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THE EDITORIAL VIEW

## EDITORIAL: SURVIVING THE BUSTED BUBBLE ECONOMY

By Tom R. Halfhill {12/29/08-01}

At *Microprocessor Report*, we are primarily technology analysts, not market analysts, so we don't make economic forecasts. Our fellow In-Stat analysts are not so lucky. Since the economy sharply worsened in September, they have struggled to update their market

forecasts for 2009 and beyond—a daunting task. Even the world's top economists have been rocked by the Wall Street meltdowns, government bailouts, and financial upheavals of recent months. It's difficult to anticipate what will happen a few weeks from now, much less months or years in the future.

Of course, our analysts can't simply give up and stop forecasting. At times like this, customers need good business intelligence more than ever. So we've been putting our heads together to interpret recent events, even drawing on resources from seemingly unrelated parts of our umbrella company. (The corporate economist for Reed Business Information's construction-data division provided some particularly useful insights.)

These internal discussions have been fascinating. They reflect a wide variety of viewpoints and experiences, in keeping with the varied backgrounds of our analysts. In-Stat employs smart people from all over the world, including the U.S., Europe, China, and India. Some are relative youngsters in their twenties. Others are middle-aged or approaching retirement. At times, our ruminations have drifted far afield, into matters philosophical.

One reason for optimism is that technology companies should be able to weather a recession better than companies in most other industries. When times get tough, efficiency

becomes even more important. The wise application of technology can improve efficiency in many ways, from better communications to smarter allocations of shrinking resources. Energy efficiency is particularly vital. Although energy costs have rapidly declined in response to falling consumer demand, they will inevitably rise again. New technology can dramatically improve the efficiency of energy production and consumption.

Of course, the biggest question on everyone's minds is when the economy will recover from its numerous woes. Predictions are all over the map, from six months to two years or more. Eventually, recovery will come. Another important question, asked less often, is the nature of that recovery. I have noticed that this question tends to divide economists, analysts, journalists, and other observers along definite age boundaries. Perhaps some historical perspective is in order. (Disclaimer: These observations are mine, not necessarily the collective view of In-Stat.)

### Bubble After Bubble After Bubble

Unfortunately, many people believe our now collapsed bubble economy was a normal economy. As a result, they define recovery as the restoration of bubble-level business activity. This misconception is understandable for younger folks who have known nothing but bubbles. However, even some

older people have forgotten what a normal-growth economy looks like.

Multiple bubbles are at fault. In the late 1990s, we started with the thrilling dot-com bubble. It inflated the fortunes—or, at least, the stock prices—of most technology companies, dot-coms or not. That bubble abruptly burst in 2000, shattering hundreds of companies in Silicon Valley and elsewhere. But the dot-com bubble was immediately overlapped by the real-estate bubble, which was a much larger phenomenon.

The real-estate bubble was stoked by deregulation, poor oversight, easy credit, reckless lending, and low interest rates, especially after the U.S. Federal Reserve Bank slashed rates to dampen the aftershocks of the 2001 terrorist attacks. Those interest rates stayed historically low for years. Indeed, at the interbank level, they have fallen still lower.

At the same time, the real-estate bubble further inflated yet another bubble—general consumer credit. Flush with generous credit-card offers and loans secured by fast-rising home equity, consumers went on a spending spree. Actually, this bubble was growing steadily for a long while, especially after credit-card restrictions were loosened in the 1980s. Interest rates as punishing as 35% have not contained it.

In view of this history, it's easy to see why millions of people who reached adulthood after 1995 regard a bubble economy as perfectly normal. It's all they have known. And millions more people whose life experience precedes the 1990s have forgotten what sustainable economic growth looks like. Unrealistic expectations have become routine expectations.

### Not a Normal Recession

When the economy recovers from a normal business-cycle recession, economic activity usually resumes at or near the previous level and soon surpasses it. However, we're not experiencing a normal cyclical recession. This recession was caused by the bursting of multiple overlapping bubbles. In addition, the upheaval has revealed serious structural cracks in the foundation of our national and international economic systems. These cracks demand structural solutions. Symptomatic remedies—such as government-rebate checks and pleas to go shopping—are not enough.

I believe this recession is actually a much-needed macroeconomic correction, not a cyclical market downturn that allows a healthily growing economy to catch its breath. Recovery from this severe correction will not resemble the typical recovery from a cyclical recession. Eventually, the economy will resume its growth—but at a lower, sustainable rate, not the unsustainable rate to which we became accustomed. Economic forecasts that predict a restoration of the previous level of business activity will probably take longer to come true than their forecasters realize.

In other words, we need some attitude adjustment. All bubbles eventually burst, and we can't keep replacing them with new ones. (The public-debt bubble notwithstanding.) Also, keep in mind that it usually takes longer to fix something than it does to break it.

Leaving bubbles behind isn't a bad thing. Sustainable economic growth affords plenty of opportunity for gainful employment and profitable business. A sustainable growth rate is actually better for long-term product planning, because companies can anticipate future market demands without the wild fluctuations of booms and busts. Predictability is especially important for the semiconductor industry, whose most complex products take four years or more to develop.

### Pure Speculation: The Next Bailout

So far, we've seen the U.S. government (and other governments) shower mind-numbing amounts of bailout money on investment banks, commercial banks, insurance companies, and (perhaps) automakers. It seems like everyone is begging for a handout. Could a technology company be next? If so, which one?

