



# Shortfalls, downturns, and recessions

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..... Many high tech firms have recently issued poor earnings reports. Industry analysts wonder if high tech is in a recession or headed into one. The answer depends on the definition of recession.

Finding a definition is not so easy. Most people wouldn't recognize a recession. The people who lived through the last deep recession in high technology markets are the same people who now listen to oldies on the radio. There is little collective memory of that time.

To be sure, bad news happens. The big question is what to call it.

In popular discussion it seems as if bad economic news is called an *earnings shortfall* when it happens to your commercial rival. It's called a *downturn* when it happens to both your firm and a commercial rival. It's called a *recession* when it happens to you, your rival, and your brother who works in another city.

This is probably too loose and confusing. A remedial review is called for.

## Official definition

The official definition of a recession is used in all the newspapers and is endlessly quoted by reporters. But this definition does not connect to a reality that anybody—except US Federal Reserve chair Alan Greenspan—recognizes.

A recession officially occurs in the US when its economy sustains two successive quarters of negative aggregate growth. That's it, precisely.

Notice a few peculiar things about this definition. First, it's retrospective. The sta-

tus is not official until after six months of recessionary activity. So this definition might be useful for economic history, but it's useless for forecasting. More to the point, your firm and your nearest rivals could be doing badly long before any official declaration emerges in *The Wall Street Journal*. These lags reinforce a certain public skepticism with official declarations. What is the good of somebody declaring a recession six months after you and your friends have been laid off?

Second, this definition only considers the aggregate economy in all 50 US states plus territories. It's not about any specific sector or any particular location; nor does it consider the global economy. So, even though the US economy is officially not in a recession yet, it's entirely plausible that specific sectors of the economy—such as the PC industry—could be in a serious decline. It's also plausible that specific locations, such as Northern California or the greater Boston area, could experience extraordinarily painful economic adjustments even when most other places as well as the average economy are just fine. This is another reason why an official declaration is disconnected from your daily business life.

Finally, some official has to formally declare a recession. Since it is quite a sensitive declaration to make, a decision maker in the US executive branch could find it very tempting to change the definition to suit their needs—especially around election time.

As a result, the US government does not make these pronouncements but the

National Bureau of Economic Research, a private nonprofit think tank, has the official authority to declare a recession. They use the same government statistical data as everyone else, so there is no mystery to these declarations. Nonetheless, part of the caution you may sense in the newspapers' use of the term arises from this institutionally peculiar assignment of duties.

As I discussed previously, official declarations of recessions have only a weak relationship to the present downturn in many facets of high tech. Is the current situation a recession? Officially, the answer is "no" or "not yet," and that is how the picture will stay for a while. In this case, officialdom is useless.

## High-tech downturn

Is there presently a high-technology market recession? Possibly yes, but why?

The present downturn is widespread. It started innocently, as downturns usually do, and is now known as the dot-com crash. It took more than a Web page to build a successful e-tailing business. Online advertising was less lucrative than first thought. Many dot-coms developed businesses but found a lack of demand. In other words, unsteady revenue streams and too many costs are a recipe for bankruptcy in a new business. Many firms cooked the same goose.

The dot-com decline produced a domino effect, hurting the equipment and consulting firms who supported the boom. It was what business professors call a clas-

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sic decline in a whole value chain. That is, demand for the end product dropped. So all the upstream suppliers lost a fraction of their customers at the same time. This spread the pain into different markets. In particular, the dot-com crash pushed a lot of almost new, used computing equipment onto the secondary market. This hurt sales of new PCs, exacerbating sales problems at major PC and equipment firms.

So it all adds up. Bad news has arisen at PC suppliers, such as Dell or Intel; at Internet equipment suppliers, such as Cisco; at software firms, such as Oracle; and so on. It has also arisen at the consulting houses, such as Accenture and EDS, who used to make a lot of money implementing solutions to problems in e-commerce and ERP issues among others.

