Performance Report
STIR TEST_G10

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Introduction

We have been running a dummy portfolio since the beginning of October 2002 and all trades executed in the portfolio to date are described here.

The objective of the portfolio has been to maintain a low VAR of between 0.5 and 1% with a small number of positions. We believe that the current benign price action in STIR products conceals considerable risk and consequently we wish to keep the portfolio focussed. We have not applied the full range of risk factors that we will be using subsequent to launch since we are only going live with the Globeop risk platform in January.

Nonetheless we would like to reiterate that STIR is not in the first order seeking to reduce the short term variability of portfolio returns through quantitative constraints, but seeking to maintain consistency in a qualitative sense via the investment process. It will be noted that there is a strong focus on academic research (See Appendix C). At STIR we avoid the consumption of primary data; discount secondary data and eschew information that has been mediated by brokers, advisors, analysts and journalists. Instead we focus on academic medium term empirically based data.

As much as anything the purpose of this document is to stimulate discussion with prospective investors, so please feel free to call us and do just that.

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Chapter 1

STIR's Macro Viewpoint

"Monetary policy is more of an art than a science"
–*Greenspan*

In every mania there is a mantra. Whether you look at the real S&P vs real earnings growth or the real price-earnings ratio, what happened in the US stock market from 1992 to 2000 is unprecedented in the last 130 years and was indisputably a mania. Underpinning what has come to be known as the "millennium boom" or the "Fabulous Decade" were a number of mantras. The productivity miracle, the stock option as a fast track to executive wealth, the abolition of the business cycle, Greenspan as God and the G10 central bankers as his disciples, a strong dollar, the buy now pay later birthright, the surge in materialism and the consumer culture that became synonymous with the U.S. at the fin de siecle.

As the participants in and perpetrators of these mantras gradually move to revise, or disown their beliefs, the stock market and the underlying economy that it reflects will return to a level that is considered cheap even by the sceptics.

We make very few concessions to hard numbers in this piece. This is because we believe we are at the beginning of a secular shift in the return on assets and a shift in prosperity from the West to the East that is unlikely to be derailed by another trick of economic accounting. Failure is an integral part of the capitalist system. The suppression of economic and financial failure has costly side affects and the wholesale cultural submission to a vice like greed is secular not cyclical in nature.

Productivity

The chairman of the Federal Reserve is still touting the "productivity miracle". The improvement in productivity in the US can be traced to the mid 1980's. Significantly, it was in 1986 that statisticians decided to adjust the prices of units of computer output by deflating them in accordance with Moore's law. The application of this deflator vastly increased the real dollar value of computer output and has created a clear distortion in the productivity numbers. The import of components from the East similarly distorts the data.

McCarthyism

The stock option greed spiral is unwinding as a corporate governance purge reminiscent of McCarthyism (which needs no further comment from us) sweeps the boardrooms of America.

The US Business Cycle

The standard deviation of GDP has fallen from 2.7 percentage points in the 1970's to 2.6 percentage points in the 1980's and 1.5 percentage points in the 1990's. Studies such as that conducted by Stock and

Watson have attempted to explain this. These studies broadly conclude that the reduction in volatility cannot be explained by the traditional offerings of the new economy banner wavers, such as the shift in output from goods to services or information technology led improvements in inventory management. Such studies generally conclude that while improved monetary policy accounts for perhaps 25% of the reduction in volatility, over half the reduction is unexplainable and is thus probably just good luck. In other words there is no reason why we should not be in a phase of more volatile times.

Central Bankers financial stability put option

The promotion of financial stability is a key objective for central banks. Investors came to believe that this offered them a put option on stock prices, an expensive misjudgment that has not prevented the perception that the put has moved to the credit markets. Is it possible that Central banks are fallible when it comes to maintaining financial stability?

The Messiah

Attempts to value human capital more precisely as manufacturing diminishes as a component of the national accounts of the West have as yet come to little. Had they created such an index prior to the 1992-2000 greed blow off, surely Greenspan would have been the most overpriced component of that index, the absurdity of his valuation possibly exceeding even that of the Nasdaq. His moon is now waning but the light has yet to be extinguished. Ironically, the Messiah cradling his copy of The Fountainhead is the first to disown his own power; indeed, fundamental to Rand's philosophy of "Objectivism" is a rejection of the notion that the government should regulate the economy.

The Federal Reserve

Unlike many central banks the Fed neither has a stated commitment to price stability nor does it have an explicit nominal anchor. Indeed such is Greenspan's position that the public seems to be prepared to accept that *he* is the nominal anchor. In this context the recent decline in his popularity is a concern. The relative weakness of Fed transparency compared to countries such as the UK and Canada–which have adopted inflation targeting–produce substantial reports laying out strategy and engage in self- assessment, leads to public policy debate that tends to focus the Fed on short term considerations. The inflation report mechanism of other countries tends to focus debate on the longer run goals. The ultimate test of the credibility of the Federal Reserve would most likely occur just when its credibility needs to be at a peak. Were the current weak domestic growth backdrop to deteriorate further, it is quite possible that the reliance of the Federal Reserve on certain key individuals as well as its cosy relationship with the Executive would be the subject of a damaging backlash focusing on its lack of accountability and reminiscent of the corporate accountability backlash sweeping the US today.

ECB

The ECB council is a group of delegates with conflicting interests. When an issue of difference arises, a French appointee would vote in the style of France and a German in the style of the Bundesbank. A number of academics have used game theory to model the decision making mechanism of the ECB council, most convincing is the model designed by Rasmus Fatum which concludes that there is a strong bias towards a policy set in accordance with the preferences of the most inflation averse member. His paper strongly supports the notion of the ECB implementing the policy of the Bundesbank rather the policy of an average union wide central bank. This is clearly unsatisfactory and may ultimately lead to changes in the voting procedures of the ECB that could cause further uncertainty.

On some levels the ECB could be taken as the most efficient central bank in terms of its quest for price stability. Given the EMU Stability pact, it is much harder for fiscal irresponsibility to undermine the monetary authorities attempts to pursue price stability. Whilst output is factored into the policy pillars since it is a component of M3, price stability should be a means to end and not an end in itself, the end being the reduction in the volatility of output. Were the Stability pact abandoned the ECB's reputation could suffer.

Many of the criticisms levelled at the ECB centre around the relevance of the M3 reference rate set against the undisclosed internal inflation forecast as the other pillar. These are in effect criticisms of transparency. But does transparency really matter? There is a case to put for the fact that expectations are adaptive, that the markets are interested in what the central bank actually does; comments by individual members could be the posturing of a dove mimicking a hawk and the reputation will be hard won through actions over time. Against this we would favour the position that despite the tighter pursuit of inflation and lower short-term inflation results achieved by the ECB compared to the Bundesbank, there has been neither any reduction in the long-term inflation expectation in the Eurozone nor reduced volatility. This is most likely attributable to the multi-national consensus committee practice and low transparency. After all the ECB has clearly demonstrated itself as conservative. Yet part of the ECB's reluctance to adopt full transparency is excused by its concern that were they to release voting patterns or detailed minutes the identification of national policy preference may cause anxiety and disapproval.

The Eurosystem's statutes cannot be changed by legislation but only by alterations to the Maastrict treaty and consequently its goal of price stability is harder to change than statutes embedded in legislation. This rigidity at the statutory level is a concern. There is a case for saying the inflexibility of inflation targets diverts attention from dealing with shocks. Friedman and Kuttner have attempted to quantify damage that could be done by rigid adherence to a fixed nominal anchor such as the inflation target in the face of a supply shock. The current policy of the ECB may provide them with a useful new case study.

Bank of Japan

Here is an example of how central bank independence can expand harmfully even when transparency is increasing. One of the problems the Bank of Japan clearly has with transparency is manifested in its reluctance to announce an inflation target. This is clearly a product of its concern that were they to miss the target they would come under considerable political pressure. Since its independence in 1998 the BOJ has become highly transparent yet in its pursuit of a disastrous deflationary policy it has rejected entreaties by elected officials, taken stands on issues not covered in its legal mandate and failed in its mandate to maintain price stability, yet there has been no accountability for any of this.

Bank of England

There is currently a risk in the UK that despite the independence of the central bank, the fiscal authorities are taking over the role of first mover. Gordon Brown appears to be setting fiscal policy exogenously knowing that the monetary authorities will accommodate his policies accordingly, thus making fiscal policy the principal determinant of the price level. This is clearly a weakness in the UK central bank position as it stands.

The Dollar

The dollar whilst temporarily boosted by global economic and political uncertainty is struggling in the face of a $500 billion current account deficit. The uncertain economic and political scene has postponed the correction in the dollar as international investors (especially, Asians) have continued to park money in treasuries. Once this uncertainty ebbs the dollar is likely to resume its descent.

Credit in US

The mania that once gripped the stock market has moved on to credit. Many of the numbers in credit markets today look uncannily like the dreams of the day trader of the late 90's. The apparent put option that investors came to believe existed in the US equity markets has now been written under the credit markets. The Federal Reserve is nurturing excess and convincing itself that it is powerful enough to engineer a soft landing. Student Loan Issuance has doubled in the last year as employment prospects have deteriorated. Credit insurance is exploding as risky debt is transferred into seemingly palatable securities through intermediation. MBIA the leading provider of insurance for municipal bonds, mortgage-based securities and corporate bonds recently reported that net debt service outstanding increased $22 billion in the 3rd quarter compared to $1.4 billion in the 3rd quarter of 2001. MBIA has now got CDO exposure of $66 billion, $35 billion of asset backs, $21 billion of home equity loans, $20 billion of other mortgage backed paper and $20 billion of miscellaneous securities. The only move left for Auto credit is 0% finance and 0% down payments. All time growth records are being posted in every sector of the credit markets. The Fed as a custodian of America's fear of a return to the depression, is artificially inflating house and auto sales in a gamble that investment will pick up before the credit bubble bursts.

Is this the next moral hazard? Financial Stability is now a recognized goal of Central Banking, with the Fed as lender of the last resort, institutions in the credit markets have an incentive to take on excessive risk, an incentive they appear to responding to with gusto.

Greed: "an inordinate or insatiate longing, especially for wealth". However commentators choose to frame the internet bubble or the overall stock index bubble, the perception existed that effortless 20% per annum returns were our birthright in the new paradigm. The late 80's and 90's were about greed. America then exported the greed culture like so many McDonalds to the rest of the West and the East. The greed culture was not confined to the corporate sector, the consumer was a willing participant at the party and from all the evidence he is still partying. There is no reason to suppose that his hangover will not come soon. It was a culture that in turn spawned its own self-perpetuating engines. The business media and investment banking elite were principal among these engines. In the same way that the media has distorted the Americans perception of social reality with the "if it bleeds it leads" call to journalistic arms, it distorted investors perception of the norm by encouraging short term investing, speculation and the enthusiastic suspension of disbelief. The backlash has been simmering appropriately in popular culture for some time and has recently burst out with Arthur Millers new play " Resurrection Blues". The greatest living American playwright sums it up when a character laments: "And I tell you, I really wondered if it will take a returning God to tear us away from this madness, this whole insane worship of money that is killing everyone".

Geo-political risk?

Greenspan in his recent testimony highlighted Geopolitical risk as a short-term uncertainty. His focus was on the upcoming conflict with Iraq. Although clearly of concern, the current price of oil would suggest these concerns have already abated. We do however have lingering concerns about the institutionalising of conflict. The US is in a state of war and in the new National Security Strategy, the administration has elevated the previously unwritten preemptive option to a policy doctrine. This gives the US a wider brief to move to military rather than diplomatic solution and it maintains the risk premium the markets may wish to assign to conflict with such nations as North Korea, Iran or Syria. The principal concern as we see it is that by developing doctrines that lower the threshold for preemptive action, the US risks encouraging countries on the brink of war to use the doctrine as a precedent, resulting in it being much harder for the international community to counsel diplomacy. There are a number of examples where this might apply; China and Taiwan and India and Pakistan being the most concerning. With this in mind we continue to include in our scenario anal-

ysis violent upside price moves in the very short end of markets. If this long-term risk is generally perceived and such risk aversion is accordingly built in, the real cost of the policy change will become clear. The weight Greenspan gave to the geo-political question in his testimony was excessive and did not take into account the corporate governance issues, low capacity utilization and weak demand that are holding back further investment in the corporate sector.

