**LETTER TO INVESTORS**
**Number 03 | March 2017**

# Reflections about risk and capital allocation in stock investment context

"I would rather have questions that can't be answered than answers that can't be questioned."

Richard Feynman

Maybe one of the best questions already made about economics was that of a Queen. In 2009, Queen Elisabeth visited the economics department of the London School of Economics, where she made an extremely simple question: why hasn't anyone envisioned the 2008 crisis?[1] How disconcerting for the world economic elite! Dozens, possibly thousands of PHDs work in federal banks in the world's main economies and no one could alert us to what was about to happen. This brilliant quest seems to echo until today in the academic and in the financial world and among the regulators. It is still more disturbing to think that the complexity of this phenomenon is not an excuse for such incapacity. In financial market jargon, something that is too complex is targeted as "rocket science". What would the present economic establishment say if it was taken back to the past for a conversation with Richard Feynman?

Richard Feynman perhaps was one of the greatest physicist in the XX century. His personality and biography are far beyond extraordinary. Nobel prize in physics in 1965, he had an outstanding contribution in areas such quantum mechanics, computing and nanotechnology before he died in 1988. With respect to the readers time, we are not getting much deeper in details of Faynman's fantastic biography. In this letter, we are going to concentrate on his participation in the committee dedicated to investigating the accident with the space shuttle Challenger[2], guiding our reader thoughts to an unexpected parallel with Queen Elisabeth's question.

In January 28, 1986, NASA's space program suffered a big hardship with the above-mentioned accident. Challenger exploded during its launch from Cape Canaveral, in Florida. The tragedy was witnessed by everyone on TV and caused a big commotion. After a few days, the American government set up an independent committee to investigate the causes of the fatality and Richard Feynman was invited to take part in the investigations.

Specialists met in an introductory meeting in Washington. Willian Rogers (committee chief and member of staff of president Ronald Reagan's office) tells everyone that the investigation will be conducted in an orderly manner without impairing NASA's image. He also states that he was certain that the agency had done an excellent job. Furthermore, he emphasizes that everybody must accept that the shuttle was the most complex mechanism ever built, divided into 2,5 million parts. **And concluded by saying that, due to this complexity, it would be difficult to identify the causes of the disaster.** Bill is unexpectedly interrupted by Feynman, that says: "This is nothing!" **And insists in explaining that, according to his point of view, even ultra-complex phenomena can be explained by a unique and simple factor.**

After several institutional arguments, huge resistance of pressure groups in giving information, Richard was breaking the investigative limits imposed by Washington and then started to identify hypothesis. As he used to take notes of all his actions, Feynman noticed that a *trade-off* between cost and test reliability of some space shuttle parts might have caused failures. He also noticed that lack of patience in running some tests by NASA engineers could have been a source of problem. Ahead in the investigation, some photos of the missile launch were disclosed. In such photos, a side flame could be seen, which could be a source of evidence. **Feynman understood that the flame could not be the cause, but the consequence of something more important that had not worked properly.**

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[1] Here we refer to an extract from the book *What have we learned? Macroeconomic policy after the crisis*, by the economic Nobel prizes George A. Akerloff and Joseph E. Stiglitz, et alii, Alta Books, 2016 (Brazilian Edition); [2] The investigation on Challenger accident is reported by Richard P. Feynman in his biography *What do you Care What Other People Think – Further Adventures of a Curious Character*, written by his friend Ralph Leighton, Norton, 2001;

After some more investigation, Feynman finally concluded that an O-ring related to the main ignition could be thought to support heat but not the cold. According to the temperature data in Cape Canaveral at the launch day, he arrived at the conclusion that this could explain the accident!

Then Feynman needed to submit his conclusions to the public, to win the communication challenge. During the investigation process, he noticed that he would be naïve to simply write a report with his conclusions… He needed a more direct strategy, with greater impact. So he heads to a tools shop, buys a pair of pliers and in the day of the press conference, in which the investigation results would be presented, he asks for a cup with ice... **Feynman takes the pair of pliers and a ring containing the material that sealed the main ignition from his pocket and in one of the most fascinating events in Science history, he shows to the public and journalists of the whole world that, after a few seconds on ice, the ring misshaped with a ridiculous pressure of his hand and the pliers.** Two million and five thousand parts, millions of event combinations which could have caused the accident, the brighter minds of the planet telling that it was impossible to know the reason for sure, and a man proves irrefutably that the problem was simple in its essence. And as incredible as it could be, although he was one of the greatest minds that ever lived on Earth, Feynman was not a rocket specialist. He was just curious, knew how to ask the right questions and did not accept the limits determined by the bureaucracy.

