

BARCLAYS PLC & AGRICULTURAL COMMODITY DERIVATIVES

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The following is an overview of Barclays PLC's involvement in commodity derivatives markets, with particular reference to its involvement in agricultural commodity derivatives.

1. BARCLAYS PLC

Barclays PLC is a series of businesses, separated in two main clusters:

1) *Global Retail Banking*: The retail banking businesses includes UK Retail Banking, Barclaycard, and some international subsidiaries (e.g. ABSA of South Africa)

2) *Corporate & Investment Banking & Wealth Management* – Split into three businesses:

- Barclays Corporate: A commercial banking operation providing loans and other financing for large companies.
- Barclays Wealth: Focuses on looking after the money of high-net-worth individuals (i.e. private banking for very wealthy people).
- Barclays Capital: The investment bank, by far the most important unit in the overall Barclays Group. This is the business where the commodities division is located.

2. MORE ABOUT BARCLAYS CAPITAL

Barclays Capital, often called 'BarCap', is where the commodity derivative division is situated.

BarCap's core operations, like all investment banks, can be broken down into three separate areas

- Mergers & Acquisitions / Corporate finance advisory: They help large companies to merge with each other, acquire each other, or break apart. They also advise on other technical financial issues. They make money from fees. Not relevant in the context of commodities trading.
- Primary capital markets: The prime activity here is in helping large companies raise money, either by issuing shares, or by issuing bonds. Also not strictly relevant for commodities trading.
- Secondary capital markets: This is the realm of 'trading', often more accurately called 'dealing' in the context of investment banks. This is where the commodities division is located.

3. BARCLAYS CAPITAL IN THE SECONDARY MARKETS

To understand the commodities division, it's important to understand the basic business of 'dealing'. Investment banks, in their purest form, are *intermediaries*, making money by facilitating transactions between institutions (e.g. companies, investors, funds etc.). They refer to those institutions as 'end-users', 'clients' or 'customers'. The business of dealing is the business of buying from, and selling to, those end-user clients. The dealers hope to buy at a lower price than what they sell at, and in so doing

to make money off the *spread* between those prices. Dealing is one type of trading, called 'flow trading', which is why dealers are frequently called 'traders'. Other terms for this business include 'market-making', or 'risk warehousing'. Good analogies to understand investment bank dealing include secondhand car dealers, or any secondhand dealers for that matter, like ticket-touts buying and selling tickets outside a rock concert.

DERIVATIVES DEALING

Secondary market dealing activities are further separated, conceptually at least, into dealing in actual things, and dealing in bets on things. Dealing in actual things includes dealing in shares, bonds, and currencies. Dealing in bets on things, is also called 'derivatives dealing'.

When it comes to dealing in *derivatives*, a more appropriate analogy for investment banking activities are the activities of sports-betting 'book-makers' or 'bookies'. BarCap will quote 'odds' for derivatives trades, enter into bets with clients, and then try offset those bets against other bets from other clients, the ultimate aim being to make money regardless of the outcome of whatever is being bet on.

These derivatives come in three main types: Futures/forwards, options and swaps. In practice, a lot of the dealing on investment bank trading floors will be in 'over-the-counter' (OTC) derivatives, which includes forwards, swaps and bespoke options. Futures are slightly different, in that they are traded on regulated *exchanges*. All these derivative types can be based on different 'underlying assets' – e.g. derivatives based on shares, bonds and currencies, economic indicators, and a lot of other things. By far the largest global derivative market is the interest rate derivatives market, followed by currency derivatives, credit derivatives, commodity derivatives, and equity derivatives.¹

4. BARCLAYS CAPITAL COMMODITIES DIVISION

Barclays Capital commodities division is a *commodity derivatives* business, facilitating derivative markets in energy commodities (e.g. oil, oil distillates, natural gas, coal), industrial metals, precious metals, carbon emissions, and agricultural commodities. There are roughly 350 employees.² Barclays describes the business as follows:

*Barclays Capital's Commodities division has expanded rapidly in recent years to meet growing customer demand. Our Commodities Traders build 'trading books' specialising in goods from energy products to agricultural assets, all over the world.*³

¹ See Bank of International Settlements (BIS) bi-annual derivatives statistics to monitor changes in the size of global derivatives markets

² <http://www.barcap.com/Client+offering/Global+Markets/Commodities>

³ <http://group.barclays.com/Careers/Barclays-around-the-world/Corporate-and-Investment-Banking-and-Investment-Management/Barclays-Capital> (accessed 10th March 2011)

Traders (dealers) are only one part of the picture though. The division will also have *salespeople*, that assist the traders by interfacing with the end-user clients, *analysts* that produce research (either for clients, or for traders), *'quants'*, or quantitative analysts, that develop mathematical pricing and trading models for traders to use, *structurers* that design 'structured products', and *trade support staff*, doing all the admin and logistical work.

The products categories covered by the division include:

- Crude oil and oil products: By far the largest global commodities market is in crude oil and the various distillates of crude oil (e.g. gasoline, naphtha, fuel oil, jet kerosene etc.)
- Industrial materials: Metals like copper, aluminium, nickel, lead and cobalt
- Precious metals: Gold, Silver and Platinum. Old and well-established markets
- Emissions trading: Including EU emissions allowances (EUAs) and CDM credits (CERS & ERUs)
- Electricity, gas, coal, weather & freight derivatives: Comparatively new & growing markets
- Agricultural: Wheat, Corn, Soybean, Palm oil, Cocoa, Coffee, Cotton, Orange juice, Sugar, Pulp and paper, and rubber⁴

In terms of how they make their money in this division, there are a several potential revenue sources:

4.1) Execution services (brokering): BarCap is a member of all major commodities exchanges, and as such, acts as a conduit through which BarCap clients can enter into futures contracts. For example, a hedge fund that wishes to enter into a crude oil futures contract on the NYMEX exchange can execute the trade through BarCap and pay commission. This is a highly competitive area, and investment banks rely on high volumes of client trading activity to make money off it. A related activity, though not undertaken directly by trading desks, is lending to speculative players (this actually takes places through 'prime brokerage' divisions).

