertainty. Evidences in CDS spread between

³⁴ <http://aswathdamodaran.blogspot.it/2013/07/rediscovering-risk-in-emerging-markets.html>;

developed and emerging countries strike against the latter within January and June 2013. Damodaran also creates a global heat map (available in the same web article) with the risk premium level for every Country; such RP is based on CDS and, in the authors' word, it is "simplistic, but desperate times call for desperate measures". The map makes intuitive that there indeed is a premium that vary substantially between countries, and it is not strictly related to their geographic location. Generally, the article sustains the widespread perception that risk is increasingly coming from emerging markets. We wanted to test this idea in a restricted scenario: we expect to observe a less net distinction, but a finding in this direction would here be more striking then it is in global terms. The net difference between more and less developed countries within the Asian region would indeed partly free from the geographical or cultural component that a worldwide look causes. The region this research puts the focus on is derived from the territory that the World Bank denominates "East Asia and Pacific", with the inclusion of some big players in the "big" group. East Asia and Pacific includes 24 countries, even if a significant number of it accounts for extremely small islands with negligible economic influence and non-established trading markets. We thus selected 12 representative states, also including some important players that are not listed in the World Bank sub region at issue. These have been judged still strongly influencing the Asian markets, and are Japan, India and Mongolia. While the Indian and Mongolian economies easily suit the Asian scenario, Japan's peculiarities in term of industry sectors and development of consumes and markets might be criticized. It seems indeed to clash with the other members of our "big" group (China, India) that actually are recently grown economies, as opposed to the already established Pacific Ocean's island. Moreover, more extended countries rely more (or did in the past) on the agricultural sector and display a larger wealth inequality in its population. This might alter an aggregate socio-economic evaluation of the group of "big" countries (the issue will be handled later on); however, the interdependence between the Japanese economy and markets and the rest of Asia is intuitively strong. Such idea is confirmed by the above-mentioned study on Japanese convergence in risk premium, showing this country is closely related to the rest of the region at least from 1997 on. As such paper sustain - mentioning the work by Bormann (1995)-, together with growth comes an increase in integration of Asian countries, both within the geographic region at issue and at

worldwide level³⁵. The most underdeveloped countries greatly benefit of the success of new emerged ones: investors attracted to the area by the latter and gaining in returns, are indeed willing to enlarge their pool of profitable markets. For this reason the influence of Japan cannot be ignored in the Asian framework. Still, it represents a singular case among the other State in the group, if anything because Japan shows notably low transaction costs in its equity market. Nevertheless the influence on risk aversion and premium should not be dramatically affected; rather, the average investor could perceive such market as a more efficient and developed one, which after all is the rationale for which it is in the “big” group.

Before the presentation of the two groups and their characteristics, a further reference to Damodaran’s blog is needed. His elaborations on RP behavior are indeed recent, thus not always proposed as evidences, but mostly left as ideas to be explored and tested as time passes by. He himself in the very next post criticizes the CDS as a proxy for risk perception. This figure is indeed in strong agreement with the presence of a country risk, while equity and firm scores do not (refer to note 33 for source). This second idea is presented through the study of the price-earning ratio (PE), which is the ratio between outstanding stock’s prices and the per share earnings³⁶. This figure can be interpreted as revealing how much investors are willing to pay for one unit in earnings; the higher the PE, the higher is expected growth of the stock. Note that the PE ratio is particularly useful in the comparison we are interested in, since it is computed for a multifaceted market index. If it was not so, the PE absolute value would have needed much more caution: since it is often connected to the firm’s underlying sector, it would have been a rather industry related index.

Generally speaking, Damodaran argues, emerging markets displaying a higher risk premium should trade at a much lower multiples (such as PE), or at least at a decreasing one, in recession times. The lower willingness to pay for a dollar in earnings should actually be a sort of remuneration for risk bearing.

³⁵ Borman, W. C., White, L. A., and D. W. Dorsey, *Effects of Ratee Task Performance and Interpersonal Factors on Supervisor and Peer Performance Ratings*, *Journal of Applied Psychology* 80 (1) 1995, page 168-177;

³⁶ <http://aswathdamodaran.blogspot.it/2013/07/developed-versus-emerging-markets.html>;

The choice of PE is justified as follows: if $Equity\ Value = \frac{Expected\ Dividends}{Cost\ of\ Equity - Expected\ growth}$ and, recalling that expected dividends are a fraction of expected earnings (the payout ratio), $\frac{Equity\ Value}{Expected\ Dividends} = \frac{Payout\ ratio}{Cost\ of\ Equity - Expected\ growth} = PE$.

Damodaran evidences a net decline in PE ratios for advanced nations, when comparing all emerging and developed countries. However, this broad look misses the regional factor that a by-country analysis entails; for this reason, we are initially going to test the risk premium behavior in the two groups of countries through a comparison in PE. This would point us either in the direction of a convergence within the Asian region as well, or toward a more complex case, to be analyzed in details: the two outcomes are conflicting. The possible undercut of what we saw at a global level would indeed have consequences on individuals' beliefs.

The feeling for a "golden age" for emerging markets investments which are now becoming lower risk and lower return markets seemed to justify the convergence in RP. However, if this global evidence is not reflected in the Asian case, further investigation will be required. The denial of convergence in PE might merely be a matter of selection, for which the chosen countries all behave in the same way (likely as emerging). A much intricate solution for non-convergence would be represented by the higher risk still supposedly inherent in smaller markets. It still seems reasonable that the group of smaller countries is generally more subject to informational uncertainty, government instabilities and volatility in most indices, justifying a consistently lower PE. Besides this two clear scenarios, data could unveil a much more foggy outcome, as CDS and equity values did for Damodaran studies. However the analysis of PE will let us consider only firms operating in those specific countries. This is useful in the comparison with historical risk premia, since HRP data include all firms listed in the markets at issue, thus bearing a more global risk.

Once identified the region within we will focus our computations, the available countries has been restricted in order to consider only those actually owning a sufficiently large equity market or a non-excludable number of firms participating in it. It must be said that a big portion of firms representing the less developed economies are actually traded in the Indonesian or Thai stock exchange. The fact that the degree of financial development has been inferred by the capitalization of

each country's stock exchange does not represent a contradiction. The two groups have been indeed chosen according to the level of capitalization of their market (or markets). However, in describing the different groups, information on each firm's capitalization has been used. The result is thus similar to a comparison between two market indices, representative of the two groups.

The only caution regards the features of the markets where the assets are listed: an example is the level of information risk computed on a group, which is not to be considered as the actual single market IR (since the underlying assets are coming from more than one). Similarly, the liquidity of a specific market is not useful in inferring a group's characteristic. These cautions are however shared by the big group as well, since it is made up of different markets itself. The only difference between the two is that the small one does not always have equity assets of firms both listed and domiciled in the same country; yet these equities are listed in a market belonging to a country within the group. This is expected to defend the consistency of the procedure.

The twelve countries included in the risk premium determinants' study are:

Group Small (S)	Group Big (B)
Fiji	China
Indonesia	India
Malaysia	Korean Republic
Mongolia	Japan
Papua New Guinea	
Philippines	
Thailand	
Vietnam	

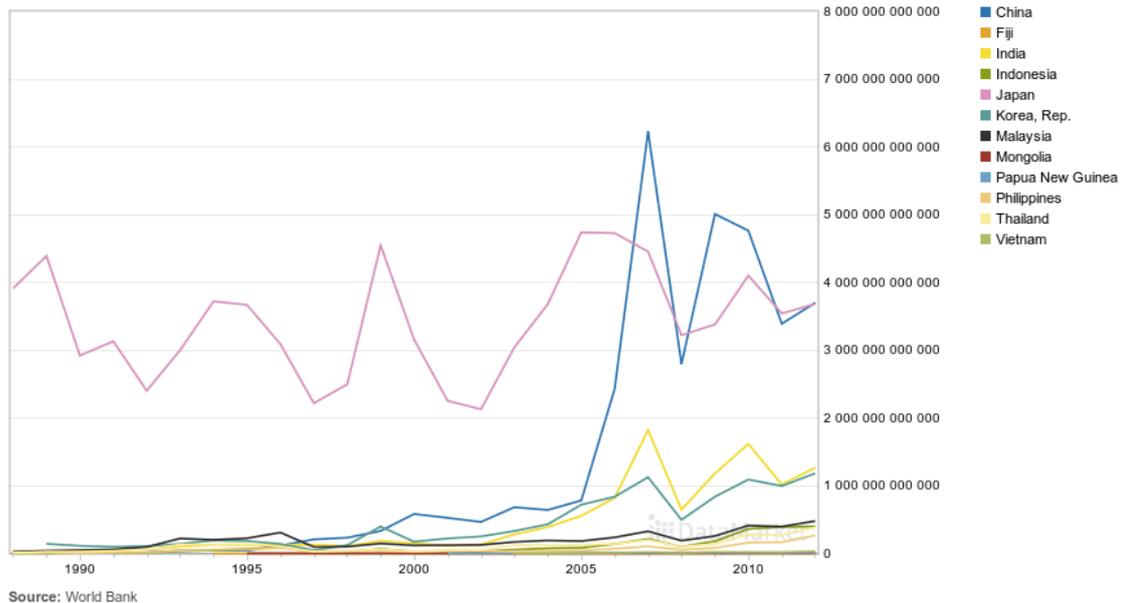
Both groups' data have been recorded quarterly from 30/06/1995 to 31/12/2013; however, depending on the specific variable considered, the time period used will vary. This has been made necessary since some figures for both small and big countries are missing for the majority of firms before certain dates; alternatively, such data might be available for past date as well, but their values is far from reliable. The time period available is still sufficient to study the recent shifts in RP; we indeed want to provide a framework for the recent jumps in risk premium, expectations and possible convergence between countries. Group S is composed by

161 firms domiciliated in the above mentioned countries; group B has 153 firms. Especially in group B (since it allowed it most in term of availability of data), participating firms have been selected to display an evenly distribution of country of domicile. All companies have been chosen from indices that are widely accepted as highly representative of the underlying economy of the country; unfortunately, the initial number of firms participating in the two groups has been cut to the figures just presented. This was required since some of the initially selected firms did not made available enough data to offer a consistent improvement in the index reliability.

The heading “small” and “big” to the groups has been the quickest solution for distinguish the two; however the rationale with which the two are divided needs to be clarified. Small and big are indeed two adjective which can refer to many aspects of the included Nations, however the discriminant for the division has been the country’s market capitalization in recent years, expressed in current USD. This choice is a subjective one, but is seems consistent with the degree of advancement of the countries. The same data in term of % of GDP has been considered distorted by the much different size of the economies considered, underestimating the bigger ones and thus resulting in a non-coherent grouping. Moreover, we can somehow see the information on capitalization as an index more suitable than others in expressing the degree of development of the equity market structure. We do need to keep in mind that the present research, despite focusing on much diverse risk drivers, is still set in the framework of stock exchanges. Other measures of economic development could have been a valid rule on which to base the two groups; on the other hand, it would lose the market dimension we are interested in.

Market capitalization of listed companies (current US\$)

Units: Current US\$

**Figure 1**³⁷

The threshold between big and small is intuitively located at 1 000 000 000 000 \$. From this very first graph, a clear distinction between countries is already available. The chosen level of capitalization that distinguishes the two groups is rather self-evident. The nations setting themselves above such point in the near past display however much different paths. The already mentioned Japan actually has a constantly high capitalization: this feature is unvaried from the late '80s. The Tokyo Stock Exchange is after all the second world stock exchange (behind NYSE) on monetary volume; established in 1878 (even if closed and re opened between 1945 and 1949), its historical roots guarantees it a peculiar behavior in the above chart³⁸. The 1997, 2001 and 2008 crises are marked in the stability of the trend. Moreover, the underlying economy has been established for a much longer time. Among the remaining big group participants, an increasing trend is visible. It is undeniably linked to the boom of these economies in the second part of the '90s and more notably mid 2000. These countries as well as the small ones share 2008

³⁷ The presented chart has been extrapolated from <https://datamarket.com/data/set/16v3/market-capitalization-of-listed-companies-current-us#!ds=16v3!i79=o.13.f.3o.1g.2c.22.2o.3v.25.21.3f&display=line> ; it is however based on data from The World Bank DataBank available at <http://data.worldbank.org/indicator/CM.MKT.LCAP.CD> ;

³⁸ <http://www.tse.or.jp/english/about/history.html>;

recession signs. Interestingly, a further drop in market capitalization is recorder in 2011. After the first hit of the recent crisis, 2011 experiences people realization of the increase in uncertainty that is then reflected on markets' capitalization. What is fascinating here is that group S is almost not at all hit by this second "wave". However, market capitalization only displays a consequence of the state on the market, while it does not provide any clue on where it originates. The stability in capitalization for group S is indeed a sign liked to the real underlying economy, which does not cut equity funding.

Yet, it does not disclose investors' expectations on the stock market. For this purpose, we turn to considerations on a firms' performances measure more dependent on future outlook: the anticipated PE ratio.

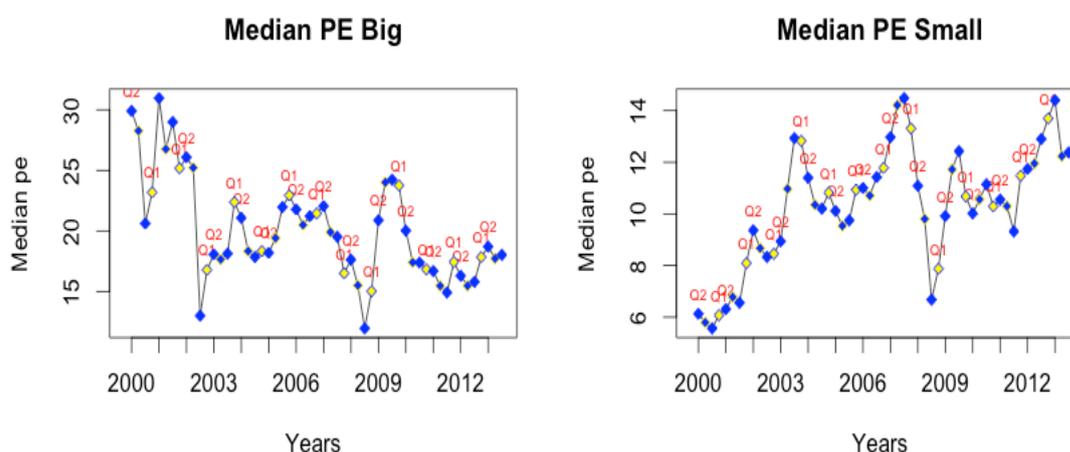


Figure 2

Higher PE is generally related to an expected increase in earnings, in firms' comparison. Figure 2 reports charts for the two groups; the represented values are the medians from information provided by all firms taking part to the groups. The respectively descendent and ascendant trends are an immediate signal for convergence, even though the absolute values of PE for group B and S do not cover the same range. Data before 2003 are not strongly reliable for the absence of many participants (the median is thus based on a smaller sample); however, world evidences hint that the convergence began in 2003, and this is what our data disclose as well. Moreover the two groups appear equally subject to the financial crisis, which apparently strikes Asia from 2007 but that, as opposed to western countries, has its hardest down in 2008. Moreover, the recovery of small countries

appears much more evident, while the “big” group sets at a stable PE value of around 19 from 2010 on.

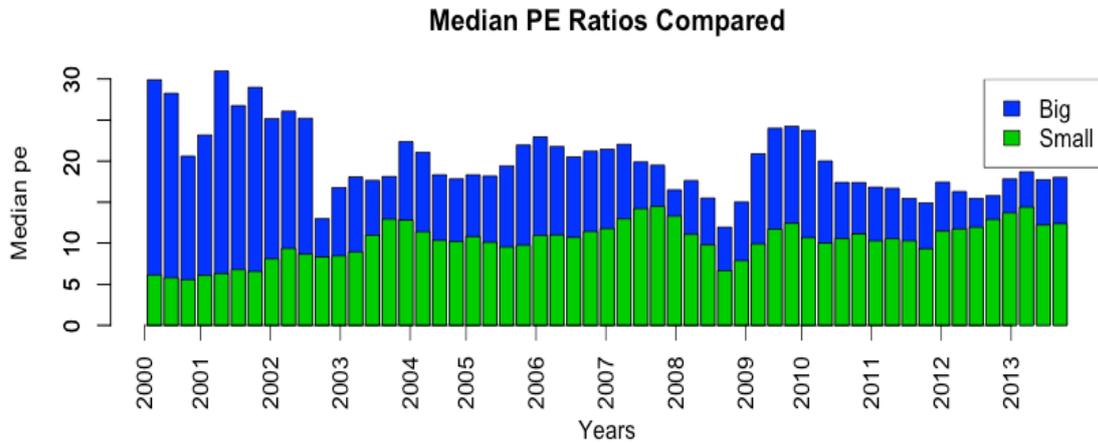


Figure 3

The barplot in figure 3 makes it clear what the charts above suggested: the convergence in PE is consistent within the two groups. In the roles defined in the worldwide study, the blue one takes the role of the more advanced countries, while the green one that of emerging. At this time, despite the evidence of PE approach in the Asian case, we should not jump to the same conclusions that have been highlighted for the global study on convergence. Moreover, we need not to forget that convergence in PE, despite being one good proxy for it, is far from being a proof for the same conduct in ERP. The two could indeed move with a much different timing, and the mere observation of PE cannot lead us to sure conclusions on investors' thought.

Overall, the convergence in the price earning ratio seems suggesting the rise of a new class of emerging countries, where higher risk could be compensated with higher returns. This in turn enforces the getting closer of developed countries to those that were once considered emerging, but are now actually gaining some traits from the former. In accordance with the behavior of the rest of the countries, the Asian case illustrates a greater decrease in big group's PE ratio. The median growth of big PE is indeed a slightly negative value (-0.788%), against a +2.3% by the smaller ones. Figure 4 shows the quarter-to-quarter PE growth from 2003 on; as we can see, the path is extremely positively correlated. Moreover, the delay in trend is nearly absent: when one of the two experiences an increase or decrease, the other immediately does as well. This suggests a communality of factors

influencing the firm's performances, even though we are aware that the PE values are on different levels for the two groups (the average of the medians is at around 20 and 10 for big and small respectively).

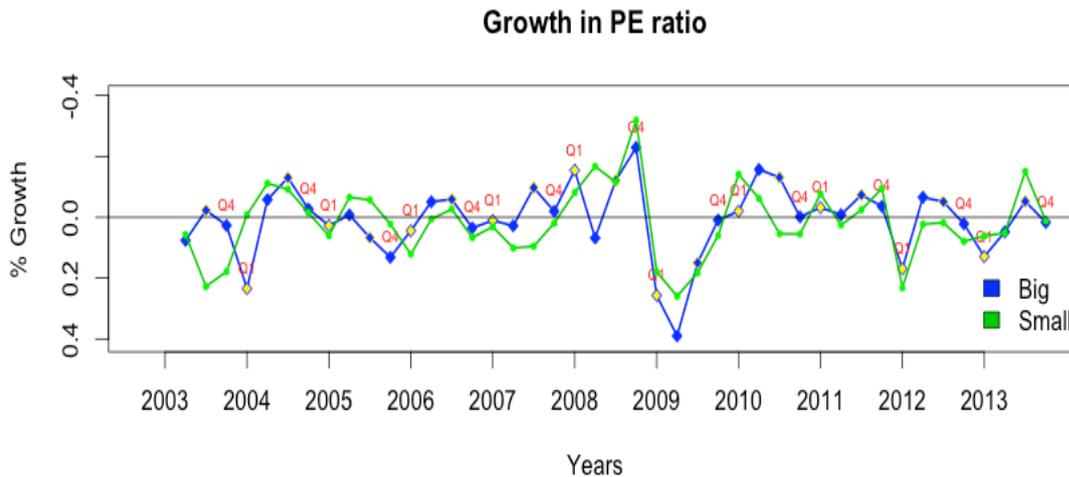


Figure 4

Interestingly, even if the trends are perfectly fitting, some moderate overperformance by group S and a harder hit on developed countries in time of crisis leads a slight convergence in the ratio.

Recall that an high PE is symptomatic for an expected higher return; the growth chart in figure 4 can indeed be misleading in these terms. We break figure three into three portions, with two batches for convergence. 2007 displays a first drop in PE: a possible first, more direct consequence of western countries' recession. The major drop in the blue line between 2008 and 2009 might thus be a quick refinement in expectations, since the widespread perception of uncertainty that the crisis brought about lead to an increase in risk aversion in every market, regardless of its background. The western crisis permeates Asian markets; nonetheless the higher degree of risk implied in less developed country should hit more the group composed by small countries. Instead, the diffusion of financial crisis fear somehow punished more the more established economies, where firms are known and information widely available. Even though we should not go too far with inference on risk aversion and expectation refinement from data on PE only, the financial crisis splits the path of meeting of this ratio into two stages. The first approach between the two values is due to both an increase in group S and a

steady or slight decrease in group B (due to the oncoming recession, much visible in figure 3). Group B behavior might be explained by a timid increase in profitability of big markets' firms with respect to small ones; group S appears more consistently rising in the half of the decade. We are going to deepen this aspect through firm-related indices. The second stage of convergence, the post-crisis one (2011-2013), comes from a similar movement of the ratio in the recovery period. The stability of group B PE ratio and the slow increase in the figure for "small" countries creates an again not striking but yet visible convergence. Since the two time series are close in trend, but yet allowing for a different extent of variation, the link between convergence and recession is rather foggy. Economic and behavioral implications may merge and not be distinguishable with the sole PE ratio observation. It is indeed hard to explain what the cause of such paths. The mentioned decrease in profitability by developed countries is a reasonable explanation; a more complex to investigate but yet valid answer would be an adjustment in risk aversion that, in some way, allowed for a quicker recovery for group S. Both real economic results and uncertainty perceptions contribute to form expectations on future. In the light of the observations on PE, we try here to interpret the behavior of risk premium, which is assumed to comprehensively account for investors' perceptions and real economy performances. What we are intended to do is a sort of top-down and bottom-up approach on expectations, in order to understand how risk aversion and RP behaved. The PE ratio will hopefully help us in interpreting the risk premium path; the economy and market data will contribute with the ground on which this parameter is based on.

The risk premium presented here is the within-country historic one, meaning the surplus (or deficit) of past earnings on risky assets over the return of the risk free rate. We will call it "state risk premium". It has been computed as the median value of the figures within each group on a quarterly basis. Since we are interested in using HRP as a benchmark, we decided to display it before the in depth examination of its components. We want indeed to observe the recent years' trend based on an ex-post observation, and see whether it mirrors what its drivers suggest. For this reason, we are using here an already elaborated RP measure, based on the classic definition of difference between returns of each country's stock market and a riskless (usually, the country government bonds). A study of its three parts, in an ex-post perspective as well, could provide us with farther reference

points for the factors analysis. Also, a preliminary look at all components of historic risk premium could contribute in creating a sort of “interpretational survivor bias” with respect to the behavior of RP. For these reasons and for the sake of our initial purpose, namely limit the focus on the influencing factors of RP, we will not follow this procedure. We prefer to outline here the general trains of risk compensation in accordance with what said on PE and then concentrate on a narrower scope analysis.

The RP data are here depicted from 2008 to 2013; the dates included have not been chose at will. They are instead dependent on the data disposal for most countries belonging to the groups. Before 2008, the estimate for each group would indeed have been computed on a too reduced sample, due to data availability. Note that the risk premia are here intended as including the non-regional companies, meaning firms listed in the countries at issue, but possibly operating in far economies or domiciled in foreign countries. This gives us an insight on the whole market, and lets us highlight the possible discrepancies between purely local PE and the more comprehensive RP.

