

# FRIEDBERG'S

## COMMODITY & CURRENCY COMMENTS

Friedberg Commodity Management Inc.



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### Oil: the big, bad bear

As prices push relentlessly lower, we wonder when, just when, will a consensus emerge that this is no mere correction, nor some speculative raid, but rather a monstrous, thumping bear — one that will likely cut early 1993 prices in half and then in half again.

The blandest of headlines herald five-year lows: "Oil prices fall further on reports of growth in inventories, declining need for OPEC crude" (*The Wall Street Journal*, Dec. 9); or "Oil prices fall as market realizes that OPEC is unlikely to take an action to boost prices" (*The Wall Street Journal*, Dec. 7). One detects a matter-of-fact attitude, a sense of normalcy, an air of irrelevance.

Much of the same goes on the stock exchanges. The S&P International Integrated Oil sub-index (Chart 1) has been on a clear *uptrend*(!) over the past two years, perhaps buoyed by some of its high-yielding components. Incredibly, integrated oils like Phillips Petroleum and Unocal are barely off all-time highs despite dividend payout ratios (based on full-year 1992 reports) of 161% and 93%, and almost identical debt/equity ratios of 141%. For perspective, Phillips trades at 325% of its 1986 lows (Remember? Oil was then below \$10/barrel!) while Unocal is at 2.6 times the same year's lows. Single-digit oil prices would ravage these companies, and yet no one seems to worry.

OPEC has been so good for so long in touting the myth of its invincibility and its total control of the market that when the few shout "Bear!", no one listens.

When the oil-in-single-digits consensus arrives, we will know that we have reached a temporary low. In the interim, attention is being diverted by the Iraqi situation. The bulls hope that the Iraqis will not be allowed to resume oil shipments in the near term. The (timid) bears fear an almost immediate resumption of shipments. The discussion centers around this phantom, and little or no attention is being paid to soaring North Sea output and Russian exports.

Only in recent weeks, has one begun to detect a shift away from Iraq and towards, to be precise, Norway, the UK, and Russia. This very slight shift can be observed in the refusal of the market to mount a significant rally in the face of a hardening of positions of the US and its allies *vis à vis* the government of Saddam Hussein. At the same time, OPEC's rhetoric has moved increasingly off-center: It is not OPEC members but non-OPEC producers that are the cause of declining prices.

As anticipated earlier this year, the economic collapse of the CIS countries is giving OPEC a royal headache. While Russian crude output continues to fall (7 million barrels per day (mbd), down from 8 mbd in 1982), crude exports should reach 1.64 mbd this year, up from 1.32 mbd in 1992. Domestically, energy sector enterprises and consumers owe more than \$9 billion to oil producers, which have had to cut output and hold back an estimated 400,000 barrels per day.

According to the Fuels and Energy Ministry "on average, five or six thousand wells are obliged to stay idle every day." The debt mountain has grown despite the fact the Russian domestic oil prices remain well below world levels. Understandably, crude producers have been turning to the export market where payments are secured and prices are attractive.

Whereas the bulls once argued that the Soviet economic collapse would shut off their supplies from the world markets, the opposite has been demonstrated: The economic collapse has had a greater effect on domestic consumption than on domestic production. The lure of much higher international prices has succeeded in redirecting supplies.

If this situation persists, one wonders if Russian crude exports could rise to 30% of a declining domestic output. Or to 40%. Or to 75% — that is, if Russia reverts to the Stone Age.

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Contributions by Albert D. Friedberg, Edison Lee, David B. Rothberg and Michael D. Hart.

Futures and options trading is speculative and involves risk of loss. Past trading results are not indicative of future profits.

Be that as it may, it has become a powerful bearish force. As we once pointed out, if it can happen to aluminum and other base metals, it can easily happen to oil.

Some of OPEC's members, too, are at the border of economic collapse. Algeria, Nigeria, and Iran are perhaps the extreme cases in point. But Saudi Arabia, as we pointed out last month, may not be that far away. And that is the real crux of the problem.

Given OPEC's extraordinary financial weakness, it can no longer afford to defend prices. The next best thing is market share, especially for those members endowed with substantial reserves and cheap production costs. Ultimately, the Gulf producers will seek to displace the world's other large producers with cheap and plentiful supplies.

Cheap energy supplies are a blessing to the world. The

blessings have just begun. Perhaps it is a Big, Good Bear.

**STRATEGY:** *The extent and size of any future rallies are totally unpredictable. They will depend on pronouncements, and as such, they will lack substance. Nevertheless, futures traders should be prepared for counter-trend rallies of \$1.50 to \$2 from any lows.*

*To make the ride more comfortable, we advise moving to the back of the train, i.e., roll present short positions to the more distant months, such as December 1994. The rallies will be less violent given the sizeable contango, although admittedly, one will lose some of the exhilarating advantages of the bear trend: the widening spread (see Chart 2).*

*Option traders should roll down and roll forward from June 18s to September 16s.*

Chart 1  
S&P INTERNATIONAL INTEGRATED OIL INDEX

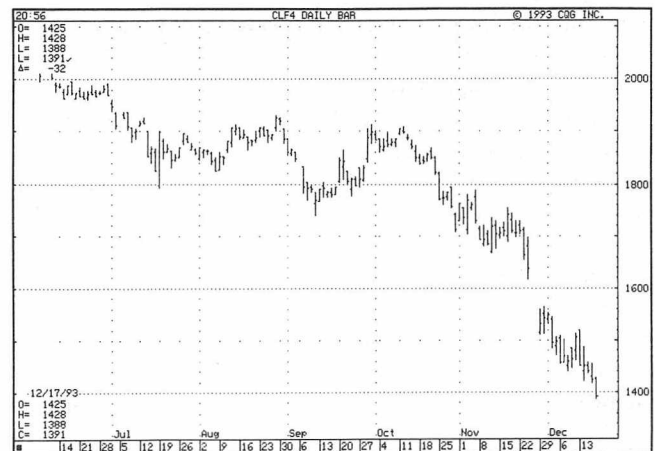


Courtesy: Bloomberg

Chart 2  
CRUDE OIL - JULY 94-JAN. 94



Chart 3  
CRUDE OIL - JAN. 94



**JAPAN**

# Desperately seeking a way out

The contraction worsens.

Outstanding debts of Japan's corporate bankruptcies in November jumped 25.6% from a year earlier to \$9.5 billion, a record for a single month. Tokyo department store sales during November showed a 10.5% fall year on year, the third consecutive month of double digit decreases.

