

Introducing the JPMorgan Commodity Curve Index (JPMCCI)

Capturing investment opportunities across commodity futures curves

- The JPMorgan Commodity Curve Index (JPMCCI) is a new index family offering a diversified and representative approach to passive commodity investing.
- Unlike traditional indices which focus exposure at a single maturity, JPMCCI holds exposure along the entire futures curve in proportion to the open interest of each tenor.
- JPMCCI adopts a neutral and representative approach to index construction, analogous to a bond market index which invests in line with market outstandings.
- JPMCCI aggregate, sector and single commodity indices are available in excess and total return form. JPMCCI includes 33 USD-denominated exchange-based single commodities, and has a much broader coverage of commodities than traditional indices (24 commodities in S&P GSCI and 19 in DJ-AIGCI). Additional commodities include NYMEX platinum, NYMEX palladium, CBOT soybean meal, NYBOT orange juice, LIFFE robusta coffee, LIFFE white sugar and MGE spring wheat.
- JPMCCI is an aggregate market index which weights individual commodities by their open interest. This implies an allocation of approximately 46% energy, 25% industrial metals, 8% precious metals, 19% agriculture and 3% livestock (as of September 28, 2007). Using open interest to determine allocation allows the index to reflect the financial deepening and broadening of these markets. It also yields sector weights which are more balanced than production-weighted indices (S&P GSCI), while avoiding arbitrary sector caps (DJ-AIGCI).
- JPMCCI has generated average annual total returns of 9.4% on a volatility of 12.8%. The resulting Sharpe ratio of 0.39 compares to 0.11 on the S&P GSCI and 0.29 on the DJ-AIGCI (Jan 91 Sep 07).
- JPMCCI reduces the drag from negative roll yield in contangoed markets, as well as overall roll return volatility. Roll return on the JPMCCI has averaged -0.5% per annum since 1991, compared to -3.3% and -4.1% on S&PGSCI and DJ-AIGCI, respectively.
- JPMorgan also provides the capability to use the JPMCCI single commodity subindices as building blocks to create customized indices tailored to investor objectives.

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Chart 1: Index performance



Source: JPMorgan and Index Sponsors

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Why a New Commodities Index

The growth of commodity index investment over the past five years has been well-documented, as has the inadequacy of traditional index products that limit exposure to the front end of the futures curve, incurring significant negative carry since 2005. Attempts to address the roll yield problem typically have centered on better execution (changing roll dates), buying deferred contracts (to achieve better roll returns), or optimizing exposure along the curve. While these approaches have, in some cases, outperformed traditional benchmarks, many run the risk of being over-engineered, and stray increasingly from the concept of a market-neutral benchmark. Indeed, many are closer to active strategies than passive benchmarks.

The **JPMorgan Commodity Curve Index (JPMCCI)** attempts to fill this void in passive indexation by borrowing the liquidity and maturity concepts commonly used in JPMorgan's family of fixed income indices. The JPMCCI adopts a simple, curve-neutral approach, holding exposure along the commodity futures curve according to the open interest of each tenor. The JPMCCI also uses open interest to determine the inclusion and relative weights of the individual commodities, to arrive at a total market benchmark whose constituents will grow as the futures market liquidity deepens and lengthens in coming years.

The JPMCCI offers several advantages over traditional passive and semi-active products, including:

• **Curve-neutral approach**. JPMCCI includes open interestweighted baskets of commodity contracts across the futures curves to capture all available investment opportunities in each market. The chief innovation is thus a curve-neutral approach to gaining commodity exposure. This method reduces the disadvantages of traditional, passive products which concentrate exposure in a single tenor (either front contract or a single deferred contract), or of engineered strategies which choose an optimal exposure to different parts of the curve over time. This adaptability is particularly useful given that investment opportunities at the long-end are increasing. As chart 2 highlights, the share of the investable commodity universe captured by JPMCCI is much higher than by traditional indices.

- **Representativeness**. JPMCCI is a representative index reflecting the available market opportunities, as measured by open interest. This is analogous to face amount outstanding in bond markets or shares outstanding in equity markets. Monthly compositions for each commodity index are guided by the historical distribution of open interest of commodity contracts across the futures curve in the same calendar month of the preceding three years, in order to capture shifts in liquidity along the curve.
- **Broader coverage**. The JPMCCI includes thirty three exchange commodities, a wider range of products than traditional indices. Additional commodities include NYMEX platinum, NYMEX palladium, CBOT soybean meal, NYBOT orange juice, LIFFE robusta coffee, LIFFE white sugar and MGE spring wheat.
- Lower volatility and higher risk-adjusted returns. JPMCCI avoids the front-end bias associated with traditional commodity indices and offers substantial diversification benefits. By investing in multiple contracts per commodity, JPMCCI reduces return volatility and increases risk-adjusted returns for 24 out of the 25 commodities included in S&P GSCI and DJ-AIGCI. Moreover, a JPMCCI investment portfolio benefits from greater intermonth composition stability. Although positions may be adjusted monthly, many contracts are held for multiple months since deferred liquidity in many commodities tends to be concentrated in certain months each year. This differs from traditional indices which may liquidate their current holdings entirely when rolling from one contract to another.



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Methodology: Single Commodity Curve Indices

Why Open Interest

The concept of JPMCCI is straightforward: through a series of inclusion rules, JPMCCI holds commodity futures contracts along the curve in proportion to their **open interest** (chart 3 provides an example). Open interest is the total number of outstanding futures contracts held by market participants, so is a stock measure approximating the size of commodity markets from a financial perspective. JPMCCI is properly aligned with these opportunities. From an investor's standpoint, this approach should be preferable to alternatives such as production or volume weights.

Production weights are useful in highlighting a commodity's economic significance, but often include many commodities which are not investable or are extremely cumbersome to access. Global production weight is a measure of the physical commodities market, which is distinctly separate from the futures market where the actual index exposure is being taken. Production weights also lead inevitably to a much larger overweight of energy than would be consistent with prudent diversification (S&P GSCI allocates over 70% to the energy sector).

Futures **volume**, which tracks the number of contracts that change hands between buyers and sellers, is a good measure of market depth, but poor data quality across commodity curves and over time (relative to open interest) makes it unsuitable for constructing a benchmark like JPMCCI, which dates back to 1990. In addition, the lower volatility of open interest versus volume allows for smoother rebalancing along the curve and across commodities.

Historically, investment solely in the nearby contract was acceptable as liquidity was particularly concentrated there, and deferred contracts did not offer enough depth to accommodate meaningful investment. This is no longer the case. Chart 4 compares the weighted average tenor of the WTI Crude Oil market to that of S&P GSCI's holdings. It demonstrates that exposure is increasingly being taken further out on the futures curve, making investment solely in the front month contract less and less representative of the total futures market.

There will rightfully be concerns that investment in the longer dated contracts included in the JPMCCI will face liquidity constraints. Table 1 on the following page compares the open interest and volume utilised in WTI Crude Oil for a US\$1 billion investment of JPMCCI, S&P GSCI and DJ-AIGCI. The allocation using the JPMCCI results in a lower share of total market open interest and volume (0.2% and Global Commodity Research JPMorgan Introducing the JPMorgan Commodity Curve Index November 9, 2007



Source: JPMorgan, September 28, 2007



0.3%, respectively) of the nearby contract than S&P GSCI (1.3%, 1.5%) and DJ-AIGCI (0.5%, 0.6%). At its furthest point, JPMCCI utilizes a comparable portion of the total market open interest (0.3%), and a higher, but reasonable amount of total volume (2.6%).

Wheat is another example. DJ-AIGCI allocates a lower weighting to energy and a higher concentration to agriculture. Comparing the same \$1 billion investment of JPMCCI versus S&P GSCI and DJ-AIGCI portfolio into their respective wheat indices, we find a much higher usage of open interest and volume in the nearby contract for both S&P GSCI and DJ-AIGCI versus JPMCCI. In fact, DJ-AIGCI uses a slightly higher amount of total market volume (2.7%) to invest in the front month than JPMCCI does in its furthest dated contract of its WTI Crude Oil index.

Despite exposure to deferred parts of the curve, JPMCCI is a replicable index. Exposure is naturally weighted to the more liquid tenors, whereas the less liquid contracts are accordingly reduced by the open interest weighting scheme.

Chart 4: WTI Crude Oil OI weighted tenor vs S&P GSCI exposure

Determining weights along the futures curve

The JPMCCI single commodity indices include multiple contracts with different expirations of the same commodity. When deriving the composition of a JPMCCI index for a particular month, the selection of contracts and assignment of weights ideally should reflect the distribution of open interest along the futures curve for that month. However, since it is not possible to know this distribution ex-ante, the composition is based on the historical distribution of open interest. Specifically, we derive the composition for a particular month by averaging the distribution of open interest in the same calendar month of the previous three years, in order to capture both structural and cyclical shifts in liquidity along the curve. Three years' history was chosen as a time span long enough to filter out any short-term anomalies, but short enough to maintain fluidity and reflect changing market dynamics.

For example, to construct the composition for the month of January 2007, we average the distribution of open interest of contracts along the curve in January 2006, January 2005 and January 2004. The following is the process of constructing the WTI Crude Oil composition for January 2007.

1. Calculate distribution of OI for each of the preceding three years. The distribution of open interest for the same calendar month for each of the preceding three years (January 2004, January 2005 and January 2006) are calculated across the entire futures curve. As Table 2 illustrates,

Table 1: Open interest and volume utilized to invest \$1 billion in JPMCCI, S&P GSCI and DJ-AIGCI WTI and Wheat indices (Sept 28, 2007)

	Crude Oil	futures			JPMCCI ir	vestment		S&P GSC	l investment	DJ-AIGCI investment		
Contract	\$ per barrel	Open Interest	Volume	Dollar weights	No of contracts	% of OI	% of volume	% of OI	% of volume	% of OI	% of volume	
Nov 2007	81.66	340,915	294,397	37.2%	824	0.2%	0.3%	1.3%	1.5%	0.5%	0.6%	
Dec 2007	80.48	231,590	141,522	23.4%	526	0.2%	0.4%	-	-	-	-	
Jan 2008	79.58	87,700	41,186	9.5%	217	0.2%	0.5%	-	-	-	-	
Mar 2008	78.31	45,488	5,382	4.8%	111	0.2%	2.1%	-	-	-	-	
Jun 2008	76.95	54,066	5,983	7.1%	167	0.3%	2.8%	-	-	-	-	
Dec 2008	74.98	156,568	12,406	11.4%	274	0.2%	2.2%	-	-	-	-	
Dec 2009	72.94	57,139	6,186	6.5%	162	0.3%	2.6%	-	-	-	-	

	Wheat fu	itures			JPMCCI in	nvestment		S&P GSC	linvestment	DJ-AIGCI investment		
Contract	\$ per bushel	Open Interest	Volume	Dollar weights	No of contracts	% of OI	% of volume	% of OI	% of volume	% of OI	% of volume	
Dec 2007	9.39	235,392	60,077	78.6%	510	0.2%	0.8%	0.4%	1.7%	0.7%	2.7%	
Mar 2008	9.47	57,069	16,253	13.9%	90	0.2%	0.6%	-	-	-	-	
Jul 2008	6.81	62,622	6,116	7.5%	67	0.1%	1.1%	-	-	-	-	

Source: JPMorgan

Table 2: Calculating the distribution of open interest in the preceding three years

January 2004																																		
Contract	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Dec-06	Dec-07	Dec-08	Dec-09	Dec-10
Distribution of OI in %	9.6	27.8	9.5	5.2	6.0	4.4	2.5	3.9	2.8	2.0	7.5	2.3	0.8	0.7	0.4	0.3	1.4	0.5	0.3	0.4	0.2	0.2	3.5	0.3	0.1	0.0	0.0	0.0	0.9	2.4	1.4	1.1	0.8	0.7
January 2005																																		
Contract	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Dec-07	Dec-08	Dec-09	Dec-10	Dec-11
Distribution of OI in %	9.2	24.9	8.9	4.2	5.4	3.1	1.7	2.1	1.4	2.1	8.1	1.4	0.7	1.3	0.7	0.4	3.5	0.4	0.2	0.5	0.2	0.2	5.8	0.2	0.2	0.1	0.0	0.0	1.6	3.0	3.1	2.4	2.6	0.3
January 2006																																		
Contract	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Dec-08	Dec-09	Dec-10	Dec-11	Dec-12
Distribution of OI in %	9.4	27.1	9.2	4.8	6.8	2.0	1.5	2.4	1.0	1.5	6.8	1.7	0.5	0.9	0.6	0.3	2.5	0.3	0.3	0.4	0.3	0.3	6.3	0.2	0.2	0.3	0.1	0.1	1.1	3.7	2.2	3.1	1.4	0.5
Source: JPMorgan																																		
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Table 3: Prelimina	ry 20)07 c	omp	ositi	on																													
3 years average, %	9.4	26.6	9.2	4.7	6.1	3.2	1.9	2.8	1.7	1.9	7.5	1.8	0.7	1.0	0.6	0.3	2.5	0.4	0.3	0.5	0.3	0.2	5.2	0.3	0.2	0.1	0.0	0.0	1.2	3.0	2.2	2.2	1.6	0.5
Assigned to contract	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Dec-09	Dec-10	Dec-11	Dec-12	Dec-13

Source: JPMorgan

Table 4: Constructing the preliminary composition for January 2007

	Preliminary			Final weight
Contract	weight	Filter	Action	(rescaled)
Feb-07	9.4%	9.4%	Expiry, removed	-
Mar-07	26.6%	26.6%	Included	40.6%
Apr-07	9.2%	9.2%	Included	14.1%
May-07	4.7%	4.7%	Included	7.2%
Jun-07	6.1%	6.1%	Included	9.3%
Jul-07	3.2%	3.2%	Included	4.9%
Aug-07	1.9%	1.9%	Less than 3%, removed	-
Sep-07	2.8%	2.8%	Less than 3%, removed	-
Oct-07	1.7%	1.7%	Less than 3%, removed	-
Nov-07	1.9%	1.9%	Less than 3%, removed	-
Dec-07	7.5%	7.5%	Included	11.4%
Jan-08	1.8%	1.8%	Less than 3%, removed	-
Feb-08	0.7%	0.7%	Less than 3%, removed	-
Mar-08	1.0%	1.0%	Less than 3%, removed	-
Apr-08	0.6%	0.6%	Less than 3%, removed	-
May-08	0.3%	0.3%	Less than 3%, removed	-
Jun-08	2.5%	2.5%	Less than 3%, removed	-
Jul-08	0.4%	0.4%	Less than 3%, removed	-
Aug-08	0.3%	0.3%	Less than 3%, removed	-
Sep-08	0.5%	0.5%	Less than 3%, removed	-
Oct-08	0.3%	0.3%	Less than 3%, removed	-
Nov-08	0.2%	0.2%	Less than 3%, removed	-
Dec-08	5.2%	5.2%	Included	7.9%
Jan-09	0.3%	0.3%	Less than 3%, removed	-
Feb-09	0.2%	0.2%	Less than 3%, removed	-
Mar-09	0.1%	0.1%	Less than 3%, removed	-
Apr-09	0.0%	0.0%	Less than 3%, removed	-
May-09	0.0%	0.0%	Less than 3%, removed	-
Jun-09	1.2%	1.2%	Less than 3%, removed	-
Jul-09	0.0%	0.0%	Less than 3%, removed	-
Aug-09	0.0%	0.0%	Less than 3%, removed	-
Sep-09	0.0%	0.0%	Less than 3%, removed	-
Oct-09	0.0%	0.0%	Less than 3%, removed	-
Nov-09	0.0%	0.0%	Less than 3%, removed	-
Dec-09	3.0%	3.0%	Included	4.7%
Dec-10	2.2%	2.2%	Less than 3%, removed	-
Dec-11	2.2%	2.2%	Less than 3%, removed	-
Dec-12	1.6%	1.6%	Less than 3%, removed	-
Dec-13	0.5%	0.5%	Less than 3%, removed	-

Source: JPMorgan

the distribution pattern should not vary significantly from year to year; this makes it plausible to construct the January 2007 composition based on the past three Januaries.

- 2. Construct the preliminary open-interest weighted composition. The preliminary composition is constructed by averaging the distribution of open interest in the preceding three years. In this context, the average is defined as the sum of the distribution of open interest in the preceding three years, divided by 3. For example, the average value assigned to the February 2007 contract is calculated as $(9.6\% + 9.2\% + 9.4\%) \div 3 = 9.4\%$. Results are listed in Table 3 on the previous page.
- **3. Filter contracts for inclusion.** The criteria for contract inclusion are as follows:
- Each contract for inclusion should represent at least 3% of total open interest across the futures curve (as represented by the preliminary weights calculated in Step 2). This prevents illiquid contracts from incurring excessive slippage costs and jeopardizing index replicability.
- Each contract should NOT encounter expiry, Last Trade Date or First Notice Day prior to completion of the following month's roll; or in the case of LME contracts, encounter a Last Trade Date in the same month of the last anticipated roll date.

For example, in January 2007, all outstanding WTI Crude Oil contracts along the curve from March 2007 onwards are available for trading up until the 10th business day of the February roll, and thus eligible for inclusion. However, for the January 2007 composition of NYMEX Brent Crude, only the Apr-2007 and longer-dated contracts are eligible for inclusion. The Mar-2007 Brent Crude contract has a last trade date of February 13, 2007; the contract ceases to trade before it can be completely phased out during the February roll, and therefore cannot be included in the January 2007 composition.

Table 4 illustrates the process for removing non-eligible contracts from the composition.

4. Select contracts for the index basket and construct the final composition. The final index basket is constructed by applying the series of filters outlined above to select the most representative contracts. Finally, the weights for the selected contracts are rescaled to 100%. The January 2007 composition for the WTI Crude Oil index is thus determined, as shown in Table 5.

Table 5: Final Composition for WTI Crude Oil index for January 2007

				•••					_
Contract	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Dec-07	Dec-08	Dec-09	
Final weight	40.6%	14.1%	7.2%	9.3%	4.9%	11.4%	7.9%	4.7%	
Source: JPMorgan									Ì

Announcement of index compositions

The index compositions – selected contracts and weights – are scheduled for announcement twice a year. Weights for the January to June composition will be announced in November of the prior year, and weights for the July to December composition will be announced in May. Table 6 is an example of the WTI Crude Oil composition schedule that would have been announced in April 2007.

Rolling methodology

Since the composition of the index is determined on a monthby-month basis, the basket of contracts and weights for each month could vary. This reflects the changing open interest distribution profile with the passage of time, as longdated contracts further out the curve become more liquid and those at the front end of the curve become less liquid as they approach their expiration dates. Accordingly, to replicate the index, investors need to re-adjust positions monthly. This process may involve liquidation of contracts at the front-end that is close to expiration, purchasing new contracts or increasing exposure on contracts currently held, and the decrease of exposure or even liquidation of contracts currently held.

To mitigate the risk of price shocks, the composition of the current month is slowly introduced. The notional amount needed to be bought or sold for each contract is divided into 10 equal parts, executed at the end of every day between the 1st to 10th business days. In other words, the target composition for any month is reached at the end of the 10th business day of that month, when the roll process is complete. Thus, the notional weights shown in Table 7 on the following page are end-of-day weights, which would be used to compute the following day's return. For example, the Feb-07 contract needs to be liquidated. The entire 37.6% notional position is not sold at one time but in portions of 3.76% at the end of each day, starting from the first roll day.

Index calculation methodology

There are three components of commodity total return: price return, roll return, and collateral return. The sum of price and roll return is referred to as excess return; the sum of excess return and collateral return is total return.

Total Return: measures a fully collateralized investment in JPMCCI commodity futures, taking into account the monthly rolling of contracts.

Excess Return: measures the return earned from investing in the commodity futures composition of the JPMCCI, taking into account the effect of monthly composition changes during the roll period.

Price Index: reflects the aggregate price levels of the contracts included in the JPMCCI.

Roll Return: is the component of return that arises from rolling a long position through time in a sloping price curve environment. For JPMCCI, the roll would occur over the first ten business days of each month. Roll return is derived by subtracting the percentage change in the Price Index from the Excess Return.

JPMCCI excess return levels capture the return on commodity futures investments. On non-roll days, index return calculations are fairly straightforward. The value of the basket of contracts for today and the prior day are calculated as the sum product of the notional weights and their prices. The index return is then simply the percentage change of these values.

On roll days, the excess return is calculated by aggregating, using the prior day's roll weights, the values of the outgoing and incoming baskets on both days and computing the percentage change in these values. Values for both baskets are calculated exactly as described above for a single basket on a non-roll day. For example, on the third business day, the

Month				Cont	racts			
July 2007	Sep-07	Oct-07	Nov-07	Dec-07	Jan-08	Jun-08	Dec-08	Dec-09
July 2007	37.7%	12.4%	6.1%	14.9%	5.0%	5.5%	11.7%	6.7%
August 2007	Oct-07	Nov-07	Dec-07	Jan-08	Jun-08	Dec-08	Dec-09	
August 2007	35.6%	13.6%	17.8%	7.0%	6.5%	12.3%	7.3%	
Sontombor 2007	Nov-07	Dec-07	Jan-08	Mar-08	Jun-08	Dec-08	Dec-09	
September 2007	36.1%	23.1%	9.5%	4.9%	7.3%	12.0%	7.1%	
October 2007	Dec-07	Jan-08	Feb-08	Mar-08	Jun-08	Dec-08	Dec-09	
	43.6%	15.6%	7.0%	5.6%	8.2%	12.2%	7.8%	
November 2007	Jan-08	Feb-08	Mar-08	Apr-08	Jun-08	Dec-08	Dec-09	Dec-10
November 2007	38.9%	11.9%	8.2%	5.3%	8.9%	12.9%	9.1%	4.7%
December 2007	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Dec-08	Dec-09	Dec-10
December 200/	33.3%	15.8%	8.2%	5.0%	9.4%	13.9%	9.4%	5.1%

Table 6: April 2007 Composition Announcement for WTI Crude Oil Index

Source: JPMorgan

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value of the two baskets are aggregated using 80% for the outgoing basket and 20% for the incoming basket because the index invested in that ratio at the end of the second business day.

