

SPECULATIVE BUBBLES – A BEHAVIORAL APPROACH

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The purpose of this paper is to explain briefly from a behavioral point of view, the appearance and the development of speculative bubbles in financial markets. In the first part of the paper, we have presented the most known speculative bubbles among the history and the principal factors causing them (structural, cultural and behavioral factors). In the second part of the paper we have briefly presented the four main stages of developing speculative bubbles. In the last part of the paper we have concluded that besides the general opinion that bubbles make more harm to investors and economies, the human history has provided us the lesson that some of the bubbles have offered us genuine collective social gains: Apollo program, Human Genome Project and the Dot.com bubbles in the early 2000s. As some studies reflect, besides of the fact the some investors have lost all their money during those bubbles (Dot.com), nowadays we all enjoy the IT infrastructure realized with all those heaps of money that were frenetically invested in.

Keywords: Bubbles, Phases, Behavioral Biases, Smart Money, Euphoria, Collective Social Gain

Jel Classification: D71, D81, D83, D84, G12, G14, Z10

“Bull markets are born in despair, grow amid skepticism, mature in optimism, and die amid euphoria” – Sir John Templeton

A speculative bubble represents „a cumulative movement in the price of an asset whose price is high mainly because speculators believe it will rise still further. ... at some point a bubble will burst, but it is hard to predict when this will happen⁵⁷” (Oxford Dictionary). According to conventional financial theories, speculative bubbles should never happen. According to EMH, the prices of financial assets should always reflect the intrinsic value, due to the fully informed market participants. A little volatility (for instance the noise effects) is considered normal, but overall the prices should reflect the value of the underlying asset.

Shiller (2000) sees the computational era and such related phenomena as online trading and day trading to contribute too much to the market volatility. He thinks today's New Economy was preceded by earlier "new economies" that were at least as important, generated by the automobile, the telephone, and the interstate highway system, for example. Because it is difficult to assess intrinsic values, bubbles are often identified only hindsight, after the bubble bursts.

Both the boom and the bust phases are considered to be part of the positive feedback mechanism, in contrast to the negative feedback that determines the equilibrium prices under normal market circumstances. Shiller (1989) gives the example of US stock market crash of October 1987 – “84% of institutional investors thought that the market was overpriced; 78% of them thought that this belief was shared by the rest of investors and, still, 93% of them were net buyers” (Bianchi & Jehiel 2007) Investors tend to remain invested longer, on the contrary of their opinion that the market is already overpriced. Investors are overconfident about their skills to anticipate the bubble burst, but the bubble bursts when the least people expect it. It usually happens in regular days with no major events.

⁵⁷ Black, John, Hashimzade, Nigar, Myles Gareth, „*Oxford – A dictionary of economics*”, Oxford University Press, 3rd Edition, 2009, pp 44 – Google Books online.

The term „bubble” derives from the 1711-1720 British South Sea Bubble, and originally referred to the company itself rather than to the general phenomena. The term „mania” originates from the Dutch tulip mania (Goldgar 2007). A few of the main bubbles occurred among the human history might be (Wikipedia):

- Tulip mania (1637)
- The South Sea Company (1720)
- Mississippi Company (1720)
- Railway mania (1840s)
- Florida speculative building bubble (1926)
- Roaring Twenties stock-market bubble (circa 1922-1929)
- Poseidon bubble (1970)
- Japanese asset price bubble (1980s)
- 1997 Asian Financial Crisis (1997)
- The Dot-com bubble (1995–2000)
- Real estate bubbles in Australia, USA, UK, Ireland, Romania, Spanish, China, India, France (2004 – 2008)
- Commodities bubble: uranium, rhodium, exotic live stocks, gold, crude oil, etc - (2007-2009)

The impact of the bubbles has been debated between many schools of economic thought: Austrian economics, sustains that bursting bubbles can destroy a large amount of wealth and cause economic and psychological / behavioral distress (Great Depression in the 1930s, 1990s for Japan or 2007 – 2010 in USA and Europe). Behavioral distress is due to the impact of the burst, on spending habits. People tend to feel richer having their over valuated assets and are encouraged to spend more. On the contrary, when bubble bursts, they manifest anchoring biases (referring to the highest prices) and feel poorer, so they tend to consume less. Less consumers means less jobs, less loans and an inevitable recession (or even depression), affecting banks, particularly if banks had bought assets (real estate or shares).

