Part 1: Our View on Risk II

In out last letter issued in September 2017, we detailed how we look at risk. We mentioned that among the several risks that we face, losing money over a 3 to 5 years investment horizon is what concerns us the most. A large share of the analyses and comments on risk usually focus on evaluating uncertainties without considering the asset prices. We can use the Mexican market situations in 2000 and 2012 as an example, where a decrease in uncertainty entailed a high-risk investment period due to exacerbated expectations reflected on asset prices. In our view, the asset prices should portray one of the most relevant variables in any investment risk assessment. Comprehending the connection between the price of an asset and its intrinsic value (a non-observable variable) is among the most important activities for any investor focused on capital preservation.

In this letter, we will briefly discuss the risk measurement process and its limitations.

The academic works by Henry Markowitz (who published the Modern Portfolio Theory and Efficient Frontier in the mid 20th century), Bill Sharpe, Jack Treynor and John Lintner, (who, in 1961 and 1965, used Markowitz's work as a template to independently develop the capital asset pricing model - CAPM) revolutionized the decision making process used by the majority of investors. Under a solid mathematical basis, Markowitz, Sharpe, Treynor and Lintner created intuitive models that established parameters to measure risk and asset pricing via the concept of economic diversification and the relation between risk and return. Up until then, there was no quantitative theory framework that enabled simple and objective risk assessment and asset pricing for choosing investment alternatives. The “value investing” school of thought that emerged a few decades earlier under Benjamin Graham began to provide parameters for choosing investments. Graham suggested an investment approach that secured low-risk of capital losses and “adequate returns” in the long term, even if the price of invested assets is affected by price fluctuations due to constant market mood-swings. The approach was essentially based on the search for a “safety margin”, which means acquiring assets below their intrinsic value. Graham suggested that investors dedicate themselves to assessing companies’ fundamentals and adopt a business mindset.

The value investing style, introduced by Graham, clearly sets a path to be followed, although this path does not provide instant answers for observers who are anxious for short-term, objective metrics. One of the main restrictions to this approach is the fact that using a business mindset to assess intrinsic value necessarily requires a deep understanding of company fundamentals, which is an ability that requires practical experience and could take decades to develop. Another restriction is the lack of an objective

Tel: 11 3049 3954 Fax: 11 3049 3305
fundos@equitas.com.br
www.equitas.com.br

answer to the following question: What is the “adequate return” for a certain investment? Graham only suggested a generic return of stock investments of approximately 7.5% per annum, achieved through a combination of 3.5% in dividends and 4% in price increases. The models introduced by Markowitz, Sharpe, Treynor and Lintner provided a seemingly accurate calculation for expected returns from each individual stock based on measurable risk parameters. A broad and subjective concept was streamlined into a mathematical formula.

Besides the models’ contribution towards portfolio development and asset pricing mindsets, their clear simplicity and objectivity enabled mass adoption among investors, analysts and investment advisors. Suddenly, anyone who could apply the four mathematical operations and was willing to read a few chapters of a book on finance was ready to apply two or three formulae and give an opinion on risk without the need for further learning or debate. The basic assumption behind these Markowitz, Sharpe, Treynor and Lintner models was that the volatility (price fluctuation) of an asset is the best measurement for its absolute and relative risks. The “blind” and widespread application of this methodology somewhat distorts important risk assessment processes. In the absence of other simple and effective parameters, an asset's volatility may be the measurement most readily available, although it should not be considered an absolute and unique depiction of risk. This indiscriminate adoption leads to a certain level of complacency when facing major risks and a shortened investment horizon.

What is the importance of volatility as a risk measurement for long-term investors?

We view risk as the probability of losing money over a certain investment horizon. For an investor with a horizon comprised of a few months, an asset's volatility is the central analysis factor. For example, investing in an equity fund with 15% annual volatility can be a high-risk investment over a one-year horizon. For an investor with a 5 to 10 year horizon, a 15% annual price fluctuation is a less relevant parameter. If the horizon is even longer, volatility becomes almost irrelevant. When evaluating the purchase of a property as a long-term investment, a buyer usually tries to understand the risks by analyzing the neighborhood, the characteristics of the condominium, price, tenant profiles, etc... The investor intuitively knows that the possible price fluctuations for that property the month following the purchase should not be a cause for concern. Nevertheless, we can see come odd situations, maybe due to the frequent availability of financial asset prices, such as savers who have available resources to invest over a horizon of several years or maybe decades, evaluating the efficiency of their portfolio mainly through the Sharpe Index, which indicates the relation between a portfolio’s surplus return and its volatility. This practice is frequently taken to the extreme, which results in warped decision-making in favor of lower volatility assets, giving up the benefit of being able to capture liquidity premiums, which is a major advantage that these long-term investors should have over others.