The excess return index level, initialized at 100 on 29 December 1989, is simply the prior business day's index level compounded with the present day's excess return.

JPMCCI Single Commodity Performance

A balance between transaction costs and diversification benefits is achieved through the contract selection process executed in the final composition construction phase, as described in the previous methodology section. Moreover, the monthly re-adjustment of positions described above provides greater composition stability from month to month. Unlike traditional commodity indices that only hold one contract (two during roll periods), liquidate their existing positions completely, and assume a new one as often as every month, a significant percentage of contract holdings in JPMCCI are carried forward from month to month because the index invests across the futures curve. On average, 60-70% of JPMCCI WTI Crude Oil composition is held and maintained throughout each roll, versus only 10-15% for S&P GSCI (S&P GSCI may hold contracts for more than one month if there is no following monthly contract to roll into).

An S&P GSCI portfolio during a roll must sell out of its single soon-to-expire contract and buy into the next nearby, leaving it 100% exposed to the front and generally the steepest part of the curve. DJ-AIGCI rolls less often, but still faces the same problem of concentrating its entire roll over a five day roll period.

Holding contracts across the commodity futures curve requires less month-to-month composition change; in

Table 7: Rolling process for JPMCCI Crude Oil, January 2007

addition, it reduces its concentration of exposure away from the front end of the curve, which is usually the steepest part, and which has also usually been in contango. Since 1990, S&P GSCI commodities spent 65% of the time in contango, suffering a punitive roll return.

JPMCCI's strong performance does not only hold in this contango scenario where the negative roll yield of the nearby contract is prominent. For example, holding exposure across the commodity futures curve reduced the drag from negative roll yield in the front WTI Crude Oil contract during the contangoed market of 2005, while still capturing the yield



Contract		Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Dec-07	Dec-08	Dec-09
Pre-roll and	post-roll snapshots				-					
January 2007	7 pre-roll composition	37.6%	17.5%	9.6%	5.7%	9.5%	0.0%	11.7%	8.4%	0.0%
January 2007	post-roll composition	0.0%	40.6%	14.1%	7.2%	9.3%	4.9%	11.4%	7.9%	4.7%
Total buy/sell	L .	-37.6%	23.1%	4.4%	1.5%	-0.3%	4.9%	-0.3%	-0.5%	4.7%
Rolling proc	ess, on a day-by-day basis									
29-Dec-06	Pre-roll	37.6%	17.5%	9.6%	5.7%	9.5%	0.0%	11.7%	8.4%	0.0%
03-Jan-07	1st roll day	33.8%	19.8%	10.1%	5.8%	9.5%	0.5%	11.7%	8.3%	0.5%
04-Jan-07	2nd roll day	30.1%	22.1%	10.5%	6.0%	9.5%	1.0%	11.6%	8.3%	0.9%
05-Jan-07	3rd roll day	26.3%	24.5%	11.0%	6.1%	9.4%	1.5%	11.6%	8.3%	1.4%
08-Jan-07	4th roll day	22.5%	26.8%	11.4%	6.3%	9.4%	1.9%	11.6%	8.2%	1.9%
09-Jan-07	5th roll day	18.8%	29.1%	11.8%	6.4%	9.4%	2.4%	11.5%	8.2%	2.3%
10-Jan-07	6th roll day	15.0%	31.4%	12.3%	6.6%	9.4%	2.9%	11.5%	8.1%	2.8%
11-Jan-07	7th roll day	11.3%	33.7%	12.7%	6.7%	9.3%	3.4%	11.5%	8.1%	3.3%
12-Jan-07	8th roll day	7.5%	36.0%	13.2%	6.9%	9.3%	3.9%	11.5%	8.0%	3.7%
16-Jan-07	9th roll day	3.8%	38.3%	13.6%	7.1%	9.3%	4.4%	11.4%	8.0%	4.2%
17-Jan-07	10th roll day/post-roll	0.0%	40.6%	14.1%	7.2%	9.3%	4.9%	11.4%	7.9%	4.7%

Source: JPMorgan

pickup in the backwardated market of 2003 (see chart 5). This is due to the fact that JPMCCI, being invested across the futures curve, is able to take advantage of the changes along term structure.

In 2003, the WTI Crude Oil curve was generally in backwardation, therefore S&P GSCI was able to generate a positive roll yield; in addition, it gained approximately 4% on price appreciation. JPMCCI, by holding multiple furtherdated contracts, was able to capitalize on the steepening at the back end of the futures curve which contributed to a higher price appreciation, while earning additional pickup from the roll in long-dated tenors.

By investing in multiple contracts per commodity, JPMCCI outperforms 24 out of the 25 commodities included in the S&P GSCI and DJ-AIGCI, with reduced roll volatility and increased risk-adjusted return. Complete details of JPMCCI single commodity performance versus other benchmarks are outlined on pages 13-15.

Methodology: JPMCCI Aggregate Index

The concept of JPMCCI is to create a comprehensive portfolio of commodities that represents a transparent, diversified, and investable commodities market place. We consider commodities which meet the following requirements for inclusion in the JPMCCI each year:

- Only publicly exchange-traded physical commodities are considered for inclusion
- The exchange on which the commodity is traded must be a valid US or UK exchange
- The commodity must be USD-denominated
- The commodity must have traded for at least one year before inclusion
- The commodity must have a minimum estimated market size of US\$250 million

Estimated market size is defined as the 3-year historical average open interest as reported by the Futures Industry Association, multiplied by the commodity's first nearby futures price, as of the last business day in October prior to the new composition year. Once a commodity is included into the JPMCCI, it will remain in the index until its estimated market size falls below US\$150 million, at which point it will be removed at the next rebalancing. This is to prevent the churning of commodities that border the US\$250 million mark.

Table 8: JPMCCI commodities vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
	33 commodities	24 commodities	19 commodities
Energy			
ICE Brent Crude	7.4%	14.7%	-
ICE Gas Oil	3.6%	5.2%	-
NYMEX Crude Oil	17.8%	37.1%	14.7%
NYMEX Gasoline	3.1%	1.3%	4.3%
NYMEX Heating Oil	4.1%	5.8%	4.3%
NYMEX Natural Gas	10.0%	6.3%	10.7%
Industrial Metals			
COMEX Copper	2.1%	-	7.2%
LME Aluminum	6.9%	2.6%	5.3%
LME Copper	9.8%	3.9%	-
LME Lead	1.2%	0.7%	-
LME Nickel	2.0%	1.1%	2.1%
LME Zinc	2.7%	0.9%	1.9%
Precious Metals			
COMEX Gold	5.8%	2.0%	6.8%
COMEX Silver	2.0%	0.3%	2.1%
NYMEX Palladium	0.1%	-	-
NYMEX Platinum	0.2%	-	-
Agriculture			
CBOT Corn	3.9%	2.9%	4.7%
CBOT Soybean	3.5%	2.0%	9.2%
CBOT Soybean Meal	1.1%	-	-
CBOT Soybean Oil	1.1%	-	3.2%
CBOT Wheat	3.0%	4.7%	7.7%
NYBOT Cocoa	0.6%	0.2%	-
NYBOT Coffee	1.2%	0.7%	2.6%
NYBOT Cotton	0.9%	0.9%	3.0%
NYBOT Sugar	1.1%	1.0%	2.3%
NYBOT Orange Juice	0.2%	-	-
LIFFE White Sugar	0.1%	-	-
LIFFE Robusta Coffee	0.3%	-	-
KCBOT Winter Wheat	1.1%	1.6%	-
MGE Spring Wheat	0.4%	-	-
Livestock			
CME Feeder Cattle	0.3%	0.6%	-
CME Live Cattle	1.6%	2.5%	5.3%
CME Lean Hogs	0.7%	1.2%	2.5%

Source: JPMorgan and Index Sponsors

Chart 6: Sector weights across indices (as of Sept 28, 2007)



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As shown in Table 8, JPMCCI includes 33 single commodities in the aggregate index, greater than traditional benchmark offerings.

JPMCCI single commodity indices are aggregated according to their dollar market sizes to form the aggregate JPMCCI index. Allowing open interest to guide the weightings of each commodity produces a more balanced allocation across sectors, as illustrated in chart 6.

Exchange commodities are considered for inclusion only if the necessary data are readily available and expected to continue to be obtainable in the future for generating the composition and index calculation.

In certain exceptional cases, JPMorgan may substitute one commodity for another, such as when an exchange announces a cease trade of one commodity futures and another has emerged as a natural substitute. The methodology by which this substitution will be effected will be announced as far in advance as possible.

JPMCCI Aggregate Performance

As summarized in the previous section, most JPMCCI single commodity indices outperform those of S&P GSCI and DJ-AIGCI. By extension, the aggregate JPMCCI does as well. Including a wider selection of commodities and distributing the exposure across the whole futures curve leads to higher absolute as well as risk-adjusted returns (see chart 7).

Overall, JPMCCI benefits from reduced roll return volatility: 6.3% annual roll return volatility against 11.5% for S&P GSCI and 7.6% for DJAIG-CI (see chart 8 and table 13 on page 16).



JPMCCI Diversification Benefits

Investment in JPMCCI provides returns that are largely independent of stock, bond and credit market returns, as illustrated in chart 9 below and table 9 on the following page. Unsurprisingly, the inclusion of commodities through JPMCCI into traditional portfolios raises risk-adjusted returns. Consider the 50% stock and 50% bond portfolio illustrated in chart 10 on the following page. The dark blue curve represents the risk-return profile of adding JPMCCI incrementally into the portfolio. Replacing 30% of the portfolio with JPMCCI results in a per annum return increase of 0.9% and a volatility reduction of 0.8%.





Source: JPMorgan and Index Sponsors



Chart 9: Correlation of JPMCCI with S&P 500, US bonds, and US credit monthly data, % oya, rolling two-year period

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Hedging equity market declines

In addition to long-run diversification, some investors are also concerned with hedging declines in core markets over discrete periods, such as an annual holding period. Commodities can provide insurance for this under two circumstances: (1) when the cause of an equity market decline is a geopolitical event/supply shock (1973, 1974, 1977, 1990); or (2) when a commodity price rise contributes to the inflation trend motivating central bank tightening and eventual growth slowdown (1994, 2000). It should therefore be unsurprising that commodity indices have generated positive returns in the majority of years when equities decline. Since inception in 1990, JPMCCI has as well (see chart 11 on following page). Global Commodity Research JPMorgan Introducing the JPMorgan Commodity Curve Index November 9, 2007





Source: JPMorgan and Index Sponsors. Data from Jan 1996 to Sep 2007 Bond Investment : Lehman US Aggregate. Stock Investment : S&P 500.

Table 9: Performanc	e of JPMCCI a	and other comm	odity benchmar	ks versus othe	r asset classes			
Total Returns	JPMCCI	S&P GSCI	DJ-AIGCI	S&P 500	U.S. Treas	Lehman US Credit	Lehman US Agg	EM Bonds
1990	19.2%	29.1%	-	-3.1%	8.6%	7.1%	9.0%	-
1991	-10.3%	-6.1%	-5.8%	30.5%	14.8%	18.5%	16.0%	38.8%
1992	2.8%	4.4%	3.7%	7.6%	7.2%	8.7%	7.4%	7.0%
1993	-3.3%	-12.3%	-1.1%	10.1%	10.1%	12.2%	9.7%	44.2%
1994	20.6%	5.3%	16.6%	1.3%	-2.9%	-3.9%	-2.9%	-19.3%
1995	9.3%	20.3%	15.2%	37.6%	17.3%	22.2%	18.5%	27.3%
1996	14.8%	33.9%	23.2%	23.0%	2.9%	3.3%	3.6%	37.8%
1997	1.6%	-14.1%	-3.4%	33.4%	10.0%	10.2%	9.7%	10.8%
1998	-23.3%	-35.7%	-27.0%	28.6%	10.3%	8.6%	8.7%	-8.1%
1999	23.7%	40.9%	24.3%	21.0%	-2.9%	-2.0%	-0.8%	19.6%
2000	37.5%	49.7%	31.8%	-8.1%	13.9%	9.1%	11.6%	12.7%
2001	-25.6%	-31.9%	-19.5%	-12.8%	6.6%	10.3%	8.4%	9.7%
2002	24.4%	32.1%	25.9%	-22.1%	12.2%	10.1%	10.3%	13.7%
2003	28.8%	20.7%	23.9%	28.7%	2.4%	8.2%	4.1%	22.2%
2004	23.1%	17.3%	9.1%	10.9%	3.7%	5.4%	4.3%	11.6%
2005	39.8%	25.6%	21.4%	4.9%	2.9%	1.7%	2.4%	10.2%
2006	5.8%	-15.1%	2.1%	15.8%	3.1%	4.3%	4.3%	9.9%
2007 YTD	15.3%	18.8%	11.0%	9.1%	4.9%	2.5%	3.8%	3.3%
Cum Return*	347.3%	173.9%	248.5%	548.9%	201.6%	238.0%	210.0%	784.5%
Annualized Return*	9.4%	6.2%	7.7%	11.8%	6.8%	7.5%	7.0%	13.9%
Volatility *	12.8%	18.7%	12.2%	13.5%	4.4%	4.7%	3.7%	12.9%
Sharpe Ratio*	0.39	0.11	0.29	0.56	0.61	0.72	0.78	0.74
Correlations*	JPMCCI	S&P GSCI	DJ-AIGCI	S&P 500	U.S. Treas	Lehman US Credit	Lehman US Agg	EMBIGD
JPMCCI	1.00							
S&P GSCI	0.88	1.00						
DJ-AIGCI	0.95	0.89	1.00					
S&P 500	0.07	-0.01	0.09	1.00				
U.S. Treas	-0.01	0.06	0.01	-0.06	1.00			
Lehman US Credit	0.00	0.05	0.04	0.18	0.89	1.00		
Lehman US Agg	0.02	0.07	0.03	0.07	0.95	0.94	1.00	
EM Bonds	0.12	0.07	0.16	0.50	0.19	0.37	0.27	1.00

Source: JPMorgan and Index Sponsors; *Figures based on monthly returns from January 1991 to September 2007, to accomodate comparison with DJ-AIGCI. Correlations are based on monthly returns.

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Hedging inflation risk

Although inflation could be hedged directly through inflation-linked bonds/swaps, considerations such as liquidity and higher return often drive preferences for other real assets such as commodities, equities, commodity equities, real estate and even commodity currencies. This issue has been discussed in detail in *Hedging Inflation with Real Assets*, J. Normand, July 28, 2006. Consistent with those results, JPMCCI also exhibits a positive correlation with US inflation (see chart 12).

JPMCCI (and some of its sub-sectors) also generates higher returns than other real assets when inflation surprises to the upside in a given year. We measure surprises as the difference between consensus expectations on inflation reported in January each year and realized inflation 12 months later. The resulting forecast error is a proxy for unexpected inflation. Since consensus data are only available since 1990, the sample period for this analysis is sub-optimal (seventeen years) but still adequate. Over that period annual inflation has surprised to the upside seven times in the US, six times in the Euro area, five times in the UK and eight times in Japan. In most countries and in most instances, the forecast error has been small (1% or less), but these upside surprises nonetheless correlate positively with real asset returns across countries.

The magnitude of returns varies significantly across asset classes, however. Commodities – particularly energy and base metals – tend to generate the highest returns when inflation surprises to the upside (see chart 13) given that these products are direct components of CPI indices. In the US, average returns on the JPMCCI when inflation surprises occur are 26%, compared to 8% on TIPS, 4% on equities, 12% on real estate and 9% on commodity currencies. Mining and energy stocks both post positive returns (3% and 14%, respectively), but those returns are far lower than the gains on broad commodity indices or even sub-sector indices such as energy or base metals.

Chart 11: JPMCCI vs equity market returns



Source: JPMorgan and Index Sponsors

Chart 12: Correlation of JPMCCI with US CPI

monthly data, % change oya, rolling two-year period





Chart 13. Returns across real assets when US inflation surprises to the upside, 1990 - 2006 $\,$

Sourcing JPMCCI

JPMCCI index levels are calculated and published for every Index Valuation Day, defined as a day where at least half of the exchange commodities are open and scheduled for trading. Settlement prices are used to calculate official closing levels.

Disrupted Days

A day is considered a Disrupted Day for a commodity if:

- the settlement price for any contract in the portfolio of a JPMCCI single commodity is not obtainable
- the settlement price for a contract in the JPMCCI single commodity is a limit price

To allow for marking-to-market, closing index levels will still be published on a Disrupted Day if it is an Index Valuation Day, using exchange-published official settlement prices. If a settlement price is not obtainable, then the previous day's level will be used for index level calculation. If the settlement price is a limit price, the limit price will be used to calculate the index.

However, if a contract experiences a disruption during the roll period, the roll for the commodity on the Disrupted Day will be postponed until the next Index Valuation Day when all contract settlement prices are available, and which is not a Disrupted Day. The portion of the roll that would have otherwise taken place is made up on the next valid roll day. For example, if the first business day of the month was a Disrupted Day, the 10% that would have rolled is postponed until the next valid roll day, at which point 20% (10% of the postponed roll plus 10% of the scheduled roll for the current day) of the holdings will be rolled.

Accessing JPMCCI

JPMCCI information is available through a variety of sources which makes tracking and benchmarking the index easy for investors.

MorganMarkets

www.morganmarkets.com

Users can access JPMCCI using their MorganMarkets ID and password (these can be obtained from JPMorgan sales representatives). The website is accessed using the Commodities link on the MorganMarkets home page. This site provides comprehensive index information, available for download for the aggregate, sector, and single commodity JPMCCI indices:

- Excess Return Index Levels
- Price Index Levels
- Total Return Index Levels
- Weights
- Average Maturity

DataQuery

http://dataquery.jpmorgan.com

DataQuery is a web-based application for reporting and analyzing research data. JPMCCI information is available using this tool, which enables users to view and download index levels, returns and statistics at single commodity, sector and aggregate levels.

Bloomberg

Ticker: <JMCX>

Aggregate, sector and individual market index levels and statistics are available by typing JMCX <Go> on your Bloomberg terminal.

Monthly publications

The monthly *Commodities Index Monitor* contains JPMCCI index levels and statistics, including return decomposition, weights, and average maturity. It also includes performance across commodity indices and other real asset classes.

Table 10: Performance of JPMCCI vs other commodity indices, January 1991 - September 2007

Based on excess returns over cash

	Market			JPMCCI			S&P GSCI			DJ-AIGCI	
	Generic		Ann. excess			Ann. excess			Ann. excess		
Commodity	contract	Exchange	return	Vol	Sharpe	return	Vol	Sharpe	return	Vol	Sharpe
Aggregate			5.0%	12.8%	0.39	2.0%	18.7%	0.11	3.5%	12.2%	0.29
Energy			7.9%	25.2%	0.31	3.0%	29.4%	0.10	5.4%	29.7%	0.18
Crude Oil	CL	NYMEX	10.5%	25.4%	0.41	7.9%	30.4%	0.26	9.4%	29.1%	0.32
ICE Brent Crude	CO	ICE	11.8%	25.5%	0.46	-	-	-	-	-	-
NYMEX Gasoline	XB	NYMEX	11.7%	29.4%	0.40	8.6%	33.4%	0.26	8.7%	31.1%	0.28
Heating Oil	HO	NYMEX	7.1%	27.1%	0.26	3.5%	31.1%	0.11	5.7%	29.8%	0.19
Gas Oil	QS	ICE	7.9%	26.0%	0.30	-	-	-	-	-	-
Natural Gas	NG	NYMEX	1.5%	38.5%	0.04	-	-	-	-9.4%	50.5%	-0.19
Non-Energy			3.0%	10.5%	0.29	-0.7%	9.5%	-0.07	1.0%	9.6%	0.11
Industrial Metals			5.8%	16.8%	0.34	3.8%	17.0%	0.22	4.9%	18.1%	0.27
Nickel	LN	LME	9.7%	31.4%	0.31	-	-	-	8.1%	32.5%	0.25
Copper	LP	LME	9.8%	22.0%	0.45	8.9%	23.0%	0.39	-	-	-
Copper	HG	COMEX	9.6%	23.1%	0.42	-	-	-	9.0%	23.7%	0.38
Aluminium	LA	LME	-0.02%	15.3%	-0.001	-	-	-	-1.8%	16.5%	-0.11
Zinc	LX	LME	2.7%	21.4%	0.13	-	-	-	1.7%	22.7%	0.07
Lead	LL	LME	8.5%	21.8%	0.39	-	-	-	-	-	-
Precious Metals			0.9%	14.7%	0.06	0.9%	13.5%	0.07	1.1%	14.8%	0.08
Gold	GC	COMEX	0.04%	13.1%	0.003	0.04%	13.2%	0.003	0.1%	13.2%	0.01
Silver	SI	COMEX	3.2%	24.3%	0.13	2.9%	24.5%	0.12	3.1%	24.5%	0.13
Palladium	PA	NYMEX	9.2%	32.0%	0.29	-	-	-	-	-	-
Platinum	PL	NYMEX	8.8%	16.8%	0.53	-	-	-	-	-	-
Agriculture			-0.6%	13.9%	-0.05	-3.4%	14.9%	-0.23	-1.7%	14.4%	-0.12
Cotton	СТ	NYBOT	-6.7%	23.0%	-0.29	-8.1%	24.8%	-0.33	-8.1%	24.7%	-0.33
Coffee	KC	NYBOT	-6.0%	38.5%	-0.16	-6.8%	40.6%	-0.17	-6.7%	40.6%	-0.17
Robusta Coffee	CF	LIFFE	-	-	-	-	-	-	-	-	-
Sugar	SB	NYBOT	2.3%	26.0%	0.09	1.7%	28.4%	0.06	1.9%	28.3%	0.07
White Sugar	QW	LIFFE	7.1%	18.9%	0.38	-	-	-	-	-	-
Cocoa	SB	NYBOT	-5.5%	27.5%	-0.20	-7.1%	29.0%	-0.24	-	-	-
Corn	С	CBOT	-7.0%	21.0%	-0.33	-9.8%	22.3%	-0.44	-9.8%	22.3%	-0.44
Wheat	W	CBOT	-0.9%	22.3%	-0.04	-3.9%	23.4%	-0.17	-4.0%	23.4%	-0.17
Winter Wheat	KW	КСВОТ	4.4%	22.6%	0.20	-	-	-	-	-	-
Spring Wheat	MW	MGE	4.8%	21.2%	0.22	-	-	-	-	-	-
Soybeans	S	CBOT	2.3%	20.6%	0.11	2.0%	21.5%	0.10	2.1%	21.5%	0.10
Soybean Oil	BO	CBOT	-0.2%	22.3%	-0.01	-	-	-	-1.2%	23.0%	-0.05
Soybean Meal	SM	CBOT	5.3%	22.1%	0.24	-	-	-	-	-	-
Orange Juice	JO	NYBOT	-7.5%	28.7%	-0.26	-	-	-	-	-	-
Livestock			1.8%	11.1%	0.16	-2.4%	13.7%	-0.18	-2.6%	14.1%	-0.19
Lean Hogs	LH	CME	-1.5%	20.8%	-0.07	-8.2%	24.3%	-0.34	-7.9%	24.4%	-0.33
Live Cattle	LC	CME	2.2%	11.2%	0.20	0.1%	13.5%	0.01	0.3%	13.5%	0.02
Feeder Cattle	FC	CME	3.4%	11.9%	0.29	-	-	-	-	-	-

