THE DEVIL'S ADVOCATE REPORT

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A Profound Question:

Will Technology Companies Be Restored To Their Former Luster?

This is, of course, the quintessential question that now confronts every portfolio manager. If one owns no technology shares and these shares resume their upward progress, then severe underperformance with all of its attendant consequences will be the result. On the contrary, if one chooses to own such shares, even in underweighted fashion, the price deterioration from bubble deflation might be so severe as to virtually assure a highly negative investment result despite what might be accomplished in other sectors of the portfolio. In fact, if the negative scenario were to transpire, it might so alter investor confidence as to increase the risk premium on all equities since there are still obvious segments of the U.S. equity market that have yet to experience a very negative investment result. Thus, the current investment climate is fraught with danger for professional investors and, therefore, requires very serious thought.

The Favorable Technology Scenario

In order to comprehend the bizarre and perverse logic of unfavorable investment alternatives, one needs to ponder the so-called favorable scenario. In this set of circumstances, the Federal Reserve, by virtue of aggressive monetary policy, with the assistance of an aggressive fiscal policy on the part of the U.S. government, is able to engineer an economic recovery and the earnings of such firms as Corning, Intel and Dell Computer are able to advance. No view is advanced herein on the probability of the realization of this scenario. It is merely asserted that this is a possible and a quite plausible set of circumstances. However, the reasoning should by no means cease at this point, as is the customary fashion.

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If aggressive monetary and fiscal policy were required to restore the profitability of a business enterprise, is it not true then that the business is by definition inherently cyclical? Moreover, if this proposition can be accepted, as it inevitably and with great reluctance must be accepted, is it not then also true that the risk premium placed upon such shares must increase? In other words, is it not highly likely that such firms will trade at low, perhaps very low, P/E ratios? This point should be marked, since the most disconcerting thoughts are usually the most pertinent.

The great business transformations in American history have occurred when fabulously successful enterprises such as RCA and General Motors mature and begin to reflect the cyclical characteristics of the economy in which such firms must operate. In the case of these two firms, despite the enormous profitability experienced by both of these firms during the Second World War, despite the obvious fact that the plant and equipment of actual competitors such as AEG Telefunken, Renault and Mercedes Benz was destroyed during the war, it was universally believed by investors in 1945 and 1946 that a new deterioration of profits was about to begin. Accordingly, such beliefs were reflected in the valuations of these shares as they were reflected in virtually all publicly traded shares. Although the assessment of the investment community was not correct, needless to say this was not even remotely the low point in the affairs of both RCA and General Motors.

Let us presume that the proposition here advanced is reasonable and that a successful restoration of the profits of technology firms by aggressive Federal Reserve policy merely establishes the fact that such firms are cyclical. In order to model this, let us make use of Intel for illustrative purposes. In fiscal 2000, Intel earned $1.52 per common share. If Intel were to earn $1.52 per share in 2002, but were to trade at only 10x earnings, it would trade at roughly half of its current share price. Note should be taken of the earnings estimate used in this case. If realized, it would represent an enormous increase from whatever is likely to be realized in fiscal 2001, which is still, of course, in the process of downward revision.

The next step in this rather disenchanting process of reasoning is to construct a table of leading technology shares, assume that a complete restoration of profits reported in fiscal 2000 will occur in 2002, and then merely assert the application of a presumed cyclical P/E ratio of 10x earnings. The table is provided on the following page:

Earnings Restoration Scenario—Leading Technology Firms

	Presumed Fiscal 2002 Profits	Price at 10x P/E	% Change from Current Price
Dell Computer [1.]	$0.84	$8.40	(64.6)%
Intel	$1.52	$15.20	(48.9)%
EMC	$0.79	$7.90	(77.4)%
Oracle [2.]	$1.06	$10.60	(35.3)%
Sun Microsystems [3.]	$0.57	$5.70	(67.3)%
IBM	$4.45	$44.50	(55.2)%
Hewlett Packard [4.]	$1.81	$18.10	(40.2)%
Compaq Computer	$0.34	$3.40	(81.6)%
Lucent [5.]	$0.37	$3.70	(70.2)%
Lucent (using 9/99 profits)	$1.22	$12.20	(1.6)%
Microsoft [6.]	$1.71	$17.10	(69.8)%
Cisco [7.]	$0.38	$3.80	(81.6)%
Corning [8.]	$0.64	$6.40	(76.3)%
Analog Devices [9.]	$1.59	$15.90	(59.9)%

1. Estimate based on Dell profits ending January 2001.
2. Estimate based on Oracle profits for year ending May 2000.
3. Estimate based on Sun Microsystems profits for year ending June 2000.
4. Estimate based on Hewlett Packard profits for year ending October 2000.
5. Estimate based on Lucent profits for year ending September 2000. In fairness to Lucent, it should be observed that the firm did report profits of $1.22 per share in the year ending September 1999.
6. Estimate based on Microsoft profits for year ending June 2000.
7. Estimate based on Cisco profits for year ending July 2000.
8. Estimate based upon Corning December 1999 year, since Corning reported an extraordinary loss in the quarter ending December 2000.
9. Estimate based upon Analog Devices profits for the year ending October 2000.

