STOCKS IN SHORT TERM OR LONG RUN

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AÇÕES NO CURTO PRAZO OU NO LONGO PRAZO

OBJETIVO

O objetivo deste trabalho é mostrar que um investimento em ações não é necessariamente um investimento para o longo prazo e que é possível auferir ganhos significativos e com assertividade também no curto prazo utilizando a abordagem da análise técnica.

METODOLOGIA

A metodologia consiste da análise de oito casos marcantes e na identificação, nos correspondentes gráficos, dos avisos dados pelas técnicas mais simples e mais utilizadas. A utilidade da abordagem é corroborada pela sua eficácia em todos os casos estudados.

RESULTADOS E CONCLUSÕES

Comprar ações pode ser um investimento de sucesso no curto prazo. Investimentos em renda variável não necessariamente são rentáveis somente no longo prazo. Posições de longo prazo também podem se beneficiar dos avisos emitidos pela análise técnica, por exemplo, através da indicação de pontos de venda, mitigando ou evitando perdas quando os cenários mudam.

IMPLICAÇÕES PRÁTICAS

A analise técnica é muito utilizada, mas pouco estudada pela academia. É frontalmente oposta à Eficiência Fraca da Hipótese dos Mercados Eficientes. Os casos analisados mostram a sua utilidade e convidam à pesquisa meticulosa da abordagem.

PALAVRAS-CHAVE

Análise de Investimentos, Análise Técnica, Análise Gráfica.

STOCKS IN SHORT TERM OR LONG RUN

OBJECTIVE

This work shows that an investment in stocks is not necessarily an investment for the long run. A technical sell signal may appear warning that at a given moment the recommendation is to sell and take the profits obtained up to that moment, thus avoiding future losses. However, in the absence of sell signals a position can be held, featuring an investment for a longer term and occasionally, for the long run.

METHODOLOGY

The methodology consists in the analysis of 8 landmark cases where are identified, in the charts, the warnings given by the simplest and most widely used techniques. The usefulness of the approach is corroborated by its effectiveness in all the cases studied.

RESULTS AND CONCLUSIONS

Buy stocks may be a successful investment in the short term, selling if things change, when technical analysis sends a sell signal, avoiding losses in the end. A position may be held in the long run and be successful, in the absence of signals to sell. Or lead to a big loss, if a wrong position, a losing one, is held in the long run. Technical analysis tools and signals help to tell the difference.

PRACTICAL IMPLICATIONS

Technical analysis is widely used but little studied by academia. It is contrary to the hypothesis of market efficiency in its Weak Form. The cases analyzed show the usefulness of the tools and encourage the meticulous research on this technique.

KEYWORDS

Investment Analysis, Technical Analysis.

INTRODUCTION

Considering short term investments those that last up to one year and long run ones those which last any period longer, in the investment world one often hears, or reads, that "stocks are investments for the long run".

Are they, really? "In the long run we are all dead", said Lord Keynes (1924).

When buying a stock it is not possible to know at that very moment whether or for how long will that investment be profitable. Whenever market conditions change and a sell signal appears, the best thing to do is to sell. If, even though, that stock has good prospects, when a buy signal appears again what one has to do is to buy it back, and that process is repeated, in cycles. Thus, many short term periods may compose a long run period.

A long run 10 year period is a sequence of more than 3600 short term one day periods. The long run of an investment may be composed of several small phases, short term phases.

Suppose that XYZ Company has launched a successful new product whose sales are reaching new markets and are expected to boom. Revenues will grow, income is also expected to grow, XYZ stocks promise to be winners.

This is what Fundamental Analysis (FA) is for: analyzing balance sheets, income statements, calculating financial indices and so on, it is able to forecast earnings that will convey information about the stock value, in a very efficient way. However, FA alone is not able to forecast stock prices, for prices, differently from earnings, depend not only on the performance of a company but also on stock market condi-

tions, which depend on several different factors. FA tells the reasons why to buy a stock, but not when.

The objective of this work is to show that an investment in stocks is not necessarily an investment for the long run and that it is possible to earn significant gains with assertiveness in the short term by using the approach of technical analysis.

On the one hand, according to FA, it is easy to buy a stock that is to be a winner, even not knowing it will, while it is still cheap (see P/E explanation ahead); on the other hand, what is difficult is to sell it in the most convenient moment. Technical Analysis (TA) points out the best moments to buy and sell, indicating when to do so, but not why. Joining FA and TA one will have both the WHYs and WHENs. Both FA and TA work separate and independently, but when combined, TA complements FA, providing more and better reasons to make a decision about an investment in stocks.

The most important feature of TA is not to forecast prices, as often believed - and as it may, but to indicate when to buy or to be in the market, and when to sell, or to be out of the market.

In other words, once a crisis has arrived, taking away hopes and dreams, even though trying to explain it a posteriori, willing to find an explanation to Taleb's Black Swan (2007), the damage has already been done; it is not possible to change the beginning of a series of facts, but acting now it is possible to change the future horizon from that moment on, with a different ending. That is when tools provided by TA will help a decision making.