The 25% drop in Japanese auto registrations suggests that consumer spending is still weakening. Companies are still reducing capital spending: machinery orders in October fell 13.5% from a year earlier. Japan's inventory-to-sales ratio for October hit a new post-1976 high. At the same time, October's industrial production index was revised down, showing a production fall of 5.5% against a month earlier, down from a provisional decrease of 5.1%. Clearly, the depression is gathering steam.

What is extremely worrisome is that Japan's business and consumer debt (see Chart 5) as a percentage of GDP have either flattened out or increased slightly to new highs. In effect, Japan has experienced a price deflation that is aggravating the burden of the debt. *The debt deflation process has not even begun.*

When the debt liquidation process finally gets underway, it will send the economy spiralling downwards in a manner that may eerily resemble the US experience in the '30s — unless, of course, the Hosokawa government succeeds in offsetting the private debt implosion with a public debt explosion of its own. This implies uncompensated income tax cuts of ¥10,000 billion and up. The size of the net tax cut seems at this time highly improbable. Alternatively, Japan may try once again to seek to widen the trade surplus and achieve an export-led recovery.

Economic contractions are supposed to raise domestic

savings and thus produce smaller trade deficits/larger trade surplus, which in due course help lift the domestic economy by its bootstraps. Attesting to the gross overvaluation of the yen is the fact that Japan's trade surplus edged lower last month for the first time in nearly three years. In effect, the surplus narrowed to \$7.4 billion in November from \$7.56 billion a year earlier.

These figures merely confirm the little noticed fact that the trade surplus in yen terms had already been declining for quite a number of months.

It is quite clear that a fairly-priced yen would produce a much more substantial trade surplus. This in turn would help to alleviate the domestic contraction.

A substantial depreciation of the yen is inevitable. A weak stimulative fiscal package will ultimately force the yen to the 140-150 area. A strong fiscal package, on the other hand, will provide enough stimulus to the economy to justify a small 10%-15% devaluation. In this case, the yen will remain overvalued, but for awhile, the economy will be able to advance, drawing on a revival of domestic demand.

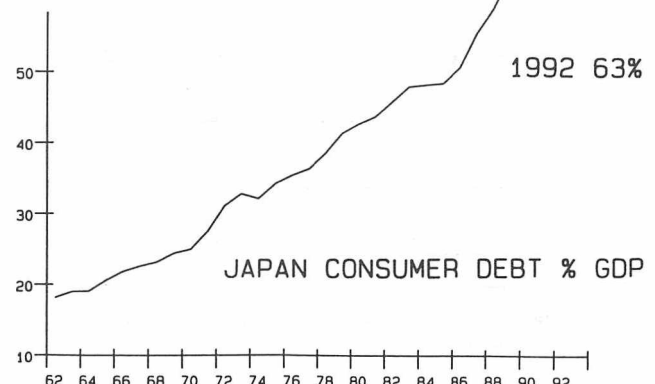
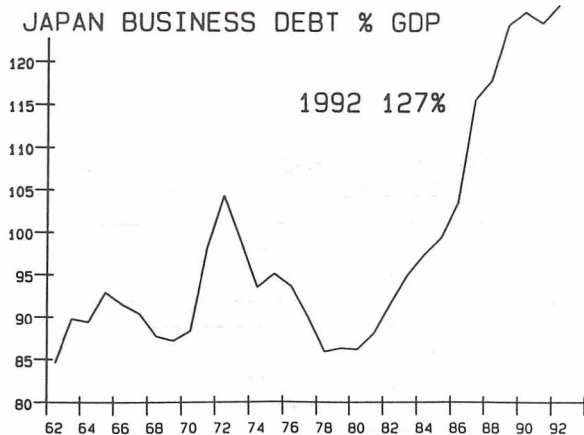
In the worst scenario — no tax cuts, a political crisis that leads to the fall of the present government, and a series of weak and ineffectual governments — one could easily see an overshooting of the dollar/yen to the 200 level.

**STRATEGY:** 1. Remain short March '94 yen, with stops at 95.00, close only.

2. Put options are quite reasonable: long-term, far out-of-the-money options could become huge winners.

3. Remain short Nikkei futures. The December JPN puts expired with very substantial profits. Buy March 1994 160 puts.

Chart 5

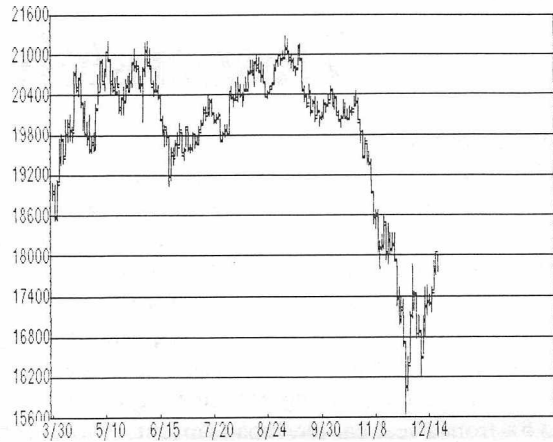


Courtesy: ISI Group, New York

Chart 6 – JAPANESE YEN



Chart 7 – NIKKEI 225 INDEX SPOT



**INTEREST RATES**

**Bonds under distribution**

The three accompanying charts (Charts 8-10) are worth more than 3,000 words. The continuing improvement in the banking system's lending activities is prompting a fast deceleration in the banks' accumulation of Treasuries. At this rate, it won't be long before the banking system becomes a net seller of securities to accommodate accelerating loan demand. The rise in commodity prices is a coincident indicator of loan demand and is tending to verify the trend.

In short, the props are being removed from under the long end of the bond market. The downtrend in bond prices will accelerate once the banking system begins to liquidate its enormous investment portfolio.

**STRATEGY:** Weak oil prices, as we pointed out last month, are masking the ongoing distribution. Remain short; add to short position on closes below 112½.

