Boom or Bust?
A Behavioral Analysis of Investments and Growth in the Technology Sector

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In the 1630s, the Netherlands experienced a meteoric rise and subsequent drop of unprecedented proportions for tulip prices—this was the first recorded speculative bubble in history (Shiller 85). In the modern times of financial markets, we have witnessed several more of these phenomena, often with grave consequences for the broader economy and society as a whole. The housing and dot-com bubbles are still fresh on the American psyche—the cumulative result has been an on-going global economic malaise and trillions in lost wealth and foregone innovation opportunities. Optimism, however, is resilient and the technology sector is once again saturating today’s news and frothing up with a rash of new investments and sky-high valuations. Will the world finally learn from its mistakes or are we headed toward another economic bubble? In order to answer this question, we will analyze today’s financial ecosystem through a behavioral prescription of speculative bubbles provided by Yale professor Robert Shiller:

Irrational exuberance is the psychological basis of a speculative bubble . . . a situation in which news of price increases spurs investor enthusiasm, which spreads by psychological contagion[,] . . . amplifying stories that might justify the price increases and bringing in a larger and larger class of investors, who, despite doubts about the real value of an investment, are drawn to it partly through envy of others’ successes and partly through a gambler’s excitement. (2)

With these criteria in mind, we can evaluate the technology boom of 2011 and gain insight into the likelihood of a bubble. On a macro-level analysis of the industry, the psychological contagion seems not to have spread very far, with several dampening factors in the marketplace. Given the current weak market conditions and overall investor caution, there are not enough widespread signs of irrational exuberance to warrant classifying the current growth in the technology sector as a speculative bubble. There
certainly exist the foundations for amplification mechanisms and feedback loops but not to the extent that would manifest in the instance of a large-scale bubble.

In order to make this judgment call, we turn toward a similar phenomenon from recent history: the spectacular rise and decline of the Internet industry and subsequent dot-com bubble in the 1990s and early 2000s. During this era, the market exhibited an air of dangerous optimism and overconfidence, resulting in sky-high valuations for many unproven startups that collapsed soon after investors poured their cash in. Companies popped up left and right and were swooped up by greed-driven Wall Street. A prominent example in the dot-com bubble Webvan.com, an online grocery delivery service whose IPO debuted in 1999 with a valuation of $6 billion yet only revenue of $13 million. Goldman Sachs, the underwriter for its IPO, projected revenues of $518 million in 2001; the company went bankrupt that year (Harris). Investment banks were happy to create highly optimistic financial projections and introduced the sector to the public, raking in profits for themselves. Even if the companies failed later, the banks no longer cared as they pocketed their profits. All of the big players acted together to generate enormous sums of money with disregard for the underlying health of the economy. Along the way, the financial giants created a perfect storm of exuberance that permeated the marketplace.

Far too good to be true, the market peaked in 2000—and soon bottomed out. Investors of all walks were hit and families lost their fortunes in the seemingly invincible stock market. It was not until 2009 when Silicon Valley recovered and regained traction in the financial ecosystem (Kaplan). Technology-centric venture capital has taken off in recent years with angel investors generously pouring cash into blue-chip startups. Fast forward to the present day: the area is bustling with activity and talk about the next
bubble has resurfaced. When LinkedIn, a professional networking business, made its debut on the stock market in the summer of 2011, shares rose from an initial public offering price of $45 to $94.25, more than doubling its value (Woo et al). A Google News search for “tech bubble” yields nearly a thousand articles published within the past thirty days. Discussions of the technology sector range from the latest IPOs such as Zillow and Pandora to startups with rapidly growing valuations such as Groupon, Facebook, and Zynga to name a few.

Indeed, the boom has certainly experienced price increases and investor enthusiasm, both characteristics of an early-stage bubble as Shiller described. A chart of the Nasdaq stock index’s historical prices shows that the period between 2009 and now closely mirrors the period from 1995 to mid-1997 as investors were beginning to feed into the frenzy that snowballed into the dot-com boom (Kaplan). Prices are certainly not near the highs experienced in 2000 but valuations are quickly skyrocketing and investors are piling their money into new start-ups and IPOs (Jones). Once again, everyone wants a slice of the quickly-growing pie.

This pie, however, may be a ticking time-bomb just waiting to detonate. In a speculative bubble, irrational exuberance leads to an overvaluation of assets and there is only a matter of time until an efficient market brings these valuations crashing back to earth. In the case of the tech boom, this means pricing startups well above what they should be worth and triggering a sense of unfounded optimism and further rounds of investment. Had Apple used the same metric to measure market value as LinkedIn, its market capitalization would be estimated at around $3 trillion (Ovide). Other companies
featured these days are also being valued at extraordinary amounts proportional to their total operating revenue, often at multiples of thirty to forty (Jackson).