4.2) Dealing in OTC derivatives: This is one area where investment banks really come into their own. OTC derivatives are bilateral derivative contracts between the bank and individual clients. They are more flexible than exchange-traded derivatives, and BarCap will spend much of its time trying to convince clients to enter into structured derivatives 'solutions' through their OTC trading desks (e.g. getting an airline to enter into bespoke fuel swaps, rather than just using exchange traded futures). The main way of making money in this is through the 'dealing spreads' (i.e. getting more in than they have to pay out).

⁴ <http://www.barcap.com/Client+offering/Global+Markets/Commodities/Commodities+Product+Range>

4.3) Facilitating the creation of investment products backed by commodity derivatives: Other than nuts & bolts dealing activities, the OTC trading desks are also key players in creating structured investment products that can then be sold to investors. The generic term given to these investment products is *structured products*, or *structured notes*. In essence, these are derivatives products, packaged in such a way that they don't look like derivatives products. This activity is an extension of the OTC derivatives dealing activities, but targeted at more conservative, longer-term investors like pension funds. A lot of these funds are bound by regulations and mandates that prevent them investing directly in derivatives, but that do allow them to invest in structured products. These instruments thus become a way for trading desks to expand their coverage of clients past pure corporations and hedge funds etc.

BarCap is well known to be an innovator in structured commodity investment products (see section 7 below for a fuller discussion). These include:

- Commodity-linked notes
- Commodity Exchange Traded Notes (ETNs)
- Collateralised Commodity Obligations (CCOs)

4.4) Proprietary trading ('Prop trading'): Proprietary traders aim to make money, not by earning commission or dealing spreads, but by using the money of the bank to punt on particular outcomes in the prices of an asset. It is thus pure speculative activity, more akin to the activities of hedge funds than to traditional market-making.

In a text-book sense, pure investment banks do not seek to engage in outright speculative activity. Much like a sports-betting bookie theoretically seeks to maintain a *flat*, low risk position that makes money no matter what happens in the outcomes of a horse race, so traditional dealing activities are supposed to maintain relatively flat (i.e. not skewed towards any particular view) trading books.

That said, while the theoretical core business of an investment bank dealing desk is to merely deal as an intermediary, investment banks are well known to take on proprietary risk as well. Different banks have different reputations in this regard. Goldman Sachs, for example, is known to have one of the most aggressive proprietary stances, whereas HSBC Global Banking & Markets (HSBC's investment bank) would have a lot less, focusing a lot more on just servicing clients. BarCap is generally regarded to be a lot more aggressive in risk-taking than other UK banks (see below).

In general, proprietary trading activities are undertaken by small teams of traders, sometimes completely separate from the client-focused dealing teams. It's a task generally assigned to senior traders that gain experience of markets through initially being dealers. They frequently end up hiving off from the bank and joining hedge funds.

BarCap has previously maintained that it does not focus on proprietary trading in commodities, rather focusing on its 'client business' (shorthand for dealing). In an investor meeting in June 2009, Bob Diamond, then head of BarCap, had this to say:

We don't have a proprietary trading business in commodities, we have a client business that takes risk. But we talked about the oil prices earlier, 40-60-145-40-70, during all that volatility our revenues in commodities continued to grow. It wasn't you know 'got a hunch, bet a bunch and put your money in the oil market'. It was a client driven business. So whether prices were flying higher or collapsing, our business still did quite well, because it was focused on clients and helping them manage their risk.⁵

Mr. Diamond is asserting that, in 2009 at least, the focus was not on punting on prices, but on intermediating. In practice though, there is a fine line between dealing activities, and speculation, and the distinction gets blurred depending on how aggressive a dealing desk is in taking on risk. On the intermediation risk spectrum, there are a number of variants.

- Lowest risk: Pure brokering, and back-to-back matching of clients – Very little risk taken by intermediary.
- Low to medium risk: Flow trading – Dealing with clients, but 'warehousing' risk on the positions (i.e. buying from one client, and seeking to offset that with another client later, taking risk in the interim)
- Medium to high risk: Proprietary flow trading – Dealing with clients, but having a favoured view on the market (analogous to a sport-betting bookie accepting bets from all directions, but favouring some bets over others)
- Highest risk: Outright proprietary trading – No dealing. Pure speculation with the bank's own money.

Mr. Diamond classes the commodities division as 'a client business that takes risk', suggesting a desk tending towards risky positions, but stopping short of pure proprietary trading. The degree to which proprietary trading actually occurs is therefore quite subjective⁶. In a recent interview, a BarCap commodities executive said the following about the matter:

⁵ Barclays Capital Investor Seminar, New York, 17th June 2009 (PDF file available online)

⁶ For a good short discussion of this issue see: "Identifying commodity prop traders will be hard" by John Kemp; (<http://www.commodities-now.com/news/general/1632-identifying-commodity-prop-trades-will-be-hard-comment.html>)

“Across the banks, there’s a tremendous diversity of opinion about... the difference between taking proprietary risk and the risk warehousing that would normally be associated with a large franchise business such as ours”⁷

The matter at BarCap is complicated by the fact that, unlike some investment banks, they don’t have explicitly designated proprietary trading units (e.g. like Goldman Sachs ‘Principle Strategies group’, and Credit Suisse’s ‘Global Proprietary Trading Group’). The following excerpt from the *Financial Times*, dated August 3rd 2010, illustrates the complications (note that the excerpt is referring to overall trading activities, not just the commodities division):

In Europe, “pure” prop desks have historically accounted for a lower proportion of trading revenues – as little as 1-2 per cent at banks such as Barclays, UBS and Credit Suisse, according to most analysts.