The risk premium observation, from the latest crisis to our times, represents a path of similarity and convergence. The consistency with the price-earning ratio is outstanding, and strengthens what said about its post crisis scores. We coherently observe an increase in difference between the two in the nearest post-crisis period. Values at around 9% diverge notably, up to the first quarter of 2010, primarily for a hike in group B premium. The PE bar plot shows the very same path, including the decreasing and increasing trend for small and big respectively.

On the one hand, finding the same behavior in two different indicators for firm performances is encouraging in term of reliability of observations; on the other hand, we should not mistake the “expectation” element sustained by PE ratio and the ex- post records of risk premium. It might be correct, but probably simplistic to accept that the first index forecast the behavior of prices while the latter is simply the confirmation of it. Besides, this translates in the assumption that productivity is the main ingredient in the reward to risk measurement, which would be far too untimely at this point of the investigation.

A preliminary note is necessary before the examination of RP. The State risk premium presented here (SRP), being computed with specific data for each country, is subject to variations in the different growth and risk free rates. On one hand,

this better represents the within country reward for choosing a risky asset; on the other, comparisons between different countries (or groups) is prejudiced by the different riskless asset returns. A higher interest on bond is indeed a signal for country uncertainty; however it leads to a lower RP since we subtract a greater value from market returns. Indeed note that the convergence is expected on the other way round, namely with a decrease in emerging markets (group S) risk premium brought about by global integration in markets and economies. We are aware that the theory for emerging and developing countries suppose a higher RP for the former. However, once made clear the difficulties in treating this measure, we considered appropriate to mention the SRP as computed here. We are indeed confident the reader will correctly take into account the conceptual differences between definitions; moreover, this lets us analyze the actual State excess return of stocks. It will be one of our tasks to separate the meanings of RP, and understand whether the RP behavior and the two groups' roles are analogous to those of global emerging and developed countries, as PE suggests. Alternatively, the dynamics of risk premium could completely differ from the expected; in this case, a different relation between the two groups would exist. The cause could be financial, economic or behavioral; a study of RP drivers will then even better suits the scope, in comprehend how individuals set their expectations. If the dynamics result more complex than those suggested globally, a possible difference in the reflection on RP might arise.

For this reason, we have to keep in mind how the ex-post RP is computed here; individuals may require and expect a risk premium different from the calculated one, on the basis of its drivers. As already discussed, the two aspects do not need to coincide.

According to the data presented in figure 5, risk premium convergence is gradual but self-evident, and the understanding of what drives it as well as what caused the '08-'09 widening of the gap is key for our research. As happened for PE ratio, years of crisis brought an increase in compensation for bearing risk. It is indeed reasonable to assume that in time of uncertainty, risky assets need to pay more to attract buyers than what they would in bull markets. This generates the increase in RP for big markets. What is not explained by this reasoning is the drop of the green line in the very same period. This is even more surprising if we consider

that, after the first two years in figure 5, the two lines regain an almost parallel conduct.

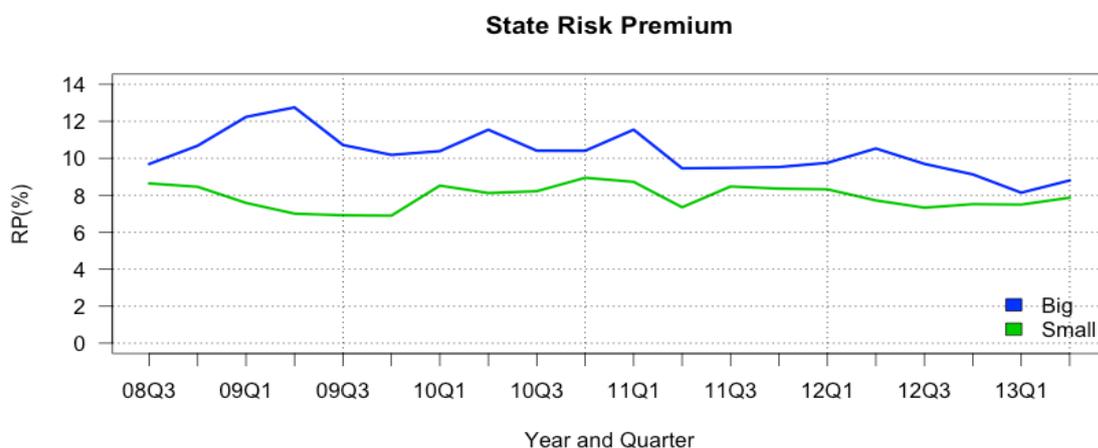


Figure 5³⁹

What so far observed seems suggesting a behavior of expectations and investment choices that, rationally or not, distinguishes two different scenarios for the two groups in time of crisis. In both figure 3 and 5, group S has an uptrend after the recession; it then resets to its former stability. Group B seems instead linked to more reactive changes in the same period: its values shift away from the pre-crises growth (in PE at least) and decreasing its ability to compensate for risk. Leaving to this page's note⁴⁰ further evidences in term of market results, what induced investors in differentiating their expectations between the two markets is not clear yet. Reconciling the proofs so far collected, we can suppose that the two markets essentially act as a benchmark and subordinate one according to the underlying economies. We can then imagine that, in the mind of investors, big markets benefit of a more reliable image in time of recession. The underlying economy does appear stronger; the other side of the coin is that a higher volume of market interactions and global integration makes them more easily involved in the financial crises. Eventually, the economic dimension is the prevailing one. It allows the regain of out-of-crisis performance, but does not fuel an extra growth. Small markets on the

³⁹ The data used in figure 5 have been elaborated by Bloomberg L.P. and are available in Bloomberg database;

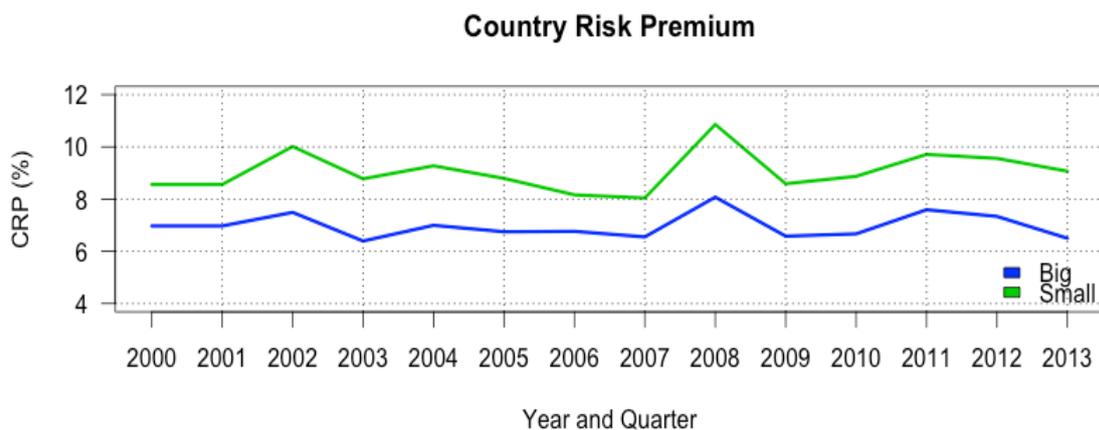
⁴⁰ A brief postscript at the end of this study provides further evidences on what said about risk premium behavior, in term of its computational elements: market growth and risk free rate.

other hand benefit from a slower but more consistent growth. They are expected to grow more in bull periods, but are much more feared when a downturn shows up. This explains the behavior of PE and, to some extent, the convergence in risk premium. RP is indeed dependent on growth (equation 2); a lower g in 2008 and 2009 would lower prices (according to equation 1) and actually reduce risk premium for the period.

The crux of the problem lies in the different opinion of the two groups by investors. Overall, such viewpoint can be explained through individuals' perception of growth, providing an additional clue toward a "subjective" trait of RP. The parameter g indeed includes expectations on the future. Our interest is in finding what appears to drive such expectations; this could not be done if not by first setting what are past reward to risk levels, resulting from historical data.

An alternative approach to risk premium that accounts for a higher risk level in smaller countries is the one suggested by Aswath Damodaran in its works on country risk premium (CRP)⁴¹. This procedure assumes that a country's rating (computed by rating agencies, the author actually uses the Moody's or S&P ratings) correctly estimates the sovereign bond risk. Computing the average CDS spread by rating, it was indeed possible to create a data set of risk level for each country; the U.S. and other top rated countries are the benchmark for this scale. The Aaa rating indeed guarantees country risk premium equal to zero. The pro of this approach, besides it assigns more risk to those countries who actually are perceived as less stable, is that it absorbs the effect of rating agencies over investors. If a country gets downgraded, this will have immediate effects over the CRP. However, the method refers to rating agencies and CDS for the evaluation, in a procedure not under our control.

⁴¹ http://people.stern.nyu.edu/adamodar/New_Home_Page/datafile/ctryprem.html and Damodaran A., *Equity Risk Premiums (ERP): Determinants, Estimation and Implications – The 2013 Edition*, New York University - Stern School of Business, March 23, 2013;

**Figure 6**

According to this approach, the convergence between risk premia only interests the first part of the time window. Adjustments in sovereign rating from the latest crises on have indeed been mostly against lower classes countries, while the top rate ones kept their leading role.

It looks like the financial crisis, bringing in fear, made rating agencies more careful in assigning higher classes to less developed or established states. Moreover, it is possible that, through the spreading of such vision, individual stockholders more than big investment companies, adjusted their investment choices towards safer markets. An interesting intuition is the turning point role of the financial crisis. In the analysis of drivers of risk premia, we will keep in mind the possibility of a general increase in risk aversion involved by the financial crisis. It indeed seems an interpretation that fits with the role of risk premium in its expectation term.

To this point, we highlighted the discrepancies in the market remuneration for risk and its measures. The two RP measurements are both ex-post but, in our view, focusing on two different issues: market returns and risk perception. Additionally, the PE ratio speaks for expectations on future convenience of equity investment and willingness to pay shareholders. It is now time to shift the focus to firms and economic description, to understand what motivates the records up to now. Keeping in the back of our minds what seen so far, we will look for reasons of discrepancy in expectations, investigating a collection of indices.

2.1 Methodology and Screening: Performance Indicators

In this first part of our analysis, we will introduce the variables we intend to observe, trying to infer which of those had greater impact in forming people's behavior on the market and driving investors' choices. The firms' variables at issue have been chosen to represent two aspects behind risk premium: a real economy and a market component. The first is described by performance indices and returns on operations: we want to compare the efficiency of companies in the two group, to see if the treatment by investors in equity markets is actually deserved in term of results. We want to have a clear look of the reasons for the different performance between advanced and small countries, and a motivation for it could lie in the inability of the latter to properly manage companies operating in their territory, making them value creating firms.

The analysis of productivity and performances allows a comparison between the two. This will make clear whether the difference between markets is fueled from an actual deficiency of the underlying real economy. The valuation needs to be aware of the size factor that separates the two, since not all figure are expressed in percentage terms.

Also, the market dimension must be interpreted in the light of their structural differences, to understand what can attract investors or make them hesitate. Furthermore, market data are subject to firms operation as well as agents' influence. A different perception of the market as a whole may indeed cause an alteration of prices due to the use of the market itself. The bid and ask process can influence prices in peculiar manners, according to the type of investors operating, transaction costs, capital concentration of the stock market, length of the investment horizon and so on.

Some strong discrepancies may hide a reason for instability that is not marked from previous mentioned categories of data. A social component, such as the evolution of local preferences in consumption or savings, may cause the investors' opinion to change. Such alteration may or may not be reasonable: for more closed countries, documented facts often meet common misperceptions, generating rule of thumbs.

This first step consists in an initial screening, in the sense that it is an attempt of delimiting the range of possible drivers of RP by watching indices' performances. An empirical study will help us later, in sustaining what observed.

To begin with, we check for a dependence of market results on the firm whose assets are traded. We study the behavior of the return on equity in the two groups; the ROE is a measure of profitability of a company. The PE ratio tends to express more directly the expected gain on shares: it answers a question on market prices. It is indeed used in identifying whether the current market price is above or below the expected value, allowing for gains in trade. This is clearly connected to the firm's ability to create value, but the approach expressed by the ROE better suits real economic performances since the market does not filter it (through prices). ROE states how much is gained from the remaining of the difference between assets and liability, namely the company's equity. Net earnings are divided by shareholder's equity; it is then expressed in percentage points. Easy to read, a higher return on equity hints at a better performing firm and, in the view of risk-devoted studies, a better ability to pay off the risky capital invested by shareholders.

In this latter perspective, such figure is an index shaping individuals' propensity to invest in a given market. However, it can be misleading in the case of structural company adjustments⁴²: ROE alone cannot provide full information on the company's state, without a careful look at the cash flow generating income.

⁴² An example for which ROE, still being a good estimator of productivity, needs some care if considered alone, is that of how net income is recorded. For big companies performing renewal operations, net income might be negatively affected by such expenses. A smaller net income lowers ROE, since the ratio is expressed as $\frac{Net\ Income}{Equity}$. In our study, we assume the sample large enough to overcome this problem;

Since we consider here the median values of firms in the two groups, it will work well in representing their results over time.

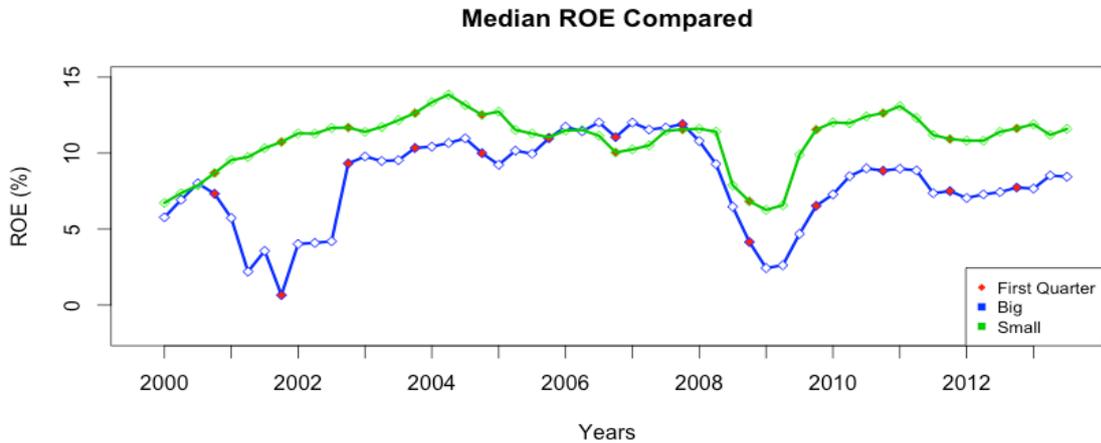


Figure 7

The ROE for the group of small market companies is regularly higher than the big market ones for almost all the time range considered. Before focusing on the positive results of group S, we should clear out the temporary 2007 decrease below the blue line. The extent of the lower performance is not large, but it is worth noting for its consistency with an underperformance in PE growth as well. A slowdown in ROE performance has been registered since 2004 for group S; giving a reason to such behavior with what seen so far is not easy and would likely end in unreliable considerations. However, as most emerging economies, it is possible that group S countries experienced a decrease in growth speed and a lower ROE, thus more in line with group B results. This would hint to a pre-crisis convergence in ROE as well, from the green line side. The process of global integration is indeed afoot from several years now, and we should recall that the two groups are not necessarily much different. Their status is not always that of developed and emerging countries, and this is a further signal for a more complex relation. Post-crisis figures however display a wider disparity. Continuing the observation of drivers, with particular reference to the macroeconomic activity of the country, will provide us with a better insight.

Overall, the ROE chart speaks an unambiguous story on the performances of the two groups of firms. The green line is only hit in the recent crisis period that interested whole Asia; the fall has not only been lower in percentage term and

absolute value, but also quicker and more powerful in recovering from it.

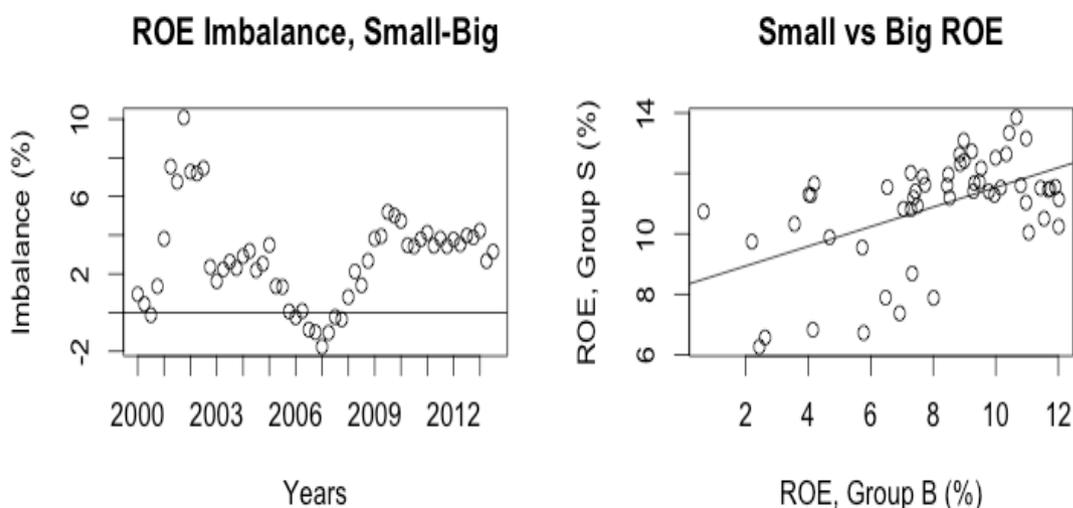


Figure 8

The imbalance between small and big markets (the ROE values of small countries minus that of big) gives us a measure of how better group S' firms performed according to this index. Besides the already mentioned years between 2006 and 2009, less developed countries managed better the recent recession. The correlation between the two scenarios is high, as shown by the regression line in the plot on the right of figure 7. There is positive correlation between the two; the general growth and development of Asian countries is indeed common to the two groups. As we could imagine, this makes hard to distinguish different trends among the considered countries.

In our sample however group S represents the “more emerging” group; this possibly translates in a higher company growth, since emerging countries' economies grow at a faster rate. Moreover, the notably high values in the imbalance for pre 2003 crisis admit two clarifications, only one of which is of interest for our research. It must be said that older data are liable of less trustworthiness, since based on a smaller sample due to data availability. Nonetheless, the resulting decrease in group B is too striking to be explained with bad selection only. We believe that, for the timing of the drop, it can be also attributed to dot.com bubble in U.S. markets. In addition, the low degree of financial involvement with European crisis and the higher dependence on U.S. stock outcomes lead us to a limited region of influence in Asia. Moreover, the

notable degree of financial integration in recent years, much greater than that of group S, makes group B countries more prone to shifts coming from developed U.S. markets⁴³. Eventually, an economy much more based on tertiary industry and with more established equity markets is likely to suffer more from financial crises, no matter how far. Such negative period reasonably hit more integrated countries only, given the greater extent of IT firms already established by that time in those countries.

This interpretation is useful with respect to the recent recession as well, with the due modification of smaller economies' peculiarities and integration level. It must be said that, due to the glitches in older data, the drop we see in figure 6 could more reasonably be a not so heavy, lower level of the blue line. Yet, what said so far comes useful in the 5 years later scenario. The more advanced countries underperform from 2008 on; this should help the reduction of risk premium for small markets, since they become more attractive to investors. It is indeed what happens until 2010: the State risk premium (figure 5) grows for group B and lowers for group S. However, the constant supremacy of ROE does not pay off in term of SRP in future years. Instead of continuing the downward swing as time passes, group S CRP increases. Nonetheless, SRP converges from 2010 on: stronger ROE increases growth and SRP goes up with respect to group B. The real economy underlying listed firms is thus one of the reasons for the risk premium level, but not the sole driver. Interestingly, State risk premium responds better to the actual economy in period of crisis; it is lead by some external forces when markets are bull or bullish. Such forces can be reconciled with market or behavioral facts; they are however unlikely related to macroeconomic shifts since we expect these to highly match real economy firm's indices.

Another index of interest to investors, since it describes how well companies manage their capital investment, is the return on invested capital (ROIC). Despite not providing the sources of gain, ROIC (here as $\frac{\text{Net Operating Profit}}{\text{Average Invested Capital}}$) represent the goodness of capital management in the two groups. This is of course dependent on the possibilities that the economic environment presents. Overall, the two

⁴³ Goldstein M., Xie D., *The Impact of the Financial Crisis on Emerging markets*, Federal Reserve Bank of San Francisco Asia Economic Policy Conference, October 18-20 2009, page 41;

figures are stable throughout the whole period. The one for group S is performing always better than its counterpart.

Even though this seems pointing at a much better business management in small markets countries, the outlook is only partial. Recall that our study is indeed on listed companies only: this excludes all the non-listed firms in the country, which can display a much less positive outlook. We should thus be careful in use these evidences over investors' perceptions, since they may also rely on information not in these data. Still, this has consequences on the State risk premium analysis only; the analysis of our basket of firms is not influenced by the lack of smaller firms. We should thus include the degree of insecurity linked to unrecorded economic activities under the field of individuals' own perceptions of macroeconomic generalities.

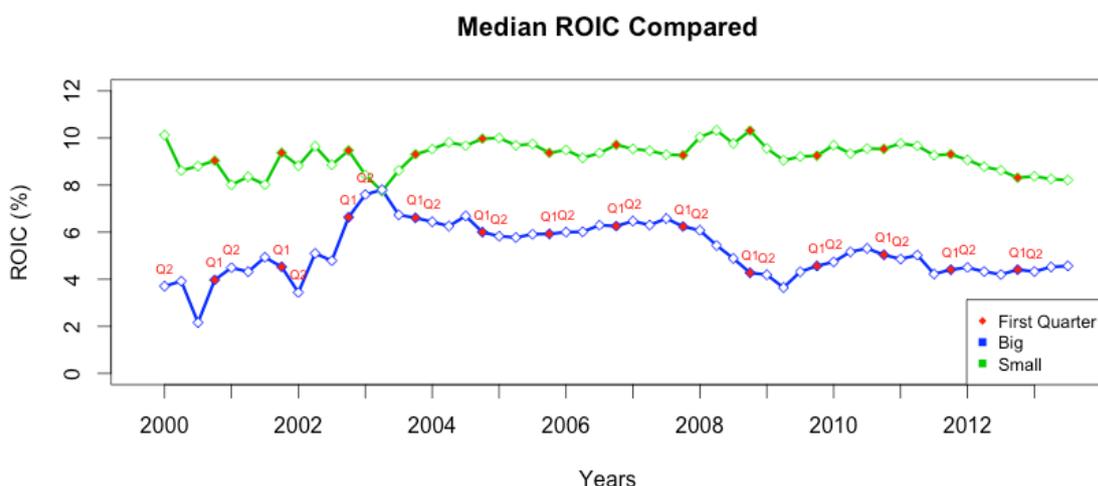


Figure 9

Continuing the analysis of available data, a slight drop from 2008 on is present in this index as well, but only for big countries. It seems that the real economy of more advanced countries has been to a greater extent touched by the recent financial crisis, for the already discussed reasons. Despite having further clues on the behavior of the two groups, it is hard to make them agree with risk premium and PE convergence. The only information available actually impacting risk perception is the same-period, between-firms volatility. For a given quarter, group S displays a higher inequality of recorded data than group B; this is consistent throughout the entire period. Even if it could be interpreted as a higher disparity in investing capabilities between countries belonging to the same group, it is more

likely a signal for different firms ability to manage their capital⁴⁴. The disparities existing inside minor countries' firms are indeed one of the barriers to global integration and general lower trust.