Real estate bursting bubbles nearly always damage banks, because properties are mainly financed with money borrowed from banks. So long as property prices continue to rise and interest payments can be made, loans get repaid, everybody is happy. When the process reverses, problems appear. Borrowers are no longer interested in repaying the loans, because their equity becomes negative and may cause further reasons for prices to fall (as banks tend to demand more collateral) – so called the domino effect (Redhead 2008). Many countries have experienced economic slowdown, financial instability, and sometimes large budgetary costs from the recapitalization of the banking systems after a bubble burst.

Behavioral finance suggests that stock market bubbles occur because of the irrational behavior - the positive feedback trading, other behavioral biases. According to Johnsson, Lindblom and Platan (2002), the factors forming speculative bubbles may be grouped into three main categories:

1. Structural factors:

- The development of new technologies capable to sustain economic growth
- Changes of mentality and people’s beliefs
- Changes in the money supply (remember the changes in the monetary policy of FEDs after September 11, 2001). A rapid growth in money supply could bring price inflation in stock and property markets (Redhead, K. 2008).
- Demographic development and its effect on the economy - „the baby boom” and its perceived effects on the markets
- The development of communications, telecommunications and business media able to inform and give access ordinary people to financial markets -
- The development of pensions and mutual funds industries

- Inflation and money illusion effect
- Expansion of the online trading volume and access to information (brokers, day traders, one-click trading).

2. Cultural and biological factors:

- Differences among genders (females vs. males)
- Investment and financial education among people (especially among youth). See the major differences between US households that invest directly or indirectly on stock exchanges (through their pension and mutual funds) versus the Eastern European households that merely hold their assets in bank deposits and real estate properties.
- Culture and religion (“Sharia (Islamic) Banking”)

3. Psychological traits and behavioral factors (behavioral biases):

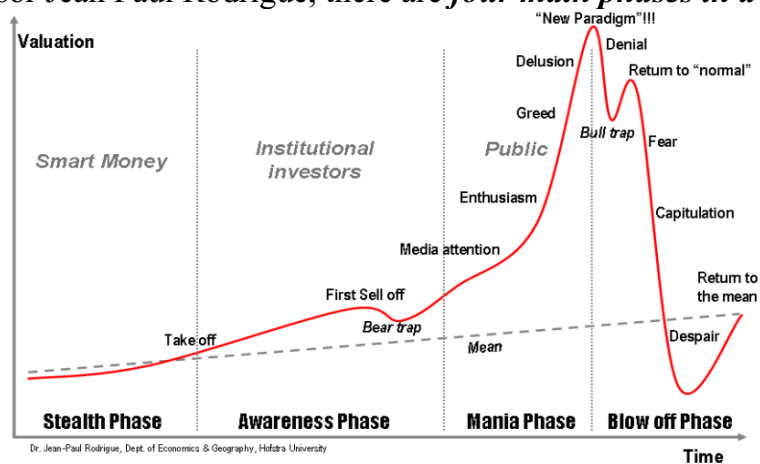
- “*The greater fool theory*” - the bubbles continue as long as the fools can find greater fools to pay up for the overvalued asset;
- Moral hazard causes* - see the TARP Program - bailout for many financial and non-financial institutions who speculated in high-risk financial instruments during the housing boom;
- Anchoring* – the tendency of people to attach or anchor the beliefs, thoughts and perceptions to a reference point (past event or trend) even if may have no logical relevance at the first sight;
- Beliefs perseverance* – people are reluctant to search for evidence that contradicts their beliefs and once they find it, they tend to misinterpret everything that goes against their favor;
- Framing* – mental frames are often linked to the language used, to underline the positive or negative aspects with adequate words. The origins of framing may be internal or outside misinformation (external framing) done involuntarily or voluntarily by the informer in order to manipulate;
- Ignorance and lack of study* – people invest faster and easier USD 1000 in a stock than pay for a refrigerator or a TV Set. Before buying the refrigerator, they study dozens of models and search different stores for the best market price, instead for a stock they might decide to buy or sell the stock in a matter of minutes.
- Familiarity biases* – people tend to think that assets they know more about are less risky than the others that do not know much about: for instance, they invest heavily in the company or industry they work for.
- Representativeness biases* – leading to “sample size neglect” bias, by which the probability of an event is similar to its parent population.
- Gambler’s fallacy effect* – people defectively believe that a certain event is more probably to happen following an event or a string of events.
- Conservatism* – manifested to people that lag or postpone their decisions much after the recent evidence tells them to act. They underweight the effects and under react to particular news or event.
- Confirmation Bias* – people tend to filter and pay more attention to information that supports their judgments, ideas, beliefs and positions, while ignoring the rest.
- Hindsight bias* – people understand better the nature of an event after it has happened.
- The Role of affects* – investors tend to fall in love with stocks – they hold positions even when all the information “shouts” for close (sell); they don’t hit the stock until they run into panic and very often they sell it at the minimum price

-*Herd behavior* – people tend to mimic gestures of a larger group due to the social pressure of conformity (tulip mania, dot.com bubble or more recently the mania of holding shares of Apple Inc among institutional and retail investors).