Barclays Capital, the investment banking arm of Barclays that is widely seen as being more comfortable with risk than some rivals, has repeatedly said that pure prop trading accounts for a “miniscule” slice of its earnings.⁸

This impression that BarCap takes greater risk than other European banks is pervasive. In my experience (albeit that this is subjective and anecdotal evidence), traders have wryly commented that ‘client business’ is often a euphemism for ‘prop trading with the occasional client thrown in’. The lack of transparency around the matter makes it difficult to confirm the accuracy of those statements.

Comparative ‘Value at Risk’ in Commodities

Risk-taking in commodities can be measured by proxy through the ‘Value at Risk’ (VAR) figures reported by investment banks for different trading divisions. VAR is a generic methodology used by trading institutions to give an estimation of how much money can be lost in one day in a particular asset class, given past price fluctuations. It is a flawed measure insofar as it fails to really take extreme events into account, but is a useful comparative tool.

The table below summarises average daily commodities VAR figures for a number of banks. As a rule of thumb, the higher the figure, the more aggressive the risk stance. The most recent figures from the end of 2010, show BarCap taking a higher degree of risk on commodities than any other European Bank, and

⁷ Risk Magazine, *Commodity and Energy Derivatives House of the Year: Barclays Capital*, 10th Jan 2011 (<http://www.risk.net/risk-magazine/feature/1933567/commodity-energy-derivatives-house-barclays-capital>)

⁸ Financial Times Aug 3rd 2010 “Prop-hostile environment throws up tough calls for banks” (<http://www.ft.com/cms/s/0/d4376130-9f41-11df-8732-00144feabdc0.html#axzz1GfyqzGBz>)

a similar amount to the leading US investment banks. Note that the Barclays figure refers to average daily VAR over the course of a year, rather than quarters (measured in millions of US dollars)⁹

	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010
Goldman Sachs	38	49	32	29	23
MorganStanley	23	27	29	32	26
Barclays	22.45	25.66	25.66	25.66	25.66
Citigroup	38	18	21	26	(unreported)
BofA Merrill	20.6	22.2	23.2	19.4	(unreported)
JP Morgan	17	15	20	13	14
Deutsche	21.35	16.83	16.69	16.69	(unreported)
Credit Suisse	18.57	17.54	14.44	10.32	16.51
RBS	24.04	17.1	17.59	14.36	(unreported)
BNP Paribas	6.77	6.77	5.41	4.06	5.41
SocGen	3.25	5.52	3.96	5.09	(unreported)
UBS	3.1	2.06	2.06	3.1	4.13

5. BARCAP'S RELATIVE POSITION IN TERMS OF COMMODITIES

Comparing the relative success of banks in commodities would be based on how much revenues and profits they generate from their activities, but such figures are guarded, with banks seldom providing actual figures for specific divisions (see section 8 below for discussion). Thus, to some extent rankings of investment banks are based on subjective criteria, such as awards received and general reputation among clients.

In this regard, it is generally accepted that Goldman Sachs and Morgan Stanley are the two top financial players¹⁰ in commodity markets, followed by Barclays Capital, JP Morgan and Deutsche Bank¹¹.

These ranking don't remain fixed. Barclays Capital started from a low base, with very little presence in commodities markets in the late nineties and early 2000s. It fought its way up the rankings, and is now perceived to be a contender for third top financial player in commodities markets¹². In some ways, the battle has been between BarCap and JP Morgan, which was also aggressively expanding its commodities business over the last few years. The general sense though, is that JP Morgan might have over-extended

⁹ Reuters Feb 17th 2011 "Factbox-Investment banks' commodities risk" (<http://uk.reuters.com/article/2011/02/17/commodities-risk-factbox-idUKLDE71922P20110217>)

¹⁰ The term 'financial player' distinguishes them from physical commodity trading companies like Glencore, Trafigura, Vitol, Cargill, ADM, Bunge, Noble, Phibro etc.

¹¹ See for example Commodities Now article 1st Sept 2010 (<http://www.commodities-now.com/news/general/3440-growth-in-commodity-derivatives-set-to-slow.html>)

¹² See FT article 30th Nov 2010 (<http://www.ft.com/cms/s/0/4de60f72-fc71-11df-a9c5-00144feab49a.html#axzz1GfyqzGBz>) / See also Reuters Oct 9 2009 "Factbox -Banks expand commodities trading desks" and Reuters 22nd Jan 2010 "Factbox: Banks jumped into commodities trading"

itself, getting rid of 50 staff last year, losing a lot of money in coal trades, and falling in the industry-recognised Risk Magazine Commodity Rankings 2011.

Barclays itself now perpetuates this general view on its website: “Barclays Capital is acknowledged to be one of the top three players in the major commodity asset classes, and remains at the forefront of the industry. If you are seeking exposure to commodities as an asset class, we can offer you an extensive and innovative suite of products.”¹³

Certainly, in terms of UK banks, the Risk Magazine awards reflect that BarCap is the only UK bank that has any real presence in the commodities markets. RBS used to own RBS Sempra Commodities, but that has since been sold off to JP Morgan and others. HSBC is very well known as a precious metals dealer, but is not a major player in any other commodities¹⁴.