The real economy indicators are so far in favor of the group of small markets, which is a reason for preferring group S to B in investments for all the period studied. They are indeed steadier in business results when crisis comes and faster growing. However, as we have seen, the risk premia diverges during crisis. This seems justified by market's elaboration of uncertainty, if such trait were based on indices like those we commented above. In this way, group B stocks pay more since they need to compensate a higher vulnerability to recession. Trying to apply a rational investor's logic to the assessment of the two markets, the solidity of group S throughout the crisis and its growth would encourage investment in this market. Since it is perceived as more secure, RRP should decrease, while the expected one might remain high (more closely connected to market performances than to environmental uncertainties) in accordance with the high degree of growth and the lowering risk free rate (the latter, justified by a stable economy).

Dealing with the State RP described above, the level of consistency is impressive, if we link firm's performances to growth. State RP should indeed decrease with productivity, but that is not what happens, flowing into convergence. There is however no coherence with the perception of risk and the RP computed against the U.S. . The 2008 CRP is indeed increasing for both groups, while those years' ROIC suggests a penalization of big countries only. It must be the case that the increase in country risk premium in both groups is not due to a deficiency in capital investments. It is however in strong relation with the return on equity figure; even within the field of real economic indicators, the expression of reward for risk-bearing choices is not unambiguous.

As third and last measure of company performances, we introduce the earnings before interest, taxes, depreciation and amortization. Since it is not a ratio, such measure of earnings should show firms' direct ability to run its operations and create (hopefully positive) cash flow, summarizing it with no numeraire. The

⁴⁴ the observation is consistent with disparities in capitalization, presented later on. In the group of "smaller" countries, few big players are likely to have much higher performances and management abilities than the actual median. For completeness, ROIC values are presented in two separate charts at the end of this work;

measure expresses then the net gain of a firm: this helps us in treating different countries, with differences in accounting and taxation⁴⁵. The EBITDA allows a transparent observation of the final results of a business. Its value is indeed computed before the application of standards and norms that may lead to the misrepresentation of the final value. Note however that EBITDA displays large discrepancy between firms according to the number of assets and financial loans. Also, financial operating firms could not be correctly represented since their interest expenses is actually a part of its revenues. This may translate in a biased comparison if one of the two groups (most likely, group B according to a greater financial development) has more financial firms in it. For these reasons, we compare here the per quarter EBITDA growth in the two groups. We want to check for a different slowdown in firms result despite the value-creating management abilities, according to ROE and ROIC.

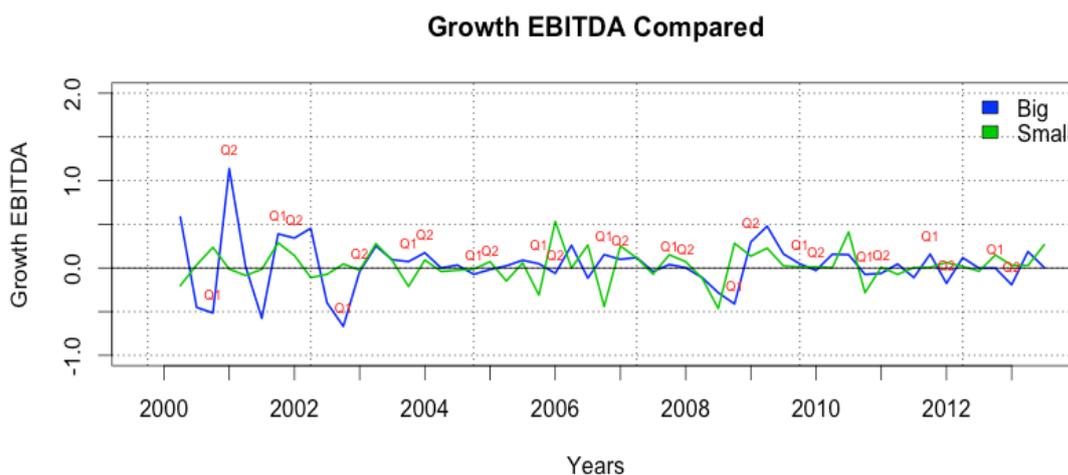


Figure 10

Remarkably, for growth in EBITDA is not easy to find a better performer between the two groups. One evidence of interest is the width of the oscillation in the two lines. The blue one has abnormal values in the very first portion of the chart. We know that past values are biased by a smaller sample, especially for group B. However its growth sets with few variations over the following period. Big countries experience a predictable decrease and consequent recovery in the period of crisis, assuming values close to those of small ones. The median growth for group

⁴⁵ EBITDA is here an already refined data calculated as operating income plus interest expense, depreciatidon and amortization;

B is 3,6% excluding the first three years, its mean is almost coincident. On the other hand, we highlight here in group S a behavior consistent with that of emerging countries in the worldwide scenario: an higher degree of instability. EBITDA growth is a much more spiky line, if we consider the green color only. Despite the mean value at the level of group B, its median is much lower, suggesting the influence of frequent positive and (more often or more strongly) negative bumps. Indeed the group in blue, excluding the first years, has a standard deviation of 15% against the almost 20% of the group in green. On the whole, this is the only productivity index displaying the peculiar uncertainty for the smaller country group. The variability of EBITDA growth throughout the whole time window is a signal for instability, a good reason to be scared to invest in such firms. There seems to be much less link with the business cycle than big country growth has. While the former have plenty of ups and downs over 0, the latter group is mostly positive, out of recession years.

The productivity figures are collectively in favor of a similar treatment of the two groups; there is indeed no marked reason to assume a more relevant risk for one of the two groups. Big countries appear to be more involved in recent recession, and have lower upswing strength. Nonetheless, the overall situation is different if looked through the lens of uncertainty. What is evident in the growth path for EBITDA is indeed present, but less evident, in ROIC and more notably in ROE figures pictured with a different scale⁴⁶. Considering investors as risk averse implies, as discussed at the beginning of this work, a will for decreased uncertainty and higher predictability. The two graphs, despite admitting that group B has more positive values, do not speak in favor of good behavior for the very same group. While we found relative ease in explaining the blue lines trends, the green lines often left doubts on the reason of their behavior. This translates in uncertainty to the eyes of investors, since the knowledge of what happens in the economy (in terms of EBITDA g) does not always meet what we know. Being it for a lack of knowledge in smaller states facts or an irrational behavior of firms less integrated in the global environment (at least financially), the results in a less anticipated behavior. Such unpredictability negatively affects the risk perception of

⁴⁶ figures 7 and 9 appear relatively smooth, but this is partly due to the chart's limits. Increasing the focus unveil several discontinuity in the path, with a degree of instability for both groups;

a country and its financial assets. The result might eventually punish firms that actually over-perform those in bigger market countries. This is somewhat the logic behind the risk premium measure proposed by Damodaran, where negative but consistent performances are, within boundaries, preferred to uncertainty. However, going back to the general portrait of risk drivers, it would be of interest to get a glimpse to the expectation of actors in the economy, namely firms operating in it. Their perception of risk is indeed benchmarked on daily operations, quickly adapting to the shifts in demand, supply and costs within their industry.

On the matter of risk perception and faith in the future while keeping a foot on the relation between firms' operations and business cycle, we choose to observe how much companies themselves fuel their own growth. The underlying idea is that the belief on a growing future persuades firms in betting more on their operations. Thus the firms' equity reinvestment rate serves as a proxy for expectations on the near future. What managers anticipate for their businesses should correspond at least in part to people's expectations, or possibly influence it.

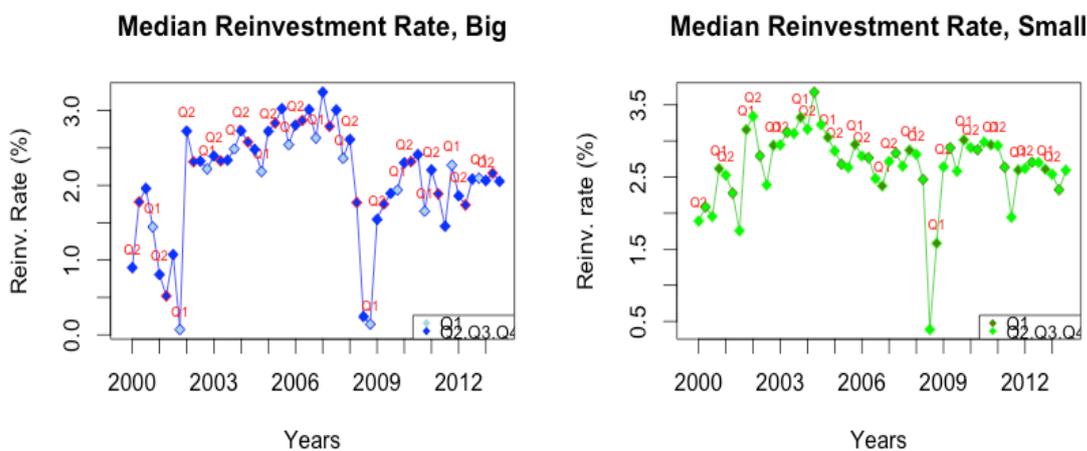


Figure 11

The reinvestment rate path suggests the very same scenario depicted so far, and rationally why it should not? Since all performance indicators are steady or increasing, especially for group S, good reasons exist for keep investing in the activity. The 2008 recession slows down both groups; moreover, more advanced countries scores lower rate of reinvestment at the beginning of our analysis. We already discussed the double source of outliers for the beginning of the time

window considered⁴⁷. Focusing on the most recent crisis, there appear to be no reason for a discrepancy in uncertainty. Firms reinvest at a similar rate, slightly higher for group S, but constant for both in the post-crisis period. After the recent drop, group B firms lower their willingness to invest, while less advanced countries resets to pre-crisis level. The two figures are easily comparable since are both expressed in percentage terms. The graph on the right has generally higher values: the willingness to reinvest is an additional symptom of and fuel for a higher growth. All in all, the difference between the two is not striking, not even in the hardest times. The interest insight provided by this index is that it is a cross-industry ratio. Our sample indeed comprehends firms operating in different sectors. The resulting trend is thus supposedly inclusive of different economic aspects. The two variables have similar deviation from the mean; however, the reinvestment rate in small markets crumbles more and has a quicker recovery. The translation in terms of risk perception suggest a higher degree of fear during harsh times, and a greater trust in bull markets periods. This is consistent with what Damodaran observes in its global study, but not backed by already examined measures of productivity, that depict a more solid, undifferentiated scenario. The weaker governmental stability and development of financial structure may however bias the investor's beliefs over these markets. A greater attention to the signals for instability may indeed increase risk aversion in economic crisis. This would cause an increase in the risk premium required to attract buyers of stocks; moreover, stemming from this, equity markets could sense it on price levels. It then arises the distinction between the two group, with one market known to have, for both behavioral and (only partial) economic reasons, higher uptrend in bull markets and lower drop in bear markets. Group S can hence be a target for agents able to ride on this peculiarity.

A measure functioning as bridge between the real economy and the exchange market world is that of free cash flow to equity. It accounts for the quantity of equity freed for shareholders, thus serving as a representation for dividends. It is

⁴⁷ The focus of our research is on the risk perception and risk premium in the latest crisis. However, a farther perspective helps us in differentiating between the two groups. For this reason, despite the lower data availability, we will keep considering the beginning of the decade in our graphs, if not completely inconvenient.

however computed from balance sheet voices⁴⁸. Since it is not expressed in percentage terms, we will use the same expedient applied to EBITDA, namely the growth rate between quarters. This helps us in evaluating the extent of shifts in two variables with different absolute values.

The two charts show a clear seasonality and the first ten to twelve months (three years) of the left chart are not reliable due to data availability: for this reason, the reported growth is 0.

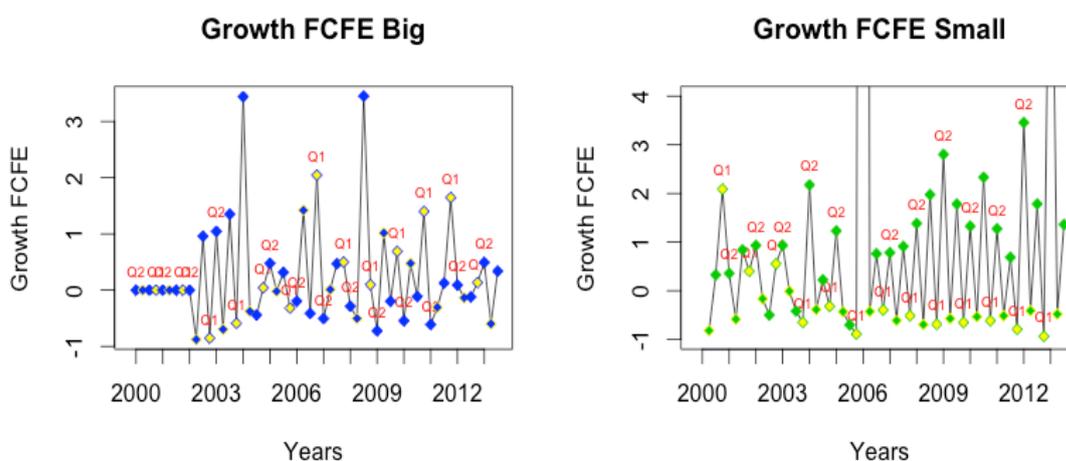


Figure 12

Besides the yearly seasonality of data, which can be explained by the fact that yearly accounting data are split in 4 groups to obtain a per-quarter analysis, FCFE raises and drops for group B are more restricted in range. The standard deviation for group S is actually higher, even excluding the outlying figures. The chart indeed cuts out some values that are far above the average growth: they are mostly due to the seasonality of the data. The growth between quarters is indeed dependent on the computation of the quarterly FCFE. To better catch the path of this dividend proxy, we should try to look only at the upper peak for each year.

Indeed, despite the left figure seems more spiky, group B stays much closer to steadiness (growth=0), with the exception of few peaks. As opposite, the right chart

⁴⁸ The underlying FCFE is computed by our data provider as the sum of cash flows from operations plus capital expenditure, disposal of fixed assets increase/decrease st borrowings, net change in lt debt (cashflow) and increase preferred stock minus total cash preferred dividends);

has more variation around stability, with a greater standard deviation⁴⁹. Despite we can say that group S reveals larger shift in FCFTE, the figure itself once again does not provide a strong evidence for a higher instability of the underlying countries. We can then state that, despite we found some clues of a higher instability in the firms' measures presented so far, there is no basis for a distinction between the two groups. With a different scale, consistent with the dimensions of the economies in the groups, they are both performing positively throughout the crisis in term of real operations. Moreover, there is no evidence (if not a minor one) of a more chaotic scenario for one of the two. We would indeed expect smaller market to suffer of greater drops in recession, or of wider shifts due to the general instability of the time. Firms measures of productivity and efficiency are thus poor in explaining the behavior of risk and the fact that, in a global framework, less developed countries are required to pay higher premiums to investors. The figures commented so far are also modest factors in the understanding of the ex-post risk premia presented above. Once accepted the higher SRP for group B, we do not see better performances in smaller markets, able to decrease its premium neither the opposite for big ones. We rather see a consistency in the RP computed by Damodaran with respect to the U.S. market. However, in this framework evidences for convergence are weak, suggesting the two groups selected are only partially representative of two distinct poles. They appear performing in real economy and region RP as substitute markets. Nevertheless, the perceptions of investors could differ from what data say. The study of some financial markets indicators will be useful to understand what level of ERP and RRP is more realistically associated to the two groups. It might be the case that, under the light of market peculiarities, the rating-based procedure for computing risk premium is better consistent with our case. Alternatively, a market driven force, depending on market or investors' singularities, may support an higher reward to risk for group B as the State risk premium suggests.

⁴⁹ The comparison between standard deviations of the two groups is computed excluding the first three years, in order to delete the first years' stability in group B data;

2.2 Methodology and Screening: Market Indicators

We begin the description of the two indices with the most obvious figure available: the market closing price. We present in figure 12 the median prices of all firms taking part to the two groups. Despite the median value is chosen in order to delete the influence of few great observations in the sample, group B has blatantly higher prices. Prices are expressed in U.S. Dollars, so the real exchange rate also plays a role in the absolute value. The last decade saw a nominal (and real) effective exchange rate increase against the weighted average of foreign currencies⁵⁰. This is recognized for all the East Asia and Pacific region, keeping reliable the comparison between the two charts.

Group B, consistently with its greater financial development, sees an increase in prices much smoother than group S. The blue line is indeed almost free of bumps from 2003 on. The left part of the graph does not display non-plausible data; the closing price is one of the most available figures: this held the first years still meaningful despite the smaller sample. We recognize the 2000 bubble effects on both charts, even if the blue line describes it much more clearly.

Also, group B has a much greater pre-crisis growth in prices than its counterpart. Small countries, on the other hand, reach the 2007 peak through a much more troubled (and gradual) path. There are much more adjustment shifts in the green line, but this does not make the positive trend continue during recession as well. The crisis hit the two groups similarly in percentage terms: the decrease from 2007 peak to 2009 minimum is between 53% and 59% for small and big respectively.

⁵⁰ World Bank DataBank at <http://data.worldbank.org/indicator/PX.REX.REER> ;

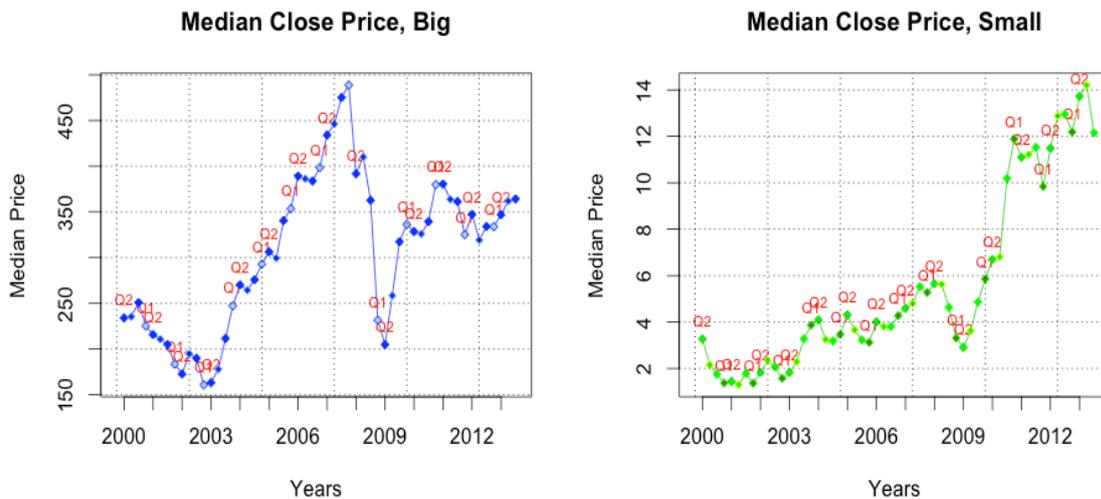


Figure 13

The post-crisis reaction does not only resemble what we saw for PE ratio and other measures so far: market prices exacerbate the ability of small countries to regain the pre-crisis growth. We see that, while the blue line sets steady at around 350\$, the median price keeps growing terrifically in the right chart. This aspect melts with the governmental issues of public spending and savings, since there are evidences of policies influencing real effective exchange rate⁵¹. As for the nominal appreciation, we can accept that group S experienced a stronger development in governmental ability when dealing with exchange rates. Nonetheless, it is not enough to explain the difference in post-crisis price growth. A further component can be found in the essence of the two markets: group B is composed by countries that earlier experienced a boom in their economy. The recession may then have acted as a stop signal, forcing growth to more stable levels. On the other hand, group S is by definition open to a development level it has not yet reached. For them, the post-crisis is a hit in the alignment with the surrounding region integration. This would explain the number of adjustments and the hike. To see the role of market operators in this framework, we decided to observe the trading

⁵¹ Badia M., Segura-Ubierno A., *Real Exchange Rate Appreciation in Emerging Markets: Can Fiscal Policy Help?*, IMF Working Papers, January 2014; the issue of exchange rate also affects investors' preferences over the two groups of markets. We adress this topic to the end of the present work;

volumes throughout recession. Given the path of prices, the volume traded should highlight the trust of individuals in the two markets. We indeed expect that the crisis freeze the equity markets, increasing risk aversion and driving individuals toward more secure choices.

What **turnover** levels show is perfectly fitting the price levels charts⁵². Speaking in terms of correlation, the relation between the two set of prices and turnovers is of interest for our study:

	Close Price Big	Close Price Small
Turnover Big	0.867602	0.6377722
Turnover Small	0.5325894	0.6680156

As data demonstrate, the within group correlation is non-negligible; the value for big countries allows for a dependence between the two variable. What is worth keeping from this data is the differentiation that group B makes between its own turnover level and that of group S. Such distinction is not valid for its counterpart, suggesting that prices in small-country markets are linked to their own turnover as well as neighbor markets. This is not surprising, considering the size of the two; however, putting it in the perspective of risk perception unveils some curious observations. First of all, if we expect investors to substitute between the two markets in time of recession, when group B is considered safer for whatsoever reason, in this period an increase in turnover for group B has negative impact on group S prices. Moreover, the difference in turnover correlation point at a group S which is more subject to transversal influences. While big markets rely much more on their on fluctuations to determine prices, smaller ones are influenced by themselves and the surrounding. This can easily be read as a signal for instability, since the contributing factors are identified in a wider region (geographically speaking, but also in term of market influence). We analyze both these aspects in detail in the next chapter with econometric linear regressions. Eventually, the turnover jumps in group S unveil some peculiar trading choices by investors. There is not a secure trend, and months of strong market activity are followed by periods of restrained trading. The difference in stability between the two groups is most

⁵² Please consider the support of the chart presented at the end of this work for a visual perception of trends and sleekness of path;

evident here, even if it could be lead by market-related characteristics, hard to individually investigate for more countries at a time. Nonetheless, the features of such markets as a whole allow considering a possible speculative use. If it were so, the study of turnover effect on market prices would explain the risk premium generated by stock exchange, even in disjunction with real economy results. To sustain what just said and briefly introduce the relation between prices and all variables at issue, we performed two regressions of median close prices on all variables available, regardless of the group of belonging. The results are interesting and worth commenting, even if we will narrow the focus on variables' importance in the next chapter. The broad reason beyond median prices' regression is that of testing all variables and actually looking for a peculiar behavior of turnover. Moreover, this allows us to have a glimpse to cross-group influences. The median prices for group B are mostly defined through inside-group variables. Beside these, group S' turnover is the only cross-contributor in the regression (meaning an explanatory variable coming from the opposite group).

On the other hand, group S median prices strongly and mostly rely on the other group's variables for their determination in the OLS model. We can here draw two important evidences: first of all, group B countries are mirrored by markets in a more individual way, less influenced by the surrounding; we expect investors to create their expectations in this way as well. Moreover, while group B prices are in direct relation with its own turnover and inversely related to group S' one, small median prices are only explained by the opposite group's trading measure, and in a positive relation. The subject will be deepened later on; however we start to grasp the disparity between the two exchange markets in term of self-definition. We highlight here an evidence for a dual relation between the two groups, which is not of parity in a stock exchange dimension⁵³.