Value

There is a tendency for those wishing to call the end of the equity bear market to seek valuation measures to serve their ends. However, surely it is wise to expect the market in this post bubble era to move to valuations that are clearly cheap on the pessimists measures rather than on the optimists measures. After all, the bull market exceeded the most optimistic forecasts right up until its optimism began to feed on itself. One of the most bearish measures currently available is the ratio between S&P core earnings yield and Baa corporate yield; this produces a fair value for the S&P of around 400.

Risks

Brazil, weak dollar, inability of refinancing boom to continue to stimulate consumption, China. Dollar will fall when risk aversion falls. There is no reason the clean up in corporate balance sheets in the US should result in the saved money being spent.

Europe is resolutely sticking to its stability pact thus preventing fiscal policy solutions. Japan is no nearer resolution, China has no interest in inflation and will continue to deflate as it wins international market share.

EU

The European corporate culture rewards cronyism and entangled personal relationships. So in many ways they are exposed to more corporate revelations than US companies.

STIR does not regard the M3 pillar, namely the deviation of money growth from the reference value as a reliable indicator of risks to price stability. See "Eurosystem Monetary Targetting: Lessons from US Data." Rudebusch. FRBSF.

See 5.2 for further commentary.

ECB

Eurozone has lowest liquidity readings for 30 years and lowest interest rates.

ECB tends to focus on real rates and compare them to a long term average. Real policy rates are currently 1% and average policy rate from '81-'99 is 3.9%, so on this analysis policy is very stimulative.

See 5.1 for further commentary.

US

See 3.5.

Japan

See 4

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Chapter 2

Portfolio Summary

2.1 Current NAV

Capital on 01 Oct 02	10,000,000 USD
NAV on 23 Dec 02	10,642,629 USD ’

2.2 Returns

ROR since inception

Holding Period	6.426%
Annualised	39.09%

ROR since 30 Nov 02

Holding Period	-.245%
Annualised	-1.488%

Daily Returns

Mean	.105%
StDev	.41%

2.3 Risk

For more details on the risk managemenet of TEST G10, see Appendix A.

VaR

VaR is calculated for a 1-day horizon at 99% confidence and it is expressed as a percentage of NAV.

Last	1.14%
Mean	.675%
StDev	.322%

Liquidity

The liquidity measure is the quotient of cash plus availiable credit and 20-day VaR. The TEST G10 portfolio is traded under the constraint of the STIR G10 Master Fund’s liquidity parameter: the ratio of cash plus borrowing capacity over monthly VaR is not to fall below 4.

Liquidity Ratio Statistics

Last	18
Mean	38
StDev	19

Of course, a liquidity ratio between 19 and 38 is excessively conservative. This is because the purpose of TEST G10 is to represent STIR’s primary return-generating (and VaR-consuming) strategies; active cash management is ignored in TEST G10.

A minor return-enhancing cash management programme will be part of the actual portfolio and a liquidity ratio between 8 and 4 will be the target range of this risk measure.

Chapter 3

Trade Summary

3.1 Trades open and unrealised P&L

Trade Name	Date Opened	P&L
BREAKEVEN_TIPS_UST_5Y	18 Dec 02	67,962
SWITCH_EUR_GBP_SWAPSPREAD	2 Dec 02	3,759
LONG_EDU4_PUT	10 Oct 02	39,000
SHORT_JPY_2Y_FWD	10 Dec 02	-9,660
	Total	101,061

3.2 Trades closed and realised P&L

Trade Name	Date Opened	Date Closed	P&L
FLAT_EURIBOR_MAR3_JUN3	16 Oct 02	5 Dec 02	-29,983
LONG_ERU3	17 Oct 02	5 Dec 02	358,132
TIGHT_BOBL_CAL_SPRD_DEC2_MAR3	26 Nov 02	27 Nov 02	42,490
TIGHT_GBP_AUD_SPRD_3M	5 Nov 02	7 Nov 02	65,584
TIGHT_USD_TED_2Y	6 Nov 02	7 Nov 02	30,934
WIDE_SCHATZ_CAL_SPRD_DEC2_MAR3	1 Oct 02	22 Oct 02	58,701
WIDE_TED_USD_6M	1 Oct 02	22 Oct 02	15,712
		Total	541,570

3.3 BREAKEVEN_TIPS _UST_5Y

How is inflation measured in the US?

Some inflation watchers focus on the increase in the dispersion of inflation since the mid 90's, or the consistency in the volatility of core inflation despite this increase, or the dispersion, or the deflation in the manufacturing economy that has been exacerbated by dollar appreciation, perhaps they will look at the strong service sector inflation, or the consumption habits of the baby boomers in the 90's which have been skewing durable goods consumption upwards and service consumption down giving a negative bias to inflation, the same pundits might argue that now the baby boomers are growing older they will switch back into services consumption and inflation will start to have an upward bias. There are many factors to observe and we would gently question the relevance of these intricacies especially for the purpose of this trade. However, it is clearly important to understand them before deciding to discount elements.

What measure do you look at?

The Boskin commission report highlighted a number of biases that affected the CPI including, substitution bias, outlet substitution bias, quality change bias and new product bias and they concluded that this index overstated inflation by anywhere between 0.8 and 1.6%. Meanwhile The Bureau of Labour Statistics started releasing the Chained Consumer Price Index designed to capture substitution. Greenspan now favours the Personal Consumption Expenditure Consumption Index.

How much does it really matter whether you look at the CPI, the Personal Consumption Expenditure deflator or the chain-weighted PCE? The principal difference is in the weighting of certain fundamental data principally medical care services and housing, with medical care services receiving a much higher weight in the PCE and housing receiving a much higher weight in the CPI. Nonetheless if you examine the data over the last decade the two indices are correlated at around 0.96 and consequently both capture the direction of inflation and the small differences in the level mean very little for monetary policy.

Leading Indicators or Inflation.

There is extensive academic research on the efficacy of leading indicators in the prediction of inflation. Those that have almost without exception been rejected by the research include, consumer confidence, weekly hours worked, share prices, M1.

The three indicators that we focus on here are:

Industrial Production

Although levels of growth are well below pre 2000 data of 5% yr on yr industrial production growth is steady at 1% a marked improvement from the % readings of 2001.

Industrial Production of Consumer Goods

These numbers have been patchy since July and gave a very weak reading in October.

Merchant Wholesaler's Sales

In October these numbers reported a small month on month decline having been strong for most of 2002, the growth levels remain well up on the negative readings of 2001.

The leading indicators certainly do not appear to point to a rise in inflation but equally do not point towards deflation.

Commodity Prices

With the CRB Index up 21.2% in the last year, Gold up 14% and Oil up 28% does it make sense to argue that inflation is beaten or indeed heading lower.

Commodities have consistently under performed inflation and as a consequence have lost a great deal of their attraction as an inflation hedge. If they are no longer seen as a reliable inflation hedge is it reasonable to assume the market will suddenly treat them as reliable indicators of future inflation. After all the consumption of commodities as a % of nominal GDP

has collapsed from 10% in the late 70's to around 2% today. It should also be noted that commodity indices exhibit a strong negative correlation with the $US and this may explain some of their recent strength, the move could also be explained by a technical rebound in a returns starved world, after all most commodities are languishing at 40 year lows in real terms. Some commodity indices actually have a negative correlation with CPI inflation. What this suggests is that a change in the price pass through for commodities has occurred and the relationship between the inflation process in the manufacturing sector and the overall economy has broken down, reflecting the predominance of the servive sector.

The Journal of Commerce Index, which was specifically designed as an indicator of inflation pressures, has proved to be a significant over predictor of inflation.

Some commentators are citing the rise in gold as a predictor of future inflation. We would agree that there are elements in the recent rise in the price of gold that may reflect the abundant US liquidity conditions. This in itself does not mean inflation though and it is very difficult to strip out the contributions to this price rise from the removal of the Central Bank selling mandate and the high geo-political risk premium.

"Price Puzzle"

It has been demonstrated that an unanticipated positive shock to the Taylor rule, in other words a tightening has invariably been followed by a negative correlation between returns and inflation. This is partly due to the higher costs of capital getting initially passed on to the customer. This phenomena is known as the "Price Puzzle".

An unanticipated positive shock to the Taylor rule in other words tighter policy should result in lower expected and realised inflation. Empirical studies show that such a shock is in fact followed by higher inflation in the short run. Known as the "price puzzle" (Sims 1992). It is possible that the current mild inflation readings are an example of the "price puzzle" working for a negative shock to the Taylor rule.

One argument that Sims put forward was that the price puzzle exists because the Fed's reaction function contains information about inflation that is missing from the CPI. This to our minds is of critical importance.

The Federal Reserve's Information Edge

There is strong evidence to the support the view that the information channels available to the commercial forecasters and those available to the Fed are asymmetric. The markets often implicitly acknowledge this; for example the reason that long yields rise when the Fed tightens is that the market believes the Fed has information it does not have.

Romer and Romer's study of this information edge came up with some interesting findings. By comparing commercial forecasting agencies inflation predictions with those of the Federal Reserve they concluded that the optimal forecasting strategy would be to discard the commercial forecasters altogether and just observe the Fed. In other words the Fed has a clear information edge possibly for the simple reason that they commit far more resources to forecasting than even the largest commercial organisation.

The coincident Fed inflation forecast is at 1.5-1.75 % and we believe that markets are not paying enough attention to what the Fed is saying. The markets have got too tied up in the idea that the Fed is making mistakes and has been wrong. The recent statement from the Fed on moving to a neutral stance was:

"Against the background of its long-run goals of price stability and sustainable economic growth and of the information currently available, the Committee believes that the risks are balanced with respect to prospects for both goals in the foreseeable future."

Current Measures of inflation

Goldman Sachs have designed a model they call the Fedflation model, this model relates swap rates to the historical behaviour of inflation and the Fed Funds target rate. The model currently suggests that the level of swaps is consistent with zero to negative year on year CPI growth, in fact the model suggests that either inflation needs to move into negative territory

soon or the swap curve is around 5 standard deviations rich or approximately 150bp. Goldman's lean towards the view that inflation will fall in the near term, we do not. The last time the Fedflation model found swaps to be so rich was at the end of the 1993 bull market.

Recent Data

- October All Items CPI increased at an annual rate of 3.4%. (large energy component).
- CPI Excluding Food and Energy rose 1.9% at an annual rate in October.
- Federal Reserve Bank of Cleveland Median CPI was at 3.4% in October.
- Yr on Yr the CPI Ex Food and Energy is up 2.2%.
- Median CPI is up 3.2%.
- Medical Care inflation is running at around 5%.
- Owner Equivalent Rent is up 3.7% year on year.
- Even Greespan's favoured "PCE Chain-type index" is at 1.6%.
- A recent survey of 60 economists' forecasts for the US CPI in 2003 show a mean of 2.2%.
- Rule of thumb for core inflation is 2/3 services and 1/3 goods. Core services are rising at around 4% and core goods are stable. Inflation is running around 2.5%.

Summary

Whilst we would concede that many of the touted inflation lead indicators that appear to be flagging a pick up are flawed, it is hard to get away from the reality that the inflation picture is stable which is after all the Central Bank's unwritten objective and that deflation is currently a headline grabbing concoction of the media and selected analysts. The concoction has clearly been drunk by the markets and 5yr breakevens at 1% offer a very attractive call option on inflation over the next few years, especially if you consider that the time lag for monetary policy to take effect is considered to be in the region of 18 months. On that basis 250bp of rate cuts have yet to take effect.

Tips

A significant proportion of the cheapness of the breakeven inflation rate at 5yrs is a function of the richness of 5yr swaps discussed above. The breakeven offers a number of possible solutions to this while holding a positive carry trade. Equally even if the breakeven remains the same for the time being with inflation at 1.9%. Every month that goes by further improves the forward breakeven.

Trade Management

We need to decide on a beta to apply to the relationship between the nominal and real bond as ever in trades such as these. The beta between the TIPS 3.625 2008 and the Treasury 6.125 2007 over the last six months is 0.685. It is important to look at the beta over specific periods of volatility. During the November 2001 sell off in the short end the beta dropped to 0.61 and during the October 2002 sell off it was 0.82. During the subsequent rally it dropped to 0.33. We have chosen to use a beta of 0.70, this gives us some comfort if there is a treasury rally from this level and gives us a possible benefit of being ovehedged if yields rise.