Table 11: Performance of JPMCCI vs other commodity indices, January 1997 - September 2007

Based on excess returns over cash

	Market			JPMCCI			S&P GSCI			DJ-AIGCI	
	Generic		Ann. excess			Ann. excess			Ann. excess		
Commodity	contract	Exchange	return	Vol	Sharpe	return	Vol	Sharpe	return	Vol	Sharpe
Aggregate			7.7%	14.9%	0.52	2.2%	21.7%	0.10	3.6%	14.2%	0.25
Energy			10.9%	28.4%	0.38	4.5%	32.8%	0.14	4.2%	33.9%	0.12
Crude Oil	CL	NYMEX	14.2%	27.9%	0.51	7.5%	33.5%	0.22	9.2%	32.7%	0.28
ICE Brent Crude	CO	ICE	16.2%	27.5%	0.59	-	-	-	-	-	-
NYMEX Gasoline	XB	NYMEX	15.8%	34.1%	0.46	11.5%	38.7%	0.30	10.5%	36.1%	0.29
Heating Oil	HO	NYMEX	10.8%	30.5%	0.36	4.5%	34.6%	0.13	6.8%	33.5%	0.20
Gas Oil	QS	ICE	12.3%	28.9%	0.43	-	-	-	-	-	-
Natural Gas	NG	NYMEX	1.9%	43.6%	0.04	-20.5%	59.8%	-0.34	-14.0%	55.4%	-0.25
Non-Energy			5.2%	11.6%	0.44	-1.9%	10.4%	-0.18	1.1%	10.7%	0.10
Industrial Metals			11.0%	17.9%	0.62	8.3%	17.7%	0.47	9.1%	19.4%	0.47
Nickel	LN	LME	20.1%	34.8%	0.58	18.1%	35.8%	0.51	18.6%	36.0%	0.52
Copper	LP	LME	15.7%	23.4%	0.67	13.9%	24.2%	0.57	-	-	-
Copper	HG	COMEX	13.6%	25.0%	0.55	-	-	-	12.4%	25.4%	0.49
Aluminium	LA	LME	3.3%	14.4%	0.23	0.5%	15.7%	0.03	1.5%	15.5%	0.10
Zinc	LX	LME	8.1%	23.9%	0.34	5.6%	25.0%	0.22	6.5%	24.9%	0.26
Lead	LL	LME	16.6%	22.9%	0.72	13.6%	24.9%	0.55	-	-	-
Precious Metals			4.1%	15.9%	0.26	4.2%	14.7%	0.29	4.2%	15.9%	0.26
Gold	GC	COMEX	3.0%	14.6%	0.21	3.0%	14.7%	0.20	3.0%	14.7%	0.20
Silver	SI	COMEX	7.0%	25.9%	0.27	6.6%	26.1%	0.25	6.6%	26.1%	0.25
Palladium	PA	NYMEX	11.0%	37.5%	0.29	-	-	-	-	-	-
Platinum	PL	NYMEX	16.3%	18.0%	0.90	-	-	-	-	-	-
Agriculture			-2.0%	15.5%	-0.13	-7.3%	16.2%	-0.45	-4.0%	15.9%	-0.25
Cotton	СТ	NYBOT	-12.9%	24.7%	-0.52	-15.4%	26.2%	-0.59	-15.4%	26.2%	-0.59
Coffee	KC	NYBOT	-7.6%	36.0%	-0.21	-9.0%	37.9%	-0.24	-9.0%	38.0%	-0.24
Robusta Coffee	CF	LIFFE	-0.6%	33.7%	-0.02	-	-	-	-	-	-
Sugar	SB	NYBOT	-1.5%	28.7%	-0.05	-3.1%	31.0%	-0.10	-3.1%	31.0%	-0.10
White Sugar	QW	LIFFE	3.8%	20.5%	0.19	-	-	-	-	-	-
Сосоа	SB	NYBOT	-2.9%	30.4%	-0.09	-3.8%	32.0%	-0.12	-	-	-
Corn	С	СВОТ	-9.9%	22.3%	-0.44	-13.1%	23.8%	-0.55	-13.1%	23.8%	-0.55
Wheat	W	СВОТ	-6.1%	23.7%	-0.26	-9.6%	24.6%	-0.39	-9.6%	24.5%	-0.39
Winter Wheat	KW	KCBOT	-0.1%	23.4%	0.00	-	-	-	-	-	-
Spring Wheat	MW	MGE	1.8%	21.4%	0.08	-	-	-	-	-	-
Soybeans	S	СВОТ	4.3%	23.3%	0.19	4.0%	24.4%	0.17	4.0%	24.4%	0.17
Soybean Oil	BO	СВОТ	0.2%	24.9%	0.01	-	-	-	-1.2%	25.7%	-0.05
Soybean Meal	SM	CBOT	8.3%	25.4%	0.33	-	-	-	-	-	-
Orange Juice	JO	NYBOT	-5.6%	26.9%	-0.21	-	-	-	-	-	-
Livestock			0.9%	12.0%	0.07	-4.5%	14.5%	-0.31	-5.3%	15.0%	-0.35
Lean Hogs	LH	CME	-4.2%	22.4%	-0.19	-12.9%	26.5%	-0.49	-12.7%	26.4%	-0.48
Live Cattle	LC	CME	1.6%	12.2%	0.13	-1.0%	14.2%	-0.07	-0.9%	14.2%	-0.06
Feeder Cattle	FC	CME	4.6%	12.5%	0.36	-	-	-	-	-	-

Table 12: Performance of JPMCCI vs other commodity indices, January 2002 - September 2007 Based on excess returns over cash

Market		JPMCCI		S&P GSCI		DJ-AIGCI					
1	Generic		Ann. excess			Ann. excess			Ann. excess		
Commodity	contract	Exchange	return	Vol	Sharpe	return	Vol	Sharpe	return	Vol	Sharpe
Aggregate			20.2%	15.4%	1.31	13.1%	21.8%	0.60	12.8%	13.7%	0.94
Energy			21.7%	27.7%	0.79	16.0%	30.6%	0.52	11.7%	32.7%	0.36
Crude Oil	CL	NYMEX	28.3%	25.3%	1.12	21.5%	29.0%	0.74	25.1%	28.3%	0.88
ICE Brent Crude	CO	ICE	31.3%	24.0%	1.30	25.9%	27.0%	0.96	-	-	-
NYMEX Gasoline	XB	NYMEX	27.5%	33.6%	0.82	21.4%	38.3%	0.56	20.9%	35.0%	0.60
Heating Oil	Ю	NYMEX	26.9%	27.9%	0.96	19.0%	31.5%	0.60	22.8%	30.1%	0.76
Gas Oil	QS	ICE	30.4%	27.1%	1.12	27.7%	30.4%	0.91	-	-	-
Natural Gas	NG	NYMEX	4.4%	41.6%	0.11	-19.6%	58.6%	-0.33	-12.9%	52.2%	-0.25
Non-Energy			19.2%	12.1%	1.59	8.7%	10.5%	0.83	11.9%	11.0%	1.08
Industrial Metals			29.3%	19.1%	1.54	25.3%	18.8%	1.35	26.1%	20.1%	1.29
Nickel	LN	LME	43.5%	38.5%	1.13	39.6%	39.7%	1.00	40.1%	39.9%	1.00
Copper	LP	LME	41.8%	25.7%	1.63	40.3%	26.2%	1.54	-	-	-
Copper	HG	COMEX	38.4%	27.0%	1.42	-	-	-	36.5%	27.3%	1.33
Aluminium	LA	LME	12.0%	14.0%	0.86	8.4%	15.2%	0.56	9.3%	15.1%	0.62
Zinc	LX	LME	25.1%	28.1%	0.89	21.2%	28.9%	0.73	21.9%	28.9%	0.76
Lead	LL	LME	46.2%	26.8%	1.72	42.8%	28.5%	1.50	-	-	-
Precious Metals			15.6%	16.8%	0.93	15.2%	15.4%	0.98	15.5%	16.9%	0.92
Gold	GC	COMEX	15.0%	14.9%	1.01	14.8%	14.9%	0.99	14.8%	14.9%	0.99
Silver	SI	COMEX	17.8%	27.8%	0.64	17.3%	27.8%	0.62	17.3%	27.8%	0.62
Palladium	PA	NYMEX	-7.1%	31.4%	-0.23	-	-	-	-	-	-
Platinum	PL	NYMEX	22.2%	15.8%	1.40	-	-	-	-	-	-
Agriculture			8.4%	16.4%	0.51	2.6%	16.9%	0.15	5.9%	16.5%	0.36
Cotton	СТ	NYBOT	-5.7%	25.8%	-0.22	-8.2%	27.4%	-0.30	-8.3%	27.4%	-0.30
Coffee	KC	NYBOT	0.6%	31.4%	0.02	-1.2%	32.4%	-0.04	-1.2%	32.4%	-0.04
Robusta Coffee	CF	LIFFE	20.3%	30.4%	0.67	-	-	-	-	-	-
Sugar	SB	NYBOT	4.9%	26.8%	0.18	1.0%	28.8%	0.03	1.0%	28.8%	0.03
White Sugar	QW	LIFFE	10.9%	20.7%	0.53	-	-	-	-	-	-
Сосоа	SB	NYBOT	5.6%	30.3%	0.19	5.0%	31.5%	0.16	-	-	-
Corn	C	CBOT	-3.7%	24.1%	-0.15	-7.9%	25.9%	-0.31	-7.9%	25.9%	-0.31
Wheat	W	CBOT	9.0%	24.7%	0.37	5.1%	25.9%	0.19	5.1%	25.8%	0.20
Winter Wheat	KW	КСВОТ	17.4%	24.6%	0.71	14.7%	25.7%	0.57	-	-	-
Spring Wheat	MW	MGE	16.2%	24.3%	0.67	-	-	-	-	-	-
Soybeans	S	CBOT	18.1%	24.8%	0.73	16.7%	26.1%	0.64	16.7%	26.2%	0.64
Soybean Oil	BO	CBOT	16.5%	25.4%	0.65	-	-	-	14.4%	26.5%	0.54
Soybean Meal	SM	CBOT	18.0%	26.9%	0.67	-	-	-	-	-	-
Orange Juice	JO	NYBOT	-2.0%	26.6%	-0.07	-	-	-	-	-	-
Livestock			5 7%	13 4%	0.42	-1 0%	15.6%	-0.06	-2 7%	16 2%	-0 17
Lean Hors	ТН	CME	-1.3%	23.2%	-0.05	-12.3%	26.6%	-0.46	-12.1%	26.6%	-0.46
Live Cattle		CME	7.0%	14 0%	0.00	12.070	16 3%	0.70	1 2.170	16 3%	0.70
Feeder Cattle	FC	CME	9.4%	14.3%	0.66	6.2%	15.4%	0.40		-	-
	10	02	3.170		0.00	5.270		0.10			

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Table 13: Decomposition of excess returns of JPMCCI vs other commodity indices

returns									
Annual		Excess Return			Spot Price			Roll Return	
Returns	JPMCCI	S&P GSCI	DJ-AIGCI	JPMCCI	S&P GSCI	DJ-AIGCI	JPMCCI	S&P GSCI	DJ-AIGCI
1990	10.4%	19.5%	-	6.1%	6.1%	-	4.2%	13.3%	-
1991	-15.1%	-11.2%	-10.8%	-16.2%	-19.6%	-10.6%	1.0%	8.4%	-0.2%
1992	-0.7%	0.8%	0.1%	2.0%	2.3%	1.0%	-2.7%	-1.5%	-0.9%
1993	-6.2%	-15.0%	-4.0%	-1.1%	-9.6%	2.5%	-5.1%	-5.3%	-6.6%
1994	15.5%	0.8%	11.7%	18.4%	10.5%	16.5%	-2.9%	-9.7%	-4.8%
1995	3.3%	13.8%	8.9%	1.0%	12.6%	8.3%	2.3%	1.2%	0.7%
1996	9.0%	27.2%	17.0%	-2.0%	5.8%	3.8%	11.0%	21.4%	13.2%
1997	-3.6%	-18.4%	-8.2%	-8.2%	-18.4%	-9.8%	4.7%	0.0%	1.6%
1998	-27.0%	-38.8%	-30.5%	-19.5%	-24.3%	-19.8%	-7.5%	-14.6%	-10.8%
1999	18.0%	34.4%	18.6%	24.3%	46.2%	27.2%	-6.4%	-11.9%	-8.6%
2000	29.5%	41.1%	24.2%	21.8%	26.9%	21.2%	7.7%	14.2%	3.0%
2001	-28.2%	-34.3%	-22.3%	-27.3%	-31.5%	-18.2%	-1.0%	-2.8%	-4.1%
2002	22.3%	29.9%	23.9%	26.6%	39.0%	33.3%	-4.3%	-9.1%	-9.4%
2003	27.5%	19.5%	22.7%	18.8%	10.8%	19.0%	8.7%	8.7%	3.7%
2004	21.4%	15.7%	7.6%	16.4%	19.2%	12.4%	5.1%	-3.5%	-4.7%
2005	35.4%	21.6%	17.5%	37.1%	39.1%	30.2%	-1.7%	-17.4%	-12.7%
2006	0.8%	-19.1%	-2.7%	11.3%	0.4%	14.8%	-10.5%	-19.5%	-17.6%
Sep 2007	11.2%	14.6%	7.1%	16.6%	25.9%	16.3%	-5.4%	-11.3%	-9.3%
1991 to Sep 2007									
Cum return	127.9%	39.8%	78.3%	151.2%	148.3%	242.7%	-23.2%	-108.5%	-164.5%
Annualised return	5.0%	2.0%	3.5%	5.7%	5.6%	7.6%	-	-	-
Volatility	12.8%	18.7%	12.2%	12.8%	18.6%	12.4%	2.2%	4.2%	3.6%
Sharpe ratio	0.39	0.11	0.29	-	-	-	-	-	-
1997 to Sep 2007									
Cum return	121.8%	25.9%	46.1%	153.4%	153.7%	182.7%	-31.6%	-127.8%	-136.7%
Annualised return	7.7%	2.2%	3.6%	9.0%	9.0%	10.2%	-	-	-
Volatility	14.9%	21.7%	14.2%	14.9%	21.5%	14.3%	2.3%	3.9%	3.5%
Sharpe ratio	0.52	0.10	0.25	-	-	-	-	-	-
2002 to Sep 2007									
Cum return	187.5%	102.5%	100.2%	211.4%	222.9%	203.4%	-23.9%	-120.3%	-103.2%
Annualised return	20.2%	13.1%	12.8%	21.8%	22.6%	21.3%	_	-	-
Volatility	15.4%	21.8%	13.7%	15.4%	21.6%	13.7%	2.1%	3.7%	3.7%
Sharpe ratio	1.31	0.60	0.94	-	-	-	-	-	-

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JPMCCI Aggregate

- **Performance.** JPMCCI Aggregate produced an annualized excess return of 20.2% from 2002 to September 2007 with a volatility of 15.4%. This results in a Sharpe ratio of 1.31 for JPMCCI, compared to S&P GSCI (0.60) and DJ-AIGCI (0.94). This outperformance is not due to any one sector but occurred broadly accross energy, industrial metal, agriculture and livestock.
- **Roll return**. JPMCCI Aggregate average annual roll return was -1.6% from 2002 to September 2007. This compares to -9.3% for S&P GSCI. JPMCCI Aggregate average annual roll returns were -1.1% from 1997 to September 2007 and -0.5% from 1991 to September 2007.
- Sector Weights. JPMCCI is an aggregate market index by which individual commodities are weighted by their open interest. This implies a current allocation of approximately 46% energy, 25% industrial metals, 9% precious metals, 18% agriculture and 3% livestock. Letting the stock of open interest naturally drive allocation results in sector weights that are more balanced than production-weighted indices (S&P GSCI), and without the imposition of discretionary caps (DJ-AIGCI).

JPMCCI Aggregate: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI	
1991 to Sep 2007				
Cum Roll	-23.2%	-108.5%	-164.5%	
Average Ann Roll	-0.5%	-3.3%	-4.1%	
Ann Roll Volatility	6.3%	11.5%	7.6%	

Source: JPMorgan and index sponsors

Aggregate: sector weights across indices (Sep 2007)



Source: JPMorgan

JPMCCI Aggregate: performance vs other indices excess returns

Checco Fotanio			
	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	10.4%	19.5%	-
1991	-15.1%	-11.2%	-10.8%
1992	-0.7%	0.8%	0.1%
1993	-6.2%	-15.0%	-4.0%
1994	15.5%	0.8%	11.7%
1995	3.3%	13.8%	8.9%
1996	9.0%	27.2%	17.0%
1997	-3.6%	-18.4%	-8.2%
1998	-27.0%	-38.8%	-30.5%
1999	18.0%	34.4%	18.6%
2000	29.5%	41.1%	24.2%
2001	-28.2%	-34.3%	-22.3%
2002	22.3%	29.9%	23.9%
2003	27.5%	19.5%	22.7%
2004	21.4%	15.7%	7.6%
2005	35.4%	21.6%	17.5%
2006	0.8%	-19.1%	-2.7%
Sep 2007	11.2%	14.6%	7.1%
1991 to Sep 2007			
Cum return	127.9%	39.8%	78.3%
Ann return	5.0%	2.0%	3.5%
Volatility	12.8%	18.7%	12.2%
Sharpe ratio	0.39	0.11	0.29
1997 to Sep 2007			
Cum return	121.8%	25.9%	46.1%
Ann return	7.7%	2.2%	3.6%
Volatility	14.9%	21.7%	14.2%
Sharpe ratio	0.52	0.10	0.25
2002 to Sep 2007			
Cum return	187.5%	102.5%	100.2%
Ann return	20.2%	13.1%	12.8%
Volatility	15.4%	21.8%	13.7%
Sharpe ratio	1.31	0.60	0.94

Source: JPMorgan and index sponsors

JPMCCI Aggregate: performance vs other indices

index, excess returns



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Energy sub-index

- **Performance.** JPMCCI Energy produced an annualized excess return of 21.7% from 2002 to September 2007, with a volatility of 27.7%. This results in a Sharpe ratio of 0.79 for JPMCCI, compared to S&P GSCI (0.52) and DJ-AIGCI (0.36).
- **Roll return**. JPMCCI Energy average roll returns, on an annual basis, was -2.8% from 2002 to September 2007. The deferred part of the crude oil curve has remained in backwardation even as the front end was in contango (2004 July 2007); JPMCCI captures the benefits of the backwardation at the back end while most indices do not. JPMCCI Energy average annual roll returns were 0.9% from 1997 to September 2007 and 2.3% from 1991 to September 2007.

JPMCCI Energy: commodity weights (Sep 2007)



Source: JPMorgan

JPMCCI Energy: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	32.1%	-123.6%	-163.9%
Average Ann Roll	2.3%	-1.9%	-0.4%
Ann Roll Volatility	15.6%	18.1%	21.3%
Courses IDM arrest and in			

Source: JPMorgan and index sponsors

cumulative roll returns



Source: JPMorgan and index sponsors

JPMCCI Energy: performance vs other indices excess returns

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	43.1%	34.5%	-
1991	-23.0%	-17.5%	-16.0%
1992	8.1%	-2.5%	9.5%
1993	-20.4%	-35.7%	-26.9%
1994	2.7%	2.9%	10.9%
1995	9.8%	21.2%	17.6%
1996	58.5%	58.2%	78.2%
1997	-14.2%	-27.1%	-26.5%
1998	-40.1%	-49.4%	-48.7%
1999	61.4%	83.5%	73.3%
2000	101.7%	76.7%	107.6%
2001	-41.5%	-42.5%	-39.3%
2002	44.6%	48.3%	52.6%
2003	30.2%	23.3%	30.4%
2004	34.4%	24.3%	17.5%
2005	50.4%	27.1%	37.7%
2006	-27.1%	-30.2%	-44.2%
Sep 2007	11.6%	16.3%	5.1%
1991 to Sep 2007			
Cum return	258.8%	64.7%	143.1%
Ann return	7.9%	3.0%	5.4%
Volatility	25.2%	29.4%	29.7%
Sharpe ratio	0.31	0.10	0.18
1997 to Sep 2007			
Cum return	203.2%	61.3%	55.5%
Ann return	10.9%	4.5%	4.2%
Volatility	28.4%	32.8%	33.9%
Sharpe ratio	0.38	0.14	0.12
2002 to Sep 2007			
Cum return	209.8%	134.4%	88.9%
Ann return	21.7%	16.0%	11.7%
Volatility	27.7%	30.6%	32.7%
Sharpe ratio	0 79	0.52	0.36

Source: JPMorgan and index sponsors

JPMCCI Energy: performance vs other indices

index, excess returns



Global Commodity Research JPMorgan Introducing the JPMorgan Commodity Curve Index November 9, 2007

Non-Energy sub-index

- **Performance.** JPMCCI Non-Energy produced an annualized excess return of 19.2% from 2002 to September 2007, outperforming S&P GSCI by 10.4% and DJ-AIGCI by 7.3%. The index volatility during this period was 12.1%, which is higher than S&P GSCI by 1.6% and DJ-AIGCI by 1.1%. This results in a Sharpe ratio of 1.59 for JPMCCI, compared to S&P GSCI (0.83) and DJ-AIGCI (1.08).
- **Roll return**. JPMCCI Non-Energy average roll returns, on an annual basis, was -0.2% from 2002 to September 2007. This compares to -7.0% for S&P GSCI. JPMCCI Non- Energy average annual roll returns were -1.7% from 1997 to September 2007 and -1.4% from 1991 to September 2007.