FUNDAMENTAL ANALYSIS

The objective of FA is to evaluate the intrinsic value of an asset, stocks, in this case. Graham and Dodd, in their classical work (1934) stress that to discover if the intrinsic value of a stock is still adequate to justify its purchase, yet, whether it is bigger or smaller than the market price, is more important than to find its exact intrinsic value.

Damodaran (2010) defines the valuation of an asset as the present value of the sum of the expected cash flows on that asset discounted at a rate called cost of equity.

$$Valuation = \sum_{n=1}^{N} \frac{CF_n}{(1+r)^n}$$

where:

- N = life of the asset

- CFn = cashflow in period n

- r = discount rate or cost of equity

The Price to Earnings ratio (P/E)

An alternative way to set the intrinsic value of a stock is the use of multiples, out of which the P/E ratio or Price/Earnings ratio is the most used. P is the stock price today, or the latest available. E is the earning per share (net profit/ # shares). In Brazil E represents the earnings forecast for the end of the fiscal year. In the USA, although that method is also used, it usually is an average of prior earnings. Shiller (2000) uses a 10 year earnings moving average. E always indicates annual earnings.

The P/E model is based on 3 assumptions:

- All the earnings belong to the stockholder
- The earning is constant
- Inflation is not considered

It is easy to see that those 3 assumptions on the model do not occur in the real world, but they make possible the utilization of the model. For instance, based on those assumptions, let $14.00 be the stock price and $2.00 its earnings, what makes 7 the P/E, where that 7 indicates how many years are necessary for the payback of such an investment. Therefore, the smaller the P/E, the shorter the payback, and so the cheaper the stock is considered. However, consider 2 stocks A and B with P/E of 7 and 14, respectively. That doesn't mean one will have to wait 7 and 14 years for the investments to payback; that only means that today A's payback is half B's, i.e., A is cheaper than B. Depending on market conditions we know neither if nor when those values will be reached. Each time a quarter's result is posted those forecasts are reviewed, what may alter those comparisons. P/E is, therefore, a relative and comparative measure, indicating how many times price is multiple of earnings at a given moment.

Bank stock market analysts project companies' earnings and, from them, their P/Es and industries' P/Es. The average P/E of an industry conveys the intrinsic value of that industry's stocks when multiplied by the respective companies' E.

As a rule of thumb, the company's P/E is compared with industry's average P/E, and a decision should be taken as follows:

- If P/E < P/Eaverage ➔ BUY - the stock is cheap

- If P/E > P/Eaverage ➔ SELL- the stock is dear
- If P/E = P/Eaverage : In this case, if one doesn't have the stock, don't buy, look for a cheaper one. If one has the stock, he should hold until a technical sell signal appears.

Graham & Dodd (1934) suggest that 16 times average earnings is as high a price as can be paid in an investment purchase of a common stock.

As a reference level, from 1871 to 1990 the average P/E ratio in the American stock exchange has been 15 (Jornal O Estado de São Paulo, 04/15/00). As shown by Shiller (2000), in the 1929 crisis the P/E ratio was 32.6, more than twice the reference level, and in the subprime crisis it was 44.3, nearly 3 times the reference level.

So the question is: once above the reference level, how high should the P/E ratio be for a stock to be considered dear and therefore be sold, i.e., when to sell?

That question will not be answered by FA, but via TA (For the 1929 crisis see Object 9 and for the subprime crisis, see Object 8).

TECHNICAL ANALYSIS

In this study we will recall only the TA concepts necessary to understand the topics discussed here. For more TA details, see Edwards *et al* (2001); Murphy (1986); Noronha (1995); Pring (2002); Penteado (2003; 2013). As mentioned above, the main function of TA is not to forecast prices, as many people believe – even though it does that, but to warn when to be in or out of the market; in other words, its main

function is the timing of the market, i.e., when to buy and when to sell.

These seem to be the three most important patterns that usually warn to sell.

Record top or historical top

A historical top, shown in Object 1, happens when a top never reached before appears for the first time. It is confirmed by 3 descending bars after the top (Object 1). Therefore, one will never know in advance if an all time top has been reached, once its confirmation only happens 3 days later. Notice that it is not the closing that counts, but the descending bars. After the 3 days for confirmation a horizontal line – HRL or Horizontal Resistance Line - should be traced from that top to the right, as long as possible, for most probably it will become an important resistance level. Lines have memory, because people have memory (Noronha, 1995:19) and remember that there has been a trend reversal at that resistance level, and it will probably happen again.

Object 1. Historical Top

Bar chart with historical top.

Often at this point the *Herd Effect or Herd Behavior (*Le Bon 2002; Sornette 2003) - that is a tendency of individuals, for whatever reason, to mimic the actions of a larger group

(Phung, A. Site *Investopedia*), with no leader or direction – plays an important role.

Head & Shoulders (H&S)

This is the most common configuration, shown in Object 2.