Chart 8



Chart 9

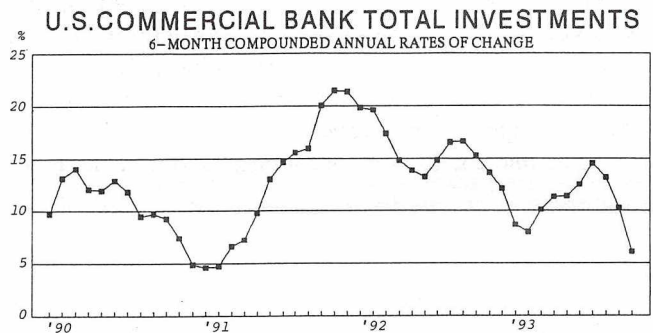


Chart 10A – CBT T-BOND (DAY) MAR '94

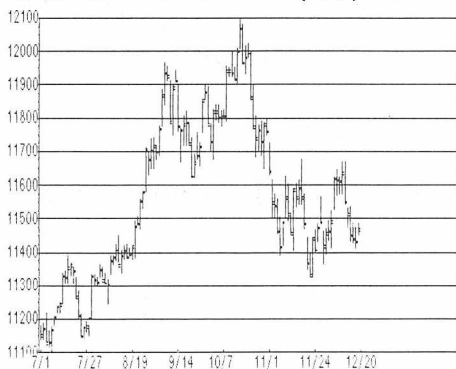
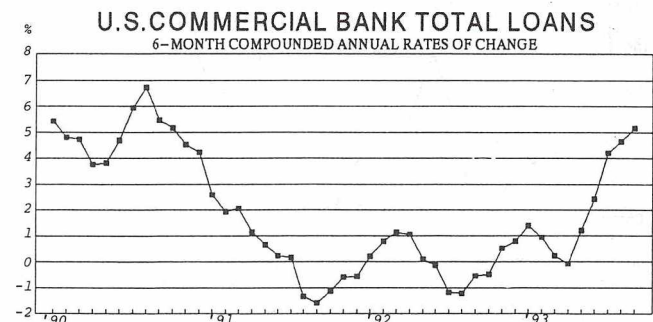


Chart 10



**STOCK INDEXES**

# The loss of momentum is clear for all to see

On the New York Stock Exchange (and even more on the NASDAQ) with the indexes hitting new all-time highs, there are as many days that new lows exceed new highs as vice versa. And currently, there are only two Dow Jones stocks making new 52-week highs.

Excessive valuations and the increasing probability that the Fed will be forced to raise interest rates in the face of strongly advancing commodity prices spell the inevitable end to this grand bull market.

There are three ways to play the coming super decline: One can try to "pick a top," a most hazardous way to make a living but one that nonetheless we chose last month. Because one is likely to be stopped out a number of times, perseverance and a very phlegmatic personality are a must.

The in-and-out costs of picking a top are encapsulated in the second strategy: buying a put option. That is because options express expected market volatility. And volatility is precisely the characteristic that forces us to sell and be

stopped out once again.

Finally, one can choose to give up the honors of picking a top. Instead, the very rational and very prudent investor could choose to establish a bear position once, and only once, the major uptrend has been broken. While the choice of uptrends is a matter of taste, there is little dispute as to what constitutes the main uptrend. Chart 11 draws just such an uptrend. At the risk of being whipsawed, a slightly more courageous short seller may prefer to use shorter-term uptrends, as in Chart 12. Similarly, one can entertain a short sale at the point that the S&P 500 closes below a falling 30-week moving average.

Choose your weapons.

**STRATEGY:** We are short as of last month at around 461.45, basis March 1994 S&P. We have lowered stops to 469.50, good anytime. We have also purchased March 440 puts at just under 400 points.

Chart 11 - S&P MONTHLY



Chart 12 - S&P WEEKLY



**CANADIAN DOLLAR**

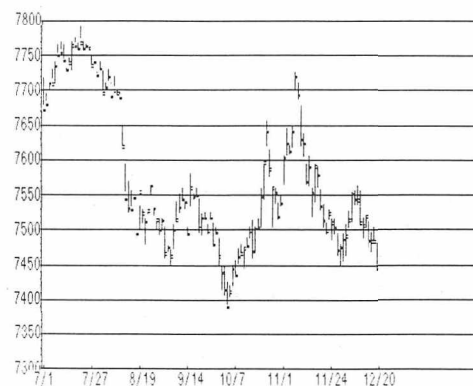
# A super-cheap dollar coming

We have nothing to add to last month's comments. In trepidation we await the first Liberal budget, and the new provincial budgets. We don't hold our breath, though. What is coming is sure to be worse than what we have.

A super-cheap dollar is on the way.

**STRATEGY:** We are short March 1994 at around 75.36. Remain short. Initial target: 70¢. Longer term: 60¢.

Chart 13  
CME CAN. DOLLARS MAR '94



## COMMODITIES

The Commodities Research Bureau (CRB) benchmark index has made new three-year highs and now stands at 225.13. Every single commodity discussed below is in a phase of deficit production. The long trek of the bulls has begun.

### Cocoa

As predicted in last month's *Comments*, prices tested the June 1991 highs. The advance came in anticipation of an interruption of supplies from Ivory Coast (the world's largest producer) in the wake of the death of that country's founding President, Houphouet-Boigny.

That prices could not break the highs of 1991 indicates only that the market got a bit ahead of itself. The fundamental underpinnings of the market are solid.

This year (1993-94) there will be a deficit of at least 150,000. Depending, primarily, upon conditions affecting the entire West African crop throughout the growing season, the deficit could reach 300,000 tonnes. The deficit will be the third in succession.

Cocoa consumption, which has averaged 4% annual growth over the past decade, has been slowed this year by the recession. Demand will increase as OECD economies improve. It could increase more if the former Soviet States should become the consumers of confectionary items they were only several years ago, and if rapidly-expanding China should become a new consumer. (Consumption in countries of the former Soviet Union has stabilized at about 30% of what it was during the last years of the communist regime.)

The only producing nation that can significantly increase production to meet that demand is Indonesia, which is expected to increase production by an average of 40,000 tonnes a year over the next seven years. (Forty percent of planted land in Indonesia has yet to yield fruit. Indonesia is expected to produce 210,000 tonnes this year.)

It is not enough. We have entered a deficit cycle during which rising cocoa prices are certain.

**STRATEGY:** *At issue is only timing, which given the value of the asset, we prefer to disregard as much as it is possible to do so. Own the right to own cocoa with stops at \$900 per tonne, basis the nearest delivery. It could be worth twice, and perhaps as much as three times, its current value before the cycle runs its course.*

### Grains

Over the past several years, consumers grew accustomed to record harvests and allowed inventories to shrink to "just-in-time" levels. Now, in the wake of last summer's floods, *combined carryover stocks of wheat, rice, corn, oats, and barley relative to the consumption of those commodities is the lowest in history.* Grain markets will not tolerate any threat to production in the Southern Hemisphere (which is starting now) nor, of course, to next year's crop north of the equator.

**STRATEGY:** *Remain long corn with stops at 2.70, basis March '94, close only. Having been stopped out of soybean meal as per last month's remarks, re-enter with stops at 193.00, basis March.*

### Precious metals

In February of last year India liberalized imports of silver. Expatriate Indians were allowed to import the commodity subject to a duty.

