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Publication date:
2010

Document Version
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

Citation for published version (APA):

Turcan, R. V. (2010). *Understanding the bubbles: Vilfredo Pareto and beyond*. Paper presented at After the Gold Rush: Economic Crisis and Consequences, Iceland.

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Understanding the bubbles: Vilfredo Pareto and beyond

Abstract. Understanding how and why bubbles occur as well as whether these could be anticipated, managed, or even prevented is equally important as to know how to recover from them. To address these questions, a model of bubble emergence is put forward. The model builds on two fundamental commonalities that are identified to exist between the Internet and housing market bubbles: uncertainty and sentiments. The iteration between uncertainty and sentiments leads to the emergence of the third commonality: residue. The residue is the difference between the actors' overall sentiment about exaggerated future prospects of a new venture and intended outcomes of that new venture; the higher the residue, the higher the likelihood of the bubble emergence; as residue increases, the likelihood of bubble burst increases. One question that arises is whether one can manage the hype, hence the residue. In this, it is maintained all boils down to the role pricing plays vis-à-vis the emergence of a new venture and its perceived value. Being in the midst of the global economic crisis provides us with a unique opportunity to refine the proposed model, especially by understanding its temporal and contextual boundaries.

Keywords: bubble, uncertainty, sentiment, residue, hype, new venture, newness, perceived value

INTRODUCTION

Today, one of the foremost questions is how the world economies can get out of and recover from the current global economic crisis. Appreciably, all the efforts are directed towards tackling its effects. At the same time, we realize that for the last decade we have been on two major events: the Internet bubble in 2000 and housing market bubble in 2008. It is therefore equally important to concentrate on getting insight into the reasons *why* and *how* things occurred and understand whether these events could be anticipated, or prevented in the future or even managed. In this sense, the challenge is to explore whether those two bubbles may provide us with some answers to these questions.

THE MODEL OF BUBBLE EMERGENCE

At least two fundamental commonalities between these two bubbles can be identified: uncertainty and sentiments. The iteration between uncertainty and sentiments leads to the emergence of the third commonality, namely the concept of residue. This concept was introduced by Vilfredo Pareto some time ago;¹ yet, the relationship between the sentiments and the residues is not perfectly clear (Aspers 2001).

The first point of departure is the uncertainty over the pursuit of a *new venture*², be it an innovation, new product, new technology, or new business idea. In an uncertain environment, the probability distribution of outcomes yet to be created by exploiting a market opportunity is unknown (Alvarez and Barney 2005).³ In such an environment, different actors may make different choices with respect to the same technology, resulting in different outcomes (Carlaw et al. 2006). For example, during the dot.com boom, some futuristic predictions were driven by the prospects of the introduction of 3G mobile phones, adoption of smart cards, internet banking and data mining, to name a few: bank branches will disappear, 3G mobile phones will replace home computers, brands will die, prices will fall, and middlemen will die (Coltman et al. 2001). From the viewpoint of the current economic crisis, the newness could be typified as the emergence of sophisticated derivative

instruments, developed over the last few years by bankers and the like who themselves in turn were not able to understand them fully (www.parliament.co.uk).⁴

The relationship between uncertainty and the emergence of a new venture is depicted in Fig. 1, where X is the initial state of a new venture, Y_{i1-n} are the intended consequences the actors believe the new venture will generate, and Z_{u1-n} are the unintended consequences that actually emerge. Despite the high failure rate of new ventures, on the aggregate level new ventures' unintended outcomes ($\sum Z_{u1-n}$) generate new economic value for an economy.⁵ The array of possible applications of a new venture (Y_{i1-n}) creates severe competition for resources among entrepreneurs who possess *intimate* knowledge about the potential of a new venture, albeit being uncertain about its actual outcome. Knowing her stakeholders are not able to properly evaluate the potential of the new venture, an entrepreneur will tend to skew its potential towards over-optimism, hence to hype her business plan. This phenomenon, known as anchoring and considered as one of the strongest and most prevalent of cognitive biases (Lovallo and Kahneman 2003), is depicted in Fig. 1 as Y_{h1} , hyped-intended consequence. Anchoring leads to the creation of a positive feedback loop among the actors that in turn leads to trends being reinforced rather than reversed (Keynes, 1936). As a result, there emerges actors' overall sentiment about exaggerated future prospects of a new venture ($\sum Y_{hn}$), termed here as hype.

"Insert Figure 1 about here"

The difference between hyped-intended and intended consequences ($Y_{hn}-Y_{in}$) is Pareto's residual (R). It is this residual that is responsible for the emergence of the bubbles: the higher the R , the higher the likelihood of the bubble emergence; as R increases, the likelihood of bubble burst also increases. Two by-products of this process emerge: hyperbole and vaporware. Hyperbole refers to a signal emanating by various actors from either competitive or remote environments about exaggerated future prospects of a new venture.