In terms of European banks, BarCap’s strong rivals include Deutsche Bank and Societe Generale Corporate & Investment Banking (‘SocGen’), both serious players in commodities globally. Credit Suisse has made ground in the commodities space, and the aforementioned VAR reports suggest that it has been increasing its commodity risk exposure. This is also true of UBS: UBS basically shut its commodities division down in 2008, retaining only a strong presence in precious metals. Recently though, UBS has announced they want to re-enter the commodities space, with particular attention on agricultural commodities¹⁵. BNP Paribas is also a large player in commodities, but is generally perceived to be on the second tier, along with American banks Citigroup, and Bank of America Merrill Lynch.

Most of these banks initially focused on establishing client bases for their commodity businesses in the US and UK/Europe. In recent years however, Asia has begun to emerge as a new focal point for expansion in financial services, and there is an increasing desire among investment banks to establish strong teams in China and other countries. JP Morgan, BarCap, Goldman Sachs, and Morgan Stanley are taking the lead there, followed by Deutsche Bank, SocGen, BNP, and Citigroup¹⁶. Other banks that have an early head-start in the Asian markets include UK-based Standard Chartered and Australian Bank Macquarie. Standard Bank of South Africa has also been promoting its strength in commodities in resource rich countries.

6. BARCAP’S AREAS OF DOMINANCE IN COMMODITIES

Risk Magazine is the leading derivatives trade publication and its annual commodity rankings and awards are followed closely. Unfortunately, it focuses primarily on energy commodities and metals, with

¹³ <http://www.barcap.com/Client+offering/Global+Markets/Commodities> (Accessed 15th March 2011 – quote is embedded in page source)

¹⁴ See Risk Magazine Commodity Rankings 2011

¹⁵ Financial Times 30th Nov 2010 “UBS prioritises agriculture in new division”

(<http://www.ft.com/cms/s/0/4de60f72-fc71-11df-a9c5-00144feab49a.html#axzz1GfyqzGBz>)

¹⁶ For example, see Asia Risk Commodity Derivatives Rankings 2010 / Asia Risk Commodity Survey 2009 / Reuters Jul 12 2010 “Factbox -Banks expand commodities trading in Asia”

minimal focus on agricultural commodities to date. Its recent rankings however, confirm that BarCap is a top player in energy commodities and industrial metals, along with others like SocGen, Goldman Sachs, Morgan Stanley and Deutsche Bank.¹⁷ BarCap was also named 2010 'Energy Risk Manager of the Year' by the magazine. BarCap's dominant position in energy commodities is further reinforced by a recent survey of the global market penetration of OTC energy derivative dealers produced by Greenwich Associates¹⁸. The report surveyed 309 corporate clients and 79 investment funds and found that JP Morgan, Goldman Sachs, Morgan Stanley and Barclays Capital were all used by roughly 4 in 10 energy commodity end-users. The report showed BarCap as the leading energy derivatives dealer in Europe, and the second leading dealer in the US. In terms of dealings with investors like pension funds, Goldman Sachs was the leading swaps dealer, followed by BarCap and JP Morgan.

BarCap is the undisputed leader in *emissions trading*, frequently topping the Point Carbon Best Emissions Trader awards and the Energy Risk Environmental Rankings¹⁹. Their main competitor on that front is Deutsche Bank, but between them they facilitate the largest transaction volumes.²⁰

The Asia Risk awards, covering *all* commodities, shows BarCap as a leading dealer in Asian oil distillates, base metals & precious metals, as well as a top five player in agricultural commodities in Asia²¹.

BarCap's increasing dominance in the commodities markets since the early 2000s is reflected in the following awards:

- Euromoney Awards for Excellence 2007: Best Commodities House
- IFR Magazine awards 2007: Commodity Derivatives House of the Year
- Asset Asian Awards 2009: Best Commodity Derivatives House - Institutional
- Risk Magazine Awards 2008: Commodity & Energy Derivatives House of the Year
- Risk Magazine Awards 2009: Commodity & Energy Derivatives House of the Year
- Risk Magazine Awards 2011: Commodity & Energy Derivatives House of the Year

Of all the areas of activity though, BarCap is perhaps most recognised for their work in designing *commodity structured notes and index products* (see section below).

¹⁷ Energy Risk Commodity Rankings 2011

¹⁸ See Bloomberg 1st March 2011 "Goldman Sachs, JPMorgan top OTC commodity market, survey shows" (<http://www.bloomberg.com/news/2011-03-01/goldman-sachs-jpmorgan-top-otc-commodity-market-survey-shows.html>)

¹⁹ See Energy Risk Environmental Rankings 2010, for example

²⁰ Barclays also bought leading carbon credit origination company Tricorona in July 2010.

