Understanding Commodities and Commodity ETFs

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Co-Founder and President, Teucrum Trading, LLC

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Chief Investment Officer, Compass EMP Funds

Presented by: IndexUniverse
Broad-based Commodity Exposure: 2008 - Present

PowerShares DB Commodity

iShares S&P North American Natural Resources (Equity)

GS Connect S&P GSCI

Oil: 2008 - Present

XOM

WTI Spot

USO

USL
Jamie Farmer, Executive Director
Global Business Development & Communications
Dow Jones Indexes
Commodities – 2011 Review

The charts tell the story of 2011:

- Commodities fell by 13%
- Precious Metals Sector gained, driven by Gold
- Petroleum Sector gained
- All other sectors fell, with Industrial Metals leading the way down
- Brent Crude performed best
- Nat Gas performed worst
## Commodity Index Comparison:

<table>
<thead>
<tr>
<th></th>
<th>DJ UBS</th>
<th>S&amp;P GSCI</th>
<th>Thomson Reuters</th>
<th>Rogers International</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong># of Commodities</strong></td>
<td>19</td>
<td>24</td>
<td>19</td>
<td>35</td>
</tr>
<tr>
<td><strong>Rebalancing</strong></td>
<td>Annual (Jan)</td>
<td>Annual (Jan)</td>
<td>Monthly</td>
<td>Monthly</td>
</tr>
<tr>
<td><strong>Selection / Weighting</strong></td>
<td>Liquidity &amp; Production</td>
<td>Production</td>
<td>Economic Significance</td>
<td>Consumption &amp; Liquidity</td>
</tr>
<tr>
<td><strong>Largest</strong></td>
<td>Crude @ 14.71%</td>
<td>Crude @ 34.71%</td>
<td>Crude @ 23.00%</td>
<td>Crude @ 21.00%</td>
</tr>
<tr>
<td><strong>Smallest</strong></td>
<td>Cotton, Lean Hogs @ 2.00%</td>
<td>Silver @ 0.36%</td>
<td>OJ, Wheat, Nickel, Silver, Hogs @ 1.00%</td>
<td>Greasy Wool @ 0.10%</td>
</tr>
<tr>
<td><strong>Energy</strong></td>
<td>33.00%</td>
<td>69.76%</td>
<td>39.00%</td>
<td>44.00%</td>
</tr>
<tr>
<td><strong>Ag</strong></td>
<td>30.09%</td>
<td>14.06%</td>
<td>34.00%</td>
<td>31.90%</td>
</tr>
<tr>
<td><strong>Industrial Metals</strong></td>
<td>17.84%</td>
<td>8.42%</td>
<td>13.00%</td>
<td>14.00%</td>
</tr>
<tr>
<td><strong>Precious Metals</strong></td>
<td>13.74%</td>
<td>3.16%</td>
<td>7.00%</td>
<td>7.10%</td>
</tr>
<tr>
<td><strong>Livestock</strong></td>
<td>5.36%</td>
<td>4.62%</td>
<td>7.00%</td>
<td>3.00%</td>
</tr>
</tbody>
</table>
Commodity Index, ETP Trends:

- Industry-wide, 2011 US ETP commodity introductions included:
  - 28 products
  - Issuers included ETF Securities, US Commodity, iPath, RBS, & Teucrium
  - Launches included single commodity ETNs, physical metals, trend, and contango-focused concepts

- Development of new DJUBS Commodity Indexes is driven by client demand and market evolution so a review of recent introductions gives insight into how consumer use is evolving and trends are developing:
  - Forward Curve Versions
  - Composite Ex-sectors - e.g. ags, industrial metals, precious metals, etc.
  - Contango Solutions – e.g. DJ UBS Roll Select
  - Full Curve Exposure – e.g. DJ UBS 2-4-6 Forward Blend
  - Currency Hedged
  - New Singles
The Futures Curve Can Impact Commodity Returns

*Backwardation* occurs when the short term contract or spot price is greater than the longer term contract, thus creating a positive “roll yield”. *Contango* is the opposite market condition. Indicated below is the estimated yield from 2011 DJUBS contract rolls.
Regulatory Landscape

CFTC received >13,000 comment letters on their proposal to toughen position limits.

