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## Chicken Little Predictions

.....Like any social system, a decentralized financial system works well when participants expect it to work well. Conversely, it works badly when participants expect something worse. A certain amount of psychological fragility always hangs in the air.

Such fragility played a key role in the recent economic volatility. Although the bad debts from subprime mortgages had been recognized for quite some time, it took the travails of Bear Stearns and, a few months later, Lehman Brothers, AIG, Merrill Lynch, and Washington Mutual to convince enough financial market participants that something erratic would emerge soon. That helped persuade (or force) many participants to unwind their leveraged financial positions, which unraveled the remaining confidence, bringing about a self-fulfilling prophecy of erratic outcomes.

At one time it was possible to forestall both the dangerous amount of leveraging and the unnaturally rapid unwinding of it, so it is very tempting to use this space to vent my anger at those responsible for letting issues fester and then blossom. However, this column normally covers technology economics, not errors in financial market oversight, so I will bite my tongue.

Today I will gaze into the crystal ball and address a question of importance for many of my friends in technology firms: What effects will this financial

meltdown have on US high-tech markets over the next year?

There is good news and bad. The good: in this case do not expect the normal cloudiness that interferes with prediction. Predictions are easy to make today. Now the bad: all the predictions point toward a painful future. Cassandra would feel right at home, except she never had so much company.

### Worldwide decline

Let's start broadly. Economic activity in the US economy has started to decline, dramatically in sectors that depend on a smoothly operating credit system—such as banking, autos, construction, real estate, and support services for financial activities.

Worse yet, for similar reasons, every other developed and growing country in the world has experienced similar financial volatility and subsequent economic decline. That has whipsawed exchange rates in multiple directions, along with exports and imports. All these volatilities have been reinforcing each other. It is unclear where it will all settle.

The world economy has not witnessed global economic volatility of this magnitude since the 1970s. The recession of that era brought about declines in GDP of several percentage points from one year to the next, and the highest unemployment since the Great Depression. It is hard to say exactly where the recent events will bottom out because

every new event is outside the range of recent experience, but nobody is ruling out an economic experience as bad as the 1970s.

After such a sobering soliloquy, I am afraid to get more specific, but I promised I would focus on high tech, so here goes.

Demand for high-tech products and services will certainly decline along with the rest of the economy, but probably more so. That has been the pattern displayed in prior recessions. Most businesses will be cautious about making ambitious investments in enterprise IT, and some IT projects will be cut back. Similarly, households that are supported by businesses that do not do well will hesitate to make an ambitious purchase.

Every capital good in the high economy should feel the decline. That does not mean sales will drop to zero; but it should be surprising to see broad and sustained growth in digital cameras, PCs, servers, satellite radios, flat-screen TVs, or whatever. I would expect zero or negative growth.

Business services will also suffer, especially the luxurious side of IT consulting and business development. It might become as bad as the downturn in 2001 to 2002, which resulted from the dot-com bust, the telecom meltdown, and post-9/11 investment uncertainty. Business consulting that focuses on cost cutting and restructuring might do okay next year, as such firms did in 2001–2002. Only the vultures of the

consulting world—those who specialize in bankruptcy—did extremely well in 2001–2002, and the same should be true next year.

There will be a few outliers, to be sure. Moore's law will still hold for PCs, smart phones, tablets, and other gadgets. New features might not create much new demand during a recession, but they should help to stave off the worst. That said, next year when Steve Jobs announces sales-volume growth next to 20 percent a year (or whatever), just remember that Apple is exceptional. Without this financial mess, Jobs' business could have grown even more.

As in every prior recession, firms upstream should have a worse time than those downstream. Integrated circuit manufacturing, memory manufacturing, and a myriad of other component parts vendors are going to face a very tough row. In other words, expect Intel and AMD to have a few bad quarters, and expect many small hardware firms to go bankrupt. Only those lucky enough to supply parts for smart phones and iPods might be all right.

The common use of outsourcing in hardware and software production makes it difficult to forecast unemployment, or, shall we say, the distribution of lay-offs. The recession of 2001–2002 hurt many white-collar workers, particularly on both coasts of the US, but affected US manufacturing unemployment less than anticipated. It appeared that contract assembly houses in East Asia and Mexico bore the brunt of the decline.

What about this time? Will contract manufacturing take another hit? Will Bangalore go through a crisis in unemployment? Will the Chinese economy slump as well? Nobody knows yet.

### Venture capital and entrepreneurship

The decline will also hurt venture capital firms and related activity. As in 2001–2002, a big fraction of the new VCs in the US may shut down. Although nobody ever feels much pity for VCs, a contraction in this subsector seems a bit unfair, since it is one of the few corners of the

US financial system not responsible for this mess. Well, sometimes life is not fair.

VCs are getting it from two sides at once. Institutional investors write the biggest checks, and many of them will write smaller checks next year, if any at all. Nor will pension plans, private foundations, or wealthy investors commit as much money in an era of tightened liquidity.

Making money during an exit also got more difficult. Specifically, venture firms make money when they either (a) take a young firm public, or (b) sell a company and its assets to an acquirer, such as Cisco, Google, Facebook, or whoever has both cash and interest. Both activities will remain less valuable until the economy picks up again.

The public market looks especially bad. As Wall Street tried to come to grips with the subprime overhang in the last year, it had been difficult—although not impossible—to take a young firm public. More recently, public markets have come to a standstill. It is a safe bet that nothing will occur in 2009.

Once again, there will be exceptions. The best entrepreneurs did not stop looking for opportunities last month. There should continue to be growing niches in the wireless world, for example. There are still plenty of VCs looking for the next Twitter. Funding will not cease. Just remember, once again, that exceptions do not make a trend.

The more difficult open questions concern investment priorities for firms that have already begun to explore a new product or service—for example, in Web 2.0, social networking, cleantech, and the other fads that emerged in the last half dozen years. This is what I mean: Most young companies return to their VCs for further rounds of financing as matters progress. It is just a fact of entrepreneurial life. So what will VCs do when they are approached for more funding?

Already most good VCs are "triaging." That is, they have determined priorities for existing portfolios of startups, cutting back selectively to focus funds on and increase the survival probabilities of

those who have a better chance for a profitable exit.

Who will get cut and who will get picked next year? Your guess is as good as mine.

A few months ago, Sequoia capital received considerable publicity because somebody "leaked" a slick set of 56 slides its partners presented to their startups (see, for example, <http://www.techcrunch.com/2008/10/10/sequoia-capitals-56-slide-powerpoint-presentation-of-doom>). Most of the publicity was favorable, which I found puzzling. The slide deck discussed rather generic belt-tightening strategies, impressing upon startups the importance of generating cash flow as soon as possible and the importance of sparing frivolous expenses. Who did not know that already?

Moreover, the visual tone hit a discordant note with me. What message did the partners think they were sending with dazzling graphs and garish graphics? Shouldn't the partners show that they knew how to take their own medicine and cut back frivolous spending—cutting spending on such things as, perhaps, fancy graphs and graphics? It was an inconsistent, not to mention inconsiderate, set of attributes for a presentation on an inherently grim topic.

### Chicken Little economics?

A recession has arrived, and it could last a while. While that leaves little room for economic optimism, the economic policy community has woken up to the potential for disaster. So let me mix some metaphors and end this gloomy column with a sardonic silver lining: At least Cassandra has a direct line to policy makers right now, and for a while that might keep the sky from falling.

In the meantime, I see little additional reason for economic optimism. In the near term many good friends in high tech are in for a dour downturn, and, perhaps, a rather harsh experience.

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