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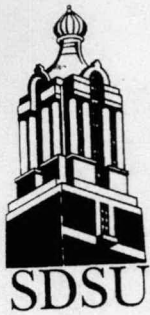
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ECONOMICS COMMENTATOR

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The Stock Market: Herd Mentality and Rationality

by

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World Meat Production and Trade -- Some Selected Comments

by

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On Monday, October 27, the stock market "celebrated" the tenth anniversary of the October 1987 crash with a 554 point drop in the Dow Jones Industrial Average (DJIA), the largest one day point drop in history. In opening trading on October 28, the Dow fell even further, below the 7000 level, before rebounding. At its October 28 nadir, the DJIA was 14% below its August 1997 high, signalling that the long expected correction was a fact.

Homo economicus

Why the plunge? By all indicators, the market was overvalued. Price/earnings and price/book value ratios for the S&P 500 were at, or close to, record highs, while the dividend/price ratio was 1.6 - a historical low. The crash of stocks on the Hong Kong market (Hang Seng) and Asian markets in general, provided the catalyst for a global market downturn.

The basic ingredients in the recipe for a market runup and a collapse are the same; a peculiar combination of herd mentality and perfectly rational behavior. In the 1950's, academicians were keen to convince us that we were rational economic actors (*homo economicus*) and that stock markets themselves were highly efficient in providing information about the intrinsic value of stocks. The Efficient Market Hypothesis stated that stock prices were very quick in reflecting changes in a stock's fundamental value. So quick, in fact, that the prospective investor could not trade fast enough to profit from good news on a particular company.

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Each month, the Meat Export Research Center publishes a report titled "US Meat Export Analysis and Trade". The September/October issue (a two month issue) included some interesting statements about what is happening around the world in meat production and trade. This issue of the Commentator includes a brief summary of some of those statements for some of the countries included in the report.

Argentina: Argentina recently has been declared free of foot-and-mouth disease. That means more doors are open to their beef exports. They could be "one of the top three" beef exporters by early next century. Argentina will continue to export mostly grass fed beef. Only about three percent of their beef is "fed". The government is developing an organization to promote Argentina beef in foreign markets.

Australia: While exports of beef to Japan during the first three quarters of 1997 increased, the Australian Meat and Livestock corporation (to be replaced by a private, producer-owned company) reports increased pressures from higher cattle prices, an appreciating Australian dollar, a depreciating Yen, and a weaker U.S. demand.

The producer-owned company noted above will be responsible for market access, market intelligence, food safety and international promotional activities for beef and sheep meat. The company will replace several other governmental organizations. It is reported that the budget for the new company is not large enough to support large, generic campaigns such as the "Aussie Beef" campaign in Japan. Private companies are expected to undertake promotional campaigns solely or jointly with the new company. If sufficient contributions are not gathered, the government could

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The Behavioralist School

While the rationality models of investor behavior retain strong support, other schools, such as behavioral economics, have sought to explain why economic actors do not always behave in a rational manner. Economists such as Richard Thaler, Daniel Kahneman, and Amos Tversky have attempted to show that (investor) behavior will diverge from rational behavior in predictable ways. Thaler notes that economic man will digress from the rational model in that he (the investor) will systematically overreact to news and is loss averse - much more sensitive to losses than to gains. If most investors respond in this manner, it may explain some of the turbulence and herd-like behavior in both the 1987 and 1997 market breaks.

Stock Market "Bubbles"

Proponents of investor irrationality argue that stock market "bubbles" (market prices far out of sync with fundamental stock values) result from the herd-like behavior of investors piling in to a market and pushing prices far beyond value. Eventually, of course, the bubbles will break. In fact, otherwise rational investors follow the herd, thinking it may possess superior knowledge. Bubbles date back to 17th century Amsterdam, where an investor craze for tulip bulbs ("tulipmania") eventually upset the Dutch economy.

Subsequently, in the 18th century, bubbles developed in the stock of colonial trading monopolies. The South Sea and Mississippi bubbles, in London and Paris respectively, dashed investor hopes of a killing and adversely affected both economies. After the South Sea fiasco, British investors became wary of any stock venture; so much so that most of their investment flowed to America over the next century. Finally, a case could be made that the 1987 stock market crash and 1997 market correction in the US were also the result of speculative bubbles. An even stronger case for a bubble can be made for the Japanese stock market of the late 1980's. Fueled by easy money, low interest rates, and real estate speculation, the Japanese market, as measured by the Nikkei 225 Index, peaked at over 40,000 in 1989. In the eight ensuing years, the Nikkei has never approached that peak and today rests at less than 16,000.