CFTC approved proposed position limit rules on October 18 with a 3-2 party-line vote.

Implementation of the rules is pending final approval of swap definition and thus should not occur until April at least – CFTC goal is to have full implementation by end of 2013.

In early December ’11, SIFMA and ISDA filed suit to stop implementation of the rule saying that the CFTC failed to take into account the negative impact of the rules.

Concern – that position limits could negatively impact ETP issuer ability to use futures to gain exposure to a particular commodity thus requiring them to gain exposure through swaps (i.e. synthetic exposure).

Concern - that position limit changes will restrict swap dealer activity in structuring synthetic hedges for product issuers, leading to fragmentation in the market, diminished liquidity and a less favorable investor experience.
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This material must be accompanied by the prospectuses:

http://www.teucriumweatfund.com/pdfs/weat-prospectus.pdf

The Teucrium Corn Fund (“CORN”), the Teucrium Wheat Fund (“WEAT”), the Teucrium Soybean Fund (“SOYB”), the Teucrium Sugar Fund (“CANE”), the Teucrium Natural Gas Fund (“NAGS”), and the Teucrium WTI Crude Oil Fund (“CRUD”), collectively the “Teucrium Funds,” have a limited operating history, so there is little performance history to serve as a basis for you to evaluate an investment in any of the Teucrium Funds. Investing in Commodity Interests subjects the Teucrium Funds to the risks of the commodity-specific market, and this could result in substantial fluctuations in the price of the shares of each of the Teucrium Funds. Unlike mutual funds, the Teucrium Funds generally will not distribute dividends to Shareholders. Investors may choose to use the Teucrium Funds as a means of investing indirectly in specific commodities, and there are risks involved in such investments. The Sponsor has limited experience in operating a commodity pool, which is defined as an enterprise in which several individuals contribute funds in order to trade futures or futures options collectively. Investors may choose to use the Teucrium Funds as a vehicle to hedge against the risk of loss, and there are risks involved in hedging activities. **Commodities and futures generally are volatile and are not suitable for all investors.**

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Shares of the Teucrium Funds are not FDIC insured, may lose value, and have no bank guarantee.

All supporting documentation will be provided upon request.

Foreside Fund Services, LLC is the distributor for the Teucrium Funds.
Addressing Portfolio Risk

This chart consists of two aspects of the market’s seasonal pattern of prices for December Corn Futures Contracts – the most recent 15-year (solid line) and its most recent 5-year (dotted line), for the years 1996 to 2010, inclusive of the December 2010 contracts. Thus, any evolution in the pattern may be perceived, as well as trends, tops, and bottoms coincident to both. The numerical index to the right measures the greatest historical tendency for the market to make a seasonal high (100) or low (0) at a given time.

*Past Performance is not an indicator of future results.*

*Graph does not represent any indication that futures or funds will achieve similar results*


Graph current as of February 2011
Addressing Portfolio Risk

Past Performance is not an indicator of future results.
Graph does not represent any indication that futures or funds will achieve similar results.

Chart: Teucrium Trading LLC as of 1/6/11
Data: Bloomberg Professional as of 1/6/11
Commodities values are from futures (Generic First) spot continuation charts

**S&P500 Index taken from Bloomberg: SPX Index** - This is for illustrative purposes only and not indicative of any investment. An investment cannot be made directly in an index.
Stocks in this example are represented by the Standard & Poor’s 500®, which is an unmanaged group of securities and considered to be representative of the stock market in general. Bonds are represented by the 5-year U.S. government bond. Commodities are represented by the Morningstar Long-Only Commodity Index. An investment cannot be made directly in an index. See Appendix for more details on Commodities Used in this comparison.
## Commodity Exposure Comparison