With the enormous caveat that economics does not deal with natural phenomena, the Queen's question has not yet been answered with such a level of brilliance, neither in the conference day nor thereafter. The economic authorities tend to complicate phenomena to preserve their "knowledge feuds". Institutions have huge self-preservation instincts. If Queen Elisabeth's question was answered honestly perhaps the answer should be: "We do not know, your majesty!".

Besides the uncertainty and low capacity to make verifiable forecasts, when the time to act comes, economists deal with a set of options generally narrower than that professed by the theory, as Charlie Munger has once emphasized. Taking actions to remedy crises is almost mandatory regardless the effectiveness of the action. It is difficult to imagine the CEO of a Federal Bank calling a press conference after some shock and saying: "Remain calm, the invisible hand of the Market will ensure that your job will return in the long term…". In practice, every finance minister is Keynesian during crises. We do not know which should have been the best solution for 2008 crisis and the academy will be probably discussing this 100 years from now.

If crises are hard to foresee and the decision makers set of options is narrower than it seems, the way to foresee what is going to happen to a country is not an easy task in most situations. Then, what is left is to assimilate is the macroeconomic reality and not be taken by the "it will be different this time" syndrome[3]. **There is, however, a small set of economic rules that, once broken, invariably lead to the same result.** This small set, if used with parsimony, helps in having a better view of the situations in which the stock asset class has its opportunities collection reduced. **To help in this task of identifying these situations, questions are more useful than answers.**

Recently in Brazil, particularly in 2014 and 2015, perhaps the question that echoed among all the asset managers was: **how will the country pay its public debt?** To invest in Brazil, you must have an answer to this question. We do not believe that stock picking is enough to solve a state insolvency. In situations like this, the solution is asset protection. This two-year context is known and still very recent in our minds. Plain and simple, **inflation seemed to be the only solution for public indebtment** [4]. No surprise for a country that had spent 25% of the time between 1800 and 2008 in internal and external default situation, or in public debt rescheduling situations [5].

From the universe of listed companies in Brazil, we see few with a concrete capacity of redistributing even moderate inflation. The regulated and non-cyclical consumer sectors are remarkable exceptions to this rule. Even if the observed inflation was of two low digits, we flirted at that time with inflationary spiral abysses. In such scenario, even the inflation redistribution companies would begin to have problems, especially the risk of supply chains disorganization, which we used to see in Brazil in the past. Big inflations make even the time gap between raw material acquisition and the corresponding delivery at the final selling points into something unpredictable.

We did not believe then, and we are still skeptical with no tax hike. The easy collection logic is in the epicenter of tax decisions in Brazil. Thus, tax increases in Brazil tend to prioritize industries with a more stable cash flow, especially some of the businesses regarded as safe, such as beer industry. Even though this practice is unsuitable, it is recurrent. One more vertical trace of our public policies and a milestone of our lag. Our tax system punishes success on behalf of making collection easier.

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[3] Expression used by Kenneth S. Rogoff and Carmen M. Reinhart in *This Time is Different: Eight Centuries of Financial Folly*, Campus, 2010 (Brazilian Edition); [4] See Carneiro D. Dionísio in the article *Taxa de Juros nos dois Regimes Cambiais: Papel da inflação e das variáveis externas*, Casa das Garças, 2005; [5]This finding was also extracted from the aforementioned book by Kenneth S. Rogoff and Carmen M. Reinhart. Unfortunately, dear reader, we do not need to return to 1800 to remember the history of moratoria of the Brazilian public debt. It is enough to look upon three decades in history, more precisely upon the month known as black September in 1982. After this episode the international capital market closes to the country for 13 years, only reopening in 1995;

Another risk at that time was the level of external private indebtedness. With regards to this matter, it must be emphasized that, according to our numbers, about 25% of the public local companies didn't have enough operational income to pay interests[6]. The closure of funding channels, which became more frequent, made debts more and more unpayable. Furthermore, during this initial period of the crisis, the adjustment in the banks' balance sheets still seemed restraining (general balance sheets contraction). When we looked at this together with BNDES paralysis, it was a discouraging scenario.