²¹ Asia Risk Commodity Derivatives Rankings 2010

7. STRUCTURED COMMODITY PRODUCTS PIONEERED BY BARCAP

In the various Risk Magazine rankings BarCap consistently tops the commodity structured products sections, and its leading role in the development of commodity investment products has been reflected in the following awards:

- Structured Products Magazine Commodity house of the Year 2005 (for commodity-linked notes)
- Risk Magazine Awards 2006: Commodity Derivatives House of the Year (for developing CCOs)
- Finance Asia Best Commodities Structured Product in February 2009 (for its CORALS series)
- Energy Risk Awards 2010: Commodity Structured Products House of the Year

7.1 Commodity Linked Notes

Commodity-linked notes are structured products that are sold to investors and give them a return linked to the performance of a commodity index (see indices below). They are debt instruments that have the appearance of bonds (i.e. an investor invests a lump sum principle amount, receives periodic coupons and gets repaid the principle amount back after a number of years). In a normal bond the periodic coupon rate is an interest rate, but in a commodity linked note, the rate is linked to a commodities index. In practice, the coupon is derived from an embedded commodity derivative transaction (e.g. a total return swap or an option) between the investor and the investment bank that issues the note (see appendix for more detail).

These products are designed by teams of 'structurers' working in conjunction with traders and are then sold to investors via the BarCap sales desks. Some of these structured products are marketed through third party distributors: A recent example of this is the *Merchant Capital Growth Plan: Agricultural Commodities Issue 2*, a five-year structured product offering the buyer a return linked to corn, sugar, cotton and soybeans²². When clients of Merchant Capital buy this structured product, the money is passed on to BarCap, which will then invest part of the money in interest-bearing government bonds, and use part of it to purchase commodity options, creating the effect of a bond linked to agricultural commodities (see appendix).

In 2010 Barclays Capital claimed to be "*the largest dealer of commodity-linked notes in the world, with more than US\$7.9 billion in commodity-linked notes issued in 2009.*"²³ It is very difficult to know the specific structure of all these notes, but many of them are linked to baskets of commodities that contain agricultural components. In a 2010 interview with Asia Risk, Kevin Burke of BarCap gave this overview of the structured products business:

²² <http://www.merchant-capital.com/recent-press/merchant-capital-growth-plan-agricultural-commodities-issues-2/> / <http://85.113.82.136/documents/MerchantCapitalGrowthAgricultural2.pdf>

²³ <http://www.barcap.com/About+Barclays+Capital/Press+Office/News+releases/News,1518,Barclays+Capital+Dealers+Commodities-Linked+Solutions+to+Brazilian+Asset+Managers>

“Certainly over the last 12 months, following the sell-off we saw in 2008, we have seen clients interested in getting exposure risk across the board. We can provide across crude and refined, across the energy complex through to agriculture, and even create bespoke indexes,” says Burke. “In general, clients are looking to put on more risk and get more access to underlying products; markets such as gold have been very good as a hedge,” Burke adds, saying that institutional clients, such as pension funds and insurance companies, are increasingly looking at ways to access the commodities market as a means of diversification. “That is where our ability to create products linked to public indexes, such as Jim Rogers, Goldman, Dow Jones indexes or the bespoke indexes we create for a client according to their needs, have proved very popular. “We have added significantly to our risk-taking capability within the region, and also the number of traders that we have trading commodity risk,” says Burke.²⁴

Bespoke Commodity Investor indices released²⁵

The following list gives an indication of the type of bespoke commodity indices created by BarCap to be used as the basis of some of the commodity investor products mentioned above. When an investor buys a structured product based on these indices, they are in effect buying the things that are used as the basis to calculate the indices (in many cases commodity futures), but doing so indirectly through swaps and options. The indices thus resemble packaged trading strategies (i.e. when an investor buys the index product, it is as if they are entering into the trading strategy the index is based on, and the traders at BarCap are going to be executing that trading strategy in the background to create the notes).

Beta Indices (indices that seek to passively track the commodities market)

- Barclays Capital Commodity Index (sub-indices include BCI Grains & Oilseeds index, BCI Softs index, BCI Agriculture index, BCI Agriculture & Livestock index)
- Single Commodity Indices (simple indices measuring returns on particular futures contracts, including agricultural futures contracts)

Enhanced Beta Indices (indices that seek to track the commodities market, with some alterations)

- Pure beta series (altered versions of the BCI series, singles commodity series, S&P GSCI indices, and DJ UBS indices)
- Information ratio series (includes versions for all agricultural commodities)
- Momentum Alpha series (includes versions for all agricultural commodities)
- Roll Yield series (includes versions for all agricultural commodities)

²⁴ Asia Risk Magazine 18th May 2010 “Goldman takes the crown” (http://www.risk.net/digital_assets/1276/026-030_AR0510_Comm-writeup.pdf)

²⁵ <https://ecommerce.barcap.com/indices/index.dxml>

Allocation Strategies Indices (slightly more esoteric indices providing exposure to commodities)

- Barclays Capital Backwardation Index series (includes versions for agricultural commodities)
- The Barclays Capital Commodities Research Index series (includes BCRI Agriculture index)
- Commodity Curve Allocation Index TR: Includes 21 commodities (agricultural commodities included are Cocoa, Coffee, Corn, Cotton, Wheat, Kansas Wheat, Soybeans, and Sugar)
- CORALS Index (contains 12 commodities, including Wheat, Soya, and Corn)
- Barclays Capital Voyager Index series (based on the DJ UBS commodities index and S&P GSCI commodities index)

Alpha indices (indices that do not seek to passively track the market – resemble proprietary commodity trading strategies)

- Barclays Capital CombATS 6 Index (contains ten commodities, including wheat and sugar)
- Barclays Capital Everest Alpha Index (contains up to 23 commodities, including agricultural commodities – based on a discretionary strategy managed by a company called TCW)

7.2 Commodity Exchange Traded Notes (ETNs)

These were pioneered by Barclays through its I-Path brand. They are basically exchange-traded versions of the commodity-linked notes described above, but based on a narrower range of simpler indices.