Stop

The breakeven inflation rate on the 5yr dropped to 0.74 in the 1998 LTCM crisis and this is therefore representative to us as defining a crisis. We will therefore set our stop at 25bp on the breakeven which puts us within a whisker of this level. The target for the breakeven is 1.80 which is the 5yr average and also more representative of where we feel inflation is and is likely to be over the next five years.

We believe this is an excellent trade, which matches all the required criteria of the investment process, and so we will allocate 1.2% of NAV in risk.

With the 25bp point stop we have in mind we will seek a trade with a BPV of $5,000.

If there are two consecutive months of deterioration in our lead indicators we will cut the trade whatever the spread. The target for the breakeven is 1.8%. We will monitor the beta and the correlation between this position and any other $US positions as we go.

Research Inputs

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3.4 SWITCH_EUR_GBP _SWAPSPRD_2Y

Technical and Supply Related Issues

Euro swap spreads have been narrowing since October on the back of declining risk aversion, worsening budgets, and curve steepening.

There is very little room for further tightening, as these present lows are record or near-record lows, the curve is already pricing in an ECB policy change, and the bigger budgets story is old news and fully priced in. Risk aversion, in our opinion, can only increase from here.

Britain shares with the Euro area a growing fiscal burden and declining tax receipts. Total Gilt issuance for the current year will end up being around 22 billion, 8 billion more than 01's issuance. And JPM forecasts issuance in 03 to more than double present levels (46 billion).

Unlike Europe, the extent of the government's financing needs was made apparent only recently with Gordon Brown's 27 Nov Pre-Budget report. The increase in issuance should have a tightening bias on spreads going into 03. Issuance will probably be distributed evenly across the curve.

The best relative value on a rich/cheap basis is in the 2y, where the current benchmark against maturity-matched swap spread is trading at 1.5 standard deviations wide of its 3-month average, while the German benchmark trades currently near its 3-month average with a z-score of only .2.

Furthermore, shorting the GBP spread and going long the EUR spread has both positive carry and positive slide.

Event Risk

Euro spreads will most likely trade within these recent ranges through 1Q03 and GBP spreads we see narrowing 4bp, although event risk opens up the possibility of both spreads widening. In a flight-to-quality scenario, which would widen more? It's hard to say, but both are likely to move in tandem, with the EUR spread hedging the GBP spread. Over the 10 Sep 02 - 24 Sep 02 period the swap spread differential between the two currencies remained unchanged, first narrowing, then widening, then narrowing to pre-sep11 levels (but later the differential narrowed further–as much as 5bp–into October).

6M-2Y Curve

Over the last month the 6m-2y curve has gone through a bullish steepening of 23bp in EUR and about 13bp bearish steepening in GBP. In Europe, the steeping is driven by expectations of an ECB cut being pushed forward (the 2y hardly budged) while in GBP the whole curve sold off on strong economic data and the appointment of hawkish Mervin King. This latter curve is fairly priced (although yield levels still seem too low given the STIR macro view), but the risk to the EUR curve is that the ECB stays on hold and the curve flattens, dampening receiving interest and widening spreads.

Furthermore, it should be noted that the 6m leg of the 6m-2y EUR curve explains just about all of the correlation between curve steepeness and 2y swap spreads; regressions of 2y spreads on 2y level over the last two and five months return an almost independent relationship. This is not the case with GBP (see attached plots), where over the last two months the 2y yield has explained over 50% of variation in spreads.

Carry and Rolldown

This trade also has positive carry and rolldown properties. For example:

HorizonDate	PNL Carry	PNL Slide
2Jan03	7	7
3Feb03	15	6

(Net PNL expressed in bp)

Risk

We will risk .4% of NAV (42,800 USD) on the trade. Our stop is set at an 8bp widening of the ss differential, the pvbp of the spread is approximately 1bp of

the notional, so the notional amount of the trade in USD is 53,500,000. The target is 8bp of narrowing.

3.5 LONG_EDU4_PUT

Global Macro Background

See separate heading Global Macro

Country Specific Issues

The information inputs that are important to us in assessing the likely path of the 3 month 2yr forward are: The housing market and its impact on consumption, the stock market and a selection of leading indicators.

The US housing market

Robert Shiller thoroughly examined the links between housing wealth, financial wealth and consumer spending in a Cowles foundation paper in Oct 2001. The conclusions that a change in the level of the stock market had no discernable effect on the change in per capita consumption and that a change in the value of housing had a significant effect, sit comfortably with what we know about the consumers exposure to these markets. The weakness in the stock market does not affect the consumers ability to consume but for psychological reasons it may make the option to consume seem less attractive.

1. 80% of the US stock market is owned by 10% of the families and the stock portfolios represent less than 25% of the net worth of this 10%.

2. 90% of families own over 50% of the housing and real estate market and this represents 80% of their net worth.

The total contribution of the housing sector to GDP when you add residential investment to housing consumption and housing related is close on 20%.

Borrowers use most of the money generated by cash-out refinancing to pay down higher cost of consumer credit, purchase consumer durables and make home improvements. The Federal Reserve estimates that 50% of mortgage borrowing ends up in higher household spending.

Housing market concerns

The marginal propensity to consume out of real capital gains in owner occupied housing is about 0.3. However this number arises out of an asymmetry in that there is no observable increase in consumption as a result of price rises but a significant decline in consumption as a result of price falls. Although moderation in the current 5.6% annual increases would not necessarily affect consumption, outright falls clearly would.

Prices are weaker at the high end of the market which is usually a sign for turning point in the whole market. Any slowing in the growth rate of refinancing will have a significant effect on consumption. More precisely, a slowdown in the growth of mortgage debt which covers a wider range of sources of credit. A halving of the growth in mortgage debt could create a negative demand shock of up to 2% of total consumer spending.

The ratio of household debt to disposable income has continued to grow through the recession for the first time post war.

It is a reasonable assumption that some or all of the drivers of this debt growth, namely falling interest rates, rising house prices, strong real income growth due to tax cuts will slow. Pimco have stated that they for one would not buy 30yr mortgage paper below 5%. This suggests that we are close to the low in mortgage rates and therefore the refinancing boom is within 12 months of a top.

If one chooses to draw parallels with Japan, note that it took 2 years for the property market in Japan to break.

There is a dual mortgage delivery system in the US whereby new types of lending organization provide distinctly different mortages products to lower income markets than those commonly offered in higher income markets. Conventional mortgages with the lowest rate and most favourable terms accounted for just 37% of the growth in lower income lending in 2000. Defaults are more common on the higher cost loans. A prolonged downturn could be devastating to these households. A moderate rise in rates is likely to expose major affordability in some markets.

Risks are that that further economic weakness

could trigger widespread defaults in the sub-prime laon section of the market which in turn would depress prices across the market. In 2001 15% of all home purchases had loan to value ratios equal to or greater than 95%, 5% of all homeowners had equity that was less than 5% of the value of their homes, with 9% having less than 10% equity.

Housing the Plus side

Employment is a key driver of housing market confidence and this is holding up at the moment. Weekly jobless claims have stabilized at levels below previous cyclical peaks. If employment does not deteriorate any further and rates remain low, why should households lose their appetite for additional debt and spending?

New home ownership is being driven by minorities who accounted for 40% of net new homeowners during the least five years. Immigrants have moved from 5% of US population to 11% since 1970 and there is no reason for this trend to change.

Building permits authorized, one of the most consistent forecasting tools of all the U.S. Home sales leading indicators remain at a peak.

Summary

A negative demand shock resulting from deterioration in one of the drivers of the refinancing boom is a high probability outcome the timing of which is hard to predict.

The Stock Market

The financial equivalent of "if it bleeds it leads" has brought short termism to new levels. This is not a time to be short term.

Many investors argue that the market is due for strong technology led gains in the first quarter of 2003. Yet when BCA modelled the old bubbles in gold and the Nikkei they concluded that although the Nasdaq bubble had burst, the index was likely to go sideways for the next 20 years.

Whilst there have only been 5 years in the history of the S&P that have seen declines of the magnitude of this year and they have all been followed by years of gains, if we look at a 10yr rate of return history it is clear that we are in for at least another 10 yrs of single figure returns.

All the major consumer confidence cycles of the last 30 years have ended with readings below 60, as have all the bear market cycles. The Consumer Confidence index currently stands at 80.

Bearish sentiment indicators are coming off multiple year highs by such measures as the American Association of Individual Investors Sentiment index, indicating that some bounce is likely.

Leading Indicators

Liquidity

STIR have been following carefully the research of Cross Border Capital. Crossborder make a distinction between money supply, interest rates and liquidity. Their liquidity indices (comprised of coincident data which is a lead indicator of the OECD leading indicator) measure credit in excess of the needs of the real economy. At a time when there are many possible distortions in the monetary data and the GDP-weighted average interest rate is 2.9%, it seems prudent to look at indicators that go beyond the cost of credit.

The planks to the Cross Border argument are as follows.

1. Low nominal interest rates overstate the degree of ease. Interest rates are not the price of money (i.e., purchasing power), they are the cost of credit which is forced down because no one wants to borrow.

2. Broad money growth is exaggerated because the uncertain economic outlook forces up precautionary savings balances.

3. Monetary velocity is positively correlated with inflation/deflation, so the efficiency of money can drop in a deflating environment.

The liquidity indicators, despite tailing off recently, suggest that there is adequate liquidity to stimulate

an upturn in the economy, albeit they have recently turned down again indicating only moderate growth in the US next year. In terms of provision of liquidity the Fed is running the most aggressive policy in the G10 today.

Some alternative measures of the purchasing power of money in this environment

The CRB index is within 1% of 5yr highs indicating little pessimism on the growth outlook.

Gold remains below the trading range of 1989-1996 that preceded this period of deflation. The end of Central Bank selling may have driven some of the recent rally and the war risk premium may also be inflating the price. So we would rather see a move above $350 to confirm that reflation was underway. It is an open question what importance Greenspan attaches to gold. In the current environment it may be that some of his thinking in the 1990's is relevant for today.

> Gold is a different type of commodity because virtually all of the gold that has ever been produced still exists. And therefore changes in the level of production have very little effect on the ongoing price, which means that it's virtually wholly a monetary demand phenomenon. So it's a store of value measure, which has shown a fairly consistent lead on inflation expectations and has been over the years a reasonably good indicator. It does this better than commodity prices or a lot of other things.[1]

> ... like a lot of commodity prices, and perhaps better than most, [the gold price] has been useful, in my judgement, in trying to get some sense of what inflationary pressures have evolved in this country.[2]

Stock Watson Indicators.

- The Experimental Coincident index assigns a probability of 4% that the economy was in recession in Sep 2002.
- The Experimental Leading index is forecasting a pick up in the growth of the coincident index from 1.2% to 3.3% annualised growth.
- The Experimental Recession index suggests a probability of 3% that the economy will be in recession in March 2003.

Yield Curve as a predictor of recession

Using the model devised by Frederic Mishkin, former head of research at the Federal Reserve Bank of New York, which estimates recession probabilities using the yield curve spread; and noting that the spread between 3-month T bills and 10yr treasury notes has successfully predicted the last five recessions, although in 1990-1991 the curve only predicted a 25% chance of a recession it was back to form with a 50% prediction in 2000. Currently the yield curve model indicates that the probability of a recession at the end of 2003 is sub 1%. The 3month 10yr yield spread 1 yr forward is at 250 bp. In other words, the curve is predicting a zero probability of a double dip recession.

What is the market discounting?

As seen from above the yield curve is not discounting a recession. In fact 3-month libor versus 2yr swaps 6-months forward is already mimicking the spread that has been typical 120 days after the end of an easing cycle. Long term TIPS, which in 1998 got to a breakeven inflation rate of 60bp are currently showing breakeven closer to 160bp. Japanese year on year CPI first moved into negative year on year growth around the end of 1986. If we look at the yield curve in Japan 1-yr prior to this we observe that the spread between the discount rate and 10yr yields was 136bp, if the market were pricing in deflation next year, we might expect the US curve to be flatter than 290 bp.

[1] Alan Greenspan, *Semi-annual Testimony to Congress*, Fall 1994.