Object 2. H&S
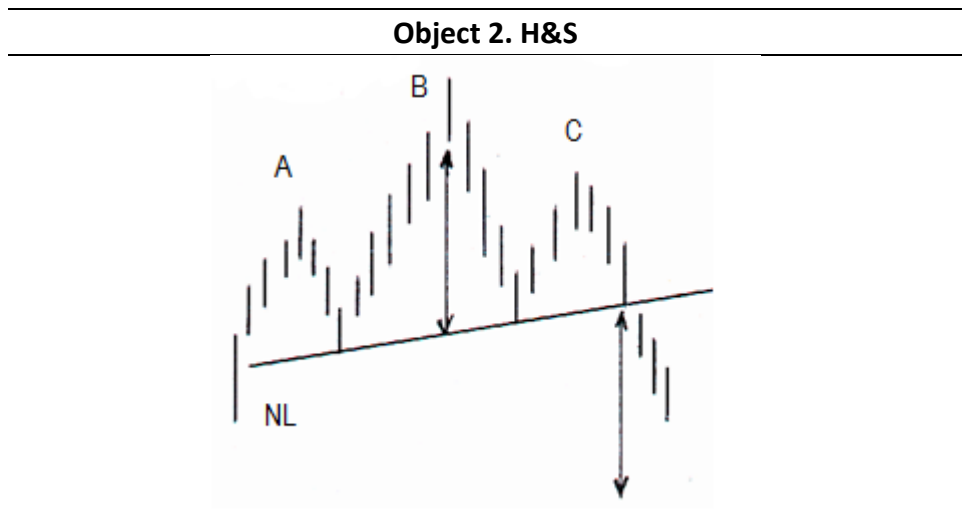
Bar chart with h&S figure.

Price (or points) is (are) going up until point A, where the price (or points) starts to decrease. After a fall (the left shoulder is formed) it goes up again until point B (the top of the head), coming down again. Then it moves up until point C and falls again, forming the right shoulder. The line connecting the head and the shoulders is called Neck Line (NL). If after reaching point C the price crosses below NL and confirms (3% or 3 days) (Penteado, 2013), the arrow from NL to B (i.e., the distance in price or points) tends to repeat from NL downwards. The H&S may also appear inverted, in a mirror image of this most common pattern, when it will be a bottom and a buy signal. (Murphy, 1986).

The 233 days moving average (Murphy 1986) - MA233

AMA is the arithmetic moving average, as:

$$AMA = \frac{\sum_1^n p_i}{n}$$

Where pi is the price p on day i and n is the number of days considered (window size).

That MA represents 1 year, for the year has 252 working days.

In a weekly chart the MA233 turns into MA55, for one year has 52 weeks. The numbers 55 and 233 come from the Fibonacci sequence, for more details see Brown (2008).

Every moving average behaves as support and resistance, and the MA233 (MA55) usually is the most important resistance/support level.

The most important concept in technical analysis – the breakthrough – indication to buy or sell

Usually a new trend begins after a resistance/support level is broken by at least 3%, i.e., the closing of the bar on that day should be at least 3% above/below that level. This is shown in Object 3.

Object 3. Breakthrough
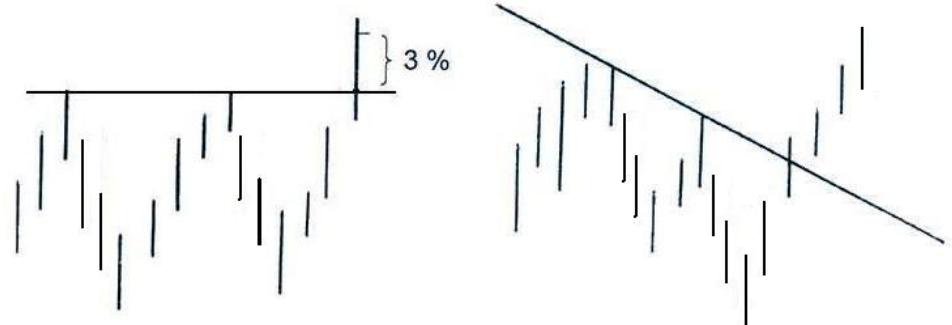
Bar chart with trend lines.

In that case one should buy/sell the next day. If it doesn't reach 3% on a single day the up/down percentages in the following days are added. The breakthrough is also valid if there are 3 bars going up/down after the crossing point as shown in the next page, even if the percentage is less than 3%, and the order to buy/sell should occur on the fourth day. Three days or 3% apply indistinctly to horizontal lines – supports or resistances, up trendlines (supports) or down trendlines (resistances).

The most important Dow's tenet

"*A trend is assumed to be in effect until it gives definite signals that it has reversed*" (Penteado, 2013; Murphy, 1986, 3; 30; Rhea, 2002). In other words, a trend in motion, as shown in Object 4, tends to continue in motion, or a trend in motion is more likely to continue than to reverse.

Object 4. Buy and Sell

Bar chart with trend line.

When buying, prices are expected to go up, so while they are going up, one should not interfere, until a sell signal is given. If that happens, the recommendation is to sell and take profits!

METHODOLOGY

Method

This study uses the technical analysis of 8 important cases with the use of bar charts, RSI and MACD.

In every case, we identify several warnings referred to warnings of buy/sell opportunities.

The effectiveness of technical analysis in all the cases corroborates the usefulness of the approach and suggests the need for further research.

The methodology consists in the analysis of 8 landmark cases where are identified, in the charts, the warnings given by the simplest and most widely used techniques. The usefulness of the approach is corroborated by its effectiveness in all the cases studied.

