US inflation derivatives take off

The US inflation derivatives market is getting into its stride, and hedging and investment opportunities abound. Leading players discussed the vibrant market, and its future, in a round table discussion in New York

Risk: To set the scene, let's discuss how the US inflation derivatives market got to where it is and its current state.

D'Arcy Miell, BGC Partners: The US inflation derivatives market effectively began in 2003. The total turnover – including asset swaps, zero-coupon swaps and options – was around $2 billion that year. In 2004, we saw tremendous growth in the interbank market, with volumes surging to around $12 billion. The interpolated zero-coupon instrument accounted for around 68.5% of that figure; the next most popular instruments were asset swaps, at around 18.5%; and year-on-year (YOY) options accounted for most of the remaining 13%. This year, volumes have continued to grow strongly. For the first two months of February, we have seen a total volume of approximately $3 billion go through the market. Of that, the proportions are: zero coupon – around 80%; asset swaps – around 15%, with year-on-year options accounting for the rest. Around a year ago, inflation swaps bid-offer spreads were 6 basis points, narrowing to 4bp before trading, and trading was very much by appointment. Now it's more liquid: quoted at 4bp wide, narrowing to 2bp before trading. Out to a five-year tenor, it's not uncommon to see trades of $50 million.

Dariush Mirfendereski, UBS: When the US consumer price index (CPI) market started a few years ago, essentially it was more to do with total-return swap requests and enquiries – not really the kind of market we see today. In early 2003, we saw the first desks set up to deal the products, and 2004 was a time of dramatic growth in volumes. There are now a whole array of products, including year-on-year inflation swaps, asset swaps on US Treasury inflation-protected securities (Tips) and zero-coupon swaps – the basic trading instrument between banks. Options – YOY options, as well as options on cash instruments – Tipstions, typically.

Gang Hu, Barclays Capital: Overall, even though the market has become more and more sophisticated in product knowledge base, new problems still emerge every day. It presents challenges to both the investment community and the dealer community. As a result, both communities have put more and more emphasis on this market. From the dealer community, even though I am still the only trader who trades this market full time, we do see more and more firms setting up desks to trade inflation or inflation swaps specifically. From the investment community, we are also seeing more and more inflation-linked debt being issued and bought over all last year and early this year.

Sven Helsen, BNP Paribas: The inter-dealer market had been looking for what the standard inflation derivatives product is. After all, the zero-coupon inflation swap that trades between dealers is not necessarily what is trading with clients. With asset swaps alongside zero-coupon swaps, you have the two basic building blocks of the inflation swap market. With these pieces, dealers can individually hedge out risks.

Mirfendereski: It's similar in Europe, where there has always been a divide between what clients do at the retail maturities – typically, five-year and 10-year. While these are typically year-on-year products, dealers will most often trade zero-coupon swaps and asset swaps with each other.

***Risk*:** Are there any inflation-indexed issuers in the US that retain the inflation risk, other than the US Treasury?

James Leonard, Bank of America: This relates to the golden question – how do we encourage payers of inflation into the US market? We are in the early stages: government contractors that may have government revenues tied to the CPI are considering whether to hedge out some of their risk. An example might be a large contractor involved in a lengthy environmental project. Another example could be a company with leases tied to the CPI. We expect to see a lot more momentum in terms of client interest in paying inflation by the end of 2005.

Hu: In addition to that aspect of demand, we believe there might also be payers for a subset of inflation, rather than for the entire index. An example of this could be a pharmaceutical company that is interested in paying the medical part of CPI. As a matter of fact, I was on the phone with an investor yesterday who told me that he is interested in either paying or receiving this part of CPI.

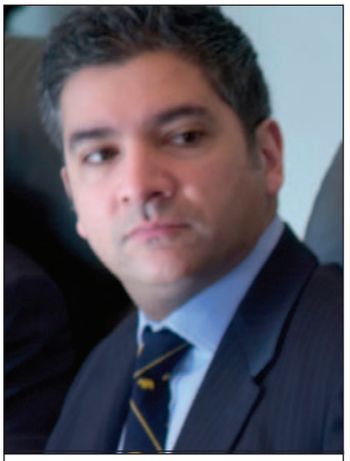
In an ideal market there would be payers from all sorts of sub-indexes of CPI. As an inflation trader, you could gather all these components and effectively bundle them together into a total CPI payment. But it's an extremely difficult type of market to start, because any missing piece must be hedged.