Does this mean that using volatility as a risk measurement tool is only problematic because it leads long-term investors to miss good investment opportunities? No! The indiscriminate adoption of volatility parameters as a risk measurement also leads to complacency with excessive asset prices and high-risk practices, such as using a high degree of leverage. Once an investor or analyst sees volatility as risk, controlling this parameter becomes more relevant than understanding a portfolio's components, the fundamentals of a certain asset or the characteristics of a certain investment strategy.

There are two basic ways to secure returns in the "investment" (or in the purchase and sale of financial assets) universe. One way is by trying to answer the question: How much is a particular asset worth? Another way is trying to answer: Where will prices go next?

Investors who focus their efforts on trying to answer the "worth" question try to identify and purchase financial assets which are being traded below their intrinsic value and expect a long-term return from dividends or via the convergence of an asset's price with its intrinsic value. As outlined in our previous letter, the problem with this approach is that the intrinsic value is a non-observable variable that we can try to estimate through an arduous and imprecise process, which offers little short-term predictability. Yet, we have full confidence that this approach offers greater protection against the risk of permanent capital losses than most other options. Furthermore, it helps accrue knowledge that can improve the investment process over time. The process of analyzing a certain company to gauge its intrinsic value involves collecting a large amount of specific information about microeconomic aspects and characteristics that determines a company's capacity to generate value for shareholders, which cumulatively contributes to the quality of future analyses. In other words, we believe that by adopting this approach people who have intellectual curiosity and the willingness to learn on an ongoing basis can actually improve in what they do over time. By understanding that none of us will become younger in ten or twenty years time, we wish to continuously develop conditions to keep doing what we do for many more years to come choosing an investment approach that will keep us alive in the long-term and will favor our accumulated knowledge over a young investor's hubris.

The market players who try to understand "where prices will go next" usually employ macroeconomic analyses, behavioral interpretation of other market players or simply identifying trends by observing

Tel: 11 3049 3954 Fax: 11 3049 3305
fundos@equitas.com.br
www.equitas.com.br

asset price behavior over short-term horizons. There is a widely documented phenomenon known as momentum, which, in many situations, can explain the trajectory of financial asset prices. It mainly involves following a trajectory, where past price fluctuations have a predictive power over futures prices. Because this phenomenon can be observed and measured, it becomes an instrument market players often use to identify and follow trends. The problem with this approach is that trends do not give clear signs of how long they will last. They work until they no longer work. If prices have reached a threshold clearly above an asset's intrinsic value, the turnaround can be very strong and quickly eradicate the earnings accrued in a seemingly low-risk environment. In these situations, trend followers lose their trading parameters and are forced to trigger their stop loss mechanisms which, in turn, amplify price drops driven by others taking a similar approach. These mechanisms' ability to limit losses is uncertain. The only thing we do know is that, once triggered, the losses become permanent.

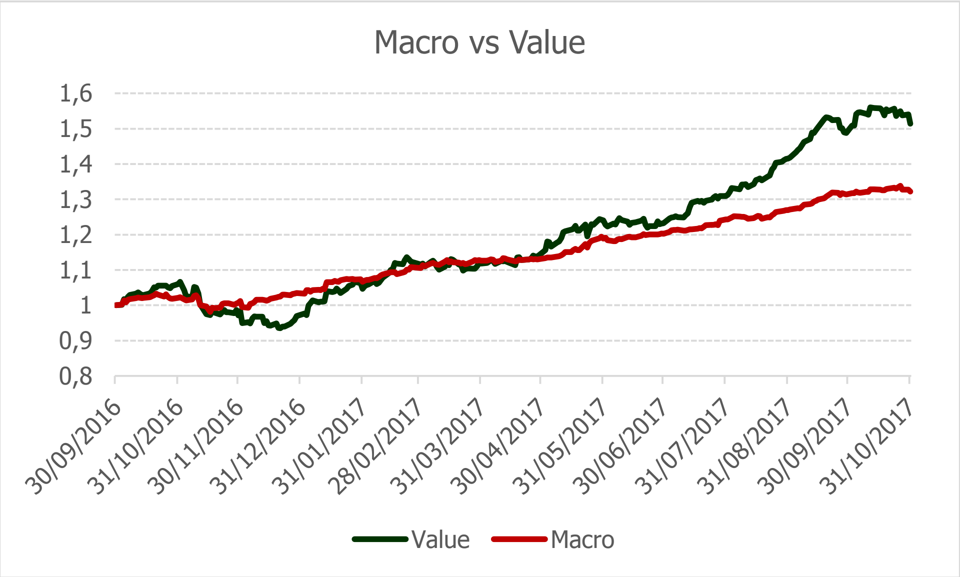
What does volatility, the most widely used risk measurement tool, tells us about the risk of permanent losses mentioned above?