Limitations and Suggestions for Further Research

The main limitations are the same as for any multicase study: the sample is small and not random, the analyses are not standardized, and the conclusions cannot be generalized. These are inherent to the chosen method and cannot be avoided. On the other hand, only with this method all relevant information is available and can be used.

Further, the analyses could use more technical indicators. The choice of the most simple and common methods has the function of showing that positive results can be obtained even with a low level of analysis.

Further research can use standardized analyses and much bigger samples.

CASES OF CRISIS IN MARKETS AND COMPANIES

It is not the goal of this study to delve into fundamental or economic reasons (Roubini & Mihm 2010; Rogoff & Reinhart 2010; Siegel, 2009; Kindleberger & Aliber, 2014) that have led to the crises discussed here. Otherwise, the goal is to show the signals provided by TA that recommend to sell.

The examples we show were selected according to their representativeness and the effect they have caused, in market terms, consequences of uptrend reversals which turned into steep downtrends and dramatic falls. With the exception of the Russian crisis, which followed the Asian crisis, it was possible to establish positively that all of them started after the reaching of a record top, followed by the other patterns shown which indicate that the market is on the brink of a fall.

1. The Asian Crisis – IBOVESPA - IBOV (July-November / 1997)

Object 5 shows the sequence of technical warnings in the Asian Crisis.

1. At this point (07/10/97) the IBOVESPA (IBOVESPA or IBOV is the main stock index in Brazil) reaches a record top, warning that the rally from 6.500 points to nearly 14.000 points within 7 months is over. From that point a HRL is traced.

2. Here the RSI (Relative Strength Index) crosses below the 70 line, indicating that a reversal is about to happen. MACD (Moving Average Convergence – Divergence), however, is still positive, not indicating to sell.

3. The breaking of the support given by the uptrend warns that a bear market is about to start.

4. The IBOVESPA crosses below the MA21, losing its support.

5. MACD histogram crosses below the zero line, confirming the beginning of a bear market.

6. The formation of a second top creates a downtrend, showing that the bear market may be a long one. The steep fall from point 6 on is the Asian Crisis.

Object 5. The Asian and Russian Crisis

Bar chart with trend lines. RSI: Relative Strength Index. MACD histogram. HRL: Horizontal Resistance Line

2. The Russian Crisis – IBOVESPA (July – September/1998)

7. After the Asian Crisis the market recovers, but forms an H&S. Before the confirmation of its breaking IBOVESPA crosses below the MA55 (weekly chart), warning that the fall may be steep.

8. IBOVESPA crosses below the NL, confirming the H&S pattern. Those 2 technical signals, after the previous 6, predicted a bear market that has shown to be a steep one, forming the Russian Crisis.

Therefore we notice the convergence of 8 technical sell signals: beginning with the record top, all the other signals sent the same warning: don't buy, sell and stay out of the market!

It is worth to stress that in August, 2003, 6 years later, the IBOVESPA is at the same level as in July, 1997. It means that an investor who had made a portfolio mimicking the IBOVESPA and had held it through the long run 6 year period without using TA would have had no profit, in terms of stock valuation, safe for receiving some small dividends. And he would have lost other investment opportunities. It's an example of how a long run investment would have failed.

3. The NASDAQ Crisis

The NASDAQ has been created in 1971 with the aim of listing small companies which could not fulfill the rigid criteria required by large American stock exchanges such as NYSE,

and became the American stock exchange where technology stocks are traded.[1]

According to Kindleberger (2009), in the second half of the 90s there existed a bubble in American stock prices associated to the extraordinary United States economic boom by that time, when NASDAQ presented a strong growth.

The chart shows that trend (UT1) since December, 1994. From July to October, 1998 it happens a quick bear market and then a new uptrend is born (UT2), steeper than the previous one. That uptrend goes up to 03/10/00, when the bubble begins to burst. After an initial drop, the NASDAQ recovers till 03/24/00, when a steep fall begins and goes up to 10/10/02. From the high 5132 points on 03/10/00 till the low 1108 points on 10/10/02 the NASDAQ plummeted about 78%.

Object 6 shows the sequence of technical warnings in the Nasdaq Crisis:

1. Record Top, where a HRL begins.

2. The index crosses below UT2, breaking its support and the fall begins.

3. RSI crosses below the 70 line.

4. MACD histogram crosses below the zero line.

5. The second top originates a downtrend (DT).

6. The index crosses below the MA21.

7. The index crosses below the MA55.

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[1]   http://exame.abril.com.br/tecnologia/noticias/nasdaq-vive-a-maior-crise-e-pode-ser-fechada-m0076406 - 29/08/2003 - accessed on 06/22/12.

8. The index crosses below UT1 losing the strong support started in December, 1994.

If the investor had observed the technical signal provided by the record top and the signals that followed he would have sold and stayed out of the market, avoiding such a loss. A new buy signal appears only in October, 2003 when the index crosses above the MA55 and the DT.

The conclusion is that the NASDAQ didn't recover that high (03/10/00) and today (12/23/13) is around 4,150 points.