[2] Alan Greenspan, *Comments to Senate Banking Committee*, February 1999

Microstructure

The explosion in the refinancing boom and the continued growth of mortgage debt could result in an accelerating sell-off in the market much as was seen in November of last year. Similar to last year, this would be accentuated by year-end risk aversion from the leveraged investment community. Although the Eurodollar sentiment indicator is at the middle of its range the Treasury sentiment indicator is at 2-year highs. Similarly, bearish sentiment readings for stocks are just coming off a 5yr high. Talks with various Fund of Fund managers indicate that hedge funds are very long the front end of the US curve. Retail investors have invested heavily in bond funds in the last quarter, which has been another factor in taking yields to their lows.

Contrary Opinion

Ken Windheim, Strategic Asset Management

The corporate sector is not going to be focussed on increasing investment against a backdrop of governance concerns until there is a clear pick up in final demand. Capacity utilization is moving back down to the lows seen in Sep 2001. The US housing market is leveraged and the consumer's comfort is one of the final givens in the bull market mania that has yet to break. The productivity miracle is a Greenspan invention, which is distorted by imported components and incorrect treatment of computer price deflation. Durable goods unfilled orders are still falling precipitously.

Bill Dudley, Goldman Sachs

While job losses are abating, continuing claims remain high. Consumer spending remains patchy, service sector activity is sluggish, low tax receipts will force budget cuts at a state level offsetting any planned fiscal stimulus. Easy monetary policy is being undermined by weak equity prices, a strong dollar and widening credit spreads.

Value

The 2yr note backed up to 3.71 in March and is currently trading at 2.10. A move back to a neutral Fed funds rate reflecting 3-4% real rates would imply a libor of between 5% and 6%. With EDU4 trading at 3.20 there is substantial room for a sell off if the market catches a recovery theme. We are reluctant to trade short the 2yr note as it is potentially susceptible to trading special in this environment. Given the uncertain implication of rate rises on the housing sector, we are reluctant to trade the short much beyond 2004 in case the market decides to flatten the curve on housing weakness concerns going forward. A possible scenario on which this trade is based is the market returning to worrying about the timing of Fed rate hikes as it did in the first quarter. Analysis of the 1-2's curve shows that this part of the curve tends to steepen four to six months prior to a Fed tightening. In March the spread was at 50bp compared to 10bp today. Term premia in 3month 1yr forward Eurodollars are negative around 30bp. The move of the term premia to a positive reading will be the initial driver of weakness ex-policy movement. Two year treasuries have been range trading over the last month between yields of 2.23 and (currently) 1.99. This is a mere 35.5bp over Dec. 30-day Fed Funds. JPM ran a regression of this spread on S&P 500 level. According to the regression line ($R^2 = .82$) this spread should be at about 60bp given the current level of the S&P (873). We are somewhat sceptical of this analysis.

If the Fed cuts by 50bp in November, the 2yr at 2% will represent 75bp over funds with rates possibly staying on hold for another year. If the central view is that the Fed will remain on hold for 6-12 months, then an upside limit for 3-month libor to 2yr notes is around 150bp based on previous rate cycles. This would suggest that 2.25% to 2.50% is the most sensible downside target.

Probability inferred through options

The options market is indicating 26% probability that 3-month libor will be above 3% in Sep 2004. We think this probability could easily move to around 50%, if some of the recent data reverses.

Risks

If the refinancing boom were to end before the new investment boom begins, the US economy is likely to go back into recession.

We believe that there is a built in war/terrorist premium in the market's risk profile and further Al-Qaeda activity is unlikely to affect markets greatly unless it is nuclear or biological in nature.

Trade Implementation and Management

We anticipate that speculation ahead of Nov FOMC meeting will push EDU4 close to or through the highs. This is where we will seek to implement the trade. We are not concerned by a 50bp cut as a great deal is discounted in the market and it would likely be regarded as the last for some time. We have chosen the EDU4 contract for reasons that are explained in 1. We are using options rather than outright because of the risk of a 50bp cut plus maintenance of an weakness bias.

We will monitor the trade closely for downside fails as a large part of the rationale is simply an unwind of significant market longs. For the same reason EDU4 targets are:

Now	96.80	96.10	95.75	Stop 97.20
96.50P	0.59	1.01	1.15	0.39

If we risk 1.2% NAV with a stop at 97.20 equivalent, then a move to the target price around 96 would give a P&L of approximately 2.9%. This is with a position of 240 lots in the 96.50 puts.

Stop

We will allow for any volatility around the rate decision by setting a stop well above contract highs at 97.20.

Trade Management

The up trend line for EDU4 is around 96.13 and the contract high is 96.86. A substantial rate cut is needed to keep that market at these levels. With around 50bp priced in it is not clear that the market will have enough to look forward to to hold these levels even after a cut. If our forecast of year-end liquidation in Eurodollars is correct, then EDU4 could trade back to an initial level of 96.00. Fibonacci retracement. 38% is 95.70

2-years to Fed Funds should find support at 100 over funds. But this should not be taken too seriously given the move to 200 over funds in late March. Were the 2-year to trade 150 over funds by the end of the first quarter, it is quite possible for EDU4 to trade at 95.50 to 95.75.

It is to be remembered that at this point the trade is an expectation that at some point over the next quarter either a rally in equities or some stronger numbers will shake the bull's confidence and cause a liquidation move of some violence given the positions in the market. This is not a reflection of a firm view that the marker has topped out or that the interest rate cycle is clearly turning again. Thus, if the market starts to trade clean again before the target levels are reached, we will exit the trade.

Equally, one rate cut is unlikely to be enough to trigger our stop given what is discounted in the market. So, the stop will be reviewed post the delivered rate cut. If Goldman Sachs' forecast for a 75bp cut by year-end, then EDH3 could move to 98.50/60 or a 30bp premium over funds. Even in this scenario we would still not be stopped out without a significant curve flattening. (EDH3-EDH4 at 150 now.)

Volatility paid on this trade approached 41%, a level down from 47 in recent weeks. The initial phase of a sell off like that anticipated will display stable to rising put vol. Subsequent to the liquidation of longs, volatility is likely to fall. It is possible that we could be looking to sell the puts into declining volatility, which may reduce the P&L but is not a reason to hold back.

Given that we are not calling a strategic shift in the picture, we will move the stop to cost very rapidly. Equally well will lock in every incremental $\frac{1}{2}$% NAV gain with a stop shift.

Barring being stopped-out, we will run this position through the end of November Conference Board release. The Conference Board's Consumer Confidence index has fallen in October in each of the

last 12 years it rarely fails to bounce.

Key pointers for the trade and Risks.

- This trade does not require any particular event to occur for it to work.
- Signs that it was weakening would include a substantial fall in open interest, downside fails, institutional liquidation, systems funds getting to maximum short.
- Beware, weak housing data.
- If we get strong data coming in, increase the size of the trade and roll down the trade into more out-of-the-money puts immediately. The market is too weak to digest this and the first mover will not be the last.

Size

We will allocate maximum NAV to this position. The target return is approximately 1.5%. We will buy 240 EDU4 96.50 puts.

Portfolio

Inclusion of this trade reduces the VAR of the portfolio towards 0.5%.

Research Inputs

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Stock, James H, Watson, Mark W (2000), " A procedure for Predicting Recessions with Leading Indicators: Econometric Issues and Recent Experience".

Miller, Stephen M, Smyth, David, 1999, " Using Leading Indicators to Forecast U.S. Home Sales in a Bayesian Vector Autoregressive Framework".

Postmortem

The position retraced 50% off the peak profit and we cut it at .73 for a profit of $63,000. As the market moved back to the top of its trading range on heightened Iraq war fears we reinstated the trade.

Chapter 4

Trade Summaries (Open Positions)

4.1 SHORT_JPY_2Y_3Y_FWD

County Specific Issues

The second biggest economy in the world!
It is easy to forget that Japan is the second largest economy in the world. Japanese politicians are a laughing stock, the Japanese political system since Koizumi decided to work his reforms from within the LDP instead of from the front of the breakaway Democratic party, has become a one party system. Dealings in the Japanese money markets are almost non-existent since transaction costs are prohibitive in a zero rate environment and the largest government bond market in the world is not only 96% owned by domestic investors but is rated by Moody's on a par with Botswana.

This is, of course, not new news. What is critical for any macro trade in Japan outside the currency play is what is going to change. We believe that changes are afoot and that the moment of truth for Japanese policy makers is close.

The Topix is hovering at 19-year lows, the government bond market has already shown one wobble, the deficit continues to balloon, China is grabbing export market share, Takenaka has been appointed Economics minister and has already tabled aggressive policies for the Japanese banking sector and resolution of the NPL issue. The lengthy preoccupation with putting a floor under equities (which has so far failed) is now being transferred to concerns that a collapse in bond prices would have a far more serious effect on the banks. The difficulty is that it is hard to imagine how a recapitalization of the banks in any form would not result in higher yields in the bond market. A bond market rout is another possible catalyst for change. Just as the government has failed to halt the slide in equities it is unlikely to halt the rise in bond yields.

Bring back Takahashi. (The finance minister in the 30's whose policies led to hyperinflation).
In our opinion the "Japanese Inertia Rhetoric" has acquired an inertia of its own and commentators are ignoring a clear shift in emphasis within the government and the BOJ.

Examination of recent minutes makes this quite clear.

1. We are prepared to ignore the underlying talk of "inflation targetting" as an option for the BOJ, primarily because it is clear the BOJ do not believe they know what policy tools to adopt to achieve this end or what exactly the transmission mechanism might be. Equally, it is hard to ascertain what is the difference between the current quantitative easing and "inflation targetting". One policy is waiting for the CPI to reach zero or positive readings and the other would presumably try and induce this outcome in as short a time frame as possible. The principal difference seems to be one of timing. The internal BOJ concerns that "inflation targetting" would undermine bond yields and thus the credibility of the BOJ is an argument that we cannot accept is really taken seriously. This would be a bit like Paul Volker saying he would not raise in-

terest rates to combat inflation because initially bond yields would rise. It is taken that what achieves credibility is a decisive move towards a widely acknowledged beneficial end.

2. The government and the BOJ are working together to seek any credible or even incredible solution to the deflation problem. Mr Fujii, the deputy vice minister for Policy and Planning at the Ministry of Finance recently said at a BOJ meeting, "The government would like the bank to consider implementing drastic and effective monetary policy measures, which might not be based on conventional thinking or frameworks, from the viewpoint of improving both the quality and quantity of liquidity".

3. The government is also known to support the "New Intiative toward Financial System Stability". This initiative supports the idea of the bank purchasing stocks held by banks as a method of easing the pressures on the financial intermediary function. It also would improve the functioning of the economy by unwinding cross shareholdings.

4. The vice minister for Economic and Fiscal Policy at the Cabinet office, Mr Kobayashi, stated recently that, "the government and the bank should work together to implement powerful and comprehensive measures in order to accelerate the resolution of the the NPL problem and to overcome deflation... the government would like the bank to continue to seek policy measures that were effective in overcoming deflation, and these measures should be sought from a wide range of options including ones that might not be based on conventional frameworks".

The counter claims, that a rise in long term rates before the economic recovery was in place would cause a hard landing, seems to assume that financial markets in Japan have to suspend their lead indicator features for the benefit of the BOJ and government. This is patently absurd.

It is also possible that the extent of banks exposure to JGBs is being overestimated as banks have been controlling risk and generally reducing duration in their portfolios.

Non-Performing Loans

The aggressive proposals from the new Economics minister Takenaka that met some initial resistance should be regarded as an opening shot in the move towards a radical policy shift. Clearly any move to resolve the NPL situation quickly might have a dampening effect on the volume of loans as well as consumer confidence due to increased bankruptcies and layoffs. This seems to us to be microanalysis of what is a prototypically macro issue. It is just as possible that banks and consumers would respond so favourably to realistic affirmative policy measures that confidence and the risk appetite of banks would increase significantly overnight. This is effectively the reverse of the current Ricardian equivalence that exists in Japan, where consumers see the fiscal folly of tax cuts and respond with offsetting prudence by increasing savings.