Mirfendereski: There will always be times when you can do these kinds of back-to-back deals. After all, in the early Libor swaps market there was virtually no such thing as quoting a trade – it was mostly back-

Sven Helsen, director, US inflation trading, BNP Paribas

Gang Hu, associate director, US inflation trading, Barclays Capital

James Leonard, vice-president, structured rates trading, Bank of America



Dariush Mirfendereski, managing director, head of inflation-linked trading, UBS

to-back deals. The problem I see with this approach is that if you encourage people to go down this route, it might hinder the growth in liquidity. As a first step, we must build a standard market – which is non-seasonal adjusted CPI – that is large, liquid and transparent. Of course, the other kinds of deals will come.

Now to the broader question of US issuers – the market will truly take off when there is more active two-way flow. As mentioned, demand from the retail sector is strong, but who are the payers? Currently, it's asset swap trades that create a synthetic supply into the market. So, an asset swapper buys a bond and pays the coupon and redemption to the bank that sold the asset swap in return for Libor, minus a spread. This is an artificial supply – it's not someone paying inflation flows on a swap into the market.

In Europe, there is supply: project-related deals, toll roads and so on. The market there is liquid at the long end: no-one blinks an eye at deals of 30-year tenor worth hundreds of millions of euros. People do need to get comfortable with the accounting and other issues, but I think that this year we will see some larger deals in the US.

Helsen: I agree that hedging of infrastructure-related revenues tied to inflation will become a more dominant feature in the US market – we are working on a deal involving an energy-related infrastructure project. One potentially large part of the market that has not really developed yet is the municipals market. State governments collect sales taxes on basically everything that is in the CPI. For them, paying inflation is a perfect hedge. They could do it naturally through issuance or synthetically through the swaps market. All it needs is for one big state to demonstrate that it's a reasonable thing to do and then you could see a flurry of activity. There have been some municipality-linked inflation deals, but all have swapped out rather than retain inflation risk. The risk flowed to dealers, who then hedged themselves with Tips.

For taxable investors, inflation-linked municipal bonds have a special attraction as the inflation component accrues tax free and provides better protection than the taxable corporate inflation bonds against a rise in inflation. If inflation goes up from 3% to 4%, with the corporate linkers, part of the 1% increase will be paid in taxes, eating into the after-tax real yield received by the investor. This is not the case with the municipal linkers.

***Risk*:** Let's move on to looking at some of the differences between the cash and derivatives cashflows.

Helsen: Inflation compensation with Tips occurs with accretion compensation of the notional. A fixed percentage is paid on that accreting notional. With CPI floaters, you get the inflation that occurs right away in the coupon. Say inflation in the first year is 3% and your fixed rate is 2%, then with Tips, your notional will accrete by 3% and then you get paid 2% on that. This means that the duration of Tips is much longer than on CPI floaters.

Mirfendereski: There are tax differences too. The fact that the final notional is accreting up on a Tips payout means that you will get taxed on that accretion, even though you haven't received it. Understandably, some investors are not comfortable with this. The CPI floater has the advantage that it pays inflation adjustments as you go through the trade, so you have money you are taxed on as you pay taxes. Also, the CPI floater pays whatever inflation was that month on an annualised basis, plus some spread. It's in line with how retail investors understand 'inflation'. The Tips payout is not so straightforward.

Lance Black, Protective Life Corporation: It's perplexing as to why municipality-related entities such as toll roads, bridge complexes and the like are not paying CPI. They have the ability to increase their income with changes in CPI, so it would make sense.

As an issuer, we are concerned about the flow in market being one way. We have found that to date we have been able to issue efficiently within our pricing structure. We swap all the way back to a fixed rate, not Libor floating. I take the point of view that, if I wanted floating-rate exposure, I would pay CPI with a fixed spread as opposed to a percentage such as 150% of CPI. I can stomach a 1.5% coupon and year-on-year change in CPI of 10% better than 15%, being 150% of the year-over-year change.

If we could get CPI to be a recognised index under US mark-to-market accounting rules, this market would look a lot more attractive to issuers. It would be hard to argue that inflation swaps are not a true hedge.