JPMCCI Non-Energy: commodity weights (Sep 2007)



Source: JPMorgan

JPMCCI Non-Energy: roll return vs other indices JPMCCI S&P GSCI DJ-AIGCI 1991 to Sep 2007 S S&P GSCI DJ-AIGCI

Cum Roll	-45.2%	-88.2%	-142.4%
Average Ann Roll	-1.4%	-4.3%	-5.0%
Ann Roll Volatility	3.6%	5.9%	3.9%
0 ID11 II			

Source: JPMorgan and index sponsors

cumulative roll returns



Source: JPMorgan and index sponsors

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JPMCCI Non-Energy: performance vs other	indices

excess returns

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-1.2%	1.1%	-
1991	-11.4%	-3.3%	-8.5%
1992	-4.5%	4.1%	-4.2%
1993	0.4%	6.5%	6.9%
1994	20.4%	0.3%	12.3%
1995	1.1%	6.2%	5.1%
1996	-7.3%	-4.0%	-4.1%
1997	1.4%	-5.5%	-0.9%
1998	-20.9%	-26.5%	-21.8%
1999	1.3%	-6.3%	-2.6%
2000	-7.1%	-5.2%	-8.1%
2001	-16.9%	-18.3%	-15.3%
2002	8.2%	2.9%	9.1%
2003	24.6%	11.0%	18.3%
2004	11.8%	-0.7%	3.8%
2005	22.0%	8.8%	8.1%
2006	34.5%	18.3%	22.3%
Sep 2007	10.8%	10.7%	7.6%
1991 to Sep 2007			
Cum return	64.7%	-10.4%	18.7%
Ann return	3.0%	-0.7%	1.0%
Volatility	10.5%	9.5%	9.6%
Sharpe ratio	0.29	-0.07	0.11
1997 to Sep 2007			
Cum return	71.7%	-18.4%	11.9%
Ann return	5.2%	-1.9%	1.1%
Volatility	11.6%	10.4%	10.7%
Sharpe ratio	0.44	-0.18	0.10
2002 to Sep 2007			
Cum return	173.9%	61.7%	90.5%
Ann return	19.2%	8.7%	11.9%
Volatility	12.1%	10.5%	11.0%
Sharpe ratio	1.59	0.83	1.08

Source: JPMorgan and index sponsors

JPMCCI Non-Energy: performance vs other indices

index, excess returns



Global Commodity Research JPMorgan Introducing the JPMorgan Commodity Curve Index November 9, 2007

Precious Metals sub-index

- **Performance.** JPMCCI Precious Metals produced an annualized excess return of 15.6% from 2002 to September 2007, outperforming S&P GSCI by 0.4% and similar to DJ-AIGCI. The index volatility during this period was 16.8%, higher than S&P GSCI by 1.4% and similar to DJ-AIGCI. This results in a Sharpe ratio of 0.93 for JPMCCI, compared to S&P GSCI (0.98) & DJ-AIGCI (0.92).
- Roll return. JPMCCI Precious Metals average roll return, on an annual basis, was -3.8% from 2002 to September 2007. This compares to -4.0% for S&P GSCI. JPMCCI Precious Metals average annual roll returns were -3.6% from 1997 to September 2007 and -3.8% from 1991 to September 2007. The similar performance of the sector across indices is driven by the linear curve shape of gold and silver, which is primarily set off LIBOR interest rates.

JPMCCI Precious Metals: commodity weights (Sep 2007)



Source: JPMorgan

JPMCCI Precious Metals: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-99.6%	-91.5%	-111.6%
Average Ann Roll	-3.8%	-3.6%	-4.1%
Ann Roll Volatility	1.5%	1.6%	1.5%

Source: JPMorgan and index sponsors

cumulative roll returns



Source: JPMorgan and index sponsors

JPMCCI Precious	Metals:	performan	ce vs of	ther ind	ices

excess	returns	

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-13.9%	-12.4%	-
1991	-15.0%	-15.6%	-13.3%
1992	-9.6%	-7.6%	-9.2%
1993	18.9%	16.0%	20.2%
1994	-6.3%	-5.4%	-7.2%
1995	-3.5%	-3.6%	-2.7%
1996	-9.4%	-8.9%	-9.6%
1997	-13.3%	-18.4%	-12.0%
1998	-8.4%	-5.5%	-8.1%
1999	-0.1%	-0.9%	-1.0%
2000	-12.9%	-6.9%	-13.1%
2001	-2.9%	-3.0%	-2.3%
2002	16.6%	21.3%	16.9%
2003	19.2%	18.3%	19.1%
2004	6.2%	4.2%	5.9%
2005	16.9%	14.9%	16.7%
2006	21.7%	18.3%	21.2%
Sep 2007	9.7%	11.0%	9.8%
1991 to Sep 2007			
Cum return	15.7%	17.0%	20.3%
Ann return	0.9%	0.9%	1.1%
Volatility	14.7%	13.5%	14.8%
Sharpe ratio	0.06	0.07	0.08
1997 to Sep 2007			
Cum return	54.5%	55.6%	55.7%
Ann return	4.1%	4.2%	4.2%
Volatility	15.9%	14.7%	15.9%
Sharpe ratio	0.26	0.29	0.26
2002 to Sep 2007			
Cum return	130.3%	125.4%	128.9%
Ann return	15.6%	15.2%	15.5%
Volatility	16.8%	15.4%	16.9%
Sharpe ratio	0.93	0.98	0.92

Source: JPMorgan and index sponsors

JPMCCI Precious Metals: performance vs other indices

index, excess returns



Global Commodity Research JPMorgan Introducing the JPMorgan Commodity Curve Index November 9, 2007

Industrial Metals sub-index

- **Performance.** JPMCCI Industrial Metals produced an annualized excess returns of 29.3% from on a volatility of 19.1%. This results in a Sharpe ratio of 1.54 for JPMCCI, compared to S&P GSCI (1.35) and DJ-AIGCI (1.29).
- **Roll return.** JPMCCI Industrial Metals average annual roll return was 4.8% from 2002 to September 2007 vs 1.5% for S&P GSCI. JPMCCI Industrial Metals average annual roll returns were 1.6% from 1997 to September 2007 and 0.5% from 1991 to September 2007. The outperformance of JPMCCI seems to be a function of the ability to pick up not just the performance of the backwardation at the front end of the curve but also the general trend especially in recent years of flatter curves as the deferred positions trade narrower to the front positions.

JPMCCI Industrial Metals: commodity weights (Sep 2007)



Source: JPMorgan

JPMCCI Industrial Metals: roll return vs other indices

JPMCCI	S&P GSCI	DJ-AIGCI
0.5%	-64.7%	-38.6%
0.5%	-1.6%	-1.0%
5.3%	4.1%	3.5%
	0.5% 0.5% 5.3%	0.5% -64.7% 0.5% -1.6% 5.3% 4.1%

Source: JPMorgan and index sponsors

cumulative roll returns



Source: JPMorgan and index sponsors

JPMCCI Industrial	Metals:	performance vs	other indices

excess	returns	

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	7.8%	34.7%	-
1991	-18.4%	-21.5%	-18.2%
1992	-1.1%	2.3%	0.9%
1993	-18.3%	-18.6%	-18.6%
1994	54.7%	58.1%	59.7%
1995	-6.6%	-11.7%	-9.2%
1996	-12.8%	-13.4%	-11.2%
1997	-5.3%	-7.4%	-6.7%
1998	-21.9%	-23.2%	-22.7%
1999	25.6%	24.7%	30.3%
2000	-7.6%	-9.8%	-8.3%
2001	-18.3%	-19.4%	-21.5%
2002	-1.0%	-2.2%	1.2%
2003	38.7%	38.6%	42.1%
2004	32.0%	25.8%	23.5%
2005	38.8%	32.0%	29.3%
2006	59.6%	53.4%	64.3%
Sep 2007	9.2%	6.1%	0.4%
1991 to Sep 2007			
Cum return	155.2%	86.7%	121.6%
Ann return	5.8%	3.8%	4.9%
Volatility	16.8%	17.0%	18.1%
Sharpe ratio	0.34	0.22	0.27
1997 to Sep 2007			
Cum return	207.6%	136.3%	155.9%
Ann return	11.0%	8.3%	9.1%
Volatility	17.9%	17.7%	19.4%
Sharpe ratio	0.62	0.47	0.47
2002 to Sep 2007			
Cum return	338.8%	266.3%	278.7%
Ann return	29.3%	25.3%	26.1%
Volatility	19.1%	18.8%	20.1%
Sharpe ratio	1.54	1.35	1.29

Source: JPMorgan and index sponsors

JPMCCI Industrial Metals: performance vs other indices

index, excess returns



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Metals sub-index

- **Performance.** JPMCCI Metals produced an annualized excess return of 26.2% from 2002 to September 2007. The index volatility during this period was 16.9%. This results in a Sharpe ratio of 1.55.
- Roll return. JPMCCI Metals average roll return, on an annual basis, was 2.7% from 2002 to September 2007.
 JPMCCI Metals average annual roll return were 0.3% from 1997 to September 2007 and -0.4% from 1991 to September 2007.

JPMCCI Metals: commodity weights (Sep 2007)



Source: JPMorgan

JPMCCI Metals: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI		
1991 to Sep 2007					
Cum Roll	-28.7%	-	-		
Average Ann Roll	-0.4%	-	-		
Ann Roll Volatility	4.0%	-	-		
Source: JPMorgan and index sponsors					

cumulative roll returns



Source: JPMorgan and index sponsors

JPMCCI Metals: performance vs other indices excess returns

exceed retaine			
	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	3.5%	-	-
1991	-17.8%	-	-
1992	-2.7%	-	-
1993	-11.7%	-	-
1994	40.1%	-	-
1995	-6.1%	-	-
1996	-12.2%	-	-
1997	-6.8%	-	-
1998	-19.4%	-	-
1999	20.2%	-	-
2000	-8.5%	-	-
2001	-15.7%	-	-
2002	2.4%	-	-
2003	34.4%	-	-
2004	26.2%	-	-
2005	33.6%	-	-
2006	50.2%	-	-
Sep 2007	9.3%	-	-
1991 to Sep 2007			
Cum return	116.7%	-	-
Ann return	4.7%	-	-
Volatility	14.6%	-	-
Sharpe ratio	0.32	-	-
1997 to Sep 2007			
Cum return	165.6%	-	-
Ann return	9.5%	-	-
Volatility	15.7%	-	-
Sharpe ratio	0.60	-	-
2002 to Sep 2007			
Cum return	281.1%	-	-
Ann return	26.2%	-	-
Volatility	16.9%	-	-
Sharpe ratio	1.55	_	_

Source: JPMorgan and index sponsors

JPMCCI Metals: performance vs other indices

index, excess returns



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Agriculture sub-index

- **Performance.** JPMCCI Agriculture produced an annualized excess return of 8.4% from 2002 to September 2007, with a volatility of 16.4%. This results in a Sharpe ratio of 0.51.
- Roll return. JPMCCI Agriculture average roll returns, on an annual basis, was -3.9% from 1991 to September 2007. Agriculture curves typically exhibit contango for deferred months following production but prior to the next production event; thereafter, new production usually results in lower prices at the outset of a new crop year followed again by contango. Therefore, indices that invest solely at the front end usually suffer negative roll returns associated with current crop-year contango; JPMCCI mitigates these effects by investing in deferred months that correspond to successive and often lower-priced crop years.

JPMCCI Agriculture: commodity weights (Sep 2007)



Source: JPMorgan

JPMCCI Agriculture: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI	
1991 to Sep 2007				
Cum Roll	-78.7%	-136.3%	-177.4%	
Average Ann Roll	-3.9%	-7.6%	-7.6%	
Ann Roll Volatility	6.9%	8.8%	7.8%	
0 1014 11	1			_

Source: JPM organ and index sponsors

cumulative roll returns



Source: JPMorgan and index sponsors

JPMCCI Agriculture: performance vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-10.4%	-18.0%	-
1991	-3.0%	7.0%	-2.8%
1992	-11.1%	-11.7%	-11.6%
1993	15.4%	16.0%	14.8%
1994	4.2%	3.7%	3.7%
1995	11.9%	20.1%	17.2%
1996	-4.0%	-7.0%	-3.0%
1997	12.8%	-0.5%	10.3%
1998	-22.4%	-28.0%	-24.2%
1999	-20.7%	-22.6%	-24.2%
2000	-7.1%	-6.8%	-8.2%
2001	-21.1%	-25.8%	-20.2%
2002	18.7%	9.5%	17.2%
2003	16.3%	5.5%	12.7%
2004	-12.4%	-21.3%	-14.1%
2005	3.7%	-0.9%	-2.1%
2006	9.7%	8.0%	8.9%
Sep 2007	15.3%	18.7%	14.9%
1991 to Sep 2007			
Cum return	-10.1%	-43.7%	-25.0%
Ann return	-0.6%	-3.4%	-1.7%
Volatility	13.9%	14.9%	14.4%
Sharpe ratio	-0.05	-0.23	-0.12
1997 to Sep 2007			
Cum return	-19.3%	-55.6%	-35.5%
Ann return	-2.0%	-7.3%	-4.0%
Volatility	15.5%	16.2%	15.9%
Sharpe ratio	-0.13	-0.45	-0.25
2002 to Sep 2007			
Cum return	58.7%	15.7%	39.1%
Ann return	8.4%	2.6%	5.9%
Volatility	16.4%	16.9%	16.5%
Sharpe ratio	0.51	0.15	0.36

Source: JPMorgan and index sponsors

JPMCCI Agriculture: performance vs other indices

index, excess returns



Global Commodity Research JPMorgan Introducing the JPMorgan Commodity Curve Index November 9, 2007

Livestock sub-index

- **Performance.** JPMCCI Livestock produced an annualized excess return of 5.7% from 2002 to September 2007, with a volatility of 13.4%. This results in a Sharpe ratio of 0.42.
- **Roll return.** JPMCCI Livestock roll returns, on an annualized basis, was 0.6% from 1991 to September 2007. Livestock markets are generally observed in a flat or backwardated structure, as changing characteristics and perishability limit the ability to carry inventories forward; prices for a given delivery period are therefore considered market forecasts of equilibrium prices and associated supply and demand at a specific future date. In practice, functional temporal relationships that result from production planning, perceived patterns of demand and seasonal production factors result in imperfect backwardation at the front of the curve.

JPMCCI Livestock: commodity weights (Sep 2007)



Source: JPMorgan

JPMCCI Livestock: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	12.3%	-47.4%	-76.8%
Average Ann Roll	0.6%	-3.1%	-4.7%
Ann Roll Volatility	6.7%	8.5%	8.5%
Source: IBMorgan and in	dox sponsors		

Source: JPMorgan and index sponsors





Source: JPMorgan and index sponsors

IPMCCI	Livestock:	performance	vs other	indices
vooce ro	turne			

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	13.1%	17.2%	-
1991	-4.4%	-5.2%	-4.2%
1992	21.1%	21.7%	22.0%
1993	6.7%	4.6%	4.8%
1994	-7.8%	-15.1%	-13.6%
1995	-2.2%	-2.3%	-0.9%
1996	9.9%	9.4%	9.8%
1997	-5.1%	-10.9%	-10.5%
1998	-22.9%	-31.1%	-32.1%
1999	10.2%	9.1%	9.3%
2000	4.0%	2.3%	2.2%
2001	-4.5%	-6.3%	-4.0%
2002	-2.3%	-10.9%	-12.9%
2003	4.3%	-1.0%	-4.9%
2004	28.1%	23.7%	25.3%
2005	9.2%	0.2%	-3.4%
2006	-5.3%	-11.1%	-10.5%
Sep 2007	1.9%	-2.7%	-4.8%
1991 to Sep 2007			
Cum return	34.9%	-33.5%	-35.9%
Ann return	1.8%	-2.4%	-2.6%
Volatility	11.1%	13.7%	14.1%
Sharpe ratio	0.16	-0.18	-0.19
1997 to Sep 2007			
Cum return	10.1%	-39.3%	-44.3%
Ann return	0.9%	-4.5%	-5.3%
Volatility	12.0%	14.5%	15.0%
Sharpe ratio	0.07	-0.31	-0.35
2002 to Sep 2007			
Cum return	37.5%	-5.5%	-14.6%
Ann return	5.7%	-1.0%	-2.7%
Volatility	13.4%	15.6%	16.2%
Sharpe ratio	0.42	-0.06	-0.17

Source: JPMorgan and index sponsors

JPMCCI Livestock: performance vs other indices

index, excess returns



Energy – NYMEX Crude Oil

- **Distribution along the curve**. Open interest grew by 6.4% from 1996 to 2001, and grew by 110.5% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the middle part of the curve. In 2006, open interest in the two frontmost contracts accounted for 50.6% of open interest in the 12 frontmost contracts, virtually similar to 2001, suggesting that the concentration of positions at the front end of the curve has not changed meaningfully.
- **Performance.** JPMCCI Crude Oil produced an annualized excess return of 28.3% from 2002 to September 2007, outperforming S&P GSCI by 6.8% and DJ-AIGCI by 3.3%. The index volatility during this period was 25.3%, which is lower than S&P GSCI by 3.7% and DJ-AIGCI by 3.1%. This results in a Sharpe ratio of 1.12 for JPMCCI, compared to S&P GSCI (0.74) and DJ-AIGCI (0.88).
- Roll return. JPMCCI Crude Oil average roll returns, on an annual basis, was 1.8% from 2002 to September 2007. This compares to -6.0% for S&P GSCI. JPMCCI Crude Oil average annual roll returns were 4.0% from 1997 to September 2007 and 5.5% from 1991 to September 2007.

JPMCCI Crude Oil: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	240.9%	70.8%	-
Average Ann Roll	5.5%	4.0%	-
Ann Roll Volatility	14.9%	22.8%	-

Source: JPM organ and index sponsors



Crude Oil: average of daily open interest along the curve thousand contracts

Source: JPMorgan, Bloomberg

JPMCCI Crude Oil:	performance v	s other indic	es
excess returns			

	JPMCCI	S&P GSCI	D.J-AIGCI
Annual returns			2014001
1990	36.1%	35.6%	_
1991	-19.9%	-21.1%	-13.5%
1992	3.0%	0.1%	2.9%
1993	-31.1%	-37.2%	-34.4%
1994	20.1%	32.9%	25.4%
1995	12.1%	26.3%	21.6%
1996	66.1%	97.8%	98.5%
1997	-23.1%	-34.5%	-32.4%
1998	-43.1%	-50.1%	-50.4%
1999	97.9%	112.4%	111.4%
2000	38.7%	42.0%	33.0%
2001	-17.4%	-28.0%	-24.9%
2002	50.5%	55.7%	55.0%
2003	31.9%	26.2%	33.2%
2004	52.8%	42.8%	47.2%
2005	33.7%	17.4%	21.9%
2006	-11.1%	-20.8%	-16.7%
Sep 2007	16.5%	17.7%	17.2%
1991 to Sep 2007			
Cum return	428.7%	258.0%	353.1%
Ann return	10.5%	7.9%	9.4%
Volatility	25.4%	30.4%	29.4%
Sharpe ratio	0.41	0.26	0.32
1997 to Sep 2007			
Cum return	315.7%	117.3%	156.5%
Ann return	14.2%	7.5%	9.2%
Volatility	27.9%	33.5%	32.7%
Sharpe ratio	0.51	0.22	0.28
2002 to Sep 2007			
Cum return	319.5%	206.7%	261.7%
Ann return	28.3%	21.5%	25.1%
Volatility	25.3%	29.0%	28.3%
Sharpe ratio	1.12	0.74	0.88

Source: JPMorgan and index sponsors

JPMCCI Crude Oil: performance vs other indices

index, excess returns



Energy – NYMEX Gasoline

- Distribution along the curve. Open interest grew by 79.3% from 1996 to 2001, and grew by 37.5% from 2001 to 2005, based on the 12 frontmost contracts. In the later period, open interest grew the most in the front part of the curve. Whereas open interest in the two frontmost contracts accounted for 51.2% of open interest in the 12 frontmost contracts, this proportion was 59.1% in 2006, suggesting a mild increase in concentration of positions at the front end of the curve.
- **Performance.** JPMCCI Gasoline produced an annualized excess return of 27.5% from 2002 to September 2007, outperforming S&P GSCI by 6.1% and DJ-AIGCI by 6.6%. The index volatility during this period was 33.6%, which is lower than S&P GSCI by 4.8% and DJ-AIGCI by 1.4%. This results in a Sharpe ratio of 0.82 for JPMCCI, compared to S&P GSCI (0.56) and DJ-AIGCI (0.60).
- Roll return. JPMCCI Gasoline average roll returns, on an annual basis, was 5.1% from 2002 to September 2007. This compares to -1.8% for S&P GSCI. JPMCCI Gasoline average annual roll returns were 7.1% from 1997 to September 2007 and 6.9% from 1991 to September 2007.