India has a very strong cultural affinity toward silver. It has been estimated that the world's largest above-ground hoards rest on the bodies of Indian women.

The Indian domestic market initially fell nearly 2,000 rupees per kilogram in response to the relaxed import regulations but has since rallied back 75% from its lows. Imports are estimated at 2,500 tonnes in 1993, 25% more than last year.

Given the Indian economy's rapid expansion in response to the far-reaching reforms introduced two years ago, we expect the high offtake to continue.

The Indian scenario typifies, in many respects, a trend of burgeoning demand — primarily for jewelry — coming from rapidly developing Eastern and Far Eastern nations. In the East and Far East, the precious metal's content of jewelry constitutes 95% of the price of the jewelry item (versus less than 50% in Western nations, which have come to value the design and artisanship component more highly).

The various markets in these countries are subject to short-term corrections in response to temporary overheating. But given their growing buying capacity and precious metals' cheapness (see the past two issues of *Commodity & Currency Comments*), there seems nothing capable of derailing them over the longer term.

[Incidentally, informed industry sources pointed out that last month, I overstated the potential effect of the lifting of producer short hedges in gold. While our overall bullish argument remains intact, what must be modified is our expectation of a spiked breakout above the \$400 per ounce level.]

**STRATEGY:** *Remain long gold and silver with stops at 360 and 440, respectively (both basis nearest futures contract).*

### Sugar

Most recent estimates of the size of the 1993-94 deficit range between 1.55 million (mln) tonnes (according to the International Sugar organization) and 2.25 mln tonnes (according to statistician F.O. Licht).

At an ISO seminar held in London the last week in November, both China and India said, in effect, that they would not turn to the market and import sugar to augment reduced production this year. (China said it would not subsidize its fledgling domestic industry but would simply allow per capita consumption to dwindle from its current 6 kg per

person level; India said that since sugar imports would be used to build up dwindling stocks rather than to provide for direct consumption it would "probably" wait until late in the year to assess the situation.)

Trade talk over recent months was largely focused upon Chinese and Indian imports. That the market has held so firm in the wake of such disappointing news — prices have hardly budged — suggests the firm fundamentals underpinning it.

**STRATEGY:** Remain long with stops at 10, basis May.

## Coffee

Coffee is yet another commodity in the throes of a deficit cycle. The current year will mark the second in succession in which production will fall short of demand. Last year's deficit had little effect on the market, because stocks, especially in consuming nations, were considered burdensome.

This year, exchange and nonexchange stocks in the US (the world's largest consuming nation) fell consistently through October, and consumer stocks fell 1 mln bags, or by nearly 10%, from August through the end of November. Combined stocks in consuming nations are reliably put at 15 mln bags, 25% less than at mid-year.

**STRATEGY:** Buy March calls.

— David B. Rothberg

Chart 14 – N.Y COCOA MAR '94

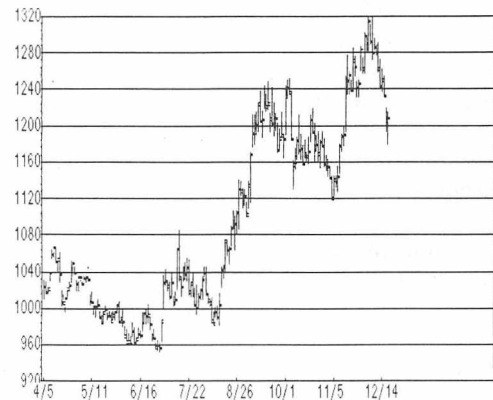


Chart 15 – CBT CORN MAR '94

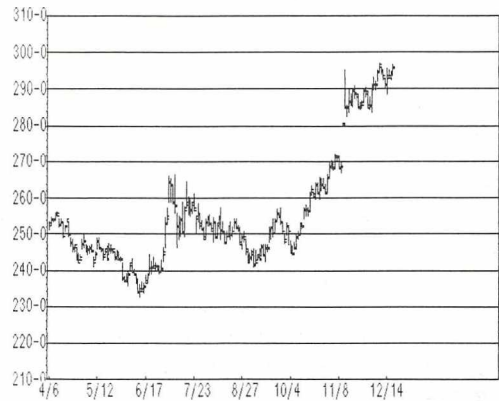


Chart 16 – COMEX GOLD FEB '94

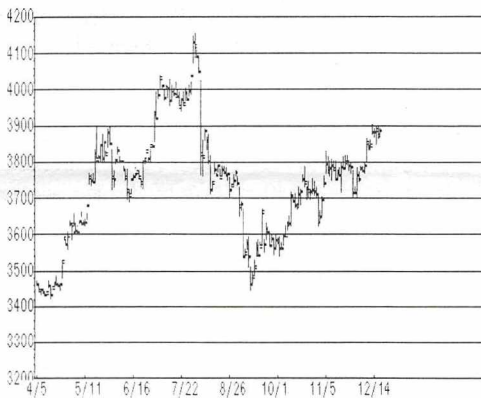


Chart 17 – COMEX SILVER MAR '94



## FRIEDBERG CAPITAL MARKETS

### Review of Atari Corp.

**Security:** 5.25% convertible debentures due 04/29/02

**Recent price:** \$67

**Yield:** 11.4%

**Conversion price:** \$16.3 per share

**Recent stock price:** \$6.25 per share

Since our last update in June, Atari's stock price has been a roller coaster. From its low of \$15/16 per share on May 21, 1993, it shot up to \$12.75 on November 5, and tumbled to \$6.25 recently. The price of its convertible debentures has followed more or less the same pattern, having skyrocketed to \$90 in November and recently pulled back to \$67. At this

moment, we believe Atari's bonds are still a good investment for aggressive investors.

Much of the wild fluctuation is due to the market's interest in and excitement about the interactive multimedia industry in general and Atari's new video game system, Jaguar, in particular. Jaguar is the first 64-bit multimedia entertainment system on the market and appears to be far superior, in terms of speed and graphics, to the products of such market leaders as Sega, Nintendo, and 3DO. Its price at \$250 also is very attractive compared with the \$700 price tag of 3DO's 32-bit machine.

However, Atari's stock started tumbling when investors became increasingly skeptical about whether Jaguar can be a home-run product. Their concerns are the following: 1) game availability is seriously lacking for Jaguar — only one game will come with the machine, and another one to two games are expected to come out before year-end; 2) Atari delayed the initial shipment and indicated some production start-up problems; and 3) Atari may lack the resources and bargaining power to compete with Nintendo and Sega in marketing and distribution.