The Yen

Finance Minister Shiokawa recently said the Yen is strong relative to purchasing power parity. Well, so what? It has been for 15 years. This may be seen as a statement that Japan should devalue its way out of the deflation but we do not see this as a likely outcome. There is no quick solution to the US current account deficit and the current stability of the dollar is in our view merely a function of the global political and economic risk profile, which is encouraging investors to remain in dollars even as the long term prospects for US assets has deteriorated. Once the outlook on both these fronts becomes clearer we believe overseas funds parked in US treasuries will be withdrawn and the $US will resume its decline. There is also simultaneous talk of a revaluation of the Yuan, which certainly the Japanese regard as too cheap versus the Yen.

Liquidity

Whichever way you look at it monetary policy is highly accommodative in Japan, the price of money is zero and the quantity of money as measured by the monetary base as a ratio to nominal GDP is around twice that of the other major G10 economies. The monetary base which is a quantitative monetary indicator is composed of current balances held at the Bank of Japan and cash in circulation. Its growth rate took off in 2001 reaching growth levels of over 30% yr on yr, in turn the ratio of monetary base to nominal GDP reached 17% the second highest figure in 100 years and only matched by the ratio during the second world war.

This rise in the monetaty base has been engineered in large part by the BOJ raising the target level of current account balances several times, but cash in circulation has played its part increasing at a year on year rate of 10%. The BOJ are fully aware that normally high rates of increase are accompanied by high inflation and high nominal economic growth, and although this policy has not yet worked to their satisfaction, it does have a 9 month lead into improving leading economic indicators. We anticipate the BOJ will pursue this policy with increased vigour even though monetary base growth has come off its 2001 peak due to a decline in cash in circulation which is highly volatile in a situation like this.

It is probable that the BOJ realises that there comes a point where yields on long term debt become so low that they become the equivalent of reserves themselves, in such a situation the bank would achieve few easing benefits by continuing to buy JGBs.

Short term indicators

There has been some data revision in Japan in recent days, which suggests the economy has not been quite as weak as originally supposed. GDP for 2000 and 2001 has been revised up and interestingly real GDP for 2001 is now reported at 0.3% compared to 0.2% for the US in the same period.

The WPI rose by 0.1% in November, bringing the year on year rate to 0.3%, suggesting an easing in the deflation. Perhaps we are closer to the end of deflation than the market is allowing for.

Conclusion

A radical attempt to resolve the NPL and deflation problems in Japan other than a devaluation of the Yen is now a high probability outcome. The equity buy back program certainly gives weight to the argument that Japan is close to the point of doing whatever it takes. Whether this takes the form of recapitalization of the banks, a further increase in the monetary base, attempts to convince the public that the government will actively pursue inflation thus creating an expected negative real forward interest rate or a solution that has not been considered, it is clear that the full imagination of Japanese policymakers is now on the case.

Microstructure

The composition of the investor base in the market is so uniform in type that the likelihood of a significant break down is the market is high. It is unlikely based on observation of Japanese investors in the bond markets over time that they will see the get out sign until it is way too late. The whole bond market and not just the long end is being artificially supported. Long term rates at sub 1% show a substantial deviation from the long run average real interest rate in the developed economies of 3.5%. There is no reason to suppose that the Japanese will be able to manage this market in an orderly fashion when the bond bubble bursts.

There is a strong consensus that a yield curve steepening from 5-10yrs is the way the market will adjust. We are not so sure, any aggressive rise in yields in Japan would hurt almost everyone, if the rise was led by the short end and the yen strengthened the rout would be complete.

There is a clear short bias amongst international investors in JGBs but the size of these positions has little relevance.

A great deal of negativity is discounted in the market. After all the major Japanese banks lost more than 60% of their market value from the beginning of

October to mid November and they are yet to bounce. The Topix bank index is now 85% off its 1990 high.

Contrary Opinion

Commentators who believe that there is no near term solution to the Japanese malaise are too numerous to list.

Trade

2yr-3yr swap spread 2yrs forward combined with a 2yr-3yr forward outright short.

This trade is based on the premise that when rates were close to zero in Feb 1999 to July 2000 the curve was significantly steeper than it is today. Whilst the principal difference is the commitment to a positive CPI which has acted to extend outwards the projections for a rate rise, in our view this is not an adequate reason for the market to effectively say that the probability of a rate rise 2yrs forward in Japan is lower now than it was in 1998.

The aim of the trade is to express a bearish view in the 2yr section of the Yen swap curve with a 1yr time horizon on the trade.

We have decided to express the trade through two positions. A 2s 3s forward steepener and an outright short in the 2yr 3yr forwards. The outright short is an expensive position to carry and if old relationships hold the lower negative carry forward steepener will produce a similar risk reward payoff. However, given the likely stressors in the market were the policy makers to implement dramatic reforms or were the market to impose their own form of pressurised reform we wish to hedge the curve bet. As expressed above we have some concerns about a bearish curve steepening anyway and positioning in the 2s 3s steepener will give us an early warning signal if a bearish flattening is in the offing allowing us to switch all the risk to an outright short.

The breakeven for a short in the 2yr 3yr forward is 40bp over 3 years, whereas in the 2s 3s 3yr forward steepener it is 7bp.

If we examine the data a regression of 2s 3s on the 2yr level for the last 3 months reveals an r2 of 0.64 and a coefficient of 0.80. If recent history were our base case we could expect 4/5ths of a basis point steepening for every basis point increase in the 2yr level. Recent history is unlikely to be the best guide to the relationship between slope and level in a sell off. If we take the period between April 1997 and May 1997, the last time the 2yr had a large sell off we get weaker readings. The coefficient drops t 024 and r2 increases to 0.85. If we therefore use this period as our base case, the steepener has an expected breakeven of 29bp which beats the 2yr 3yr forward breakeven of 40bp.

Furthermore the rolldown on the steepener is better than on the outright. Assuming a notional forward swap position of 100,000,000 yen, here are the near term rolldown profiles.

Date	2y3y	2s3s3y
6 Jan 03	-30,000	-12,000
4 Feb 03	-59,000	-23,000
4 Mar 03	-86,000	-32,000

A steepener between terms one year apart will almost always outperform outright positions on slide, provided the curve is not too convex. The curvature of JPY at the moment is almost linear, suggesting that the market does not have much conviction either way regarding the future shape of the curve.

Stop & Sizing of Trade

The stop is set at 20bp for the short 2yr 3yr forward. Using the last 12 months of data, this is equivalent to a 1 standard deviation move over a 1 year horizon. Also using 12 months of data, the standard deviation of the 2s 3s 2-years forward spread is about 4bp. We will set the stop for the steepener at 1.5 standard deviations around the yearly mean(6bp), as the distribution of this spread has more kurtosis than the distribution of 2y3yforward.

We are risking 1.2% of NAV, .6% for each leg of the trade:

Swap	Stop bp	Stop %	$Stop_{\$}$	$Stop_{Yen}$
2y3yfwd	20bp	0.006	63,330	7,829,488
2s3s2yfwd	6bp	0.006	63,330	7,829,488

Swap	DVO1
2y3yfwd	-2.00
2y2yfwd	2.00
3y2yfwd	-2.99

We relate the bp stops to the notional size of the trade via the DVO1's of the swaps:

$$(stop) \times (DV01) \times (notional) = (stop_{yen})$$

Hence, the size of the contract is:

$$Notional = \frac{(stop_{yen})}{[(stop) \times (DV01)]}$$

The size of the 2y3y fwd trade is 1,957,372,000 yen
The size of the 2y2y fwd trade is 6,524,573,333 yen
The size of the 3y2y fwd trade is 4,364,263,099 yen

Trade Management

Any sign of a breakdown in the correlation between the 2yr level and the 2s 3s steepener we would take as a warning sign that the curve is not going to steepen as well as validating the bear move. We would then switch all risk into the outright short. Any major policy move that induces a rise in yields we will use to increase exposure to the short side in Japan.

Key Pointers for the trade and risks

A total loss of confidence by domestic investors resulting in a government bond market meltdown that pushes swaps further through governments. An aggressive inflation targeting mandate from the BOJ which causes the longer term curve to flatten. A revaluation of the Yuan.

Research Inputs

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Chapter 5

Trade Summaries (Closed Positions)

5.1 FLAT_EURIBOR_MAR3 _JUN3

Futures leg of the trade

There is a bias within the ECB voting structure towards the policy of the lowest inflation tolerance voter. In effect, the ECB is a clone of the Bundesbank. This is likely to cause reactive delay in the face of current data and so the probable scenario is that rate cut expectations move along the curve causing the ERH3-ERM3 spread to invert. To take advantage of this:

Sell ERH3 at 96.97
Buy ERM at 96.87

Hedge with a mid curve steepener conditional on market rally:

Buy ERH3C 97.125 at .12
Sell ORH3C 96.625 at 0.12

An aggressive short term cut by the ECB will steepen H3/M3 by as much as 15bp but this will be compensated for by the cheap entry into the conditional curve steepener.

Stop-loss

If the spread moves to +25, then either the bull argument will be over or they will have already cut. Therefore, 25 is a stop point.

If the ECB cut in the near term by 25, the trade is likely to move into profit.

If they cut by 50bp prior to February, we would unwind the whole trade.

Trade Management

The target for the trade is -15 on the spread. If rate cuts are still in the air coming into march expiry, it could move to -.25 As time passes the profit expectation will rise.

2 months of pick up in the EU lead indicators would be enough to cut the trade. The key inidicators are as follows.

Risks

The main risk is a rise in inflation expectations resulting in a major curve steepening.

There is some risk that the 04 area enjoys a significant rally at the expense of 03. This would hurt the conditional steepener.

The optimal scenario is for rate cut expectations to build in the first quarter. If sell-offs occur buy back elements of the short in the mid curve as premium drops below 6.

Options leg of the trade

This is a separate trade that uses the same research inputs as the ERU3 long described earlier.

The strongest view in STIR at the moment is that the ECB will eventually either create a downturn or

respond aggressively to the prospect of one. Thus, in addition to the long, we are also putting on a relative value trade that plays off the front end yield curve against the curve slightly further out.

Trade

Short March 2003 Euribor
Long June 2003 Euribor
Long March 2003 97.125 Euribor Calls at 0.12
Short the March 2003 96.625 mid curve options at 0.12

This trade is predicated on the possibility of a delay in the ECB responding to the weakening economy. The premise is that if the ECB delay into the first quarter of next year, March June will invert by up to 15bp from the current position of plus 5bp. The conditional curve steepener puts us in March 2003 - March 2004 at 50bp. We are protected against a short term aggressive cut as the curve should steepen from 2003 to 2004. The emphasis on this trade is in the front contract spread and the conditional curve steepener is a hedge.

Trade Management

We will risk 10bp on the trade or O.6% of NAV. If the ECB cuts rates by any amount before the end of 2002, we will cut the trade. If prior to this the trade shows a profit of 15bp, we will take it. A move against us of 0.5bp on the overall trade will result in us cutting.

Post Mortem

The position traded like a long but the overall position was stable. We were not concerned by the relationship with our outright long in ERU3 because there was going to come a point in a sell off where the curve steepened if the sell off was genuinely predicated on improved growth prospects in the Eurozone. When the ECB cut 50bp at the beginning of December we cut the trade.

5.2 LONG_ERU3

Global Macro Background

See 1

Country Specific Issues

This trade is a component of the company view that the widening in the US/EURO yield spread that has been in place since mid 1999 is now over. The requirements are in place for this spread to move back to positive as US rates rise, the dollar falls and the Eurozone continues to wrestle with the stability pact and other teething problems of EMU. With exports accounting for a mere 1.3% of Eurozone GDP and the US buying a mere 10% of those exports, a growth spurt in the US is unlikely to make a significant impact on the region. Unless the dollar rallies significantly, the prerequisite for a sharp increase in activity in the Eurozone (e.g. an export led recovery) is improbable. Observation of the spread between Eurozone and US unemployment over the last 4 years and Eurozone and US 5yr yield spread demonstrates a correlation of 0.86 with and $R^2 = 0.74$. Interestingly, the correlation deteriorates over a 10yr history despite the apparent visual symmetry in the chart, which has been sited as relevant by some researchers.

The principle drivers behind this trade are the liquidity indicators, the lack of relevance of M3 and the decision making mechanisms of the ECB *leading indicators*. Quite apart from the well known problems of weak capital goods production, poor incentives for job creation and the Growth and Stability Pact handcuffing fiscal policy.