-*Wishful thinking* and *overestimating the abilities* – people tend to overestimate their abilities. Besides of the fact that most of the professional money managers are not able to beat the markets returns, most of the retail investors overestimate their abilities when asked about the returns expected to have;

-*Mental accounting bias* - may manifest when dealing money differently from sources (hard working money spent or money received from bonuses) and the fact that people tend to put aside money in savings account instead of paying their debts first.

According to Professor Jean Paul Rodrigue, there are *four main phases in a Bubble*⁵⁸:



Main Stages in a Bubble according to Jean Paul Rodrigue

source: http://people.hofstra.edu/jean-paul_rodrigue/jpr_blogs.html

1. Stealth – the period when “smart money” gets in without much noise. In this phase, only very well prepared and skilled people invest. It is usually the market phase where stocks (investments) are considered to be a “dirty word”. People usually keep out of the markets and some even confound trading with gambling.

2. Awareness – It is the phase when very few of the initial investors tend to mark their profits, while smart money buy dips.

3. Mania – Everyone is noticing that prices are going up and the public jumps in for this “investment opportunity of a lifetime”. There is a large propaganda in magazines, tv-shows, a real fashion develops in buying securities. It is the period when everyone, from the taxi-driver until your dentist asks for investment tips. All persons, no matter of what their professions are, become interested in the stock markets. High short term returns, the “easy money” ways attract many new, inexperienced investors, forming euphoric expectations about the length of the bubble. “*Floods of money come in creating even greater expectations and pushing prices to stratospheric levels. The higher the price, the more investments pour in.*” (Rodrigue, J.P.). Investors seeks even hilarious reasons to justify the actual level of the prices (remember the case of the Romanian Stock Market – the stock prices were justified because of Romania’s new membership to European Union and many foreign investors were ready to buy whatever it takes).

Bubbles tend to decrease as the mass of rational investors increases. Moreover, rational investors, so called “smart money” tend to leave earlier when they are many, as they need to have enough investors to buy their stocks. In this period, the prices have risen

⁵⁸ Rodrigue, Jean Paul – BLOG – “*Bubbles, manias and bears, oh my...*”, January 18, 2006 – source: http://people.hofstra.edu/jean-paul_rodrigue/jpr_blogs.html

dramatically, conventional methods of asset valuations are widespread rejected and there are often presented investment schemes that offer high returns very quickly (Bernard Maddoff scheme for instance). There is a widespread enthusiasm regarding the stock market and investments in margin accounts, together with a high trading volume of shares and high selling volume by corporate insiders (Redhead 2008, apud Band 1989). In this period, practicing “short selling” might seem as normal as an extreme sport.

4. Blow-off – It is the moment when suddenly everything has changed. “The house of cards collapses under its own weight and late comers (commonly the general public) are left to hold the bag while the smart money has pulled out a long time ago”. (Rodrigue, J.P.) This is the phase when people cannot find explanations why the stock markets crash and continue to dip further.

Conclusions

Besides the general opinion that bubbles make more harm to investors and economies, the human history has provided us the lesson that some of the bubbles produces also social wealth and benefits. Gisler and Sornette (2009, 2010) assert that bubbles constitute an “essential element in societal processes and in the dynamics of society at large”. They give examples of the Apollo program, the Human Genome Project and other emerging industries that need “animal spirits” and overinvestment in order to sustain innovation. Take example of the Dot.com bubbles, when many technological companies like Yahoo, Google, MSN, and many others have invested extremely amount of money in the IT infrastructure or heavily investments in alternative energy industries that revolutionized technologies in the energy sector. Daniel Gross (2007), asserts that “most investors in the ‘dotcom’ episode lost, but their money built the software and infrastructure that runs today’s Internet”. Instead of seeing bubbles from a catastrophic point of view, others see bubbles as a collec.