JPMCCI Gasoline roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	356.3%	118.6%	-
Average Ann Roll	6.9%	3.7%	-
Ann Roll Volatility	16.0%	19.2%	-

Source: JPM organ and index sponsors

Gasoline: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI	Gasoline:	performance	VS	other	indices

exces	s ret	urns			

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	44.8%	47.0%	-
1991	-4.6%	-3.1%	-0.4%
1992	-3.0%	-8.2%	-4.6%
1993	-33.0%	-38.3%	-34.2%
1994	12.4%	10.6%	13.4%
1995	23.2%	36.4%	28.8%
1996	52.9%	49.5%	51.6%
1997	-13.2%	-16.0%	-16.3%
1998	-42.3%	-47.4%	-46.4%
1999	79.2%	79.0%	77.7%
2000	59.4%	60.5%	52.4%
2001	-15.9%	-17.3%	-19.4%
2002	45.3%	46.1%	49.0%
2003	33.6%	27.8%	32.9%
2004	36.3%	21.9%	24.0%
2005	48.2%	34.8%	36.5%
2006	-18.5%	-23.9%	-27.5%
Sep 2007	26.4%	30.8%	22.7%
1991 to Sep 2007			
Cum return	538.3%	296.9%	304.7%
Ann return	11.7%	8.6%	8.7%
Volatility	29.4%	33.4%	31.1%
Sharpe ratio	0.40	0.26	0.28
1997 to Sep 2007			
Cum return	385.8%	220.7%	192.3%
Ann return	15.8%	11.4%	10.5%
Volatility	34.1%	38.7%	36.1%
Sharpe ratio	0.46	0.30	0.29
2002 to Sep 2007			
Cum return	304.0%	205.3%	198.1%
Ann return	27.5%	21.4%	20.9%
Volatility	33.6%	38.3%	35.0%
Sharpe ratio	0.82	0.56	0.60

Source: JPMorgan and index sponsors

JPMCCI Gasoline: performance vs other indices

index, excess returns



Energy – NYMEX Heating Oil

- Distribution along the curve. Open interest grew by 25.1% from 1996 to 2001, and grew by 28.9% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the front part of the curve. Whereas open interest in the two frontmost contracts accounted for 42.0% of open interest in the 12 frontmost contracts, this proportion was 51.8% in 2006, suggesting a mild increase in concentration of positions at the front end of the curve.
- Performance. JPMCCI Heating Oil produced an annualized excess return of 26.9% from 2002 to September 2007, outperforming S&P GSCI by 7.9% and DJ-AIGCI by 4.1%. The index volatility during this period was 27.9%, which is lower than S&P GSCI by 3.5% and DJ-AIGCI by 2.2%. This results in a Sharpe ratio of 0.96 for JPMCCI, compared to S&P GSCI (0.60) and DJ-AIGCI (0.76).
- Roll return. JPMCCI Heating Oil average roll returns, on an annual basis, was 0.2% from 2002 to September 2007. This compares to -7.5% for S&P GSCI. JPMCCI Heating Oil average annual roll returns were 0.8% from 1997 to September 2007 and 1.8% from 1991 to September 2007.

JPMCCI Heating Oil: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	22.1%	-104.4%	-
Average Ann Roll	1.8%	-1.4%	-
Ann Roll Volatility	16.1%	19.2%	-

rce: JPMorgan and index sponsors



Heating Oil: average of daily open interest along the curve thousand contracts

Source: JPMorgan, Bloomberg

JPMCCI Heating Oil: performance vs other indices excess returns

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	26.1%	22.7%	-
1991	-23.7%	-27.5%	-16.6%
1992	4.7%	1.8%	3.5%
1993	-27.8%	-31.0%	-30.8%
1994	9.9%	20.0%	14.0%
1995	4.9%	7.7%	8.2%
1996	56.9%	67.4%	69.7%
1997	-27.3%	-35.1%	-31.1%
1998	-46.1%	-50.5%	-50.9%
1999	68.2%	73.9%	68.2%
2000	62.6%	66.7%	64.5%
2001	-28.2%	-36.6%	-33.5%
2002	43.4%	41.4%	43.3%
2003	29.0%	21.9%	28.6%
2004	53.0%	39.5%	45.1%
2005	43.4%	25.8%	32.0%
2006	-21.1%	-29.4%	-26.2%
Sep 2007	22.8%	27.1%	24.8%
1991 to Sep 2007			
Cum return	216.0%	76.7%	153.6%
Ann return	7.1%	3.5%	5.7%
Volatility	27.1%	31.1%	29.8%
Sharpe ratio	0.26	0.11	0.19
1997 to Sep 2007			
Cum return	202.6%	60.3%	102.7%
Ann return	10.8%	4.5%	6.8%
Volatility	30.5%	34.6%	33.5%
Sharpe ratio	0.36	0.13	0.20
2002 to Sep 2007			
Cum return	293.5%	171.4%	225.3%
Ann return	26.9%	19.0%	22.8%
Volatility	27.9%	31.5%	30.1%
Sharpe ratio	0.96	0.60	0.76

Source: JPMorgan and index sponsors

JPMCCI Heating Oil: performance vs other indices

index, excess returns



Global Commodity Research JPMorgan Introducing the JPMorgan Commodity Curve Index November 9, 2007

Energy – NYMEX Natural Gas

- **Distribution along the curve**. Open interest grew by 128.0% from 1996 to 2001, and grew by 57.9% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the middle part of the curve. Unlike most other commodity products, positions are less concentrated at the front end of the natural gas futures curve. In 2006, open interest in the two frontmost contracts accounted for 28.2% of open interest in the 12 frontmost contracts, virtually similar to 2001.
- **Performance.** JPMCCI Natural Gas produced an annualized excess return of 4.4% from 2002 to September 2007, outperforming S&P GSCI by 24.0% and DJ-AIGCI by 17.3%. The index volatility during this period was 41.6%, which is lower than S&P GSCI by 17.0% and DJ-AIGCI by 10.6%. This results in a Sharpe ratio of 0.11 for JPMCCI, compared to S&P GSCI (-0.33) and DJ-AIGCI (-0.25).
- Roll return. JPMCCI Natural Gas average roll returns, on an annual basis, were -13.2% from 2002 to September 2007, -5.8% from 1997 to September 2007 and -4.7% from 1991 to September 2007.

JPMCCI Natural Gas: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-320.0%	-	-
Average Ann Roll	-4.7%	-	-
Ann Roll Volatility	18.6%	-	-
0 1014			

Source: JPMorgan and index sponsors

Natural Gas: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Natural Gas: performance vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-	-	-
1991	-32.4%	-	-34.3%
1992	22.4%	-	48.6%
1993	10.7%	-	6.0%
1994	-22.8%	-	-35.8%
1995	2.2%	3.3%	-1.2%
1996	45.7%	13.1%	46.5%
1997	11.4%	-19.3%	-12.3%
1998	-28.5%	-44.6%	-43.4%
1999	5.8%	-8.7%	-1.3%
2000	239.1%	300.8%	322.7%
2001	-66.4%	-81.7%	-78.9%
2002	39.9%	36.8%	37.2%
2003	29.9%	14.0%	26.1%
2004	8.2%	-39.1%	-26.5%
2005	72.0%	44.4%	52.8%
2006	-58.2%	-74.9%	-72.1%
Sep 2007	-9.4%	-17.0%	-16.6%
1991 to Sep 2007			
Cum return	29.3%	-	-81.0%
Ann return	1.5%	-	-9.4%
Volatility	38.5%	-	50.5%
Sharpe ratio	0.04	-	-0.19
1997 to Sep 2007			
Cum return	22.8%	-91.5%	-80.2%
Ann return	1.9%	-20.5%	-14.0%
Volatility	43.6%	59.8%	55.4%
Sharpe ratio	0.04	-0.34	-0.25
2002 to Sep 2007			
Cum return	27.9%	-71.5%	-54.8%
Ann return	4.4%	-19.6%	-12.9%
Volatility	41.6%	58.6%	52.2%
Sharpe ratio	0.11	-0.33	-0.25

Source: JPMorgan and index sponsors

JPMCCI Natural Gas: performance vs other indices

index, excess returns



Energy – ICE Brent Crude

- **Distribution along the curve**. Open interest grew by 30.1% from 1996 to 2001, and grew by 72.5% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the middle part of the curve. In 2006, open interest in the two frontmost contracts accounted for 51.7% of open interest in the 12 frontmost contracts, virtually similar to 2001, suggesting that the concentration of positions at the front end of the curve has not changed meaningfully.
- **Performance.** JPMCCI Brent Crude produced an annualized excess return of 31.3% from 2002 to September 2007, outperforming S&P GSCI by 5.4%. The index volatility during this period was 24.0%, which is lower than S&P GSCI by 2.9%. This results in a Sharpe ratio of 1.30 for JPMCCI, compared to S&P GSCI (0.96).
- **Roll return**. JPMCCI Brent Crude average roll returns, on an annual basis, were 4.4% from 2002 to September 2007, 5.9% from 1997 to September 2007 and 7.0% from 1991 to September 2007.

JPMCCI Brent Crude: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI	
1991 to Sep 2007				
Cum Roll	352.2%	-	-	
Average Ann Roll	7.0%	-	-	
Ann Roll Volatility	13.5%	-	-	
				-

Source: JPMorgan and index sponsors

Brent Crude: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Brent Crude: performance vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	61.7%	-	_
1991	-24.9%	-	_
1992	7.8%	_	_
1993	-31.7%	-	-
1994	19.9%	-	-
1995	14.4%	-	-
1996	70.7%	-	-
1997	-23.0%	-	-
1998	-48.3%	-	-
1999	126.5%	-	-
2000	30.2%	21.4%	-
2001	-10.8%	-15.2%	-
2002	45.4%	48.4%	-
2003	29.5%	23.4%	-
2004	52.4%	44.6%	-
2005	45.5%	30.7%	-
2006	-2.3%	-8.8%	-
Sep 2007	17.3%	19.1%	-
1991 to Sep 2007			
Cum return	547.7%	-	-
Ann return	11.8%	-	-
Volatility	25.5%	-	-
Sharpe ratio	0.46	-	-
1997 to Sep 2007			
Cum return	400.9%	-	-
Ann return	16.2%	-	-
Volatility	27.5%	-	-
Sharpe ratio	0.59	-	-
2002 to Sep 2007			
Cum return	378.6%	275.9%	-
Ann return	31.3%	25.9%	-
Volatility	24.0%	27.0%	-
Sharpe ratio	1.30	0.96	-

Source: JPMorgan and index sponsors

JPMCCI Brent Crude: performance vs other indices





Energy – ICE Gas Oil

- **Distribution along the curve**. Open interest grew by 67.2% from 1996 to 2001, and grew by 92.8% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the later part of the curve. In 2006, open interest in the two frontmost contracts accounted for 47.4% of open interest in the 12 frontmost contracts, virtually similar to 2001, suggesting that the concentration of positions at the front end of the curve has not changed meaningfully.
- **Performance.** JPMCCI Gas Oil produced an annualized excess return of 30.4% from 2002 to September 2007, outperforming S&P GSCI by 2.8%. The index volatility during this period was 27.1%, which is lower than S&P GSCI by 3.4%. This results in a Sharpe ratio of 1.12 for JPMCCI, compared to S&P GSCI (0.91).
- **Roll return**. JPMCCI Gas Oil average roll returns, on an annual basis, was 3.0% from 2002 to September 2007. JPMCCI Gas Oil average annual roll returns were 1.9% from 1997 to September 2007 and 2.6% from 1991 to September 2007.

JPMCCI Gas Oil: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	70.6%	-	-
Average Ann Roll	2.6%	-	-
Ann Roll Volatility	14.3%	-	-

Source: JPMorgan and index sponsors

Gas Oil: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Gas Oil: performance vs other indices

excess returns			
	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	56.9%	-	-
1991	-23.1%	-	-
1992	4.5%	-	-
1993	-21.9%	-	-
1994	-2.2%	-	-
1995	7.3%	-	-
1996	55.3%	-	-
1997	-26.2%	-	-
1998	-49.2%	-	-
1999	83.1%	-	-
2000	40.2%	36.5%	-
2001	-21.7%	-29.7%	-
2002	34.3%	36.1%	-
2003	30.0%	28.7%	-
2004	60.3%	58.7%	-
2005	46.8%	30.9%	-
2006	-9.5%	-13.4%	-
Sep 2007	24.0%	29.4%	-
1991 to Sep 2007			
Cum return	255.6%	-	-
Ann return	7.9%	-	-
Volatility	26.0%	-	-
Sharpe ratio	0.30	-	-
1997 to Sep 2007			
Cum return	247.6%	-	-
Ann return	12.3%	-	-
Volatility	28.9%	-	-
Sharpe ratio	0.43	-	-
2002 to Sep 2007			
Cum return	360.9%	307.7%	-
Ann return	30.4%	27.7%	-
Volatility	27.1%	30.4%	-
Sharpe ratio	1.12	0.91	-

Source: JPMorgan and index sponsors

JPMCCI Gas Oil: performance vs other indices

index, excess returns



Precious Metals – COMEX Gold

- **Distribution along the curve**. Open interest shrank by 33.8% from 1996 to 2001, but grew by 181.4% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the later part of the curve. Whereas open interest in the two frontmost contracts accounted for 70.3% of open interest in the 12 frontmost contracts, this proportion was 65.1% in 2006, suggesting a mild increase in dispersion of positions across the curve.
- **Performance.** JPMCCI Gold produced an annualized excess return of 15.0% from 2002 to September 2007, outperforming S&P GSCI by 0.2% and DJ-AIGCI by 0.2%. The index volatility during this period was 14.9%, which is similar to S&P GSCI and DJ-AIGCI. This results in a Sharpe ratio of 1.01 for JPMCCI, compared to S&P GSCI (0.99) and DJ-AIGCI (0.99).
- Roll return. JPMCCI Gold average roll returns, on an annual basis, was -3.9% from 2002 to September 2007. This compares to -4.1% for S&P GSCI. JPMCCI Gold average annual roll returns were -3.8% from 1997 to September 2007 and -3.8% from 1991 to September 2007.

JPMCCI Gold: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-86.6%	-88.6%	-
Average Ann Roll	-3.8%	-3.9%	-
Ann Roll Volatility	1.6%	1.6%	-

Source: JPMorgan and index sponsors

Gold: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Gold:	performance	vs	other	indices
excess returns				

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-9.4%	-9.0%	-
1991	-15.2%	-14.8%	-13.6%
1992	-9.5%	-9.1%	-9.1%
1993	14.6%	14.5%	14.7%
1994	-5.5%	-6.1%	-6.3%
1995	-4.5%	-3.7%	-3.7%
1996	-8.1%	-8.4%	-8.4%
1997	-24.4%	-24.1%	-24.1%
1998	-4.1%	-4.2%	-4.2%
1999	-3.2%	-3.3%	-3.3%
2000	-10.4%	-10.8%	-10.8%
2001	-1.7%	-1.0%	-1.0%
2002	22.7%	22.5%	22.5%
2003	18.1%	17.8%	17.8%
2004	3.7%	3.4%	3.4%
2005	14.1%	13.8%	13.8%
2006	16.3%	16.0%	16.0%
Sep 2007	12.1%	12.1%	12.1%
1991 to Sep 2007			
Cum return	0.7%	0.7%	2.0%
Ann return	0.0%	0.0%	0.1%
Volatility	13.1%	13.2%	13.2%
Sharpe ratio	0.00	0.00	0.01
1997 to Sep 2007			
Cum return	38.1%	37.0%	37.0%
Ann return	3.0%	3.0%	3.0%
Volatility	14.6%	14.7%	14.7%
Sharpe ratio	0.21	0.20	0.20
2002 to Sep 2007			
Cum return	123.2%	120.8%	120.7%
Ann return	15.0%	14.8%	14.8%
Volatility	14.9%	14.9%	14.9%
Sharpe ratio	1.01	0.99	0.99

Source: JPMorgan and index sponsors

JPMCCI Gold: performance vs other indices

index, excess returns



Precious Metals – COMEX Silver

- **Distribution along the curve**. Open interest shrank by 31.3% from 1996 to 2001, but grew by 67.3% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the middle part of the curve. Whereas open interest in the two frontmost contracts accounted for 71.4% of open interest in the 12 frontmost contracts, this proportion was 60.0% in 2006, suggesting a notable increase in dispersion of positions across the curve.
- **Performance.** JPMCCI Silver produced an annualized excess return of 17.8% from 2002 to September 2007, outperforming S&P GSCI by 0.5% and DJ-AIGCI by 0.5%. The index volatility during this period was 27.8%, which is similar to S&P GSCI and DJ-AIGCI. This results in a Sharpe ratio of 0.64 for JPMCCI, compared to S&P GSCI (0.62) and DJ-AIGCI (0.62).
- Roll return. JPMCCI Silver average roll returns, on an annual basis, was -3.8% from 2002 to September 2007. This compares to -4.2% for S&P GSCI. JPMCCI Silver average annual roll returns were -3.5% from 1997 to September 2007 and -4.1% from 1991 to September 2007.

JPMCCI Silver: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-155.6%	-165.2%	-
Average Ann Roll	-4.1%	-4.5%	-
Ann Roll Volatility	1.8%	1.9%	-
Courses IDMerson and in	day ananaara		

Source: JPMorgan and index sponsors

Silver: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Silver: performance vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-26.3%	-26.5%	-
1991	-14.3%	-14.0%	-12.3%
1992	-9.8%	-9.6%	-9.6%
1993	33.0%	33.1%	34.0%
1994	-8.3%	-8.8%	-9.4%
1995	-0.5%	-0.1%	-0.1%
1996	-12.9%	-13.2%	-13.2%
1997	17.7%	18.3%	18.3%
1998	-16.6%	-17.4%	-17.4%
1999	6.5%	6.1%	6.1%
2000	-18.0%	-18.8%	-18.8%
2001	-5.4%	-5.4%	-5.4%
2002	2.9%	2.5%	2.5%
2003	22.1%	22.1%	22.1%
2004	12.7%	12.4%	12.4%
2005	25.8%	25.0%	25.0%
2006	39.1%	37.8%	37.8%
Sep 2007	3.4%	3.1%	3.1%
1991 to Sep 2007			
Cum return	69.8%	62.6%	65.6%
Ann return	3.2%	2.9%	3.1%
Volatility	24.3%	24.5%	24.5%
Sharpe ratio	0.13	0.12	0.13
1997 to Sep 2007			
Cum return	107.9%	98.7%	98.6%
Ann return	7.0%	6.6%	6.6%
Volatility	25.9%	26.1%	26.1%
Sharpe ratio	0.27	0.25	0.25
2002 to Sep 2007			
Cum return	156.2%	149.7%	149.7%
Ann return	17.8%	17.3%	17.3%
Volatility	27.8%	27.8%	27.8%
Sharpe ratio	0.64	0.62	0.62

Source: JPMorgan and index sponsors

JPMCCI Silver: performance vs other indices





JPMCCI Palladium: performance vs other indices

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Precious Metals – NYMEX Palladium

- **Distribution along the curve**. Open interest shrank significantly by 81.5% from 1996 to 2001, but then grew massively by 5395.8% from 2001 to 2006, based on the 12 frontmost contracts. Open interest continue to be massively concentrated at the front-end of the curve, with the open interest of the two frontmost contracts accounting for 98.3% of the open interest of the twelve frontmost contracts in 2006.
- **Performance.** JPMCCI Palladium produced an annualized excess return of -7.1% from 2002 to September 2007. The index volatility during this period was 31.4%. This results in a Sharpe ratio of -0.23 for the index.
- **Roll return**. JPMCCI Palladium average roll returns, on an annual basis, were -3.7% from 2002 to September 2007, 2.1% from 1997 to September 2007 and 1.1% from 1991 to September 2007.

excess returns			
	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-42.7%	-	-
1991	-4.9%	-	-
1992	28.3%	-	-
1993	25.2%	-	-
1994	28.9%	-	-
1995	-22.0%	-	-
1996	-7.5%	-	-
1997	73.0%	-	-
1998	91.2%	-	-
1999	40.3%	-	-
2000	115.8%	-	-
2001	-53.3%	-	-
2002	-47.0%	-	-
2003	-17.3%	-	-
2004	-9.2%	-	-
2005	35.0%	-	-
2006	22.3%	-	-
Sep 2007	-0.3%	-	-
1991 to Sep 2007			
Cum return	334.9%	-	-
Ann return	9.2%	-	-
Volatility	32.0%	-	-
Sharpe ratio	0.29	-	-
1997 to Sep 2007			
Cum return	206.7%	-	-
Ann return	11.0%	-	-
Volatility	37.5%	-	-
Sharpe ratio	0.29	-	-
2002 to Sep 2007			
Cum return	-34.5%	-	-
Ann return	-7.1%	-	-
Volatility	31.4%	-	-
Sharpe ratio	-0.23	-	-

JPMCCI Palladium: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	3.7%	-	-
Average Ann Roll	1.1%	-	-
Ann Roll Volatility	8.2%	-	-

Source: JPMorgan and index sponsors

Palladium: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

Source: JPMorgan and index sponsors

JPMCCI Palladium: performance vs other indices





Precious Metals – NYMEX Platinum

- Distribution along the curve. Open interest shrank by 74.9% from 1996 to 2001, but grew by 37.5% from 2001 to 2006, based on the 12 frontmost contracts. Open interest is massively concentrated on the two frontmost contracts; they account for 99.6% of open interest in the 12 frontmost contracts in 2006. Also, notably, positions further out the curve have diminished since 1996.
- Performance. JPMCCI Platinum produced an annualized excess return of 22.2% from 2002 to September 2007. The index volatility during this period was 15.8%. This results in a Sharpe ratio of 1.40 for the index.
- Roll return. JPMCCI Platinum average roll returns, on an annual basis, were 2.0% from 2002 to September 2007, 3.3% from 1997 to September 2007 and 1.6% from 1991 to September 2007.