***Risk*:** What about the redemption on Tips compared with CPI floaters?

Hu: Tips have a floor on just the principal, whereas CPI floaters can have a floor on every coupon payment. For example, if a CPI floater

pays CPI plus 2%, and there is one month in which the year-over-year CPI dropped below –2%, the investor would not need to pay any money to the issuer. As a result, along with every corporate issuance, there is a sale of a monthly YOY floor, which in turn makes the corporate issue quite expensive. This being said, I expect the value of the embedded floor to come down sharply. What we have seen was the beginning of a massive hedge fund involvement to this product. Once they are fully awake, the selling will naturally make the corporate issuance much cheaper to the investors.

Mirfendereski: One could argue that Tips redemption is less protection than a floater. If it's a 0%-floor floater, it's more protection than you have on a Tips redemption. This is because you could have deflation in a couple of years and still have inflation catch up by the issue date and so not be compensated for the years of deflation. With floaters – especially geared floaters with a floor at 0% – you get that full compensation at every juncture.

Leonard: There was certainly a lot of interest in selling floors a few months ago when valuations were really high. Even though the prices on the floors have lowered somewhat recently, the view in the market is that the valuation is still too high, and we are seeing continued interest in selling these floors from hedge funds.

Helsen: Hedge funds have a role to play in ironing out pricing inconsistencies. If dealers have used up their risk capital, funds that have a good risk appetite for the inflation product will find opportunities. An increase in the amount of risk put to work in the inflation market will make the market structure more efficient and liquid.

Mirfendereski: Part of the reason why floors have been priced too rich is supply and demand. Compare the premium for a typical year-on-year inflation floor, and see what strike interest rate floor you could buy with that premium and see the contrast. It's not implausible that the floors should be worth so much. Nobody understands the concept of deflation very well.

Hu: Along the same line, we have recommended trades to hedge funds where they buy a Libor floor and sell a CPI floor. Clients loved it. They used it as long-term correlation trades, which I expect to show handsome profits over the period of the trade.

***Risk*:** Is it true that retail demand for CPI floaters is the main driver behind inflation swap activity, or are there other drivers?

Leonard: Retail is driving activity. We look for and also work with potential CPI issuers to help meet retail demand. To a lot of issuers, issuing in CPI makes sense since the issuance can then be swapped back to fixed or floating LIBOR. The CPI-linked debt allows issuers to diversify their investor base to a class of investor that they may not see in the institutional market.

Helsen: It's retail driven currently, but there could be an institutional appetite for these corporate inflation-linked notes. Some institutional investors fear the inflation swap market is opaque and illiquid. Institutional investors who have a corporate portfolio, instead of buying corporate inflation-linkers, could enter into inflation swaps instead and synthetically create an exposure. However, the currently cheap level of Tips asset swaps makes this type of activity less attractive, especially compared to Europe, where the linker asset swaps are more fairly valued.

Mirfendereski: The UK pension industry has been involved in using swaps to create corporate inflation-linked assets synthetically. More sophisticated players in the US should be interested in doing similar things – though they would want to see volume. There needs to be more inflation supply so that clients can transact efficiently at a size of $100 million or more, and at a broad range of maturities out to 30 years.

***Risk*:** Is there a 'premium' in the swap levels compared with Tips breakevens? If so, how much, and what is behind it?

Hu: We face this every day – it's the risk we take as traders of inflation swaps. We call it basis risk: the implied inflation levels in the bond market versus the implied inflation in the inflation markets. The difference is between 20 and 25bps. I would attribute this 20–25 bps to three sources. Firstly, with the absence of inflation payers other than the US government, the natural hedge is to buy Tips and sell nominal bonds. Under normal market environments, the carry cost of this structure is about 10bps. Secondly, during the period of a trade, if the nominal bond we short is to be squeezed in the financing market, the carry cost of the trade could jump from 10 bps to over 200–300 bps, let alone the risk of

failing to deliver the short. And finally, Tips only pay inflation in, at most, four months of a year, while the inflation swaps could pay inflation of any month. The risk of inflation seasonality mismatch is another source of risk that cannot be ignored. When the market started, it was at 35–45 bps. It has come down a lot because of hedge fund involvement at the asset swap market. I don't expect this spread to narrow much more unless there are some structural changes to the inflation swap market.

Helsen: In general, as inflation breakevens go higher, market participants that want to sell inflation look to the swaps market as the low Tips asset swap levels make it more attractive to short breakevens with swaps than through a combination of Tips and Treasuries. As we are entering an era of higher inflation breakevens, people may start hedging against a decline in inflation. Hence, the much needed payer of inflation will emerge, creating better two-way flow, which will cause the Tips asset swaps to richen.