The third indicator for the markets at issue is that of capitalization. We used total capitalization as discriminant between the two groups of countries. Here, we want to understand which of the two groups has higher concentration of capital and if, throughout the years, the two diverged or met according to this characteristic.

The analysis of the ninetieth quantile tells us the value below which ninety percent

⁵³ such evidence is provided by prices regressions on all available variables. The results are rather foggy and not strongly statistically, but still point in the direction of what observed so far. More narrow-scoped analysis will help us further in this topic;

of the observations are found. For both groups, the 90th quantile rises up to around 0,015 in 2009, and then decreases after the recession, in the surrounding of 0,011. The pre-crisis increase in this threshold indicates that most companies are gaining in capital shares, decreasing the level of concentration of the whole market. The process is much more chaotic for group B, which also displays slightly higher values⁵⁴. Such values should be interpreted as a lower market concentration of capital for this group; moreover, the disordered path might be an indication of a more developed market, where the rise of new firms gaining a big slice of the market is more frequent than in smaller stock exchanges. Eventually, both 90th quantile thresholds decline in recent times, suggesting a more and more even distribution of capitalization among listed firms. This path is consistent with what expected from a recession period. Nonetheless, the greater and less ordered variations for group B hint at a less stabilized market in terms of capitalization. We can assume a more competitive scenario, where big players exist but are not well established as for group S. As a consequence, their “supremacy” is threatened by more expanding firms. Smaller markets are often subject to few great players, with a more notable margin with less capitalized participants. The same conclusion can be derived analyzing how much capitalization is in the hand of the top 10 capitalized firms in the market.

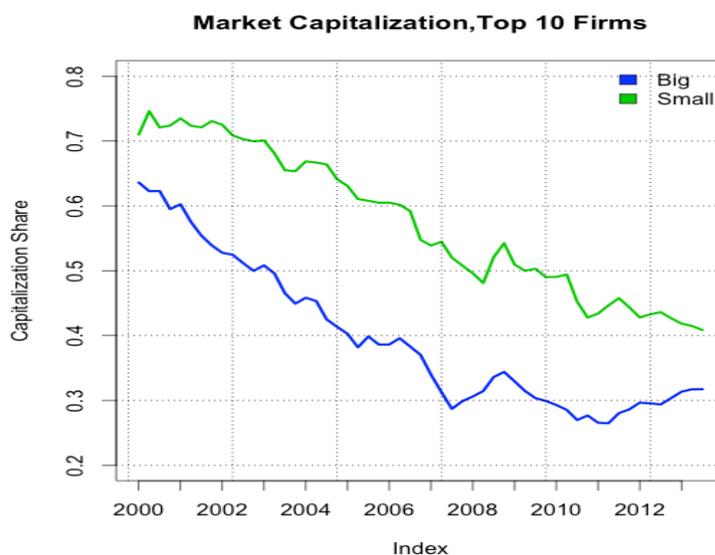


Figure 14

⁵⁴ For completeness, scatter plots are available at the end of this work;

The decreasing trend¹ indicates the general decreasing level of market concentration, even if the green line is constantly above the blue one, we see a degree of convergence from the 2008 crisis on. We cannot make inference from this observation alone, but this last clue seems in accordance with the other indices, on last 5 years. It would not be senseless to suppose that the rising integration level expanded to stock markets as well. If in the beginning of the decade, smaller markets where to a larger extent composed by few big firms operating in it, the increase in number of participants, and the rise of some of them, had the top 10 firms' capitalization decreasing. On the other hand, more notably for what concerns group B but evident in group S as well, the financial crisis functioned as a natural selector. The immediate after crisis reaction is indeed the continuation of the former trend. However, from 2010 on, a rise in market capitalization (or a slowdown of the decrease in the green line) is visible. Firms who better reacted to the economy drawdown had the chance to gain in capital share, while weaker ones opted for a lower profile, going out of the market. There is indeed evidence of a decrease in the number of listed firms in the years immediately after the recession⁵⁵. It is likely that firms leaving the market are those that get hardly hit by the economic distress, with new, smaller ones taking their places. A confirmation of this in real performance terms is provided by the firms' ROE standard deviation within the same quarter. The within-sample standard deviation increases notably in the years of recession for both groups; it subsequently decreases again to normal levels. Similarly to capitalization, the crisis possibly made evident the discrepancy between good and bad performing business. The cut in listed companies is again a sort of natural selector for both big and small countries. Reinvestment rate, on the other hand, applies the opposite reasoning. Within-firms standard deviation decreases during crisis if compared to the previous period, since expectations on the future are shaped on the new economic environment. The degree of agreement increases and the percentage to reinvest becomes more modest for everyone and, on the whole, closer to each other values⁵⁶.

⁵⁵ <http://data.worldbank.org/indicator/CM.MKT.LDOM.NO>;

⁵⁶ Despite this appears true for both groups, standard deviation within less advanced countries is typically higher. This is not surprising, according to the group peculiarities and what seen so far;

2.3 Methodology and Screening: Macroeconomic Indicators

Before summing up on the overall trends of the two groups and trying to grasp what are the main discrepancies, in order to test them with more solid methods, we rapidly present here the macroeconomic traits for the two groups. We will present here the portrait of yearly data only. This should not result in a lack of completeness since we are interested in an outlook of the economy in the last decade. Macroeconomic indices are usually slower in their shifts with respect to market or performance measures; moreover our data providers here⁵⁷ present yearly figures only. Transforming them into quarterly observations would be helpless and not necessary. To begin with, we start discussing the gross domestic product for the two groups. In order to have compatible figures and not discriminate according to size, we will use **GDP growth** expressed in annual percentage terms. The distinction between the two groups is on hand, but with some notable exceptions. Whilst the majority of countries classified as “small” in our work have a greater GDP annual growth, the most advance ones experience an after-crisis slowdown (India, Japan). However, China represents a notable exception: despite accusing the 2008 recession, its GDP growth quickly resets to the values established in the middle of the decade, at around +7.8%. On the other hand, Fiji Islands keep its value constant throughout the whole period, suffering the recession but not gaining strength after it.

The traits in GDP terms are generally those of emerging countries for group S and developed ones for group B; the distinction is always net, save for the already mentioned examples. As a matter of fact, this is not the rule under which countries have been divided, thus they should not follow it closely. Still, that’s what to some extent we expect to find, and actually do. This allows us to partially confront the Asian case at issue with what suggested in global terms, meaning the convergence of risk premium between developed and emerging countries. We will elaborate on this topic in the conclusions of the chapter. Nonetheless, linked to the issue of emerging countries are data on **foreign direct investment**. FDI is defined as “*the net inflows of investment to acquire a lasting management interest (10*

⁵⁷ Which are mostly citing the World Bank if not directly from the World Bank DataBank at <http://data.worldbank.org/region/EAP>;

*percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments*⁵⁸. The flow can obviously be both in and outward. With respect to the amount received, in percentage of GDP, the scenario is the same of GDP growth. There appear to be a more “emergent” treatment for group S, that attracts much more foreign investments. The usual exception, despite the high GDP absolute value, is China with 4% of its GDP in FDI. Overall, the emerging distinction is that of GDP growth; the result on investors’ perception of the underlying countries is that of the two poles of emerging and developed. Interestingly, such dualism is reflected only on some of the indicators analyzed. Smaller markets attract greater investment flows according to the expectancy of higher growth.

For what concerns the same flow in the opposite direction, the number of investments from each of our countries to a foreign one is not notably high. If compared to the U.S. or Euro area, the values are lower, and the same stands with respect to the whole world aggregate figure⁵⁹. Among generally lower values, it is harder to point out a relevant distinction between the two groups; however group B countries are investing slightly more in foreign ones. The recent recession had a negative impact on this figure mostly for the big group; still post-crisis adjustments (or, to better say, cuts) are absent. Knowing that FDI inflow has been visibly hit by the recession, we assume that such investments were coming from countries outside the Asian region. Alternatively, the decrease in FDI can be explained with the gain in stability of the target country. When less advanced countries align to developed ones, the possible gain from investing in it reduces since the advantage of the “emergent” country has already be exploited.

A decrease in foreign investments can thus hint at a development in the country and its economy, converging to advanced ones and requiring lower premia. Besides the considerations on the emerging or developed status within the East Asia and Pacific region, of which FDI is an indicator, there also are consequences on global integration.

⁵⁸ World Bank definition at <http://data.worldbank.org/indicator/BM.KLT.DINV.GD.ZS>;

⁵⁹ FDI outflow as the weighted average of countries;

As a recent study suggests, FDI influence the production, financial and networking sectors⁶⁰. The financial crisis permeated Asian markets in a direct and indirect way, through already integrated financial systems and FDI. The first are by definition more common in group B, and generate a more “standard” contagion effect. The multinational companies entering group S countries face a less developed financial framework; the role of FDI in spreading the effects of crisis is much more multifaceted and depends on the sector of operations⁶¹. Nonetheless, FDI has positive effects on growth: it is argued that, for emerging countries, investors compensate the lack of knowledge and networks in a foreign country with an increased efficiency. In time, the external agent gains connection with the firm’s territory, eventually filling the gap and boosting country’s growth⁶². Thus FDI, besides increasing the growth performances of the countries at issue, consent foreign companies and institution to penetrate the market, and increase trust in the countries involved, with possibly positive influence on investors’ beliefs.

A similar macroeconomic measure that can account for the ability to bring foreign risk inside a country (and viceversa) is the amount of **external general debt stock**. The latest financial crisis diffused widely through risky assets and debt holdings, and the integration of the financial system has a sure claim on it. We evidence a decline in external debt from the beginning of the decade on, that only stops and stabilizes in 2009. If on the one hand this is evident in data for all countries at issue, the same is not true in particular for government debt. The IMF forum explains in one recent article how, among emerging countries, Asia has two much different scenarios. Big countries such as India and China jealously hold their debt inside their boundaries, either in bank or non-bank domestic funds. On the other hand, less developed countries such as Thailand, Indonesia or Philippines have an uneven share of its debt held by foreign agents⁶³. If their degree of financial integration might have limited the impact of foreign markets shifts, the

⁶⁰ Alfaro L., Chen M., *Surviving the Global Financial Crisis: Foreign Direct Investment and Establishment Performance*, Harvard Business School, Working Paper 10-110, June 2010;

⁶¹ We offer a brief clarification on risk spreading through FDI in the last section of this work;

⁶² Borensztein E., De Gregorio J., Lee J-W., *How Does Foreign Direct Investment Affect Economic Growth?*, Journal of International Economics 45 (1998), 115-135, Accepted on 20 May 1997;

⁶³ <http://blog-imfdirect.imf.org/2014/03/05/the-trillion-dollar-question-who-owns-emerging-market-government-debt/> ;

sovereign debt holdings open a different door. This has consequences on risk perception and vulnerability as well as risk premium. If an already developed country can be considered up to the challenge of limiting foreign debt's negative economic effect through regulations, the same is not true for less advanced ones (or perceived as such). The two act in opposite sense: lower market integration is in favor of group S stability, while foreign debt undermines it. The first fact seems to be more easily accounted by the non-expert investor, that bases her choice on a less deep knowledge of the economic environment. This type of market agents are indeed more probably aware of the level of a specific market's integration rather than the distribution of a country's debt in domestic and foreign hands. Market integration can indeed be sensed by everyday news, through the number of multinational listed in such market, new listed ones, the size of the market, etc.

These comments should contribute in creating a correct perception of the contagion risk, thus requiring to more integrated market a higher premium for risk in recession. However, a component of balance is given by the trust in supervision activities, which should be superior where needed the most (where market integration is high). This is reasonably the case for group B countries which structure is, by definition and according to the criterion used in this work, more advanced. It is indeed likely that group B financial markets' safety measures are perceived as more efficient than the managing of external debt by group S countries. This leaves the latter as overall more dangerous from a macroeconomic perspective.

Going back to the economic field and leaving considerations on market investors' perception to the end of this work, we examine here differences in the pivotal indicators for a country's health. First of all, the **trade balance** of goods and services (exports minus imports), which is positive for most countries in our study, does not support anyone of the two groups. There is not a size effect, with bigger countries exporting more, when this figure is computed in percentage of GDP (China and India have positive and negative trade balance respectively). Overall, all countries experience the same trend in their balance: they all felt the effect of recession; nonetheless, group S countries appear more hardly hit in 2009 and once again more hotly regaining strength in the following years than group B countries do. This is regardless of the trade balance scores that differ from country to country but are not more positive or negative according to the group. We should thus

conclude that the level of financial development, measured through market capitalization, does not reflect on economic results in term of international trades. There are in fact no clues on the type of goods produced, even if the typology of industries varies notably. Group B countries rely much more in manufactured exports, while services is the main sector for internal production. On this topic, we should consider the increase in inside consumption brought about by globalization. The greater integration of less developed countries (meaning both groups' ones) lead to higher living standards, requiring higher consumption. This easily reflects on country-oriented industries' chance for growth; even if this may not return on the trade balance, it surely is a notable component in national progress. However, in order to support such belief, we need to check measures of consumption that actually address at an improvement in life conditions. One distinction between the two groups is visible in the **price level for household consumption**. Before directly observing inflation, through the common consumer price index, we though it would have been useful to understand how the typical basket of household consumption changed in price level. This does not only include inflation, but more notably accounts for the development of society consumption. The countries at issue have all been experiencing (or partially still are) a high disparity in income distribution. The globalization phenomenon helped the spreading of higher life standard, even in remote regions. This increases the average household needs and the price level for household expenses index, regardless of the two groups we created. Price level for household consumption is indeed notably higher for Japan, coherently with its role in the global environment, being the most developed of the countries at issue. Nonetheless, other nations display not far features, and with no relevant division. Consumption has also been a target of most fiscal and monetary policies; however, income inequality is still high. Despite it is hard to find reliable figures for all countries, according to OECD the Gini coefficient (measure for inequality), did not improve or even get worse in time⁶⁴. Eventually, we see an increase in household expenses due to cultural integration and a push on the demand side, also sustained by the governments; nonetheless, such fact leans toward a smaller group of people. The issue of equality is indeed of great interest

⁶⁴ Asian Development Bank, *Asian Development Outlook 2012 Update*, ADB, 2012, pages 55-57; Asian Development Bank, Zveglich J. E. Jr., *Asian Development Outlook 2012, Confronting Rising Inequality in Asia*, ADB, OECD – Development Center, April 2012;

for the global community, and helps increasing and improving regulations. Despite this phenomenon interests all countries in our study (with the exception of Japan), it is credible that people have more faith in the already established ones. On the other hand, where the problem has a major impact, improvements are quicker. We can thus expect a rapid alignment between the two groups, even if the resulting inequality index will not be satisfactory in few years from now. On income inequality, recall that Japan, as an all rounded developed country, has much higher Gini coefficient levels. This should be kept into consideration when dividing investor's expectations on markets divided into our two groups.

As already mentioned, the price level for consumption is a proxy for inflation as well. The **consumer price index** examines the increase in prices for all goods. It is interesting to note that, as opposed to the measure referring to household consumption, which is strictly increasing, the CPI (in annual percentage terms) is overall stable throughout the period examined. This sustains our inference on the actual increase in household consumption, not only of the relative inflation level. Among the countries at issue, we have no strong distinction with respect to CPI index; despite Japan has the lowest inflation level, most countries set between a 1% and 3%. This highlights the difference in the status of Japan and the other countries in our group. The level of inflation is expected to grow in the Asian region as a whole; this can become a problem for countries such as India and Mongolia, which score around 10%. The efforts of all governments are directed in limiting this figure; higher inflation today increases its own expectation, thus reducing future consumption and increasing present one. After an initial positive consequence in growth, the effect weights over wages and slows down the country. For this reason, inflation targeting is a common policy among emerging countries. However, some difficulties are observed in less developed States, when such policy is applied. A summation of structural government ability, transparency, fiscal dominance, methodology and international networking are in fact required in order to enact effectively inflation targeting⁶⁵. Despite the matter involves all emerging countries, from the perspective of investors' expectations things might not be equal for all countries. It is reasonable to assume that also in this field, the greater size and

⁶⁵ Fraga A., Goldfajn I., Minella A., *Inflation Targeting In Emerging Market Economies*, National Bureau of Economic Research, Working Paper Series, Working Paper No. 10019, October 2003;

governmental stability of group B countries, as well as their international integration facilitate them in the eyes of markets. Nevertheless, there is no evidence of higher or more volatile year-to-year inflation for one of the two groups.

In closing the most common macroeconomic indices, we could not but consider the **unemployment rate** as a measure of social development and government ability. There are here clues suggesting that group B actually has a lower percentage of unemployed in their total labor force, even if the lowest rate is attributed to Thailand. Most values are below 6%⁶⁶. We should be aware that most countries at issue have difficulties in data gathering: observations might be not complete, given the inability to reach the more remote and less developed regions. Nonetheless, there appear to be lower unemployment where there are supposed to exist more efficient policies.

Eventually, the social dimension is crucial in the comparison between the two groups since it contributes to the widespread opinion on a given country, thus influencing the non-expert investor. Despite numerous data are not consistently available for all countries, we can track the status of the two groups and eventually look for the presence or absence of similarities. Most countries seem to have a close level of literacy rate among fifteen to twenty-four years old citizens, at almost the complete share of population. India alone stays at a much lower 84% for male individuals. However, the number of graduates is notably higher for group B, even in relation to total population. This can be a more precise indicator of country integration, since universities often provide possibilities for cross-cultural experiences. Also, group B has on its account a higher number of mobile subscriptions and cellular phones, even if the per capita measure equalize the two; the same is true for per capita personal computers and Internet usage⁶⁷.

All these data give us hints on how the Asian region developed in recent years; we gathered strong clues on the path of integration and openness, in its broader sense. Even if market divergences exist, we depicted a path of economic convergence, which clashes with different risk perceptions and country risk levels in a cultural dimension. However, the large similarities between the two groups examined point us in multiple directions for risk premia estimation, since we did not see

⁶⁶ The source for unemployment data is the International Monetary Fund database at <http://www.imf.org/external/data.htm>;

⁶⁷ datamarket and <http://country-facts.findthebest.com/d/a/Asia>;

outstanding discrepancies even in the macroeconomic field. It seems indeed that real economic and macroeconomic performance, not without peculiar aspects, do not provide clues for an unequal risk perception of the two groups. Nonetheless, they are components of investors' impression over these countries; this does not mean that such impressions are built on the correct information processing neither that such information are correctly elaborated in estimating risk. We might indeed find a discrepancy between the actual data variability and the perceived uncertainty. This has undeniable consequences on assets' choice and RRP.

A final note in the macroeconomic field must be dedicated to the role of governments in Asian countries. As a whole, Asian countries experienced tough years in governance, with numerous socialist regimes that however did not stop growth. The so-called "authoritarian developmentalism" lies on three principles for the establishment of a country: nationalism expressed through material prosperity; competitiveness with developed markets; decision making in a single leader's (and a small surrounding group's) hands. When we talk about global integration, we in part mean a decline in this rigid system; nonetheless, the cultural difference between east Asia and the rest of the world remains. It is reasonable to suppose that regions with lower communication devices are more distant from this process. On this theme, three more purposes are recognized for the type of government at issue. Such goals stem from the former three and more directly advocate integration. The government is indeed expected to create an economy with a strong social component in term of policies, often referred to as social capitalism. In this framework, market and govern act simultaneously, but the actual decision-making is centralized in the government's hands. The desired market freedom is thus seldom preserved. Moreover, the country administration is supposed to encourage integration, by directly acting between-countries interactions; preset rules have thus a structural role over which the government intervenes to manage competitiveness and absorb possible risks coming from the global environment. The same is expected in the field of growth: fast growing countries quickly encounter in their path a number of scenarios they are not prepared to. The

already mentioned issue of equality, as well as social stability, urban and rural development are some of the aspects to care about⁶⁸.

From what said on Asian government history, we can grasp that it exists an overall advancement between the first and last three milestones of Asian governments. The last three are indeed to be applied to an already established State framework. The observations of data so far do not weaken the governments' ability to boost growth and competitiveness, neither provide any clue against its centralized structure. However, from social to economic information to the peculiarities of the market at issue (i.e. capital concentration) it is left open the interpretation of a possible lack in the application of the last three purposes. In distinguishing between the two groups (and leaving out Japan for this topic), poor governments might have a role in actual performances of the country and people's opinion. Despite an accurate per-country analysis would be necessary in order to draw solid conclusions, we question if poor governmental performances are attributable to group S more than group B. If this was the case, actions in stabilizing the country would not be as effective as they should, creating a sense of instability even in presence of a reliable economic force beneath it.

This concludes the presentation of the countries at issue, combined into "big" and "small" set. There have not been univocal clues for either of the two groups, thus the required and expected risk premium assessment must be a combination of more factors. This is not unexpected, and it was clear from the very beginning of this research. Nonetheless, we are allowed to draw a comprehensive portrait of the two groups and eventually deepen the aspects that are more consistently quantifiable and significant to the matter.

⁶⁸ Ohno K., *The East Asian Experience of Economic Development and Cooperation*, National Graduate Institute for Policy Studies (GRIPS), December 2002;

Chapter 3: Group Boundaries and Market Investigation

The measures observed in the previous chapter allow us to cross check for a flurry of aspects contributing to the risk perception and risk premium. If the two groups at issue were much distant from a cultural, geographical and most of all developmental point of view, finding their peculiarities and read them in the key of RP would have been much easier. There would indeed be different traits in all indicators as well as risk perception by investors; tracing a line of conduct for each group and confronting them would have been straightforward.

However, the scenario proved itself being largely interconnected at many levels. The political framework is to some extent comparable in terms of stability and ideology; the geographical location is obviously shared; the social indicators are even closer than what expected. Nonetheless, in our data presentation, we found ways to interpret dissimilarities and sustain the possible impact they have on people's view of the group at issue. First of all, the two groups have been chosen according to their degree of financial markets' development and size, measured through the market capitalization. This division created a preliminary perception of "emerging" and "developed" countries, which is in part mirrored by the economic framework of the nations in the two groups. We indeed do not find indicators that overturn our initial idea. Group S countries are still the less developed ones according to some of the measures seen so far; nonetheless, the relation with group B is not that of a simple subordinate.

Measures of productivity (ROE and ROIC) are those of two safe markets, with no signs for greater instability for one of the two groups. The two economies are overall equally solid, and even group S firms are capable of positive performance and value generation. Most countries in our study equally rely on industrial production and services in their economy; agriculture is marginal for all, even if group S rely more on this sector. The greater difference in sectors is the share of services' contribution to GDP. More integrated countries have a higher percentage of their gross domestic product coming from tertiary (60% or more). China represents a special case, since it has a share of services sector in its GDP at around 44%, only slightly higher than group S countries. However, the size of this

country and its internal inequalities rationalize its presence among the more developed ones, allowing for the relevance of its industrial dimension. As a whole, the distinction made on market capitalization reflects an economic disparity, but this does not flow into worse performance for either of the two groups. According to the instabilities in reinvestment rate and EBITDA growth we can infer that, while the financial crisis is a bigger but limited threat for group B, group S is not largely but generally insecure, even in bull periods.

The similarity with developed countries help in creating a stable outlook for group B, being it originated for a greater development (Japan), large western influence (India) or cultural aim (China). Even if the long-term consequences in the evolution of the country will be different, the present result is a perceived (and gained) superior trustworthiness.