These worries are legitimate, because Nintendo and Sega together occupied almost 90% of the video game system market currently. Because they have been dominating the market, there are hundreds of games available to their machines, which is a major driving force for video game system sales. On the other hand, 3DO, an aggressive upcomer in the industry backed by Matsushita, AT&T, and Time Warner, has committed over 100 software developers to produce more than 150 games next year for its new 32-bit system.

Despite all these obstacles, we still are optimistic about Jaguar's prospects. We conducted an informal survey of toy retailers in New York and San Francisco that carry Jaguar. The findings are that all of them have received only a small first shipment and they were mostly sold out in one or a few days. Store operators generally believe Jaguar is much better than the 16-bit machines of Sega and Nintendo or even 3DO's new 32-bit machine, and so far there have been no customer complaints (except one who asked why Jaguar does not have an RCA jack). In short, Jaguar seems to be a hot and good product.

Nevertheless, most stores were not sure when the next shipments would come in and how many they would get, primarily owing to problems Atari has in start-up production. It was reported that 28 units were found to have an improper shield on the wire that connects the control panel with the television. Shipments were thus halted temporarily.

While we believe that with IBM's manufacturing expertise Jaguar's production problem will be solved eventually, it is very likely that Atari will miss most of the Christmas season this year because of such a delay. Although Sam Tramiel, president of Atari, has twice trimmed the estimated number of Jaguars to be shipped this year to 20,000 units from 50,000, we believe the ultimate number will be between 10,000 and 15,000.

We expect to see explosive sales growth of Jaguar as of the second quarter of 1994. Since the next 64-bit machine will not appear until late 1995 (from Sega), Atari will have at least one and a half years to build up the installed base of Jaguar and draw customers away from Sega and Nintendo. We agree that the lack of games is a high hurdle; however, the fact that Atari has already signed up 35 software developers to produce 25 to 50 games by the end of 1994 is a good starting

point. As sales start growing and other developers see increasing market acceptance, more will be willing to join the Jaguar platform.

The year-and-a-half window will be, in our opinion, a key opportunity for Atari to regain its dominance in the video game market. As technology advances swiftly, Atari will have a first-mover advantage over other video game system producers. A good example is Sega's introduction of its 16-bit machine in 1989, when Nintendo's 8-bit machine was the clear market leader. At that time people believed the 16-bit machine did not offer appreciable differences than the 8-bit. When Nintendo woke up and introduced their 16-bit version two years later, the market already was dominated by Sega. The two years' time lag gave Sega the opportunity to build up the installed base of its 16-bit system and also let software developers gain familiarity with the Sega machine.

The last, if not the least, doubt about Atari is its ability to market and promote Jaguar in face of such dominant competitors as Sega and Nintendo. We believe all Atari needs is a strong pull marketing strategy that demonstrates and promotes the superiority of Jaguar. A successful pull strategy will push consumers to ask for the product and thus force distributors to carry it or lose sales. The key element of a massive pull campaign is a big advertising and promotion budget. Our estimate is that Atari needs \$20 million to \$25 million in the next two years to establish Jaguar's image and encourage consumers to switch.

Although Atari currently has approximately \$30 million in cash, it will need another \$30 million to \$50 million to finance its marketing program and working capital requirements. While Atari has not indicated how it would raise additional funds, we believe a secondary stock offering is more likely than additional debt in order to reduce interest expense.

Atari recently announced a larger-than-expected loss of \$17.6 million on \$4.4 million sales for the quarter ended September 1993. The large loss was due to a \$7.5 million inventory writedown and a \$6.4 million restructuring charge. Without these nonrecurring charges, the net loss would have turned into a pretax income of \$678,000. Despite the large losses, cash holdings declined by only \$1 million in the quarter, to \$34 million from \$35 million. The debt-to-market capitalization ratio is only 0.19, a very comfortable level.

Even if Atari raises \$40 million by debt, the ratio will go up merely to 0.33. Therefore, potential additional leverage is not an imminent concern here.

Our projection for Jaguar's sales for 1994, assuming all the planned games will be released as scheduled, are 400,000 units. With more games available and increased market acceptance, sales are projected to increase to 810,000 and 1.1 million units in 1995 and 1996, respectively.

These numbers in fact are low compared with Sega's growth. Sega's 16-bit machine had an installed base of 1 million units in 1991, but it skyrocketed to an estimated 12 million units in 1993. Even with 1.1 million unit sales in 1996, Atari will occupy only 10% of the \$5.3 billion US video game market.

With high marketing cost and low manufacturing efficiency in the beginning, Atari should have a small loss in 1994. Its earnings per share in 1995 will be in the range of 50¢ to 55¢, assuming dilution from a secondary stock offering for \$40 million at \$6 per share. The projected earnings in 1996 are approximately 86¢ per share. At a price-earnings multiple

of 30, Atari's stock should be trading at \$15 to \$16.50 in early 1995. Even if the stock trades at \$15 in 1995, the low side of our estimate, its convertible bonds should be able to trade up to par in the next 12 to 18 months.

At the current price of \$67, Atari's convertible bonds are trading close to their investment value, which means the conversion option is almost free. If the bonds trade at par in 18 months, the compounded annual yield will be over 30%.

## TWA's 15% bonds are converted

The 15% senior secured notes of Trans World Airline were converted into cash and new 10% notes on December 7. The final conversion rate was \$441.5859 cash plus \$964.9025 face value of new 10% notes per \$1,000 face value of 15% notes. Based on the then-current price of the new 10% notes at \$73, the 15% notes were valued at \$114.59 at conversion.

The new 10% notes mature on November 3, 1998. Their price has fallen slightly from \$76 when it started trading last month to the current level of \$73.25, because of TWA's larger-than-expected operating loss in the quarter ended September of \$64 million.

At \$73.25, the 10% notes provide a yield to maturity of 18.6%. We believe it is an attractive investment. As discussed in our market letter of September 26, the estimated market value of all collateral for the 10% notes is approximately \$243 million. With \$225 million of 10% notes outstanding, the asset coverage is very strong.

The recent correction in TWA's stock and bond prices is due to investors' nervousness about TWA's viability after its

**STRATEGY:** *Despite some investors' pessimism, we believe Jaguar has a good chance of making a big hit in the video game market, mainly because of the 18-month window Atari possesses. The convertible bonds should provide a substantial annual yield of over 30% if they trade up to par in 18 months. However, these securities are suitable only for aggressive accounts, as Jaguar represents almost an "all or nothing" strategy for Atari.*

third quarter loss. However, the loss is larger than expected mainly owing to the Midwestern flood, which disrupted TWA's traffic at the St. Louis hub. We are still optimistic about TWA's medium-term prospects based on the assumptions of continuously falling oil prices and a steadily improving US economy.