Liquidity

The twin pillars of ECB policy are "the internal inflation forecast" and the "M3 reference rate of 4.5%".

Taking the latter first, the M3 reference rate of 4.5% is derived by adding 2.25% growth to 1.5% inflation and 0.75% velocity of circulation. The principal problem with this indicator at a time where demand for credit is weak and monetary deflation is a risk, is that the velocity of circulation is positively correlated with inflation/deflation. Consequently, in an economic zone where 90% of corporate debt outstanding is in the form of bank loans, changes in financing requirements can distort upwardly the demand for credit without actually implying an increase in investment and moves higher in the monetary indicators can reflect an increase in precautionary savings which is flagged by lower velocity of circulation. Issing is certainly conscious of this concern around the M3 reference rate.

Furthermore, the efficacy of the M3 reference rate as a useful tool for predicting inflation has been seriously challenged in a number of studies. Svensson argues that is it is little more than a noisy indicator of current inflation rather than a reliable indicator of future inflation and Glenn Rudebusch in "Eurosystem Monetary Targeting: Lessons form U.S. Data", demonstrates that the the correlation coefficient of current monetary growth and equilibrium inflation forecasts 8 quarters out (most relevant period for monetary policy) are as low as .13. Rudebusch discovers that this inefficiency is not due to potential instability of money demand but that the central bank reaction function that results from this data is ineffective in stabilizing inflation.

While the banking sector represents a far more significant risk for the Eurozone than the for the US, this should not be overstated. Bad debts as a percentage of the loan book for German banks are at a very reasonable level below 1%.

It is possible that the money and loan growth that is concerning the ECB could be corporates accessing bank credit because of weak earnings and difficult securities markets. The robust M3 data may easily reflect a similar situation to what was observed in Japan in the early 90's, where savings started to increase as credit growth collapsed. The Cross Border liquidity indicators for central bank liquidity appear to support this view, the indicator, which acts as a lead indicator for the Eurozone leading indicator, is at a 30yr low and is clearly predicting recession in 2003.

Gold prices in Euros–despite a strong rally from early 2001–has failed to make any headway since May, suggesting inflation is not yet on the cards.

ECB Policy

The Lucas Critique and Decision Making process of the Central Bank.

It has been demonstrated that ECB members vote on policy changes in a manner that can be justified by the differential between their national inflation rate and the EMU average.

According to the ECB treaty the vote cast by the president is decisive in case of a tie. Thus the president's vote carries more weight than the other 17. 6 member states have 2 votes and 12 have 1. Game theory models have demonstrated (Rasmus Fatum) that the voting rules of the ECB give a result that is bias towards the most inflation averse state. Fatum's findings provide theoretical support for the "Twin Sister Hypothesis" and the perception of the ECB implementing the policy of the Bundesbank rather than the policy of an average union-wide central bank.

The Lucas Critique, which argues that policy regime shifts change the structure of the economic system under investigation, suggests that the move to European monetary union would throw into chaos the traditional econometrically estimated behavioral equations for the term structure that applied pre-EMU. The Institute for Empirical Research in Economics has demonstrated that this has not been the case in the EMU countries with the exception of Germany, whom it could be argued suffered the greatest shock from EMU and appears not to be behaving in accordance with the traditional models.

EMU has created many problems that have yet to be solved, from the structure of the ECB enshrined in the ECB treaty to the interpretation of models relating to the term structure in the combined states. It is our perception that whilst this will induce a tendency towards policy inertia, it may equally stimulate periodic high volatility as the market struggles to interpret what is happening. For the time being we are inclined to treat their decision making as mimicking the Bundesbank and the rhetoric that comes from those who assume the ECB is representive of a multination super state as empty.

Leading Indicators

The principal leading indicators we observe for the Eurozone.

- Production Expectations: Stable possible signs of an upturn.
- Industry Confidence Indicator: Although very weak, recently turning up.
- Economic Sentiment: Stuck at Sep 11 lows.
- OECD Leading Indicator: Modest weak trend.
- Demand for cars: Picking up since mid year.
- Real Interest Rate: Stimulative.
- Real Short Rates.

The real short rate has only been below 1% once in the last 20 years in Germany. Whilst the German real short rate currently stands at 1.9%, the Eurozone Real Short Rate is at 1%. With the current uncertainty the ECB faces in interpreting data in a highly unusual environment added to the foetal stage of EMU, it is hard to imagine that they will take significant risks with a measure that has served them well for so long. With Eurozone consensus inflation forecasts for 2003 at around 1.7%, we would regard a Refinancing rate of 2.75% as a bottom, barring any further aggressive deflationary shock.

These lead indicators are specifically chosen from the large selection of indicators available for their robustness under rigorous testing in and out of sample.

Belgian Business Indicators

75% of Belgian exports go to Eurozone. So Belgian lead indicators are a good proxy for Eurozone activity. Belgian Consumer confidence: Still weakening. Belgian Business Confidence: Still weakening.

Weak producer input prices in Germany are a fair lead indicator of future inflation.

Currency

The rally in the Euro in the early part of 2002 will still be exercising a drag on inflation. The lead-time on such a move in competitiveness is usually 6-12 months. Any removal in the global risk premium will likely result in a further reallocation of funds out of the US, which in turn is likely to lead to a weaker dollar.

Microstructure

Having been very long the strong move down in Euribor today is a clear sign of long capitulation. Given that the market is now much cleaner, a move back above 97.00 should be effortless.

The term premia

A spread between the consensus rate forecasts and the market forwards are currently showing a negligible premium down from premiums of around 20bp. This is a proxy for sentiment.

Contrary Opinion

- ECB: Uncomfortable with the idea that we are in a monetary deflation where such measures of the purchasing power of money such a gold in Euros.
- ECB: Feel that low real rates and strong broad money growth and credit growth are adequate to sustain growth.
- ECB: the introduction of the Euro continues to distort measures of Central Bank Money and indicators of extreme liquidity tightness may be wrong.

Mike Dudley, UBS Connor. The market is extremely long Euribor, the political situation in the Eurozone is unstable and will not be able to resist large wage claims as is occurring in the UK. The fiscal pact is clearly unsustainable and the ECB will move for a modification, thus opening the door for fiscal stimulus to work alongside interest rate stimulus.

Value

Examination of the EONIA curve suggests that the recent sell-off has left no rate cut priced in for November and no cut for most of next year. Euribor should be able to price in 50bp by the middle of 2003 without stretching the imagination.

Our view that excess caution by the ECB remains a risk with cuts coming in direct response to better inflation numbers during 2003. We are less inclined to place our bet at the short end as we see the risk of delay as being high. Were such a delay to come about, it would potentially increase the need for easing in 2003.

Market is assigning a probability of 22% to rates being below 3% by the 3rd quarter of 2003, we think this could move north of 50%.

Trade Implementation and Management

There has been a significant build up of speculative longs in the Euromarket and a sell off is overdue. As this materializes it is important to remember that the sell off is only a function of short term unwinds prompted by bearish comments from Duisenberg rather than a reflection of the fundamental easing bias that should be discounted in the curve through 2003. A move by Sep 2003 to discounting a rate rise would represent an excellent buying opportunity as the probability remains for a cut of 25-50bp. Thus, buying as the market moves towards 96.50 resistance and value binary point. 96.50 was the yield low during the Sep 11th crisis.

Stop

A close below 96.50 would open the market up to selling off to 96.12. This would be a good point to

reassess trying the trade again. So, we will set a stop at 96.40 or any close below 96.50.

Trade management

The target for the trade is the market discounting a 50bp rate cut. We will take off $\frac{1}{2}$ the position at the old highs of around 97.10 and run the other $\frac{1}{2}$ towards 97.25. The market should now be much cleaner than it was and we should not be phased by hawkish comments from the ECB. The assumption is that they are missing the point so we will continue to trade off the data not the words of the bankers.

Risks

The possibility of a deeper sell of in US treasuries with the 2yr moving towards 2.45. Now that we have had some of the longs out of Euribor this should not be a problem. It is perfectly possible for the EDU3/ERU3 spread to move to 50bp from the current 90.

A strong pick up in the lead indicators in Eurozone. This is unlikely as the CBC liquidity index is meant to be a lead indicator of the lead indicator. We are unlikely to be phased by data until the liquidity numbers start to pick up.

Post Mortem

Target of 97.10 reached in Sep 2003 and $\frac{1}{2}$ position removed. Running other half into ECB December meeting will sell on a 50bp cut if market moves towards 96.20. On 5 Dec 2002 thet remaining 125 contracts were sold at 96.99.

Size

This is a high probability trade. We will allocate maximum NAV to this position and buy the Sep 2003 outright with a position size of 250 contracts, allowing for a 20bp (1.25% NAV) stop and a target of 50-60bp on the upside.

Portfolio

This will take the VAR of the portfolio up to 1%.

Research Inputs

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5.3 TIGHT_BOBL_CAL_SPRD _DEC02_MAR03

Overview

There's some room for narrowing in the Bobl roll on a relative value considerations between the two different CTD's.

OEZ2 CTD is DBR 6 07/04/07
OEH3 CTD is DBR 5.25 01/04/08

As one would expect, the Jul07 has been cheapening against the nearest non-deliverable / identical coupon bond, the Jan07 6% on an asset swap spread differential basis, but it is still almost 3bp expensive to the Jan07 bond. What's the fair differential between the front month CTD and this non- deliverable Jan07 at Dec02 expiry? Well, look at the pair of nearby bonds, Aug06 4.5% and the Feb07 4%. The average differential is about 0 and they bounce around that mean to a tune of rarely more than a basis point. The relative trading behavior of the Jul07 and Jan07 6%'s should follow a similar pattern once the contract rolls, and we should see a convergence toward an asset swap differential of 0 between now and Dec02's expiry. In other words, the Dec contracts CTD is about 3bp dear, which translates into a target of 15 ticks narrowing, ceteris paribus.

There is an interesting relationship between the yield spread of the two CTD's regressed on 5y benchmark yield level. What we find is that as 5y level increases, the yield spread between the CTD's declines and vice versa. The regression has an $R^2 = .55$ and a slope of -.021. In other words, we estimate that for every 10bp increase (decrease) in yield, there is a $10 \times -.021 = .21bp$ decrease (increase) in the CTD yield spread. This translates into a move of about 1 tick for every 10bp. We don't have an opinion on 5y level between now and 10 Dec, so we do not include this aspect of the trade in my target.

Financing

While there is a time/widening bias of 2.5bp due to the front CTD's coupon being 75bp higher than the back's, the back month's implied repo rolls up the inverted money market curve, giving a tightening bias tightening the calendar in an unchanged curve.

But the real story behind the financing component of the calendar spread is the 5 Dec ECB decision. In my analysis we assume that by 5 Dec the repo curve goes flat between o/n and 3m and that repo level equals the ECB's target rate. Furthermore, we assume that the net basis for both contracts declines linearly with time (converging to 0 at the contract's delivery date). With these assumptions, we calculate a gross basis for the two contracts on 5 Dec 02 under three different scenarios: no cut, 25bp cut, 50bp cut. In the scenario where the ECB doesn't cut at all, the calendar spread tightens by 5.4 ticks. In the scenario where ECB cuts 25 ticks, the spread widens by 1 tick, and in the scenario where ECB cuts 50 ticks the spread widens by 7 ticks. Treating each scenario as equally likely, the expectation of the ECB's policy on the spread is a widening of about $\frac{1}{2}$ a tick.

Specialness

The greatest risk to being short the calendar spread is that Jul07 gets squeezed. With the net basis of the second CTD at almost 30 cents away, there is allot of room for this bond to richen should delivery problems arise.

Trade Construction

We duration-weight thte spread as we don't want to assume any yield directionality beyond the statistical relationship mentioned above.

Target and Stop

We put this trade on at a target of $\frac{1}{2}$ the front CTD's richness (.5*15bp= 7.5bp) and we will risk .4% of NAV.

Postmortem

The trade was opened on 26 November at a spread of .17 and closed on 27 November with a spread of .07.

5.4 TIGHT_GBP_AUD_SPRD_3M

STIR devotes a section of the portfolio to trades with a short horizon spanning central bank announcement schedules, so-called *announcement-non-announcement* (ANA) trades.