Vaporware is a signal emanated by powerful actors to the market and refers to a false announcement of a new venture in an attempt to deter entry.

IMPLICATIONS

One question that arises immediately is whether one can manage the hype, hence the residue. This research note suggests that all boils down to pricing. And it is not so much pricing as a monetary value that is of concern here. It is about the role pricing plays vis-à-vis the emergence of a new venture and its perceived value. As regards to the former, the question is whether pricing is seen as a mechanism that fosters competition during the emergence of a new venture, and at the same time tends to destabilize the firms in the market (Fligstein 2001). Or, pricing is seen more as a mechanism to mitigate the competition among various actors to achieve stability in the market, as the goal of the market is to ensure the survival of the firm (Fligstein 2001).⁶ In this respect, one may posit the reason for bubble burst is that pricing is used as a 'competition' mechanism rather than a 'stabilizing' mechanism. It could further be argued that using pricing as a mechanism to bring stability in the market by coordinating the efforts to avoid destructive forces of the competition during the bubble emergence would mean *inter alia* that hype could be managed and as a result high prices could be perpetually increased.

As to the perceived value of a new venture, two facets of bubble emergence could be singled out. First facet relates to exchange as being virtually non-existent during the emergence of a new venture. Here the primary argument is that the emergence of a new venture under uncertain decision making situations is more about the markets formation (battle for resources or competitive advantage) rather than exchange (in market sense), and even polity (as both bubbles demonstrated). If we assume markets, exchange, and polity emerge along the emergence of a new venture in that order, then the explanatory power of the model increases. In other words, the R could be interpreted as nothing else but the effect of the markets formation (battle for resources/competitive advantage).

The path dependency of market formation, exchange initiation, and polity development (markets → exchange → polity) may be also explained by the fact that implicitly the model also builds on the notion of ‘opportunity’ as being something objective, existing independently of the actors and which may or may not eventually materialize (Z_{u1n}), on one hand, and the notion of business venture ideas (the sum of Y_{i1n}), that are created by various actors around that opportunity, on the other. Hence, the exchange may fully materialize along the materialization of the opportunity, that is after the winners and losers are identified (if of course the bubble does not burst before that). According to Schumpeter (1934, p. 85), ‘carrying out a new plan and acting according to a customary one are things as different as making a road and walking along it’. It could be inferred from here that there are no limitations for how large firms may grow, but might be the limitations for how fast firms may grow.

Second facet relates to the emergence of exchange solely based on the anchored value of a new venture. In other words, the only reference point to form an opinion about an emerging new venture, i.e. its perceived value, is the anchored or hyped value of the new venture. Figure 2 exemplifies this assertion. The perceived value of a new venture by potential customers materializes primarily as a result of marketing efforts undertaken by the emergent new venture, emergent substitutes (Y_{i2-n}), and to a certain degree previous encounter with similar products or services. In this sense, the perceived value is nothing else but the anchored view of the future prospects of the new venture, Y_{h1} .

“Insert Figure 2 about here”

The difference between the perceived value by potential customers and the expected value, i.e., R , could be viewed as potential customers’ incentives to demand the new emergent product or service, driven by the ‘do-not-want-to-lose-out-on-a-big-opportunity’ motives. As

the product is virtually non-existent yet in the market, hence scarce, it is well expected the demand to increase, driving the price/value of the product up, hence the value of R . It is important to note that during this process of new venture emergence, the actual exchange is non-existent, and the cost of goods sold (COGS) is relatively low (clearly, the value of the latter depends on the type of product or service, e.g., one may compare high-technology, fashion or movie products). The attractiveness of a new venture to potential investors could be expressed as a difference between perceived (anchored) value of a new venture and the cost of goods sold, i.e., Y_{h1} -COGS. This explains for example the attractiveness of new high-technology firms to investors.

FUTURE RESEARCH DIRECTIONS

Having been through two bubbles over the last decade, at the same time being in the midst of the global economic crisis, and moreover being on the verge of another bubble (Hilsenrath 2009), provides us with a unique opportunity to refine the proposed theory, by understanding especially its temporal and contextual boundaries. As far as the temporal boundary goes, an assumption is that the R is unstable over time; as actors move away from uncertain towards risk decision making settings (R diminishes), more accurate information comes from the market that makes it possible for actors to perform much needed evaluations, and therefore to make a distinction between hype and reality. By contrasting the dot.com and housing market bubbles, the researchers may also delve into the nature of sensitivity to context and contextual factors as such. For example, at one level, the researchers may focus on the emergence, stability, or transformation of particular markets (Fligstein 2001). At another level, the researchers may focus on the process of emergence and decay of new ventures in these and adjacent markets, on the exchange in these markets, as well as on the emergence of related polities.