Because of investors' concern, TWA's preferred and common stock prices also have pulled back recently, depressing the price of its senior unsecured notes (17.25% and 16%). They are currently trading in the range of \$33 to \$34, down from \$41 to \$43 when the new securities started trading. The conversion of the senior unsecured notes is expected to take place in January or February 1994.

**STRATEGY:** *Despite a pullback of the prices of TWA's various securities, we remain optimistic about the company's medium-term viability. The recent selloff reflects investors' eagerness to lock in their returns for fear of TWA's failure to turn around. Nevertheless, the attractive yield more than compensates, in our opinion, for the perceived risk. Strong hold.*

## Power Beat International Ltd.

**Exchange:** New Zealand Stock Exchange (Symbol: PBT)

**52-week high/low:** \$18.20/\$10 per share

**Recent price:** \$12.90 per share

**P/E:** 111X

**Price/Sales:** 31.6X

Power Beat International Ltd. (PBIL) in Hamilton, New Zealand, develops and licenses automotive on-board electric power technology. The founder of PBIL, Mr. Peter Witehira, invented a battery for automobiles that will never run down. Mr. Witehira established PBIL in 1988 and issued a worldwide Technology Exploitation License to the company on the battery and other related technology. PBIL went public on the New Zealand Stock Exchange in 1993.

### Concept of the Power Beat Battery

The on-board power supply system in modern automobiles, which includes the battery and all electrical wiring, was found to be the weakest link in the entire vehicle design. A study conducted in Australia shows that almost 60% of automobile breakdowns are due to problems in either the battery or electrical system.

The reason is that electric power consumption in modern automobiles has increased substantially because of additional electronic equipment. However, there has been no corresponding improvement in battery technology. The current automotive batteries follow a design format developed almost a century ago. Here comes a market opportunity with

huge potential.

The Power Beat battery developed by Mr. Witehira directly addresses this opportunity. It ensures an adequate supply of electric power to start the engine under almost any circumstances, and to operate all auxiliary power equipment.

It is, in effect, a combination of two batteries in one. By using two different sets of electrode plates, the Power Beat battery provides one source of power for starting the engine and a separate source for auxiliary equipment. A proprietary electronic controller switches between the two power sources using a discharge or recharge logic, in a transparent fashion. The result: It allows a vehicle user to start the engine normally even if any auxiliary power equipment, such as the headlight, has been left on for a long time without the engine running. In short, vehicle owners will no longer have the problem of "dead battery." The Power Beat battery not only looks like a conventional battery in shape and size but also will cost about the same.

### Current Status

In addition to the Power Beat battery, PBIL also has developed the following proprietary technology:

- Electrode plates designed to reduce weight and protect the battery from long-term damage because of abuse. These plates can be used in conventional batteries.
- High power electrode plates for batteries designed to produce higher power to weight ratios.

- Electric wiring technologies that when used with the Power Beat battery can reduce hydrocarbon emissions and increase automobile reliability.

PBIL has applied for patent protection for its proprietary technologies on a worldwide basis. Up to now, patents have been granted in Argentina, Australia, Canada, the European Community, New Zealand, South Africa, and the United States.

To commercialize the product, PBIL formed Power Beat Australasia Ltd. (PBAL) with a small battery manufacturer to produce a small batch of prototype Power Beat batteries for testing purpose. Based on this experience, PBIL has formulated manufacturing procedures and specifications that can be used for mass production later.

PBIL has given the prototype batteries to various automobile manufacturers for extensive testing. In December 1991, Rover of England performed a test by putting a Rover Sterling (3L, V6 engine) equipped with a Power Beat battery into a refrigerated chamber (-25°C), with the headlights on full beam and the engine not running. Eighteen hours later, they turned on the ignition, and the engine started in three seconds. No conventional batteries could have done that in similar conditions.

### PBIL's Strategies

PBIL has decided not to engage in manufacturing. It plans to license its technology to battery manufacturers and collect royalties on the units produced. Potential licensing opportunities include the following:

- The Power Beat battery to existing and new battery manufacturers.
- The proprietary electrode plates to conventional battery manufacturers.
- The proprietary electrical wiring system to automobile manufacturers.

We believe it is a sensible strategy for PBIL to concentrate on research, product development, and marketing instead of manufacturing. Manufacturing requires large capital input as well as a different set of management skills. PBIL's competitive advantage lies more in technology origination and commercialization.

In March this year, PBIL signed a technology transfer agreement with Trend Vision Technologies, Inc. (TVT), based in Vancouver, Canada (listed on the Vancouver Stock Exchange and NASDAQ). Under the agreement, TVT was granted marketing rights to PBIL's products in the US and Mexico, and the option to include Europe later.

The agreement requires TVT to establish manufacturing capacity within three years for an annual output of three million Power Beat batteries. In return, TVT has to pay PBIL up to \$9 million, which includes \$1.5 million licensing fee and \$3 million nonproduction royalties for each territory. The production-based royalties are 4% of invoice price and one cent per electrode plate (average 66 plates per battery).

On the other hand, PBIL has a cooperative marketing agreement with Mitsubishi Corporation that covers the Japanese market for its technology. It also has sold rights to the Taiwan and Hong Kong markets.

Earlier this year, Japan's Nissan Motor Co. announced that it would be offering the Power Beat battery to car buyers in New Zealand as an option. PBIL expected initial sales to be 14,000 batteries due to this agreement.

On November 16, PBIL signed a technology agreement with Hyundai Motor Co. of South Korea, under which Hyundai has the rights to install Power Beat batteries in their new vehicles, subject to design and application testing in the next six months. This agreement came about after an evaluation program begun by Hyundai about 12 months ago. Hyundai's current annual sales exceeded 100,000 vehicles.

### Valuation

Our valuation of PBIL is based on the dividend discount model where the terminal value (year 2000) is assumed to be 15 times earnings. We consider the P/E of 15 by year 2000 conservative since the wider acceptance of the technology at that time will put PBIL's annual earnings growth at a minimum of 30%.

The current worldwide annual automobile production is approximately 45 to 50 million. The total number of vehicles in use is about 550 million. In 1990, the total number of battery shipments was 234 million, and was expected to increase to 267 million in 1995.