Crises typically turn more acute when the financial system losses its solvency capacity. At that time, bank analysts questioned the amount of loan rescheduling from banks to corporate clients. From the valuation perspective of bank stocks, this discussion seemed extremely relevant to us. However, as this letter deals with capital allocation and systemic view, it is suitable asking if, in this light, there was another alternative. Once again mentioning Charlie Munger, *what was the real set of options?*

Time went by and in our bank results follow-up dynamics we started to notice, in the explanatory notes, that the reuse of working capital was not related to the neutral growth in the credit portfolio, corroborating the corporate loan portfolio refunding hypothesis. Here is a paradox, from the value perspective, perhaps bad news, since it restrains the capacity of expanding return on assets in the future, but from the angle of finance system solvency, it was good news. These great crossings that expand the limit of what is possible and find solutions are better analyzed after some time, without the heat of the moment. Possibly in the future, we will applaud them.

If we would summarize, we would say that 2014 and 2015 depicted a potential fiscal domination[7] scenario, inflation increase, high company indebtedness, income and unemployment getting worse and concrete risks of contamination. This scenario leaves room to obtain solid profits in very few stocks in Brazil. Departing from a base return scenario of any good stock, adding to this the possibility of tax increase, risk of a long-lasting absence of growth, doubts on the inflationary pass-through and the risk of closing external funding channels, the outcome did not look promising at all. The attractiveness of investing in the stock market in Brazil, at that time, was quite doubtful. During this period, we took the decision of not exposing ourselves too much. It is not the case of market timing, just the confirmation that this was the best possible choice due to the scenario in place.

Usually the power system has adapted itself and in 2016 the signs that the impeachment would happen started to surge. Even though it would not solve Brazil's problems, it seemed clear that this would break the decision paralysis and would concretely contribute to eliminate some systemic abysses. We believe that we exaggerated in the conservatism doses at that time. We took some time to believe that the tail scenarios would dissipate. Most of the Ibovespa's return in 2016 came from high Beta strategies, companies that the value investors run away with their knees in their chin. Mining and metal industries are examples.

It would be comfortable to say that we did not allocate resources in these assets because of conservatism, since there were some opportunities to invest in companies at the correct subordination level, with asymmetrical returns. An example of investments in this direction were debts in dollar from the biggest Brazilian State companies, negotiated at 50%-70% of their face value. Such stocks showed return opportunities protected from the *Brazilian Real* risk, with an inferior average maturity in relation to the cash flow for the shareholder and with surreal implicit yield levels. As we have already said in other occasions, there is nothing more value investing than thinking that way. Benjamin Graham biography in our first letter is full of examples like this one.

Looking at these periods in consolidated manner, we can see how important the incorporation of the "flirt with abyss" scenario was in our investment decisions. In similar situations that we recently lived in Brazil, we will act the same way. Perhaps taking a little more care not to overdose when the scenario is changing. For the future, a lot of very attractive opportunities begin to rise for our class of asset. The value, for our benefit, is now more in shares selection and definition of the position sizes in portfolio. In the second part of this letter we will emphasize some selection filters that we are using.

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[6] Analysis based on information by Bloomberg platform; 7 We also refer here to Carneiro D. Dionísio, mentioning this time the hypothesis of the article *Dominância Fiscal e Desgaste do Instrumento Único de Política Monetária no Brasil,* Casa das Garças, 2005;

## Perspectives for 2017- 2018 and some comments on the management company

“Marriage is the chief cause of divorce.”
Groucho Marx

Before tracing a scenario and speak briefly about our investment strategy for the future, we would like to highlight some institutional evolutions. By the way, we must have competency to look at our business with at least the same critical spirit that we look at the public companies that we analyze.

We started the hedge fund focusing in the investment process and management team. Our main concern was to gather a group united in concepts and values, taking care in not attracting professionals with incompatible views concerning business maturation and investment philosophy. We presently have a team of 5 people dedicated to analysis and investment. We are very proud with the fact that one of those members started as an intern, was subject of training and recently reached the position of analyst. We hope to continue this route, continuously forming more inside workers...

It is worth making a few comments on the investment process. There is always a dilemma between excessive specialization and the horizontality cover. We believe we reached an equilibrium in this matter that is working well, limiting specialization to a few sectors which need an extensive follow up (electrical sector is an example) and a culture of knowledge sharing deep-rooted in Normandia. Authorship detachment and intellectual honesty are also values that have been in fact very important in our investment process, especially in thesis debate stage.

The most recent evolution was in our background. In the end of the year we ramped up our Compliance and Controls team, improved function segregation and invested in more infrastructure. This is a task that never comes to an end and as of right now we are making progress in some automatization processes.

In summary, we are quite motivated with our team and with the internal environment. Our access channel to the companies and our capacity of making group decisions have been exhaustively tested, which makes us optimist and confident in our decision model.