A few important companies, such as IBM and Intel, might be deemed "too big to fail" (e.g., too big to *let* fail), but they look financially solid. A more interesting bailout prospect is a smaller company that may be too *needed* to fail—AMD.

We hasten to add that AMD isn't in imminent danger of failing. AMD is taking significant steps to cure its financial ills, most recently spinning off its fabs as a new foundry company. This maneuver will improve AMD's balance sheet and create new business opportunities for the foundry, over which AMD retains part ownership and control. (See [MPR 11/24/08-01](#), "AMD's Fresh Start.")

Nevertheless, AMD has always flirted with danger. AMD not only competes directly with the world's largest semiconductor company (Intel), it also competes directly with that company's most treasured product line—x86-compatible PC and server processors. Even during good times, AMD fights for its life. In bad times, AMD's existence is more precarious.

What if AMD's turnaround stalls, and the company teeters on the brink of collapse? Will AMD be a candidate for a government-backed bailout, as U.S. automakers are asking for? Arguments on both sides have merit.

### AMD Strengthens Competition

Of course, we're familiar with the good arguments in favor of preserving "moral hazard"—the erstwhile principle that bankruptcy is appropriate punishment for a company's failure to compete. And we are mindful of "bailout fatigue," as taxpayers grow weary of throwing their money at the problems of big business. Unfortunately, "moral hazard" seems to have become a quaint concept from another era, like "budget surplus" and "peace dividend."

Why should AMD be exempt from moral hazard? It's not that AMD makes products that aren't available elsewhere. Similar microprocessors, GPUs, and PC chipsets are sold by Intel, Nvidia, VIA, and others.

No, AMD's contributions to the economy are second-source competition and innovation. If AMD collapses, or is forced to exit the x86 business, Intel would become the world's

sole supplier of PC processors and x86 server processors. VIA has less than 2% market share and doesn't compete above the low end. In contrast, the embedded-processor market is much more diverse.

Perhaps AMD's demise wouldn't matter. Intel is an extremely competent company with the engineering talent and manufacturing capacity to meet the world's needs for PC processors. However, we can't help thinking of how things might be different today if AMD hadn't been around the past few years. Without AMD's stubborn competition and innovation, we might only now be getting the first 64-bit x86 processors, multicore PC processors, and x86 processors with integrated memory controllers. And without AMD, Intel's prices would probably be higher.

### AMD Is Hard to Replace

There are more than 8,000 banks in the U.S., but only two companies making high-performance PC processors. The loss of one of those companies would be felt more deeply than the loss of a major bank. Or, to make another analogy, imagine if only two companies in the world manufactured engines for passenger cars—the company that owned the patents on internal-combustion engines and the sole licensee of those patents. Imagine that alternative engines weren't compatible with existing roads. Would the world tolerate a single source for car engines?

Unlike the banking and auto industries, the PC-processor industry has no competitors waiting in the wings. In AMD's absence, it's unlikely that VIA could rise to the occasion. VIA has engineering talent but shallow resources. The long-term trend in PC processors has been toward less competition, not more competition. In the 1970s and 1980s, there were several popular CPU architectures for personal computers: 6502, Z80, 6809, 68000, x86, PowerPC, and more. Apple was the last holdout, finally abandoning the PowerPC in 2006. In 30 years, free-market forces have narrowed the field to only one CPU architecture.

Forget about new startups. Unless one is lurking deep in stealth mode, there aren't any. The barriers to entering the x86

market—financial barriers, legal barriers, market barriers—are so towering that startups have almost no chance of seriously challenging Intel. Witness the recent departure of Transmeta and the failure of Montalvo Systems. (See *MPR 5/27/08-02*, "A Tale of Two Companies," and *MPR 12/26/07-01*, "Transmeta's Second Life.")

The only remotely visible alternative to the Intel x86 in personal computers is the MIPS-compatible Godson/Loongson architecture from China. The latest Godson-3 has extensions for accelerating x86 emulation, which would help bridge a transition from the x86. In some quarters, however, the possibility that Chinese CPUs might someday replace the x86 in PCs would be an even stronger argument for preserving AMD. (See *MPR 11/3/08-01*, "Godson-3 Emulates x86.")

To avert antitrust trouble, even Intel may want AMD to survive in some fashion. Contrary to popular belief, it's not unlawful for a company to monopolize a particular market, if it comes by the monopoly honestly. However, companies are restricted from using monopoly power to conquer other markets. If Intel achieves a legal monopoly in PC processors, antitrust regulators might block Intel from dominating related markets, such as GPUs, SoCs, and embedded processors. Note that Intel is expanding in all those directions right now. (See *MPR 9/29/08-01*, "Intel's Larrabee Redefines GPUs," *MPR 9/15/08-01*, "Intel's New SoCs," and *MPR 4/7/08-01*, "Intel's Tiny Atom.")

We hope our speculation is moot. We're not even certain we would support a public bailout of AMD, should one ever be proposed. Ideally, a private investor would come to the rescue. However, if the worst happens to AMD, we won't be surprised if an Intel monopoly of PC processors is deemed intolerable—by world markets and foreign governments, as well as by U.S. regulators. At the least, Intel might be compelled to transfer AMD's x86 license to another large company to regenerate a second supplier. Stranger things have happened. ♦

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