Nonetheless, what described so far is with few doubts a well established but yet mostly perceived difference, while real economy measures are positive for both groups.

The macroeconomic outlook brings us to the same conclusion, when looking for a point of division that results in the same groups as those proposed. The absence of losing or negative streak periods that interest one of the two groups sustain the economic observations made so far. More “social” indicators such as unemployment and advanced education level provide a more interesting insight. There is indeed evidence of two distinct poles for global integration, regarding the cultural aspects. Group B countries (even temporarily ignoring Japan) have more traits in common with properly advanced countries. The communication technologies are more widely available and this is reflected by the cultural assimilation. A minimal but yet outstanding example of it is provided by Chinese recent suburban area, largely resembling the American peripheral regions in California⁶⁹. Also, the increase in consumption is driven by a rise in needs typical of the western, capitalist culture. The socialist governs so far limited this tendency, but the opening of communication boundaries inevitably makes different cultures align, mostly where IT devices are widespread. Such cultural division between the two groups treated is consistent with what expected; even if it accounts for the behavioral explanations of RP, it is hard to be studied in measurable terms, if not dedicating

⁶⁹ http://www.theguardian.com/cities/2014/aug/20/why-havent-chinas-cities-learned-from-americas-mistakes?CMP=fb_gu;

the whole research to this aspect alone. Nonetheless, a more quantitative approach is made possible by data on the two exchange markets. The price path points at a strongest rise in small markets after the recession; however S market's turnover stays seesawing. We propose then an econometric study on the effect of the main drivers of risk premium on prices, in order to understand to what extent the latter correctly value the economy. As opposed to the cultural aspects of the two groups, that have an ambiguous impact on investor's expectations, the greater market fluctuation in turnover and price growth can be measured. This can be used to support what observed so far. Moreover, we already analyzed a structural difference in stock exchanges in the two groups; the lower degree of financial integration, greater capital concentration, lower transaction costs and an overall less controlled configuration attract peculiar investors to small markets.

At this issue, some caution is needed in treating group S data, since it is a sample from many different markets. On the one hand, this makes it hard to elaborate on a "single market dimension"; nonetheless, from available information we can trace the characteristic of our index. One hint on markets structure is provided by the betas; we know that the beta of an index particularly representative of the market (or markets, in our case) should reasonably approach to one. However "small" group's firms, which have been chosen from indices representative of the country's economy, are often listed in Thai or Indonesian markets where other, non-local firms operate. This leads to a beta whose simple average is close to 1 for group B, where domestic firms actually represent the whole market, but it stays far from it for the other (at 0,53). It is somehow expected since in a market index the beta of small firms only is allowed to differ from 1.

Yet, when weighting the average for each firm's capitalization, the beta improves notably (to 0,65). Highly capitalized firms in group S are thus more closely related to the market behavior than smaller ones; moreover, the weighted average improvement suggest a higher presence of small firms with betas far from that of the market. This distance from a reference point once more suggests a higher unpredictability for group S.

Overall, the uncertainty traits highlighted so far coincide with the typical small, developing stock exchange characteristic. We indeed expect that the lack of big investors and greater market concentration open up the possibility of a weaker

price efficiency in representing the asset. Observing the correlation matrices⁷⁰, which are intuitive but yet immediate representations of within variables' trend, group B prices appear related to not only market movements, but real economy indicators as well (ROE, reinvestment). Group S prices are correlated with market indices (turnover, capitalization), but further from real performance indicators.

In this framework, that replicates what happened in other minor, volatile markets, the issue of speculation could be one great discriminant between the two groups. We cannot measure the actual rapidity of cash flowing in and out of the market, on the time horizon of investments. Nonetheless, the fluctuation of turnovers account for the whole amount sold in a given quarter; this figure has a more “extreme” path for group S. The comparison of turnover growth's scatter plots makes it evident the different degree of stability in market activities.

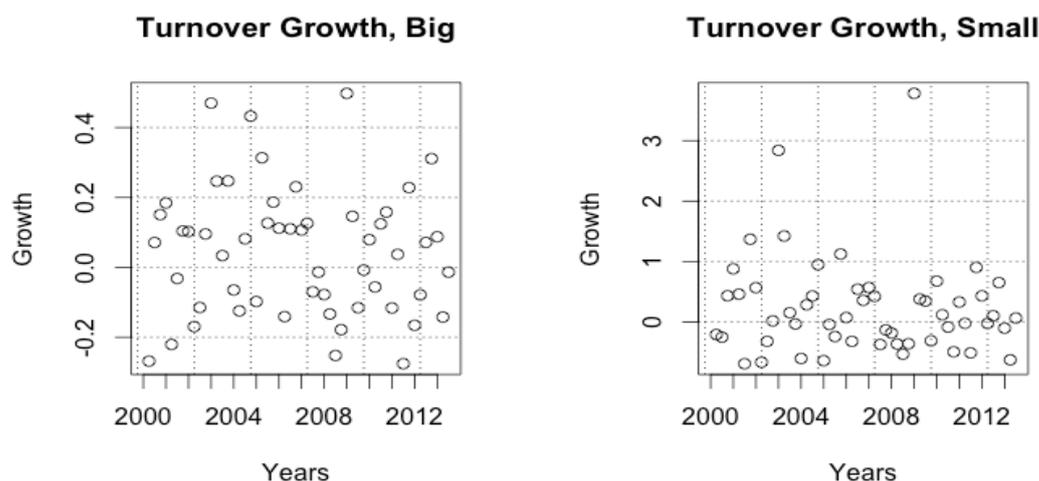


Figure 15

The hectic trade volume variations in the right chart (do not misread the different scaling) can represent a speculative dimension; however there are several reasons for such measure. Turnover might reflect the higher instability in macroeconomic and business environment, resulting in quick shifts from positive to negative perceptions. Alternatively, the lack of a well established derivatives' market in Asia (and mostly in less developed stock exchanges) requires more rapid

⁷⁰ Correlation matrices grant a quick portrait of the different relation between variables. We show the two matrices relative to each group in the last part of this work;

adjustment in quantities bought or sold⁷¹. Apart from the reason of these shifts, higher turnover growth can cause rapid shifts in market prices, flowing into an additional source of uncertainty at market level. Whatever causes the quick buying and selling behavior has not only direct consequences on prices, but also market effects in the bid-ask process.

Moreover, as we saw in the presentation of this variable, the relation between market prices and turnover is of substitutability between markets for group B, but rather foggy for group S. The study of regression coefficients' signs will be of help in understanding the relation between the two markets and the use of the two by market agents. Eventually, an outlook of turnover throughout the crisis will clear out how this relation developed in such a period of test.

3.1 Market Discrepancies in Price Drivers and Efficiency

Narrowing the focus to the determinants of market prices, it is worth deepening which are the main contributors of financial assets' values. Up to this point, we pinpointed in the turnover amount and volatility a relevant driver of prices and a valid peculiarity in the risk perception of the two groups.

By doing so, we are actually generalizing over macroeconomic diversities. Assuming that macroeconomic variables affect all firms in a similar fashion might not be strictly correct in a countrywide study. Here differences are considered only between groups, but not within same-group countries for the sake of broader, dual framework. Nonetheless, real economy indicators are worth testing, since they should contribute to the firms' stock exchange value.

The role of the variables of interest on the median closing prices can be portrayed by linear regressions of this figure on the other real economy and market indices⁷². Overall, turnover values captured our attention, in explaining investors' behavior. Buying/selling choices can indeed be driven by economic or market factors; in the light of the following regressions, it looks that the latter is the reason for small

⁷¹ Fratzcher O., *Emerging Derivatives Markets in Asia, Chapter for Asian Financial Market Development*, The World Bank, March 2006;

⁷² results on the regression of closing prices on all variables are not presented here for the sake of fluency. Moreover, econometrics results on the most notable variables are presented later on. The results of the estimate of closing prices on all other variables are still available after this work's conclusions;

market operations. The two linear models at issue have been set to include eight variables: ROE, ROIC, reinvestment rate, PE, EBITDA, FCFE (fcfte in the results), close price and capitalization. All are expressed in median terms; the default lag is equal to one, meaning the turnover at time 1 is explained through the one “time-unit” before data (in our case, quarter of year). We draw conclusions on 2008 Q2 turnover using other variables’ 2008 Q1 data. However, EBITDA has been set to two units of lag since its value is disclosed in annual or semi-annual documents, thus requiring longer time for investors to process it.

The median close price has a particular time lag as well: we believe that, before buying risky assets, investors care about the former price levels to infer a possible trend. We thus take into consideration the two quarters before, in defining the turnover level at issue.

Eventually, these are the results from the two regressions:

Regression Big, lagged

Model 1: OLS, using observations 2002:3–2013:4 (T = 46)
Dependent variable: median_turnover

	coefficient	std. error	t-ratio	p-value	
const	-3.88111e+08	4.25808e+08	-0.9115	0.3681	
median_roe_1	-6.00115e+07	3.43857e+07	-1.745	0.0895	*
median_roic_1	7.94495e+07	6.99141e+07	1.136	0.2633	
median_reinv_1	5.91784e+07	8.84337e+07	0.6692	0.5076	
median_pe_1	1.17941e+07	1.42631e+07	0.8269	0.4137	
median_ebitda_2	-1.16304e+06	536787	-2.167	0.0370	**
median_fcfte_1	-372239	663166	-0.5613	0.5781	
median_close_p_1	381597	1.15553e+06	0.3302	0.7431	
median_close_p_2	2.02489e+06	931647	2.173	0.0364	**
median_cap_1	110161	19644.2	5.608	2.32e-06	***
Mean dependent var	1.02e+09	S.D. dependent var	4.19e+08		
Sum squared resid	1.09e+18	S.E. of regression	1.74e+08		
R-squared	0.862129	Adjusted R-squared	0.827662		
F(9, 36)	25.01270	P-value(F)	6.35e-13		
Log-likelihood	-932.4461	Akaike criterion	1884.892		
Schwarz criterion	1903.179	Hannan-Quinn	1891.742		
rho	0.337833	Durbin-Watson	1.320404		

Excluding the constant, p-value was highest for variable 45 (median_close_p_1)

Regression Small, lagged

Model 1: OLS, using observations 2000:4–2013:4 (T = 53)
 Dependent variable: median_turnover

	coefficient	std. error	t-ratio	p-value
const	1.18257e+06	2.45556e+06	0.4816	0.6325
median_roe_1	-171524	147049	-1.166	0.2499
median_roic_1	-201929	260210	-0.7760	0.4420
median_reinv_1	587339	438105	1.341	0.1871
median_pe_1	233471	98304.6	2.375	0.0221 **
median_ebitda_2	-149087	625079	-0.2385	0.8126
median_FCFTE_1	727072	822105	0.8844	0.3814
median_close_p_1	-471598	258344	-1.825	0.0749 *
median_close_p_2	228722	215605	1.061	0.2947
median_cap_1	6539.45	2243.38	2.915	0.0056 ***
Mean dependent var	2222927	S.D. dependent var	1643902	
Sum squared resid	4.86e+13	S.E. of regression	1062701	
R-squared	0.654430	Adjusted R-squared	0.582102	
F(9, 43)	9.048027	P-value(F)	1.65e-07	
Log-likelihood	-805.1080	Akaike criterion	1630.216	
Schwarz criterion	1649.919	Hannan-Quinn	1637.793	
rho	0.327225	Durbin-Watson	1.336104	

Excluding the constant, p-value was highest for variable 46 (median_ebitda_2)

As we can see, capitalization and former prices contribute to both group's turnover. However, the big scenario is much more dependent on older prices, since the trends in this market are smoother; group S on the other hand has its market activity more strictly linked to the one quarter before prices (reasonable for exploit short-term rises), with the frequent shifts in trend and magnitude of exchange volumes we already commented. The importance of market capitalization can be linked to its highly trending path; there are few comments on its effect on turnover, since it is analogous for both groups. Interestingly, group B accounts for much more real economy indicators: ROE and EBITDA contribute in explaining the level of trades. Overall, the first regression presented has a much higher adjusted R-squared and higher Akaike criterion, indicating a better quality of the model. The second one is poorer in estimating the dependent variable, for both the more volatile nature of explanatory variables and volatility of turnover itself that, as we already commented, hardly match any variation in the other indices.

Reading the results so far under the light of speculation seems consistent since drivers for the quantity traded refers strongly to the financial market dimension,

with few if no reference to real economy. Capitalization, closing price and PE are the meaningful variables for group S; the negative sign of the price coefficient is not an issue since the turnover is comprehensive of both buying and selling direction, thus an increase in price does not necessarily imply a greater turnover level.

Of course being subject to market fluctuations is much more dangerous when such shifts are loosely connected to economic performances. Foreseeing ability decreases and individuals are more subject to investors' group choices. Moreover, if small markets are out of the sight of most largely capitalized investors, it is easier for the fewer financial companies or big investors acting on group S stock exchange to influence prices. This is also true because of the type of listed firms: less capitalized business likely have fewer stocks outstanding. This makes easier to influence their prices.

This surely impacts on investors' expected and required risk premium and, by shaping stocks' prices through the bid ask process, computed risk premium as well. For the sake of preserving our focus on risk perception, we will apply the same analytical method to the median prices, expressed through turnover values, for the two markets. We will split the available time horizon in three branches: before, during and after the financial crises. Hopefully, the change in price and its relation with turnover will unveil how investors shaped their preferences throughout recession.

Time Horizon	Median Close Price, Big		Median Close Price, Small	
	Coefficient Turnover Big	Coefficient Turnover Small	Coefficient Turnover Big	Coefficient Turnover Small
2000 Q2-2013 Q4	1.824e-07	-1.168e-05	2.597e-09	1.020e-06
Pre-crisis (2000 Q2-2005 Q4)	2.355e-07	-1.473e-05	3.226e-09	2.382e-07
Crisis (2006 Q1-2010 Q1)	3.432e-07	-3.377e-05	2.464e-09	-1.275e-07
Post-crisis (2010 Q2-2013 Q4)	6.677e-08	-8.388e-06	5.111e-10	-1.698e-07

A preliminary consideration on the reliability of the models is needed, since we do not present p-values neither standard errors of coefficients. We are not displaying here a strongly based model for the inference of median prices through turnover levels: low p-values suggest indeed the weak trustworthiness of such explanatory variable in the regression, which is what we were looking for in the former econometric results. We are interested here in the analysis of the type of relation existing between the variables. For this purpose, we can admit the p-values to have low levels. This is true especially in cross-group data (p values for one group's variable which is an estimator for the other group's price). However, the problem is not always present, and limited to the shorter time-span regressions. Coefficients' standard errors need a more accurate treatment, since the regression's betas are all close to zero. A large standard error can indeed void any inference on the coefficients' signs, since they would be allowed to shift from positive to negative. The legitimacy of considerations based on this analysis is preserved by the observation of each standard error. They have indeed been all checked to confirm that standard errors are lower than the coefficients' values. This lets the signs be consistent inside the windows of inaccuracy suggested by the models.

Shifting the sight to results' analysis, as we can see from the investigation over the entire period (2000 to 2013), group B prices have a positive relation with their own turnover and negative relation with the turnover of the other group. Both coefficients are significant at least at the 0,05 level, meaning that even if the two values are close to zero, the signs are likely correct (95% probability or more). The same reliability holds for the regression on small close prices. Both dependent variables are more reliably explained by their own turnover; nonetheless, they have an interesting relation in a cross-market sense. The opposite sign in regression "big"'s coefficients suggest a substitutability by investors between the two markets. This is consistent throughout the crisis, in the three periods observed; moreover, for group B, the two coefficients tend to zero in out of crisis periods, while they move away from 0 in the crisis period. The results for all these regressions' betas are notably close to zero, thus the evidence is not outstanding with respect to the three periods division; moreover, reducing the sample used decreases the regressions' reliability. Nonetheless, the conflicting signs in coefficients imply that the increase in small market's traded amount decreases the prices in the other.

The separation from zero in positive and negative direction for the big and small coefficient during crisis sustains this intuition. Stock exchanges are indeed supposedly more sensitive in recession, in their relation between prices and turnover; moreover, risk averse investors are more willing to substitute away from the more volatile market (group S). This should reasonably make prices more positively related to their own market turnover, and negatively related to their substitute's one. The divergence from zero in recession is thus in agreement with the increase in risk aversion. The regressions of close price for group S are less noteworthy over time; the influence of market B's turnover fades away, and this is consistent with the gain in global integration and financial independence. Countries in group S are more and more creating their own status, freeing from the influence of big surrounding Nations, even in market field.

What we can understand from coefficients of market S's turnover over the same market's price is less clear in terms of p-values. Nonetheless, there is a decreased relevance in the effect of the explanatory variable on the dependent one in the central period. It is indeed possible that a market considered weaker in front of speculation suffers more from this characteristic in bull periods. If turnover is a signal for speculation, it must be the case that short-term investors are more active (with the relative influence on prices) in periods where easy quick gains are available.

We find further clues on the greater exposure of investors' activities to market measures (rather than actual firms' performances) observing the regression of turnover over expectations on operational and market results. The former are indeed measured through the amount of equity reinvested in operations (here, reinvestment rate); the latter by the price earning ratio, that we already explained representing expectations over shareholders' gain.

Time Horizon	Median Turnover, Big		Median Turnover, Small	
	P-value	P-value	P-value	P-value
	Reinvestment	PE Big	Reinvestment Big	PE
	Big			Small
2000 Q2-2013 Q4	0.054683	0.006725	0.12502	2.74e-11

The P-values reported here are indices for the reliability of the coefficient and relevance of the explanatory variable in the regression. A higher p-value indicates a less important variable in the explanation of the turnover value. As highlighted from the regression results, both reinvestment rate and PE ratio contribute in estimating Big's turnover. The same does not hold for group S, where only PE is relevant, while the reinvestment rate is not statistically significant, not even at the 0,1 level.

Such evidences are once again in favor of a more complete investment analysis by group B market agents, while in group S risky investments are mainly taken for their market remuneration, with less regard to the economic underlying reasons for growth. This allows us to sustain the greater short-term attentions in small country markets, thus shaping investors' traits on it. Expected risk premium over a country's stocks does not only depend on markets' peculiarities, but also on the type of investors operating in it. More volatile and speculative markets are thus reasonably bearing a higher growth in bull periods, attracting investors looking for quick gains. However, the perceived risk is expected to be lower in big markets, for reasons besides volatility. Basing on preliminary features of our groups and the considerations made so far, investors in big markets are more and more often big in size. The higher number of agents and greater and better control systems over big investors (such as institutions or financial companies) allows an increased efficiency in the market. Agents are thus more likely true price takers; moreover the higher liquidity makes prices adjustments quicker, supposedly limiting shifts due to few investors' large trades.

Eventually, the overall better business results of firms domiciled in countries with lower market capitalization are not reflected consistently on market activities. This provides a financial integration driven by market indicators only, and ignoring other factors that actually make the two groups meet.

A step ahead in the identification of markets efficiency is represented by the study of information risk. If historical market reward to risk is the translation in numeric terms of one aspect of risk premium, the informational component plays a crucial role in investors' prospects. The choice of investing in one country or the other is indeed not only linked to former returns; we analyzed how the higher instability can lead people in their saving choices. This flows into the behavioral

field, and molds the subjective perception of risk that each individual have. Nonetheless, news are included into market rates, creating an additional mechanism of information absorption that can be more or less rapid in its path to the correct assessment of prices. Investors should be reasonably interested in how efficient the market is in transforming a company news into prices, how long the process is and how much it takes in terms of volatility.

This has been the subject of study by Bertinetti and Mantovani⁷³; we will quickly apply the methodology they present, in order to outline a possible market deficiency for group S in this sense as well. The procedure consists in the comparison of standard deviations of returns, computed on different time horizons. It is indeed supposed that an informational shock greatly affects prices in the short run. Conversely, in the long run variations are assimilated in a path that tend to a steady growth. The number of days reporting news is indeed assumed lower than the days displaying a normal growth in price, for a given asset. The comparison of short and long run standard deviations should thus provide us with the total information risk (TIR), according to $TIR = \sigma_{ST} - \sigma_{LT}$. The more able a market is in absorbing news, the quickest will be the time to adjust and the lower the TIR.

Before presenting the results of this test for efficiency, some caution in data treating is needed. We apply the methodology to two sets of prices, representing the median values of all firms taking part to out two groups. However, since we are dealing with different markets in different countries, opening days do not always coincide. Moreover, the older the data, the higher the number of outliers in prices; possible explanations are data availability, the development in the exchange markets at issue and number of listed firms. To fix this issue, from the daily prices selected from 1995 to 2013 we decided to use information starting from February 1999. The number of outliers is indeed much lower; the same time horizon has been applied to both groups, even if group S data are smoother since the index is composed by a greater number of different markets. This makes harder to record simultaneous closing days for most of them at the same time, thus not strictly requiring the same expedient on time span.

⁷³ besides the already cited paper (note 32), examples on the methodology and application are available from: Bertinetti G., *Riforma della Corporate Governance e Nuove Frontiere della Comunicazione Finanziaria: Difendere il Valore o le Regole del Gioco?*, CREA Furio Cicogna, Centro di Ricerche Economico Aziendali sull'Imprenditorialità dell'Università Bocconi;

The results of TIR in the comparison between the two groups agree with the initial division discriminant. Less capitalized markets have indeed a greater information risk, which can be linked to a lower efficiency level in price stabilization after shocks. The stock exchange itself can display a different ease in gaining the correct price growth after new information is available. Moreover, country's rules on company information disclosure have a role in the spread of knowledge on firms. Less strict regulations, in addition to provide investors with weaker or older evidences for a firm assessment, affect the degree of fluctuation around correct pricing of a risky asset.

The TIR displayed here summarizes all these components:

Time Horizon	TIR Big	TIR Small
February 1999-2013 Q4	-7,888%	-40,823%
Pre-crisis (February 1999-2005 Q4)	-10,131%	-37,399%
Crisis (2006 Q1-2010 Q1)	-5,294%	-61,178%
Post-crisis (2010 Q2-2013 Q4)	-5,643%	-19,058%

As already said, the total information risk level is much higher for markets in group S. It must be said that the absolute values are unusually high from those found in other papers applying the same methodology. If on the one hand, the less developed financial markets leave room for informational inefficiencies, the composition of our indices is also a factor. The sum of more markets is indeed subject to additional information jumps. This inflates the waves necessary to adjust prices after a shock, increasing TIR. However the difference in values between TIR Big and Small cannot be explained by this reason alone; moreover, the evolution in time of group S TIR is extremely interesting with respect to the issue of convergence. The left column indicates how total information risk decreased from 1999 on; the period of crisis does not influence this path, suggesting an overall improvement in the market's assessment abilities over time. The impact of new information is more quickly recorder into prices, with a more controlled adjustment path. The long-time tendency of small markets is the same;

nonetheless the effect of recession seems much stronger. Minor markets' efficiency is indeed decreased during crisis, resulting in an additional source of risk for these countries' stock exchanges in bear periods. TIR figure gets again lower in the post-crisis analysis, consistently with the overall financial market integration and progress.

Market improvements as well as better regulations and the growing administrative structure (inherent in the country development process) contribute in managing information risk. Even in the field of efficiency of news elaboration, we can infer that group S is actually riskier during the crisis period.

In the previous chapter, we collected evidences provided by visual market indicators' analysis to implement our initial discriminant rule for more and less financially developed countries. Information risk and interdependence between the two groups' prices have been studied here to provide quantitative evidences to our intuitions. We can thus include a short theoretical discussion on market efficiency before concluding this work with a more investor-oriented description of asset allocation.