Behavioral Aspects of the 1997 Market Break

As observed by The Economist (November 1), market psychology contributed significantly to the global stock market slide of late October. Currency crises and stock market weaknesses in Hong Kong, Thailand, Indonesia, and South Korea created fears that US exports to this region (30% of total US exports) would suffer - as would US economic growth. Furthermore, weaker Asian currencies would increase the US trade deficit, as a stronger dollar now made imports from Asia cheaper. Plus, many US mutual funds had sprung up to invest in the Asian "Tiger" economies - and their net asset value (and wealth of their US shareholders) plummeted in late October. As economies are increasingly connected by global flows of capital, the panic in Asian

markets was then transmitted to European and American markets.

More importantly, US financial markets are connected by a common psychological thread to Asian and European markets. Until early 1997, investors in Asian Tiger stocks thought there would be no end to stock appreciation and capital gains. Similarly, the long US bull market, which began in 1990, convinced many new US stock investors that the good times would roll forever. Investors in both regions appeared immunized against risk by long term growth in their respective markets. Neither vaccination held. In the US, stock market investors bought into the "new economic paradigm" which promised that stocks were undervalued at present prices given their potential for earnings growth. Millions of new investors, unfamiliar with down markets, entered the market either through direct purchases or mutual funds.

Rational Aspects Behind Stock Market Appreciation

The US is an aging economy. As 76 million baby-boomers inexorably move toward retirement, the need to supplement post-retirement income grows. With social security currently promising a maximum monthly retirement check of approximately \$1200, and a desire to maintain a pre-retirement standard of living, middle-aged Americans must at least consider investing in stocks. Ibbotson Associates data (1994) indicates that the average annual return on stocks over the long run (1925-1993) was approximately 12%, versus 3.7% on risk-free Treasury bills over the same period. Therefore, if an individual is focusing on the long run and can tolerate risk, the evidence provides a compelling case for stocks.

Accordingly, over the past decade, millions of Americans have moved assets into the stock market. A survey by prominent pollsters indicates that half of all American families own \$5,000 or more in stocks or mutual funds. Currently, the US mutual fund industry holds more than \$4 trillion dollars of assets. Half of this amount has been placed in equity (stock) funds. And younger individuals (<45) are investing more and currently hold 22% of equity value - up from 12% ten years ago.

Therefore, demand for stocks will continue to grow in the US, putting upward pressure on share prices. Mutual funds' share of stock market capitalization now exceeds 20% and will expand as new investors see funds rather than direct investing as the smoother road to asset appreciation. As technological progress allows a broader and deeper dissemination of information down to the small investor, the edge once enjoyed by the professional investor begins to dull - and the more even playing field will encourage neophyte investors.

While demand for stocks appears to be strong in the foreseeable future, supply will not keep pace. The expansionary effects of new public offerings will be offset by the ongoing wave of mergers and acquisitions, plus share buybacks by corporations. Thus, demand for stocks will increase faster than supply and share prices are more likely to rise than fall over time.

Conclusion

Rational actors, efficient markets, and perfect information are characteristics of an "ideal" state where outcomes are likely to occur with certain probabilities. However, the "irrational" side of human behavior, replete with panics, bandwagon effects, and herd mentalities cannot be dismissed; nor can its ability to profoundly move markets.

Moreover, what may be regarded as irrational behavior by some observers may be logical to the participating actors. Were portfolio managers reacting emotionally rather than rationally on October 27, when they dumped stocks in order to preserve some percent of their annual gain [a statistic used to market the fund (and the fund manager)] for the next year? Or, were investors an unthinking herd when they thundered out of mutual funds concentrating in Asian markets in order to preserve scarce capital?

In the final analysis, herd-like behavior may equilibrate about some rational mean. Stampedes into the stock markets which artificially inflate prices are eventually counterweighed by mass exodus. Influx creates bubbles and efflux deflates them. Problems arise when exit from an inflated market is restricted by policy or self-denial. The moribund Japanese stock market stands in evidence that bubbles are better popped sooner than later.

(World Meat ... cont'd from p.1)

enact legislation to ensure adequate contribution levels.

Brazil: High production costs (grain) and low prices (for hogs) caused Brazilian pork producers to lower herd sizes and slaughter record numbers of hogs in 1996. Even then, their production is only about one-sixth as large as ours. Increased pork production is expected over the long term because of heavy investment in pork operations and processing facilities and financial incentives from some state governments.

Brazil exports pork, mainly to Hong Kong and Argentina. Brazil also imports pork. However, the level of imports fluctuates widely. For example, only about 3 million pounds were imported in 1996, while over 22 million pounds likely will be imported in 1997. Canadian exporters consistently account for over 50 percent of Brazilian pork imports. The U.S. product is perceived to be too fatty.

On the beef side, the Brazilian cattle industry now seems to be rebuilding (slowly) after herd liquidation in 1995-96. This has resulted in lower exports of beef. There have been reports from the U.S. embassy that some Brazilian politicians would like to ban U.S. beef because of our use of growth promotants. That may be difficult to do since many Brazilian producers use growth promotants and consumer surveys reveal that consumers are not particularly concerned about the use of growth promotants. They seem to worry more about the origin and hygiene of the meat they eat.