### Let us go now to the scenario for 2017 and 2018.

**What would a skeptical say about this starting biennium**? In general, he would say that the real interest has captured most part of what was left to be captured in terms of immediate improvement of Brazil’s risk profile. This skeptical would also remind us that we have in front of us the challenge of making structuring makeovers (not structural) to accomplish the interest rate drop scenario. On the same note, he would also remind us that he does not see any actual effect in EC 95 (constitutional amendment for expenditures limit). He would spend some time arguing that if someone wants to cut expenditures, would act, instead of promising to do so.

In his sourness, our incredulous character would remind us of how hard it would be to approve the proposal for budget disentailing. He would affirm: “of course disentailing would be a clearer sign than expenditure limiting, it would make room for immediate cuts”. And last, he would say that there is a good chance that the social welfare reform is not approved.

If the world were a macro guide, it would be easier to stick to our sour character thesis. Of course, there are still plenty of reasons to have legitimate doubts about Brazil. This view needs to be adopted, yet again, with precaution in today’s investment decisions. With more moderate abyss risks (although not overcome yet), we can now believe that stock selection may balance the level of fund risk, without the need of great additional capital protection strategies (explained in the first section of this letter). For this selection to be effective there is a mistake that cannot be made, that is: **bring crisis legacy for the portfolio.** The two questions (way less brilliant than that of the Queen) would be in this sense:

1) **What kind of legacies?**
2) **What happens with the companies’ valuation if you wake up with real interest rate at 4%?**

Let us start with the legacies. **We need to be careful not to think mechanically. Avoid projecting to the future company's past performance.** Some companies with excellent franchises had to be analyzed with additional care. Retail is a good example. Store opening is an important valuation component for some companies we follow. Despite being a good moment for rental negotiation, we are aware that unemployment is responsible for the reduction of customer flows to stores, with negative impact on stores' IRR. Some businessmen in this specific industry are taking the opportunity to look forward, reallocate the asset and think about business perpetuity, and this is quite laudable. As investors, we are watching closely this move, without being influenced by the automatism of the most critical impulse. However, in general, less growth and less opportunities for capital allocation with high IRR perhaps justified smaller fair multiples.

A second example of a legacy with potentially negative collateral effects could be the fuel distribution sector. We have been seeing lately a greater employment of capital for the same operational income basis in the sector. It is quite true that the churn (gas stations closing) kept constant against some opinions. Added to the competitive dynamics brought by the gas price adjustment mechanism introduced by Petrobras' new management, the sector is under a new dynamic, testing bypass conditions to a long time stable competition basis. Interesting to think that, in this case, we can be witnessing a worsening in basis, deriving from a positive externality of the crisis we live in (A shift in Petrobras' attitude). This letter does not allow a deeper look at this theme. However, we must register that, if there are real microeconomics reforms, potentially other traditional winners of our chaos may become damaged.

Finally, to conclude the list of caution examples, a more complex situation would be the real state sector. We have been successful investing in a company in this sector when there was a significant discount for asset adjustment value. Upon rising stock prices, the companies that fit our basic selection criteria for the sector are already negotiating around the equity value. At this price level, the investment thesis changes. We should have the conviction that they have the capacity to reinvest their capital at attractive rates of return in the next years.

Even well-managed companies, with owner, do not escape the fact that the rate of return in this sector is very sensitive to the sell-through (VSO). And here we reach a crossroad: the company still has inventory to digest and only after such digestion it is possible to imagine VSO reaching levels that allow capital to be profitable at interesting rates. In other words, with high inventory, consumers have no rush.

Certainly, there are excellent counterpoints to this view. One of them recalls that being a capital provider in an illiquid sector has its benefits. Some merging companies have been extremely competent in reading this environment and have bought real estate receivables with statutory lien from other merging companies in form of share picking*.* Operations like this have been bought under face value. As it is possible for the buyer (liquidity provider) to choose which enterprise and which debt/value of property proportion he wants, this alternative for capital allocation offers a good opportunity for cash owners. The problem is that this receivables secondary market is small for a merging company with big balance sheet. Between the inventory 'digestion' dilemma (medium term cash flow risk) and alternative business opportunities, the outcome seems negative.

**Moving on to the question about real interest rates at 4%.** The answer is that everything depends on which company we are talking about. We have been giving special attention to less cyclical business, preferably based on commission with cash generation close to its profit and low level of investment. Even if such features are a slightly more expensive, the profit visibility turns the equation far more attractive in comparison to operational leverage cases or turnarounds.