<table>
<thead>
<tr>
<th></th>
<th>Passive</th>
<th>Active</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ETP</td>
<td>ETN</td>
</tr>
<tr>
<td>Manager</td>
<td>Irrelevant/Benchmark</td>
<td>Credit Partner/Benchmark</td>
</tr>
<tr>
<td>Manager Selection</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Liquidity</td>
<td>Transparent Based on Underlying</td>
<td>Based on Underlying</td>
</tr>
<tr>
<td>Collateral/Exposure</td>
<td>Collateralized with Holdings</td>
<td>Unsecured Debt Obligation</td>
</tr>
<tr>
<td>Transparency</td>
<td>Full</td>
<td>Limited or none</td>
</tr>
<tr>
<td>Tracks</td>
<td>Benchmark</td>
<td>Benchmark</td>
</tr>
<tr>
<td>Fees</td>
<td>Defined</td>
<td>Defined</td>
</tr>
</tbody>
</table>

Source:
2: Exchange Traded Funds, SEC.gov
3: Ipath ETN Prospectus, SEC.gov
4: Form S-3, SEC.gov
Measuring Returns

<table>
<thead>
<tr>
<th>Type of Return</th>
<th>January 4, 2010</th>
<th>December 31, 2010</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spot Corn Futures</td>
<td>$4.185</td>
<td>$6.29</td>
<td>50.30%</td>
</tr>
<tr>
<td>Physical Holdings</td>
<td>$4.185</td>
<td>$5.79</td>
<td>38.35%</td>
</tr>
<tr>
<td>Roll-Adjusted Spot</td>
<td>$10,000</td>
<td>$13,244</td>
<td>32.44%</td>
</tr>
<tr>
<td>March 2011 Futures</td>
<td>$4.54</td>
<td>$6.29</td>
<td>38.55%</td>
</tr>
</tbody>
</table>

Spot Continuation: Fictional, no efficient hedge possible (Spot equals Front Month Futures)
Physical Holdings: Requires storage, commodity expertise (Assumes taking delivery for 10 moths with a five cent per bushel carry cost per month)
Roll-Adjusted Spot: Rolls dollars invested out of expiring contract into replacement contract. Used by futures investors, first-generation ETFs and indices
Source: Bloomberg/Teucrium Trading LLC
Access Via ETP

**Futures ETP Benchmark Structure:**
- Transparency
- Liquidity
- Exposure to the futures pricing curve
- Contango and backwardation mitigation

**Investment Time Horizon Considerations:**

**Investment <30 days:** First-generation ETPs and Indices with concentrated spot month investments

**Investment >30 days:** Products with exposure to the forward curve, next generation ETPs and Indices
# Appendix

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Exchange</th>
<th>Bloomberg Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic 1st Sugar No. 11 future</td>
<td>Intercontinental Exchange (ICE)</td>
<td>SB1 Comdty</td>
</tr>
<tr>
<td>Generic 1st Gold future</td>
<td>Commodity Exchange Inc (COMEX)</td>
<td>GC1 Comdty</td>
</tr>
<tr>
<td>Generic 1st Soybean No. 2 Yellow future</td>
<td>Chicago Board of Trade (CBOT)</td>
<td>S1 Comdty</td>
</tr>
<tr>
<td>Generic 1st Corn No. 2 Yellow future</td>
<td>Chicago Board of Trade (CBOT)</td>
<td>C1 Comdty</td>
</tr>
<tr>
<td>Generic 1st Silver future</td>
<td>Commodity Exchange Inc (COMEX)</td>
<td>SI1 Comdty</td>
</tr>
<tr>
<td>Generic 1st Palladium future</td>
<td>NYMEX</td>
<td>PA1 Comdty</td>
</tr>
<tr>
<td>Generic 1st No. 2 Soft Red Winter Wheat future</td>
<td>Chicago Board of Trade (CBOT)</td>
<td>W1 Comdty</td>
</tr>
<tr>
<td>Generic 1st Henry Hub Natural Gas future</td>
<td>NYMEX</td>
<td>NG1 Comdty</td>
</tr>
<tr>
<td>Generic 1st Platinum future</td>
<td>NYMEX</td>
<td>PL1 Comdty</td>
</tr>
<tr>
<td>Generic 1st WTI Crude Oil future</td>
<td>NYMEX</td>
<td>CL1 Comdty</td>
</tr>
<tr>
<td>Generic 1st Copper future</td>
<td>Commodity Exchange Inc (COMEX)</td>
<td>HG1 Comdty</td>
</tr>
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Alex Depetris, Vice President
Deutsche Bank
db-X Group
Term Structures: “Curve Roll” Mechanism