Our projections assumed that the Power Beat battery would be able to occupy 0.02% of the battery market initially and slowly expand to 5% by year 2000. In addition, the electrode plates will start with a 0.07% market share and end up with 1% of the market in seven years. Moreover, we assumed the royalties from the electrical wiring system to be negligible as no details have been given by PBIL on this technology. Finally, there will be up-front licensing fees and non-production royalties of \$2 million each year on average.

Since PBIL is not engaged in manufacturing, it realized a high net profit margin of 33% in fiscal '93. We believe the margin will only improve when market penetration increases because of the slow growth in overhead. By year 2000, our projections showed a 57% net profit margin.

Based on a 15X P/E and a projected EPS of \$7.7, PBIL's stock price will be approximately \$115 by year 2000. Based on a dividend payout ratio of 10% starting from '97 (raised to 20% in '99), and discount rates between 24% and 28%, the current fair value of PBIL's stock should be between \$21 and \$26. We believe the discount rates used, which represent a premium of 1,800 to 2,200 basis points over comparable New Zealand government bond yields, are high enough to reflect the business risk of PBIL.

However, we wish to emphasize that there was a high degree of guesswork inherent in our projections, primarily because the Power Beat battery is a new technology product. Its future sales depend heavily on factors such as whether mass production will be problem free, how fast the market will accept the product, and if any alternative technology will emerge.

### Risk Considerations

The Power Beat battery is a breakthrough in the on-board automotive power distribution technology. It solves one of the most common problems facing today's vehicle operators at no additional cost.

However, we do not expect the market penetration to jump in a step function for several reasons. First, automobile manufacturers are traditionally slow in adopting new technology owing to potential product liability problems. They tend to conduct tests and trials over a long time period on any new technology to make sure it works properly.

Second, some automobile manufacturers have been skeptical about Power Beat's technology. They believe the new product is bound to have problems if nobody has been able to do it in the past 50 years. Third, manufacturers of conventional batteries will certainly persuade their customers against switching to Power Beat, as it threatens their existence.

Other than the industry-related factors, we believe PBIL's strategic partner, TVT, is not financially strong enough to establish the required manufacturing facilities and may not have the necessary resources and expertise to promote the Power Beat battery on a massive scale. However, the deals of PBIL with Nissan and Hyundai are excellent starting points and will establish PBIL's credibility on the market. Once the

product has established a foothold, either TVT should be able to obtain the financing to proceed with the plan or a much stronger player should be interested in buying the marketing rights from TVT, thereby resulting in a more rapid market penetration.

**STRATEGY:** We believe PBIL represents an excellent opportunity to capitalize on a technological breakthrough that will have a very large global market. Its stock price should jump when the royalties start coming in or another deal similar to the Hyundai's one is signed.

– Edison Lee

**Chart 18**  
Breakeven exchange rates for US\$-based investor

This analysis shows a "snapshot" of the relationship between interest rate differentials and rates of exchange. The breakeven rate measures how far the foreign currency has to devalue (for NZ\$, A\$, DM, DKr, BP, FFr, ECU, CD, SAR, ITL, ARG, FIN) or revalue for SF, JY before the interest rate advantage/disadvantage is overcome by currency depreciation/appreciation. Rates as of

	US \$	NEW ZEALAND	AUSTRALIAN \$	DEUTSCHEMARK	SWISS FRANC	JAPANESE YEN	DANISH KRONER	BRITISH POUND	FRENCH FRANC	EUROPEAN CURRENCY UNIT	CANADIAN DOLLAR	SOUTH AFRICAN RAND**	ITALIAN LIRA	ARGENTINEAN PESO	FINNISH MARKKA
1 year	3.58%		C.B.A. 14% '94 yields 4.18% (.6754 A\$/US)				Denmark 9% '94 yields 6.28% (6.8556 Dkr/US)						G.E. 11½% '95 yields 7.79% (1.756 ITL/US)		
2 year	4.15%														Finland '95 yields 5.39% (5.9652 FIM/US)
3 year	4.50%					World Bank '96 yields 2.01% (102.39 US/JY)		Sweden '96 yields 5.20% (1.4618 BP/US)	Credit Lyon '96 yields 5.58% (6.0078 Ffr/US)			Escom '96 yields 10.54% (0.1891 US/SAR)	NIB '96 yields 8.02% (1.863 ITL/US)		
4 year	4.83%	N.Z. 10% '97 yields 5.39% (0.5497 NZ/US)		B.N.S. '96 yields 5.38% (1.7405 US/DM)	G.E. 4¼% '98 yields 3.86% (1.4011 US/SF)						R.B.C. '97 yields 5.39% (1.3673 US/CD)				
5 year	5.15%			Argentina '98 yields 7.64% (1.9161 US/DM)											
7 year	5.32%									UK '01 yields 5.89% (1.0901 ECU/US)					
8 year	5.40%													BIC V '01 yields 12.19% (1.6443 US/ARG)	
Spot Exchange Rate	–	.5615	.6793	1.7045	1.4542	110.08	6.6814	1.4913	5.8255	1.1321	1.3385	.2238	1.687	.9979	5.8255

\*For example, since a US\$-based investor would receive 249 basis points (764-515) by holding the Argentina '98 DM bond, the DM can depreciate to 1.9161 US/DM from the present spot exchange rate of

1.7045 US/DM over the next 5 years for the DM investment to break even with current US\$ rates of interest. Assumes that bonds are held to maturity, and coupons are reinvested.

\*\*NOTE: These bonds pay interest in commercial rand, which presently trades at a premium to the financial rand used for this table.

**Chart 19**

**Recommended current portfolio allocations**

1. New TWA	10%	6. Burnup & Sims	5%
2. New Zealand Gov't	10%	7. Datapoint	5%
3. Fletcher NZ\$	15%	8. Coeur D'Alene	5%
4. CIL NZ\$	5%	9. Atari	5%
5. FRB/BOCON	30%	10. Deutschemark	10%

**Chart 20  
FOREIGN CURRENCY BONDS**

Date: Dec. 16, '93 We Offer The Following Bonds Subject To Change Without Prior Notice: Minimum US \$4,000 (CDN. \$6,000)