The commodities ETNs are based on the Dow Jones UBS commodities index (which has a 30% weighting to agriculture), and on the S&P GSCI commodities index (which has a 17% weighting to agriculture). These indices track a basket of commodity futures, and they can be broken down into sub-indices: For example, there are ETNs for a range of DJ UBS sub-indices, including the Agriculture Sub-Index, the Grains Sub-Index; the Softs Sub-Index, and the Cocoa, Coffee, Cotton, and Sugar sub-indices.

In a report in February 2011, Bloomberg reported the following: “Barclays Plc’s iPath Dow Jones-UBS ETNs also attracted money. Shares outstanding in its \$347 million grains ETN rose 83 percent since the start of the year, the \$295 million agriculture index ETN more than doubled, and units in the \$117 million livestock ETN increased 75 percent, according to data compiled by Bloomberg.”²⁶

7.3 Collateralised Commodity Obligations (CCOs)

CCOs were developed by BarCap in 2004. They closely resemble *Synthetic CDOs* of credit crisis fame, differing only in that they are backed by commodity trigger swaps instead of credit default swaps. When an investor buys a CCO, the return they get is derived from the fact that they are selling protection to

²⁶<http://www.bloomberg.com/news/print/2011-02-25/hedge-funds-cutting-food-price-bets-as-grain-prices-take-harrowing-fall-.html/>

someone that stands to lose from the price of commodities going down. Thus, an investor in a CCO is not speculating on commodities in any direct sense, and they do not earn more of a return if the prices of commodities go up. Rather, the returns are fixed in advance, and sourced from insurance premiums being paid by whoever is on the other side of the deal (that could either be BarCap itself, or one of its clients). The flipside of these instruments is that if the price of the designated commodities go below a certain price for a certain period of time, the investors in the CCO lose money. Although BarCap issued more than \$325 million worth of these instruments in 2006²⁷, the issuance appears to have stopped since the credit crisis and the associated reduction in investors willing to buy securitised products.²⁸ (See appendix for further detail)

7.4 Legacy products: Exchange Traded Funds

It is worth noting that Barclays Group used to own the fund management firm Barclays Global Investors (known as BGI). The firm has since been bought by BlackRock, but when it was still owned by Barclays, it launched the commodity i-Shares ETF (exchange traded fund) series, including the i-Shares GSCI Commodity Indexed Trust. ETFs resemble mutual funds, and like ETNs are designed to reflect the index they are based on. BGI was a separate institution to Barclays Capital, but it helped to market BarCap's ETNs alongside its own ETFs.

8. HOW MUCH MONEY BARCAP MAKES IN COMMODITY MARKETS

Barclays Capital breaks down its revenue reporting into five business areas:

- Investment Banking (Fee-based M&A advisory, IPOs etc.)
- FICC (which stands for fixed income, currencies & commodities – The main area of trading income in the firm)
- Equities and prime brokerage (Commission and fee based businesses)
- Principle investments (The firm's private equity activities)

According to Barclays 2010 Results Announcement, FICC contributed £8.8 billion in revenues in 2010, 66% of the total revenues of BarCap in 2010. This is down from £13.6 billion (76% of total revenues) in 2009. In addition to income from commodities, the FICC component includes the income from trading activity in bonds, interest rate swaps, credit default swaps, currencies and currency derivatives. A substantial part of the £8.8 billion thus stems from activities other than commodities trading. Unfortunately, Barclays does not provide public information on what percentage of the FICC figure is

²⁷ Risk Magazine 1st Nov 2006 "House of the year, commodities – Barclays Capital"

²⁸ In the course of research I spoke to several asset-backed securities brokers and traders who haven't seen CCOs for a number of years.

made up by commodities revenues²⁹, and thus commodities revenues need to be estimated in relation to this figure.

The basis for these estimations can be made with reference to the following:

- The size of global commodity derivative markets, relative to global fixed income, credit derivative and currency markets – to provide a sense of the relative volumes of trade that BarCap might be likely to experience in any particular class of derivatives
- Derivative notional outstanding amounts reported by Barclays in their 2010 figures
- Margins on commodities derivatives, relative to margins on fixed income and currency markets
- Trading Value at Risk (VAR) figures provided by the bank

8.1 Backdrop to estimation: Global derivatives markets: The Bank of International Settlements (BIS) produces widely used figures providing estimates of the relative size of global derivatives markets. The basic gist of these figures in recent years has been to show that interest rate derivatives products are the biggest global derivatives market by a substantial margin. They are followed by currency and credit derivatives. Equity derivatives and commodity derivatives trail behind that.

The most recent BIS figures from June 2010 show ‘notional amounts outstanding’ of global OTC derivative markets, providing a good indication of the relative size of the markets. Interest rate derivatives account for 77.5%, currency derivatives for 9.1%, credit default swaps for 5.2%, equity derivatives for 1%, and commodity derivatives for 0.5%.

8.2 The 2010 derivatives figures reported by Barclays

Barclays itself provides figures for notional outstanding amounts of derivatives contracts it held for trading purposes at the end of 2010. The figures show those amounts to be:

- Interest rate derivatives: 86%
- Foreign exchange derivatives: 7.2%
- Credit derivatives (credit default swaps): 4%
- Equity and commodity derivatives: 2.7%

8.3) Volume / Margin considerations: The above figures reflect notional amounts outstanding (an indicator of the size of the markets), but not the frequency of transactions (reflected in volumes figures). From a dealing perspective, money made is a function of both volumes of trades done and of margins on

²⁹ This was confirmed in a phone-call to the Barclays Investor Relations department on 15th March 2011

those trades (i.e. the dealing spreads). High volume areas tend to be very low margin areas. This is because competition is greater in high volume areas. Likewise, low volume areas tend to have lower competition and higher margins.