We must also mention that most of our traditional sector investment thesis, such as financial and electric, have not suffered any relevant modification. On the contrary, the classical state pendulum (more and less presence in economy) has created a favorable environment to state disinvestment and brought to the table interesting alternatives for the infrastructure companies.

The voice of our skeptical character (in the beginning of this section), when counterbalanced with a low interest rate environment in Brazil, leads us to prefer to manage the fund risk by means of the quality of stock selection, as usual. The great systemic risk that we see ahead is a significant increase in the long-term yield curve, in a possible scenario in which the congress postpones or trims the social welfare reform beyond reasonability. We are certain that the companies in which we are investing have satisfactory defense of their results in this occasional scenario. All else equal, we will always be aware of negative developments that turn the picture cloudier. *Ceteris paribus*, the need to use the capital allocation leverage as a defense strategy doesn't seem to make sense in the future, considering the set of opportunities.

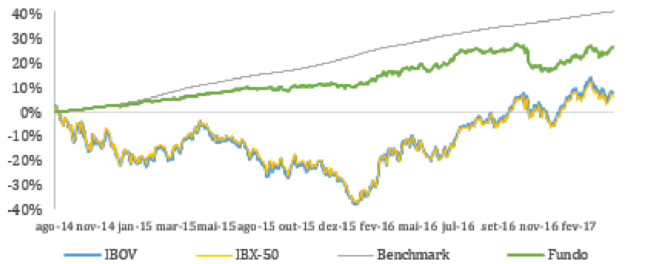
We appreciate your trust,

**NORMANDIA INVESTIMENTOS**

## Performance Normandia FIA

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Year | Acum. | IBOV year | IBOV acum. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2014** | - | - | - | - | - | - | - | - | 0,89% | 1,01% | 1,22% | 0,14% | 3,33% | 3,33% | -17,06% | -17,06% |
| **2015** | 1,30% | 0,73% | 0,50% | 1,18% | 0,55% | 1,21% | 0,91% | -0,24% | -0,44% | 1,06% | 0,36% | 0,12% | 7,45% | 11,03% | -13,31% | -28,10% |
| **2016** | 1,31% | 1,67% | 1,67% | 2,06% | -1,22% | 3,58% | 3,55% | -0,36% | 0,05% | 1,90% | -6,69% | 0,57% | 7,94% | 19,85% | 38,93% | -0,11% |
| **2017** | 2,58% | 2,10% | 1,42% | - | - | - | - | - | - | - | - | - | 6,21% | 27,30% | 7,90% | 7,78% |

| | Since Inception[1] | Las 24 Months | Last 12 Months | Year | Month |
|---|---|---|---|---|---|
| **Fund** | 27,30% | 20,29% | 9,20% | 6,21% | 1,42% |
| **Benchmark [2]** | 41,62% | 29,50% | 10,95% | 2,34% | 0,80% |
| **IBOV** | 7,78% | 22,33% | 28,52% | 7,90% | -2,52% |
| **IBX-50** | 6,64% | 21,82% | 27,01% | 7,78% | -2,17% |




[1] Start date of Fund on August 28, 2014
[2] Benchmark: IPCA + Yield IMA-B (IMA-B is an index calculated by Anbima that represents the average of coupons of a state securities portfolio indexed to IPCA)

## Additional Information

**Start Date:** August 28, 2014

**Eligible Investors:** Qualified Investors as defined in CVM Instruction 554/14

**Minimum Subscription Amount:** BRL 20.000,00

**Minimum Subscription Orders:** BRL 10.000,00

**Minimum Balance:** BRL 10.000,00

**Subscription Day:** T + 0 (updated NAV at the end of the day)

**Redemption Day:** 30 calendar days or D+0 with 10% exit fee reverting to the fund

**Payment of Proceeds:** 3 business days after redemption day

**Administration Fee:** 2,0% (1,5% when NAV ≥ BRL 100 MM)

**Performance Fee:** 20,0% over IPCA + *Yield* IMA-B

**Tax Fee:** 15% tax over nominal returns

**Investment Manager:** Normandia Investimentos Ltda.

**Administrator:** BEM - Distribuidora de Títulos e Valores Mobiliários

**Custodian:** Banco Bradesco S.A.

**Auditor:** Ernest Young

**Fund's CNPJ:** 20.331.359/0001-59

NAV: BRL 35.971.270

Average NAV: (12 Months): BRL 33.551.144

NAV per Share: BRL 1,27299838

Tel.: + 55 (21) 2515-5285 / 3111-5758 contato@normandiainvestimentos.com.br www.normandiainvestimentos.com.br