ISSUER/MATURITY DATE/COUPON	BID	OFFER	CURR. ANNUAL YLD. TO MTY.	NEXT PAYMENT INTEREST DATE
<b>DEUTSCHE MARK DENOMINATED</b>				
BANK OF NOVA SCOTIA 5½% 07/05/96 RRSP eligible	99.65	100 ½	5.38 %	May 07
WORLD BANK 57/8% 4/02/97 RRSP eligible	102.40	103 ¼	4.72 %	Feb. 04
WORLD BANK 9% 13/11/00 RRSP eligible	119.15	120	5.44 %	Nov. 13
KINGDOM OF DENMARK 6¼% 15/04/98	102.65	103 ½	5.23 %	Apr. 15
ARGENTINA 8% 5/10/98	100 ½	101.35	7.64 %	Oct. 05
<b>FINNISH MARKKA DENOMINATED BONDS</b>				
REP. OF FINLAND 11% 15/6/95	106.85	107.70	5.39 %	Jun. 15
<b>ITALIAN LIRA DENOMINATED BONDS</b>				
NORDIC INV. BANK 12¾% 19/04/96	107.95	108.80	8.02 %	Apr. 19
GENERAL ELECTRIC 11½% 7/02/95	102.95	103.80	7.79 %	Feb. 07
<b>SWISS FRANC DENOMINATED BONDS</b>				
GENERAL ELECTRIC 4¾% 2/7/98	102 ¾	103.60	3.86 %	July 02
<b>DANISH KRONE DENOMINATED BONDS</b>				
KINGDOM OF DENMARK 9% 15/11/94	101.40	102 ¼	6.28 %	Nov. 15
<b>ECU DENOMINATED BONDS</b>				
UNITED KINGDOM 9½% 21/02/01	117 ½	118.45	5.89 %	Feb. 21
<b>BRITISH POUND DENOMINATED BONDS</b>				
KGDM OF SWEDEN 8¾% 29/5/96	106 7/8	107 7/8	5.20 %	May 29
<b>FRENCH FRANC DENOMINATED BONDS</b>				
CREDIT LYONNAISE 9½% 23/12/96	109.70	110.55	5.58 %	Dec. 23
<b>JAPANESE YEN DENOMINATED BONDS</b>				
WORLD BANK 5¾% 7/8/96 RRSP eligible	108 ½	109.45	2.01 %	Aug. 07
<b>CANADIAN DOLLAR DENOMINATED BONDS</b>				
ONTARIO HYDRO 107/8% 08/01/96 (semi annual)	110 ¼	111 ¾	4.82 %	Jan. 08
EKSPORTFINANS 7¾% 5/11/97	104.95	-	-	Nov. 05
ROYAL BANK OF CANADA 9½% 7/1/97	109.20	110.20	5.39 %	Jan. 07
<b>SOUTH AFRICAN RAND DENOMINATED BONDS</b>				
ESCOM 12% 1/5/96 (semi)	102.65	103 ½	10.54 %	May. 01
<b>AUSTRALIAN DOLLAR DENOMINATED BONDS</b>				
COMMONWEALTH BANK OF AUSTRALIA 14% 01/07/94	103 5/8	104 7/8	4.18 %	Jul. 01
<b>NEW ZEALAND DOLLAR DENOMINATED BONDS</b>				
NEW ZEALAND GOV'T 10% 15/7/97 (semi)	113.95	114.80	5.39 %	Jan. 15
FLETCHER CHALLENGE 10.75% 15/12/97 (semi)	110 ½	111.35	7.40 %	Dec. 15
FLETCHER CHALLENGE 10.15% 30/11/98 (semi)	109.90	-	-	May 30
CORPORATE INVESTMENT LTD. 13 1/2% 19/6/95 (semi)	87 ½	90	21.67 %	Dec. 19
<b>ARGENTINEAN PESO DENOMINATED BONDS</b>				
ARGENTINA BIG V FIXED/FLOATING 1/05/2001 callable in full on every interest date	92.45	93.45	12.19 %	4th day of mth.
<b>U.S. DOLLAR DENOMINATED FIXED CONV. BONDS</b>				
DATAPoint CORP. 8¾% 1/6/06 CV @ \$18.11 p/sh (semi)	83	84	11.62 %	Jun. 01
BURNUP & SIMS 12% 15/11/00 (semi) CV @ \$16.79 p/sh	100	102	11.90 %	Nov. 15
ATARI CORP. 5¼% 29/4/02 CV @ \$16.31 p/sh	66	67	11.62 %	Apr. 29
COEUR D'ALENE 6% 10/6/02 CV @ \$26.00 p.sh	103 ½	105	5.25 %	Jun. 10
GLYCOMED 7 1/2% 1/1/03 CV @ \$14.06 p/sh (semi)	87 ¼	88 ¼	9.69 %	Jan. 01
T.W.A. 10% 3/11/98	72 ¾	73.60	18.47 %	Feb. 01
T.W.A. 17¼% 15/3/93	33 ½	35 ½	-	N/A
<b>U.S. DOLLAR DENOMINATED FIXED RATE BONDS</b>				
FARM CREDIT CORP. 7¾% 10/06/96 RRSP eligible	106.40	107 ¼	4.55 %	Jun. 10
<b>U.S. DOLLAR DENOMINATED FLOATING RATE NOTES</b>				
UNITED KINGDOM 30/09/96 3 mo. LIBID-½ (qly) *callable @ 100	99.64	99.94	2 15/16 %	Dec. 30
BOCON 1/4/01 (30 day LIBOR) starting to accrue May 1, '97	93.10	-	-	May 1/97
ARGENTINA: SERIES L: FRB 31/03/05 6 mo. LIBOR +13/16 (semi)	86 1/8	87 1/8	6.46 %	Mar. 31

**GOLD** (in ounces, at market prices, can also be held in your bond account)  
Although we monitor these issues specifically, we also can fill any order in any foreign bond.

**HOTLINE UPDATE**

**Tuesday, November 23:**  
There are no changes or new recommendations. The market letter is in the mail.

**Friday, November 26:**  
There are no changes or new recommendations.

**Tuesday, November 30:**  
There are no changes or new recommendations.

**Friday, December 3:**  
There are no changes or new recommendations.

**Tuesday, December 7:**  
There are no changes or new recommendations.

**Friday, December 10:**  
There are no changes or new recommendations.

**Flash update,  
Monday, December 13, 5:00 pm:**  
Lower March S&P stops to 469.50, good anytime, cancelling 471.50 stop, close only.

**Tuesday, December 14:**  
The following is a recap of this week's recommendations: On Monday, December 13, via flash update, we advised lowering March S&P stops to 469.50, good any time, cancelling 471.50 stop, close only.

**Friday, December 17:**  
This is a complete summary since our last market letter, dated November 21, of all liquidations of open positions and new recommendations.

On Monday, December 13, via flash update, we lowered our stops in March S&P to 469.50, good anytime, cancelling the 471.50 stop, close only.

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