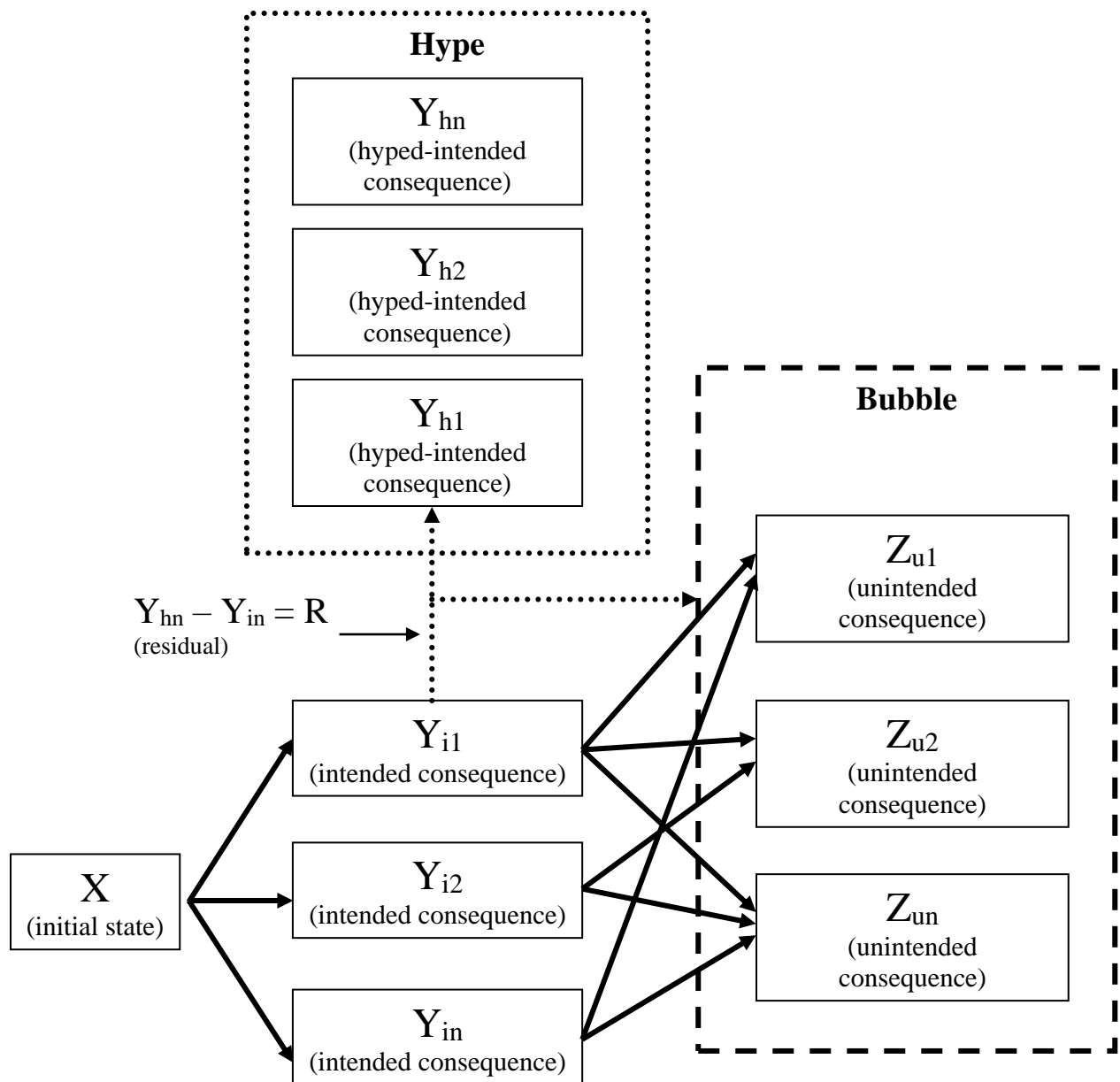
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Notes

- ¹ For a discussion of Pareto's views on sentiments and residues, please refer to Aspers (2001).
- ² For the purpose of this paper, the discussion is based on 'new venture' that is a type of *newness* that is defined, not exhaustively, as *new* ventures, business ideas, products, technology, industry or sector, policy, forms of organizing, categories, and organization practices.
- ³ Uncertain decision making situation resembles a rolling a die with infinite number of sides, without knowing whether the die is balanced and fair. Under these circumstances, it is impossible to calculate the probability of the outcomes. A risk decision making situation is similar to rolling a traditional die that is balanced and fair. In other words, it is possible to calculate the probability of the outcomes.
- ⁴ This was one of the findings of the treasury committee of the UK Parliament at the hearing on the crisis of the financial and banking sectors.
- ⁵ For a discussion of the effect of externalities on the growth of the economy, please refer to Elster (2007).
- ⁶ For a discussion of theory of markets and markets formation, please see Fligstein (2001) and Fligstein and Dauter (2007).