Interest rate derivatives and currency derivatives are highly 'liquid' markets with extensive competition among dealers, which means that margins are low. Thus, even if volumes in those areas are comparatively high, that does not equate in any straightforward manner to large revenues for those divisions. Commodities are comparatively smaller and less liquid markets, which suggests margins are higher (this logic is also evidenced by the mere presence of commodity divisions – in order for dealers to get involved in lower volume markets, they need to be enticed by higher margins). All this is to suggest that there is an equilibrating effect at work, bringing the revenues from high volume areas towards those of low volume areas.

8.4) Value at Risk (VAR) figures

Barclays publishes its VAR figures for different types of risk factors in its financial statements (see section 4.4 for VAR description). These figures can provide an indication of the relative intensity of risk being taken in different divisions. The 2010 figures are as follows.

- Credit spread risk: £48 million (from credit default swaps)
- Interest Rate risk: £33 million (from interest rate swaps and bonds)
- Commodity risk: £16 million (from commodity derivatives)
- Equity risk: £14 million (from equities and equity derivatives)
- Foreign exchange risk: £6 million (from currency and currency derivatives)

These can also give a reasonable indication of the relative importance of different divisions: Under the assumption that the more profitable a division is likely to be, the more risk it will be allowed to put on, the VAR figures suggest that even if equity and commodity derivatives only make up 2.7% of the total notional outstanding amount of derivatives at Barclays (see 8.3), they are punching far above their weight in terms of risk. For the commodities risk figure to be so high relative to the notional outstanding figure, the division must play a substantial role in the overall revenues. Put another way, if the commodities division was not a highly profitable enterprise, BarCap would not let it take such risk.

8.6) Estimate

The VAR figure shows the commodities division accounting for 17% of the trading risk (net of diversification effects). In the absence of any other more specific figures, it would be reasonable to assume that the percentage provides a rough indication of the importance of the division in the overall FICC figures (albeit equities are not included in FICC, suggesting an even higher importance for commodities). It is thus reasonable to estimate that commodities account for between 10% and 20% of

the FICC revenues, with a middle estimation of 15%. This suggests that the division made between £880 million and £1.7billion from commodities in 2010, or using the middle estimate, £1.3billion.

9. BARCLAYS CAPITAL & AGRICULTURAL COMMODITIES

Estimating revenues for *agricultural* commodities is challenging too: This is because:

1) BarCap provides no indication of the relative importance of its different commodity operations. Much discussion of the commodities division (and all banks’ commodities divisions for that matter) focuses on their presence in the oil and other energy markets. This is because oil and other energy products are the world’s largest commodities markets, and thus a lot of the analysis is skewed by that.

2) A substantial portion of the commodity division’s revenues will be tied to the structured notes they create, many of which will contain a range of commodity exposures – for example, to create a note based on the DJ UBS index would involve the use of agricultural, energy, and metal futures.

The table below gives an indication of the weightings of different commodity components in the leading commodity indices:

	S&P GSCI ³⁰	DJ UBS ³¹	Rogers ³²	TR J CRB ³³
Energy	66.5%	32.77%	44%	39%
Industrial metals	8.3%,	17.59%	14%	13%
Precious metals	3.4%	13.64%	7.1%	7%
Livestock	4.3%	5.41%	3.1%	7%
Agriculture	17.4%.	30.58%	31.8%	34%
<i>Wheat</i>	4.6%	4.47%	6.75%	
<i>Corn</i>	4.3%	7.94%	4.75%	
<i>Soybeans</i>	2.7%	7.29%	3.35%	
<i>Sugar</i>	2.8%	3.03%	2%	

³⁰ **S&P GSCI** index: A production-weighted index – weights designed to reflect the relative global economic significance of the commodities

³¹ **UBS DJ Commodity Index:** 19 commodities weighted by economic significance and market liquidity, but with weighting restrictions

³² **Jim Rogers Index:** Weighted according to international trade significance and contract liquidity.

³³ **Thomson Reuters / Jefferies CRB Index:** Designed to give a broad representation of commodities as an investment class

Commodity index weightings as a basis for agricultural derivative revenue estimation

The increasing importance of structured products offering simultaneous exposure to a range of commodities makes it challenging to separate out revenues from individual commodities. The above weightings however, do provide a useful indication of the economic significance of different commodity classes. In all of the above indices, the agricultural component is second largest after the energy component.

Given the substantial input from BarCap's energy, emissions and metal businesses (see section 6) however, it is prudent to make a fairly conservative estimate attributing between 10% and 20% of the commodities division revenues to agricultural commodities.

- At 20%, agricultural commodities bring in £176 million - £340 million
- At 15%, agricultural commodities bring in £132 million - £255 million
- At 10%, agricultural commodities bring in £88 million - £170 million

A middle estimate, taking 15% of £1.3billion (the middle estimate of 2010 commodity revenues), suggests agricultural commodities account for £195 million in revenues at BarCap.

10. BARCAP'S INVOLVEMENT IN AGRICULTURAL DERIVATIVES SPECULATION

Barclay's Capital's involvement in agricultural derivative speculation can be analysed from the following four angles:

- 1) Proprietary trading activities in agricultural commodities
- 2) Facilitation of speculation in agricultural commodities
- 3) Creation and marketing of commodity investment products
- 4) The oil price-commodity price connection

10.1 Prop trading in agricultural commodities

As the discussion in section 4.4 made clear, the opaque nature of trading activities makes it difficult to make firm assertions about the role of BarCap as a proprietary trader in the commodities markets, and in the agricultural markets in particular. It is clear that greater transparency from banks regarding trading revenues would go a long way to clarifying the matter.