Prior to the Federal Reserve meeting of Nov 6th 2002 significant expectation is built into the markets. STIR has identified an opportunity using a cross-market options trade: Australian Bills vs Short Sterling.

Australia Country Specific

Consumer spending, housing and business investment have all remained strong. Australian markets are less affected by the equity declines as the Australian market has only declined by 14% in the last 12 months compared to 20%-40% in Europe, Japan and the US.

Auction clearance data has been declining which may indicate that some areas of the property market are stalling. However, building approvals and housing finance data remain strong. The government grants program are being phased out but are still a factor in the strength of the housing sector.

Rural sector remains very weak, affected by the severe drought and this is a serious issue for the economy as some estimates are saying the decline in farm production could reduce GDP by up to 1.2% this year.

Inflation is outside the target range but is forecast to move back in. One must always remember that Australian CPI has historically been very volatile.

The majority of Australian exports are to Japan, Korea and China and account for 35%. With the exception of Japan, these economies are stable to strong. The Aussie dollar is also cheap against the $US at 0.56.

UK country specific

Consumer demand is the current engine room of the UK economy. House price inflation is rampant and the equity withdrawal numbers are matching the high points seen in 1988. The government has been another major support to the UK economy. Capital spending is particularly buoyant rising above 10% year on year in the 2nd quarter. Unemployment is at 5.2%, which is hardly a concern. There are clearly risks both ways in the UK and there appears no reason to change rates. Brown's increases in national insurance contributions in 2003 and public sector wage reviews present further upside risks to the inflation target which are broadly offset by the risks of a downturn in housing, leading to a decline in consumption and general consumer confidence.

The Trade

The G10 has discounted minimum rate cuts of 25bp from the Federal Reserve on the 6th November. Similar cuts are priced in for the BOE and the ECB. It is probable that a sell-off will ensue if the 25bp is realised as everyone is well positioned. Therefore the main risk seems to be for no rate move in any of the countries considered. The Australian bill market is looking at unchanged rates through March 2003 whereas short sterling is pricing a 25bp cut. Given how differently the markets are positioned, there is a high probability that Aussie bills will outperform over the announcement, whatever it is. With Sterling Libor at 3.92 and the Dec future at 96.19 then a sell-off of 5-10 basis points is quite possible. If they do cut by 25bp, a rally of 6 bp is possible.

Australia still would rally on a 50bp rate cut by the Fed as nothing is currently priced in.

Scenario Analysis

Scenario 1. Fed does nothing nor does anyone else

Sell-off in all markets likely to be exaggerated by the longs in the market. Front contracts will probably sell-off 10-20bp and March contracts 20bp. So moving back towards an unchanged rate scenario, whatever that is in each country. Australia is already at an unchanged rate scenario so should sell off less than equivocal countries like the UK, which may be overextended. Possible 2-day gain of 10bp March bills

March Sterling.

Scenario 2. Fed cuts by 25bp and UK does nothing and Australia does nothing

This outcome would be similar to scenario 1 with an expected profit on short sterling of 10-15bp.

Scenario 3. Fed cuts by 25bp and UK cuts by 25bp, Australia does nothing

This is probably a wash as UK libor could move down to 3.75, giving a 5bp rally in December sterling and a possible 5bp in March as such a move is partially discounted. The Aussie bill market could take some heart from a perception of concerted action and would almost certainly move slightly higher.

Scenario 4. Fed cuts by 50bp and UK by 25bp and Australia does nothing

March sterling could rally 15bp in this scenario and Aussie would likely rally 10bp given its strong association with the US through the currency and this scenario would also squeeze the shorts in the bill market.

Scenario 5. Fed cuts by 50bp and the UK and Australia do nothing

This is the optimal scenario as the bullishness discounted in the UK would wash out with a 10-15bp sell off and the Australian market would catch a bid on global recession fears and short covering.

Expected Value

ANA-type trades lend themselves to scenario analysis, and scenario analysis lends itself to a simple expected value framework. At STIR, we find that the scenario-cum-expected value framework is a useful tool for clarifying the trader's intuitions and ascribing a numerical value to a trading strategy.

To each of the above five scenarios we have assigned a subjective probability to the scenario becoming true. Furthermore, for each scenario, we can make a reasonably unbiased estimate of what the PNL of the strategy will be, given that the scenario materialises.

	Prob	FED	BOE	RBA	P&L	EV
Scen 1	10%	0	0	0	20,000	2,000
Scen 2	25%	25	0	0	50,000	125,000
Scen 3	20%	25	25	0	0	0
Scen 4	20%	50	25	0	-20,000	-4,000
Scen 5	25%	50	0	0	50,000	125,000
				EV	23,000	

Microstructure

Research on Australia is still very bearish and traders have been fighting the rally for a few months now. Market getting nervous that next rate move could be down. This market will continue to trade well on the upside until it becomes properly overvalued. UK market has fully discounted a rate cut and a wide range of participants are long.

Contrary Opinion

Kaveh Alamouti: Moore Capital

The property market in the UK is clearly breaking down at the top end and the days of record consumer confidence are coming to an end. Traders have consistently been too bearish on the UK over the last year, a cut from the UK in the next 3 months is inevitable once it is clear that the government cannot pump public money into the economy and retain credibility.

Stephen Walters: JP Morgan Economist

Residential building approvals surged by a record 23% in August, RBA would have increased the cash rate in August if not for the weak equity markets, stabilisation of equity markets will lead to a 25bp rate hike in December 2002.

Probability

Aussie bill option market is inferring that there is a 50% probability of rates being sub 4.75% in March 2003.

UK options market is inferring a 70% probability of rates being sub 4% in March 2003.

Trade Implementation and Management

Best way to express this trade at low risk is to sell at the money puts on Aussie bills in March and buy at the money puts on March sterling.

Buy the March 96.25 short sterling puts at .20
Sell the March 95.25 Aussie bill puts at 21.

The delta on these options is about .50, so we are am prepared to risk a 10bp absolute spread move or 5bp in delta-adjusted terms. This is a vanilla options play with a two day time horizon. The difficulty lies in the lack of time overlap in the markets the prime trading hours on the SFE being equivalent to 21:30-05:30 BST. We will initiate the Aussie side of the trade on the close of the Aussie market and run a 2bp delta stop until the opening of short sterling. On exiting the trade, which we will do no later than 24hrs after the announcement we will close out the Aussie dollar options short first on the close of business and close the short sterling puts on the morning open. This way we are not left outright short gamma on half the position.

Stop

At a loss of 5bp we will cut the trade in the same way that we have implemented it.

Key Pointers and Risks

There is a very short-term time frame for this trade and the risks have been looked at in each scenario above. Terrorist/war event risk would not harm the trade as the risk is expressed through puts.

Size

The risk to this trade is small. We will risk 0.5% of NAV to the stop.

Portfolio

This trade takes the VaR of the portfolio up to 0.62%.

Post Mortem

The optimal outcome of a 50bp rate cut from the US and no response from the UK or Australia enabled us to realise a profit of 0.66% of NAV within 24 hrs.

Research Inputs

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5.5 TIGHT_USD_TED_2Y

We regressed the USD 2y TED spread on the overnight effective fed funds rate and discovered that in periods of declining rates there is a statistically significant relationship between these two variables: the TED tightens as fed funds declines. The regression on the Jun90-Dec92 data set has an $R^2 = .47$ while the regression on the Jan01-Dec01 data set has an $R^2 = .67$. (We did a regression on the 95 and 98 periods where there were there were a few rate cuts but no cutting cycle and the relationship is insignificant.)

That there is a significant relationship between the TED and fed funds for these two periods is not surprising. Declining rates usually portend higher libor credit quality, and existing research on the swap spread has found this explanation persuasive in the case of the swap spread. However, it would be surprising if this information were not on average already priced into the TED immediately before FOMC meetings, as we would expect the TED to be an unbiased predictor of rate moves. But the reality is different. There is, on average, a little more than 2bp of tightening in the 2y TED spread between the day before and the day after a meeting where the FOMC cuts rates. But there is a mere .23bp of widening for those meetings were rates are left unchanged (calibrated at present yield levels). If one shorted the TED spread before each FOMC meeting where there was an almost 0 probability of a rate rise (as is certainly the case today), one would have made on average about 1.75bp over two days.

Trade Construction

We will sell 35MM face of the benchmark, UST 2Y 2.125 10/31/04, obtaining the bond and financing the proceeds via o/n reverse repo. This will require approximately 350,000 in capital to finance the repo haircut. The libor leg of the trade will be expressed using the 90-day Eurodollar strip with the Nov02 1m CME libor contract as a partial hedge to the stub risk. The number of contracts used at each point on the strip is determined by the conventional perturbation method so that the PVBP of the spread is approximately equal to the bond's PVBP, .0194. [1] Here are the contracts used:

Contract	Quantity
EMX2	16
EDZ2	35
EDH3	35
EDM3	35
EDU3	35
EDZ3	35
EDH4	34
EDM4	34
EDU4	17

The initial margin will require an additional 219,240 in capital.

Target and Stop

We view this trade as an underpriced, implicit option on a rate cut. We target 4bp (historically, the median move) by the close of 7 November and will stop the trade if there is a 4bp widening move. We will also unwind this trade immediately if the Fed stays on hold. As the trade horizon is so short, carry is negligible. The biggest risk to the trade is an unexpected spread-widening event today or tomorrow.

The spread PVBP is .0194% of the bond's face value. We will risk .3% of NAV so I need to size the position at 35,000,000 face.

postmortem

The spread was 34.40 when the trade was opened. It was closed a day later at 29.90 after the FOMC meeting, for a gross P&L of 31,987. The P&L predicted by the spread's PVBP was 30,398, leaving a modest 1,590 error explained by convexity and the partial stub hedge. Net P&L after reverse repo interest received and accrued interest paid is 30,933, giving a holding period return on capital employed of 5.43%.

[1] The approximation error is equal to the convexity error of the bond and the hedge error of the cash stub.

5.6 WIDE_SCHATZ_CAL _SPRD_DEC2_MAR3

Overview

The calendar spread implied repo is historically high relative to the forward 3m funding rate (ERZ2's implied rate used as proxy). Granted, the front month's CTD has been trading only since 24 Sep, so the history is short. But the CS implied repo to fwd funding spread has been bouncing around the 11-18bp range until yesterday, when it closed at 21bp and today it's at present trading in the mid 40's.

This technical indicator suggests that going long the Schatz calendar is a good way of expressing our opinion that the 2y sector of the GE govie curve is too dear. Regarding the money market curve, we see this as remaining largely unchanged. As the curve is almost linear, front and back month financing rates should keep changes to the relative bases of both contracts largley proportional as these two rates roll-up (the curve is downward-sloping) the curve. Also, the front CTD's coupon is 3 $\frac{1}{4}$, while the back month's is 3, so there is a widening time bias to the calendar spread as the basis of both contracts shrink over time at different rates.[2]

Stop and target

We are following a statistically-derived stop. We calculate a 22-day rolling coefficient of variation (CV=.24) to derive an estimate of the spread's standard deviation (CV is multiplied by the current spread, S=.23).

$$CV \times S = .24 \times .23 = .0552 \tag{5.1}$$

We fix the stop at a 1 estimated standard deviation move away from the spread at the trade's inception. The max loss turns out to be approximately 50bp of NAV. The target is 29bp.

[2]I'm referring to BKO 3 12/10/04, which has not been issued yet but will most likely be the March contract's CTD after it is issued.

Trade Construction

As we have a view on the short-term direction of GE 2y, we did not duration-weight this calendar spread.

Postmortem

The trade was entered with the calendar spread at 23 and the target of 29 was hit on 22 October.

5.7 WIDE_TED_USD_6M

Rationale

We will go long the 6m TED spread as a conservative hedge against a flight-to-quality scenario.

At 13.2bp, this spread is technically attractive, for this is 1 standard deviation below the two-month trading range. Note that by 16 December 2002 this spread will (within a tiny margin of error) converge to the spot 3m gc-Libor spread. How has this spread behaved this year? The range is 29 / 9 with an average of 16.6. JPM has a forecast of 20bp for this spread by the end of December (see attached). After 11 September 2001 this spread widened from about 11bp to as high as 60. I see little risk of this TED tightening much beyond its present level; the risk is certainly on the upside.

Target

In the absence of event risk, we see this spread going to about 20; in a flight-to- quality scenario, 30-60bp.