The decline in the value chain coincided—some say caused—venture capitalists' withering interest in dot-coms. The money spigot turned off, exaggerating the decline's speed and sharpness. That said, it's not just dot-coms running out of cash and declaring bankruptcy. If this were just a burst bubble in an isolated sector it could work its way out in a few months. But now the situation seems to be more serious.

The present downturn seems to have multiple causes. For example, the dot-com crash coincided with a steady rise in interest rates, hurting demand for durable goods such as cars, trucks, and machinery. When Ford Motor, General Electric, Unilever, Boeing, and their cousins see demand dropping, they buy fewer PCs. This would have had consequences for PC manufacturers and hence the aggregate economy even without the dot-com crash.

To make matters worse, the broadband revolution spread more slowly than anticipated. Demand for data is growing, but not quite as fast as the biggest forecasts from a few years ago. Many vendors anticipated too much demand for their service and their equipment. Many ISPs, hosting companies, competitive local exchange carriers (CLECs), and so on are

now left with equipment, debt, grand plans, and not enough revenue.

It's not easy to fix multiple causes of an economic downturn. If you were Alan Greenspan, where would you start trying to fix this sort of mess? A lowering of interest rates will help but may not make much difference in the long run.

### **Why downturns are bad**

It's commonly recognized that high tech is a volatile sector of the economy. Entrepreneurs seek to develop markets where they have no identified customers, just sketched business models, and endemic technological disruption. It's apparent that there will be ups and downs in conducting this type of business. Until recently, however, the "down" part of volatility was isolated to specific firms or product categories. It had been a long time since the bad times visited many firms at the same time.

So why does this matter? What is the real difference between good and bad times? In good times business failure comes about for an assignable reason. There is someone or something to blame and lessons to be learned. Not necessarily so in bad times.

So, when firms fail in good times it's possible to identify why. Reasons could include a business plan that was too optimistic about a specific customer's needs, a chief financial officer who set up an inept cash-flow tracking system, or a product whose second generation simply did not work. These are isolated mistakes, unrelated to each other, though these can often enough kill a young business.

During a recession, in contrast, firms can do everything right and still fail. It's as if success or failure is out of the firm's control. The margins for error are small; so luck plays a large role.

A few examples will make this idea concrete. Pets.com was going to fail under all circumstances, good or bad. Many people own pets, but few need to buy their food online. I always liked eToys, but there were not enough people like me out there. EToys was doomed because there was not enough online toy business to justify warehousing expenses. The business model

behind Webvan is also not set up to succeed: Any delivery business is expensive and not profitable without huge volume—which Webvan is not getting. Webvan is toast when they run out of cash. And, let's face it, Go.com had little going for it that could have made it a success.

But there are many firms who are still working out their business models and might squeak through if the times allow it. NetZero, for example, is not yet profitable, but it has not nose-dived either. It still has considerable cash to survive losses for a while. A few experimental years would help NetZero work out its kinks, but a bad overall economy makes its business marginally more difficult. The economic times influences what the company can do and how it experiments.

Related to this idea of the times, many firms built their capital structures in anticipation of large growth. Now they need a return on those investments. If that growth does not materialize for a few more years because of an unanticipated decline in economic conditions, these firms may have insufficient cash to cover debt.

Victims of this type of problem could be Internet backbone firms, such as PSINet, Level 3, and Qwest. These firms were perfectly good companies prior to the downturn, and all are about to be squeezed for cash. Some may survive, some may not. I pity their managers, many of whom have done reasonably good jobs. These difficulties are not management's fault.

One other observation scares me: Recessions are self-reinforcing. If most investors believe that the climate is hostile for growth and for risky business, they will make fewer investments in new firms. Established firms also will be less adventurous when organizing new projects.

If fewer firms are visibly growing, it fosters the perception of an unrosy future, reinforcing the hesitation to make investments. After a while, this feeds on itself. Indeed, it may eventually become difficult to identify causality—are the bad times causing low investment or is it the other way around? That is the sort of recession we all want to avoid. Once an economy sinks into a self-reinforcing funk, it's difficult to overcome.