Figure 1. The model of bubble emergence



X – the initial state of a new venture

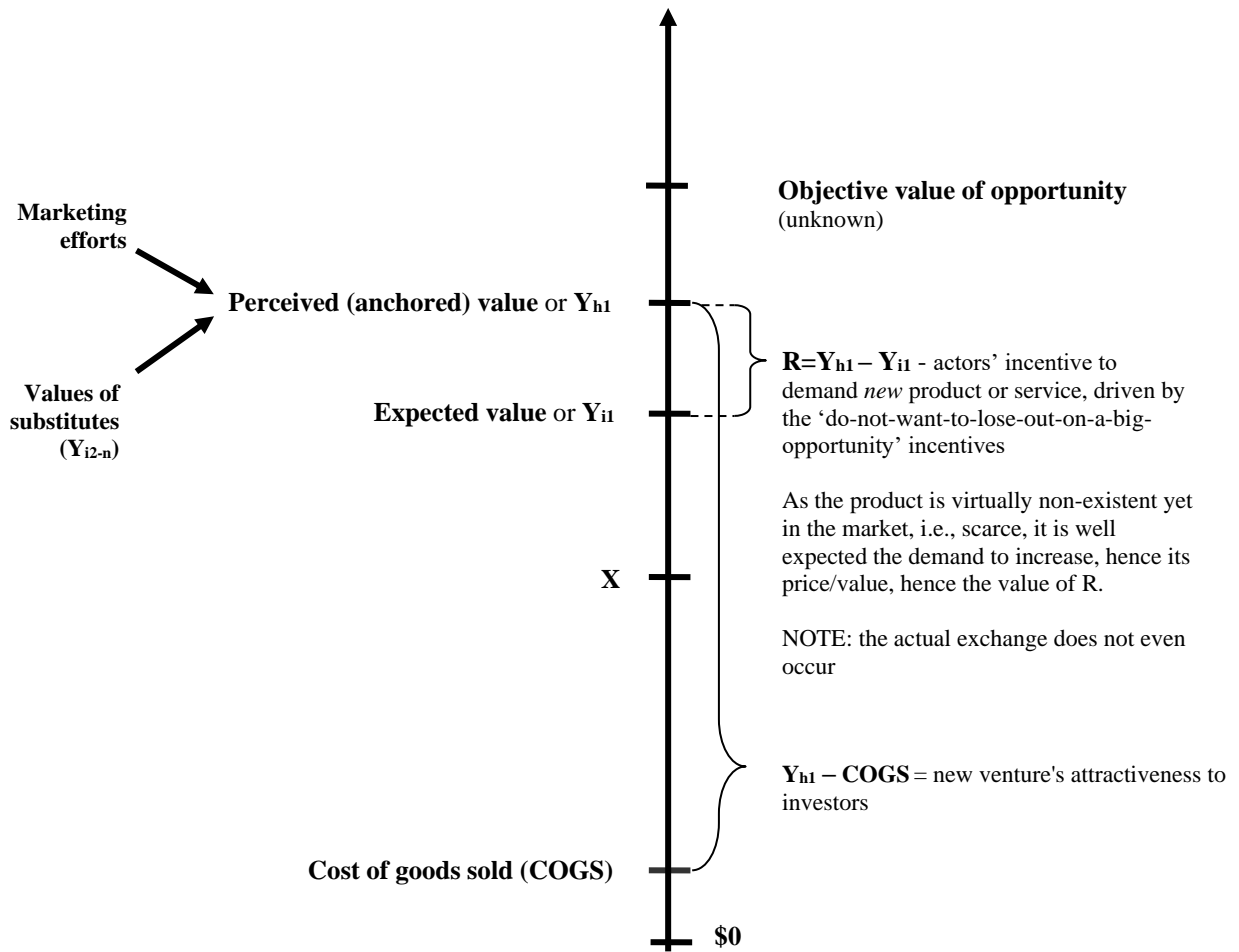
Y_{i1} , Y_{i2} , Y_{in} – an intended outcome of the new venture

Y_{h1} , Y_{h2} , Y_{hn} – an anchored view of the future prospects of the new venture

Z_{u1} , Z_{u2} , Z_{un} – an unintended outcome of the new venture

R – residual effect of anchoring

Figure 2. Bubble thermometer^a



^a The concept of 'pricing-value thermometer' is borrowed from Dolan and Gourville (2009).