On closer examination, however, it seems that today’s environment differs quite a bit from the dot-com era. The amount of venture capital investment, the number of initial public offerings, and prices for tech stocks are still far off from the glory days (Jackson). Furthermore, the IPOs that have launched have performed with an unremarkable manner in the public markets (Ovide). Some of the top players in the industry still have a long ways to go to become an established power in the economy.

Take Groupon for example. The e-commerce giant pioneered daily deals: it pairs up with local businesses around the world to provide new bargains for willing consumers every day. The company takes a cut of each transaction; the more transactions, the more revenue and profit. This model has been emulated thousands of times since Groupon’s debut, rapidly transforming the face of e-commerce and creating comparable rivals such as LivingSocial. Groupon has recently been valued at between $15 and $20 billion and rejected Google’s takeover bid of $6 billion late last year (Reuters).

So what makes this business so alluring for investors? Many aren’t quite sure. Investors have pointed out some glaring red flags in Groupon’s financial reports; the startup has yet to generate a profit within a fiscal quarter with marketing costs overwhelming gross revenue (Harris). Investors are essentially placing their bets on Groupon growing out of this build-up stage and turning a profit in the future once it finally creates a well-established customer base, but there are many factors that may complicate this development. Given its marketing expenses and the growth of rivals,
profit margin can only go down. Furthermore, complaints are rising about Groupon’s core business; upselling, red tape, and low-quality products are just a few of the issues that threaten to derail the company’s expected trajectory and growth potential (Tuttle).

Despite its difficulties, Groupon is doing well with its sales pitch. Given its sky-high valuation and questionable upside, this company is a good example of an amplification mechanism that generates a boom in investment. Groupon’s founders begin by touting its healthy growth and a sizable profit after accounting for marketing expenses; this process drums up interest through the “psychological contagion” (Reuters). When enough investors are lured in, a capital-raising round pools together the money. The problem arises on this next step as these rounds return a majority of the money raised to Groupon’s founders and early investors, namely Lefkofsky, Mason, and Keywell (Kafka). A small amount of the new money is re-invested in the company; in essence, these executives are “building businesses that they did not themselves believe in” (Shiller 77). Even so, interest stays strong, demonstrating the irrational exuberance that plagued past bubbles.

Zynga has hopped on the bandwagon and is riding the current wave of investment and optimism. The company has its own share of problems. Zynga’s U.S.-based revenue stream is subject to Facebook’s whims because its flagship games are all hosted there; when Facebook decided to up its cut from Zynga, the gaming startup had no choice but to accept (Gannes). At the same time, this business may be a saving grace for the tech boom; it has a strong revenue stream and is still growing at a rapid clip, recently expanding into China, unlike other start-ups such as Groupon (Kelleher, “Zynga's IPO”).
On the opposite side of the startup spectrum is Color, a photo-sharing business that raised $41 million in seed funding before its product even launched (Hughes). Since then, the company has entered a stage of limbo, hitting a host of issues with its top executives jumping ship and problematic growth potential.

With this rise in technology venture capital and startups of variable success, troubles are brewing as investors slowly become more and more confident in their decisions regardless of the long-term outcomes. The fledgling companies described previously are potentially problematic because they do not have well-established revenue streams. An examination of startup investment behavior reveals two main strategies for capital raising—the lean path where start-ups raise money as they go, only getting investor money as they grow more successful, and the fat path where start-ups raise a lot at the beginning in order to avoid having to raise money later and focusing on product or service development (Blodget). The significance, then, is that the fat startup approach allows for companies to get high levels of funding and valuations without proven revenue streams. Investment banks and venture capital firms have been providing generous forecasts of their future cash flows for these fat startups, echoing the same sentiment in the early stages of the dot-com bubble and creating a misleading sense of optimism and confidence.

Interestingly enough, revenue could also be a bad thing. People are already scared of the next bubble, leading them to latch on to steady revenue streams as a safety-net for picking investments. Some of the new IPOs do have well-established revenue streams and are “more real, [they attract] many more people who feel more justified in their beliefs” (Lang). MySpace, however, promptly demonstrates how quickly a tech giant can
fall from grace even after maturation, having been purchased a few years ago for $580 million by News Corporation and sold a month ago for $35 million (Bylund).