Object 6. The Nasdaq Crisis
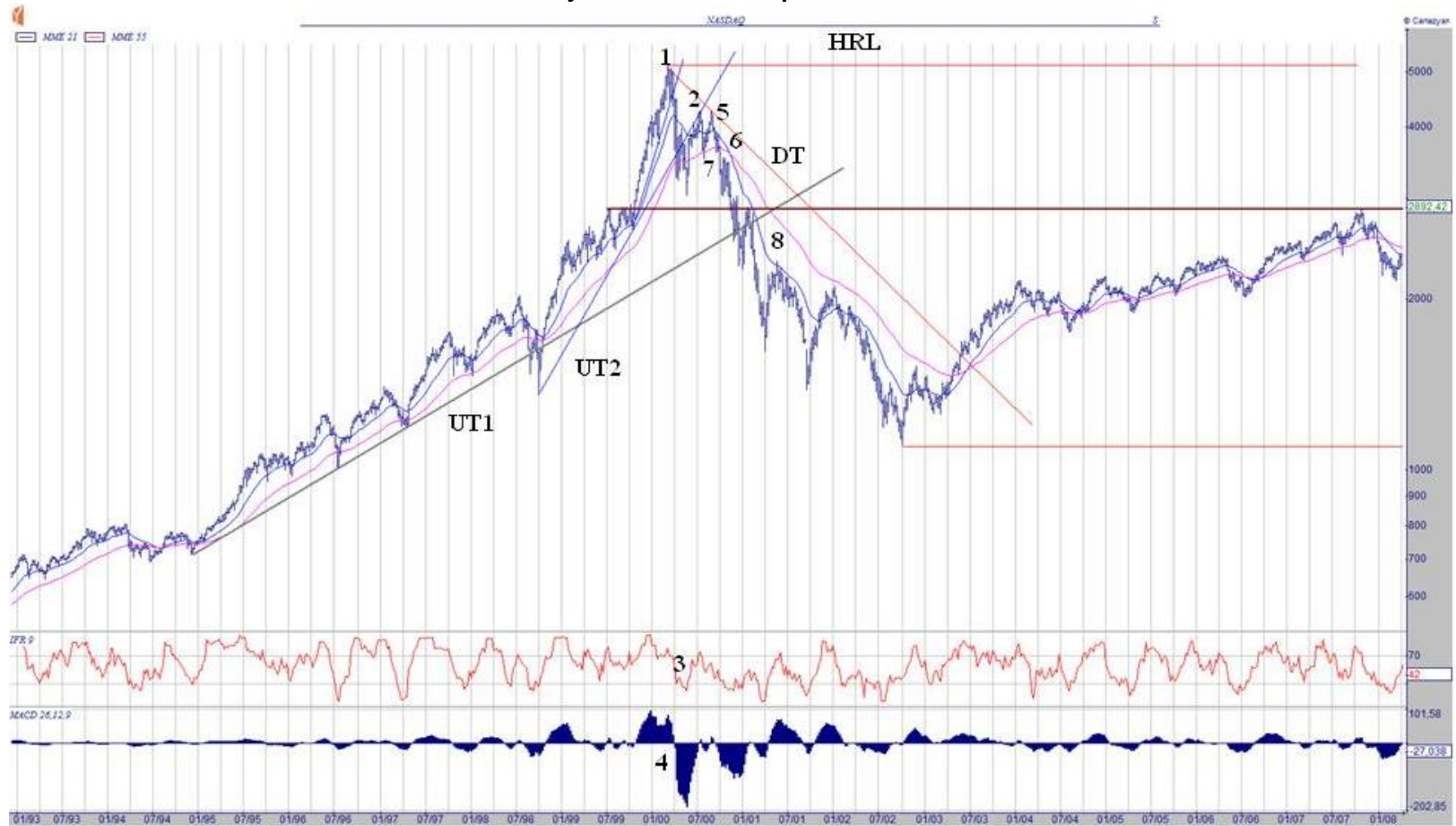
Bar chart with trend lines. RSI: Relative Strength Index. MACD histogram. HRL: Horizontal Resistance Line

4. The ENRON Crisis[2]

Seventh largest American company in revenues (Jornal O Estado de São Paulo, 12/04/01), with revenues above $100 billion (Op. Cit., 01/12/02), assets around $50 billion (Op. Cit., 12/04/01), Enron filed a bankruptcy petition on 12/02/01.

Even after the accounting problems had been announced in October 2001, reputable institutions (...) issued "strong buy" or "buy" recommendations for Enron (Healy & Palepu, 2003).

However, TA was indicating a record top and an H&S, typical sell signals, as shown in Object 7. On 12/31/96 Enron's stock price was $21.50; on 08/17/00, $90.00. This value constituted a record top, a clear sell signal; besides, it was the top of the Head of the H&S. When the pattern was confirmed with the breaking of the NL it would have been possible to sell around $66.00, in March, 2001. The stock plummeted, to $0.26 on 11/30/01.

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[2] See Fusaro (2002); Kindleberger & Aliber (2014).