- **Contango Curve**: Roll is negative (creates a cost) in a contangoed market (upward sloping).
- **Backwardated Curve**: Roll is positive (creates a benefit) when the term structure is backwardated (downward sloping).

Total Return of Futures Based ETP = Spot Return + Collateral Return + Roll Return
Contangoed Market

RBOB Gasoline

<table>
<thead>
<tr>
<th>Delivery Month</th>
<th>Contract</th>
<th>RBOB Gasoline</th>
<th>Implied Annualized Roll Yield ($)</th>
<th>Implied Annualized Roll Yield (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1/2012</td>
<td>XBF2</td>
<td>$245.42</td>
<td>-</td>
<td>0.00%</td>
</tr>
<tr>
<td>2/1/2012</td>
<td>XBG2</td>
<td>$247.53</td>
<td>($25.32)</td>
<td>-10.32%</td>
</tr>
<tr>
<td>3/1/2012</td>
<td>XBH2</td>
<td>$249.33</td>
<td>($23.46)</td>
<td>-9.56%</td>
</tr>
<tr>
<td>4/1/2012</td>
<td>XBJ2</td>
<td>$263.73</td>
<td>($73.24)</td>
<td>-29.84%</td>
</tr>
<tr>
<td>5/1/2012</td>
<td>XBK2</td>
<td>$263.83</td>
<td>($55.23)</td>
<td>-22.50%</td>
</tr>
<tr>
<td>6/1/2012</td>
<td>XBM2</td>
<td>$261.98</td>
<td>($39.74)</td>
<td>-16.19%</td>
</tr>
<tr>
<td>7/1/2012</td>
<td>XBN2</td>
<td>$259.71</td>
<td>($28.58)</td>
<td>-11.65%</td>
</tr>
<tr>
<td>8/1/2012</td>
<td>XBQ2</td>
<td>$257.23</td>
<td>($20.25)</td>
<td>-8.25%</td>
</tr>
<tr>
<td>9/1/2012</td>
<td>XBU2</td>
<td>$254.56</td>
<td>($13.71)</td>
<td>-5.59%</td>
</tr>
<tr>
<td>10/1/2012</td>
<td>XBV2</td>
<td>$241.76</td>
<td>4.88</td>
<td>1.99%</td>
</tr>
<tr>
<td>11/1/2012</td>
<td>XBX2</td>
<td>$239.27</td>
<td>7.38</td>
<td>3.01%</td>
</tr>
<tr>
<td>12/1/2012</td>
<td>XBZ2</td>
<td>$238.42</td>
<td>7.64</td>
<td>3.11%</td>
</tr>
<tr>
<td>1/1/2013</td>
<td>XBF3</td>
<td>$238.47</td>
<td>6.95</td>
<td>2.83%</td>
</tr>
</tbody>
</table>

Source: Bloomberg.
For illustrative purposes only. Past performance does not guarantee comparable future results.
### Comparative Returns