JPMCCI Platinum: performance vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-20.4%	-	-
1991	-21.4%	-	-
1992	3.5%	-	-
1993	13.1%	-	-
1994	3.4%	-	-
1995	-5.6%	-	-
1996	-9.1%	-	-
1997	3.9%	-	-
1998	-0.3%	-	-
1999	18.6%	-	-
2000	55.0%	-	-
2001	-16.3%	-	-
2002	28.8%	-	-
2003	44.5%	-	-
2004	10.2%	-	-
2005	14.3%	-	-
2006	13.2%	-	-
Sep 2007	19.5%	-	-
1991 to Sep 2007			
Cum return	312.7%	-	-
Ann return	8.8%	-	-
Volatility	16.8%	-	-
Sharpe ratio	0.53	-	-
1997 to Sep 2007			
Cum return	405.6%	-	-
Ann return	16.3%	-	-
Volatility	18.0%	-	-
Sharpe ratio	0.90	-	-
2002 to Sep 2007			
Cum return	217.3%	-	-
Ann return	22.2%	-	-
Volatility	15.8%	-	-
Sharpe ratio	1.40	-	-
Source: JPMorgan and in	dex sponsors		

JPMCCI Platinum: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI	
1991 to Sep 2007				
Cum Roll	76.8%	-	-	
Average Ann Roll	1.6%	-	-	
Ann Roll Volatility	4.4%	-	-	
Source: JPMorgan and in	dex sponsors			

Platinum: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Platinum: performance vs other indices

index, excess returns



excess returns

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Industrial Metals – LME Aluminum

- **Distribution along the curve**. Open interest grew by 33.1% from 2001 to 2006, based on the 12 frontmost contracts. In this period, open interest grew the most in the front part of the curve. In 2006, open interest in the two frontmost contracts accounted for 30.4% of open interest in the 12 frontmost contracts, virtually similar to 2001, suggesting that the concentration of positions at the front end of the curve has not changed meaningfully.
- **Performance.** JPMCCI Aluminum produced an annualized excess return of 12.0% from 2002 to September 2007, outperforming S&P GSCI by 3.6% and DJ-AIGCI by 2.7%. The index volatility during this period was 14.0%, which is lower than S&P GSCI by 1.1% and DJ-AIGCI by 1.1%. This results in a Sharpe ratio of 0.86 for JPMCCI, compared to S&P GSCI (0.56) and DJ-AIGCI (0.62).
- Roll return. JPMCCI Aluminum average roll returns, on an annual basis, were 0.8% from 2002 to September 2007, -1.1% from 1997 to September 2007 and -2.7% from 1991 to September 2007.

JPMCCI Aluminum: roll return vs other indices

JPMCCI	S&P GSCI	DJ-AIGCI
-61.6%	-	-
-2.7%	-	-
3.8%	-	-
	-61.6% -2.7% 3.8%	JPMCCI S&P GSCI -61.6% - -2.7% - 3.8% -

Source: JPMorgan and index sponsors

Aluminum: average of daily open interest along the curve thousand contracts



Source: JPMorgan, LME

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-3.8%	-	-
1991	-31.6%	-	-33.4%
1992	1.0%	0.4%	0.6%
1993	-16.2%	-17.2%	-16.6%
1994	63.1%	65.6%	66.1%
1995	-12.8%	-19.2%	-19.0%
1996	-15.0%	-16.7%	-16.4%
1997	-1.9%	-5.0%	-2.9%
1998	-24.0%	-24.9%	-24.5%
1999	24.0%	22.7%	23.7%
2000	-6.6%	-8.8%	-7.0%
2001	-14.2%	-17.1%	-16.5%
2002	-4.0%	-4.6%	-4.1%
2003	17.6%	18.7%	19.1%
2004	24.5%	20.1%	22.2%
2005	19.1%	15.0%	15.5%
2006	22.9%	18.1%	19.4%
Sep 2007	-6.6%	-13.9%	-13.2%
1991 to Sep 2007			
Cum return	-0.4%	-	-26.1%
Ann return	0.0%	-	-1.8%
Volatility	15.3%	-	16.5%
Sharpe ratio	0.00	-	-0.11
1997 to Sep 2007			
Cum return	42.5%	5.5%	17.5%
Ann return	3.3%	0.5%	1.5%
Volatility	14.4%	15.7%	15.5%
Sharpe ratio	0.23	0.03	0.10
2002 to Sep 2007			
Cum return	92.2%	59.2%	67.0%

JPMCCI Aluminum: performance vs other indices

Source: JPMorgan and index sponsors

JPMCCI Aluminum: performance vs other indices

12.0%

14.0%

0.86

8.4%

15.2%

0.56

9.3%

15.1%

0.62

index, excess returns

Ann return

Sharpe ratio

Volatility



Industrial Metals – LME Copper

- Distribution along the curve. Open interest grew by 9.9% from 2001 to 2006, based on the 12 frontmost contracts. In this period, open interest grew the most in the later part of the curve. Whereas open interest in the two frontmost contracts accounted for 39.5% of open interest in the 12 frontmost contracts, this proportion was 27.8% in 2006, suggesting a notable increase in dispersion of positions across the curve.
- **Performance.** JPMCCI LME Copper produced an annualized excess return of 41.8% from 2002 to September 2007, outperforming S&P GSCI by 1.5%. The index volatility during this period was 25.7%, which is lower than S&P GSCI by 0.5%. This results in a Sharpe ratio of 1.63 for JPMCCI, compared to S&P GSCI (1.54).
- **Roll return**. JPMCCI LME Copper average roll returns, on an annual basis, was 9.2% from 2002 to September 2007. This compares to 6.8% for S&P GSCI. JPMCCI LME Copper average annual roll returns were 4.1% from 1997 to September 2007 and 3.6% from 1991 to September 2007.

JPMCCI Copper: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	168.7%	109.2%	-
Average Ann Roll	3.6%	2.6%	-
Ann Roll Volatility	9.1%	9.5%	-
Courses IDM arrest and in			

Source: JPMorgan and index sponsors

LME Copper: average of daily open interest along the curve thousand contracts



Source: JPMorgan, LME

JPMCCI LME Copper: performance vs other indices
excess returns

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	17.2%	34.7%	-
1991	-10.0%	-11.8%	-
1992	0.7%	4.0%	-
1993	-22.4%	-25.6%	-
1994	60.4%	68.7%	-
1995	1.0%	0.0%	-
1996	-12.3%	-10.2%	-
1997	-10.1%	-14.1%	-
1998	-17.2%	-18.5%	-
1999	18.4%	16.6%	-
2000	-7.0%	-8.5%	-
2001	-21.2%	-22.9%	-
2002	0.6%	0.0%	-
2003	43.8%	44.2%	-
2004	51.1%	51.8%	-
2005	67.9%	68.4%	-
2006	56.4%	46.9%	-
Sep 2007	29.8%	29.6%	-
1991 to Sep 2007			
Cum return	380.5%	318.2%	-
Ann return	9.8%	8.9%	-
Volatility	22.0%	23.0%	-
Sharpe ratio	0.45	0.39	-
1997 to Sep 2007			
Cum return	381.2%	304.6%	-
Ann return	15.7%	13.9%	-
Volatility	23.4%	24.2%	-
Sharpe ratio	0.67	0.57	-
2002 to Sep 2007			
Cum return	644.8%	602.1%	-
Ann return	41.8%	40.3%	-
Volatility	25.7%	26.2%	-
Sharpe ratio	1.63	1.54	-

Source: JPMorgan and index sponsors

JPMCCI LME Copper: performance vs other indices

index, excess returns



Industrial Metals – LME Lead

- Distribution along the curve. Open interest grew by 87.1% from 2001 to 2006, based on the 12 frontmost contracts. In this period, open interest grew the most in the middle part of the curve. Whereas open interest in the two frontmost contracts accounted for 40.6% of open interest in the 12 frontmost contracts, this proportion was 37.0% in 2006, suggesting a very slight increase in dispersion of positions across the curve.
- Performance. JPMCCI Lead produced an annualized excess return of 46.2% from 2002 to September 2007, outperforming S&P GSCI by 3.4%. The index volatility during this period was 26.8%, which is lower than S&P GSCI by 1.7%. This results in a Sharpe ratio of 1.72 for JPMCCI, compared to S&P GSCI (1.50).
- Roll return. JPMCCI Lead average roll returns, on an annual basis, were 7.9% from 2002 to September 2007, 2.6% from 1997 to September 2007 and -0.4% from 1991 to September 2007.

JPMCCI Lead: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI	
1991 to Sep 2007				
Cum Roll	-135.3%	-	-	
Average Ann Roll	-0.4%	-	-	
Ann Roll Volatility	9.0%	-	-	
Source: JPMorgan and in	lex snonsors			

ce: JPM organ and index sponsors





Source: JPMorgan, LME

JPMCCI Lead:	performance \	vs other indices
average returns		

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-0.7%	_	-
1991	-20.1%	_	-
1992	-22.7%	_	-
1993	-5.1%	-	-
1994	24.4%	-	-
1995	3.1%	-	-
1996	0.2%	1.1%	-
1997	-20.6%	-24.2%	-
1998	-18.9%	-18.9%	-
1999	2.1%	-2.8%	-
2000	-9.2%	-12.8%	-
2001	-1.9%	-2.3%	-
2002	-17.2%	-20.3%	-
2003	61.0%	63.0%	-
2004	61.3%	55.3%	-
2005	16.6%	15.6%	-
2006	64.5%	59.2%	-
Sep 2007	115.3%	108.8%	-
1991 to Sep 2007			
Cum return	291.2%	-	-
Ann return	8.5%	-	-
Volatility	21.8%	-	-
Sharpe ratio	0.39	-	-
1997 to Sep 2007			
Cum return	419.1%	294.6%	-
Ann return	16.6%	13.6%	-
Volatility	22.9%	24.9%	-
Sharpe ratio	0.72	0.55	-
2002 to Sep 2007			
Cum return	787.0%	676.0%	-
Ann return	46.2%	42.8%	-
Volatility	26.8%	28.5%	-
Sharpe ratio	1.72	1.50	-

Source: JPMorgan and index sponsors

JPMCCI Lead: performance vs other indices

index, excess returns



Industrial Metals – LME Nickel

- **Distribution along the curve**. Open interest grew by 44.1% from 2001 to 2006, based on the 12 frontmost contracts. In this period, open interest grew the most in the front part of the curve. Whereas open interest in the two frontmost contracts accounted for 35.3% of open interest in the 12 frontmost contracts, this proportion was 38.8% in 2006, suggesting a very slight increase in concentration of positions at the front end of the curve.
- **Performance.** JPMCCI Nickel produced an annualized excess return of 43.5% from 2002 to September 2007, outperforming S&P GSCI by 3.9% and DJ-AIGCI by 3.4%. The index volatility during this period was 38.5%, which is lower than S&P GSCI by 1.2% and DJ-AIGCI by 1.4%. This results in a Sharpe ratio of 1.13 for JPMCCI, compared to S&P GSCI (1.00) and DJ-AIGCI (1.00).
- **Roll return**. JPMCCI Nickel average roll returns, on an annual basis, were 10.6% from 2002 to September 2007, 6.1% from 1997 to September 2007 and 2.8% from 1991 to September 2007.

JPMCCI Nickel: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	99.6%	-	-
Average Ann Roll	2.8%	-	-
Ann Roll Volatility	9.0%	-	-
Source: IPMorgan and in	dev snonsors		

Source: JPMorgan and index sponsors

Nickel: average of daily open interest along the curve thousand contracts



Source: JPMorgan, LME

JPMCCI Nickel: performance vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	9.6%	-	-
1991	-11.2%	-	-14.1%
1992	-20.2%	-	-20.8%
1993	-12.6%	-	-15.2%
1994	56.6%	59.6%	60.0%
1995	-13.4%	-16.5%	-16.4%
1996	-21.6%	-23.4%	-23.1%
1997	-10.6%	-11.6%	-11.3%
1998	-36.2%	-36.7%	-36.5%
1999	100.0%	99.9%	100.7%
2000	-8.4%	-8.6%	-8.5%
2001	-13.8%	-14.0%	-13.3%
2002	29.1%	28.4%	30.1%
2003	135.3%	134.8%	136.0%
2004	-0.9%	-8.8%	-5.6%
2005	-5.6%	-6.3%	-8.1%
2006	174.5%	170.0%	167.2%
Sep 2007	2.4%	-2.0%	-2.3%
1991 to Sep 2007			
Cum return	372.3%	-	270.2%
Ann return	9.7%	-	8.1%
Volatility	31.4%	-	32.5%
Sharpe ratio	0.31	-	0.25
1997 to Sep 2007			
Cum return	618.0%	499.2%	523.5%
Ann return	20.1%	18.1%	18.6%
Volatility	34.8%	35.8%	36.0%
Sharpe ratio	0.58	0.51	0.52
2002 to Sep 2007			
Cum return	698.3%	581.5%	595.7%
Ann return	43.5%	39.6%	40.1%
Volatility	38.5%	39.7%	39.9%
Sharpe ratio	1.13	1.00	1.00

Source: JPMorgan and index sponsors

JPMCCI Nickel: performance vs other indices

index, excess returns



Industrial Metals – LME Zinc

- **Distribution along the curve**. Open interest grew by 64.5% from 2001 to 2006, based on the 12 frontmost contracts. In this period, open interest grew the most in the front part of the curve. In 2006, open interest in the two frontmost contracts accounted for 34.3% of open interest in the 12 frontmost contracts, virtually similar to 2001, suggesting that the concentration of positions at the front end of the curve has not changed meaningfully.
- **Performance.** JPMCCI Zinc produced an annualized excess return of 25.1% from 2002 to September 2007, outperforming S&P GSCI by 3.9% and DJ-AIGCI by 3.2%. The index volatility during this period was 28.1%, which is lower than S&P GSCI by 0.8% and DJ-AIGCI by 0.7%. This results in a Sharpe ratio of 0.89 for JPMCCI, compared to S&P GSCI (0.73) and DJ-AIGCI (0.76).
- **Roll return**. JPMCCI Zinc average roll returns, on an annual basis, were 0.3% from 2002 to September 2007, -1.1% from 1997 to September 2007 and -2.0% from 1991 to September 2007.

JPMCCI Zinc: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-86.9%	-	-
Average Ann Roll	-2.0%	-	-
Ann Roll Volatility	5.8%	-	-
Courses IDMerson and in	day, anana ara		

Source: JPM organ and index sponsors

Zinc: average of daily open interest along the curve thousand contracts



Source: JPMorgan, LME

JPMCCI Zinc:	performance vs	other	indices
excess returns			

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	11.1%	-	_
1991	-10.4%	-	-7.8%
1992	-0.7%	-8.7%	4.0%
1993	-13.0%	-11.5%	-10.7%
1994	7.7%	2.9%	3.6%
1995	-15.9%	-19.9%	-19.7%
1996	-3.7%	-5.5%	-5.4%
1997	6.7%	7.7%	9.1%
1998	-21.5%	-22.8%	-21.8%
1999	26.6%	25.8%	27.2%
2000	-15.2%	-18.3%	-17.0%
2001	-29.2%	-30.2%	-29.9%
2002	-10.5%	-11.4%	-11.0%
2003	25.4%	22.4%	23.9%
2004	19.8%	14.9%	16.7%
2005	50.2%	46.4%	45.2%
2006	137.7%	125.7%	127.2%
Sep 2007	-24.6%	-26.8%	-26.6%
1991 to Sep 2007			
Cum return	55.7%	-	32.5%
Ann return	2.7%	-	1.7%
Volatility	21.4%	-	22.7%
Sharpe ratio	0.13	-	0.07
1997 to Sep 2007			
Cum return	130.4%	79.7%	96.6%
Ann return	8.1%	5.6%	6.5%
Volatility	23.9%	25.0%	24.9%
Sharpe ratio	0.34	0.22	0.26
2002 to Sep 2007			
Cum return	261.9%	201.3%	211.6%
Ann return	25.1%	21.1%	21.9%
Volatility	28.1%	28.9%	28.9%
Sharpe ratio	0.89	0.73	0.76

Source: JPMorgan and index sponsors

JPMCCI Zinc: performance vs other indices

index, excess returns



Industrial Metals – COMEX Copper

- Distribution along the curve. Open interest grew by 58.0% from 1996 to 2001, and grew by 6.0% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the front part of the curve. Whereas open interest in the two frontmost contracts accounted for 28.3% of open interest in the 12 frontmost contracts, this proportion was 24.2% in 2006, suggesting a very slight increase in dispersion of positions across the curve.
- Performance. JPMCCI COMEX Copper produced an annualized excess return of 38.4% from 2002 to September 2007, outperforming DJ-AIGCI by 1.9%. The index volatility during this period was 27.0%, which is lower than DJ-AIGCI by 0.3%. This results in a Sharpe ratio of 1.42 for JPMCCI, compared to DJ-AIGCI (1.33).
- Roll return. JPMCCI COMEX Copper average roll returns, on an annual basis, were 4.4% from 2002 to September 2007, 1.5% from 1997 to September 2007 and 2.6% from 1991 to September 2007.

JPMCCI COMEX Copper: roll return vs other indices

_	
_	
_	-
-	-
-	-
	-

COMEX Copper: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI COMEX Copper: perfo	rmance vs ot	ther indices
excess returns		
IPM	CCI	S2D GSCI

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	21.4%	-	-
1991	-8.5%	-	-11.2%
1992	5.9%	-	5.8%
1993	-22.1%	-	-22.9%
1994	63.8%	-	70.7%
1995	3.7%	-	2.4%
1996	-8.5%	-	-4.8%
1997	-13.1%	-	-14.1%
1998	-17.7%	-	-18.0%
1999	20.3%	-	20.0%
2000	-5.9%	-	-7.0%
2001	-24.7%	-	-25.6%
2002	1.9%	-	1.8%
2003	44.2%	-	44.6%
2004	45.7%	-	42.2%
2005	60.4%	-	56.1%
2006	48.2%	-	45.1%
Sep 2007	27.4%	-	26.1%
1991 to Sep 2007			
Cum return	363.8%	-	322.4%
Ann return	9.6%	-	9.0%
Volatility	23.1%	-	23.7%
Sharpe ratio	0.42	-	0.38
1997 to Sep 2007			
Cum return	295.3%	-	250.0%
Ann return	13.6%	-	12.4%
Volatility	25.0%	-	25.4%
Sharpe ratio	0.55	-	0.49
2002 to Sep 2007			
Cum return	548.4%	-	497.9%
Ann return	38.4%	-	36.5%
Volatility	27.0%	-	27.3%
Sharpe ratio	1.42		1.33

Source: JPMorgan and index sponsors

JPMCCI COMEX Copper: performance vs other indices

index, excess returns



Global Commodity Research JPMorgan Introducing the JPMorgan Commodity Curve Index November 9, 2007

Agriculture – CBOT Corn

- Distribution along the curve. Open interest grew by 64.3% from 1996 to 2001, and grew by 189.8% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the later part of the curve. Whereas open interest in the two frontmost contracts accounted for 65.2% of open interest in the 12 frontmost contracts, this proportion was 56.1% in 2006, suggesting a mild increase in dispersion of positions across the curve. In tandem with this, positions appear to be increasing in absolute terms further out the curve.
- **Performance.** JPMCCI Corn produced an annualized excess return of -3.7% from 2002 to September 2007, outperforming S&P GSCI by 4.2% and DJ-AIGCI by 4.2%. The index volatility during this period was 24.1%, which is lower than S&P GSCI by 1.8% and DJ-AIGCI by 1.8%. This results in a Sharpe ratio of -0.15 for JPMCCI, compared to S&P GSCI (-0.31) and DJ-AIGCI (-0.31).
- **Roll return**. JPMCCI Corn average roll returns, on an annual basis, was -15.2% from 2002 to September 2007. This compares to -19.7% for S&P GSCI. JPMCCI Corn average annual roll returns were -14.0% from 1997 to September 2007 and -10.7% from 1991 to September 2007.

JPMCCI Corn: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-132.4%	-143.2%	-
Average Ann Roll	-10.7%	-13.7%	-
Ann Roll Volatility	10.5%	12.3%	-

Source: JPMorgan and index sponsors

Corn: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Corn:	performance	vs	other	indices
excess returns				

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-6.9%	-7.2%	-
1991	-1.6%	-4.4%	-4.4%
1992	-20.9%	-23.6%	-23.6%
1993	21.9%	23.1%	23.2%
1994	-25.4%	-30.3%	-30.3%
1995	42.9%	43.8%	43.8%
1996	-10.7%	-10.6%	-10.1%
1997	4.0%	2.2%	2.3%
1998	-29.3%	-32.2%	-32.2%
1999	-18.7%	-20.7%	-20.6%
2000	-7.9%	-10.5%	-10.5%
2001	-26.4%	-28.1%	-28.1%
2002	-2.2%	-4.1%	-4.1%
2003	-2.4%	-3.7%	-3.7%
2004	-23.4%	-29.3%	-29.4%
2005	-14.8%	-18.4%	-18.4%
2006	43.4%	40.0%	40.0%
Sep 2007	-9.9%	-16.4%	-16.4%
1991 to Sep 2007			
Cum return	-70.5%	-82.2%	-82.1%
Ann return	-7.0%	-9.8%	-9.8%
Volatility	21.0%	22.3%	22.3%
Sharpe ratio	-0.33	-0.44	-0.44
1997 to Sep 2007			
Cum return	-67.3%	-78.0%	-77.9%
Ann return	-9.9%	-13.1%	-13.1%
Volatility	22.3%	23.8%	23.8%
Sharpe ratio	-0.44	-0.55	-0.55
2002 to Sep 2007			
Cum return	-19.4%	-37.7%	-37.7%
Ann return	-3.7%	-7.9%	-7.9%
Volatility	24.1%	25.9%	25.9%
Sharpe ratio	-0.15	-0.31	-0.31

Source: JPMorgan and index sponsors

JPMCCI Corn: performance vs other indices

index, excess returns



Agriculture – CBOT Soybeans

- Distribution along the curve. Open interest shrank by 10.7% from 1996 to 2001, but grew by 120.0% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the later part of the curve. Whereas open interest in the two frontmost contracts accounted for 54.6% of open interest in the 12 frontmost contracts, this proportion was 59.9% in 2006, suggesting a mild increase in concentration of positions at the front end of the curve. On the other hand, we are seeing small positions being built further out the curve as well.
- **Performance.** JPMCCI Soybeans produced an annualized excess return of 18.1% from 2002 to September 2007, outperforming S&P GSCI by 1.4% and DJ-AIGCI by 1.4%. The index volatility during this period was 24.8%, which is lower than S&P GSCI by 1.3% and DJ-AIGCI by 1.4%. This results in a Sharpe ratio of 0.73 for JPMCCI, compared to S&P GSCI (0.64) and DJ-AIGCI (0.64).
- Roll return. JPMCCI Soybeans average roll returns, on an annual basis, was 1.2% from 2002 to September 2007. This compares to -0.7% for S&P GSCI. JPMCCI Soybeans average annual roll returns were 0.6% from 1997 to September 2007 and -1.1% from 1991 to September 2007.