Object 7. The ENRON Crisis
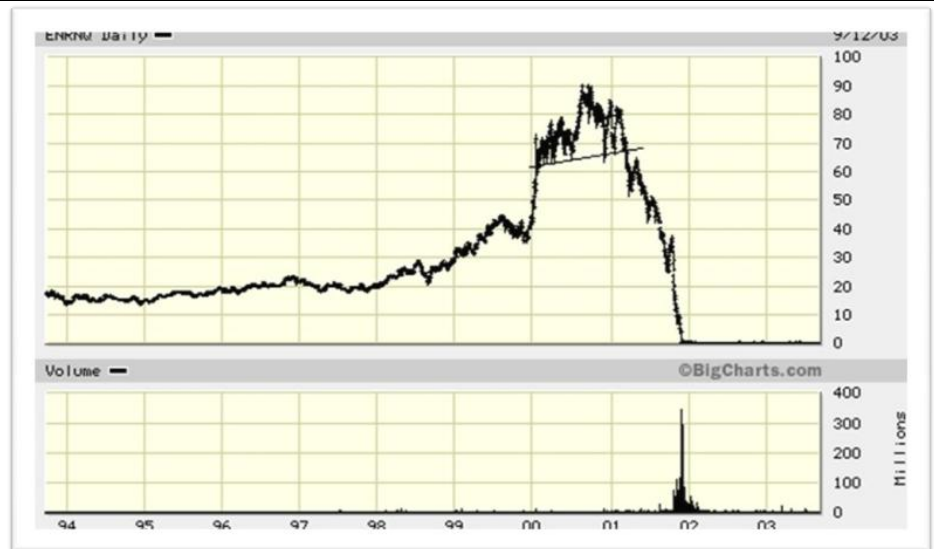
Bar chart.

5. The Subprime Crisis

The American subprime crisis, that spread worldwide, reflected in the IBOV that, from the top high of 73,920 points on 05/29/08 to the low of 29,435 points on 10/27/08, plummeted about 60% (Stiglitz, 2010; Krugman, 2009; Rogoff & Reinhart, 2010; Lewis, 2011; Gall, 2010; Shiller, 2009),as shown in Object 8.

In point A the RSI was indicating that the IBOV was overbought and a trend reversal was about to come. IBOV rallies till 58,000 points at point B, record top, where it hits the channel top resistance line RL, which comes from March, 2005. And then, in July, 2007, the IBOV falls towards the UT, primary trend, it was the Subprime Crisis. Market recovers till point C and after moving sideways for about 6 months it reaches point 1, new record top, from where the steep fall of the Credit Crisis begins.

1. Record top and the beginning of a HRL.

2. RSI crosses below the 70 line.

3. The DT begins.

4. IBOV crosses below the MA21.

5. MACD histogram crosses below the zero line, indicating IBOV will fall.

6. IBOV crosses below MA55, warning that the downtrend may be long.

7. IBOV crosses below the UT losing a 4 year support.

The 58,000 points level, which had been a strong resistance, turns into support and in resistance again, and now (12/23/13) the IBOV is 51,356 points, the same 6.5 years ago level, therefore below the 58,000 points resistance level.

Object 8. The Subprime Crisis
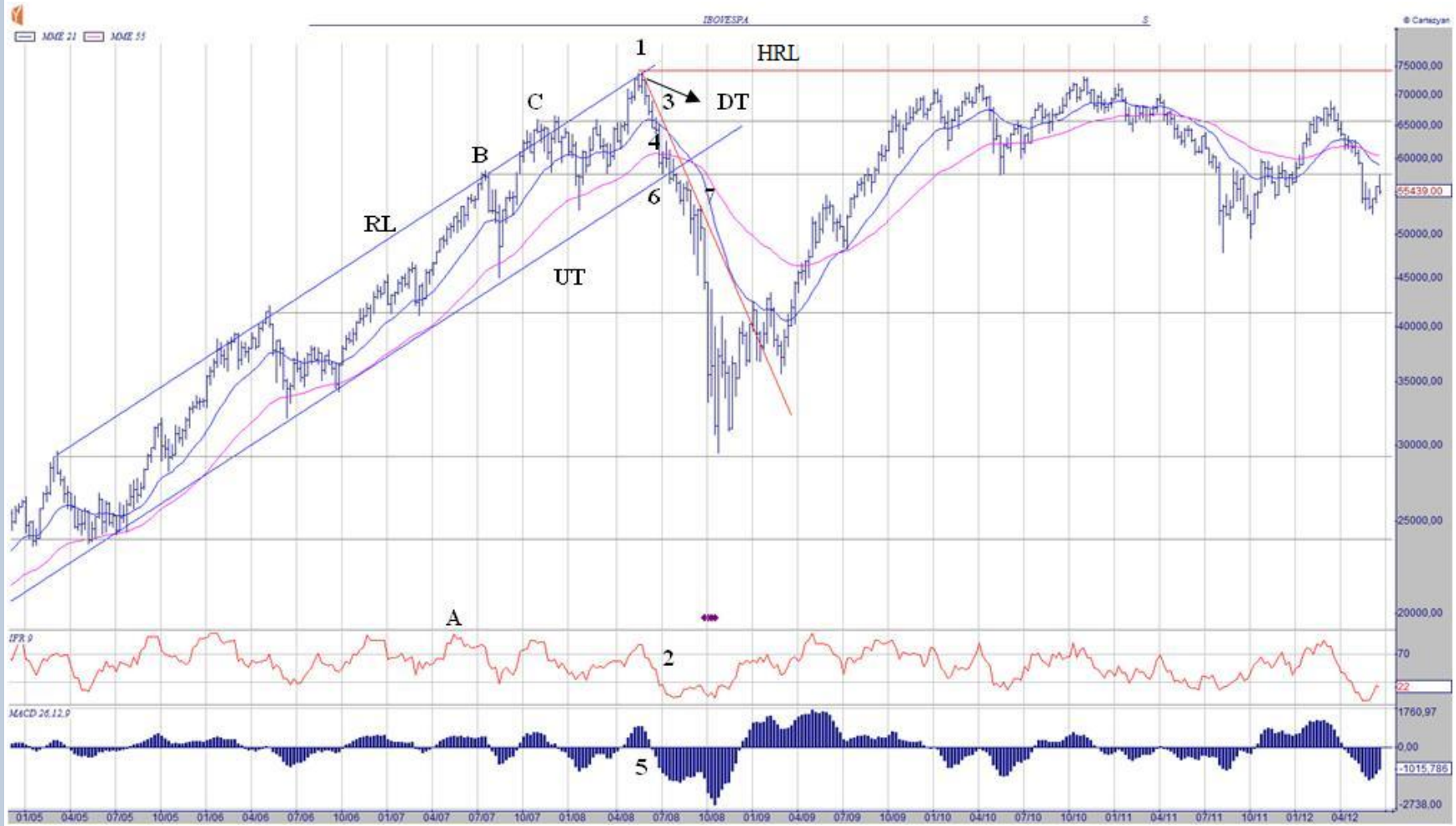
Bar chart with trend lines. RSI: relative strength index. MACD histogram. HRL: Horizontal Resistance Line