General Observations Concerning the Favorable Scenario

Although this will surely seem far from obvious, the favorable scenario was designed to actually be favorable. The valuation exercise deliberately selected the best firms. It made use of an earnings base that represented the most profitable period in the history of each firm. It is certainly possible that maximum profits might not be restored. If this circumstance were contemplated, the results would be far worse, so the circumstance was simply not contemplated. The exercise refrains from any consideration of lower multiples of earnings such as 8x or 6x, which have been placed upon cyclical firms in American financial history far more frequently and for far longer periods of time than any investor would care to contemplate.

Insofar as a restoration of profits to the previous high point is concerned, at least some of the firms listed on the accompanying table might not be so optimistic for fiscal 2002 at the time of this writing, although it is unquestionably presumptuous to speak for such firms. More significantly, in relation to this point, the perhaps thousands of technology firms not listed on the accompanying table have less developed business franchises, have poorer capital structures, have shorter operating histories, have shorter product life cycles and various other less favorable features. It is such firms beyond those listed on the accompanying table that comprise a rather significant portion of the aggregate technology investment of this land. If a plausible, albeit lugubrious scenario can be delineated with regard to the best firms, any scenario delineated for the lesser firms must by definition be far worse. Yet, the most important point to mark is that this plausible, albeit lugubrious scenario is in point of fact a favorable scenario. The unfavorable scenario has yet to be described, although most would argue that it has just been described.

The Unfavorable Scenario

In order to create the unfavorable scenario, use will be made of Intel. Intel is arguably one of the great businesses of the globe. If Intel, despite its copious financial and intellectual capital, cannot prosper, it is certainly likely that lesser firms will fare worse. In its recently completed year, Intel recorded revenues of approximately $33.7 billion. Its net income was roughly $10.5 billion; its net after-tax profit margin was 31%. It will be recalled that the favorable scenario assumed that this prosperous circumstance will be restored to Intel in 2002 after some undefined unpleasantness in 2001.

Attention should be called to the net profit margin of 31%. Surely it must be remarked that such a level of profit is almost without parallel in the course of American business. Microsoft actually has a higher net profit margin. However, this may well be the exception that proves the rule. Coca-Cola is an example of an incredibly successful business franchise with a very long, as opposed to very short product life cycle, minimal capital requirements and enormous economies of scale. The net after-tax profit margin of Coca-Cola in its most recently completed fiscal year was only 11%. Note should be made of the fact that this profit was on record corporate revenues of approximately $20.5 billion. If Intel were to earn 11% on $33.7 billion of revenue, its recorded net profit would be about $3.7 billion and if it traded at 10x earnings, it would have a market capitalization of $37 billion, which would imply that it would trade at $5.50 per share. Although this might seem a daring progression of thought, it is merely the consequence of a success as complete as that of Coca-Cola. Since virtually no firms have manifested results superior to Coca-Cola, one does not inflict an injustice upon Intel. The unfavorable scenario merely asserts an Intel net after-tax profit margin that is superior to virtually all of the business enterprises in the world but markedly inferior to current levels.

In the case of Intel there is intense competition with Advanced Micro Devices. There is a very short product life cycle, which creates the risk that in any given year some other firm might produce a superior microprocessor and thus capture market share. However, most significantly, the Intel customers such as Compaq, Gateway and Dell are locked in a fierce competition and can barely earn any profit. These firms require price concessions from Intel merely to survive and if Intel does not choose to grant such concessions, it can only do so at the grievous peril of destroying its own customers.

It should therefore be stated that the salient issue in the unfavorable scenario is net after-tax margin. The technology bubble is logically predicated upon the notion that the highest margins in the history of civilization will be maintained in a business such as technology, which is characterized by more competition than has ever existed in light of the elimination of international trade barriers, the spread of knowledge, the evolution of global capital markets and the dissemination of information. The unfortunate (or, perhaps more appropriately stated, disastrous) consequences of margin compression are now readily apparent in the case of enterprises such as Dell Computer, Gateway and Compaq. Let us therefore make note of the higher margin technology firms.

High Profit Technology Firms
Net After Tax Profit Margin

Oracle	21%
Microsoft	42%
Intel	31%
EMC	20%
Juniper Networks	22%
Analog Devices	25%
Applied Materials	22%
KLA Tencor	19%

A company that is universally regarded as absolutely outstanding is Hewlett Packard. It frequently records a 7% profit margin, although in six of the past ten years this firm has not even achieved the 7% level. The application of a 7% profit margin would enormously lower the earnings presumptions of many technology firms, or at least those for which there actually are earnings presumptions. It is perhaps needless to add that most firms are inferior to Hewlett Packard.