Like MySpace, most technology startups are still in the phase of private trading. The implication, then, is an exclusive zone of investment that isolates itself from the rest of the economy. Trades are done solely on secondary markets where only select investors can get access to shares of these coveted prizes and have been bidding prices up quickly. Despite the hiccup, the top players are still performing just fine. Using Shiller’s framework, it would appear that the boom in the technology sector has not yet put the overall financial ecosystem in a stranglehold of optimism and irrational investment.

If a bubble does indeed occur but stays insulated within the secondary markets, the damage may still be substantial but will not send worldwide stock indices and the US economy tumbling like the dot-com bubble. Since these wealthy venture capitalists and private equity firms are the ones controlling the majority of stakes in the tech startups, this relatively insulated sector will get hit the hardest. The rich may suffer, but the impact will be relatively muted for the rest of the economy.

This exclusivity, however, is a double-edged sword. Because the average investor doesn’t have access to the kind of information that the secondary market-makers and players have, public market reactions will be shaped primarily by feedback loops coming from the media and common stockbrokers. This information asymmetry makes it harder for the public to rationally evaluate and price a company that goes public; their closest source to primary information becomes the wealthy angel investors hyping up their new
investments which may be overvalued, generating a new round of widespread irrational exuberance (The Economist, “Silicon Valley”).

Despite this potential implication, the market has so far tempered itself. In stark contrast to the dot-com startups, this generation of tech IPOs have performed poorly thus far on the public market, demonstrating that the levels of optimism and overconfidence seen in the previous era has not yet infected the investing public (Ovide). In this area, Shiller’s framework falters—there is no institutional analysis of how secondary market investors generate a similar buzz or how that discussion carries over to the public. Considering the news and stock prices recently, it seems that investors are still exercising great caution on these highly volatile new tech IPOs.

If, however, a bubble occurs but also spreads to the public markets, the implications will be much greater. For one, the stock market is still a large source of wealth for many. One key difference is this: the investing public this time around includes global players such as Russia and China, both of which are much more invested in this boom and have their own billion-dollar startups (The Economist, “Silicon Valley”). Furthermore, speed becomes a key concern; the financial crisis of 2008 has demonstrated how quickly a crash can spread worldwide as well as how pervasive the damage can be to different sectors of each economy. Most notably, over-leverage has generated interdependence between investors and institutions all around the world; when one goes down, everyone else is affected.

Interestingly enough, the US economy may end up benefiting from these current circumstances in the technology sector. The current fear permeating the stock market is
making investors shy away from the risk-sensitive tech IPOs, tempering irrational speculation and potentially preventing the bubble from arising at all (Horowitz, “Closing statements”). Though a bubble may come at some future point due to natural psychological factors, it may still be worth it to generate a large boom and growth cycle in the technology sector to produce a massive global build out of technological innovation and opportunities (Bajarin). Famed venture capitalist Ben Horowitz echoed this sentiment, arguing that the benefits may outweigh the costs regardless, so long as the build out created lasting value to the global society (“Opening statements”).

However, some fear that society may not hone the full potential of the boom and would fail to create lasting value, especially if the survivors consist mainly of the social media startups being valued highly and the main culprits if a bubble were to take hold. Talented venture capitalist Peter Thiel, for one, believes that these start-ups are not “taking civilization to the next level;” instead, he argues that people should follow his example—investing heavily in areas such as health care and artificial intelligence (qtd. in Rusli). Facebook and LinkedIn seem unlikely to provide the benefits that breakthroughs in artificial intelligence or bioengineering could offer for the world—building on top of “old technology” may exhaust the pace of innovation without increasing competitiveness (Vance). Regardless of the type of outcome, a bubble would once again demolish investor confidence in the industry and create a renewed culture of risk aversion in the tech sector. The consequences could be enormous, crushing future growth opportunities worldwide (Wadhwa).

For now, however, it seems unlikely that the US economy faces the prospect of a new speculative bubble with this technology sector anytime soon. With sluggish domestic
and global markets, high unemployment, and general consumer and investor weariness, the financial ecosystem has been relatively insulated from the irrational exuberance witnessed in the late 1990s. Despite all the hype of the technology sector, ordinary investors have thus far moderated their optimism, demonstrated astutely by the high volatility and unremarkable pricing trend on public markets. The current technology boom may be just what the world needs today—a new tide of innovation and growth to lift the rest of the economy. Only time will tell whether the world has truly learned its lesson about the dangers of irrational exuberance.
Works Cited


Source: Kaplan (Works Cited)