The issue of information efficiency studied above allows us to understand the spread between the two groups. As we already cleared out, the absolute value results obtained are not useful alone in quantifying inefficiency; nonetheless, improvements over time are as clear as the discrepancy between the two. Unsurprisingly, well-established markets are more information efficient. A similar distinction arises when looking at transaction costs, even if its derivation requires a deeper estimation. Besides Japan's low figure and the general decrease in market trading costs for the Asian region in recent years, up to 2009 Asia was one the region with highest transaction costs when considering all countries. More recent studies on the matter display the very same portrait. However, in a comparison between emerging only, the greater integration of the region at issue has Asia performing better than Latin American and European less advanced countries⁷⁴. Generally, the two poles (group B and S financially more and less developed countries) have different levels of transaction costs; there is however evidence of a much faster integration than that of other regions' emerging countries.

The straightforward consequences of high transaction costs influence the validity

⁷⁴ Investment Technology Group, ITG Peer Analysis, *Global Cost Review 2013*, reports available at <http://www.itg.com/thought-leadership/topics/transaction-cost-analysis/>;

of the CAPM model, as described in the introductory part of this work. Moreover, an interesting aspect of transaction costs in the context of developing countries is that of crony capitalism. It is indeed argued that the reduction of transaction costs is seen attainable through the balance of few top actors' power, recognized in some business and government that are particularly influential market agents.⁷⁵ In our framework, such balance is often lacking, and the efficiency of financial markets is undermined. Capitalization figure has already been shown consistent with this interpretation, since it points toward market concentration, a peculiarity not easy to manage.

Nonetheless, a possible balance between strong agents would allow cronyism to actually reduce transaction costs, thus limiting deadweight losses in economic transactions and having an overall positive effect. It is hard to reconcile whichever of our two groups to a good or bad behavior in term of government/business balance, since in less advanced economies businesses are generally weaker, but the same holds for government capabilities. On the other hand, group B relies on more largely capitalized firms but also stronger regimes or more stable government structures (China, India). It is hence hard to evaluate the degree and goodness of crony capitalism of the two groups; when coming to managing powers, we can assume more developed countries display an advantage. However, the issue of transaction costs is not clear in the framework of our research.

Sum of information and operation efficiency (that concerning transaction costs) is allocation efficiency. Such aspect refers to a distribution of capital similar to that theorized by Pareto, where finances flow where better used. From what seen so far, it is hard to draw conclusion on the type of capital allocation between the two groups. Making reference to the developed-emerging duality, we might expect a faster growing market for group S. However, such growth can be a long-run rise of local firms, as well as the exploitation of less advanced countries' resources by established nations and greedy investors. We indeed question ourselves on the ethical allocation of resources between the two markets, considering long-term investment healthier for a growing and developing economy than speculative ones. Moreover, the steadier growth of group S appears as a good reason for investors to consistently allocate their resources in such markets. Nevertheless, we have

⁷⁵ Kang D., *Transaction Costs and Crony Capitalism in East Asia*, Working paper No. 02-11, Tuck School of Business at Dartmouth, May 1, 2002;

already presented indices pointing at less stable trading volumes for small countries in times of recession. This is a potential signal toward a poorer allocation efficiency for this group.

Eventually, the above forms of abilities contribute as a whole to the overall goodness of evaluation. The market faculty of correctly using available information in assessing assets prices is crucial; nonetheless, doubts arisen on the different types of efficiency do not reveal a solid scenario. The analysis of information risk and the presentation of the other theoretical market weaknesses flow into a possible lack in price evaluation. This potentially results into unrealistic prices, far from the actual firms' value; additionally, IR indicates that the process of price evaluation is likely to be rather long and unstable. We have seen how, of the two markets available, smaller countries are supposedly more subject to inefficiencies. The discrepancy between listed prices and the value of the underlying business is additionally fueling speculation. Nonetheless, besides the TIR study presented, theoretical traits are not strikingly in favor of one of the two groups.

What to hold from this market investigation is only partially regarding our groups' comparison; the most solid evidence indeed concerns loosen of the efficient market hypothesis. Region-wise studies on weak form efficiency are actually admitting room for improvements in the considered markets, with strong statistical evidences against it⁷⁶. The shortcoming of efficient market hypothesis also reduces the reliability of models that base on it. A theoretical interpretation of these aspects and the consequences on investors' choice are then harder to reconcile.

However, this discussion adds further traits to our two groups' comparison. Less capitalized exchanges are to a larger extent exposed to inefficiency in its different shapes, and the turnover study unveil a composite relation with surrounding markets as well. It is now time to try and summarize the balance between different drivers of risk, according to risk premia and behavioral adjustments.

⁷⁶ Hamid K., *Testing the Weak form of Efficient Market Hypothesis: Empirical Evidence from Asia-Pacific Markets*, International Research Journal of Finance and Economics, ISSN 1450-2887 Issue 58, 2010; the paper mainly elaborate on the analysis of random walk behavior in a sample of East Asia and Pacific countries which is only partially overlapping that considered in the present work;

Chapter 4: Reconciling RP and Investment Choices

The path followed in this work has so far crossed several grounds, as assured from the very initial introduction to risk premium. The multifaceted issue of risk perception and compensation is indeed influenced by all the above-considered variables and more. Nonetheless, the measures we chose helped us in adequately divide risk drivers in different fields and trying to estimate the respective effects on uncertainty. However, this is far from creating a solid rule for measuring individuals' risk perception, let alone for an investor to draw a strategy that differentiates between the two groups of markets.

In these final pages we will summarize what said so far and read the analysis performed under the light of the two risk premium measures proposed (Country and State RP). We will highlight the consistencies and discrepancies between drivers and RP. The former will help us in create solid implications on investment choices; we will then explain the latter through what suggested by the literature presented in the beginning of this work. We will use it to reconcile weakness of standard theories and behavioral phenomena.

First of all, we will briefly relate CRP and SRP with the fluctuations of variables in the three fields studied.

The measures of businesses performance have not been providing a strong discriminant rule between the two groups. If this has been true for most examined aspects, where group B and S components where not clearly distinct, performances indicators still bring in a peculiar standpoint on RP and countries' behavior. Firm ratios such as ROE and ROIC have been studied to tell us which group is expected to and actually is creating more value giving the available resources. Group S ends up being a better performer in out-of-crisis periods; the value generating abilities are out of doubts and the two figures display it clearly, since they are both expressed in percentage terms. Even recession appears less striking for this group, even if some caution is needed when uncertainty perception comes into play. EBITDA, which absolute value is clearly different between the two groups (according to the initial selection), completes the through-crisis analysis clearing this aspect.

Its growth is indeed characterized by higher volatility and peaks for group S: this clears out why the best performances of “Small” are penalized by the risky perception of instability. Nonetheless, such group is consistently outperforming more established countries in recession years. While this variables’ path is hard to reconcile with country risk premium, which seems a perception-oriented measure, they consistently explain the recession figures of state risk premium. In years from the end of 2008 and 2010, SRP diverges between the two groups, with group B paying a much higher reward to risk. Such figure seems answer to the need of attracting investors, in a period of low expected businesses’ performances. However, the post crisis figures of the variables are still in favor of small countries, while SRP have its values converging between the two. There is for sure a tradeoff between different aspects contributing to risk perception, thus creating a different environment in post-crisis and allowing investors and markets to reset over usual beliefs on business performances. We need to recall that State RP is computed within each country’s risk free assets, hence the different dynamics become much more country-specific.

Within the field of trust in the future, the reinvestment rate figure tells us a story closer to country RP; however, even this index has not striking differences in percentage values. Smaller countries account for a greater trust in out of crisis periods while they suffer more in recession, where firms decide to drop reinvestment much more. This coincides with what theorized by Damodaran for emerging and developed countries in the world. Moreover, figure 6 computed for our sample of nations is consistent with this view, with convergence (in the first half of the 2000-decade) stopped by recession. Smaller countries are perceived riskier here and this is mirrored by their rating and risk premium. CRP and SRP appear hence opposite in meaning, but the way in which the two values are computed is crucial.

SRP more closely mirrors the historical or implied risk premium of the markets while, if we let country ratings to include future expectations over nations, the risk premium computed according to Damodaran’s procedure is a more ERP oriented one. Interestingly, the two groups move parallel after 2008 for what concerns CRP, while they converge (thanks to decline in “Big”) for SRP. Real economic performances indicators point toward a consistent convergence of risk

compensation, with big markets' assets paying lower premia (coming from a more modest growth) with respect to their less developed counterparts.

Nonetheless, in a globalized financial world, other countries' risk free assets are available to every market operator. This makes SRP useful in the observation of internal economic dynamics, but does not take into account investors' views over a globally diversified portfolio.

The effect of macroeconomic meters over investors' risk aversion may enrich our portrait of RP since, according to already presented studies on risk perception⁷⁷, consumption varies more than proportionally to a shift in individuals' wealth. More precisely, an increase in wealth causes a greater increase in consumption, which leads risk aversion to higher levels according to the literature considered. Such aversion to risk, built in positive economic periods, is persistent in recession since consumption habits are considered sticky. If this sums to higher volatility, the economic downturn might have been characterized by an "over-risk-aversion" according to real economic performances, resulting in CRP convergence to stop. Despite the possibly high risk aversion (which is also an explanation for equity premium puzzle), general faith in the future has been consistent since the middle of the decade, when an increased volatility had investors to prefer more stable, yet modest-growing markets.

In this framework, CRP and SRP highlight two separate peculiarities of risk compensation, pinpointing the ambiguity of the subject. The two measures appear nonetheless consistent with variables observing the issue from the same perspective (general perceptions on future or business results).

The analysis of market indicators partially confirms the dual behavior of risk and results, since there appear to be once more a trade-off between returns and growth and steadiness of outcomes.

The free cash flow to equity, which is derived from accounting data but influences dividends as well, has a consistent growth for the two groups; moreover it endorses the greater volatility of the trend. The two pivotal variables in the financial markets field are turnover quantities and, more obviously, prices. The two actually

⁷⁷ Note 23, work by J. Campbell and J. Cochrane, page 244; the reference equation for relative risk aversion from the paper is $rra = \eta_t \frac{\delta \ln C_t}{\delta \ln W_t}$, where η_t represents the degree of curvature of the utility function while C_t and W_t are individual's consumption and wealth respectively, at time t.

support the greater post-crisis growth of smaller countries; however the indices should be considered here in its sole market dimension, letting apart the already presented businesses conditions. On the one hand, higher growth in prices from 2010 on opens prospects of speculations to investors and causes the convergence in SRP we already mentioned. After the increased risk aversion of the recession's years, investors reasonably prefer price growing assets. This keeps the turnover trend increasing for group S, while group B has a slowdown in the same years. Nevertheless, the turnover figure is rather seesawing; the post-crisis period, despite market trust, is not generally perceived as secure, and this keeps the two country risk premia distant.

Analyzing the price and turnover features also enlightens the substitutability relation between our groups. We already provided evidences on the different impact on assets' evaluation, for less developed countries. Small markets' prices are less representative of the underlying firms' performances, while assets' prices seems more likely built by stock exchange interactions and multiples.

This seems consistent with the effect of all market failures of efficiency, as well as the volatility of prices adjustments computed through TIR. Inefficiencies also allow speculative interactions that exacerbate the difference in role between the two groups. Adding the greater instability of the underlying business environment makes of group B investments a riskier choice. We can thus expect the stocks traded in the two markets to be perceived as substitutes according to the risk perception and expectations. On a separate note, but still in line with this view, are the diverse typologies of investments the two markets represent. In accordance with their fast-growing indices, small markets are supposed to attract speculative agents, looking for short-term investments intended to exploit fast rising firms or sectors. For this reason, such strategy is called "growth investing" and it is often opposed to "value investing". The latter approach, more suitable to group B markets' firms, relies on long-term financial commitment toward a stable growing business.

The two sides should be interpreted in relative terms, since most of the countries at issue are considered as emerging, thus more closely linked to the first investment alternative. This needs indeed further clarifications with respect to the initial issue of emerging-developed convergence treated by Damodaran; nonetheless, we can

elaborate on the recession trend, for what concerns the more- and less-risk tradeoff inherent the choice of one of the two markets.

It is plausible that, given the greater volatility in performances of group S countries, choices have been adapted toward secure investments in time of recession. Also the general uncertainty on them, brought about by fewer and less reliable information available, leads investors toward choices that are market-wise rational, but not always mirroring a country's results in real economy. This flows in a break of convergence for what regards a country's perceived risk; individuals are then slow in adjusting their beliefs when the economic scenario changes. CRP, which better portrays this standpoint, is then bounded to a parallel path. On the other hand, the preference for more secure investments in time of crisis (meaning a shift toward market B) could have created the higher growth in prices we recorded for group B. This result, together with an aligning risk free rate between countries is the 2009 divergence in SRP. However, since this aspect is less behavior-related and measured, the regain of confidence is quickly mirrored by an alignment of State RP in post-crisis years.

Eventually, the capitalization perfectly fits and fuels the difference between the two groups, and confirms the so far described division investors could feel. The greater concentration of market capital for smaller stock exchanges (which possess by definition a lower total capitalization) implies a greater number of minor firms listed. The type of assets traded together with the likely smaller investors is once again a bridge toward speculation. There is then a structural and "environmental" context that binds smaller markets to the pole of growth investment with higher risk. The degree of competition is lower and market abilities and regulations weaker. The improvement is both a goal and a consequence of global integration; nevertheless, at least in term of capitalization, big markets have a more unstable process toward the decrease in market concentration (see note 50 on the 90th percentiles). This can be interpreted as a signal for greater competition, where a higher fraction of firms in the sample are actually participating to the race for top capitalization.

The effect of recession is, in both groups of variables treated so far, that of a meritocratic reaper. Aggregate data suggest that only better operating firms survive and are able to expand. A proof of it is once again found in capitalization of top 10 firms (Figure 14) that slows its decrease or even rise for what concerns

group B. It must be the case that largely capitalized markets included more overcapitalized firms that, facing recession, let the way to better performing businesses.

The issue of capitalization only contributes in creating the ground for the substitutability described above. Nonetheless, the rest of market indicators are consistent with CRP for what concerns a greater fear for group S investments: stocks are expected to pay more if coming from risky markets; also, the speculative possibilities justify overperformances in periods when investors are willing to take the hazard: greater growth blows on quick rising investment, creating convergence in SRP (the implied RP measure).

Both economic performances and market measures make sense in the distinction of the two groups just emphasized. Even if such difference can be found in diverse aspects of the countries at issue, it is not safe to say that their relation and disparity mirrors that of world's emerging and developed countries. Despite the presence of particular country's exceptions, all components of our groups are recently growing: besides Japan, all countries can be considered emerging in a global setting. For this reason, the distinction between types of investment strategies is not always net between the two groups. Group B and S are thus in a substitutability relation in term of market choices, but the path of global financial integration is more complex than that of general developing countries. If group B is in horizontal integration with group S' markets, namely investors shift from one group to the other according to the degree of risk of the present economic period, the same is not reciprocal. Group B market prices are indeed decreasing as the trading in group S' increases. It is not straightforward assuming that the amount traded directly influences the prices of assets traded; it could also be the case that a greater rise in prices attract investors and cause more transactions. The logic is still consistent with what said so far, as long as the goal is that of riding price growth; nevertheless, this is only a market-wise observation, not including the risk aversion component of the economic period, which has more debatable attributes.

As opposed to group B, as the study of turnover explains, small markets grow at the rise of both internal and counterpart's (group B's) turnover. This is due to their expansion, which is positively influenced by the larger use and familiarity of world investors over Asian markets. It must be the case that, when the business cycle favors it, a greater number of market agents come for both big and small markets,

increasing the total traded volumes for both. As it has been argued so far, positive periods are reasonably attracting investors toward growth strategies, thus more positively effecting group S from a sort of spillover effect of group B turnover. This can be read as a regional effect: if Japan, India and China have an already known reputation for what concerns businesses operating around the world, when they are attracting investors, also the surrounding markets come to light. Group S big firms need a character that opens the door to their markets, and the increasing interest toward Asian stocks as well as positive economic environment allow investors to run a sink in hope of greater returns.

At the same time, group S is evolving in economic and social terms, as we have seen from the study of macroeconomics information. The alignment path seems consistent with that observed by Damodaran in its studies on PE ratio, with the recession increasing disparity between emerging and developed countries. Recall that PE ratio is chosen here once more for its attention toward peoples' expectations, being a signal that tries to foresee the profitability of an asset. The dynamic of pre- and post-crisis convergence suits individuals' risk aversion ups and downs; the choice is also consistent with most countries' development indicators. Both GDP growth and FDI have been recorded aligning to the usual "emerging and developed" framework. Clearly, smaller, less advanced countries attract more investment from developed ones, and their GDP growth pays off for such risk in macroeconomic terms. Both figures decline in recession: it is reasonable for established countries to cut foreign investments in negative periods. Nonetheless, years after 2010 are slightly more optimistic for group S, for the same dynamics that interest markets and firms performances. Moreover, the amount of foreign investments in emergent countries establishes the international trust on those economies; FDI also serve as a bridge with developed countries, importing well oiled systems of business management. This favors financial integration, but brings along possible negative influence such as the disadvantages of a larger financial leverage. The issue of debts is indeed relevant, since its management has been shown central in the most recent recession. It is likely that one source of risk embedded in CRP and accounted in country ratings is indeed that of the quantity and management ability of foreign debt. We already highlighted the much higher portion of debt that group S countries held abroad; this is a certain source of worries for foreign investors. Foreign debt is indeed not under direct control of the

interested country; moreover, it becomes subject to the sovereign crisis that interested developed countries the most. Overall, the threat of an unstable country blows, being subject to global volatility coming from developed nations claim on its debt. The other group is instead more stable, owning the most of its own debt. This allows room and effectiveness of governmental policies, transmitting a trustworthy image.

The social and macroeconomic traits considered so far seem to find confirmation on CRP only, supporting the emerging-developed relation, unlike other variables. The state risk premium, according to the interpretation we gave to it up to now, holds no apparent link with the environment in which firms operate; this is actually consistent with the choice to interpret it as a mere market calculated measure. However, for what concerns country risk premium, only negative aspects of less advanced countries result included in the assessment of uncertainty.

There are indeed several social indicators that point toward a development in life conditions and state administration. Such signals for increased system complexity should affect markets' rules, efficiency and eventually integration. The recent years' improvements in unemployment and number of graduates let on the one hand the dominant role to group B; the positive shifts in habits and life conditions are forward-looking positive for group S.

Such group's countries are also not displaying the typical role of raw material providers only. Even if the internally oriented industries are more tertiary focused for developed nations, smaller countries still have a smooth differentiation in sectors. It is indeed typical in the path for development to observe an increase in the businesses related to services provision. A further clue of the evolution of less developed countries and their population is the rise in consumption expenses. The rise of well-being among population in minor economies is indeed reported by the average expenses level for household consumption. The results are mixed, since measures of inequality are not in favor of a strong reduction of discrepancies between wealth classes. Nevertheless, the increase and communality of consumption levels is a step toward higher life standard and global integration. The reduction of cultural distance is easily perceived as an increased safety; this however is not enough to convince CRP to lower for group S. Despite such improvement trend, it appears to be uncertainty the main factor on risk perception and, ultimately, investment choices. The improvements in life conditions and social

integration might be accounted in generally positive times but, when the hazard rises, people are less willing to accept uncertainty in exchange of higher return and struggle to rearrange their feelings when the risk level sets.

On the whole, the risk premia presented in the beginning of this work are satisfactory shaped over the aspects that drive risk. We have seen how RP and its multiple definitions does not make easy to identify a single measure for different features. The State risk premium well accounted for the greater market returns; those have also been proven consistent with most of our variables from the three fields (real economy, markets and macroeconomics). Nonetheless, this research finds that, according to the SRP approach to risk premium, the market dimension is mostly taken into account. It is indeed a good measure to evaluate the within country choice between risk free and stock assets. It also pictures realistically the opportunity of gain from well established markets against that of minor ones. The other side of the coin consists in the limited range of financial assets considered (the risk free choice could lie outside the country where stocks are traded) and the lack of psychological dimension. This could be relevant for minor investors expanding on the observed markets. Nevertheless SRP, which is a strictly market-based measure, is by definition more closely attached to market prices; these are themselves more closely connected to market multiples as well, for what concerns group S. The regression results indeed show how median prices mistreat out-of-market indicators. On this we based the risk perception difference between the two groups, since a wrong, or better, partial perception of market hazard might arise. The goodness of the measure is then pertinent with its financial applications; however, an all around consideration would depend on what trait of risk premium we are interested in. It is likely that an investment strategy would be satisfied by SRP; on the other hand, in firms' investment choices such as the plan to expand a business, a more comprehensive look is required. We would indeed be interested not only in the implied premium of stocks, but rather on the expected and required compensation for risk. The two are both ex-ante estimation of returns, but possess a distinct sight on the matter.

ERP is more closely represented by the measure of premium computed on ratings; CRP is still in connection with the market dimension, but all the rest of variables filter this aspect through the rating-based country distinction. Such method grasps

the difference between countries in our two groups, even if the disparity is not always heavy. Ratings are indeed thought as comprehensive of macroeconomic variables, in the attempt to foresee the country ability to evolve in term of business performances as well as government and stability. Nonetheless, one of the reasons for which the main difference in stock exchanges has been identified in financial market measures is that other variables analyzed are not actually reporting a striking distinction between the two groups.

The criterion of capitalization is indeed a financial measure associated with market variables; it also fits a structural distinction of the economies at issue, but there often are exceptions. We should recall that, among group B nations, china often displays the growing traits of emerging countries, while Japan has a much older establishment. The performances, but mostly the macroeconomics and social variables, should be better treated in a per nation analysis.

In the present research however, we wanted to check for the dual connection between the two Asian groups, hence the simplifications adopted seems acceptable and still less strict than an all-emerging against all-developed comparison.

Other measures of caution and details are still worth discussing here in order to secure our analysis from easy criticisms⁷⁸. One variable that has not been used in our study, but yet provides a good reason to choose a specific market over the other, is liquidity.

Liquidity represents the ease and quickness of an asset trading and monetization, without a necessary shift in its price. A higher liquidity obviously attracts investors since it guarantees the rapidity of profit collection or investment drop out in both cases of gain or losses. We could have conjectured over liquidity when talking about turnover, since it actually is a measure of number of transactions for a given asset. However liquidity should be better considered on a single stock basis: a pool of several markets is hard to reconcile with the liquidity characteristics of its singularly traded assets. We can assume big markets to display higher average ease of monetization: the greater financial integration and stock exchange structure rather than the turnover levels should better back this intuition. Eventually, the improvement in transaction costs surely plays a role in increasing liquidity. Overall, we consider it as part of the financial structure where assets are

⁷⁸ in identifying the topics worth deepen, we based on Damodaran work at note 1;

traded, providing more established markets with a further reason to attract long-term, more risk averse investments. An additional difference that affects stocks individually, but with a clear lean toward group B, is the firm size measured by its capitalization. Recall that our discriminant rule for countries has been their market capitalization, regardless of each firm's capital. Here our aim is to warn the reader from the potential premium for small capitalization. It is thus linked to the single stock and, as liquidity, it should be better treated singularly. Nevertheless firms' sizes are here strongly related to the group in which it belongs, thus potentially influence our entire evaluation of risk. It is indeed argued that companies with lower multiples concerning their size and book values are actually earning higher returns than those expected by the application of CAPM. This notion causes baffles among risk premium researchers since the evidences in favor of such higher premium find several contradictions. First of all higher premium for poorly capitalized firms has been proven not consistent over time: in some period also the opposite fact has been true, with larger firms outperforming smaller ones. Oddly, small firms premium is recorder much higher in the first month of the year, then those companies have higher values, but the difference with the rest of the market is not striking. The last inaccuracy of sustaining a "small cap premium" is that data on capitalization can easily function as a proxy for other sources of risk related to those firms.