<table>
<thead>
<tr>
<th>Range</th>
<th>Period</th>
<th>Security</th>
<th>Currency</th>
<th>Price Change</th>
<th>Total Return</th>
<th>Difference</th>
<th>Annual Eq</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/31/10–12/30/11 Daily</td>
<td></td>
<td>SDCITR Index</td>
<td>USD</td>
<td>-8.03 %</td>
<td>-5.64 %</td>
<td>-8.06 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>DBLCDBCT Index</td>
<td>USD</td>
<td>-2.39 %</td>
<td>-2.40 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>DJUBSTR Index</td>
<td>USD</td>
<td>-13.32 %</td>
<td>-10.93 %</td>
<td>-13.35 %</td>
<td></td>
</tr>
</tbody>
</table>

(*) = No dividends or coupons

---

1. SummerHaven Dynamic Commodity Index - Total Return Index™ (Bloomberg Ticker: SDCITR <Index>).
2. DBLCI Diversified Commodity Index – Total Return™ (Bloomberg Ticker: DBLCDBCT<Index>).
3. Dow Jones-UBS Commodity Index Total Return Index™ (Bloomberg Ticker: DJUBSTR <Index>).

An investment cannot be made directly in an index.

**Past index levels are not necessarily indicative of future changes, positive or negative, in the index levels**
ETP Strategies to Navigating Term Structures

- **Spot exposure - Physically Backed ETPs**
  - Available to investors in the precious metal complex

- **Front Month Rolling**
  - Most common futures rolling strategy

- **Spreading Out Along the Term Structure**
  - Spread evenly across maturities – *e.g.* United States 12 Month Oil Index
  - A modified spread - *e.g.* Teucrium Corn Fund Benchmark Index™ which spreads splitting exposure between the 2\textsuperscript{nd} to expire futures contract (35%), the 3\textsuperscript{rd} to expire contract (30%), and the following December contract (35%)

- **Optimum Yield**
  - **DBLCI Diversified Commodity Index™** - Deutsche Bank’s flexible rolling strategy designed to minimize the roll cost

- **Momentum-Based**
  - **SummerHaven Dynamic Commodity Index™** - a passive momentum index
  - From a population of 27 commodities, monthly the index selects the 7 most backwardated and the 7 with greatest 12 month price momentum
The Challenge to Rolling Transparent Futures Based Commodity Strategies

– All commodity ETP’s in the US marketplace track passive, transparent and published indices – there are no “dark” or actively managed commodity ETPs
– All indices tracked by ETPs are potentially subject to front-running
– Front runners may include hedge funds, market makers and other sophisticated traders
– Managers can minimize potential front-running by implementing a number of strategies such as:
  (i) tracking indices that contain the most liquid commodities
  (ii) spread rolling activity over a number of days
  (iii) using the most experienced executing commodity brokers
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PAST INDEX LEVELS ARE NOT NECESSARILY INDICATIVE OF FUTURE CHANGES, POSITIVE OR NEGATIVE, IN THE INDEX LEVELS
Stephen Hammers, CIMA
Chief Investment Officer
Compass EMP Funds
Commodity Considerations

• **Diversification**
  – Inflation Hedge or Volatility Reduction

• **Economy**
  – Strategic Exposure or Tactical Exposure

• **Strategy**
  – Fundamental or Trend Following

• **Correlation**
  – Recession vs. Index vs. True Alternative (L/S)

• **Exposure**
  – Impact?
Commodity Diversification

Risk / Return
January 2002 - December 2011 (Single Computation)

Return
0% 1% 2% 3% 4% 5% 6% 7% 8% 9%

Standard Deviation
8% 10% 12% 14% 16% 18%

Source: Zephyr & Associates  Past performance is no indication of future results
Commodity Diversification

Calendar Year Return
As of December 2011

Source: Zephyr & Associates  Past performance is no indication of future results
Long-Only vs. Long-Short
Total Return (Top) & Volatility Trend (Bottom), Jan. 2000 – Present

Source: Bloomberg L.P.  Past performance is no indication of future results