6. The Great 1929 Crisis

The structural or fundamental factors (Galbraith, 1979; Kindleberger & Aliber, 2014; Sornette 2003; Roubini & Mihm, 2010) that have caused the 1929 Great Depression are not the goal of this study, but only the technical aspects of it.

As shown in Object 9, the DJIA reached a record top on September 3, 1929, at 381.17 points; on October 23, 1929 the close was 301 points. The next day, October 24, the so called Black Thursday, the DJIA closed at 230 points, a fall of 23.6%. The bear market went on till July 8, 1932 when DJIA reached 41.22 points, a fall of 89.2% compared to the record top. DJIA only returned to 381 points on November 23, 1954, i.e., 25 years later.

Object 9. The 1929 Crisis
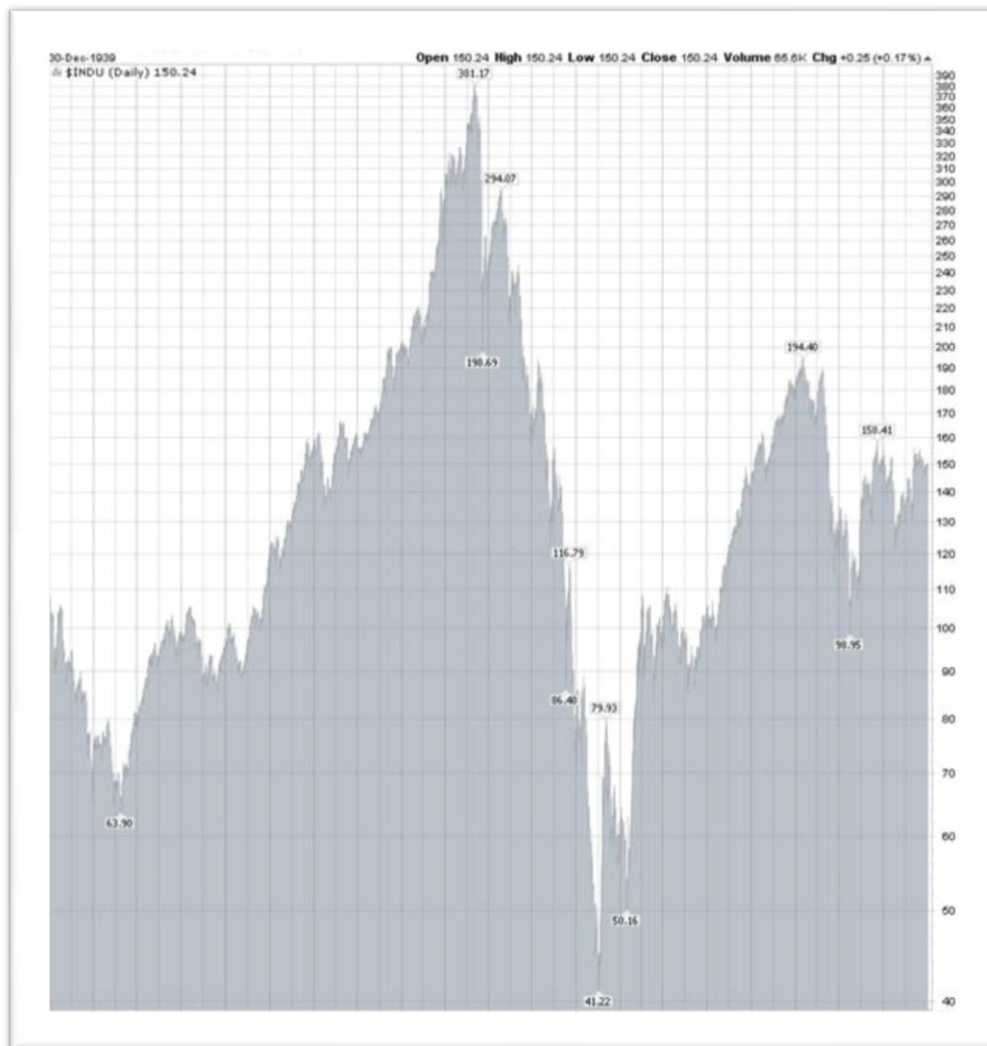
Dow Jones Industrial Average Index