Very little! To depict how restricted volatility is as a risk measurement tool, we will use a common example. A common outlook among analysts and advisers is that macro-multimarket funds (hedge funds) in Brazil present less risk than equity funds due to their greater diversification capacity and lower volatility. A multimarket fund manager has several protection and diversification instruments at their disposal, with the ability to access financial instruments from different categories across several markets around the world. Because macro-multimarket funds are not restricted to a limited number of risk factors, like equity funds of Brazilian companies, they become more "balanced" investment vehicles compared to equity funds. In addition to these characteristics that would, in theory, make them less risky than equity funds, they also have two other traits that, in our opinion, have the opposite effect: 1- they use a lot of leverage; 2- trend-following is their main investment strategy. Under the volatility measurement, the structure of these distinct characteristics generates a seemingly lower-risk profile for macro-multimarket when compared to equity funds.

What does this means to the long-term investor focused on capital preservation and concerned about avoiding permanent losses?

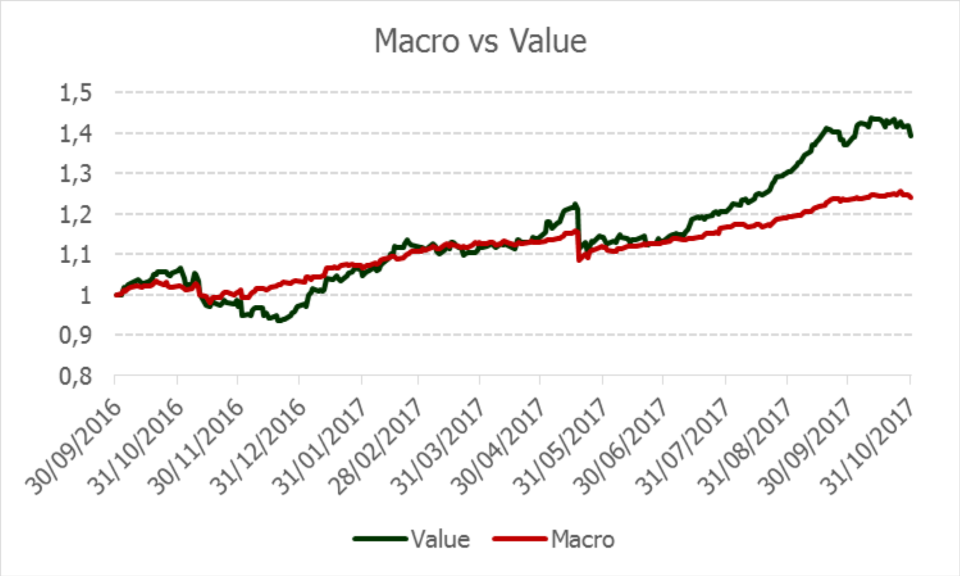
A simple track record analysis of these funds over the previous 12 months could provide us a clue about the validity of the volatility profile as a risk measurement tool. We developed two indexes (Macro and Value) which aggregate the performance of the 10 best-performing funds from the previous 12 months among all multimarket investment funds (hedge funds) and equity funds with over R$ 50 million in AUM. To analyze the distortion from a risk analysis based on volatility, we have taken the liberty of excluding a single day (18/5, or when the Joesley Batista plea bargain agreement was made public). We decided to analyze fund behavior excluding 18/5, because this particular event was momentarily interpreted as a “black swan candidate” (a low-probability event that has a major impact), and asset prices reacted accordingly. This event turned out to be only a “black swan rehearsal”, a blip in the market. By excluding this particular event, we could simulate the behavior of these asset classes under “normal” conditions and analyze the practicality of the usual risk measurement tools to forecast behavior under “atypical” conditions.

The result of this exercise, excluding 18/5, can be observed in the graph and chart below: Under “normal” conditions, the exercise suggests multimarket funds would have a volatility equivalent to less than half the volatility of the funds that follow value-based strategies in the previous 12 months. Additionally, the Sharpe and Sortino indexes, which are also based on volatility as a risk measurement tool and are typically used to assess the relation between risk and return, point to a superior ratio for multimarket funds. According to these indexes, the multimarket funds have lower risks, a better risk vs. return ratio and lower downside risk.