JPMCCI Soybeans: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI	
1991 to Sep 2007				
Cum Roll	-24.6%	-32.1%	-	
Average Ann Roll	-1.1%	-1.7%	-	
Ann Roll Volatility	9.6%	10.5%	-	
Source: IBMorgon and inc	lov choncoro			

Source: JPMorgan and index sponsors

Soybeans: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Soybeans: performance vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-10.4%	-12.4%	-
1991	-11.8%	-12.0%	-10.8%
1992	-3.6%	-3.4%	-3.4%
1993	18.8%	20.9%	20.7%
1994	-19.8%	-21.2%	-21.1%
1995	21.0%	20.4%	20.4%
1996	-6.0%	-6.0%	-6.0%
1997	16.6%	18.9%	18.8%
1998	-20.5%	-18.8%	-18.8%
1999	-19.3%	-20.4%	-20.4%
2000	-0.4%	-0.8%	-0.8%
2001	-18.8%	-17.6%	-17.6%
2002	36.1%	38.7%	38.7%
2003	56.6%	53.2%	53.2%
2004	-14.1%	-14.6%	-14.6%
2005	7.0%	4.5%	4.5%
2006	1.0%	-1.6%	-1.6%
Sep 2007	31.7%	30.6%	30.6%
1991 to Sep 2007			
Cum return	45.3%	40.4%	42.2%
Ann return	2.3%	2.0%	2.1%
Volatility	20.6%	21.5%	21.5%
Sharpe ratio	0.11	0.10	0.10
1997 to Sep 2007			
Cum return	57.7%	53.2%	53.1%
Ann return	4.3%	4.0%	4.0%
Volatility	23.3%	24.4%	24.4%
Sharpe ratio	0.19	0.17	0.17
2002 to Sep 2007			
Cum return	160.7%	143.6%	143.6%
Ann return	18.1%	16.7%	16.7%
Volatility	24.8%	26.1%	26.2%
Sharpe ratio	0.73	0.64	0.64

Source: JPMorgan and index sponsors

JPMCCI Soybeans: performance vs other indices

index, excess returns



Agriculture – CBOT Soybean Meal

- **Distribution along the curve**. Open interest grew by 40.2% from 1996 to 2001, and grew by 49.3% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the later part of the curve. In 2006, open interest in the two frontmost contracts accounted for 44.0% of open interest in the 12 frontmost contracts, virtually similar to 2001, suggesting that the concentration of positions at the front end of the curve has not changed meaningfully.
- **Performance.** JPMCCI Soybean Meal produced an annualized excess return of 18.0% from 2002 to September 2007. The index volatility during this period was 26.9%, resulting in a Sharpe ratio of 0.67.
- **Roll return**. JPMCCI Soybean Meal average roll returns, on an annual basis, were 4.5% from 2002 to September 2007, 5.5% from 1997 to September 2007 and 2.1% from 1991 to September 2007.

JPMCCI Soybean Meal: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI	
1991 to Sep 2007				
Cum Roll	73.9%	-	-	
Average Ann Roll	2.1%	-	-	
Ann Roll Volatility	12.5%	-	-	
Courses IDM array and index array are				

Source: JPMorgan and index sponsors

Soybean Meal: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Soybean Meal: performance vs other indices

excess returns

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-15.2%	-	-
1991	-3.3%	-	-
1992	-4.5%	-	-
1993	9.2%	-	-
1994	-23.3%	-	-
1995	33.6%	-	-
1996	-2.1%	-	-
1997	23.8%	-	-
1998	-33.7%	-	-
1999	-0.5%	-	-
2000	28.9%	-	-
2001	-13.9%	-	-
2002	26.2%	-	-
2003	67.3%	-	-
2004	-14.4%	-	-
2005	14.2%	-	-
2006	-5.0%	-	-
Sep 2007	32.2%	-	-
1991 to Sep 2007			
Cum return	137.9%	-	-
Ann return	5.3%	-	-
Volatility	22.1%	-	-
Sharpe ratio	0.24	-	-
1997 to Sep 2007			
Cum return	135.1%	-	-
Ann return	8.3%	-	-
Volatility	25.4%	-	-
Sharpe ratio	0.33	-	-
2002 to Sep 2007			
Cum return	159.2%	-	-
Ann return	18.0%	-	-
Volatility	26.9%	-	-
Sharpe ratio	0.67	-	-

Source: JPMorgan and index sponsors

JPMCCI Soybean Meal: performance vs other indices



Agriculture – CBOT Soybean Oil

- Distribution along the curve. Open interest grew by 67.8% from 1996 to 2001, and grew by 58.2% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the later part of the curve; the increase in open interest in the 9th to 12th contract, although low in absolute terms, are, in 2006, five times the level seen in 2001. In 2006, open interest in the two frontmost contracts accounted for 47.5% of open interest in the 12 frontmost contracts, virtually similar to 2001, suggesting that the concentration of positions at the front end of the curve has not changed meaningfully.
- **Performance.** JPMCCI Soybean Oil produced an annualized excess return of 16.5% from 2002 to September 2007, outperforming DJ-AIGCI by 2.1%. The index volatility during this period was 25.4%, which is higher than DJ-AIGCI by 1.1%. This results in a Sharpe ratio of 0.65 for JPMCCI, compared to DJ-AIGCI (0.54).
- **Roll return**. JPMCCI Soybean Oil average roll returns, on an annual basis, were -2.6% from 2002 to September 2007, -5.1% from 1997 to September 2007 and -4.2% from 1991 to September 2007.

JPMCCI Soybean Oil: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-93.8%	-	-
Average Ann Roll	-4.2%	-	-
Ann Roll Volatility	7.3%	-	-

Source: JPMorgan and index sponsors

Soybean Oil: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Soybean Oil: performance vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	5.6%	-	-
1991	-18.3%	-	-18.0%
1992	1.3%	-	1.7%
1993	34.8%	-	35.3%
1994	4.6%	-	5.0%
1995	-3.6%	-	-6.5%
1996	-15.9%	-	-16.3%
1997	1.5%	-	0.0%
1998	-11.5%	-	-12.3%
1999	-37.0%	-	-37.6%
2000	-18.8%	-	-19.7%
2001	-7.8%	-	-8.0%
2002	30.5%	-	30.1%
2003	36.4%	-	32.9%
2004	-14.5%	-	-16.3%
2005	1.0%	-	-1.7%
2006	23.8%	21.6%	21.2%
Sep 2007	26.3%	25.6%	25.6%
1991 to Sep 2007			
Cum return	-3.9%	-	-18.8%
Ann return	-0.2%	-	-1.2%
Volatility	22.3%	-	23.0%
Sharpe ratio	-0.01	-	-0.05
1997 to Sep 2007			
Cum return	1.7%	-	-12.4%
Ann return	0.2%	-	-1.2%
Volatility	24.9%	-	25.7%
Sharpe ratio	0.01	-	-0.05
2002 to Sep 2007			
Cum return	140.3%	-	116.4%
Ann return	16.5%	-	14.4%
Volatility	25.4%	-	26.5%
Sharpe ratio	0.65	-	0.54

Source: JPMorgan and index sponsors

JPMCCI Soybean Oil: performance vs other indices

index, excess returns



Agriculture – CBOT Wheat

- Distribution along the curve. Open interest grew by 68.8% from 1996 to 2001, and grew by 216.6% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew most significantly in the later part of the curve; the open interest of the 9th generic contract for example increased by 55 times, albeit from marginal initial amounts, from 2001 to 2006. In addition, whereas open interest in the two frontmost contracts accounted for 75.5% of open interest in the 12 frontmost contracts, this proportion was 65.0% in 2006, suggesting a notable increase in dispersion of positions across the curve.
- **Performance.** JPMCCI Wheat produced an annualized excess return of 9.0% from 2002 to September 2007, outperforming S&P GSCI by 4.0% and DJ-AIGCI by 4.0%. The index volatility during this period was 24.7%, which is lower than S&P GSCI by 1.2% and DJ-AIGCI by 1.1%. This results in a Sharpe ratio of 0.37 for JPMCCI, compared to S&P GSCI (0.19) and DJ-AIGCI (0.20).
- **Roll return**. JPMCCI Wheat average roll returns, on an annual basis, was -13.7% from 2002 to September 2007. This compares to -18.5% for S&P GSCI. JPMCCI Wheat average annual roll returns were -14.8% from 1997 to September 2007 and -8.7% from 1991 to September 2007.

JPMCCI Wheat: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-259.2%	-309.4%	-
Average Ann Roll	-8.7%	-12.3%	-
Ann Roll Volatility	11.0%	12.3%	-
Source: JPMorgan and in	dex sponsors		

Wheat: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI	Wheat:	performance	vs	other	indice	1
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	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-35.8%	-36.7%	-
1991	32.7%	36.2%	34.6%
1992	-6.6%	-11.7%	-11.6%
1993	16.1%	22.2%	21.8%
1994	6.0%	2.3%	2.7%
1995	33.1%	23.6%	23.6%
1996	-16.2%	-18.9%	-18.7%
1997	-16.3%	-23.8%	-23.8%
1998	-29.7%	-32.5%	-32.5%
1999	-28.0%	-29.9%	-29.9%
2000	-12.2%	-15.0%	-15.0%
2001	-16.7%	-16.8%	-16.8%
2002	5.1%	0.8%	0.8%
2003	10.0%	3.9%	3.9%
2004	-26.3%	-30.3%	-30.3%
2005	-6.3%	-8.8%	-8.8%
2006	23.3%	20.0%	20.0%
Sep 2007	67.1%	66.1%	66.1%
1991 to Sep 2007			
Cum return	-13.4%	-49.0%	-49.4%
Ann return	-0.9%	-3.9%	-4.0%
Volatility	22.3%	23.4%	23.4%
Sharpe ratio	-0.04	-0.17	-0.17
1997 to Sep 2007			
Cum return	-49.0%	-66.2%	-66.1%
Ann return	-6.1%	-9.6%	-9.6%
Volatility	23.7%	24.6%	24.5%
Sharpe ratio	-0.26	-0.39	-0.39
2002 to Sep 2007			
Cum return	64.5%	32.8%	32.8%
Ann return	9.0%	5.1%	5.1%
Volatility	24.7%	25.9%	25.8%
Sharpe ratio	0.37	0.19	0.20

Source: JPMorgan and index sponsors

JPMCCI Wheat: performance vs other indices

index, excess returns



Agriculture – KCBOT Winter Wheat

- **Distribution along the curve**. Open interest grew by 21.0% from 1996 to 2001, and grew by 99.8% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the middle part of the curve. Whereas open interest in the two frontmost contracts accounted for 80.0% of open interest in the 12 frontmost contracts, this proportion was 61.5% in 2006, suggesting a notable increase in dispersion of positions across the curve.
- **Performance.** JPMCCI Kansas Wheat produced an annualized excess return of 17.4% from 2002 to September 2007, outperforming S&P GSCI by 2.7%. The index volatility during this period was 24.6%, which is lower than S&P GSCI by 1.0%. This results in a Sharpe ratio of 0.71 for JPMCCI, compared to S&P GSCI (0.57).
- **Roll return**. JPMCCI Winter Wheat average roll returns, on an annual basis, were -4.9% from 2002 to September 2007, -8.0% from 1997 to September 2007 and -3.1% from 1991 to September 2007.

JPMCCI Winter Wheat: roll return vs other indices

	IDMCCI		DIAICO
1991 to Sep 2007	JPINCCI	3ar 6301	DJ-AIGCI
Cum Boll	136 1%		
	-130.1%	-	-
Average Ann Roll	-3.1%	-	-
Ann Roll Volatility	10.1%	-	-
0 1014	12.1		

Source: JPMorgan and index sponsors



Winter Wheat: average of daily open interest along the curve thousand contracts

Source: JPMorgan, Bloomberg

JPMCCI Winter Wheat: performance vs other indices

excess	returns	

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-37.3%	-	-
1991	38.0%	-	-
1992	-9.1%	-	-
1993	21.5%	-	-
1994	7.6%	-	-
1995	39.6%	-	-
1996	-9.0%	-	-
1997	-6.8%	-	-
1998	-19.4%	-	-
1999	-26.9%	-	-
2000	-2.2%	-4.2%	-
2001	-26.7%	-28.4%	-
2002	20.1%	17.1%	-
2003	8.0%	5.3%	-
2004	-17.2%	-19.6%	-
2005	11.2%	10.3%	-
2006	25.1%	17.8%	-
Sep 2007	68.1%	70.4%	-
1991 to Sep 2007			
Cum return	105.9%	-	-
Ann return	4.4%	-	-
Volatility	22.6%	-	-
Sharpe ratio	0.20	-	-
1997 to Sep 2007			
Cum return	-1.2%	-	-
Ann return	-0.1%	-	-
Volatility	23.4%	-	-
Sharpe ratio	0.00	-	-
2002 to Sep 2007			
Cum return	151.1%	119.7%	-
Ann return	17.4%	14.7%	-
Volatility	24.6%	25.7%	-
Sharpe ratio	0.71	0.57	-

Source: JPMorgan and index sponsors

JPMCCI Winter Wheat: performance vs other indices

index, excess returns



Agriculture – MGE Spring Wheat

- **Distribution along the curve**. Open interest grew by 21.0% from 1996 to 2001, and grew by 99.8% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the middle part of the curve. Whereas open interest in the two frontmost contracts accounted for 80.0% of open interest in the 12 frontmost contracts, this proportion was 61.5% in 2006, suggesting a notable increase in dispersion of positions across the curve.
- **Performance.** JPMCCI Spring Wheat produced an annualized excess return of 16.2% from 2002 to September 2007. The index volatility during this period was 24.3%, resulting in a Sharpe ratio of 0.67.
- **Roll return**. JPMCCI Spring Wheat average roll returns, on an annual basis, were -5.1% from 2002 to September 2007, -6.5% from 1997 to September 2007 and -3.2% from 1991 to September 2007.

JPMCCI Spring Wheat: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-126.1%	-	-
Average Ann Roll	-3.2%	-	-
Ann Roll Volatility	9.1%	-	-
Source: JPMorgan and in	dex sponsors		

Source: JPMorgan and index sponsors

Spring Wheat: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Spring Wheat: performance vs other indices

excess	returns
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	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-37.5%	-	-
1991	29.7%	-	-
1992	-7.1%	-	-
1993	31.2%	-	-
1994	2.2%	-	-
1995	27.6%	-	-
1996	-12.4%	-	-
1997	1.1%	-	-
1998	-8.2%	-	-
1999	-19.9%	-	-
2000	-13.7%	-	-
2001	-20.4%	-	-
2002	15.2%	-	-
2003	6.5%	-	-
2004	-12.5%	-	-
2005	7.6%	-	-
2006	23.7%	-	-
Sep 2007	65.7%	-	
1991 to Sep 2007			
Cum return	118.0%	-	-
Ann return	4.8%	-	-
Volatility	21.2%	-	-
Sharpe ratio	0.22	-	-
1997 to Sep 2007			
Cum return	20.8%	-	-
Ann return	1.8%	-	-
Volatility	21.4%	-	-
Sharpe ratio	0.08	-	-
2002 to Sep 2007			
Cum return	136.8%	-	-
Ann return	16.2%	-	-
Volatility	24.3%	-	-
Sharpe ratio	0.67	-	_

Source: JPMorgan and index sponsors

JPMCCI Spring Wheat: performance vs other indices

index, excess returns



Source: JPMorgan and index sponsors

Agriculture – NYBOT Cocoa

- **Distribution along the curve**. Open interest grew by 22.8% from 1996 to 2001, and grew by 29.6% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the front part of the curve. Whereas open interest in the two frontmost contracts accounted for 38.5% of open interest in the 12 frontmost contracts, this proportion was 57.6% in 2006, suggesting a notable increase in concentration of positions at the front end of the curve.
- **Performance.** JPMCCI Cocoa produced an annualized excess return of 5.6% from 2002 to September 2007, outperforming S&P GSCI by 0.6% and DJ-AIGCI by 0.6%. The index volatility during this period was 30.3%, which is lower than S&P GSCI by 1.3% and DJ-AIGCI by 1.3%. This results in a Sharpe ratio of 0.19 for JPMCCI, compared to S&P GSCI (0.16) and DJ-AIGCI (0.16).
- Roll return. JPMCCI Cocoa average roll returns, on an annual basis, was -2.4% from 2002 to September 2007. This compares to -3.4% for S&P GSCI. JPMCCI Cocoa average annual roll returns were -5.5% from 1997 to September 2007 and -8.0% from 1991 to September 2007.

JPMCCI Cocoa: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-127.7%	-147.8%	-
Average Ann Roll	-8.0%	-10.0%	-
Ann Roll Volatility	6.3%	7.7%	-

Source: JPMorgan and index sponsors

Cocoa: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Coco	a: performance v	s other indices
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	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	15.1%	7.9%	-
1991	-9.1%	-11.1%	-10.7%
1992	-38.0%	-40.3%	-40.3%
1993	5.0%	-0.2%	0.2%
1994	-1.5%	-2.4%	-3.0%
1995	-9.6%	-12.0%	-12.0%
1996	-0.2%	-2.6%	-2.6%
1997	9.1%	3.3%	3.4%
1998	-22.5%	-24.0%	-24.0%
1999	-46.1%	-48.2%	-48.2%
2000	-24.9%	-26.7%	-26.7%
2001	56.4%	66.4%	66.4%
2002	64.1%	57.5%	57.5%
2003	-21.0%	-16.8%	-16.8%
2004	-1.1%	-1.3%	-1.3%
2005	-6.9%	-10.5%	-10.5%
2006	-0.2%	-1.9%	-1.9%
Sep 2007	14.8%	16.7%	16.7%
1991 to Sep 2007			
Cum return	-61.4%	-70.8%	-70.7%
Ann return	-5.5%	-7.1%	-7.1%
Volatility	27.5%	29.0%	29.0%
Sharpe ratio	-0.20	-0.24	-0.24
1997 to Sep 2007			
Cum return	-26.7%	-34.2%	-34.1%
Ann return	-2.8%	-3.8%	-3.8%
Volatility	30.4%	32.0%	32.1%
Sharpe ratio	-0.09	-0.12	-0.12
2002 to Sep 2007			
Cum return	36.9%	32.6%	32.6%
Ann return	5.6%	5.0%	5.0%
Volatility	30.3%	31.5%	31.5%
Sharpe ratio	0.19	0.16	0.16

Source: JPMorgan and index sponsors

JPMCCI Cocoa: performance vs other indices

index, excess returns





Global Commodity Research JPMorgan Introducing the JPMorgan Commodity Curve Index November 9, 2007

Agriculture – NYBOT Coffee

- Distribution along the curve. Open interest grew by 106.5% from 1996 to 2001, and grew by 96.8% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the later part of the curve. Whereas open interest in the two frontmost contracts accounted for 71.8% of open interest in the 12 frontmost contracts, this proportion was 78.3% in 2006, suggesting a mild increase in concentration of positions at the front end of the curve. However, at the same time, we are seeing positions being built further out the curve than in prior years.
- **Performance.** JPMCCI Coffee produced an annualized excess return of 0.6% from 2002 to September 2007, outperforming S&P GSCI by 1.7% and DJ-AIGCI by 1.7%. The index volatility during this period was 31.4%, which is lower than S&P GSCI by 1.1% and DJ-AIGCI by 1.1%. This results in a Sharpe ratio of 0.02 for JPMCCI, compared to S&P GSCI (-0.04) and DJ-AIGCI (-0.04).
- **Roll return**. JPMCCI Coffee average roll returns, on an annual basis, was -18.6% from 2002 to September 2007. This compares to -20.7% for S&P GSCI. JPMCCI Coffee average annual roll returns were -6.1% from 1997 to September 2007 and -6.3% from 1991 to September 2007.

JPMCCI Coffee: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-108.4%	-114.2%	-
Average Ann Roll	-6.3%	-6.6%	-
Ann Roll Volatility	22.1%	25.4%	-

Source: JPMorgan and index sponsors

Coffee: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Coffee: performance vs other indices excess returns

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-2.3%	-3.8%	-
1991	-25.1%	-26.0%	-25.5%
1992	-17.2%	-17.8%	-17.8%
1993	-23.8%	-24.8%	-24.6%
1994	120.0%	118.4%	117.7%
1995	-44.3%	-43.8%	-43.8%
1996	42.4%	51.2%	50.7%
1997	104.0%	114.4%	114.9%
1998	-14.2%	-15.7%	-15.7%
1999	-1.4%	-3.4%	-3.4%
2000	-56.2%	-58.1%	-58.1%
2001	-45.2%	-46.8%	-46.8%
2002	3.0%	-1.3%	-1.3%
2003	-11.6%	-13.0%	-13.0%
2004	34.7%	33.5%	33.5%
2005	-10.0%	-11.7%	-11.7%
2006	2.2%	1.0%	1.0%
Sep 2007	-8.4%	-8.6%	-8.6%
1991 to Sep 2007			
Cum return	-64.7%	-69.1%	-68.9%
Ann return	-6.0%	-6.8%	-6.7%
Volatility	38.5%	40.6%	40.6%
Sharpe ratio	-0.16	-0.17	-0.17
1997 to Sep 2007			
Cum return	-57.2%	-63.6%	-63.5%
Ann return	-7.6%	-9.0%	-9.0%
Volatility	36.0%	37.9%	38.0%
Sharpe ratio	-0.21	-0.24	-0.24
2002 to Sep 2007			
Cum return	3.5%	-6.4%	-6.4%
Ann return	0.6%	-1.2%	-1.2%
Volatility	31.4%	32.4%	32.4%
Sharpe ratio	0.02	-0.04	-0.04

Source: JPMorgan and index sponsors

JPMCCI Coffee: performance vs other indices

index, excess returns



Agriculture – NYBOT Cotton

- **Distribution along the curve**. Open interest grew by 9.7% from 1996 to 2001, and grew by 140.1% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the front part of the curve. Whereas open interest in the two frontmost contracts accounted for 60.4% of open interest in the 12 frontmost contracts, this proportion was 71.8% in 2006, suggesting a notable increase in concentration of positions at the front end of the curve.
- **Performance.** JPMCCI Cotton produced an annualized excess return of -5.7% from 2002 to September 2007, outperforming S&P GSCI by 2.5% and DJ-AIGCI by 2.6%. The index volatility during this period was 25.8%, which is lower than S&P GSCI by 1.6% and DJ-AIGCI by 1.6%. This results in a Sharpe ratio of -0.22 for JPMCCI, compared to S&P GSCI (-0.30) and DJ-AIGCI (-0.30).
- Roll return. JPMCCI Cotton average roll returns, on an annual basis, was -17.8% from 2002 to September 2007. This compares to -21.1% for S&P GSCI. JPMCCI Cotton average annual roll returns were -12.9% from 1997 to September 2007 and -6.4% from 1991 to September 2007.