We shall refrain from the construction of a price performance table as was done in the case of the so-called favorable scenario. It is perhaps sufficient to say that the results would be materially worse. Some examples might suffice. For instance, if Oracle were to earn 7% on $10.75 billion of revenue and it traded at 10x earnings, its price per share would be $1.35, as opposed to the current and seemingly depressed $16.38. If Microsoft were to earn 7% on $24 billion of revenue and it traded at 10x earnings, its share price would be $3.14 as opposed to its current share price of $56.69. Of course, in the case of Microsoft, this is a seemingly absurd conclusion since Microsoft has about $4.66 of cash on its balance sheet. Yet, is it really so absurd? At current levels of interest rates, the after-tax profits on a portfolio of U.S. Treasury bills that amounted to $4.66 per Microsoft share would only amount to $0.14 per Microsoft share. In order for Microsoft to trade at 10x earnings at a price of $3.14 per share, it would need another $906 million of profits. If it earned 3.77% after tax on its current $24 billion of revenue, it would earn just such an amount. Is such a circumstance plausible? Perhaps it must be stated that the answer is unknowable. Nonetheless, history might provide some guidance or at least a precedent.

The RCA Annual Report of 1953

The cover page of the RCA annual report for the year 1953 is a picture of an NBC color TV camera focused on the Tournament of Roses Parade at Pasadena, California on New Years Day 1954. This was the first nationwide color TV broadcast from the West Coast. It was a triumph of modern technology.

On page 11, interested readers may learn of the RCA patent infringement lawsuit against its troubled competitor, Zenith Radio Corporation and its now unknown subsidiary the Rauland Corportion. The paragraph describing the lawsuit stands above the signature of David Sarnoff. Thus, the legal position of RCA was the direct opposite of Microsoft's. It was attempting to extend a monopoly position. Microsoft seeks to defend its position. RCA held numerous television, AM radio and FM radio patents, and most companies in this field paid royalties to RCA in much the same manner as firms today pay Microsoft a licensing fee for use of Windows. A comparison between David Sarnoff and Bill Gates in terms of public stature is certainly not far fetched.

On page 4, interested readers may learn that there were only 356 TV stations broadcasting in 1953 and that 65 were either NBC owned or NBC affiliates and, of course, RCA owned NBC. On page 37, current investors in newly emerging, albeit troubled telecommunications shares will no doubt be fascinated to learn that RCA owned a microwave communications unit that had as its objective the creation of a worldwide long distance network to bypass the traditional phone companies and make inexpensive long distance communications a reality. That page has a photograph of one such installation at a location about 16 miles South of Tangier, Morocco.

Those investors who consider the Internet to be a vehicle for the worldwide dissemination of knowledge must read page 34. On this page one learns that Robert Sherwood, a Pulitzer Prize winner and now classic novelist and playwright, was engaged to write a series of nine original plays for NBC television to be called the *Backbone of America*. In the next paragraph, note is taken of a two-hour performance of Shakespeare's *Hamlet* on NBC. In addition, NBC produced film interviews with Frank Lloyd Wright and Carl Sandburg.

Toscanini returned to the NBC Symphony Orchestra for his 17th year as conductor. The climax of the spring season, as readers are informed, was a performance of Beethoven's *Missa Solemnis*. The NBC Opera Theater broadcast performances of *Der Rosencavalier* and *Carmen*. Of course, for those less culturally inclined, NBC broadcast the world heavyweight championship fight between Rocky Marciano and Joe Walcott in addition to sports events such as the Rose Bowl and Cotton Bowl games.

Page 43 related the financial results. The income statement reveals that RCA, despite its impregnable patent and market positions, generated a net after tax profit of 4.1%. If preferred stock dividends are properly deducted as required, then the net after tax profit margin declines to 3.7%. Thus, viewed in the light of history, a 3.7% margin for a company with Microsoft-type attributes actually happened. It should also be stated that 1953 was yet another among many RCA growth years. Earnings advanced 8.1% from the prior year and dividends advanced 20% after being held constant for the previous three years.

Summary Remarks

The issue that confronts the prospective buyer of technology shares can be reduced, at the risk of oversimplification, to one question: Does the last half of the last decade of the twentieth century represent a period of normalcy? If the answer is yes, then one might buy technology shares with the anticipation of the profits that will be generated by the restoration of the bubble. However, if one believes, as is (hopefully) expressed in these pages, that the last half of the last decade of the twentieth century represents a misallocation and abuse of capital perhaps without parallel in modern times, then much suffering will need to occur before a new equilibrium is restored. Therefore, the *Devil's Advocate* position is to refrain from purchases of Technology shares despite the substantial declines.