7. The General Motors - GM – Crisis

On 03/07/09 the newspaper O Estado de São Paulo showed on its page B14: "GM stock hits its lowest value within 75 years. The price at NYSE yesterday went back to the Great Depression level, $1.27, lowest since 1933, closing at $1.45 after a light recover."

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Object 10. The General Motors Crisis

Candlestick chart with trend lines.

8. The OGX Petroleum (Brazilian company) Crisis

Object 11 shows the sequence of technical warnings in the OGX Petroleum Crisis.

OGX was the main company in Eike Batista's X Group. It was a Petroleum Company in pre-operational condition. Its stock (OGXP3) reached the top on 10/14/10, at R$23.39 and filed for chapter 11 on 10/30/13, at R$0.17, in a 99.27% drop.

1. Record top on 10/14/10, at R$23.39, the top of the head of an H&S confirmed later.

2 RSI indicates that the stock is overbought.

3. MACD histogram crosses below the zero line indicating that a fall is about to start.

4. Price crosses below MA21.

5. A second top originates DT1.

6. Price crosses below MA55.

7. Price crosses below NL1.

8. Price crosses below RHL2, now turned into support line SHL2.

9. The right shoulder of the second H&S originates DT2.

10. Price crosses below NL2.

RSI and MACD repeat their sell signals in the second H&S, a steep fall follows and, if held, the stock would lead to a huge loss that might be avoided if the stock were sold according to TA warnings.

Object 11. The OGX Petroleum Crisis

High-low chart with trend lines. RSI: relative strength index. MACD histogram.

CONCLUSION

Once in a lecture Warren Buffett presented a slide showing DJIA points in two different moments (Schroeder, 2008, pp. 19-30):

DOW JONES - INDUSTRIAL AVERAGE:

December 31, 1964 – 874.12
December 31, 1981 – 875.00

And he explained: "During these seventeen years, the size of the economy grew fivefold. The sales of the Fortune five hundred companies grew more than fivefold. Yet, during these seventeen years, the stock market went exactly nowhere". And added: "What you are doing when you invest is deferring consumption and laying money out now to get more money at a later time. And there are really only two questions. One is how much you're going to get back, and the other is when. Now, Aesop was not much of a finance major, because he said something like, 'A bird in the hand is worth two in the bush.' But he doesn't say when."

On the one hand, from FA point of view, crises are almost always born from the same structural factors. (Roubini & Mihm, 2010); Kindleberger & Aliber (2014)

On the other hand, from TA point of view, in the examples we have seen each crisis begins from a record top and other patterns follow, usually the same ones, although not always in the same order, like a stamp, such as a DNA that certificates the origin of each and every crisis. However, TA prevails, as in the case of Enron.

Should any 4 TA patterns, among those that happened in the crisis shown, be found, in any order, a bubble may be in formation, and it may burst ahead.

Buy stocks may be a successful investment in the short term, selling if things change, when technical analysis sends a sell signal, avoiding losses in the end. A position may be held in the long run and be successful, in the absence of signals to sell. Or lead to a big loss, if a wrong position, a losing one, is held in the long run. Technical analysis tools and signals help to tell the difference.

To buy stocks may be a successful investment in the short term, selling if things change, when TA sends a sell signal, avoiding losses in the end, as we have seen.

A position may be held in the long run and be successful, in the absence of signals to sell. Or it may also be a matter of luck.

Or lead to a big loss, if a wrong position, a losing one, is held in the long run. TA tools and signals help to tell the difference.

Practical Implications

Technical analysis is used by many analysts and traders, but its validity is rarely recognized and studied by academia.

If the hypothesis of market efficiency prevails, there would be no way to select assets based on past returns and technical analysis could not operate. The utility of Technical Analysis is contrary to the Efficient Market Hypothesis in its Weak Form (Penteado, 2013).

 The alternative of fundamental analysis requires investments for relatively long terms and is constrained by the lack of complete information.

The article contributes showing 8 notable cases where technical analysis has been successfully applied, which helps to show the potential of the approach.

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Technical analysis is widely used but little studied by academia. It is contrary to the hypothesis of market efficiency and associated techniques. The cases analyzed show the usefulness of the tools and encourage the meticulous research on this technique.

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