10.2 Facilitation of agricultural commodity speculation

It is firmly established that BarCap acts a key facilitator of shorter-term speculation in commodities markets on behalf of others:

- It makes money on execution and dealing services for hedge funds, for example, and it earns commissions and dealing spreads from this activity.
- It also makes money off extending credit to speculative players through its prime brokerage activities: This includes implicit lending through margin trading and CFD (contract-for-difference) facilities (i.e. allowing customers to 'buy on margin', which in effect is a type of lending activity). Revenue from prime brokerage comes in the form of interest income, and prime brokerage fees.

10.3 Creation and promotion of agricultural commodity investment products

As discussed in section 7, BarCap is a creator and marketer of commodity investment products for investors, including many products that include substantial agricultural elements. While prime brokerage and dealing activities cater to hedge funds that can increase volatility in markets, the facilitation of longer term investors like pension funds arguably represents a greater spur to derivative pricing anomalies. While short-term speculators can push prices both up and down, long term investors are generally 'long only' which means they buy and hold investments. Longer term investors also think very differently to hedge funds: A pension fund manager does not necessarily buy because they think something will go up in value, but rather might buy for *diversification* purposes. If increased access is facilitated to agricultural derivatives markets, and this mentality among long-term investors gets entrenched, it could lead to a structural upward pressure on derivatives pricing.

10.4 The energy trading – food price connection

Although not the direct focus of this report, it is important to consider BarCap's leading role as a player in oil and other energy products when considering its link to agricultural derivative price instability. Energy is the key input into modern commercial agriculture systems (through mechanisation and transport costs, and through the energy intensive processes to create fertilisers). Activity in energy markets can play an important role in influencing activity in agricultural derivative markets.

11. THE CONNECTION BETWEEN BARCLAYS THE RETAIL BANK AND BARCAP THE INVESTMENT BANK

Barclays PLC owns both the high-street Barclays Bank and Barclays Capital. This raises the possibility of the high street bank being used to subsidise the activities of BarCap.

In financial theory, lending money to higher risk activities should attract a higher interest rate. When people lend to Barclays group, they are lending to the overall institution. Because the overall institution is perceived to be relatively safe, the rate at which people lend to it tends to be quite low. This includes the deposits we put into Barclays (deposits are a form of short-term lending to the bank). A cause for concern though, is that if the money being lent to the Barclays group is predominantly steered into the investment banking division to finance riskier activities, the investment banking division could be

benefiting from lower rates of financing than it otherwise would if it were a standalone business. In the finance parlance, BarCap's 'cost of capital' is lower than it should be, and that is made possible by the fact that it is attached to other, lower risk businesses.

This is to say that low risk retail banking activities could be perceived as 'subsidising' the trading activities of the investment bank, including the commodity trading activities. This is indeed one concern raised by some who have submitted proposals to the Independent Commission on Banking (designed to hear proposals of structural reform of the banking system)³⁴. A similar concern has been raised by former Barclays CEO Sir Martin Taylor, who suggested that the investment banking activities were 'parasitic' on the retail bank balance sheet³⁵.

12. APPENDICES

12.1 More about commodity linked notes

When an investor puts money into an index-linked note two basic things happen.

- 1) Most of the money is used to buy very safe assets like government bonds.
- 2) And then a derivative is overlaid on top of this.

This has the net effect of creating a type of hybrid instrument, a bit like a bond, but with a coupon that reflects whatever the derivative is. If the derivative is a commodity derivative, the resultant note is a commodity-linked note. The exact structure can be tweaked with different types of derivatives for different effects. For example, options can be used to create an instrument that pays out if the commodities price goes up, but stops investors from losing if the commodities price goes down. In the end, the investor could have achieved the same by buying a call option, and simultaneously buying government bonds. Investment banks just make it easier for them, by offering to do the whole lot as a package.

12.2 More about Commodity Collateralised Obligations

CCOs are structured credit instruments. Any structured credit instrument operates on a very basic foundation: 1) A bank sets up a company called a Special Purpose Vehicle (SPV). 2) The SPV raises money from investors and 3) uses that money to purchase assets that have cash flows. 4) The resultant cash flows from those assets are then passed through to investors, either straight, or through a 'tranching'

³⁴ <http://bankingcommission.independent.gov.uk/bankingcommission/responses/>

³⁵ <http://www.which.co.uk/documents/pdf/future-of-banking-commission---evidence-session-15th-march---sir-martin-taylor-209857.pdf>

structure (a tranching structure is a way of taking one stream of risk, and refracting it into several different streams of risk with different levels of intensity.)

In the case of CCOs, an SPV holds a collection of instruments called commodity trigger swaps. These are insurance contracts, which attract a premium, paid by someone who wants to be ensured against crashes in commodity prices. The SPV receives these premiums, which it pays out to its investors. If the insurance event is triggered though, the investors lose some of the original principle they put in, (or at least the investors in the riskiest tranches do).

The net effect of this is that the CCO acts as a way to insure against crashes in commodity prices. In effect, the investors in CCOs are betting that the price will not crash. They are not, however, betting directly that prices will go up, and investor returns remain fixed if commodity prices skyrocket. These instruments would have been sold to fixed income investors (people who normally invest in bonds) using the basic sales pitch that the CCOs give steady returns, but higher returns than if you invested in a normal bond.