	Vol ex 18/5	Negative Vol ex 18/5	Sharpe ex 18/5	Sortino ex 18/5
FIA Value	14.3%	11.0%	2.77	3.60
FIM - Multimarket	6.6%	5.4%	3.17	3.85

However, when including 18/5, we came to a completely different result. The volatility for multimarket funds in relation to value funds increased from 46% to 55%. The Sharpe and especially the Sortino indexes, which should measure the downside risks, were now favoring equity funds - value, indicating an opposite outcome compared with the previous exercise.



	Vol	Negative Vol	Sharpe	Sortino
FIA Value	16.5%	15.9%	1.74	1.80
FIM - Multimarket	9.1%	11.3%	1.45	1.17

This highlights the fact that the addition of a single day is sufficient to completely alter the outcome of the risk ratio between these two asset classes. What is even more interesting is how these funds behaved on 18/5. The value funds dropped 7.9%, while the multimarket funds fell 6.2%. In other words, according to the volatility measurement tools, the multimarket funds that should have approximately 46% risk fell by the equivalent of nearly 80% of the value funds price drops. This event underlines the distortions caused by using volatility as a risk measurement tool, although it was only a blip. Shortly afterward, the market recovered and the price trajectories were soon reinstated. There is one question that this exercise does not answer: What would have happened if the 18/5 event was not just a “fake” black swan, but the real deal, capable of altering short-term scenarios and disrupting trends, resulting in sharper asset price fluctuations?

The investor who wishes to understand how these events could pose a risk of permanent capital loss, especially because this type of event will certainly happen again, will not find answers in conventional and objective volatility-oriented measurements. The investor will inevitably have to develop their analysis by trying first to understand the duration and how their portfolio is backed: (i) real assets, perpetual in nature or not, that pay dividend or a coupon; (ii) perpetual assets that do not offer yields; or (iii) derivatives that are contracts with an expiry date. Following this analysis, there is no escaping from a subjective analysis in an attempt to understand to what extent asset price are supported by fundamentals (compared to “intrinsic value”), and how these prices depend a the continuity of some sort of trend. Prices that are mostly supported by fundamentals can produce large fluctuations (volatility), although these movements have a tendency to be temporary and do not result in permanent losses for the long-term investor. The price component that depends on a trend usually evaporates when the trend concludes and offers no outlook for recovery. Lastly, the investor must understand the level of leverage to which a portfolio or asset is exposed.

Warren Buffett described this in the Berkshire Hathaway letter to shareholders in February 2011: “When leverage works, it magnifies your gains. Your spouse thinks you’re clever, and your neighbors get envious. But leverage is addictive. Once having profited from its wonders, very few people retreat to more conservative practices. And as we all learned in third grade – and some relearned in 2008 – any series of positive numbers, however impressive the numbers may be, evaporates when multiplied by a single zero. History tells us that leverage all too often produces zeroes, even when it is employed by very smart people.”.

We believe that regardless of what volatility suggests, the best way to control the risk of permanent capital losses is to avoid excessive leverage, invest in real assets that generate cash and offer returns and dedicate time and effort to understand the asset fundamentals instead of trying to guess what will happen next, necessarily over a long investment horizon. A widespread alternative approach is to use leverage and follow trends, hoping that the investor, or their fund manager’s, superior intelligence will allow them to foresee events that most people are unable to predict and wind up their positions before everyone else. In this case, besides intelligence, one has to count more on luck...

Equitas Investment Fund Management Services Ltda.

Tel: 11 3049 3954 Fax: 11 3049 3305
fundos@equitas.com.br
www.equitas.com.br

EQUITAS

Equitas Selection FIC FIA vs Ibovespa vs IBX vs CDI

	Absolute return (R$)				Annualized return (R$)			
	Equitas Selection	Ibovespa	IBX	CDI	Equitas Selection	Ibovespa	IBX	CDI
Starting on (06/07/2010)	275.9%	16.0%	52.7%	114.9%	19.6%	2.0%	5.9%	10.9%
36 months	67.7%	31.5%	31.7%	42.5%	18.9%	9.6%	9.7%	12.6%
24 months	86.1%	59.5%	57.7%	26.1%	36.6%	26.4%	25.7%	12.4%
12 months	38.9%	16.3%	16.9%	10.6%				
Year (2017)	36.2%	19.5%	19.9%	9.4%				

Baseline date: 30/11/2017

Average PE - Last 12 months - Equitas Selection FIC FIA (R$ thousands): 105,931

Current PE - 31/08/2017 - Equitas Selection FIC FIA (R$ thousands): 204,472

Equitas Investment Fund Management Services Ltda.

Tel: 11 3049 3954 Fax: 11 3049 3305
fundos@equitas.com.br
www.equitas.com.br