Letting apart the first two questions about size premium, our case treatment of the problem lies completely in this latter objection. The less capitalized group in our comparison also displays a lower per-firm capitalization; this was expected from the very first country selection. Nevertheless it represents younger, less established firms and less stable governments as well. In this variety of sources of risk, the RP for small capitalized firms gets absorbed by the general uncertainty of returns. The analysis can be assumed not influenced by the "small cap premium", but rather find in this intuition a support for the higher perceived instability over group S markets.

Eventually, permeating the whole work is the issue of exchange rate. The markets treated are all in strong relation with North American stock exchanges, as already cleared out. Yet small markets should be held in specific consideration for what concerns exchange rates: such economies are indeed often dollarized, being subject to the shift of dollar as well as the exchange rate between USD and domestic

currency. Market operations in those markets are often performed in the American currency unit. Moreover, a different fluctuation of the U.S. currency with respect to non-dollarized countries in the region considered, might lead investors in choosing markets different from those suggested by their relative risk aversion. Once again a per-country analysis is better suiting this issue, since exchange rates might vary between same group members. In this field, we are actually interested in the individual observation of currencies, since a discrepancy in exchange rates shifts could undermine considerations on investors' risk preferences over the group.

Making clear this aspect is not easy, for the dissimilar exchange rates and types of economies. Convert all currencies in U.S. dollars (as we actually did) does not solve the issue, since bigger countries have a much greater currency autonomy in stock exchanges as well. The historical data for currency exchange actually reflect the dollarization of the country: India, Vietnam, Indonesia and Mongolia are those displaying the most atypical trend for emerging countries. They are indeed depreciating their currency with respect to the U.S. dollar. The remaining considered nations on the other hand display a behavior closely connected to that of emerging countries around the world, regardless of their market capitalization (and group B or S distinction). As the IMF suggests, currency appreciation is one of the traits of emerging countries and, with the addition of a proper fiscal policy, it can be used in favor of growth⁷⁹. Once again the issue of policymakers' abilities come into play; however, we will focus here in the market dimension of the exchange rate. For what concerns growth, we will limit ourselves saying that the management of exchange rate would fall in the macroeconomics discrepancies favoring group B stability.

Focusing back to exchange rates, our fear was based on the possibility of an increased market attraction for those currencies that displayed stronger appreciation. Despite evidences are mixed for our two groups, this aspect would go in support of group B investments, which are less dependent on dollar. They are indeed generally more stable in time. Group S performances on this field are varied, but consistent with the dollarization of the countries. Philippines, Fiji and Thailand for example have steady if not increasing exchange rates, countering the already mentioned depreciating countries.

⁷⁹ The IMF source on appreciation as been already presented in note 51.

Although this remains a weak point of our analysis, we reasonably believe it is not completely invalidating the whole work. The uneven evidences over these countries, as well as the fact that most stocks are traded in Thailand stock exchange have a dual impact on investments. If on the one hand, they leave open the possibility of currency-related investment choices, on the other the different exchange rate behaviors of countries inside the same group smooth the separation between “Small” and “Big”. Trading all stocks in the Thai market might indeed alleviate country risk and that of the related currency.

What is worth signaling is the drop in exchange rate that involved several countries belonging to both groups. Markets more dependent on western countries have indeed a further channel over which being hit in exchange rate by the economic downturn.

Currency depreciation in recession years can actually affect in different ways our two groups, since it penalizes dollar related countries, which are mostly located among the “small capitalization” group.

Eventually, to muffle the problematic aspect of exchange rates on our analysis, we should recall that such variable has a limited effect in market returns. Despite the study called to support this theory is performed on China, a fairly globally stable and independent nation, evidences are in favor of market prices independence from exchange rate ⁸⁰. These financial variables’ relation has indeed been econometrically disproved if not in the short run. The issue may still influence our analysis concerning the economic crisis, given the short time span and the variations of currency rate of exchange that interest those years. Nevertheless, once aware of it, we can still expect our findings on investors’ behaviors to be overall consistent. The matter allows possible expansions toward the inclusion of exchange rate variables in the definition of prices, to more accurately link risk aversion with currency stability.

Even after presenting the possible irregularities on the two-groups comparison, the framework remains unchanged around the initial assumption of two poles for risk. SRP and CRP remain consistent with the variables and the purpose they base on; the final outlook is that of the rest of the world’s developed and emerging markets,

⁸⁰ Y. Li, L., Huang, *On the Relationship between Stock Return and Exchange Rate: Evidence on China*, The Business School, Loughborough University, College of Mathematics and Econometrics, Hunan University, Changsha, Hunan, 2008;

sized for a much less distance between groups. According to what said throughout the work and the risk trends in years of crisis, we can reasonably expect a convergence in uncertainty. However this research still address at substitutability in assets, allowing investors to differentiate within the Asian region, according to their preferences and forecasts.

To clear out the relation between risk-aversion and risk compensation, we elaborated a classic utility model under the light of a dual choice for savings. The level of income available at each period in time can indeed be partially dedicated to a saving strategy that differentiates between risky and riskless (or at least less risky) choices. The model is supposed to fit the Asian case described; it is however only presented for a more formal and clear description of what inferred so far. Also, we can conjecture on the different role the two approaches to risk premium have over such theoretical framework.

Before focusing on such elaboration, we briefly introduce the solution to the optimization of individual's preferences over saving on one generic asset. This is not the case we are examining, but it will contribute to the path of enlargement of preferences modellization. In this first structure, the decrease in consumption in any period t is used to increase investments (savings) and the expected utility does not change according to the choice of the investment asset.

Rearranging the formula equating marginal utilities in time t and $t+1$ we have ⁸¹ :

$$u'(C_t) = \frac{1}{1+\rho} \{E_t[(1+r_{j,t+1})E_t[u'(C_{t+1})]\} + Cov_t[(1+r_{j,t+1}), u'(C_{t+1})] \quad (i)$$

Equation (i) represents the modellization approach we will follow in utility description of saving preferences. Despite we will not deepen here the issue of the underlying utility function, we refer to results drawn from a quadratic utility for the sole purpose of commenting our analysis in a formal framework. Such utility

has the form $u(C) = C - \frac{aC^2}{2}$.

⁸¹ $u'(C_t) = \frac{1}{1+\rho} E_t[(1+r_{j,t+1})u'(C_{t+1})]$, where $\frac{1}{1+\rho}$ is the discount rate between periods, while $(1+r_{j,t+1})$ is the interest rate on asset j . We are here using the common Euler condition across time periods;

For this form of individuals' preferences, it is possible to state that:

$$u'(C_t) = \frac{1}{1 + \rho} \{E_t[(1 + r_{j,t+1})E_t[u'(C_{t+1})]]\} - aCov_t[(1 + r_{j,t+1}), C_{t+1}] \quad (\text{i.i})$$

In terms of utility representation, the reduction of consumption to increase investments does not depend on the risk level of the asset $r_{j,t+1}$. Regardless of the risk level of the asset, it is indeed assumed that the only aspect that matters is its relation with consumption, as shown from the covariance measure. From this suggestion, we can infer that a negative covariance is a good strategy for hedging risks. An individual should thus prefer assets that are negatively correlated with sources of risk for its own consumption. However, this is not what markets record in real life choices: for example, if risks influencing consumption are often country-related, we should not observe a home country bias in investment choices, namely the preference of assets linked to the local economy⁸². The relation between risk and consumption nonetheless allows us to think of investment choices as a substitute not only between our two groups of markets, but also as an alternative source of satisfaction (utility), moving inversely with respect to consumption, for what concerns risk. In general terms, what this consumption-based representation tells us is that, in the field of utility optimization, the individual seeks for a protection from risk, which mainly drives her consumption and saving preferences. This is the idea behind the group B and group S comparison and substitutability. However, to formalize the relation between the two, we need a model including different types of saving as well as accounting for intertemporal, risk-related choices.

In the usual CAPM model, investors are supposed to rationally maximize their utility according to the mean-variance criterion. Such principle states that one investment is better than the other provided that it has higher return and equal variance or equal return and lower variance; if both measures are equal, the investments are equivalent. Return and variance are assumed proportional in the

⁸² D. Romer, *Advanced Macroeconomics*, Third Edition, Irwin Professional Pub, August 2005;

CAPM model, as already illustrated in the introduction to this work. Such model limits its sight to the financial field, maximizing utility over investment assets.

The consumption-CAPM instead is, as its name suggests, a utility maximization based on consumption, where financial assets are bought and sold according to the economic period. In its most simple formalization, we will elaborate on an economy where a representative individual is expected to maximize its utility according to:

$$U(C_t, C_{t+1}): \quad u(C_t) + \delta E_t[u(C_{t+1})] \quad (\text{ii})$$

where U represents the individual's lifetime utility, u is the utility function (supposed equal in the two time periods considered), C_t and C_{t+1} are the consumption levels in the two periods and δ is the discount factor. The latter parameter operates as a filter for the perception of future consumption on today's utility. Future benefits should indeed be weighted by the fact they are actually enjoyed later in time, according to the individual's preference for present consumption, as in most neoclassical models.

Consumption-CAPM consists in solving the maximization of (ii) subject to:

$$Y_t = C_t + p_t q_t$$

and

$$Y_{t+1} = C_{t+1} - q_t(p_{t+1} + d_{t+1}).$$

The quantities and prices for the two periods are represented in the formula by q and p respectively while d is the dividend paid to stockholders at time $t+1$. Y is the initial endowment at time t ; it can be thought of as the available income when start investing and consuming. As we can see from the second constraint, available income in time $t+1$ equals consumption in the same period plus what earned from time t investment (computed as the sum of the price shift and dividends paid). Substituting the constraint into the values of C in (ii), the first order condition

$\frac{\delta U}{\delta q_t} = 0$ gives the expression for the excess return of a risky investment r_j .

After some arrangements it can indeed be shown that:

$$E_t(r_{j,t+1}) - r_{f,t+1} = -\frac{1}{E_t[m_{t,t+1}]} \text{cov}(m_{t,t+1}, 1 + r_{j,t+1}) \quad (\text{ii.i})$$

Where $m_{t,t+1} = \frac{u'(C_{t+1})}{u'(C_t)}$ is the intertemporal ratio of marginal utilities. The left side of equation (ii.i) is the equity risk premium in its definition on expectation ERP⁸³. What can be held from equation (iii) is that an asset should have negative covariance between its return and the marginal utility in order to generate benefits in recession times. Such negative covariance indeed translates into a positive covariance with consumption, thus serving as a parachute when C decreases. Despite equation (iii) and the standard consumption-CAPM provide a useful standpoint over recession's investment choices, we arranged the model to account for the substitutability of the two different types of assets and focus on risk aversion.

We propose here an implementation of the model, according to the approaches presented so far. The equation for intertemporal utility (ii) remains unchanged; however, the constraints applied to the maximization process are now including a double saving possibility. What left over from consumption is devoted to investment in risky and less-risky/riskless assets in period t. The resulting equations for income in time t and t+1 are the *modified constraints*:

$$Y_t = C_t + q_i p_i + (Q - q_i) p_f$$

and

$$Y_{t+1} = C_{t+1} + q_i r_i + (Q - q_i) r_f$$

The quantity invested on risky assets is denoted by q_i while that on riskless ones is q_f . The total amount of financial assets is chosen in each time t and is equal to $Q = q_i + q_f$. In this framework, we are assuming that the individual is indeed maximizing her utility, considering period t+1 as consumption-only. However, the model is thought in an infinite time horizon, such that at each period, the subject is required to choose how much to dedicate to the different types of investments, in

⁸³ Wälti S., *Derivation of the Consumption-CAPM*, October 2007;

order to increase future income. With this rationale, the individual is saving in each period for the following; we decided to indicate it explicitly, since the constraints above may appear suggesting the opposite.

Rearranging the constraints, the maximization problem results being:

$$\max \quad u(C_t) + \delta[u(C_{t+1})] \quad (\text{iii})$$

$$\text{Subject to} \quad C_t = Y_t + q_i(p_f - p_i) - Qp_f$$

$$C_{t+1} = Y_{t+1} + q_i(r_i - r_f) + Qr_f$$

From now on, we will refer to $(r_i - r_f)$ as RP, according to the most basic definition of risk premium. In the second constraint, r_i and r_f are indeed the returns of the two investments: $r_i = \frac{p_{t+1} - p_t}{p_t} + d_i$ is the sum of the shift in price and the dividend; r_f could display the same structure of r_i or report gains according to a different path. We use the letter f here to indicate both a risk free investment as well as an investment which is less risky than asset i . In this latter interpretation, RP is intended on the return of the riskier market S over B. Of course some degree of caution is required when drawing some considerations from the model; on the other side of the coin, this formalization isolates in term of utility and consumption, the effect of shifts in both markets individually.

The process of maximization passes through the above mentioned first order condition $\frac{\delta U}{\delta q_t} = 0$, deriving the intertemporal consumption relation:

$$\frac{C_t}{C_{t+1}} = \left(\delta \frac{r_i}{p_i} \right)^{-\frac{1}{\alpha}}$$

This equation lies on the assumption of constant elasticity of substitution (CES) between times t and $t+1$; this means that the decrease in consumption today accepted in exchange for an increase of consumption in the next period is constant over time. Similarly to the choice of quadratic utility in the previous model, here CES allows us to write the utility function as $U = \frac{C^{1-\alpha}}{1-\alpha}$ with α being the degree of

risk aversion of the individual; its derivative is thus equal to C^{84} . Note that the ratio $\frac{r_i}{p_i}$ is the return generated in one period by a stock bought at price p : we call it for simplicity of notation “return to price” (RtP). This will help us in displaying clearly the issue of risk preferences; however, the two components components of RtP ration must be kept in mind for a proper analysis of investments.

Substituting the two budget constraints in the consumption relation obtained, we proceed in the identification of the optimal quantity devoted to the risky asset i and its less risky or risk free counterpart f .

Solving the resulting equation for the quantity of risky asset gets:

$$q_i = \frac{(\delta RtP)^{-\frac{1}{\alpha}}(Y_{t+1} + Qr_f) - Y_t + Qp_f}{(p_f - p_i) - (\delta RtP)^{-\frac{1}{\alpha}}RP} \quad (\text{iii.i})$$

The optimal quantity of the risky asset reasonably depends on the income levels in the two periods, the individual’s risk aversion, the assets prices and their returns. These are not known in advance. However, the assumption of stability of Y and α is not strong in the case of short enough periods. If t and $t+1$ are not far from one another and the underlying economic environment stable, we can easily suppose that the risk aversion coefficient remains unchanged. For what concerns income, in stable short periods, individuals likely expect Y_{t+1} equal to Y_t . We are thus free to observe the variation in quantity q_i according to modifications of RP. The most straightforward observation is that an increase in risk premium lowers the denominator only, increasing the quantity of risky asset. With this perspective, we are looking at the additional compensation of S markets over B, assuming the former is greater than the latter, or the riskless asset.

We will keep here a theoretical attitude, leaving our case’s observations to the end of this chapter. This is surely a limitation of the approach; still, the increase in quantity seems reasonable since, all else held equal, if risk is compensated more investors are willing to shift toward risky assets. On the other hand, this look on risk premium effects is not complete. An increase in RP can indeed be driven by

⁸⁴ Etro F., *Endogenous Market Structures and the Macroeconomy*, March 2009;

both an increase in the returns of assets r_i or a decrease in the risk free (less risky) rate r_f . In the case in which risk free is increasing, RP diminishes and the effect on quantity is unambiguous. The denominator surely rises but the numerator, through Qr_f , amplifies the shift in r_f increasing even more. The overall quantity of risky investment bought hence grows. A shift in r_i however has much more complex consequences in the optimal quantity. Both numerator and denominator depend on it, according to RP and RtP in different fashion. The upper portion of the equation indeed increases when r_i increases, at the rate of $r_i^{\frac{1}{\alpha}}$. The denominator however brings the product of RtP and RP; the right portion of the denominator thus is: $-(\delta p_i)r_i^{\frac{\alpha+1}{\alpha}} + (\delta p_i)r_i^{\frac{1}{\alpha}}r_f$. As we can see, the denominator decreases at $r_i^{\frac{\alpha+1}{\alpha}}$ ($> r_i^{\frac{1}{\alpha}}$) but rises at the rate of $r_i^{\frac{1}{\alpha}}r_f$. The two effects are hard to compare since they are amplified by different quantities, resulting in an undefined impact on the optimal quantity q_i .

Before deepening the impact of RP on the investment allocations between more and less risky assets, an already encountered yet important clarification is needed. The two initial models presented account respectively for one risky and both a risky and a riskless asset; the two frameworks were indeed useful to analyze risk in relation with consumption and the RP based on expectations about returns. The latter implementation presented strives to account for the two poles identified in the Asian case. As a consequence, the spread between returns is not strictly speaking the premium for risk, since both investments require some hazard. We indirectly embrace the perception of greater risk for smaller markets: this has somehow been suggested by our analysis and the involved variables. Nevertheless, it might be a tough assumption to accept, in the light of a state risk premium that says the very opposite, even if we already explained its computation and precise dynamics.

To consistently apply the definition of RP, the latter modification of the model should thus be thought in relation with a secure investment. However, the observation of turnover and the impact of most measures appear supporting a substitution between groups of markets, with group B playing the role of the safe one. After all, the risk free rate inherent the definition of risk premium is always chosen among stable countries' sovereign bonds. Still, as most recent years' crisis

highlighted, even established countries can experience instability. Moreover, a solid description of the individual variations of both r_i and r_f helps us in isolating the two groups' dynamics as well as thinking about the investment choices of an agent differentiating between the two. An increased risk free return (r_f) has indeed been proven to decrease risk premium and increase the quantity of the riskier asset, when thinking in a classical risk premium fashion. However, when the same return refers to group B, the two parts of RP (r_i and r_f) needs to be separated and the shift in big markets' returns is weighted by $r_i^{\frac{1}{\alpha}}$. On the one hand, this makes predictions on behaviors harder, since we would need the quantification of both returns together. On the other hand, we know that the level of risk aversion weights the magnitude of an increase in the less risky return too. All things held equal, when α rises r_f impacts the denominator more, increasing it and consistently reducing the quantity of asset i . A further growth of return in less risky markets is then a better reason for lowering risky investment, in hard periods. The two investment choices are indeed substitute with respect to risk aversion, which is reasonably adapted to the economic scenario. Hence, even freeing RP from its usual definition, the relation between the two assets is sufficiently clear.

Moreover, one clear peculiarity of risk premium has been its multiplicity of meanings. It has been one of the starting points of the present research, and we actually found evidences of it throughout our case with variables' analysis. The difficulty of applying the suggested model to RP is indeed the lack of a reference point for its computation. Although it might sound extreme from a theoretical point, we have no solid evidence of an absolutely riskless asset in financial markets; this is extremely evident when outlining our case's comparison. Eventually, the choice of a riskless asset is that separating CRP and SRP and adding complexity to our model. The lack of a non-risky asset is one of the aspects that makes of RP a far from univocal measure. This is one of the reasons for which we preferred to analyze drivers of uncertainty rather than the premium alone.

Conclusions

The descriptive path of the present work can be overall satisfactory, since we weighted different sources of risk and contextualized them in the scenario in which investors operate. Nevertheless, the derivation of a rule for risk compensation and investors' behavior is far from its definition. These lines do not provide applicable laws for a correct investment strategy, neither teach how to mathematically filter evidences and understand their impact on expectations.

We however conjectured on the different influences of economic, macroeconomic and stock exchange factors, and identified the diverse perceptions of the two markets. We also accounted for changes of economic scenario. Nevertheless, when leaving data analysis for utility-based models, issues of behavioral economics arise. When dealing with risk aversion, the aforementioned topics of homogeneity of beliefs, habit adapting, and myopic risk aversion undermine the stability of rational investors. Moreover, in analyzing recession trends, sticky habits distort risk evaluation. The pre crises over-consumption (with respect to its "normal" value) contributes to increase the expected returns and volatility of stock investment, increasing risk aversion⁸⁵. One behavioral phenomenon among all is that of the over-sensitivity to losses, which would push risk aversion in the immediacy of undesired situations (negative returns). This is felt stronger, the higher the living standard: it is than reasonable that psychological circumstances contributed in building a dislike for risk. This bloomed in the first available occasion for negative returns, namely the economic recession, driving investors away from risk. Misperceptions are hence influencing preferences over the two groups of markets at issue and can be used to explain anomalies and discrepancies between theory and evidence. Good performances of group S' firms have been snubbed in crisis. Still, behavioral explanations tend to be either hard to sustain quantitatively or too subjective to be helpful when generalizing. The rising integration of markets at issue is a further obstacle in estimating behaviors, since investors possess much different cultures and degrees of financial education. In a closed economy, what we called State risk premium could have answered to all drivers of uncertainty; it would be comprehensive of an absolutely riskless asset (the state government bond, with respect to others) and a correct scale for hazard.

⁸⁵ according to the model by Campbell and Cochrane (see footnote 24);

However, open economies and global financial market exponentially enlarge interactions between factors.

What we can take as consistent enough are the characteristics of group B and S, their difference in perceived risk and possibilities of returns. The logic of shifting between the two in time of bull and bear markets seems reasonable, behaviorally consistent and backed by data; group S perceived risk is likely liable of the environment in which its firms operate. Minor countries businesses are then under-trusted in recession. Translating this scenario in terms of risk premium is however a non-linear operation: as we discovered throughout the analysis, a crucial role is played by the receiver of such compensation for risk. Charts and descriptive analysis hint at the greater volatility of smaller markets; TIR brings in a market-related risk, due to the lower general efficiency; the suggested substitution between the two groups in time of crisis is backed by turnover numbers. The framework is sufficiently clear, nevertheless it assumes much different shades according to the historical, implied, expected or required perspective adopted. This not only affects the issue of defining a correct measure for RP, but also weights differently the components that would answer to our initial questions.

We can reliably say that the different variables used, even if coming from diverse viewpoints, all contribute to the perception of risk over a market. The lack of a univocal, unambiguous reference point transfers the information considered for risk evaluation to the specific purpose for which RP is used. This has been made clear through the presentation of CRP and SRP, used to demonstrate two opposite approaches to RP evaluation. The number of information considered in the estimation of risk compensation is thus comprehensive of the environment surrounding financial markets. We can safely say that risk premia also depend on the economic environment; however, how these information are treated varies according to the final purpose of the analysis. This generally answers our initial question; however, a distinction between the two groups is necessary.

Small markets have indeed been shown more tightly linked to stock exchange measures. We highlighted the positive notes of those countries in terms of global integration and economy diversification in recent years. Still, economies that to a larger extent engage in highly correlated and easy to substitute activities (raw material and labor supply) represent by definition a much riskier investment for the issue of diversification. Adding governmental instabilities, stock exchange

weakness and structural lacks that these countries often display does not encourage investors in making long-term forecasts. The result is a likely higher number of growth-oriented, short-term investments, which are by definition (and according to the lower and less reliable information available) much more related to market shifts. This outlook penalizes actually well performing firms in such markets, which are not rewarded with increased trust. The lack of widespread and certified knowledge rises both uncertainty and ambiguity: both features are undesired by investors.