Financing / Breakeven

Carry is slightly negative: 15.9bp of cost annualised (that is, 15.9/360 = .0442bp of purchase price per day). At 3m term repo, over 3 months this spread must widen by about 6bp to breakeven.

Stop

We will close this trade if the spread goes below its yearly low of 9bp.

Postmortem

The trade was opened with the spread at 13.1bp and we closed the trade on 22 October with the spread at 18bp. Gross P&L is 64,444 and net P&L (after repo interest paid) is 15,713.

Appendix A

Appendix A: Portfolio Risk Management

The risk management system that will be used for STIR G10 Master Fund is a monte carlo VaR system managed by GlobeOp, our third-party backoffice. Due to the costs associated with running this system, it would have been infeasible to use it for managing the risk of a virtual portfolio.

For our virtual portfolio TEST G10 we use a historical, parametric VaR system. On any given day, one year of historical data (provided by Bloomberg) is used to calculate the needed variances and correlations of primitive assets and derivatives. The individual securities in TEST G10 are then mapped on to their appropriate primitive asset or derivative class and from these data and mappings a 1-day VaR for the portfolio is calculated using a methodology similar to that of JP Morgan's RiskMetrics product.

The confidence level is fixed at 1%, the horizon period is one day, Delta, Gamma, and Theta sensitivities are used when the portfolio contains options or swaptions, and no decay factor is applied to the historical data.

For each day we calculate the portfolio NAV (see B) and portfolio 1-day-horizon VaR. We apply the same risk management parameters with TEST G10 as those prescribed in G10 Master Fund's prospectus. 1-day-horizon VaR is not to exceed 2% of NaV and we have kept TEST G10's VaR under this ceiling every day since the fund's inception. The prospectus also prescribes a limit on the amount of leverage that G10 Master Fund can assume. We have kept TEST G10 within this limit every day since its inception as well. The concept of leverage when it's applied to portfolios that contain off-balance sheet instruments is a subtle one; a brief explanation of how we treat this concept is important.

A.1 Leverage and Risk

Leverage and risk are different–but frequently conflated–concepts. Risk is concerned with the likelihood of the value of a balance sheet's *assets* declining by a certain amount. Leverage, on the other hand, measures the decline of the value of an *equity* stake given a decline in the value of assets.

From a risk management perspective, leverage is an important property of a fund because the extent of a portfolio's leverage is a good proxy for the likelihood of an involuntary liquidation of positions. Such forced de-leveraging destroys value in the fund's balance sheet and is something a prudent manager works to ensure never happens.

The problem, however, is that traditional balance sheet measures of leverage are at best misleading for a fund that trades in largely off-balance sheet contracts. The financial markets crises of 1998 has created fresh interest in extending the concept of leverage to include off-balance sheet vehicles.

One increasingly popular approach involves using a VaR framework. For example, writing after

the LTCM debacle in 1998, the President's Working Group on Financial Markets [1] proposed as a measure of leverage using the Value-at-Risk of a fund's asset portfolio, VaR(A), relative to its equity, E:

$$l = \frac{VaR(A)}{E}$$

This ratio basically tells you how much capital is available to finance losses that have such-and-such probability of occurring. While clearly superior to an accounting-based measure, this definition fails to analyse the equity risk into its risk and leverage components.[2]

A.2 The liquidity measure

At STIR we use a liquidity-based leverage measure, cash C plus borrowing capacity[3] B over monthly VaR:

$$l' = \frac{(C + B)}{VaR(A)}$$

A reading of 2, for example, would mean that funds available to finance losing positions are twice the size of our monthly VaR.

This measure is clearly superior to the previous one in that it describes the fund's ability to not only finance losses, but finance losses without liquidating any positions.

We aim to have cash and available credit of at least 4-times our monthly VaR (i.e., $l' >= 4$).

A.3 Calibrating the VaR to the liquidity measure

The VaR figure in the liquidity measure should be based on a horizon equal to the amount of time that the manager could reasonably expect to raise cash through the liquidation of positions during ordinary trading conditions. In the case of the STIR G10 fund (and by design, TEST G10), this is a month, as redemption are permitted at month-end. The monthly figure is approximated in the conventional way by taking the product of the daily VaR and the factor $\sqrt{20}$.[4]

[1] *Hedge Funds, Leverage, and the Lessons of Long-Term Capital Management*, Report of The President's Working Group on Financial Markets, April 1999

[2] *Measuring Off-Balance-Sheet Leverage*, Peter Breuer, IMF Working Paper, December 2000

[3] Borrowing capacity includes credit lines, repo, and excess margin.

[4] This approximation is appropriate if and only if there is no or little autocorrelation in the daily NAV series. Part of the risk management practice of STIR is to analyse portfolio data on a regular basis to ensure that our risk models and parameters are accurately capturing the portfolio's actual risk exposure.

Appendix B

Appendix B: Portfolio Accounting

As mentioned in Appendix A, one procedural difference between the management of TEST G10 and the management of the actual portfolio STIR G10 Master Fund is the risk model used to calculate our daily VaR figure. Related to this is the back office task of portfolio accountancy, which (like the VaR model) is normally performed by GlobeOp. For our hypothetical portfolio TEST G10, GlobeOp is not used and, instead, an internally-developed accounting system called VeritasBackOffice (VBO) is used.

B.1 Fund details

TEST G10 begins with a theoretical investment of 10,000,000 USD on 1 October 2002.

B.2 The accounting system

VBO works on a single transaction file that contains time-stamped records of all cash and non-cash events in TEST G10. From this file it generates another file containing position and cash balances; the values in this file are aggregated to arrive at the fund's NAV for any given day. Data for market values are taken from Bloomberg.

B.3 Treatment of foreign exchange risk

VBO is a multi-currency system and no assumptions regarding foreign exchange risk are built-in. In other words, the fund is completely exposed to foreign exchange risk as would be the case in the real world. All foreign exchange hedges must be constructed by trader putting on a foreign currency trade. The only exception to this rule is with mark-to-market gains and losses on futures contracts; see B.4.

B.4 Treatment of futures

A futures position generates three different flavors of cash flow:

1. cash outflow when initial margin is posted
2. cash inflow when initial margin is returned upon closing position
3. cash inflow or outflow each day as the position is marked-to-market

As we want to track a liquidity measure (see A.1) for TEST G10, it is important that we track all cash flows as they would occur in real life. With futures positions, exchange defined initial margins (complicated netting rules are ignored) and mark-to-market entries are entered into VBO each day.

For futures positions not denominated in US dollars, a corresponding forex entry is made for each

cash flow associated with such future. For example, if 100,000 GBP in initial margin is needed for a LIFFE 90-day Short Stirling trade, a corresponding entry buying GBP with USD at the settle date's closing forex is entered into the system as well.

There is one sense in which the configuration of VBO does make assumptions about currency hedging which do not involve the intervention of the trader: automatic forex entries for daily mark-to-market gains and losses. The system assumes that every mark-to-market gain of a foreign currency future is converted into USD at the forex rate prevailing at the time the future's daily settlement price is fixed. Likewise, USD cash is converted into the foreign currency cash for losses in the same way. This is very close to how this aspect of foreign exchange will be managed with STIR G10 Master Fund, so this is another manifestation of TEST G10's realism.

Note: if a trader wishes to hedge *initial* margin foreign cash balances (as opposed to the *variation* margin balances just discussed), he must manually instruct the system to do so.

B.5 Treatment of Cash Bonds

All long and short positions of cash bonds are financed at repo. As the P&L of cash bond trades are often sensitive to their financing, we make sure that realism is achieved here by obtaining indicative redo rates and haircut arrangements from brokers on the day the faux trade is put on.

Appendix C

Appendix C: STIR's Skepticism of Brokerage Research

The reader might be struck by the relatively greater weight that STIR have placed in this document on academic and internal research compared to research published by investment banks. The bias is deliberate. Our investment process is skeptical of research published by banks. True, a report from a bank's interest rate derivatives desk is largely free of most of the conflicts of interest that so infamously plague sell-side equity analysts. But it is clear to us that some of the interest rate and economics research published by banks is of questionable quality and most usually fail to accurately disclose the degree of belief the author of the research has in his prediction or recommendation.

Neither phenomena is surprising once one considers the asymmetry of incentives that prevail in bank research departments versus those of a proprietary trader.

C.1 The Forecast Game

A well-known bank economist, for example, will periodically publish his forecasts for various economic variables like quarterly GDP, consumer price inflation, and so on, but he will never include in the publication a numerical description of his degree of belief in this forecast (say, a subjective probability distribution).[1]

And why would he want to? The prevailing system rewards the analyst's reputation more for making unconventional but correct forecasts than it tarnishes his reputation for making unconventional and incorrect forecasts. Consequently, a highly risk averse analyst, as well as an analyst who simply has no conviction, will publish the modal forecast as if it were his own; no one will blame him for saying what everyone else said. An opportunistic analyst or an analyst with a strong conviction in his unconventional forecast, on the other hand, will often punt with a far-off-consensus forecast that doesn't actually represent the scenario that he thinks is most likely to occur; the expected career payoff is higher with this strategy. The net result is that rag bag called the "consensus forecast" and it conveys little information.

There has been a lively research programme into this issue in the academic economics profession. Theorists have designed game-theoretic models that highlight the potential rationality (from the point of view of the analyst's selfish interests, of course) of this practice, and others have done empirical research on the accuracy and biasedness of private sector forecasts versus other estimators. A paper particularly relevant to STIR's present portfolio is an NBER

[1] Contrast this practice with, say, the Bank of England's *Quarterly Inflation Forecast*, which provides not a point estimate of inflation but a probability distribution of possible future inflation rates.

working paper by Romer and Romer. Romer and Romer ran a regression of forecast errors in private sector inflation forecasts on the difference between the Federal Reserve inflation forecasts and these private sector forecasts. The results are significant and on most fittings the least-squares line yields a coefficient of 1, implying that on average a private sector inflation forecast error of x will coincide with a Fed inflation forecast that is more accurate than the private sector consensus by an amount x. One would be better off ignoring the private sector forecasts altogether and simply read the Fed's!

C.2 Publish or Perish

One of the reasons why banking research can be so bad is that it has to be written, published on a certain day, fixed in advance by a daily, weekly, monthly, or quarterly publishing schedule. But information and trading opportunities arise at random points through time and don't obey a publishing schedule, like analysts do. So, the poor analyst is compelled to be particularly creative when confronted with the horror of having nothing new to say since the last time he published the report he must write again today.

The buy-side trader can usually tell when this has happened; one can read the lack of conviction between the lines. Take a recent example from Morgan Stanley and JP Morgan. Both Banks publish a quarterly bond futures roll publication, the latest from each bank was published in November at a time when STIR was looking into a possible trade in the UST 5y Note calendar spread. With the notional coupon (6%) of this contract considerably higher than current five-year yields, there is almost no switch risk, the calendar spread is only modestly directional, and there are no interesting relative value plays between the bonds or likely repo specialness scenarios. In other words, the trade is ostensibly boring. What is the analyst to do? Declare that that the spread will be driven largely by existing "structural" positions being unwound before the front-month's expiry. This may have been true, it may have even generated a worthy trade idea, and a structural position in the market is a present fact, not a forecast of the future.

The problem is that at least one of the two banks must be wrong about the facts: Morgan Staley confidently asserts that there is a "structural short" in the market and recommends that we go long the basis; JP Morgan sees reality differently, as it's convinced that the "rally in fixed income markets has increased the preponderance of structural longs that use 5-year futures" and recommends that we go short the basis. Who's wrong? It's hard to tell. At least Morgan Stanley keeps us in suspense on the question of how it derived the conclusion that more structural positions are short the calendar than long it. JP Morgan uses a specious argument citing the Commitment of Traders report that, unfortunately, doesn't contain the information that the report's author thinks it contains. Both banks would have saved their client's time if they had merely written: "no trade here, as far as we can tell."

C.3 Research Inputs

Romer, Christina, and Romer, David. "Federal Reserve Private Information and the Behavior of Interest Rates", *NBER Working Paper*, July 1996.

"U.S. bond futures rollover outlook", *JP Morgan*, November 12, 2002.

"December / March Futures Roll Analysis", *Morgan Stanely*, November 19, 2002.