JPMCCI Cotton: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-56.4%	-59.2%	-
Average Ann Roll	-6.4%	-7.5%	-
Ann Roll Volatility	13.5%	18.1%	-
O	deve energy and		

Source: JPM organ and index sponsors

Cotton: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Cotton: performance vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	20.0%	24.2%	-
1991	-9.7%	-12.5%	-10.1%
1992	-9.1%	-9.8%	-9.8%
1993	9.4%	9.9%	9.8%
1994	33.6%	35.6%	35.7%
1995	21.7%	37.2%	34.5%
1996	-5.0%	-9.1%	-9.0%
1997	-15.6%	-19.3%	-19.2%
1998	-14.4%	-14.3%	-14.3%
1999	-19.5%	-20.9%	-20.9%
2000	9.0%	3.1%	3.1%
2001	-49.8%	-51.8%	-51.8%
2002	16.8%	14.4%	14.4%
2003	21.6%	18.7%	18.7%
2004	-43.3%	-43.9%	-44.1%
2005	2.6%	-1.5%	-1.5%
2006	-15.3%	-18.6%	-18.6%
Sep 2007	1.5%	-0.1%	-0.1%
1991 to Sep 2007			
Cum return	-68.6%	-75.6%	-75.5%
Ann return	-6.7%	-8.1%	-8.1%
Volatility	23.0%	24.8%	24.7%
Sharpe ratio	-0.29	-0.33	-0.33
1997 to Sep 2007			
Cum return	-77.4%	-83.4%	-83.4%
Ann return	-12.9%	-15.4%	-15.4%
Volatility	24.7%	26.2%	26.2%
Sharpe ratio	-0.52	-0.59	-0.59
2002 to Sep 2007			
Cum return	-28.8%	-39.0%	-39.2%
Ann return	-5.7%	-8.2%	-8.3%
Volatility	25.8%	27.4%	27.4%
Sharpe ratio	-0.22	-0.30	-0.30

Source: JPMorgan and index sponsors

JPMCCI Cotton: performance vs other indices

index, excess returns



Agriculture – NYBOT Orange Juice

- **Distribution along the curve**. Open interest grew by 9.0% from 1996 to 2001, and grew by 33.2% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the front part of the curve. In 2006, open interest in the two frontmost contracts accounted for 82.0% of open interest in the 12 frontmost contracts, virtually similar to 2001, suggesting that the concentration of positions at the front end of the curve has not changed meaningfully.
- **Performance.** JPMCCI Orange Juice produced an annualized excess return of -2.0% from 2002 to September 2007. The index volatility during this period was 26.6%, resulting in a Sharpe ratio of -0.07.
- **Roll return**. JPMCCI Orange Juice average roll returns, on an annual basis, were -7.8% from 2002 to September 2007, -9.9% from 1997 to September 2007 and -8.6% from 1991 to September 2007.

JPMCCI Orange Juice: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-82.8%	-	-
Average Ann Roll	-8.6%	-	-
Ann Roll Volatility	10.0%	-	-
a			

Source: JPMorgan and index sponsors



Orange Juice: average of daily open interest along the curve thousand contracts

Source: JPMorgan, Bloomberg

JPMCCI Orange Juice: performance vs other indices

excess returns			
	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-19.3%	-	-
1991	34.6%	-	-
1992	-35.2%	-	-
1993	0.6%	-	-
1994	-11.2%	-	-
1995	-6.2%	-	-
1996	-30.7%	-	-
1997	-15.6%	-	-
1998	6.7%	-	-
1999	-16.0%	-	-
2000	-11.9%	-	-
2001	-9.5%	-	-
2002	-4.4%	-	-
2003	-40.2%	-	-
2004	12.2%	-	-
2005	24.8%	-	-
2006	64.2%	-	-
Sep 2007	-32.2%	-	-
1991 to Sep 2007			
Cum return	-72.7%	-	-
Ann return	-7.5%	-	-
Volatility	28.7%	-	-
Sharpe ratio	-0.26	-	-
1997 to Sep 2007			
Cum return	-46.2%	-	-
Ann return	-5.6%	-	-
Volatility	26.9%	-	-
Sharpe ratio	-0.21	-	-
2002 to Sep 2007			
Cum return	-10.8%	-	-
Ann return	-2.0%	-	-
Volatility	26.6%	-	-
Sharpe ratio	-0.07	-	-

Source: JPMorgan and index sponsors

JPMCCI Orange Juice: performance vs other indices





Agriculture – NYBOT Sugar

- **Distribution along the curve**. Open interest shrank by 2.2% from 1996 to 2001, but grew by 228.5% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the middle part of the curve. Whereas open interest in the two frontmost contracts accounted for 70.9% of open interest in the 12 frontmost contracts, this proportion was 66.3% in 2006, suggesting a very slight increase in dispersion of positions across the curve. In tandem with this, positions appear to be increasing in absolute terms further out the curve.
- **Performance.** JPMCCI Sugar produced an annualized excess return of 4.8% from 2002 to September 2007, outperforming S&P GSCI by 3.9% and DJ-AIGCI by 3.9%. The index volatility during this period was 26.8%, which is lower than S&P GSCI by 2.0% and DJ-AIGCI by 2.0%. This results in a Sharpe ratio of 0.18 for JPMCCI, compared to S&P GSCI (0.03) and DJ-AIGCI (0.03).
- Roll return. JPMCCI Sugar average roll returns, on an annual basis, was -3.1% from 2002 to September 2007. This compares to -6.3% for S&P GSCI. JPMCCI Sugar average annual roll returns were -1.4% from 1997 to September 2007 and 1.1% from 1991 to September 2007.

JPMCCI Sugar: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	37.9%	24.5%	-
Average Ann Roll	1.1%	0.0%	-
Ann Roll Volatility	10.1%	17.2%	-
Source: JPMorgan and in	dex sponsors		

Source. JF Morgan and Index sponsors

Sugar: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Sugar: performance vs other indices excess returns

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-24.3%	-26.5%	-
1991	-0.6%	8.1%	10.5%
1992	0.2%	5.6%	5.6%
1993	20.0%	7.5%	7.6%
1994	37.1%	30.7%	30.6%
1995	-8.7%	2.6%	2.6%
1996	13.9%	13.7%	13.7%
1997	10.8%	9.6%	9.6%
1998	-38.2%	-39.5%	-39.5%
1999	-25.4%	-24.1%	-24.1%
2000	56.1%	63.3%	63.3%
2001	-18.4%	-18.4%	-18.2%
2002	17.7%	32.5%	32.5%
2003	-11.8%	-20.6%	-20.6%
2004	38.1%	22.5%	22.5%
2005	51.3%	44.5%	44.5%
2006	-24.4%	-29.0%	-29.0%
Sep 2007	-19.9%	-20.0%	-20.0%
1991 to Sep 2007			
Cum return	45.5%	32.9%	36.2%
Ann return	2.3%	1.7%	1.9%
Volatility	26.0%	28.4%	28.3%
Sharpe ratio	0.09	0.06	0.07
1997 to Sep 2007			
Cum return	-14.6%	-29.1%	-28.9%
Ann return	-1.5%	-3.1%	-3.1%
Volatility	28.7%	31.0%	31.0%
Sharpe ratio	-0.05	-0.10	-0.10
2002 to Sep 2007			
Cum return	31.3%	5.8%	5.8%
Ann return	4.8%	1.0%	1.0%
Volatility	26.8%	28.8%	28.8%
Sharpe ratio	0.18	0.03	0.03

Source: JPMorgan and index sponsors

JPMCCI Sugar: performance vs other indices

index, excess returns



Agriculture – LIFFE Robusta Coffee

- **Distribution along the curve**. Open interest grew by 190.5% from 1996 to 2001, and grew by 41.2% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the front part of the curve. Whereas open interest in the two frontmost contracts accounted for 48.3% of open interest in the 12 frontmost contracts, this proportion was 63.9% in 2006, suggesting a notable increase in concentration of positions at the front end of the curve.
- **Performance.** JPMCCI Robusta Coffee produced an annualized excess return of 20.3% from 2002 to September 2007. The index volatility during this period was 30.4%, resulting in a Sharpe ratio of 0.67.
- **Roll return**. JPMCCI Robusta Coffee average roll returns, on an annual basis, were -11.5% from 2002 to September 2007, -5.1% from 1997 to September 2007 and -1.5% from 1992 to September 2007.

JPMCCI Robusta Coffee: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1992 to Sep 2007			
Cum Roll	-25.0%	-	-
Average Ann Roll	-1.5%	-	-
Ann Roll Volatility	12.9%	-	-

Source: JPMorgan and index sponsors

Robusta Coffee: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Robusta Coffee	: performance	vs other indices
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excess returns	excess	returns
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	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-	-	-
1991	-	-	-
1992	-8.3%	-	-
1993	21.8%	-	-
1994	149.1%	-	-
1995	-27.8%	-	-
1996	-13.2%	-	-
1997	38.8%	-	-
1998	20.5%	-	-
1999	-19.8%	-	-
2000	-53.2%	-	-
2001	-48.4%	-	-
2002	83.0%	-	-
2003	-21.0%	-	-
2004	-3.6%	-	-
2005	34.7%	-	-
2006	31.0%	-	-
Sep 2007	17.8%	-	-
1991 to Sep 2007			
Cum return	-	-	-
Ann return	-	-	-
Volatility	-	-	-
Sharpe ratio	-	-	-
1997 to Sep 2007			
Cum return	-6.1%	-	-
Ann return	-0.6%	-	-
Volatility	33.7%	-	-
Sharpe ratio	-0.02	-	-
2002 to Sep 2007			
Cum return	189.6%	-	-
Ann return	20.3%	-	-
Volatility	30.4%	-	-
Sharpe ratio	0.67	-	-

Source: JPMorgan and index sponsors

JPMCCI Robusta Coffee: performance vs other indices

index, excess returns



Agriculture – LIFFE White Sugar

- **Distribution along the curve**. Open interest grew by 47.1% from 1996 to 2001, and grew by 58.2% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the middle part of the curve. In 2006, open interest in the two frontmost contracts accounted for 69.5% of open interest in the 12 frontmost contracts, virtually similar to 2001, suggesting that the concentration of positions at the front end of the curve has not changed meaningfully.
- **Performance.** JPMCCI White Sugar produced an annualized excess return of 10.9% from 2002 to September 2007. The index volatility during this period was 20.7%, resulting in a Sharpe ratio of 0.53.
- **Roll return**. JPMCCI White Sugar average roll returns, on an annual basis, were 5.8% from 2002 to September 2007, 4.1% from 1997 to September 2007 and 7.0% from 1991 to September 2007.

JPMCCI White Sugar: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	219.3%	-	-
Average Ann Roll	7.0%	-	-
Ann Roll Volatility	9.7%	-	-
0 1014			

Source: JPMorgan and index sponsors

White Sugar: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI White Sugar: performance vs other indices
excess returns

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	-11.6%	-	-
1991	8.0%	-	-
1992	-6.3%	-	-
1993	15.7%	-	-
1994	52.8%	-	-
1995	11.3%	-	-
1996	5.8%	-	-
1997	2.1%	-	-
1998	-25.3%	-	-
1999	-24.0%	-	-
2000	33.7%	-	-
2001	6.6%	-	-
2002	13.6%	-	-
2003	-3.0%	-	-
2004	37.6%	-	-
2005	35.4%	-	-
2006	-0.5%	-	-
Sep 2007	-11.3%	-	-
1991 to Sep 2007			
Cum return	215.8%	-	-
Ann return	7.1%	-	-
Volatility	18.9%	-	-
Sharpe ratio	0.38	-	-
1997 to Sep 2007			
Cum return	50.0%	-	-
Ann return	3.8%	-	-
Volatility	20.5%	-	-
Sharpe ratio	0.19	-	-
2002 to Sep 2007			
Cum return	81.3%	-	-
Ann return	10.9%	-	-
Volatility	20.7%	-	-
Sharpe ratio	0.53	-	-

Source: JPMorgan and index sponsors

JPMCCI White Sugar: performance vs other indices

index, excess returns



Livestock – CME Feeder Cattle

- **Distribution along the curve**. Open interest shrank by 9.4% from 1996 to 2001, but grew by 70.4% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the front part of the curve. Whereas open interest in the two frontmost contracts accounted for 56.4% of open interest in the 12 frontmost contracts, this proportion was 59.8% in 2006, suggesting a very slight increase in concentration of positions at the front end of the curve.
- **Performance.** JPMCCI Feeder Cattle produced an annualized excess return of 9.4% from 2002 to September 2007. The index volatility during this period was 14.3%. This results in a Sharpe ratio of 0.53 for JPMCCI.
- **Roll return**. JPMCCI Feeder Cattle average roll returns, on an annual basis, were 3.7% from 2002 to September 2007, -0.3% from 1997 to September 2007 and 1.6% from 1991 to September 2007.

JPMCCI Feeder Cattle: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	40.7%	-	-
Average Ann Roll	1.6%	-	-
Ann Roll Volatility	6.7%	-	-
Source: JPMorgan and in	dex snonsors		

Source: JPMorgan and index sponsors



Feeder Cattle: average of daily open interest along the curve thousand contracts

Source: JPMorgan, Bloomberg

JPMCCI Feeder Cattle: performance vs other	indices
excess returns	

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	10.4%	-	-
1991	-4.7%	-	-
1992	24.8%	-	-
1993	3.6%	-	-
1994	-5.6%	-	-
1995	-16.0%	-	-
1996	11.6%	-	-
1997	1.8%	-	-
1998	-15.5%	-	-
1999	18.2%	-	-
2000	1.3%	-	-
2001	-6.4%	-	-
2002	-3.6%	-	-
2003	3.3%	0.4%	-
2004	31.2%	29.9%	-
2005	28.5%	25.2%	-
2006	-12.1%	-15.0%	-
Sep 2007	13.5%	10.9%	-
1991 to Sep 2007			
Cum return	76.3%	-	-
Ann return	3.4%	-	-
Volatility	11.9%	-	-
Sharpe ratio	0.29	-	-
1997 to Sep 2007			
Cum return	61.5%	-	-
Ann return	4.6%	-	-
Volatility	12.5%	-	-
Sharpe ratio	0.36	-	-
2002 to Sep 2007			
Cum return	67.5%	-	-
Ann return	9.4%	-	-
Volatility	14.3%	-	-
Sharpe ratio	0.66	-	-

Source: JPMorgan and index sponsors

JPMCCI Feeder Cattle: performance vs other indices





Livestock – CME Lean Hogs

- Distribution along the curve. Open interest grew by 16.7% from 1996 to 2001, and grew by 283.7% from 2001 to 2006, based on the 12 frontmost contracts. In the later period, open interest grew the most in the later part of the curve. Whereas open interest in the two frontmost contracts accounted for 69.2% of open interest in the 12 frontmost contracts and for 69.2% of open interest in the 12 frontmost and grew solutions across the curve.
- **Performance.** JPMCCI Lean Hogs produced an annualized excess return of -1.3% from 2002 to September 2007, outperforming S&P GSCI by 11.1% and DJ-AIGCI by 10.8%. The index volatility during this period was 23.2%, which is lower than S&P GSCI by 3.4% and DJ-AIGCI by 3.4%. This results in a Sharpe ratio of -0.05 for JPMCCI, compared to S&P GSCI (-0.46) and DJ-AIGCI (-0.45).
- **Roll return**. JPMCCI Lean Hogs average roll returns, on an annual basis, was -1.7% from 2002 to September 2007. This compares to -13.0% for S&P GSCI. JPMCCI Lean Hogs average annual roll returns were -2.2% from 1997 to September 2007 and -1.1% from 1991 to September 2007.

JPMCCI Lean Hogs: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	-19.5%	-67.9%	-
Average Ann Roll	-1.1%	-7.8%	-
Ann Roll Volatility	15.1%	16.6%	-

Source: JPMorgan and index sponsors



Lean Hogs: average of daily open interest along the curve thousand contracts

Source: JPMorgan, Bloomberg

JPMCCI Lean Hogs: performance vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	22.9%	18.5%	-
1991	-8.1%	-5.8%	-3.8%
1992	17.4%	19.6%	19.3%
1993	12.7%	4.4%	4.7%
1994	-23.0%	-31.1%	-31.0%
1995	6.0%	3.6%	3.5%
1996	24.7%	25.6%	25.7%
1997	-13.2%	-22.4%	-22.2%
1998	-45.9%	-52.7%	-52.7%
1999	10.8%	17.4%	17.2%
2000	10.3%	1.2%	1.8%
2001	17.8%	10.4%	11.2%
2002	-19.0%	-31.1%	-31.1%
2003	-12.8%	-23.9%	-23.9%
2004	59.6%	43.0%	43.0%
2005	-5.2%	-13.9%	-13.5%
2006	-5.1%	-15.8%	-14.7%
Sep 2007	-8.4%	-13.8%	-14.0%
1991 to Sep 2007			
Cum return	-22.2%	-76.2%	-74.9%
Ann return	-1.5%	-8.2%	-7.9%
Volatility	20.8%	24.3%	24.4%
Sharpe ratio	-0.07	-0.34	-0.33
1997 to Sep 2007			
Cum return	-37.1%	-77.4%	-76.8%
Ann return	-4.2%	-12.9%	-12.7%
Volatility	22.4%	26.5%	26.4%
Sharpe ratio	-0.19	-0.49	-0.48
2002 to Sep 2007			
Cum return	-7.0%	-53.1%	-52.4%
Ann return	-1.3%	-12.3%	-12.1%
Volatility	23.2%	26.6%	26.6%
Sharpe ratio	-0.05	-0.46	-0.45

Source: JPMorgan and index sponsors

JPMCCI Lean Hogs: performance vs other indices

index, excess returns



Livestock – CME Live Cattle

- Distribution along the curve. Open interest grew by 93.1% from 2001 to 2006, based on the 12 frontmost contracts. In this period, open interest grew the most in the front part of the curve. Whereas open interest in the two frontmost contracts accounted for 58.3% of open interest in the 12 frontmost contracts, this proportion was 65.9% in 2006, suggesting a mild increase in concentration of positions at the front end of the curve.
- **Performance.** JPMCCI Live Cattle produced an annualized excess return of 7.2% from 2002 to September 2007, outperforming S&P GSCI by 3.2% and DJ-AIGCI by 3.0%. The index volatility during this period was 14.0%, which is lower than S&P GSCI by 2.3% and DJ-AIGCI by 2.3%. This results in a Sharpe ratio of 0.52 for JPMCCI, compared to S&P GSCI (0.25) and DJ-AIGCI (0.26).
- **Roll return**. JPMCCI Live Cattle average roll returns, on an annual basis, was 0.8% from 2002 to September 2007. This compares to -2.7% for S&P GSCI. JPMCCI Live Cattle average annual roll returns were -2.5% from 1997 to September 2007 and 0.6% from 1991 to September 2007.

JPMCCI Live Cattle: roll return vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
1991 to Sep 2007			
Cum Roll	13.7%	-27.0%	-
Average Ann Roll	0.6%	-1.4%	-
Ann Roll Volatility	7.7%	9.5%	-

Source: JPMorgan and index sponsors

Live Cattle: average of daily open interest along the curve thousand contracts



Source: JPMorgan, Bloomberg

JPMCCI Live Cattle: performance vs other indices

	JPMCCI	S&P GSCI	DJ-AIGCI
Annual returns			
1990	10.2%	16.0%	-
1991	-3.3%	-5.0%	-4.6%
1992	21.3%	23.1%	23.6%
1993	5.7%	5.3%	5.3%
1994	-3.3%	-3.3%	-3.4%
1995	-2.0%	-4.5%	-4.4%
1996	3.5%	0.3%	0.4%
1997	-3.6%	-4.5%	-4.4%
1998	-17.4%	-22.0%	-22.0%
1999	8.6%	7.8%	7.8%
2000	2.3%	2.5%	2.6%
2001	-9.9%	-13.1%	-12.9%
2002	3.1%	1.2%	1.3%
2003	9.2%	12.5%	13.4%
2004	19.4%	12.4%	12.5%
2005	10.8%	5.2%	5.2%
2006	-4.0%	-7.3%	-7.3%
Sep 2007	4.5%	0.6%	0.5%
1991 to Sep 2007			
Cum return	45.0%	2.3%	4.8%
Ann return	2.2%	0.1%	0.3%
Volatility	11.2%	13.5%	13.5%
Sharpe ratio	0.20	0.01	0.02
1997 to Sep 2007			
Cum return	19.1%	-10.3%	-9.0%
Ann return	1.6%	-1.0%	-0.9%
Volatility	12.2%	14.2%	14.2%
Sharpe ratio	0.13	-0.07	-0.06
2002 to Sep 2007			
Cum return	49.5%	25.5%	26.6%
Ann return	7.2%	4.0%	4.2%
Volatility	14.0%	16.3%	16.3%
Sharpe ratio	0.52	0.25	0.26

Source: JPMorgan and index sponsors

JPMCCI Live Cattle: performance vs other indices

index, excess returns



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