Mirfendereski: Imagine a world where you hedge the CPI floater, not with Tips, but with a swap with a lease company, for example. Under that scenario, there's no reason why the basis should exist – as long as there is a balance in the market between supply and demand. Looking across all maturities, the basis is positive: demand exceeds supply. In my opinion, in the US, the discrepancy has a lot to do with the nominal swap spreads and at what level players are willing to buy Tips asset swaps. Unless you have supply, or nominal swaps spreads narrowing, the premium will stay at around 15bp.

Nevertheless, the premium is not a big issue because people are buying something they don't get with Tips – because of the tax advantages, simplicity and monthly income. The product is working. But proper supply will improve the market.

***Risk*: Is the dealer community dedicating more resources to developing the market?**

Miell: Most definitely. There has been growth here all round – from US domestic banks to established European inflation houses. Typically, traders on options desks were spending maybe a third of their day on inflation derivatives. But in the past six months, inflation is becoming its own area within banks.

Helsen: We hope that more banks begin to have dedicated inflation traders. We need a new breed of inflation traders to help get broader market participation. Having the same trader involved in both Tips and inflation derivatives market making creates synergies that improve the liquidity and transparency of both markets.

Leonard: Given that Tips will continue to be issued in the US, it's inevitable that every dealer will build inflation trading capabilities across the street. From our standpoint, we have definitely seen growing client interest in issuing CPI-linked debt. We have received requests from issuers, such as insurers, for assistance in CPI curve building. We continue to dedicate resources towards our CPI business.

***Risk*: Over-the-counter inflation trading is progressing. But exchange-traded CPI futures have had a lukewarm reception. How useful could a redesigned exchange-traded product be?**

Hu: CPI futures were introduced with a view to helping dealers manage reset risks and to facilitate trading of exotics products. The futures haven't succeeded – the market has not grown enough so that you have a reliable flow of demand. I think there are several factors behind it. Firstly, the CPI futures were designed to resolve the reset risk on the corporate issuance and to provide a reliable instrument for the exotic inflation product traders to fix the forward inflation rate. But since there are only four contracts each year, with which you can only fixed the CPI prints every three months, it is not enough to deal with the strong seasonality of inflation. Secondly, the contracts were introduced with poor timing. For the corporate issuance, the first reset would not happen until two to three years after the invention of the contracts, and for the exotic inflation derivative products, the market is still at a very early stage. The demand for the futures contract is simply not there.

D'Arcy Miell, director, US inflation derivatives, BGC Partners

Leonard: Changing the exchange-traded contract to a year-on-year trade would be an improvement. It would help us, and the rest of the dealer community deal with reset risk on the client trades, which usually are monthly year-over-year look backs. As the total size and number of the inflation trades grow, the need to deal with reset risk on CPI settings becomes more prevalent. We think some sort of FRA product will develop soon that will also help reset risk, but there is definitely an opportunity for the CPI futures to play a role.

Black: We have looked at CPI futures, but they don't help us hedge. I agree that a year-over-year structure would be better and, though we prefer to hedge in the OTC market, a benchmark would be useful.

Bruno Lambert, Banque Cial: I was actually surprised the CPI future hasn't had much success. We have used CPI futures to lock forward breakevens and to take pure positions.

***Risk*: What can dealers do to assuage issuers and investors that are still wary or sceptical about the inflation-linked market?**

Black: We have a presence on the issuer and investor side, and there is definitely value to be had. But there's somewhat of an information vacuum – more education is needed.

Hu: The dealer community needs to work on both the investors' side and the issuers' side. On the investors' side, institutional investors are largely absent right now, because the current corporate issues seem too expensive to them. Now, with more risk takers focusing on inflation, I expect the evaluation to become more attractive. On the issuers' side, we need to make them realise that nominal bonds are not a good hedge for them. If they are willing to pay Libor, they should be delighted to pay inflation.

Helsen: Education is key. For example, breakeven curve trades could be done via inflation swaps instead of Tips and the accompanying funding issues. It is up to the dealer community to educate market players about the derivatives possibilities, provide them with tools to track the inflation swap market and show consistent pricing.

Mirfendereski: Analysts should realise that inflation-linked issuance is a hedge for many corporates, whose revenues can be highly correlated with inflation. Once there are one or two big deals, many will follow – as happened in Europe. The market will take off. ■