On the other hand, group B firms have a much more predictable surrounding and environment reputation that more easily attracts informed agents truly believing in the company they are investing in. The way in which information are processed are thus not only different according to the purpose, but also to the group we are referring to. Such distinction, with its sole existence, realistically increases the perception of hazard in group S, since investors are forced to use market variation as a proxy for risk. As we know, such framework is liable of the influence of speculation on prices and makes rather foggy the actual performances of the underlying businesses.

In our Asian comparison however, a good word in favor of less the developed group is due. We indeed had some hard times in finding a distinction that is consistent throughout all variables observed. As it has been stated in several occasions writing down this work, the initial division of countries has not been fully observed in all aspects encountered. Even if the two groups are consistent, their differences do not have the same magnitude of the risk premia analyzed globally by Damodaran. The relation between the two groups have been addressed as that of an established leader and a rising follower; however the satellite role of group S is not strictly speaking that of emerging countries with respect to developing ones. The reason comes from two different facts: first of all, most of the considered countries are indeed emerging, weakening the “emerging vs. established” relation. Additionally, a number of group S’ nations are actually rising their integration as well as life standards, absorbing established countries’ habits. We would not be surprised if the dynamics of risk and the determinants of market prices become more clear in a few years from now, as a consequence of integration of minor economies.

In this research, we identified the rationale behind which factors are used in constructing RP measures. We also faced the main difficulty of the topic, namely its “elusiveness”. We conclude saying that, despite risk premium appears being a comprehensive indicator, its usefulness is strictly linked to the ability to interpret it and choose the most appropriate measure.

All discussed variables and more are indeed affecting RP, even if human perception often twists actual indices and bias their choices on personal impressions, which likely change from case to case. The unpredictability of behavior also depends on economic state and the effect of risk aversion, made clear through utility models. As a result, what said in this work seems consistent within the presented scenario, but hard to generalize.

The Asian case has been an interesting test for the developed and emerging convergence, partly confirming it in the name of integration. Yet, such convergence has been proven harder to define, the narrower the focus of the analysis. The sole solution would be to dedicate a focus to the vast aspects left out from this research. Within the chosen boundaries of our Asian groups, a study over the institutional actions for market regulations and economic stability would detail the portrait of uncertainty management and integration. Moreover, while we focused on information risk alone, a quantitative study on all forms of markets’ efficiency would enrich the brief theoretical glimpse provided above. Eventually, a similar study could be conducted over South American countries, with the same “two groups” logic. The Asian and South American analyses would properly specify the global study on risk premium. These two regions are indeed those with more complex dynamics between well-established and developing countries. The result would correctly address convergence between groups of countries, with respect to economic interdependence, investment choices and investors’ perceptions and preconceptions.

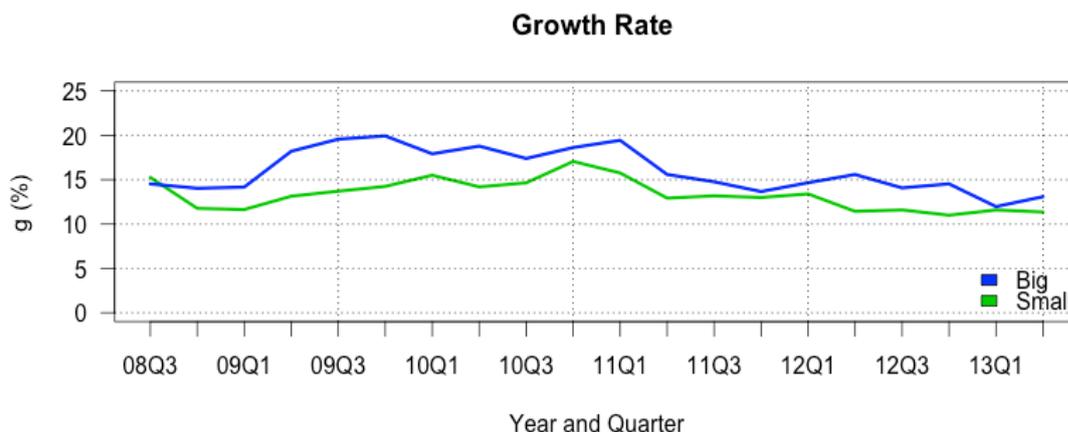
Notes' Clarifications and Additional Charts

On note 38

Bloomberg's growth rate used in the RP computations displays noteworthy evidence in favor of what said so far. Not including it in the present work would definitely mean to leave part of the discussed intuitions to the framework of a logical inference, but lacking of measurable clues. If from our point of view, the deepening of RP components in the preliminary part of our research would flow into a bias in other data interpretation, we cannot neglect the importance of such perspective. To strengthen the basis of our drivers' analysis and provide an all around description of contributing factors, we considered the addition of a note on market growth and risk free rate. The realization of an increase in the risk level of big countries in the region, with their great market integration, called for a revision in the risk free rates. If late 2008 lines are separated by a wide disparity in returns, the recession allows for redemption of smaller nations. Risk free rate in such markets declines notably, while the post-crisis level for big markets sets stable at around 4%. This drives a convergence in risk free that widely embrace the issue of global integration of less advanced regions, even in term of uncertainty evaluation.

Emerging countries are usually recognized as riskier when close to bear market times. The risks at issue are those of uncertainty around country stability, similar to those already mentioned when presenting the paper about "normality" of risk premium (footnote 25). On the other hand, developed countries saw economic growth as boost for stock returns in the past, even if modern times have economic downturn causing a general increase in uncertainty. However, the Asian region does not display a strict distinction between the two proposed groups: the effects of the crisis on uncertainty are not straightforward, and actually acted in an unexpected way in recent years. Government assets have been reevaluated in the light of recession, and the two groups obtained a much closer location in term of reliability.

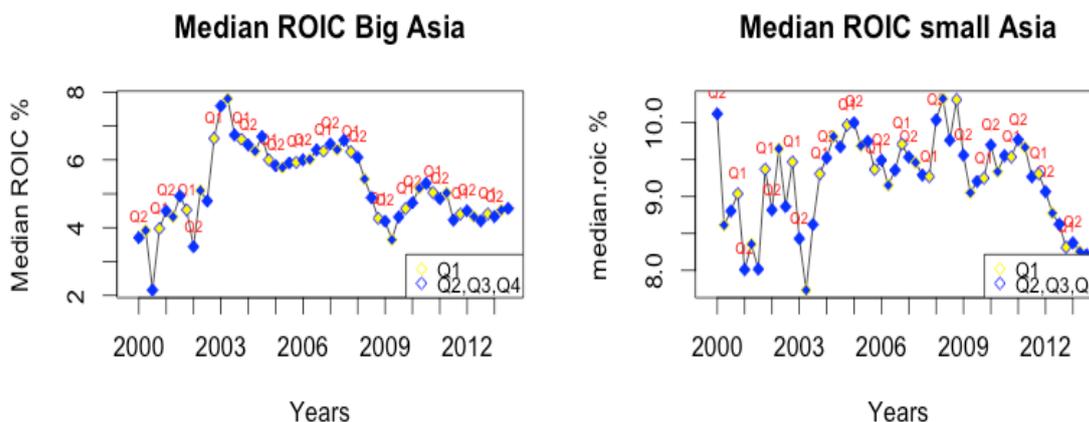
The path of growth rate for the two groups is worth showing for its complexity, relation with the RP and further contribution to the supposed scenario.



The discrepancy in 2008 quarter 4 to 2010 quarter1 pays back even more for group B in term of higher RP. The market growth rate is indeed immediately higher in the post-crisis period for the developed countries' group. However, as time passes by, it settles on lower levels, and converges to that of group S. Such growth can be an expression of investors trust, or at least preference for more advanced markets in the years immediately after recession. Eventually, the two meeting growth levels pass through a decrease in the risk free rate for smaller markets; the result could not be anything but a convergence in risk premium as well.

On note 44

The values of median ROIC have been shown separately here, to better grasp the groups' trends. We considered the unified scale misleading and lacking in the perception of volatility.

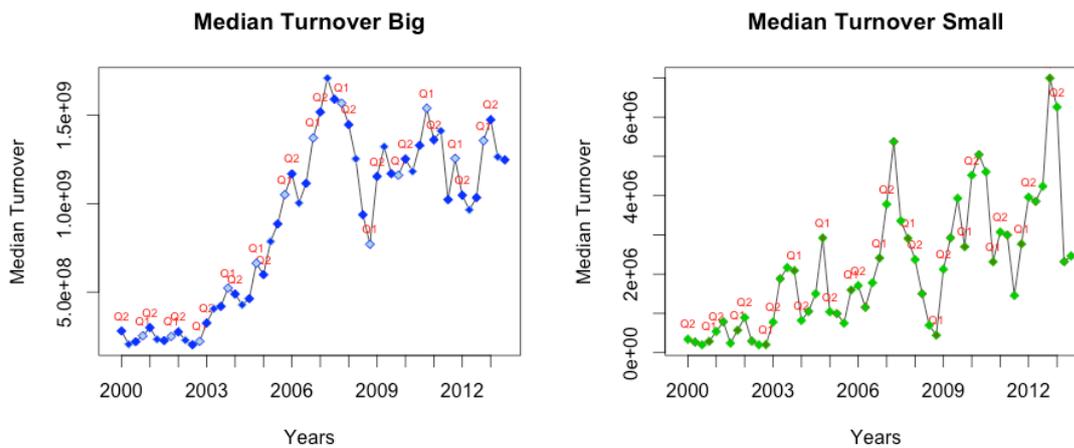


Big countries have a much smoother path; nevertheless, the two trends are

analogous. Median values have been preferred here to averages, to correctly manage the possible outliers among group S firms, where few ROIC measures could have altered the index. Nevertheless, values are higher for this group.

On note 52

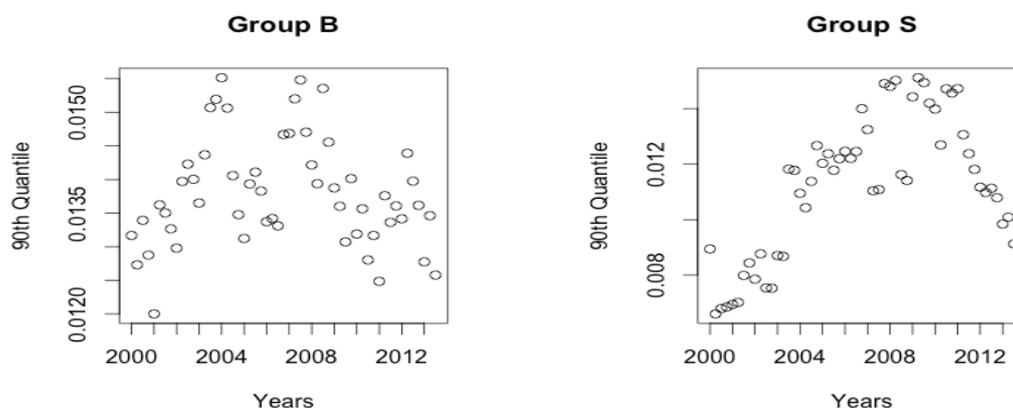
The rising trend in group S as well as the slow down of group B in the after-crisis years are both signal of a preference of risky investments in bull markets. The same is true, in the opposite sense, for the bigger drop in turnover for the graph on the right.



Also, greater volatility is visually clear. The perception of instability and larger risk is self-evident and the distinction of the two groups arises from the observation of these charts alone. Further evidences are provided by the quantitative elaborations.

On note 54

The two graphs display the shift of the 90th quantile over time. It indicates the threshold below which the 90% of the sample is set. As we can see, and it is explained in the final section of this work, the movement for group B is much more chaotic. Such peculiarity can represent a possible clue for a greater market activity and competition. It indeed relate to a faster-changing capital level for the top firms in the market, suggesting a possible switch in higher ranked firms.



Group S conversely sets in a much smoother, recession related path. This is consistent with the selection process enacted by the recession, and a stronger framework of few, largely capitalized firms holding the market concentrated.

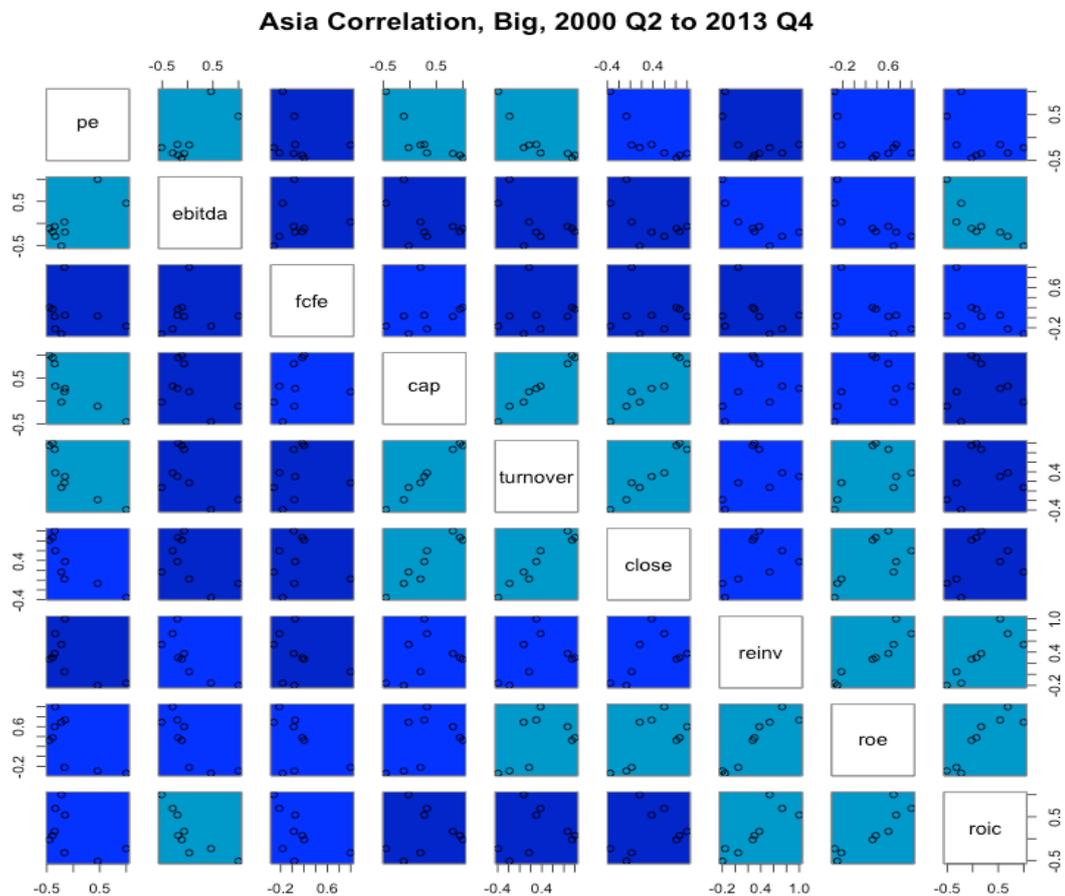
On note 61

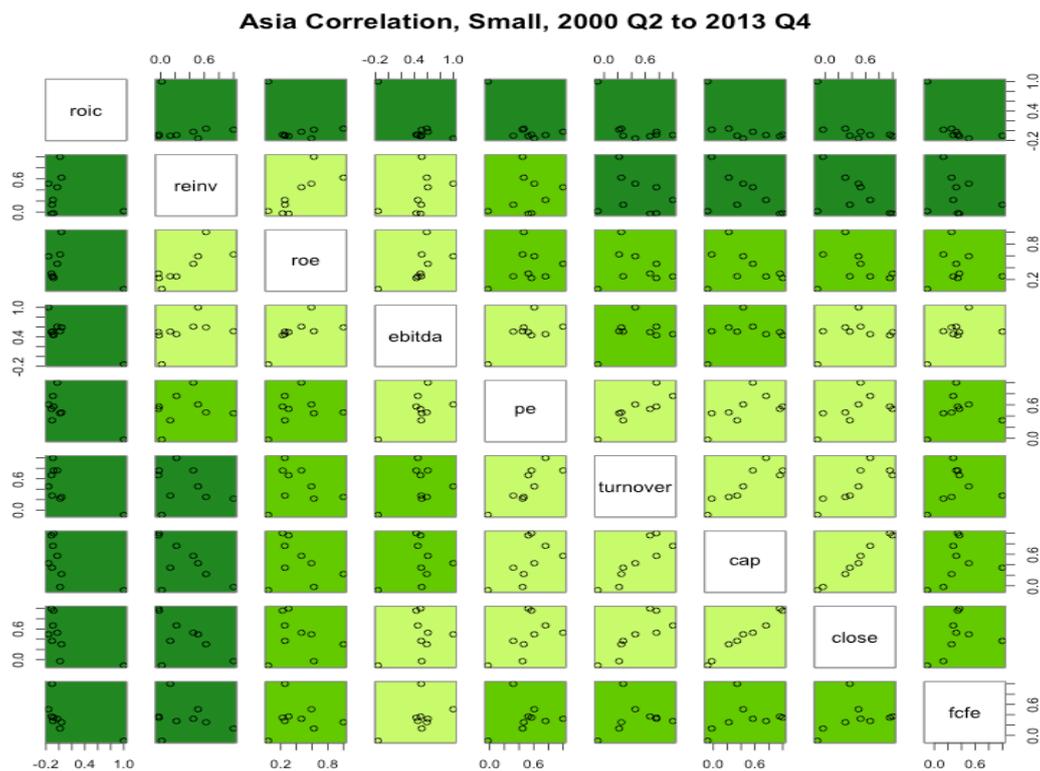
The transfer of shocks through FDI greatly depends on the type of activity covered by the business. Horizontally integrated activities are more capable of limiting shocks diffusion, while vertical integration makes sector more dependent on one another. This creates a chain reaction across countries belonging to the same company. Moreover, multinational located firms have the advantage to rely on more credit market and be able to exploit better conditions. A more global network also permits to manage better relations with governments and authorities, implementing the marketing dimension of the firm. Overall, FDI have a cross effect on business operations, which is worse if the country of origin of the investments (or the headquarter, in case of multinationals) has been hardly hit by recession. We can find a similar domino effect in the field of sovereign and non-sovereign debt owners. Also, the higher percentage of insider and CEO holding for emerging countries should keep firm's decisions local, and favor the containment of the recent crisis in these countries' activities⁸⁶. Finally, if the decrease in FDI is a sign for the establishment of a country, consequences on firms' framework exist. Such decrease indeed interested mostly group S countries, the supposedly less developed ones. The economic improvement cancels possibility of bigger gains in

⁸⁶ Data on the division of shares among insider and CEO is available in the proper section of professor Damodaran website http://people.stern.nyu.edu/adamodar/New_Home_Page/data.html;

investments, lowering FDI but pointing at a transformation in business relations with foreign countries. Most operations in emerging countries are vertically integrated with their foreign investors' companies. Economic development causes a higher degree of horizontal integration, leading emerging countries to a greater independence. Also competition changes, since the higher number of independent firms share the local market; this should generally improve efficiency and limit corruption. The overall effect is in favor of a leveling of country's status, even if what described here for FDI is not an instant process.

On note 70





On note 72

The two regressions of median closing price on the other variables are intended to evaluate the influence of economic and market information in constructing prices. The time lags are set equal to one, with the exception of turnover and EBITDA, that influence with the first two and only second lagged observations respectively. The reasons are the same used in the regression of turnover on others: EBITDAs are accounting values that need proper timing for elaborating and publishing, a 2 quarters lag seems reasonable; turnover are expected to influence prices because of an underlying trend, that might build in more than three months, thus it is worth checking for both three and six months before.

BIG median price on others.

Model 1: OLS, using observations 2002:3–2013:4 (T = 46)
Dependent variable: median_close_p

	coefficient	std. error	t-ratio	p-value	
const	94.1673	48.8192	1.929	0.0617	*
median_roe_1	14.8151	3.01250	4.918	1.93e-05	***
median_roic_1	-23.1999	7.79658	-2.976	0.0052	***
median_reinv_1	25.5684	10.1906	2.509	0.0167	**
median_pe_1	2.65209	1.60357	1.654	0.1068	
median_turnover_1	1.02969e-07	2.63211e-08	3.912	0.0004	***
median_turnover_2	3.15237e-08	2.12836e-08	1.481	0.1473	
median_ebitda_2	-0.0148324	0.0588855	-0.2519	0.8026	
median_fcfte_1	-0.134270	0.0743889	-1.805	0.0794	*
median_cap_1	-0.000453075	0.00379550	-0.1194	0.9056	
Mean dependent var	323.4402	S.D. dependent var	79.98688		
Sum squared resid	14211.28	S.E. of regression	19.86851		
R-squared	0.950639	Adjusted R-squared	0.938299		
F(9, 36)	77.03578	P-value(F)	8.19e-21		
Log-likelihood	-197.1336	Akaike criterion	414.2672		
Schwarz criterion	432.5537	Hannan-Quinn	421.1174		
rho	0.149060	Durbin-Watson	1.686378		

Excluding the constant, p-value was highest for variable 47 (median_cap_1)

small median price on others

Model 1: OLS, using observations 2000:4–2013:4 (T = 53)
Dependent variable: median_close_p

	coefficient	std. error	t-ratio	p-value	
const	1.29280	1.87491	0.6895	0.4942	
median_roe_1	0.158666	0.0956906	1.658	0.1046	
median_roic_1	-0.301888	0.193101	-1.563	0.1253	
median_reinv_1	0.195435	0.346464	0.5641	0.5756	
median_pe_1	-0.188694	0.0919775	-2.052	0.0463	**
median_turnover_1	1.85732e-07	1.41880e-07	1.309	0.1975	
median_turnover_2	1.34076e-07	1.33303e-07	1.006	0.3201	
median_ebitda_1	0.973162	0.503210	1.934	0.0597	*
median_FCFTE_2	0.0737962	0.568555	0.1298	0.8973	
median_cap_1	0.0122167	0.000739425	16.52	3.09e-20	***
Mean dependent var	5.618916	S.D. dependent var	3.922496		
Sum squared resid	27.07446	S.E. of regression	0.793498		
R-squared	0.966160	Adjusted R-squared	0.959077		
F(9, 43)	136.4092	P-value(F)	1.20e-28		
Log-likelihood	-57.40366	Akaike criterion	134.8073		
Schwarz criterion	154.5102	Hannan-Quinn	142.3841		
rho	0.475193	Durbin-Watson	1.048125		

Excluding the constant, p-value was highest for variable 49 (median_FCFTE_2)

Briefly describing the two regression's results, adjusted R-squared are high for both of them, proving a good quality of estimation; group B prices are to a greater extent linked to real economy performances, while smaller countries' prices more greatly depend on firm's features (capitalization) and market-based results (PE). There is a higher ease of prediction of market prices through firm operations' results for group B. This transmits reliability in long-term investors, with actual expectation on these countries' growth. Smaller markets display positive results as

well, as we saw in the indicators' analysis; nonetheless, they are less dependent on firms' value creation. This can attract investors willing to gain on market operations, but not interested in the long-run operations of the underlying business. We thus shift our focus on the analysis of turnover values, since this variable should describe investor's behavior for both markets, regardless of the link with real economy. We hope to trace two clear but distinctive conducts for the different groups.

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