Canada: Pork production in Canada is expected to increase for at least the next four years. Because they have

increased their slaughter and processing capacity, they are expected to reduce shipments of live hogs to the U.S. Their expanded processing capacity probably is aimed more at Asian markets. They will compete with the U.S. for those markets.

There was a large sell-off of beef cows in 1996. Inventory rebuilding probably will be noted, but at a fairly slow pace. Canada has a strong foreign beef trade (in relation to their total production). In addition, processors in western Canada are marketing aggressively in eastern Canada. That is putting some pressure on U.S. beef exports to that area.

China: On October 1, import duties for many red meat products were reduced. While that should help some, the U.S. red meat trade with China currently is relatively small. That could change in the future as China is a large, yet undeveloped, market.

China is a major poultry importer. In the Iowa State report, a quote was attributed to the U.S. Agricultural Trade office in Shanghai that Chinese consumers "ate almost all of the chicken wing tips and paws in the world last year and would eat more if they could". Turkey wings and gizzards also are becoming more popular.

Per capita consumption of poultry meat in China is estimated at about 4.3 pounds for rural households and about 14.6 pounds for urban households. That compares to almost 100 pounds consumed annually by each person in the U.S.

The U.S. has almost 90 percent of the Chinese import market for poultry. However, China exports poultry meat to Japan and South Korea. In doing that, they are competing with the U.S. In the first six months of 1997, China's share of the South Korean poultry market increased from 19 to 50 percent (compared to the same period in 1996). The U.S. share dropped from 77 to 41 percent.

China exports deboned chicken legs and yakitori meat to Japan and is the only country to export a chilled (versus frozen) product to Japan. The reported shipping time from the slaughter facility in China to the final selling point in Japan is less than a week.

Japan: Pork exports to Japan from the U.S., once expected to be 45 percent above 1996 levels, now are estimated to be only 12 percent higher. Increased use of domestic production, a weaker economy and the stronger U.S. dollar all are factors in the "smaller increase than expected".

U.S. pork exports to Japan increased a year ago when Taiwan had problems with foot-and-mouth disease. Since Taiwan probably won't be a major exporter for another year or so, U.S. pork exports to Japan should remain high in 1998. We should expect competition from Mexico and Canada.

A recent survey of 2000 Japanese households included the following information. Respondents prefer domestic beef to imported beef. They buy imported beef because of price. About an equal percentage of respondents preferred lean beef (39.7) to marbled beef (37.2). The lean beef preference was



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because of health reasons -- the marbled beef preference was because of taste. About 85 percent of respondents purchased beef at least once per week and 60 percent purchased beef in supermarkets (convenience). About one-fifth purchased beef in butcher shops (quality).

It was noted that for U.S. poultry exporters to compete with China, there must be greater emphasis on our food quality, food safety, and consistent supplies. China can compete effectively because of their much lower labor costs and because they can send chilled, not frozen, meat to Japan.

Mexico: While U.S. pork exports to Mexico are expected to increase in 1998 (a very strong demand from sausage companies), increased hog production in Mexico may cut into our future sales. Mexico probably will have many large-scale producers in the future, especially if U.S. regulations cause firms to look elsewhere. The Mexican pork industry, like many others, is targeting international markets.

Cattle numbers in Mexico are expected to hold at around 11.5 million head (the U.S. has about 101 million head). The U.S. should continue to export beef to Mexico. Almost 90 percent of U.S. beef muscle meat exports to Mexico is in boxed form. About 10 percent is shipped as carcasses.

Mexico is experiencing some growth in poultry production. That has helped lower prices there. For example, whole broiler prices declined from about 93¢ per pound in mid 1996 to 66¢ per pound in mid 1997. Much of what Mexico imports is mechanically deboned dark meat.

South Korea: Probably the greatest understatement in the publication was that production costs for steers in South Korea are high. In 1996, the average cost of production for an 1100 pound steer was about \$3400. The targeted cost of production is about \$3000 in 1997 and \$2600 in 2001. It is no wonder

that they look to imports as a source of beef.

Taiwan: The foot-and-mouth disease outbreak in Taiwan's hog industry in 1996 took them out of the export market. Before the outbreak, Taiwan's hog inventory was about 11 million head. Almost all of their production went into the export market and almost all of that to Japan. Earlier estimates were that the inventory would drop to about 7 million head -- 4 million head were to be destroyed in an effort to get rid of the disease. Now, it appears that the inventory is closer to 8.5 million head.

Producers in Taiwan expanded inventories in 1997. However, because their export market was limited, one result was lower prices. Expansion probably will occur, but just how much will depend not only on their ability to regain the export market but on attitudes toward expansion in Taiwan.

Concluding Remarks

Many countries are looking to foreign markets as an outlet for the meats and meat products they produce. The U.S. will have competition in world trade. That competition could get even greater in the future.

Other countries have problems; those problems often are similar to ours. And, their problems affect the U.S. The meat industry certainly is global.

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